BROADCAST AUDIO EQUIPMENT

Type BC-2B
Studio Consolette
and
Power Supply

RADIO CORPORATION OF AMERICA
ENGINEERING PRODUCTS DEPARTMENT CAMDEN, N. J.

IB-24748

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INSTRUCTIONS

Type BC-2B Studio Consolette and Power Supply

RADIO CORPORATION OF AMERICA
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PRINTED IN U. S. A.
5121

IB-24748

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Page 10 of IB-24750 Power Supply Instructions-Change Figure 7 to Figure 6

Page 12 of IB-24750-Add Figure 7 to title Power Supply Connection Diagram

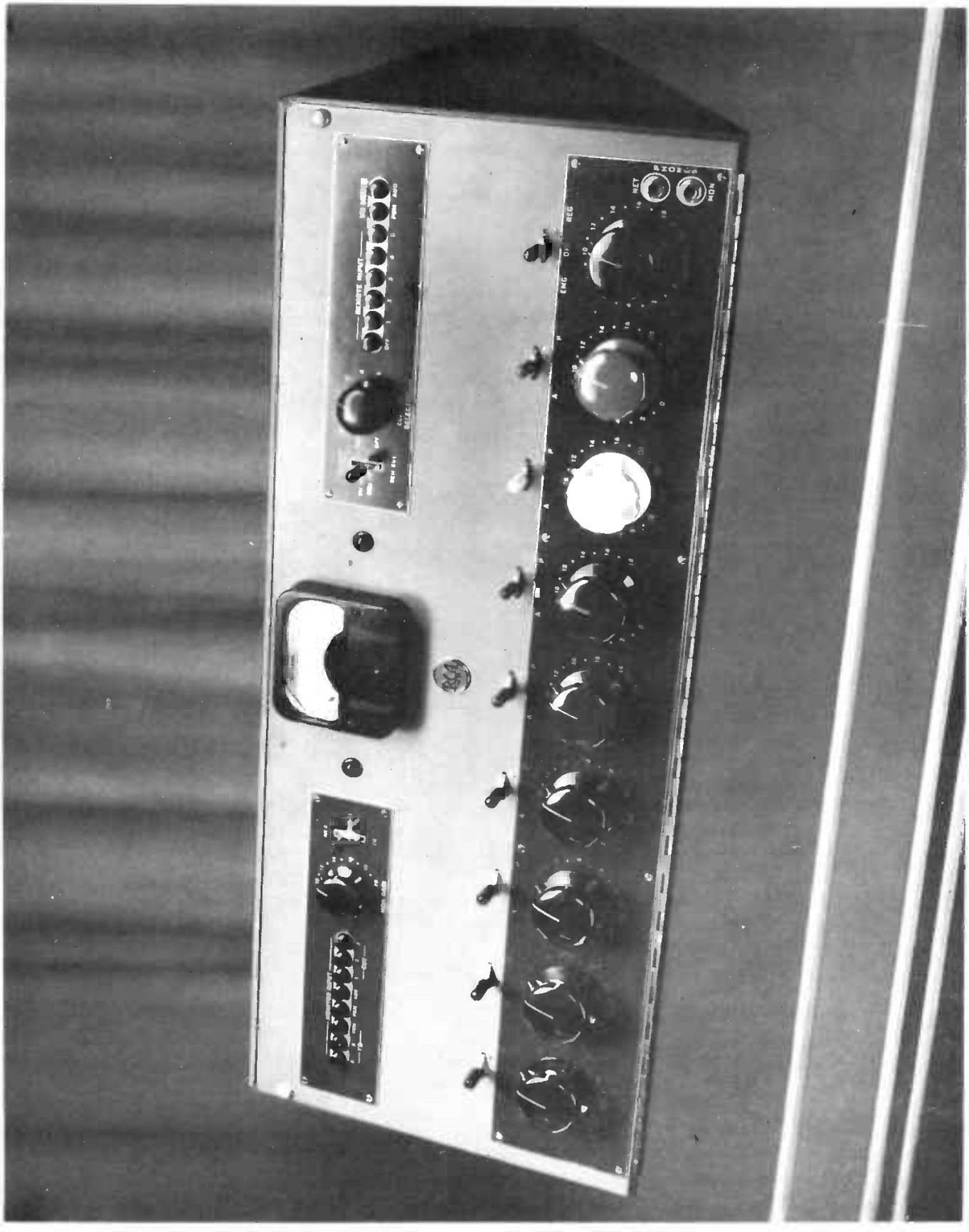


Figure 1 - Studio Consolette Type BC-2B (Signal Lights Added)

TECHNICAL DATA

Inputs

6 Microphones	30–150 ohms balanced
2 Turntables	150 ohms unbalanced
1 Network Line	150 ohms unbalanced
5 Remote Lines	600/150 ohms balanced
3 Cue Lines	20,000 ohms bridging

Outputs

1 Program Line	600 ohms balanced
5 Remote Cue Lines	600 ohms balanced
4 Monitor Speakers	15 ohms unbalanced
2 Headphones	600 ohms unbalanced
1 Recording Circuit	600 ohms balanced
1 External Monitor	600 ohms balanced
1 Turntable Cue	150 ohms unbalanced

VU Meter

One 4" illuminated VU meter with type B scale
Semi-adjustable pad. Light dimmer.

Channels

Program and Audition

Amplifiers

4 preamplifiers (2 dual units)
(Space and wiring included for one additional dual preamplifier unit)
1 program amplifier
1 monitor amplifier

Gain in db (Controls set for minimum attenuation)

	Regular	Emergency
Microphone to program line	108	102
Turntable to program line	68	62
Network to program line	49	43
Remote to program line	48	42

	Program	Audition	Other
Microphone to speakers	140	127	Talkback 104
Turntable to speakers	101*	88*	
Network to speakers	82	68	
Remote to speakers	81	67	Override 64
Cue Line to speakers			Monitor 60
Microphone to remote cue	122	108	Talkback 85
Turntable to remote cue	82*	68*	
Network to remote cue	61	47	
Mic. to record or ext. mon.	82		
Turntable to record or ext. mon.	44*		
Network to record or ext. mon.	23		
Remote to record or ext. mon.	22		

*39 db higher when MI-11241 Dual Preamplifier is used.

Frequency Response	30 to 15000 cps	Regular	Emergency
Microphone Turntable Remote Line Network	to program line	±1.5 db	±2.5 db
		Program	**Audition**
Microphone Turntable Remote Line Network	to speakers	±2.5 db	±2 db

TECHNICAL DATA

Distortion

Microphone input to line output (regular) 18 dbm output
1% 30 cps .75% 50 cps .5% 100–15,000 cps

Microphone input to speakers, 8 watt output
1.5% 50–10,000 cps

Signal to Noise Ratio

Line: 68 db (microphone input – 50 dbm. Mixer and Master gain controls set for +18 dbm output)

Speaker: 67 db (microphone input – 50 dbm. Mixer and Master and Monitor gain set for +39 dbm output)

Power Requirements

Power furnished by the MI–11313 Power Supply

	Two Dual Preamplifiers	Three Dual Preamplifiers	Program Amplifier	Monitor Amplifier
Heater (AC)	6.3 v, 1.2 a	6.3 v, 1.8 a	6.3 v, .9 a	6.3 v, 1.50 a
Plate (DC)	280 v, 16 ma	280 v, 24 ma	315, 47 ma	320 v, 87 ma
VU Meter Lights	6.3 v, .3a AC			
Relays	24 v, .2a DC			

Tube Complement (Tubes not included with MI)

Consolette MI-11632

3 RCA 6V6GT
1 RCA 12AX7
6 RCA SEL. 12AY7 (MI–11299)
1 RCA 5879

1 MI–11297 Set of operating electron tubes

Dual Preamplifier MI-11241

2 RCA SEL. 12AY7

2 MI–11299 Operating electron tubes

Power Supply MI-11313

1 RCA 5R4GY

1 MI–11294 Operating electron tubes

Dimensions and Weight

Width – 33 inches
Depth – 21–1/4 inches
Height – 11–1/4 inches

Weight – 114 lbs

General

Mounting – – flat top desk or table
Min. Clearance – from wall 3/16 inch
Finish – front panel – light umber grey
Housing – dark umber grey

DESCRIPTION

The Type BC-2B Consolette is designed to provide flexibility of all control room facilities required by the majority of AM-FM and TV broadcasting stations. Except for the MI-11313 Power Supply, the consolette is completely self-contained. The instruction book IB-24750 for the MI-11313 Power Supply is included with the consolette instruction book IB-24748.

As shown in Figure 1, the consolette is compact in design. Mounted on the control panel are knobs and pushbuttons to control four microphones in one or two studios, an announce booth microphone, a control room microphone, two turntables, a network and five remote lines.

A new feature to facilitate ease and speed of operation has been initiated in the use of colored knobs and switches to tie related functions together.

The front panel tilts forward for easy access to the rear of the components mounted on the panel. The amplifier mounting frame is pivoted and tilts backward for servicing components underneath the chassis. Each amplifier is shock mounted and individually removable. Space and wiring are provided for a third dual preamplifier MI-11241 to be used in the turntable circuits. Speaker muting relays are furnished for two studios and the control room. Space and wiring are provided for an additional relay for the announce booth speaker. Operation of the relays is interlocked with the audio switches. Terminals are provided for external warning light relays.

The VU meter is a standard four-inch model with an illuminated type B scale. The indicated output level is adjustable from -2 to 25 VU in 1 db steps by means of a semi-adjustable pad. A screwdriver adjustment is provided on the back of the control panel near the meter for setting the brightness of illumination on the dial.

Electrical connections are made to power and audio terminal blocks at the back of the consolette. Knockout holes 1-1/16" in diameter are provided in the base and rear panel for the terminating conduits.

Equipment Supplied

The following chart lists the items included with the Type BC-2B Consolette:

Qty.	Unit	MI Number
1	Studio Consolette (including in place): 2 Dual Preamplifiers (MI-11241) 1 Program Amplifier 1 Monitor Amplifier 1 Relay Strip	MI-11632
1	Power Supply	MI-11313
6	Tube Shields	
1	Bottle Davenoil	
1	Instruction Book	IB-24748

Equipment Required

The following chart lists additional equipment required for the operation of the Type BC-2B Consolette, which should be ordered by the MI number:

Qty.	Unit	MI Number
1	Tube Complement for Type BC-2B Consolette	MI-11297
1	Tube Complement for Power Supply	MI-11294

Associated Equipment

Only a brief description of the associated equipment is given here; installation and operating information is included as it pertains specifically to the consolette.

Microphones

The Type 44-BX microphone is a velocity type suitable for general studio application. The Type 77-D polydirectional microphone is designed for use where its directional characteristic is of special value as in close talking applications. The MI-11006-A model (Type 77-D with low-lustre gray finish) is intended for TV programs. The Type BK-1A pressure microphone is designed for announcing and talk-back operations. Type BK-4A microphone is a ribbon pressure type specially designed for TV work. Known as the Starmaker, its small size and wide frequency range make it most suitable for interview and close work.

Microphone Stands

The best floor stand to use with the studio microphone is the Type 90-AS Program Stand. The Type 90-AS is especially adaptable to the Type BK-4A microphone. The Type KS-11A stand is the new design for the Type BK-1A microphone. Types 91A and 91B stands are used with the Type 44-B and 77-D microphones in table applications. For boom applications, the Type KS-3B should be used. For TV, the more elaborate boom stand MI-26574, enables the operator to place the microphone with respect to the sound source. The perambulator on which the stand may be mounted makes it possible to move the microphone quietly from one location to another

Transcription Turntables

The Type 70-D series of Transcription Turntables are recommended for the transcription booth or control-room installation.

Dual Preamplifier

A third dual preamplifier, MI-11241 may be installed in space provided within the consolette. It provides additional gain in the turntable channels, where booster amplifiers are not included with turntables. The tube complement for this amplifier consists of two MI-11299.

Transcription Turntable Cueing Amplifier

For external turntable cueing, the consolette may be connected to a Type BA-14A monitor amplifier.

Recorders and Recording Amplifiers

The Type 73 series of Professional Disc Recorders are recommended for high quality performance. The Type BA-14A amplifier may be used with these recorders. The Type RT-11B Professional Magnetic Tape Recorder may also be used with the consolette for recording and reproducing.

Loudspeakers

A maximum of four loudspeakers may be connected to the consolette. For high-fidelity reproduction, the Type LC-1A Loudspeaker, MI-11411, is recommended. Cabinets for the LC-1A speaker are available in umber gray MI-11401. The MI-11406 Wall Cabinet for the MI-11411 speaker is especially suitable for control room and studios. The MI-11411 speaker has a 15-ohm voice coil impedance. The loudspeaker should have a voice coil impedance of 15 ohms, or impedance matching transformer must be provided.

Announce Booth Speaker Relay Kit

This kit may be installed within the consolette in applications where an announce booth speaker is used.

Warning Lights and Relays

The MI-11706 series of studio warning lights are recommended for the studios, announce booth and control room. Lights are available with inscriptions listed in the following table:

ON AIR	MI-11706-1
REHEARSAL	MI-11706-2
AUDITION	MI-11706-3
STAND BY	MI-11706-4
SILENCE	MI-11706-5

One Warning Light Relay Kit MI-11702-A is required for each MI-11706 Warning Light. Connection information is provided in the installation section.

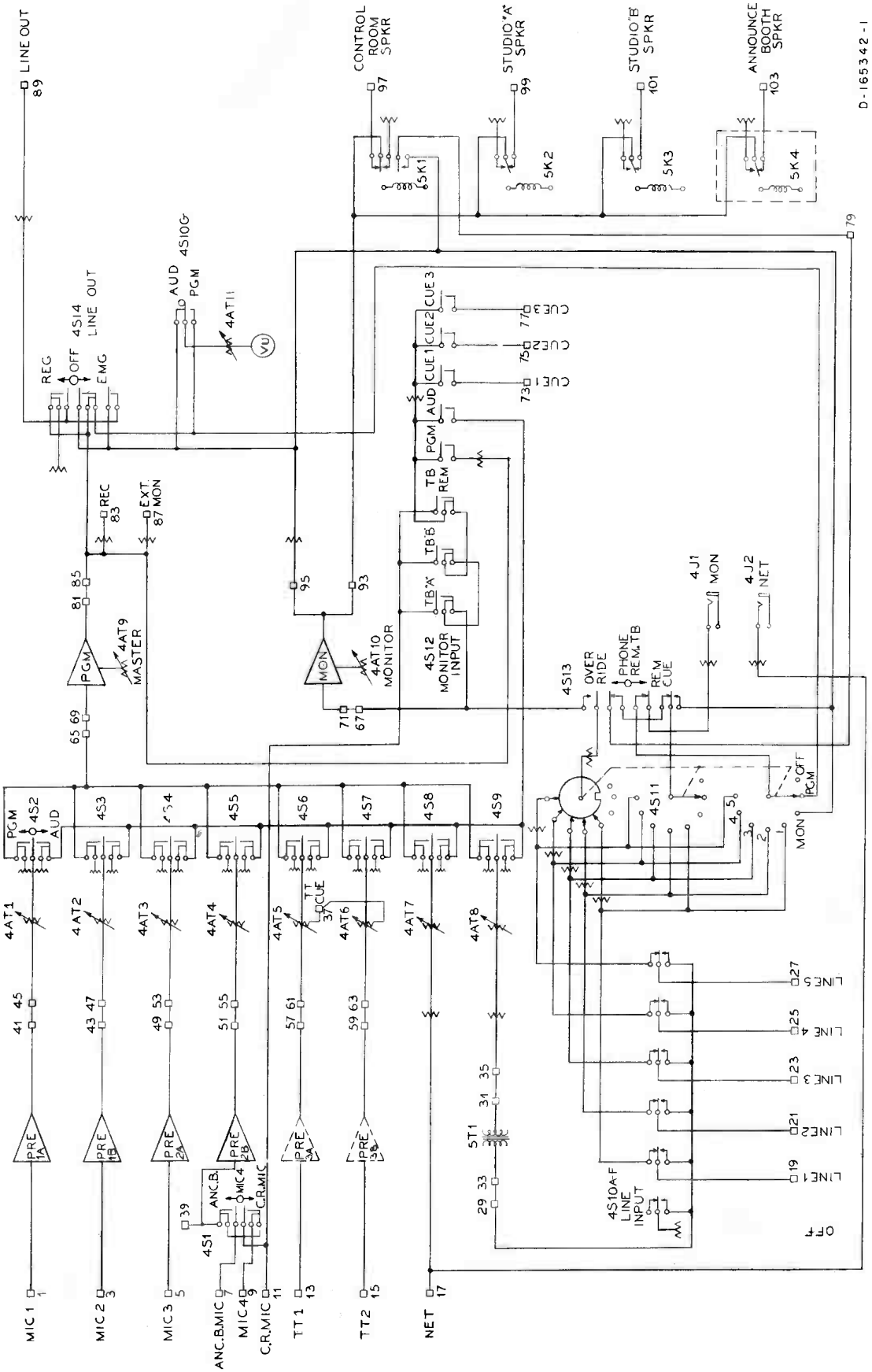


Figure 2 - Block Diagram

Signal Lights

The Signal Light Kit MI-11714-A supplies the lamps and sockets necessary to mount two signal lights on the control panel of the consolette. The wiring is available on the back of the panel to make connections.

Line Equalizer

If it is desired to equalize the remote lines, a line equalizer such as the Type BE-1B 56-C and 56-E may be used.

Conduit Terminating Box

A conduit terminating box is desirable for the installation. This box may be constructed by the installing electrician as shown in Figure 14.

Multiple Channel Switching System

The Type BCS-11A Master Switching Consolette, MI-11633, provides complete master control of ten program sources to three outgoing lines. This switching system matches the Type BC-2B Consolette in shape and styling, and makes economical desk mounting possible. Refer to Figure 3.

CIRCUIT DESCRIPTION

Amplifier Circuits

There are three types of amplifiers, each individually mounted on the pivoted frame. These amplifiers are all of a new design which utilizes miniature tubes in all stages except the output stage of the program and monitor amplifiers. Negative feedback is employed to stabilize the gain and to reduce noise and distortion. The chassis are cushion mounted to eliminate microphonics.

Dual Preamplifier MI-11241

The dual preamplifier uses a 12AY7 twin triode tube for its two-stage amplification. This tube is designed especially for low level amplifiers. However, to minimize hiss, hum, microphonics and pops, the tubes should be selected. The tubes (12AY7) which meet these test specifications and are equivalent to the type 1620 in regard to these characteristics may be obtained as MI-11299. Two identical preamplifiers are mounted on one chassis. Space and wiring are included in the consolette for third dual preamplifier when the turntable output is at a low level. The

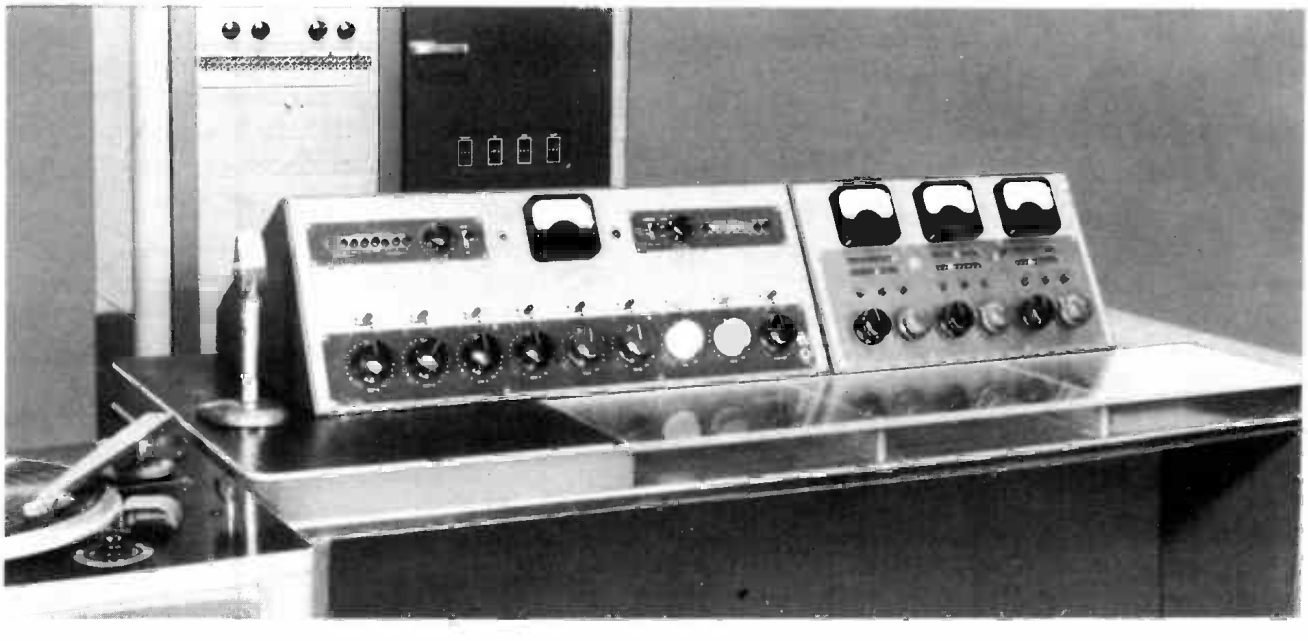


Figure 3 - Studio Consolette Type BC-2B with Master Switching Consolette Type BCS-11A

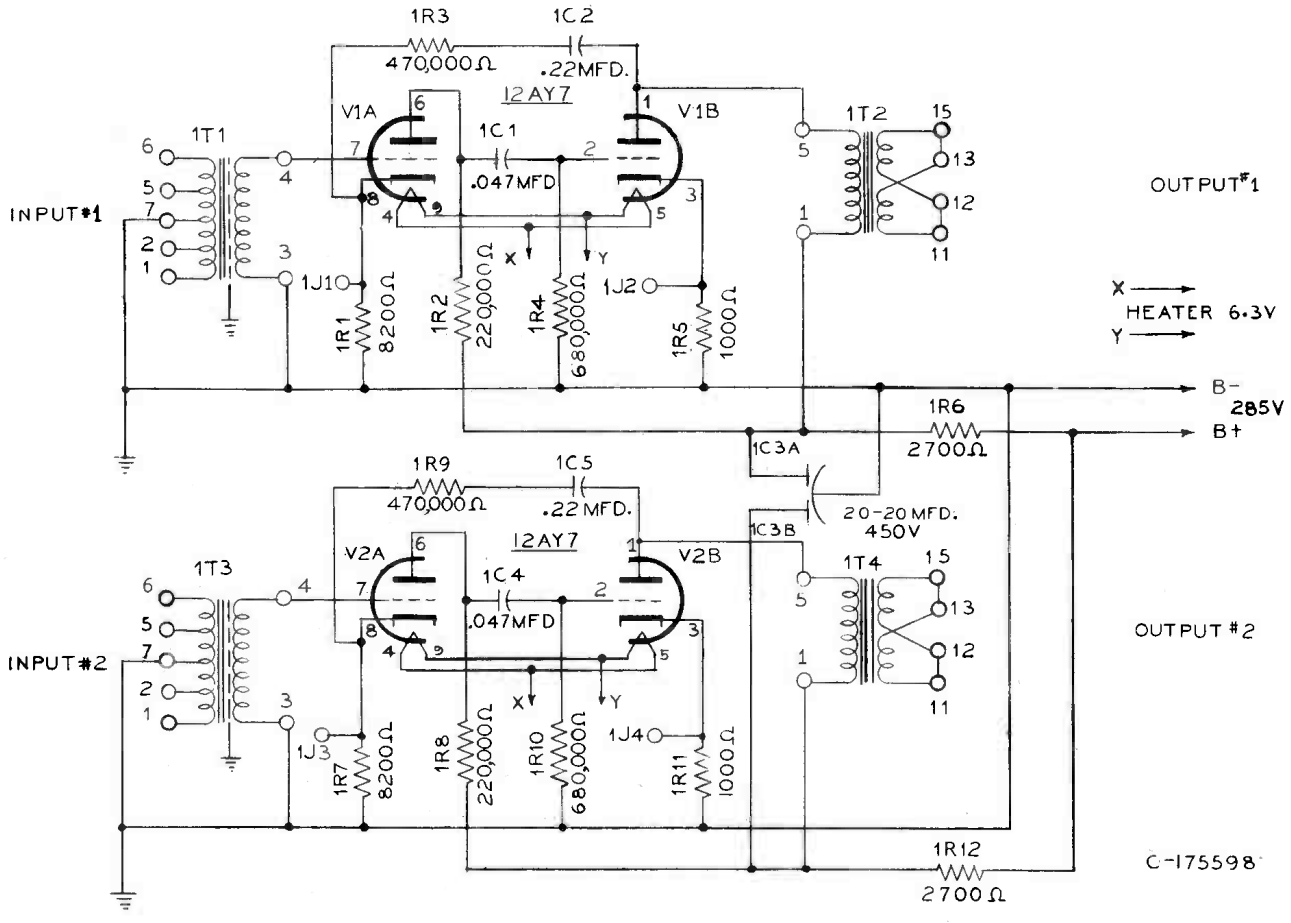


Figure 4 - Schematic for Dual Preamplifier MI-11241

third dual preamplifier is available separately as MI-11241. These preamplifiers have a gain of 40 db. See Figures 4 and 5.

Program Amplifier

The program amplifier consists of four amplifier stages. A potentiometer type gain control, 4AT9, is inserted between the first and second stages which use a 12AY7 tube. A 5879 pentode which is also a low noise tube, is used in the third stage and a 6V6-GT beam power tube is employed in the final stage. See Figures 6 and 7.

Monitor Amplifier

The first and second stages of the monitor amplifier are similar to those of the program amplifier. The third stage and phase inverter utilize a 12AX7 twin triode. The output stage consists of a pair of 6V6-GT tubes in a push-pull circuit. See Figures 8 and 9.

Overall System

As shown in the block diagram Figure 2, three of the six microphone inputs are permanently connected to the preamplifiers. Any one of the other three microphones may be connected through a selector switch 4S1.

The output of every mixer may be connected to either the program bus or the audition bus by means of key switches 4S2 to 4S9. The program bus is permanently connected to the input of the program amplifier. The output of the program amplifier is connected through the line out switch and a 6 db pad to the output line terminals. The purpose of the pad is to equalize the amplifier and line impedances.

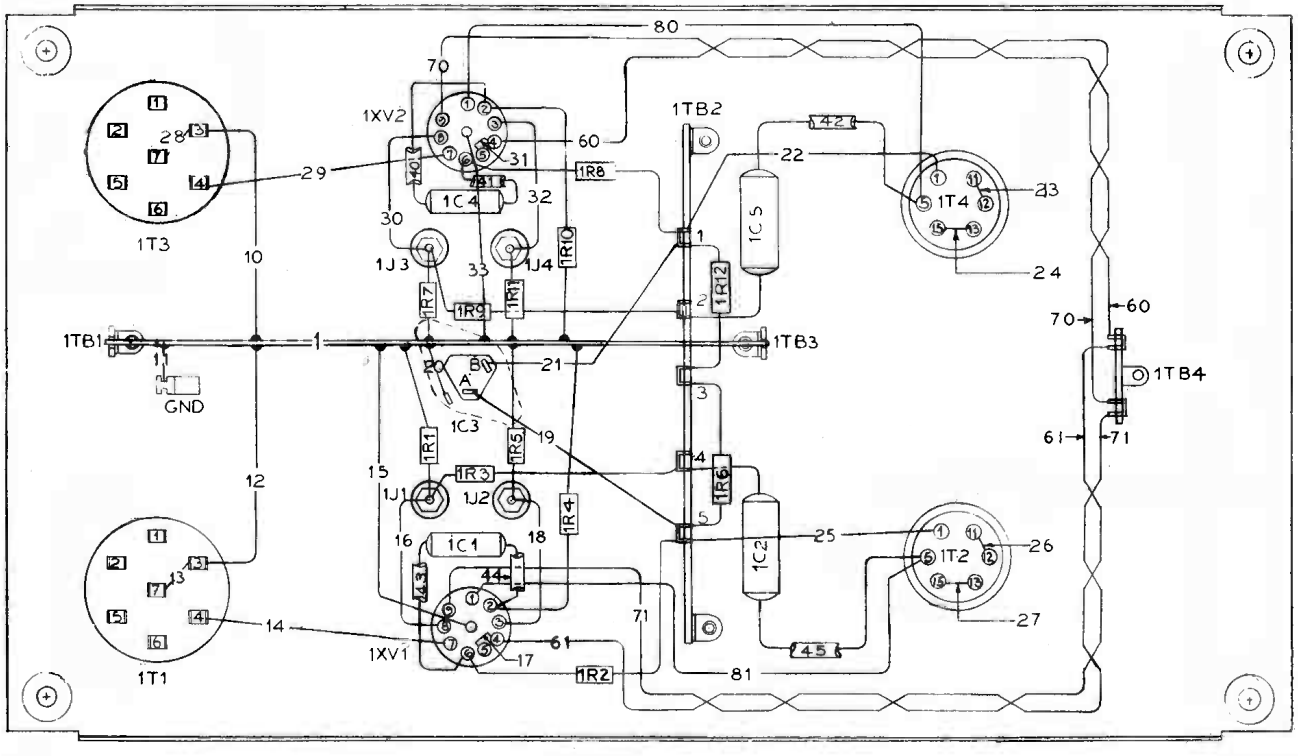
The input of the monitor amplifier can be selected by means of a pushbutton switch. There are three talkback buttons which connect the control room microphone to the monitor amplifier and permit the operator to

talk to Studio A, Studio B and the remote lines respectively. Refer to Figure 2. The fourth pushbutton bridges the monitor input across the output of the program amplifier for monitoring the outgoing programs. The fifth button connects the input of the monitor amplifier to the audition bus and the remaining three pushbuttons connect it to the cue lines.

The "override" feature of the consolette is helpful when it is not known over which remote line a program will come in. By throwing the switch 4S13 to OVERRIDE all unused remote lines are connected to the input of the monitor amplifiers and a call coming in on any one of the lines will override the signal coming out of the monitor speaker.

By throwing the switch 4S13 to the REMOTE CUE position, the monitor amplifier sends cues over a remote line selected by switch 4S11. With the switch 4S13 on the PHONE REMOTE TALKBACK (PH - REM - TB) position of the monitor phone jack 4J1 is connected through switch 4S11 to the remote lines or outputs of the program and monitor amplifiers. Under these conditions it is also possible to talk back to any unused remote line by pressing the remote talkback button. ("Unused" means those remote lines whose button on 4S10 is not depressed.)

Should the program amplifiers fail, the monitor amplifier may be used as a line amplifier, the monitor gain control serving as the master gain control. To use the monitor amplifier as a line amplifier, the mixer output switches must be thrown from the



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NOTE #1
TWIST WIRES 60 & 70 ¢ 61 & 71

WIRE TABLE		
WIRE NO.	DESCRIPTION	REF. NO. SEE A-B87635-T50
1	WIRE PS-105 .064 DIA	30
10 TO 33	WIRE PS-105 .032 DIA	31
40 TO 45	SLEEVING PS-8 .042 I.D.	32
60-61	WIRE PS-724-11 WHITE-BROWN	33
70-71	WIRE PS-724-11 WHITE-BLK/BRN	34
80 & 81	WIRE PS-724-11 WHITE-BLUE	35

Figure 5 - Connection Diagram for Dual Preamplifier MI-11241

program to the audition position, switch 4S12 depressed and 4S14 turned to EMERGENCY (EMG).

The output level of either the program or monitor amplifiers is indicated on the VU meter. Depending on whether the program or audition button on the VU meter switch is depressed. The VU meter pad is wired at the factory so that the meter indicates 100% for a line output level of 8 VU. Refer to paragraph on VU meter attenuator connections in Installation.

Loudspeakers are controlled through a set of relays which are actuated by interlocking contacts on the microphone selector and mixer switches (4S1 to 4S5). A speaker is turned off whenever a microphone located in the same room is switched on; a load resistance is substituted for the speaker to prevent changes in output level and loading.

Warning light relays MI-11702-A, which are not supplied and must be ordered separately and installed externally, are interlocked with the mixer and other audio switches and speaker relays. Power for energizing all relays is supplied by the consolette power supply.

A set of contacts on the line out switch may be used to light a lamp at the master control when a program is being fed from the consolette. Refer to the schematic and wiring diagrams, Figures 22 and 23 for the complete system.

Connection to Jack Fields or External Relays

The flexibility of the Type BC-2B Consolette may be further increased by making connections from the inputs and outputs of the consolette amplifiers to a jack field. Terminals are provided on the audio block to make these connections. This arrangement permits patching out of amplifiers in case of failure and obtaining combinations of circuits not otherwise provided. It also makes possible easy insertion of special devices such as a sound effects filter.

It is also possible to connect relays to these terminals which permit certain switching operations to be accomplished from points remote to the consolette, such as the studio, announce booths, and master control.

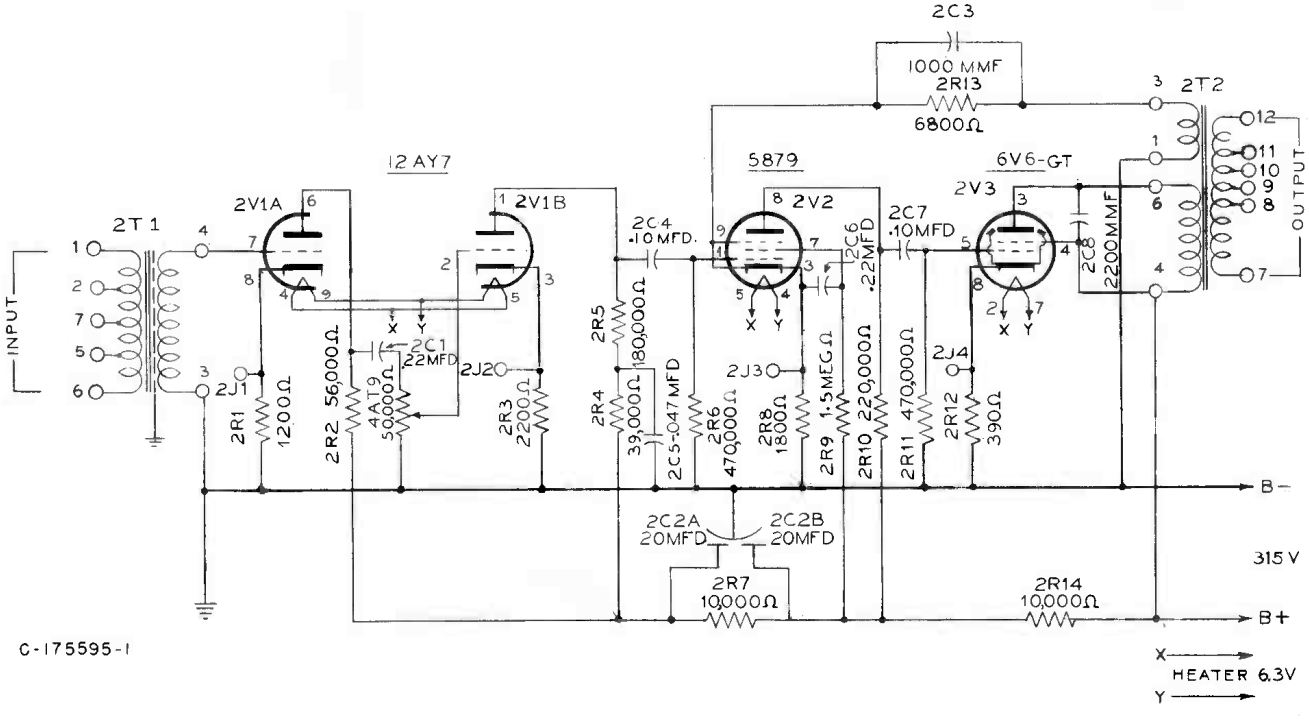


Figure 6 - Schematic for Program Amplifier

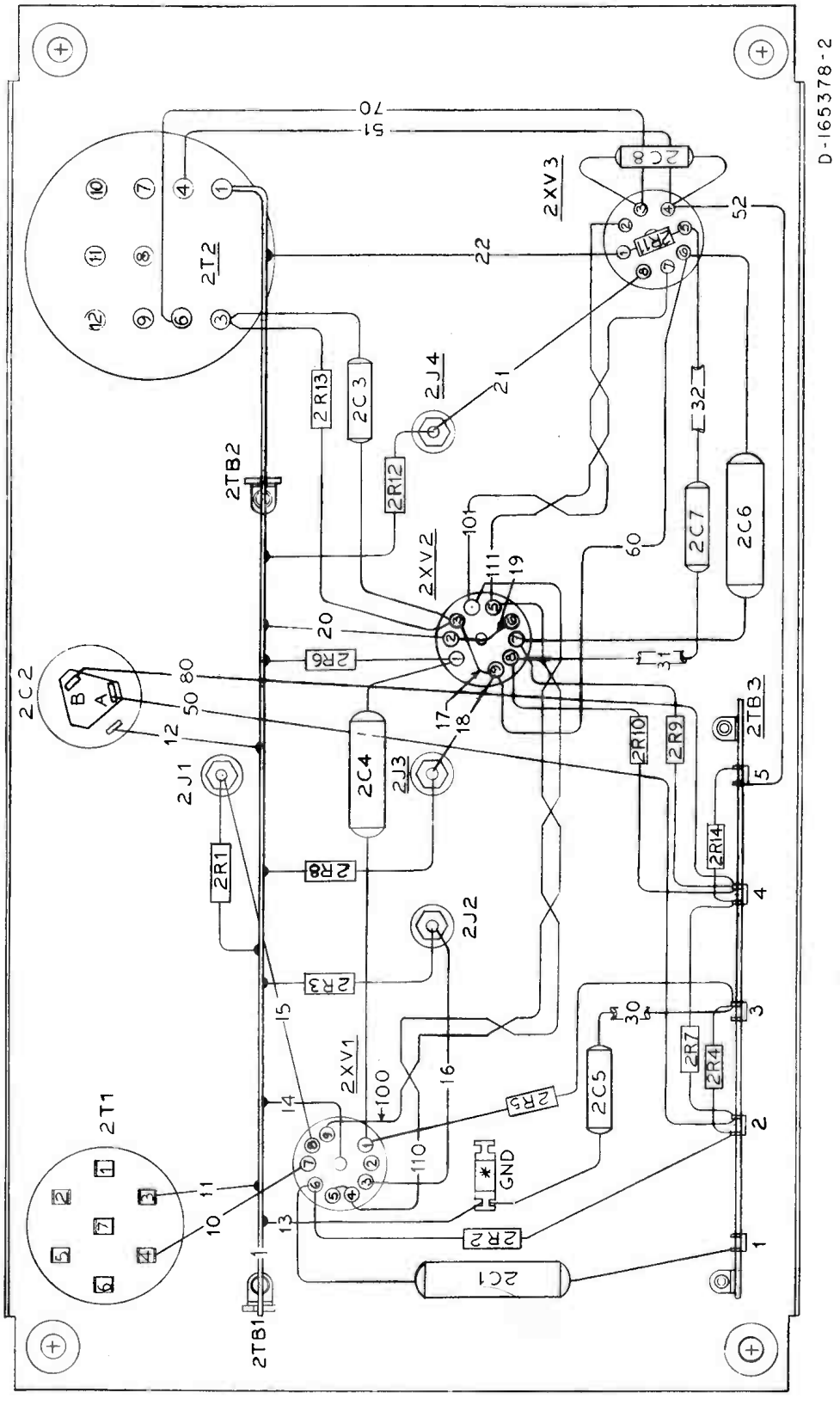


Figure 7 - Connection Diagram for Program Amplifier

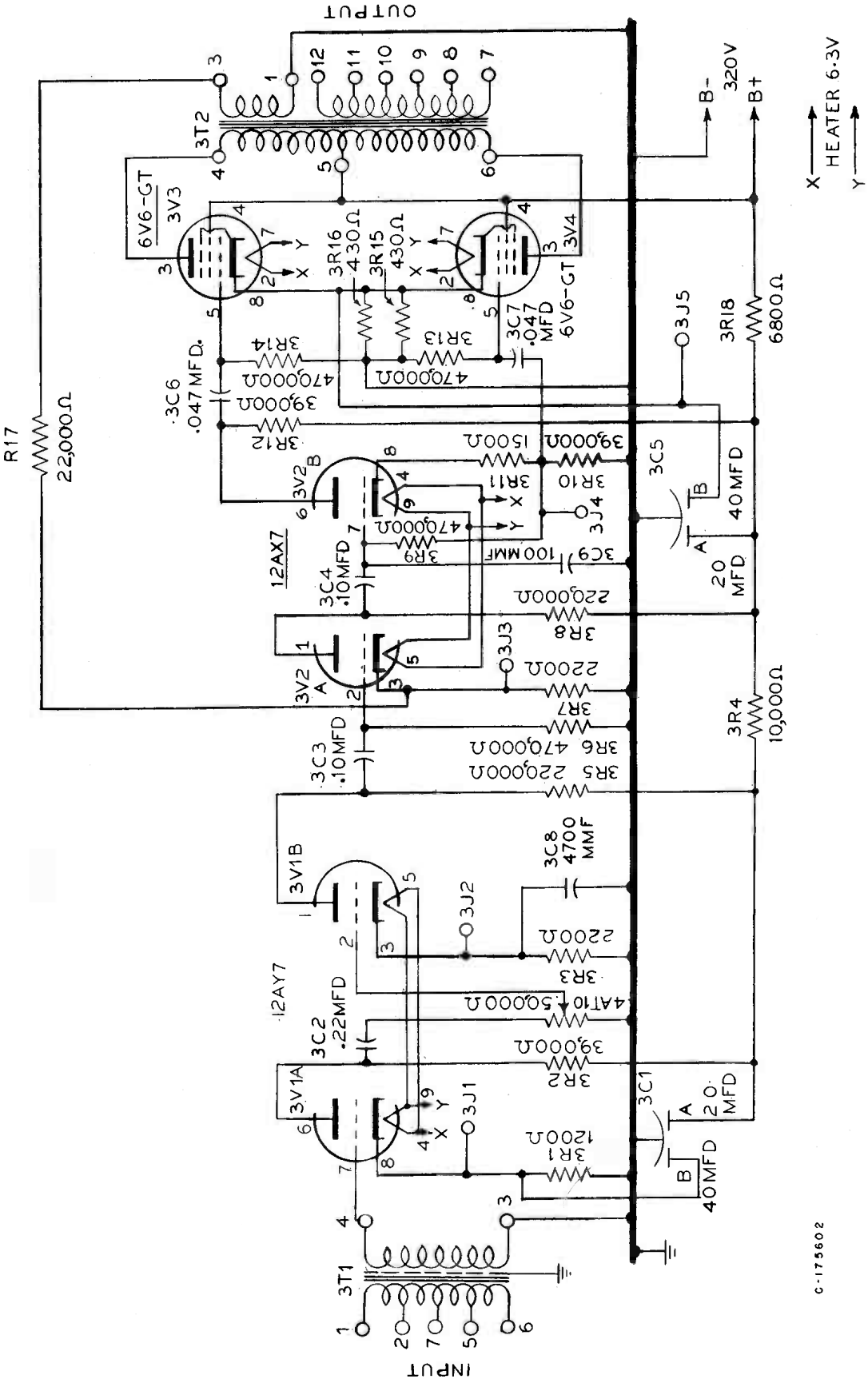
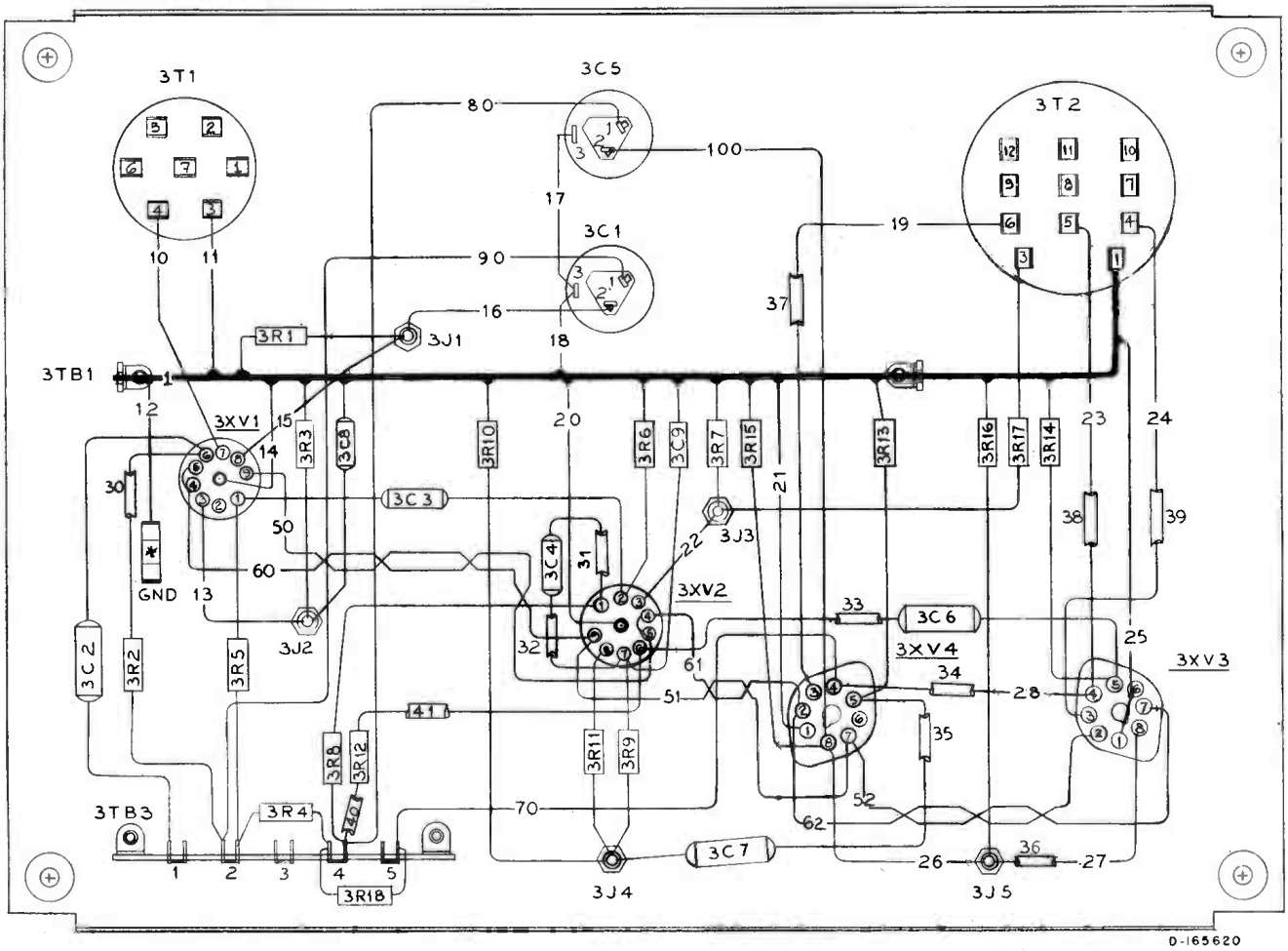


Figure 8 - Schematic for Monitor Amplifier



NOTE 1:
ON TERMINALS 1,2,3,4,5,6,7 OF 3XV3, CONNECT WIRES TO LOWER HOLE. LEAVE UPPER HOLE OPEN.

WIRE TABLE		
WIRE NO.	DESCRIPTION	PT. NO.
1	WIRE, PS-105 TINNED COPPER .0641 DIA	25
10 TO 28	WIRE, PS-105 TINNED COPPER .032 DIA.	26
30 TO 41	SLEEVING PS-8 .042 DIA. BLK	27
50 TO 52	WIRE, PS-724-11 WHITE-BLK/BRN	35
60 TO 62	WIRE PS-724-11 WHITE-BROWN	34
70	WIRE PS-724-1 WHITE-RED	28
80	WIRE PS-724-1 WHITE-GRN/RED	29
90	WIRE PS-724-1 WHITE-ORANGE	30
100	WIRE PS-724-1 WHITE-YELLOW	32

Figure 9 - Connection Diagram for Monitor Amplifier

INSTALLATION

Unpacking

The Type BC-2B Consolette is shipped with the amplifier-chassis mounting frame secured to the base. Be sure to remove the two screws holding the frame at each forward corner before installing the consolette. To gain access to the screws, open the front panel. To remove the top cover or release the front panel, press down with the thumb on the fasteners and turn counterclockwise approximately a half turn to release. Two of these fasteners secure the panel and four are used for the louvred top cover (see Figure 10).

Type of Installation

A typical broadcast installation for a two studio system is shown in Figure 12. The Type BC-2B Consolette is shipped from the factory with the jumpers on terminal board 4TB2 wired for two-studio installation. However a small change in the connection of these jumpers will permit the consolette to be used with four microphones in single-studio installation. Refer to Figure 11 which shows the position of the jumpers for each type of installation. This information is also included in the connection diagram, Figure 23.

Mounting

The consolette should be installed in the control room together with the MI-11313 Power Supply. To avoid hum, locate the power supply at least three feet away from the consolette. For information regarding the installation of the Power Supply, refer to the Instruction Book IB-24750 included with the consolette instruction book.

To provide a convenient means of terminating conduits from associated equipment, purchase or construct a metal conduit box similar to the one shown in Figure 13 and mount it in the wall or floor near the

Figure 10 - Rear View Louvred Cover in Place

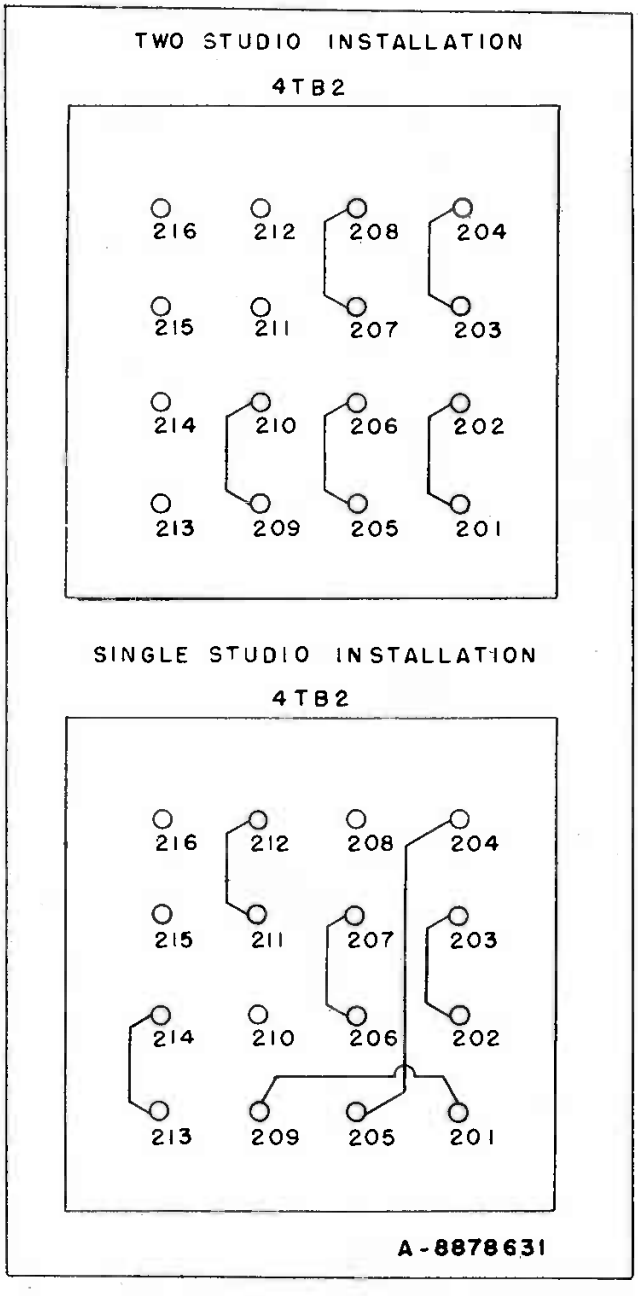


Figure 11 - Terminal Board Connections for Single and Two-Studio Operations

consolette. Up to six 3/4 inch conduits may be run into the bottom or back of the consolette where knockout holes are available. Refer to Figure 14 for overall dimensions and location of the knockout holes in the rear and bottom of the consolette. The necessary holes should be drilled on mounting surface before placing the consolette.

Internal Accessories

If it is planned to add a third dual preamplifier, announce booth relay, or consolette signal light kit, this should preferably be done before mounting the consolette.

1. Dual Preamplifier (MI-11241)

Mount the preamplifier in the space between the second dual preamplifier and the program amplifier, using the eyelets and screws supplied with the preamplifier. The eyelet must be inserted in the rubber grommet from the top. Open the amplifier mounting frame. Cut the ties securing the ends of the wires above and below the amplifiers being careful to avoid cutting the lacing of the cable. Remove sleeving from the ends of wires; strip and tin wire, and connect as shown in Figure 23. Jumper terminals 57-61, 58-62, 59-63, and 60-64 on 4TB1.

2. Announce Booth Relay Kit (MI-11722)

Remove relay cover. Refer to Figure 15. Install relay 5K4 in the space between relay 5K3 and transformer 5T1 using the two screws and lockwashers supplied. Cut ties securing the ends of wires to left and right of relay being careful to avoid cutting the lacing of the cable. Remove the sleeving from end and connect wires as shown on Figure 23. Also connect 15-ohm resistor 5R4 and 0.5 mf-capacitor 5C4.

3. Consolette Signal Light Kit (Pre-set, ON-AIR) (MI-11714A)

Fasten lamp sockets to brackets by means of the #4-40 screws and #4 lockwashers; the long part of the socket extending away from the bracket. Remove the monitor gain and selector switch knobs and the handles of switches 4S1 and 4S13. Remove the screws holding the end of the left and right or top escutcheon plates. Remove escutcheon plates

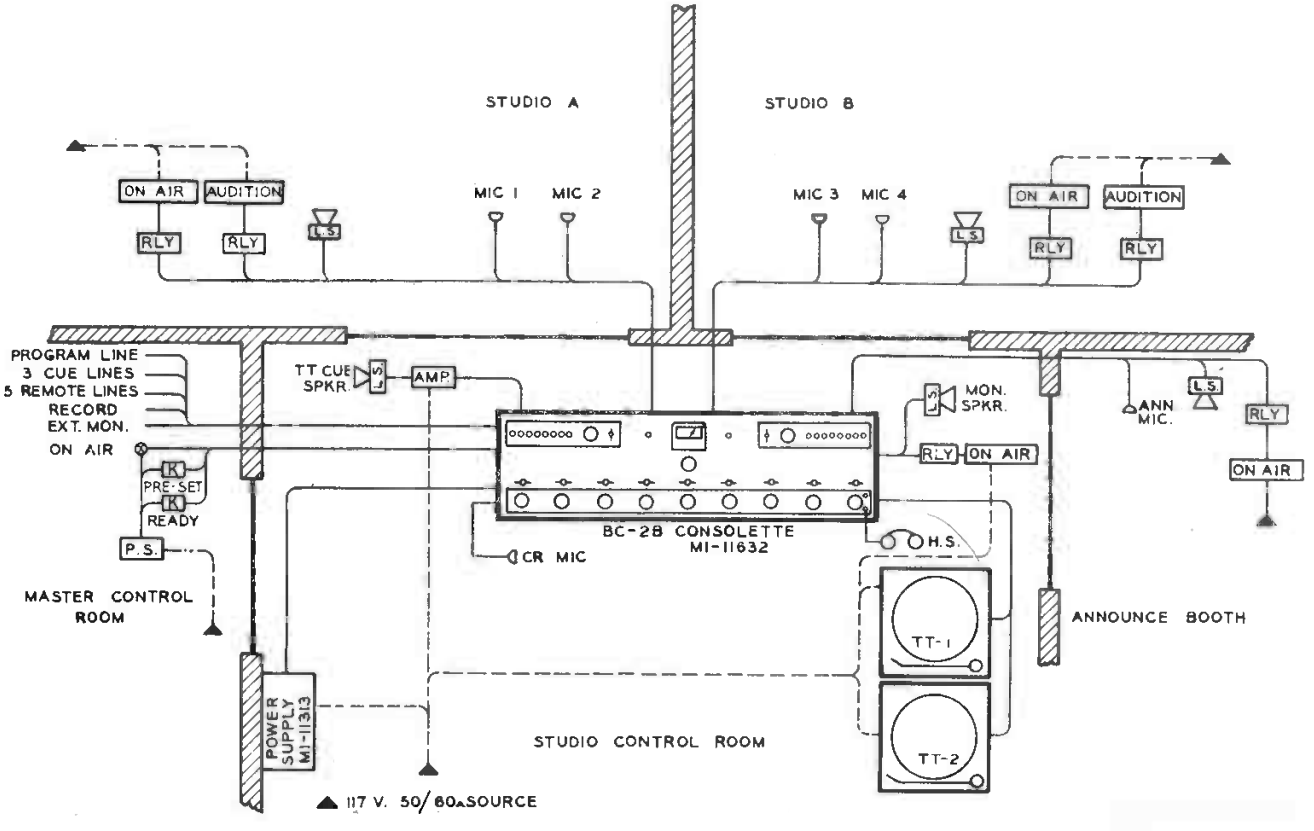


Figure 12 - Typical Layout for Two Studio Operation

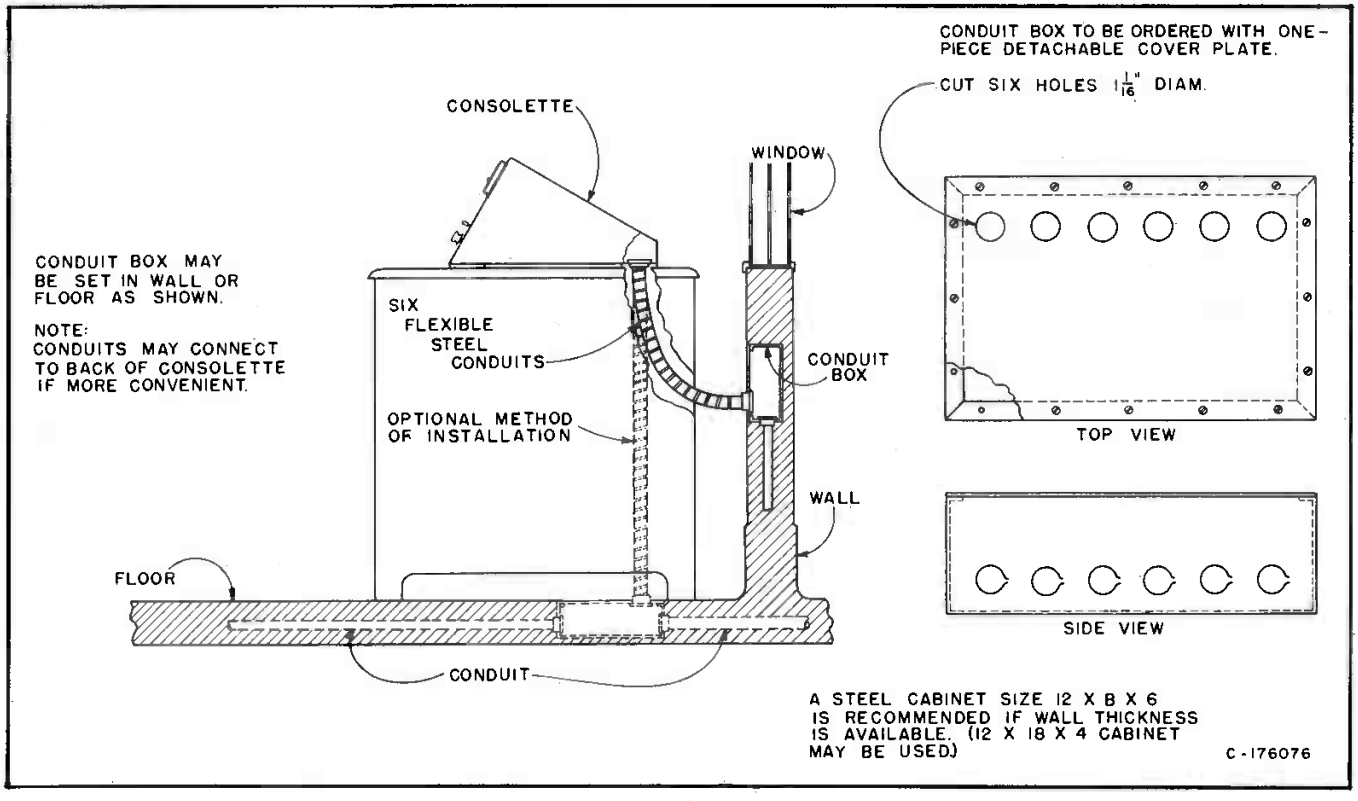


Figure 13 - Typical Installation Showing Relation of Cabinet and Conduit Box

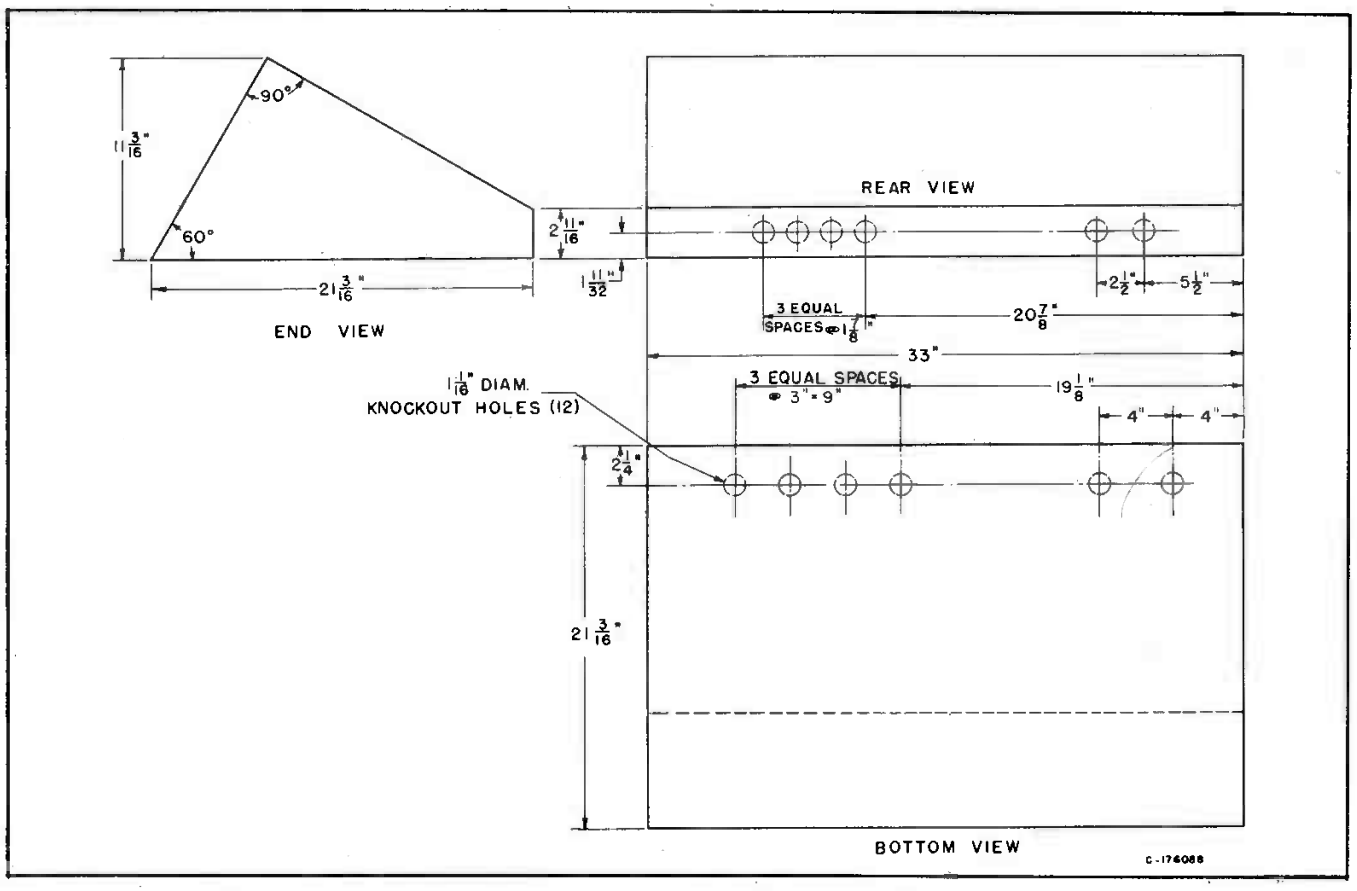


Figure 14 - Dimensional Layout of Consolette

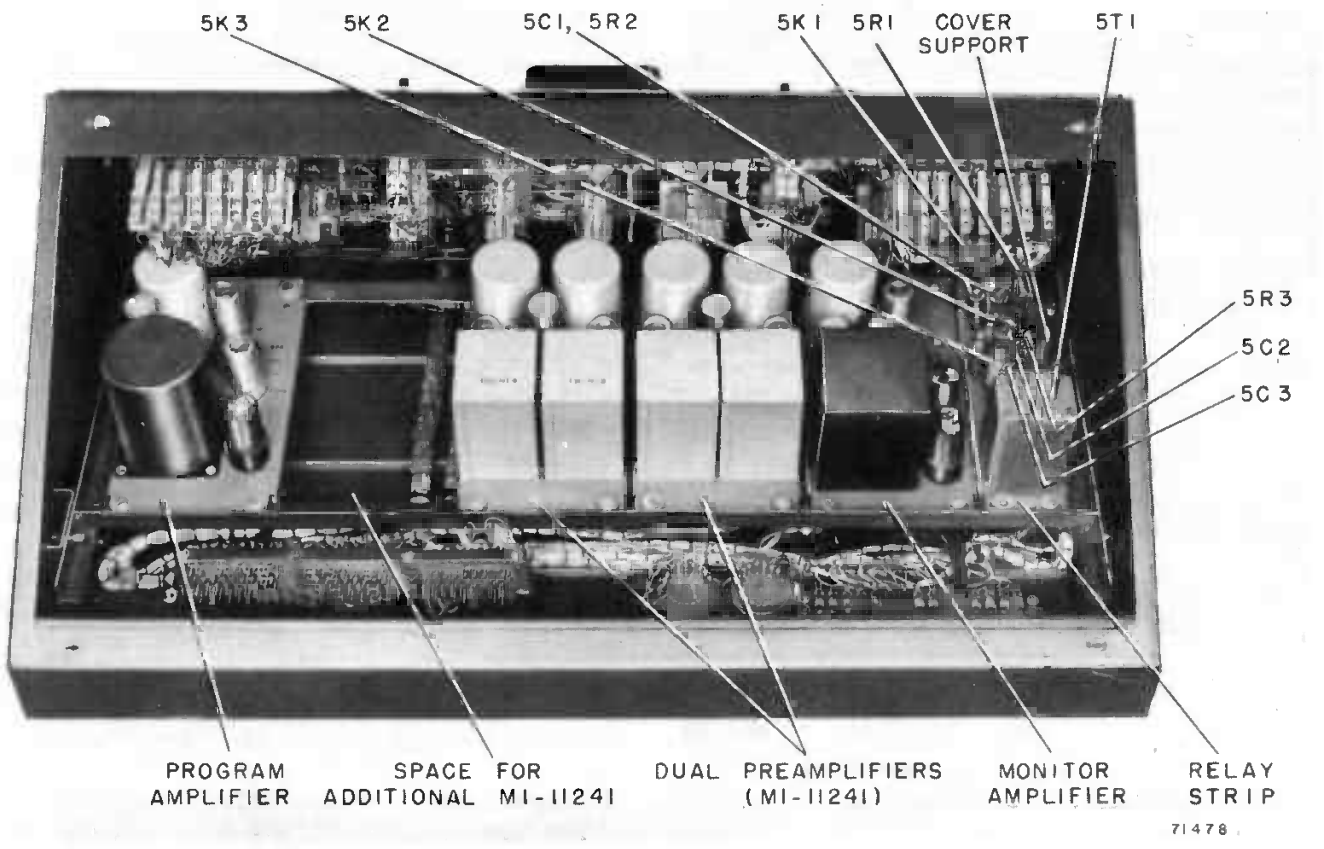


Figure 15 - Rear View, Consolette and Relay Covers Removed

exposing mounting holes for signal light brackets. Remove plug button on either side of VU meter. Mount signal light brackets on the panel using #6-32 screws, nuts and lockwashers. Cut the ties securing ends of wires near sockets. Solder the wires to the lamp socket. Insert switchboard lamps. The lamps supplied are for use on a 24 v supply, lamps for use on a 12 v supply may be obtained under stock number 21322 and on a 6 v supply under stock number 55082. Two lamps must be ordered. Insert lamp caps in place of the plug buttons. Replace escutcheon plates, mounting screws, control knobs and handles.

Audio Input Connections

1. Precautions:

a. Place power and audio leads in separate conduits.

b. Place low and high level audio leads in separate conduits, using shielded pairs of wire.

c. Ground shields to ground terminals located under audio block 4TB1.

2. **Microphones:** - Connect the microphones to the terminal of the audio block as listed in the table. The dual preamplifier input transformers 1T1 and 1T3 for the mixers numbered MIC 1, 2, 3 and 4 input channels are connected for 150-ohm microphones. If it is desired to connect a 30-ohm microphone to any of these inputs, change the connections at the input transformers as follows:

a. Unsolder the wire from transformer terminal 1 and solder it to transformer terminal number 2.

b. Unsolder the wire from transformer terminal number 6 and solder it to transformer terminal number 5.

IMPORTANT: FOR PROPER OPERATION, ALL MICROPHONES THAT ARE INSTALLED IN THE SAME STUDIO MUST BE CONNECTED IN PHASE WITH EACH OTHER.

3. **Remote Lines.** - The remote line transformer 5T1 is connected to present an impedance of 600 ohms to the remote lines. When the remote lines are long, the attenuation of high frequencies due to distributed capacitance may be reduced by connecting the line transformers for 150 ohms. To make these connections, proceed as follows:

a. On 5T1 remove the jumpers that link terminals 3 and 4.

b. Connect terminal 1 to 4 and 3 to 6.

Connect the remote lines to terminals as listed in chart, page 23.

The Type BE-1B, 56-C and 56-E Line Equalizer may also be used to equalize the remote lines. The jumper between terminals 29-33 and 30-34 on the audio block are removed, and the input of the equalizer connected to terminals 29-30, the output to terminals 33-34. To compensate for the insertion loss of the equalizer, the 150-ohm, 20 db pad consisting of resistors 4R16, 4R17 and 4R18 should be taken out of the circuit or the values adjusted to obtain the desired loss.

4. Network Line.

The network input, terminals 17 and 18 require an external line transformer with a 150-ohm output winding. This transformer and an associated line equalizer are usually furnished by the telephone company. The 150-ohm pad consisting of the resistors 4R13, 4R14 and 4R15 has an attenuation of 20 db. Should more or less gain be desired in the network channels, the attenuation of this pad should be changed by substituting resistors of the proper values, as listed below:

5. Transcription Turntables

When a booster amplifier, such as the RCA BA-12A is connected between the turntables and the consolette, connect the output of the booster amplifiers of turntables 1 and 2 to terminals 61 and 62, and 63 and 64 respectively. When a third MI-11241 dual preamplifier is installed in the consolette, connect the turntable 1 and 2 output to terminals 13 and 14, and 15 and 16 respectively. Add jumpers between terminals 57 and 61, 58 and 62, 59 and 63, and 60 and 64.

Audio Output Connections

1. Program Output Line.

A 600-ohm pad having an attenuation of 6 db is provided within the consolette to equalize amplifier and line impedances. The outgoing program line may be connected directly to terminals 89 and 90.

2. Loudspeakers

Speakers are connected to terminals 97 to 104 as listed in the chart. Note that the speakers must have a voice coil impedance of 15 ohms, otherwise matching transformers must be connected between each speaker and the consolette output terminals.

The consolette is shipped wired for use with three speakers. If an announce booth speaker is required, install the MI-11702-A relay kit as described under that heading.

If less than three speakers are used, remove the 15 ohm speaker load resistor from the unused relay. If only two speakers are used, remove the red wire from terminal 9 of 3T2 and connect it to terminal 10. If only a single speaker is used, connect the red wire to terminal 11. This must be done to maintain proper loading on the monitor amplifier. For reference, the load impedance for the various taps on the output transformer 3T2 of the monitor amplifier are tabulated on following page.

RESISTANCE VALUES FOR 150-OHM PADS

Attenuation db	Series Arm Ohms 4R13, 4R14, 4R16, 4R17	Shunt Arm Ohms 4R15, 4R18
0	0	infinite
5	42	247
10	78	105
15	106	55
20	122	30
25	134	17
30	141	9.5
35	145	5.4
40	147	3.0

The nearest RMA resistance value may be substituted without affecting performance.

Terminal	Load Impedance Ohms
8–9	5
8–10	7.5
8–11	15
8–12	150
7–12	600

3. Turntable Cue

An external turntable cueing amplifier BA-14A may be connected to terminals 37 and 38 on 4TB1. The input transformer of the amplifier should be connected for 150 ohms.

Warning Lights and Relays

The relays and lights are not supplied with the consolette. The MI-11702-A Relay and the MI-11706 Studio Warning Lights are recommended. Refer to page 7. Operating power for the relays is obtained from the MI-11313 Power Supply. An ON AIR and AUDITION signal light may be installed in the studios; the ON AIR light only can be installed in the control room and announce booth. Mount one or two relays in a metal box as shown in Figure 17. Install the box near the studio or control room for the respective installation of light. The connections for the relays to the consolette terminal board are as listed in the chart for block 4TB1.

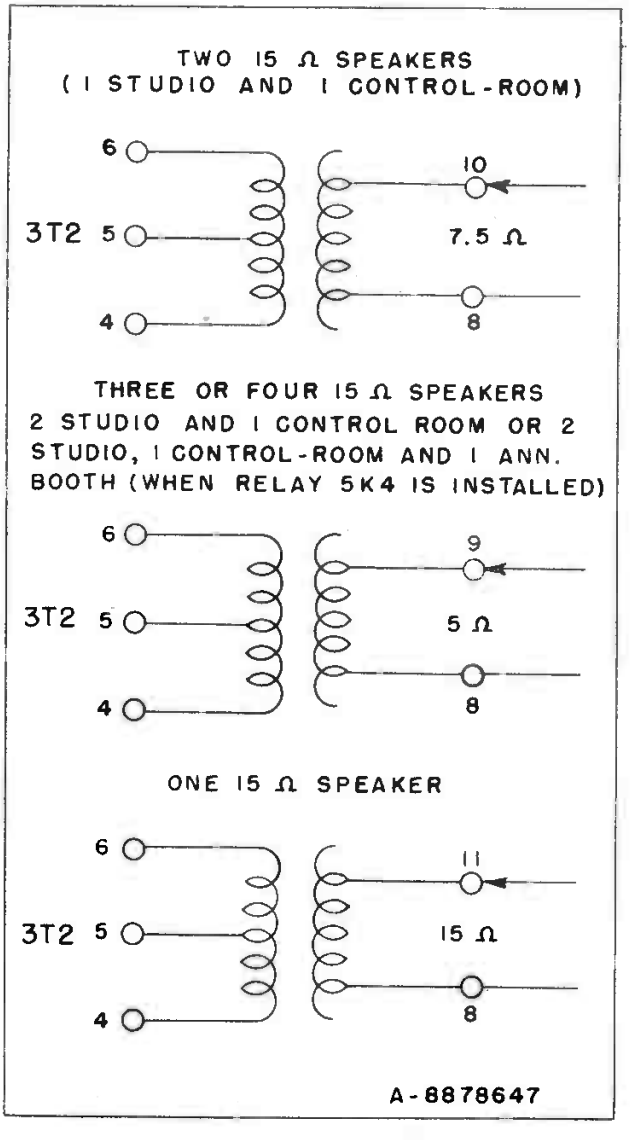


Figure 16 - Output Transformer Connections

Connect relays and warning lights as shown by Figure 19. The 0.47 mf capacitor supplied as part of the signal light relay kit is to be connected across the relay coil. The relays for the AUDITION lights are interlocked with the associated ON AIR light relay.

Connections to Jack Fields or External Relays

As shown in the schematic Figure 22, terminals are provided on the audio block 4TB1 to make external connections to the inputs and outputs of all amplifiers.

Before making use of this feature, the jumpers between pairs of terminals on the back of the audio block 4TB1 must be removed.

Connections to Power Supply

Like-numbered terminals on the power block 4TB1 of the consolette are connected to like-numbered terminals on the terminal block 6TB3 of the power supply. Wires for supply or heater current, should be twisted pairs, #14 or larger depending on length. The other wires may be #18. Those used for the B supply must be insulated for 500 v. The a-c heater wires and the relay supply wires should be run in a conduit separate from the B supply.

Ground

Terminal 9 of 4TB3 should be connected to a reliable ground.

Tubes

The consolette is shipped without tubes. The tube complement in the Technical Data lists the types and numbers required. The type numbers are marked on the chassis beside

each socket. Press each tube firmly in each socket and secure the six shields on the chassis as indicated in the photographs.

Hum Adjustments

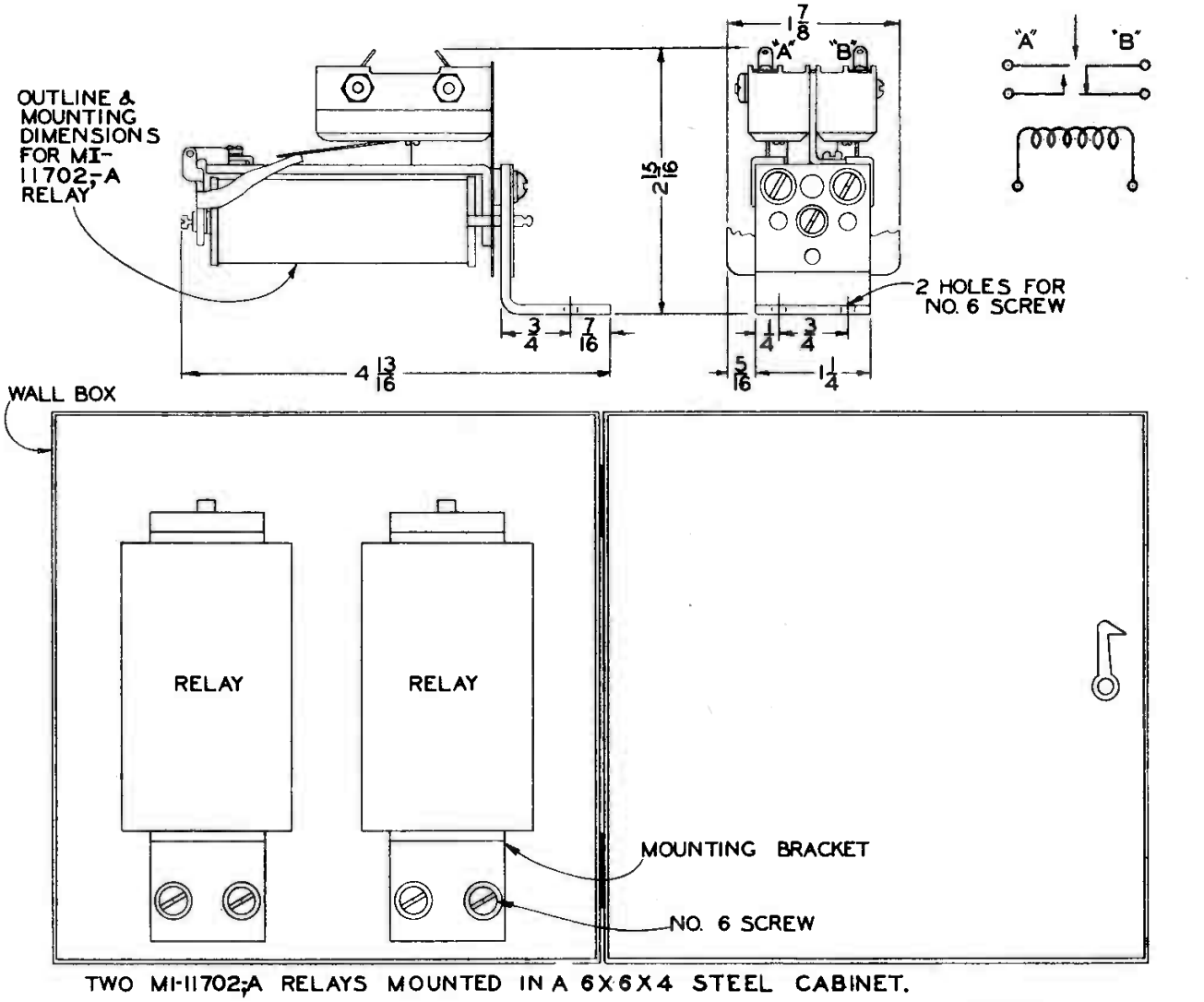
When the Type BC-2B Consolette and power supply have been installed, make the following adjustments. Whenever the 12AY7 tubes are changed, these adjustments should be checked.

Terminate all microphone inputs (turntable inputs also if additional preamplifier has been installed) in 150-ohm load resistors. Set all mixer switches 4S2 to 4S9 to the center or off position. Set the Line Out switch 4S14 to the REG position. Set the MASTER gain control 4AT9 to 20. Adjust the hum potentiometer 6R4 which is marked HUM ADJ. PGM AMP on the power supply chassis for minimum hum at the line output terminals 89 and 90.

Set the microphone and turntable mixers 4AT1 to 4AT6 to 20, set the mixer switches 4S2 to 4S5 (turntable switches 4S6 and 4S7 when third preamplifier is installed) to the P position. With the other conditions as above, adjust the hum potentiometer 6R3 marked HUM ADJ. PRE AMP on the power supply chassis for minimum hum on the line output terminals 89 and 90.

VU Meter Attenuator Connections

The VU meter attenuator 4AT11 consists of a 3600 ohm input resistor and five T pad sections having losses of 1, 2, 4, 8 and 12 db. The attenuation is stencilled between the



TWO MI-11702-A RELAYS MOUNTED IN A 6X6X4 STEEL CABINET.

MI-11702-A P-170515-2

Figure 17 - Warning Light Relay

input and output terminals of each section. These sections may be connected in series to obtain a total attenuation ranging from 0 db to 27 db in steps of 1 db.

The input resistor section must always be used. Leave the red wire connected to terminal 1 (IN) and leave the black and bus wires connected to terminal 13 (C) of 4AT11. Refer to Figures 22 and 23

The line output level expressed in VU is two VU less than the total attenuation in the pad. For example, when shipped, the input resistor is connected to the 2 db section which is connected to the 8 db section which in turn is connected to the VU meter. The total loss in the VU meter attenuator is 10 db and the line output level is 2 db less, or 8 VU.

Audio and Power Block Connections

For convenient reference the following charts list the terminal connections for terminal blocks 4TB1 and 4TB3:

CONNECTIONS AT AUDIO TERMINAL BLOCK 4TB1

	Terminals
Microphone 1	1-2
Microphone 2	3-4
Microphone 3	5-6
Announce Booth Microphone	7-8
Microphone 4	9-10
Control Room Microphone	11-12
Turntable 1*	13-14
Turntable 2*	15-16
Network	17-18
Remote Line 1	19-20
Remote Line 2	21-22
Remote Line 3	23-24
Remote Line 4	25-26
Remote Line 5	27-28
Remote Line Switch 4S10	29-30
Remote Line Transformer 5T1 Out	31-32
Remote Line Transformer 5T1 In	33-34
Remote Line Pad In	35-36
Turntable Cue	37-38
Preamplifier 2B Input	39-40
Preamplifier 1A Output	41-42
Preamplifier 1B Output	43-44
Mixer 1 4AT1 In	45-46
Mixer 2 4AT2 In	47-48
Preamplifier 2A Out	49-50
Preamplifier 2B Out	51-52
Mixer 3 4AT3 In	53-54
Mixer 4 4AT4 In	55-56
Preamplifier 3A Out	57-58
Preamplifier 3B Out	59-60

	Terminals
Mixer 5 4AT5 In**	61-62
Mixer 6 4AT6 In**	63-64
Program Bus	65-66
Monitor Input Switch 4S12	67-68
Program Amplifier In	69-70
Monitor Amplifier In	71-72
Cue Line #1	73-74
Cue Line #2	75-76
Cue Line #3	77-78
Remote Talk Back	79-80
Program Amplifier Out	81-82
Record	83-84
Line Out Switch 4S14	85-86
External Monitor	87-88
Line Out	89-90
Master Control Signal Light	91-92
Monitor Output 5 ohms	93-94
Monitor Output 600 ohms	95-96
Control Room Speaker	97-98
Studio A Speaker	99-100
Studio B Speaker	101-102
Announce Booth Speaker	103-104
Consolette Signal Light (Left)	105-106
Signal Light (Right)	107-108
Control Room ON AIR	109-110
Studio A ON AIR	111-112
Studio B AUDITION	113-114
Studio B ON AIR	115-116
Studio B AUDITION	117-118
Announce Booth ON AIR	119-120

*When MI-11241 Preamplifier is installed.

**Turntable 1 and 2 with external preamplifier.

CONNECTIONS AT POWER BLOCK 4TB3

	Terminal
No connection	1–2
Heater, preamplifiers, 6.3 v	3–4
Heater, program, mon. amp and VU meter, 6.3 v	5–6
Relay Supply, 24 v	7–8
Ground	9
B–	10
Monitor Amplifier, B+, 320 v	11
Program Amplifier, B+, 315 v	12
Preamplifier, B+, 285 v	13
No connection	14–15

OPERATION

Refer to Figure 18 and to the two charts for identification and function of all controls and switches on the control panel of the consolette. It is advisable to be familiar with this information for thorough understanding of the flexibility of the equipment.

Precautions

Do not use TB (Talk-Back) pushbuttons when the MIC 4 selector switch is in the CR position.

Do not turn the MASTER mixer and the MON GAIN controls to maximum at the same time.

Preset the MIC 4 selector switch 4S1 to the desired microphone before setting up mixer switch 4S5.

Normally leave all key switches in central position and the switch marked SELECTOR in OFF position.

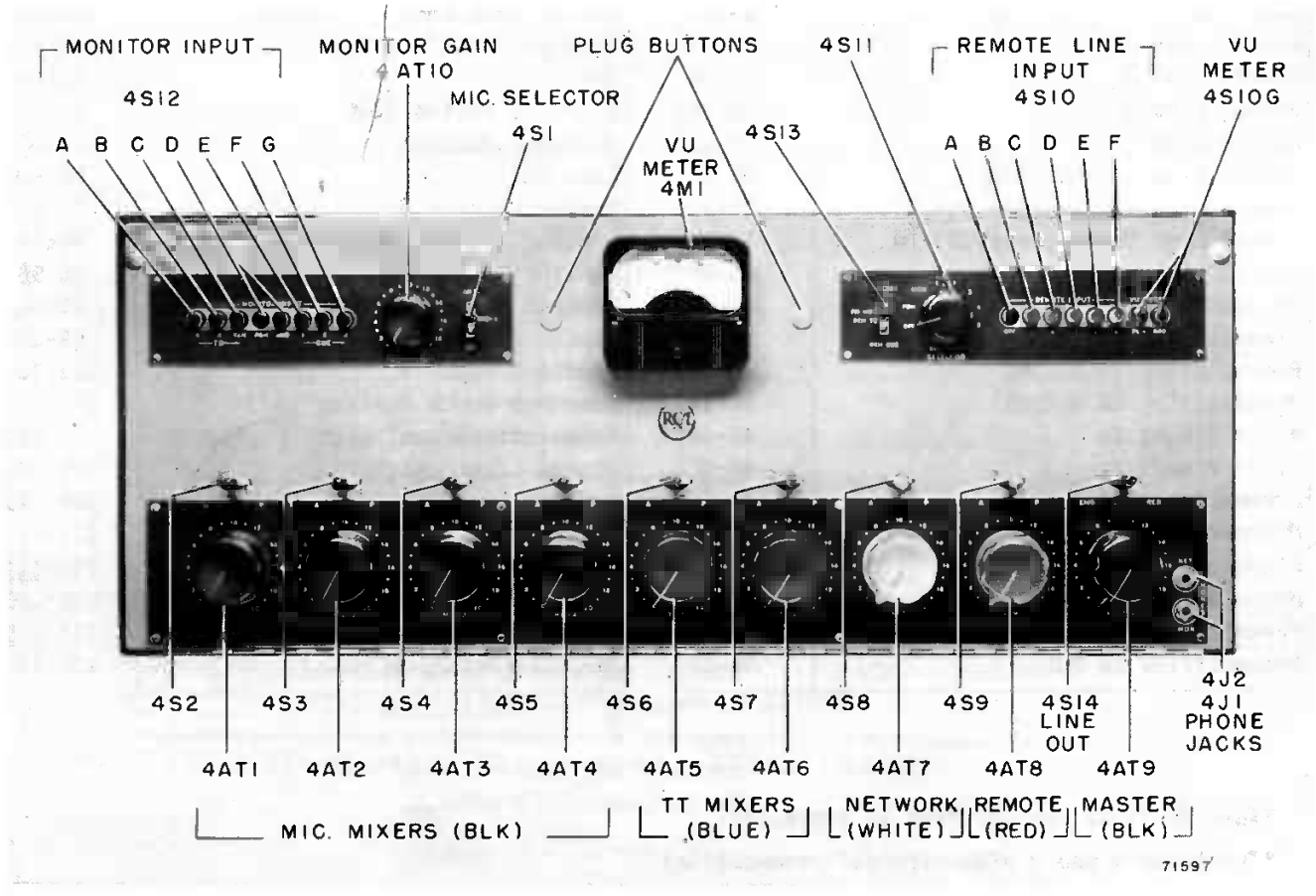


Figure 18 - Control Panel of Consolette

CONTROL FUNCTIONS

Panel Designations	Symbol	Color	Function	Coordinated with
MIXER ATTENUATORS				
MIC 1	4AT1	Black	Controls the gain of microphone 1	4S2
MIC 2	4AT2	Black	Controls the gain of microphone 2	4S3
MIC 3	4AT3	Black	Controls the gain of microphone 3	4S4
MIC 4	4AT4	Black	Controls the gain for microphone 4 announce booth microphone, and the control room microphone	4S5 & 4S1
TT1 TT2	4AT5 4AT6	Blue	Control the gain for the turntables 1 and 2 respectively; in the OFF position, connects the output of the turntables to the external cueing line	4S6
NET	4AT7	White	Controls gain of network line	4S8
REM	4AT8	Red	Controls gain of the remote lines	4S9 and 4S10
MASTER GAIN CONTROL				
MASTER	4AT9	Black	Controls gain of the program channel	4S14
MIXER SWITCHES				
A -o- P	4S2 4S3 4S4 4S5 4S6 4S7 4S8 4S9	Black Black Black Black Blue Blue White Red	Key switches 4S2 thru 4S9 Connect the mixer controls to the input of the program amplifier when in the P position These switches connect the mixer controls to the AUD pushbutton and then to the input of the monitor amplifier when in the A position. In the center position the switches disconnect the mixers	4AT1 4AT2 4AT3 4AT4 4AT5 4AT6 4AT7 4AT8
LINE OUTPUT SWITCH				
EMG	4S14	Black	Connects the program line to the output of the monitor amplifier	
OFF			Disconnects the program line	
REG			Connects the program line to output of the program amplifier.	
MONITOR INPUT SWITCH				
TB A	4S12A	Black	Connects the control room microphone to input of the monitor amplifier; cuts off all loudspeakers in Studio B and control room. Used for talkback to Studio A.	

Panel Designations	Symbol	Color	Function	Coordinated with
TB B	4S12B	Black	Connects the control room microphone to the input of the monitor amplifier cuts off loudspeaker in Studio A and in control room. Used for talkback to Studio B.	
TB REM	4S12C	Black	Connects the control room microphone to the input of the monitor amplifier cuts off all loudspeakers, connects remote lines to the output of the monitor amplifier. Used for talk-back to remote lines.	4S11 and 4S13
PGM	4S12D	Black	Connects the input of the monitor amplifier to the output of the program amplifier; used for monitoring the program	
AUD	4S12E	Black	Connects the input of the monitor amplifier to the audition bus; used for auditioning.	
CUE 1 2 3	4S12F 4S12G 4S12H	Black Black Black	Connects the input of the monitor amplifier to the respective cue lines; used for receiving cues.	
MONITOR GAIN CONTROL				
MON GAIN	4AT10	Black	Adjusts the gain of the monitor amplifier.	
MICROPHONE SELECTOR SWITCH				
AN B	4S1	Black	Connects the announce booth microphone through preamplifier 2B to MIC 4 mixer channel	4AT4 4S5
MIC 4	4S1	Black	Connects the microphone 4 through preamplifier 2B to the MIC 4 mixer channel	
CR	4S1	Black	Connects the control room microphone through the preamplifier 2B to the MIC 4 mixer channel	
OVERRIDE - PHONE MONITOR - REMOTE TALKBACK - REMOTE CUE SWITCH				
OVERRIDE	4S13	Black	Connects input of monitor amplifier through 4S11 to unused remote lines. Signal from remote line overrides program being monitored.	4S11
PH MON REM TB	4S13	Black	Connects phone jack MON 4J1 through selector 4S11. Connects output of monitor amplifier to remote lines through 4S11 when remote talkback button is pressed.	4S11 4S12
REM CUE	4S13	Black	Connects output of monitor amplifier to remote lines through 4S11.	4S11

Panel Designations	Symbol	Color	Function	Coordinated with
SELECTOR SWITCH				
SELECTOR	4S11	Black	Selects remote line for remote cue and talk-back. Also selects input to monitor phones from program and monitor amplifier, and remote lines.	4S12
REMOTE INPUT SWITCH				
REMOTE INPUT	4S10			
OFF	4S10A	Black	Terminates remote line Channel in resistance	4AT8
1	4S10B	Red	Connects remote line 1 to remote line channel	4S9
2	4S10C	Red	Connects remote line 2 to remote line channel	
3	4S10D	Red	Connects remote line 3 to remote line channel	
4	4S10E	Red	Connects remote line 4 to remote line channel	
5	4S10F	Red	Connects remote line 5 to remote line channel	
VU METER SWITCH				
PGM	4S10G	Black	Connects VU meter across the output of the program amplifier	
AUD	4S10G	Black	Connects VU meter across the output of the monitor amplifier	

Routine Procedure

As may be seen on the chart, page 28, each procedure in itself is simple. These routine procedures are used frequently and may be combined in many ways to function simultaneously.

To put a program on the air (Studio A)

1. Press PGM pushbutton of the VU meter switches to read the line output level on the VU meter.

2. Press PGM pushbutton of the Monitor Input switch to monitor the program.

3. Set the Line Out switch to REG.

4. Turn the mixer switch for MIC1/MIC2 to P.

5. Turn up MIC 1/MIC 2 faders.

6. Adjust MASTER gain control to the desired level on the VU meter.

7. Adjust MON GAIN control to desired volume.

To put a program on the air (Studio B)

This procedure is the same as for the Studio A routine except the mixer switches and faders on MIC 3/MIC 4 are used and selector switch 4S1 must be turned to MIC 4 before setting up the switch 4S5.

To audition a program (Studio A)

1. Press AUD pushbutton of the VU meter switch to read the output level on the VU meter.

2. Press the AUD of the Monitor Input switch.

3. Turn the mixer switch for MIC 1 or MIC 2 to A.

4. Turn up MIC 1 or MIC 2 faders.

TABULATION OF SWITCH POSITIONS FOR FREQUENTLY USED OPERATIONS

DESIGNATION SYMBOL		MIC SELECTOR	MIC 1	MIC 2	MIC 3	MIC 4	TT1	TT2	NET	REMOTE	REMOTE INPUT	VU METER	SELECTOR	MONITOR INPUT	OVERRIDE REM TB - REM CUE	LINE OUT
To Put Studio On Air (REG)	STD. A	MIC 4*	P	P	P*	P*	–	–	–	–	–	PGM	–	–	–	REG
	STD. B	MIC 4	–	–	P	P	–	–	–	–	–	PGM	–	–	–	REG
To Put Studio On Air (EMG)	STD. A	MIC 4	A	A	A*	A*	–	–	–	–	–	PGM	–	AUD	–	EMG
	STD. B	MIC 4	–	–	A	A	–	–	–	–	–	PGM	–	AUD	–	EMG
To Audition Studio	STD. A	MIC 4*	A	A	A*	A*	–	–	–	–	–	AUD	–	AUD	–	–
	STD. B	MIC 4	–	–	A	A	–	–	–	–	–	AUD	–	AUD	–	–
Talk Back To	STD. A	MIC 4	–	–	–	–	–	–	–	–	–	–	–	TB.A	–	–
	STD. B	MIC 4	–	–	–	–	–	–	–	–	–	–		TB.B	–	–
	REM	MIC 4	–	–	–	–	–	–	–	–	–	–		TB REM	REM TB.	–
To Put Network on Air		–	–	–	–	–	–	–	P	–	–	PGM	–	–	–	REG
To Monitor Network		–	–	–	–	–	–	–	A	–	–	AUD	–	AUD	–	–
To Put Remote on Air		–	–	–	–	–	–	–	–	P	Line 1 to 5	PGM	–	–	–	REG
To Monitor Remote Line		–	–	–	–	–	–	–	–	A	Line 1 to 5	AUD	–	AUD	–	–
To Put Turntable On Air	TT1	–	–	–	–	–	P	–	–	–	–	PGM	–	–	–	REG
	TT2	–	–	–	–	–	–	P	–	–	–	PGM	–	–	–	REG
To Cue Turntable	TT1	–	–	–	–	–	A	–	–	–	–	–	–	AUD	–	–
	TT2	–	–	–	–	–	–	A	–	–	–	–	–	AUD	–	–
To Monitor Program	–	–	–	–	–	–	–	–	–	–	–	–	–	PGM	–	–
To Send Cue Over Remote Line	–	–	–	–	–	–	–	–	–	–	–	–	Line 1 to 5	–	Rem Cue	–

5. Adjust MON GAIN control for the desired level on the VU meter.

To audition a program (Studio B)

This procedure is the same as for Studio A except the mixer switches and controls MIC 3 and MIC 4 are used and the selector switch 4S1 must be turned to MIC 4 before setting up the switch 4S5.

To put a network program on the air

1. Set the net mixer switch to P.

2. Turn the NET mixer up.

3. Follow the procedure for putting a studio program on the air.

To monitor network line

1. Set the net mixer switch to A.

2. Turn NET mixer up.

3. Follow the procedure for auditioning a studio program.

To put a remote program on the air

1. Press pushbutton of desired remote line on the Remote Line Selector switch.

2. Set remote mixer switch to P.

3. Turn REM line mixer up.

4. Proceed as in putting a Studio program on the air.

To monitor a remote program

Proceed according to procedure above except, set the remote mixer switch to A and follow the procedure for auditioning a Studio program.

To identify incoming override call from remote line

1. Push the OFF button of the remote line input switch.

2. Set the SELECTOR switch to OFF position.

3. Set switch 4S13 to OVERRIDE.

4. Turn up MON GAIN to desired level.

5. Turn the selector switch 4S11 until incoming call is not heard on the control room speaker. Pointer on the knob of 4S11 indicates the remote line over which the call originates.

To monitor a program

1. Press PGM button on the monitor input switch.

2. Adjust MON GAIN control to desired level.

To monitor with headphones

1. Network line

a. Plug headphones into NET phone jack 4J2.

2. Program amplifier, monitor, amplifier and remote lines

a. Plug headphones into MON phone jack 4J1.

b. Set the switchh 4S13 to center position (PH MON - REM - TB).

c. Set the SELECTOR switch to desired position (PGM, MON, or 1-2-3-4-5 Remote Line).

To monitor cue lines

1. Press desired CUE (1, 2, 3) on the Monitor Input switch.

2. Adjust MON GAIN control to desired volume.

To cue turntables

With monitor amplifier

1. Set TT mixer switch of turntable to be cued to A.

2. Turn up the associated mixer control.

3. Press AUD button of Monitor Input switch.

4. Adjust MON GAIN control for desired level.

With external cueing amplifier and speaker:

1. Turn TT mixer gain control of turntable to be cued to 0.

2. Adjust gain on cueing amplifier to desired volume.

To send cue over remote lines:

1. Set the SELECTOR switch to remote line to be cued.

2. Set switch 4S11 to REM CUE (Cue cannot be sent over remote line of which button on Remote Line Input switch 4S10 is depressed).

To talk-back to Studio A/Studio B

1. Press pushbutton A (or B according to studio selected) of the TB button.

2. Turn up MON GAIN to adjust volume.

Remember that the operator cannot talk back to a studio which is ON-THE-AIR.

To talk-back to remote lines:

1. Select remote line on switch 4S11. One cannot talk back to a remote line which is in use (i.e. has button on switch 4S10 depressed).

2. Press pushbutton REM of the TB buttons on switch 4S12.

3. Turn up MON GAIN to adjust volume.

Emergency Operation

In case the program amplifier should fail during the broadcasting time, proceed as follows:

1. Press the Monitor Input pushbutton marked AUD.

2. Turn the LINE OUT switch to EMG.

3. Turn mixer switches of input channels in use to A.

4. MON GAIN and the selected mixer control are now governing the output level.

RELAY, SPEAKER AND WARNING LIGHT OPERATION
(SINGLE STUDIO)

Switch Positions							Speaker Relay				Loudspeakers				Warning Lights					
4S1	4S2	4S3	4S4	4S5	4S12	4S14	5K1	5K2	5K3	5K4	CR	ST. A	ST. B	AN. B	CR O. A.	ST. A O. A.	ST. A. AUD	ST. B O. A.	ST. B AUD.	AN. B. O. A.
MIC 4	OFF	OFF	OFF	OFF	PGM	OFF	O	C		C	ON	ON		ON	OFF	OFF	OFF			OFF
MIC 4	P	OFF	OFF	OFF	PGM	OFF	O	O		C	ON	OFF		ON	OFF	OFF	OFF			OFF
MIC 4	P	OFF	OFF	OFF	PGM	REG	O	O		C	ON	OFF		ON	OFF	ON	OFF			OFF
MIC 4	OFF	P	OFF	OFF	PGM	REG	O	O		C	ON	OFF		ON	OFF	ON	OFF			OFF
MIC 4	OFF	OFF	P	OFF	PGM	REG	O	O		C	ON	OFF		ON	OFF	ON	OFF			OFF
MIC 4	OFF	OFF	OFF	P	PGM	REG	O	O		C	ON	OFF		ON	OFF	ON	OFF			OFF
CR	OFF	OFF	OFF	P	PGM	REG	C	C		C	OFF	ON		ON	ON	OFF	OFF			OFF
AN.B	OFF	OFF	OFF	P	PGM	REG	O	C		O	ON	ON		OFF	OFF	OFF	OFF			ON
MIC 4	A	OFF	OFF	OFF	PGM	OFF	O	O		C	ON	OFF		ON	OFF	OFF	OFF			OFF
MIC 4	A	OFF	OFF	OFF	AUD	OFF	O	O		C	ON	OFF		ON	OFF	OFF	ON			OFF
MIC 4	OFF	A	OFF	OFF	AUD	OFF	O	O		C	ON	OFF		ON	OFF	OFF	ON			OFF
MIC 4	OFF	OFF	A	OFF	AUD	OFF	O	O		C	ON	OFF		ON	OFF	OFF	ON			OFF
MIC 4	OFF	OFF	OFF	A	AUD	OFF	O	O		C	ON	OFF		ON	OFF	OFF	ON			OFF
CR	OFF	OFF	OFF	A	AUD	OFF	C	C		C	OFF	ON		ON	OFF	OFF	OFF			OFF
AN.B	OFF	OFF	OFF	A	AUD	OFF	O	C		O	ON	ON		OFF	OFF	OFF	OFF			OFF
MIC 4	A	P	OFF	OFF	AUD	REG	O	O		C	ON	OFF		ON	OFF	ON	OFF			OFF
MIC 4	P	A	OFF	OFF	AUD	REG	O	O		C	ON	OFF		ON	OFF	ON	OFF			OFF
MIC 4	OFF	OFF	A	P	AUD	REG	O	O		C	ON	OFF		ON	OFF	ON	OFF			OFF
MIC 4	OFF	OFF	P	A	AUD	REG	O	O		C	ON	OFF		ON	OFF	ON	OFF			OFF
MIC 4	OFF	OFF	OFF	OFF	TB. A	OFF	C	C		C	OFF	ON		ON	OFF	OFF	OFF			OFF
MIC 4	P	OFF	OFF	OFF	TB. A	REG	C	O		C	OFF	OFF		ON	ON	ON	OFF			OFF
MIC 4	OFF	OFF	P	OFF	TB. A	REG	C	O		C	OFF	OFF		ON	ON	ON	OFF			OFF
MIC 4	OFF	OFF	OFF	P	TB. A	REG	C	O		C	OFF	OFF		ON	ON	ON	OFF			OFF
MIC 4	OFF	OFF	OFF	OFF	TB	OFF	C	O		O	OFF	OFF		OFF	OFF	OFF	OFF			OFF

RELAY, SPEAKER AND WARNING LIGHT OPERATION
(TWO STUDIOS)

Switch Positions							Speaker Relay				Loudspeakers				Warning Lights					
4S1	4S2	4S3	4S4	4S5	4S12	4S14	5K1	5K2	5K3	5K4	CR	ST. A	ST. B	AN. B	CR O. A.	ST. A O. A.	ST. A AUD.	ST. B O. A.	ST. B AUD.	AN. B O. A.
MIC 4	OFF	OFF	OFF	OFF	PGM	OFF	O	C	C	C	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
MIC 4	P	OFF	OFF	OFF	PGM	OFF	O	O	C	C	ON	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
MIC 4	P	OFF	OFF	OFF	PGM	REG	O	O	C	C	ON	OFF	ON	ON	OFF	ON	OFF	OFF	OFF	OFF
MIC 4	OFF	P	OFF	OFF	PGM	REG	O	O	C	C	ON	OFF	ON	ON	OFF	ON	OFF	OFF	OFF	OFF
MIC 4	OFF	OFF	P	OFF	PGM	REG	O	C	O	C	ON	ON	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
MIC 4	OFF	OFF	OFF	P	PGM	REG	O	C	O	C	ON	ON	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
CR	OFF	OFF	OFF	P	PGM	REG	C	C	C	C	OFF	ON	ON	ON	ON	OFF	OFF	OFF	OFF	OFF
AN B	OFF	OFF	OFF	P	PGM	REG	O	C	C	O	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	ON
MIC 4	A	OFF	OFF	OFF	PGM	OFF	O	O	C	C	ON	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
MIC 4	A	OFF	OFF	OFF	AUD	OFF	O	O	C	C	ON	OFF	ON	ON	OFF	OFF	ON	OFF	OFF	OFF
MIC 4	OFF	A	OFF	OFF	AUD	OFF	O	O	C	C	ON	OFF	ON	ON	OFF	OFF	ON	OFF	OFF	OFF
MIC 4	OFF	OFF	A	OFF	AUD	OFF	O	C	O	C	ON	ON	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF
MIC 4	OFF	OFF	OFF	A	AUD	OFF	O	C	O	C	ON	ON	OFF	ON	OFF	OFF	OFF	OFF	ON	OFF
CR	OFF	OFF	OFF	A	AUD	OFF	C	C	C	C	OFF	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
AN B	OFF	OFF	OFF	A	AUD	OFF	O	C	C	O	ON	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF
MIC 4	A	P	OFF	OFF	AUD	REG	O	O	C	C	ON	OFF	ON	ON	OFF	ON	OFF	OFF	OFF	OFF
MIC 4	P	A	OFF	OFF	AUD	REG	O	O	C	C	ON	OFF	ON	ON	OFF	ON	OFF	OFF	OFF	OFF
MIC 4	OFF	OFF	A	P	AUD	REG	O	C	O	C	ON	ON	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
MIC 4	OFF	OFF	P	A	AUD	REG	O	C	O	C	ON	ON	OFF	ON	OFF	OFF	OFF	ON	OFF	OFF
MIC 4	OFF	OFF	OFF	OFF	TB A	OFF	C	C	O	C	OFF	ON	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF
MIC 4	P	OFF	OFF	OFF	TB A	REG	C	O	O	C	OFF	OFF	OFF	ON	ON	ON	OFF	OFF	OFF	OFF
MIC 4	OFF	OFF	OFF	OFF	TB B	OFF	C	O	C	C	OFF	OFF	ON	ON	OFF	OFF	OFF	OFF	OFF	OFF
MIC 4	OFF	OFF	P	OFF	TB B	REG	C	O	O	C	OFF	OFF	OFF	ON	ON	OFF	OFF	ON	OFF	OFF
MIC 4	OFF	OFF	OFF	OFF	TB REM	OFF	C	O	O	O	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF

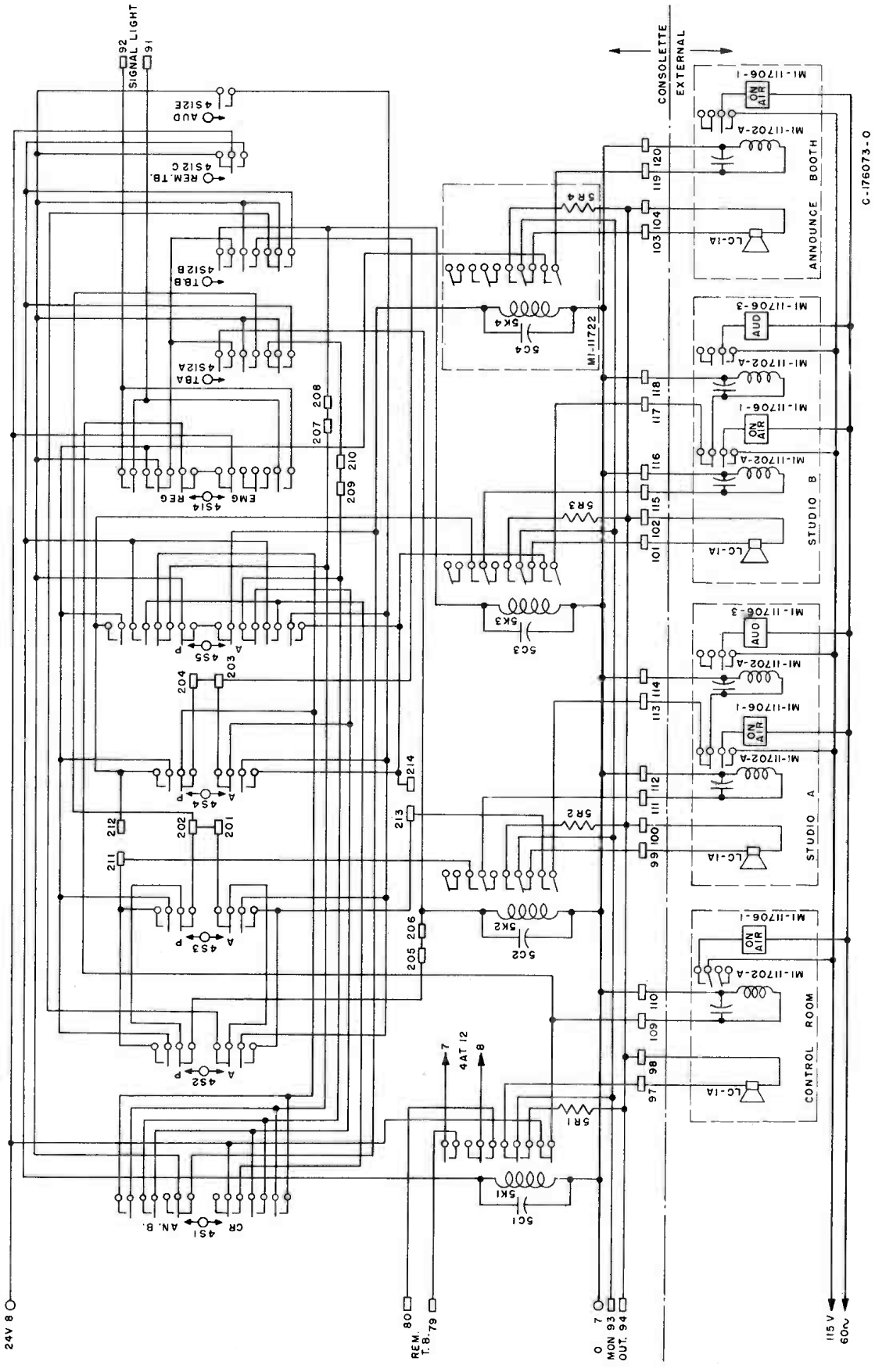


Figure 19 - Schematic of Control Circuits

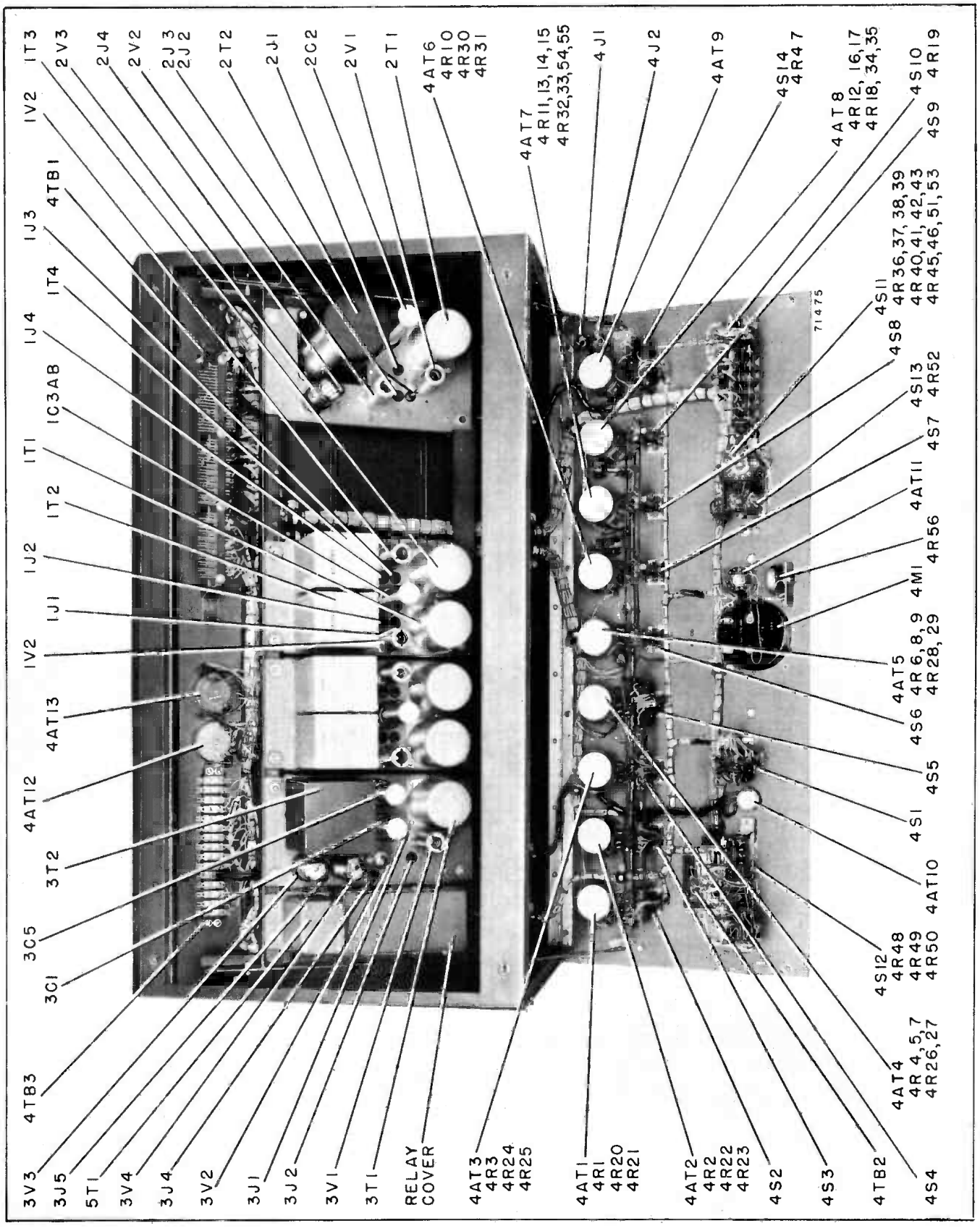


Figure 20 - Internal View of Consolette

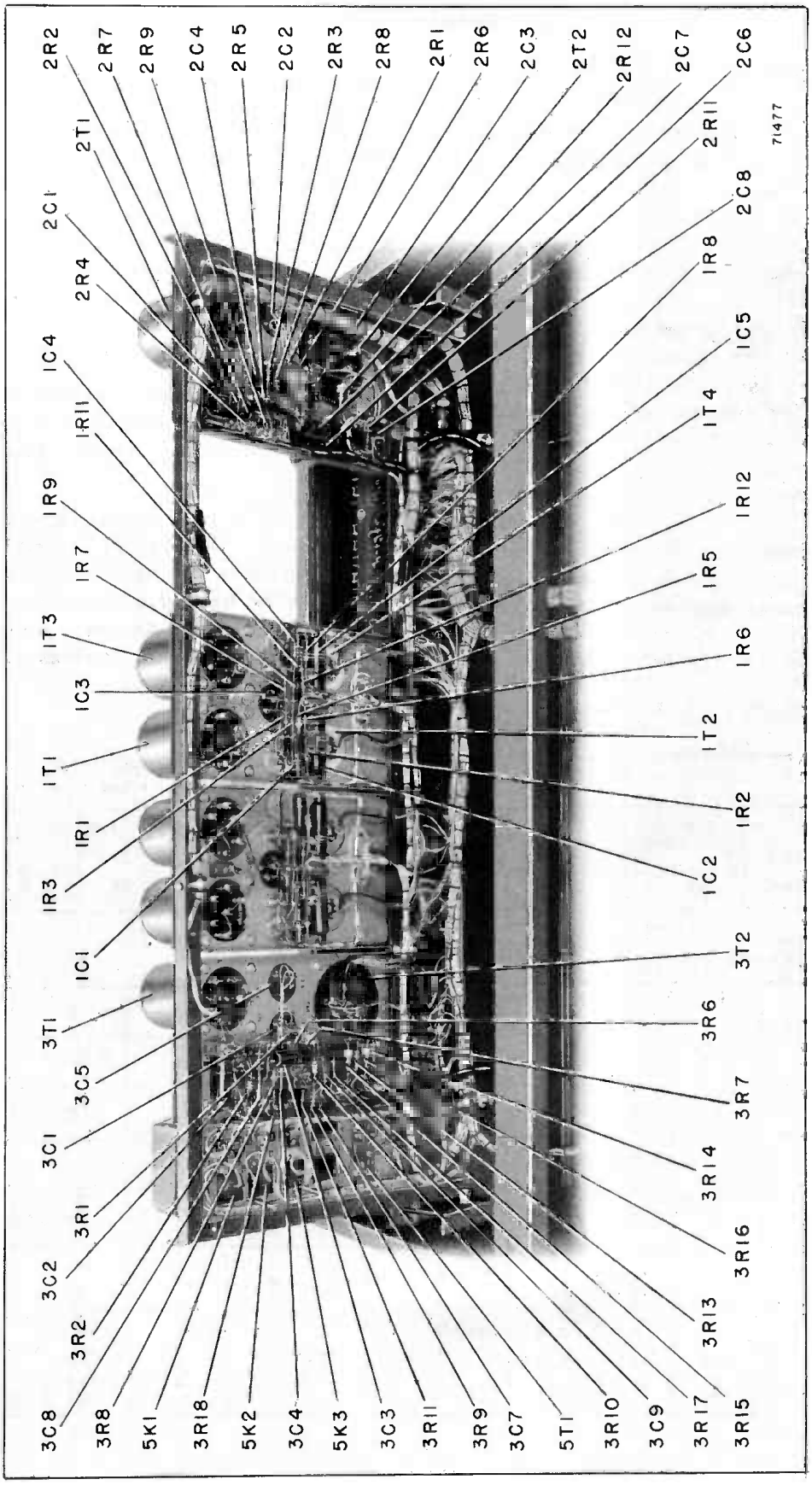


Figure 21 - Underside of Amplifiers, Chassis Mounting Frame Raised

MAINTENANCE

Inspection and Check

The Type BC-2B Consolette is designed to be serviced easily without moving the unit once installed. The front panel is hinged and swings forward at a sufficient angle to check the rear of the control panel. The louvred back panel is removable to provide access to tubes. The amplifiers and relay strip are mounted on a hinged frame which swings up giving access to the components on the rear of each chassis assembly and the terminal boards and cables dressed across the bottom of the consolette. The amplifiers and the relay strip chassis are individually removable from the frame.

A routine inspection at regular intervals should be set up to check tubes and clean attenuator contacts and sockets.

Tube Check

The condition of the tubes can be checked easily by means of the red pin jacks which are provided on each amplifier chassis. To measure the cathode voltage of a tube, connect the negative lead of a voltmeter to ground and plug the positive test probe into the pin jack associated with the tube to be checked.

Average voltages for each pin jack are listed in the table. A record of the voltage measurements at weekly intervals is valuable in determining the proper time to replace tubes.

As a guide for servicing the amplifier, tube socket voltages are listed in the tables. These voltages are typical, as measured with a voltmeter having a resistance of 20,000-ohms-per-volt, and may vary somewhat because of tube and component tolerances.

TEST JACK VOLTAGES

		1	2	3	4	5
Pre-Amplifiers	1J	3.8	3.5	3.8	3.8	–
Program Amplifier	2J	2.1	1.5	1.1	17	–
Monitor Amplifier	3J	2.4	1.6	1.2	36	17.5

SOCKET VOLTAGES

PRE-AMPLIFIER	1	2	3	4	5	6	7	8	9
1V1 and 1V2	269	0	3.5	*	*	166	0	3.8	**
PROGRAM AMP.	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
2V1	96	0	1.5	*	*	153	0	2.1	**
2V2	0	0	1.1	*	**	0	33	147	1.1
2V3	0	*	310	317	0	0	**	17	–
MONITOR AMP.	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
3V1	92	0	1.6	*	*	188	0	2.4	**
3V2	157	0	1.2	*	*	252	–	38	**
3V3 and 3V4	0	*	314	325	0	0	**	17.5	–

6.3 v ac measured between contacts indicated by * and **. This point also 26 v positive with respect to ground.

Care of Variable Attenuators

To remove the attenuator cover, press the latch under the cover and remove it by twisting the cover counterclockwise. Apply Davenoil to the contacts and rotate the control knob several times. Wipe the contacts clean using a soft cloth and apply a thin film of Davenoil. Replace attenuator cover. A bottle of Davenoil is packed with the consolette.

Care of Switches, Relays, Tube Sockets

The switches and relay contacts do not require periodic maintenance and should not be tampered with.

Contacts of the tube sockets are cleaned best by pulling tubes in and out of the socket several times.

Replacement Parts

The following parts list is included to provide identification when ordering replacement parts. Order from RCA Replacement Parts Department, Camden, New Jersey, giving the Stock Number and Description of the parts wanted. Replacement parts supplied may be slightly different in form or size from the original parts but will be completely interchangeable with them.

LIST OF PARTS

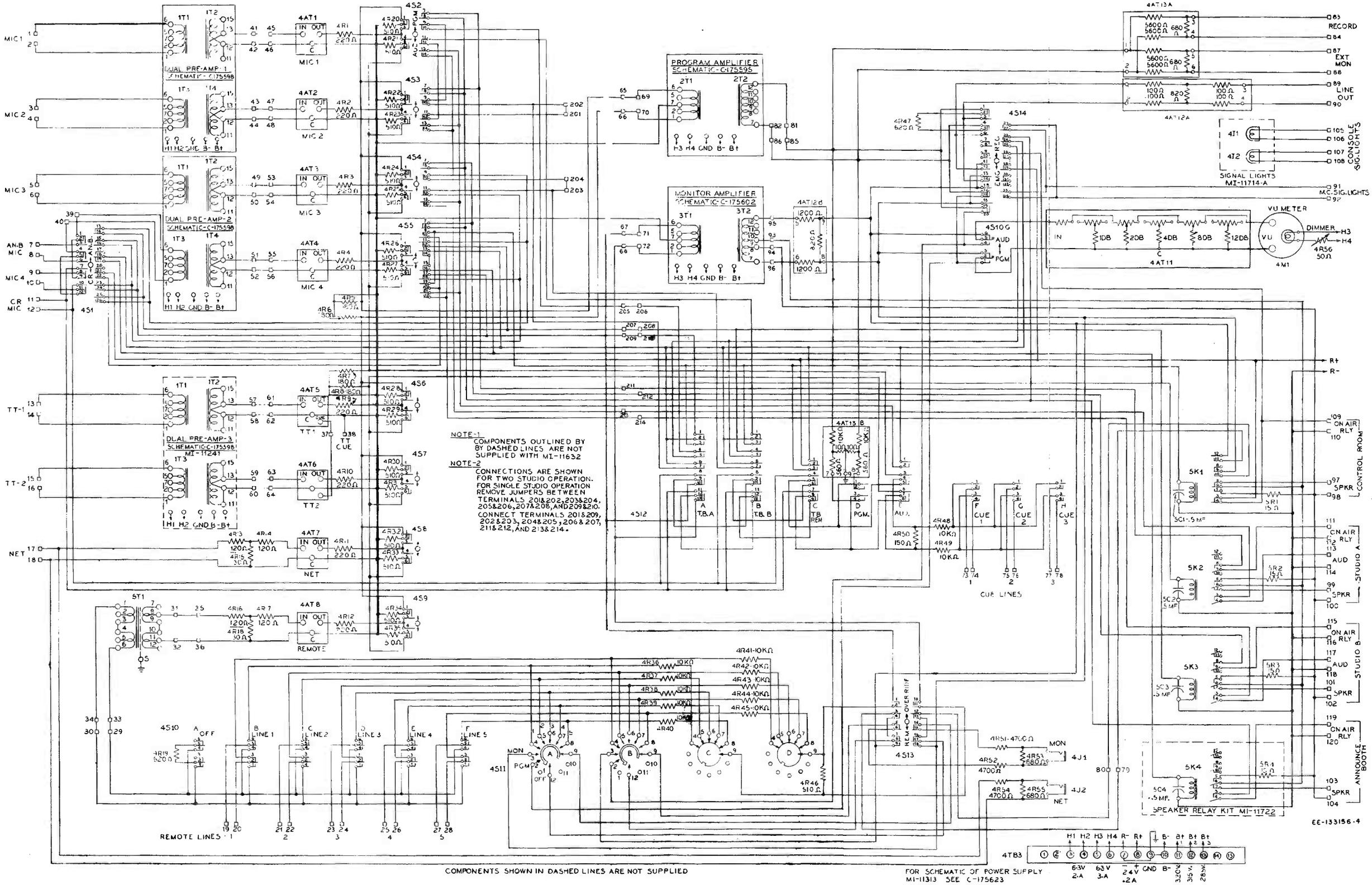
Symbol No.	*Description*	*Stock No.*
	DUAL PREAMPLIFIER MI-11241	
1C1	Capacitor, fixed, molded paper tubular, .047 mf, ±10%, 400 v	73553
1C2	Capacitor, fixed, molded paper tubular, 0.22 mf, ±20%, 400 v	73794
1C3	Capacitor, dry electrolytic, dual, 20–20 mf, −10%, +50%, 450 v	34889
1C4	Same as 1C1	
1C5	Same as 1C2	
1J1–1J4	Jack, tip	54409
1R1	Resistor, fixed, composition, 8200 ohms, ±5%, 1 w	512282
1R2	Resistor, fixed, composition, 220,000 ohms, ±10%, 1 w	54449
1R3	Resistor, fixed, composition, 470,000 ohms, ±5%, 1 w	72521
1R4	Resistor, fixed, composition, 680,000 ohms, ±10%, 1 w	52012
1R5	Resistor, fixed, composition, 1000 ohms, ±5%, 1 w	71916
1R6	Resistor, fixed, composition, 2700 ohms, ±10%, 1 w	14421
1R7	Same as 1R1	
1R8	Same as 1R2	
1R9	Same as 1R3	
1R10	Same as 1R4	
1R11	Same as 1R5	
1R12	Same as 1R6	
1T1	Transformer, input	58962
1T2	Transformer, output	58963
1T3	Same as 1T1	
1T4	Same as 1T2	

Symbol No.	*Description*	*Stock No.*
1XV1, 1XV2	Socket, tube, 9 contact, miniature	56333
	Grommet, rubber, 17/64 I.D. 11/16 O.D.	94645
	Plate, capacitor mounting for 1C3	28452
	Shield, tube	57533
	PROGRAM AMPLIFIER	
2C1	Capacitor, fixed, molded paper tubular, 0.22 mf, ±20%, 400 v	73794
2C2A, 2C2B	Capacitor, dry electrolytic, dual, 20–20 mf, −10%, +50%, 450 v	34889
2C3	Capacitor, fixed, molded paper tubular, .001 mf, ±10%, 600 v	73801
2C4	Capacitor, fixed, molded paper tubular, 0.1 mf, ±10%, 400 v	73551
2C5	Capacitor, fixed, molded paper tubular, .047 mf, ±10%, 400 v	73553
2C6	Same as 2C1	
2C7	Same as 2C4	
2C8	Capacitor, fixed, molded paper tubular, .0022 mf, ±10%, 600 v	73803
2J1–2J4	Jack, tip	54409
2R1	Resistor, fixed, composition, 1200 ohms, ±5%, 1 w	512212
2R2	Resistor, fixed, composition, 56,000 ohms, ±5%, 1 w	17440
2R3	Resistor, fixed, composition, 2200 ohms, ±5%, 1 w	71991

Symbol No.	Description	Stock No.
2R5	Resistor, fixed, composition, 180,000 ohms, ±5%, 1 w	12356
2R6	Resistor, fixed, composition, 470,000 ohms, ±10%, 1 w	72521
2R7	Resistor, fixed, composition, 10,000 ohms, ±10%, 1 w	71914
2R8	Resistor, fixed, composition, 1800 ohms, ±5%, 1 w	38875
2R9	Resistor, fixed, composition, 1.5 meg, ±10%, 1 w	47967
2R10	Resistor, fixed, composition, 220,000 ohms, ±5%, 1 w	54449
2R11	Same as 2R6	
2R12	Resistor, fixed, composition, 390 ohms, ±5%, 2 w	93685
2R13	Resistor, fixed, composition, 6800 ohms, ±5%, 1 w	38887
2R14	Resistor, fixed, composition, 10,000 ohms, ±10%, 1 w	71914
2T1	Transformer, input	58962
2T2	Transformer, output	46098
2XV1, 2XV2	Socket, tube, 9 contact, miniature	56333
2XV3	Socket, tube, 8 contact	31319
	MONITOR AMPLIFIER	
3C1A, 3C1B	Capacitor, dry electrolytic, dual, 20 mf, -10%, +50%, 450 v, 40 mf, -10%, ±250%, 25 v	94146
3C2	Capacitor, fixed, molded paper tubular, 0.22 mf ±10%, 400 v	73794
3C3 3C4	Capacitor, fixed, molded paper tubular, 0.1 mf, ±10%, 400 v	73551
3C5A, 3C5B	Same as 3C1A, B	
3C6, 3C7	Capacitor, fixed, molded paper tubular, .0047 mf, ±10%, 400 v	73553
3C8	Capacitor, fixed, molded paper tubular, .0047 mf, ±10%, 600 v	73920
3C9	Capacitor, fixed, mica, 100 mmf, ±10%, 500 v	39628
3J1-3J5	Jack, tip	54409
3R1	Resistor, fixed, composition, 1200 ohms, ±5%, 1 w	512212
3R2	Resistor, fixed, composition, 39,000 ohms, ±5%, 1 w	71084
3R3	Resistor, fixed, composition, 2200 ohms, ±5%, 1 w	71991
3R4	Resistor, fixed, composition, 10,000 ohms, ±10%, 1 w	71914
3R5	Resistor, fixed, composition, 220,000 ohms, ±10%, 1 w	54449
3R6	Resistor, fixed, composition, 470,000 ohms, ±10%, 1 w	72521
3R7	Same as 3R3	
3R8	Same as 3R5	
3R9	Same as 3R6	
3R10	Same as 3R2	
3R11	Resistor, fixed, composition, 1500 ohms, ±5%, 1 w	72762
3R12	Same as 3R2	
3R13, 3R14	Same as 3R6	
3R15, 3R16	Resistor, fixed, composition, 430 ohms, ±10%, 2 w	522143
3R17	Resistor, fixed, composition, 22,000 ohms, ±5%, 1 w	71989
3R18	Same as 3R4	
3T1	Transformer, input	58962
3T2	Transformer, output	43679
3XV1	Socket, tube, 9 contact, miniature	56333
3XV2	Socket, tube, 9 contact, miniature	54214
3XV3, 3XV4	Socket, tube, 8 contact	31319
	CONSOLETTE PANEL AND TURRET	
4AT1, 4AT2, 4AT3, 4AT4	Attenuator, ladder pad, MIC 1, MIC 2, MIC 3, MIC 4	94135
4AT5, 4AT6	Attenuator, ladder pad, with cue switch, TT1 and TT2	94136
4AT7, 4AT8	Same as 4AT1, Net, Remote	
4AT9	Attenuator, potentiometer, MASTER	94137
4AT10	Attenuator, potentiometer, carbon, 50,000 ohms, ±10%, 2 w, MON GAIN	94138
4AT11	Attenuator, VU meter pad	94437
4AT12	Attenuator, line out pad	94636
4AT13	Attenuator, line out for Rec. or Ext. Mon.	94637
4J1, 4J2	Jack	11780
4M1	Meter, VU	53064
4R1, 4R2, 4R3, 4R4	Resistor, fixed, composition, 220 ohms, ±5%, 1 w	39049
4R5, 4R6, 4R7, 4R8	Resistor, fixed, composition, 180 ohms, ±5%, 1 w	2736
4R9, 4R10, 4R11, 4R12	Same as 4R1	
4R13, 4R14	Resistor, fixed, composition,	30936
4R15	Resistor, fixed, composition, 30 ohms, ±5%, 1 w	512030
4R16, 4R17	Same as 4R13	

Symbol No.	Description	Stock No.
4R18	Same as 4R15	
4R19	Resistor, fixed, composition, 620 ohms, ±5%, 1 w	59488
4R20 to 4R35	Resistor, fixed, composition, 510 ohms, ±5%	3632
4R36 to 4R45	Resistor, fixed, composition, 10,000 ohms, ±5%, 1 w	71914
4R46	Same as 4R20	
4R47	Same as 4R19	
4R48, 4R49	Same as 4R36	
4R50	Resistor, fixed, composition, 150 ohms, ±5%, 1 w	30785
4R51, 4R52	Resistor, fixed, composition, 4700 ohms, ±5%, 1 w	71987
4R53	Resistor, fixed, composition, 680 ohms, ±10%, 1 w	19233
4R54	Same as 4R51	
4R55	Same as 4R53	
4R56	Resistor, variable, wire wound, 50 ohms, ±10%, 2 w	94438
4S1	Switch, key, 2 way locking with center off position MIC 4, ANB and CR	94139
4S2, 4S3, 4S4	Switch, key, 2 way locking with center OFF position	94140
4S5	Switch, key, 2 way locking with center OFF position, MIC 4	94141
4S6, 4S7, 4S8, 4S9	Switch, key, 2 way locking with center OFF position less handle. TT1, TT2, Net, Remote	94142
4S10	Switch, push, 7 section plus mechanical release for #7. Remote Input and VU Meter	94439
4S11	Switch, rotary SELECTOR	94143
4S12	Switch, push, 8 section, Monitor Input	94440
4S13	Switch, key, 2 way locking with center OFF position. Override - REM Cue	94144
4S14	Switch, key, 2 way locking with center OFF position, Line Out	94145

Symbol No.	Description	Stock No.
	RELAY STRIP	
5C1, 5C2, 5C3	Capacitor, fixed, metalized paper tubular, 0.5 mf, -20%, +30%, 200 v	55242
5K1, 5K2, 5K3	Relay, D.C., 600 ohms, coil 20 v min. operating voltage	94147
5R1, 5R2, 5R3	Resistor, fixed, wire wound, 15 ohms, +10%, 5 w	94148
5T1	Transformer, line	MI-11713
	MISCELLANEOUS (Mechanical)	
	Button, black, for 4S10, 4S12	32120
	Button, red, for 4S10	32121
	Handle, red, for 4S9	94441
	Handle, blue, for 4S6, 4S7	94442
	Handle, white, for 4S8	94443
	Knob, black for 4AT10, 4S11	17268
	Knob, black, for 4AT1, 4AT2, 4AT3, 4AT4, 4AT9	17269
	Knob, blue, for 4AT5, 4AT6	94444
	Knob, white, for 4AT7	94445
	Knob, red, for 4AT8	94446
	Catch, male section, for cover & panel	94642
	Catch, female section, for cover & panel	94641
	Ring, retaining, for cover & panel catches	94643
	Mounting, cushion, rubber grommet	94645
	Plate, capacitor mounting for 2C2, 3C1, 3C5	28452
	Screw, inner frame pivot pin	94644
	Shield, tube	57533
	Support, fall, for panel	94647



Overall Schematic 41-42

WIRE TABLE			PT NO
WIRE NO	DESCRIPTION		
1	PS-105 TINNED COPPER WIRE, .0808 DIA.		90
10 - 128	PS-105 TINNED COPPER WIRE, .032 DIA.		91
200-254	PS-9 SLEEVING	#042 I.D. BLK	93
300-326	PS-724-11 WIRE, 10/30	WHITE - BROWN	88
330-335	PS-724-11 WIRE, 10/30	WHITE-BLK/BRN	87
340	PS-724-16 WIRE, 10/30	WHITE - RED	89
350	PS-724-16 WIRE, 10/30	WHITE-BLUE/RED	94
360-369	PS-724-1 WIRE, 7/30	WHITE - ORANGE	80
370-379	PS-724-1	WHITE - BLUE	86
380-387	PS-724-1	WHITE	75
390-399	PS-724-1	WHITE - GREEN	83
400-409	PS-724-1	WHITE - YELLOW	81
410-425	PS-724-1	WHITE - BLACK	76
430-444	PS-724-1	WHITE - RED	78
450-459	PS-724-1	WHITE - RED/BLUE	79
460-469	PS-724-1	WHITE - GRN/BLK	84
470-479	PS-724-1	WHITE - YEL/GRN	77
480-489	PS-724-1	WHITE - YEL/RED	82
490-496	PS-724-1	WHITE - GRN/RED	85
500-559	PS-105-A2	SHIELDED PAIR - RED & BLK	92
560-568	PS-122	SLEEVING #033 I.D. BLK.	95
570-577	PS-122	SLEEVING #033 I.D. BLK	96

JUMPERS ON 4TB2 ARE SHOWN FOR TWO STUDIO OPERATION. FOR SINGLE STUDIO OPERATION, REMOVE JUMPERS SHOWN, AND CONNECT TERMINALS 201-209, 202-203, 204-205, 206-207, 211-212, & 213-214.

COMPONENTS SHOWN ENCIRCLED BY DASHED LINES ARE NOT SUPPLIED WITH ME-11682

EE-133328-3

Overall Connection Diagram

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BROADCAST AUDIO EQUIPMENT

POWER SUPPLY

MI-11313

RADIO CORPORATION OF AMERICA
ENGINEERING PRODUCTS DEPARTMENT CAMDEN, N. J.

IB-24750

BROADCAST AUDIO EQUIPMENT

INSTRUCTIONS

POWER SUPPLY

MI-11313

RADIO CORPORATION OF AMERICA
ENGINEERING PRODUCTS DEPARTMENT, CAMDEN, N. J.

PRINTED IN U. S. A.
5121

IB-24750

TABLE OF CONTENTS

LIST OF ILLUSTRATIONS

ERRATA-IB-24750

Page 10 - Change Figure 7 to Figure 6.

Page 11-12 - Add Figure 7 to title Power Supply Connection Diagram

Figure 1 - Power Supply MI-11313

TECHNICAL DATA

Power Required

100 to 130 volts
50 to 60 cycles
150 watts

Power Supplied

a. **D-C Plate Supply**

Terminals	Output Voltage	Ripple Voltage	Current
10–11 (Monitor)	320 v	.45 v	87 ma
10–12 (Program)	315 v	.03 v	47 ma
10–12 (Pre-amplifiers)	285 v	.15 mv	24 ma

b. **A-C Heater Supply**

Terminals	Output Voltage	Current
3 and 4*	6.3 vac	2 amp
5 and 6*	6.3 vac	3 amp

*Heater bias 26 v positive to ground

c. **D-C Relay Supply**

Terminals	Output Voltage	Ripple Voltage	Current
7 and 8	24 v	.20 v	200 ma

Fuses

Primary of power transformer T1: 3 amp
Primary of relay transformer T2: 1/4 amp

Tube

1 RCA 5R4GY MI-11294

Mounting

Wall mounting, or
Rack mounting:
Standard 19" rack; Type BR-84 Series
using MI-11650 mounting brackets

Dimensions and Weight

Height – 10-3/8 inches
Width – 14-3/4 inches
Depth – 8-1/8 inches
Weight – 32 pounds

DESCRIPTION

The MI-11313 Power Supply is designed to supply plate, heater and relay power to the Type BC-2B Consolette, or equipment with similar power requirements. The cabinet, primarily for wall mounting, is provided with ventilating louvres across the top and sides. Knockout holes along the back and bottom of the cabinet are provided for terminating conduits. The power switch and fuses are easily accessible through the aperture in the cabinet door. When the door is swung completely open, the chassis, which is hinged to the cabinet, can be pulled out exposing the components mounted under the chassis and the interconnection terminal board mounted on the bottom of the cabinet.

With the aid of the Rack Mounting Bracket Kit MI-11650 the power supply may be mounted on a 19" cabinet such as the Type BR-84 Series. The power supply cabinet is provided with holes covered by plug buttons for mounting the brackets.

The Transfer Switching Kit MI-11724 is available to switch a spare power supply into the Type BC-2B Consolette should there be a failure in the power supply unit in operation.

INSTALLATION

The power supply is shipped with the chassis hinged in the cabinet. Unpack the equipment carefully and note that two screws are used along the bottom rear of the cabinet

to hold the chassis in place during shipping. These screws should be removed before the cabinet is mounted. Before installing the power supply, determine the location of the consolette or equipment to be powered. Select a wall space or cabinet rack between 2 to 20 feet from the consolette. Determine whether the side or bottom of the cabinet knockout holes are to be used for the conduit. Check the dimensions of the cabinet to allow for clearance for the external cables and for convenience of operation.

Wall Mounting

For wall mounting there are four holes on the back of the cabinet. The top two are visible when the cabinet door is open. These are slotted holes so that the mounting screws may be secured to the wall before installing the cabinet. Refer to the Figure 3 for the distances between mounting centers of these slotted holes as well as the two lower holes. 1/4 inch screws or bolts should be used.

Rack Mounting

Remove the six plug buttons from the holes on each side of the cabinet. Using the parts supplied with the MI-11650 rack mounting bracket kit, mount the brackets on each side of the cabinet. The power supply cabinet may then be mounted on the rack. A location near the bottom of the rack is preferable.

Adjustment of Fall Supports

When the power supply cabinet is mounted on a rack or flush against a surface, adjust the fall supports to limit the angle at which

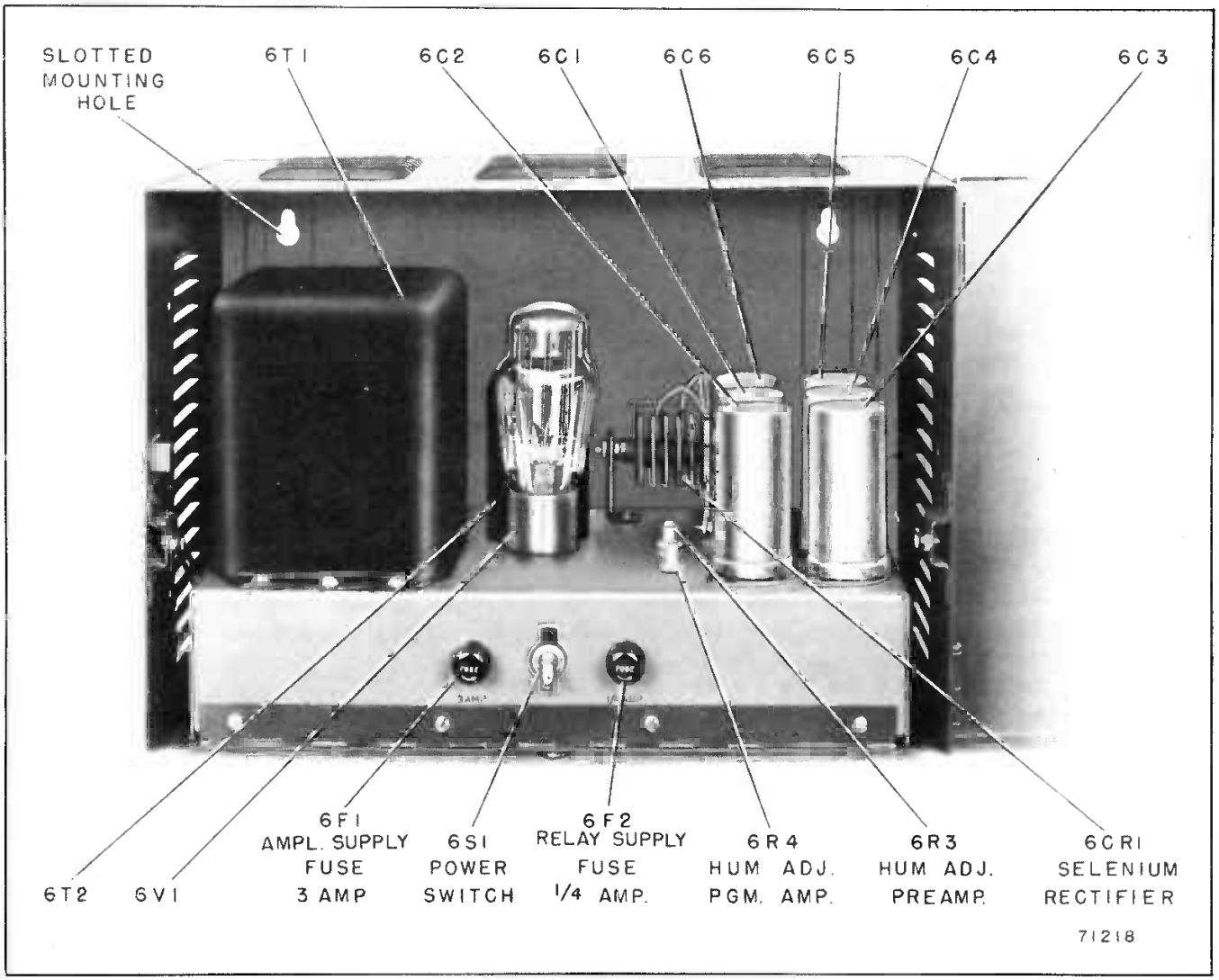


Figure 2 - Power Supply Chassis Mounted in Cabinet

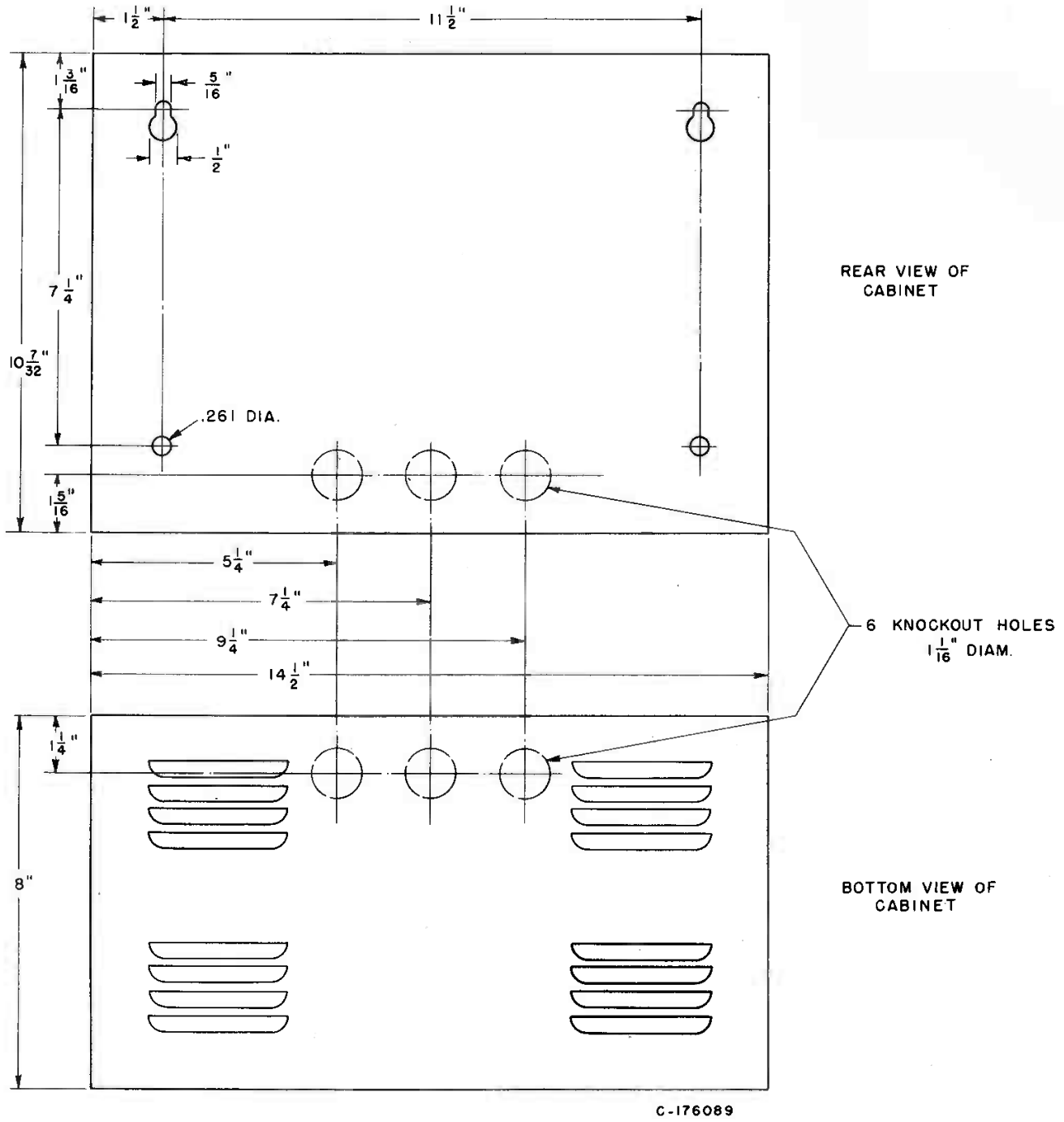


Figure 3 - Dimensional Drawing for Mounting Power Unit

the chassis may be pulled out. Otherwise the switch and fuses on the front apron of the chassis will be too close to the mounting surface or in the rack installation, too close to the other equipment.

Two holes have been drilled on each side of the chassis. The power supply is shipped with the fall supports secured to the hole allowing a right angle swing from the cabinet. Remove the screws, nuts, and lockwashers which fasten the supports to the chassis. Using the same hardware, secure the fall support through the holes drilled between the molded resistor strips and the top of the chassis.

Tube

The power supply is shipped without tubes. The RCA 5R4GY, MI-11294, is to be installed after mounting the unit on the wall or rack.

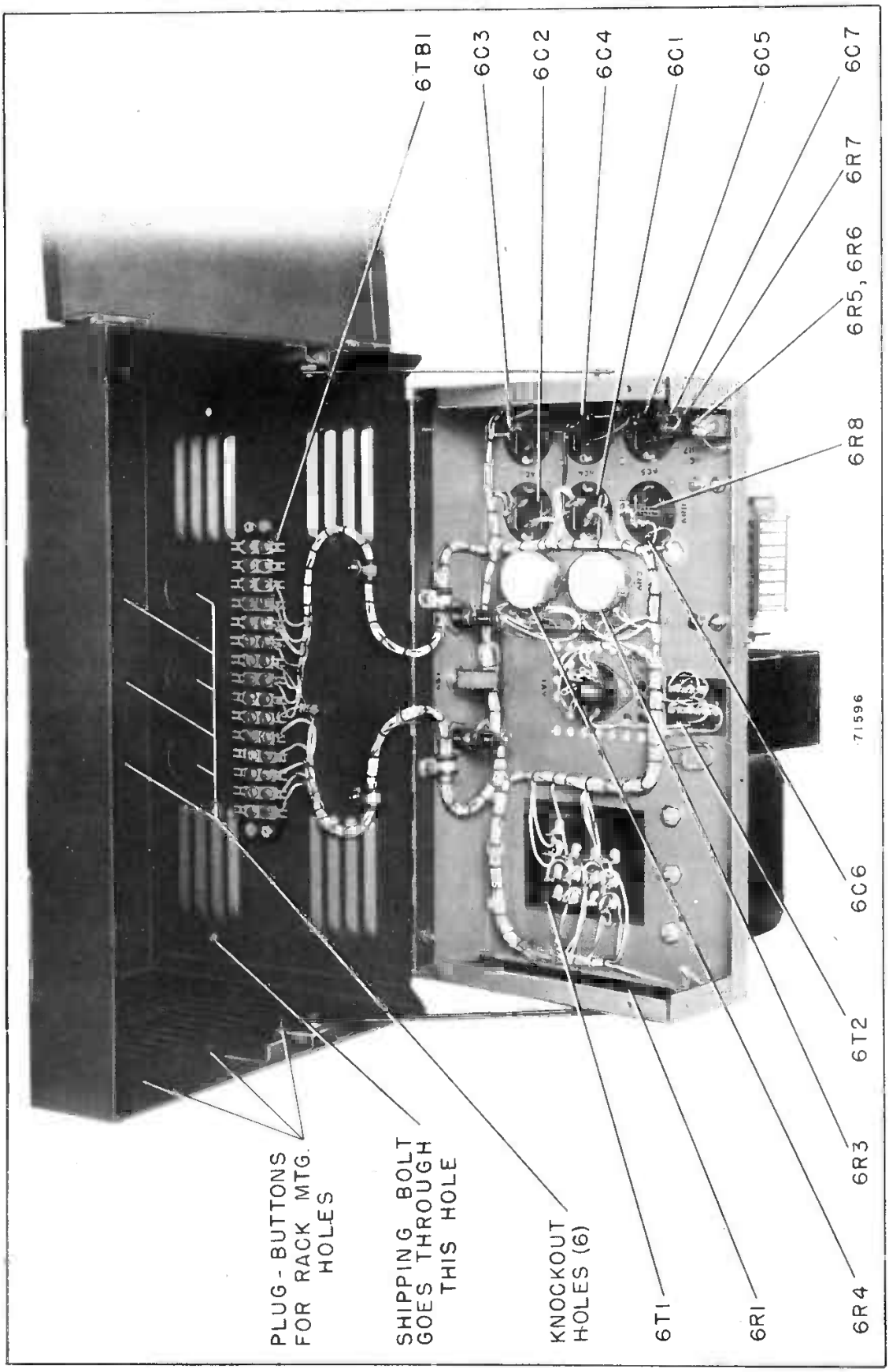


Figure 4 - Power Supply Chassis Opened

Power Transformer Connections

The power transformers 6T1 and 6T2 are designed for operation at 105, 115, or 125 volts, 50 to 60 cycles, and are connected at the factory for a line voltage of 115 volts. If the line voltage is above 120 volts, disconnect the black and red tracer wires from the 115-volt taps, terminals 3, and connect them to the 125-volt taps, terminals 4, of both transformers. If the line voltage is below 110 volts, connect them to the 105-volt taps terminals 2.

Power Transfer Switch MI-11724

The MI-11724 Power Transfer switch permits transfer of the source of power for the consolette from one power supply to another. In the OFF position, the switch disconnects the power from both supplies. The transfer switch panel is designed to mount on a standard 19" amplifier rack. This switch is 5-1/4 inches high and 3-1/2 inches deep. Refer to the schematic Figure 6.

The power switches on the power supplies should be left in the ON position. During shutdown periods, power is turned off by setting the transfer switch to the OFF position. To obtain power for the consolette, set the switch to either the 1 or the 2 position. A schedule should be set up to use the power supplied alternately. In case of failure of the power supply being used, switch to the supply not in use.

On a rack installation, the transfer switch is conveniently mounted between the two power supplies. However it can be installed in other suitable locations provided the interconnecting wires have sufficiently low resistance.

If the transfer switch is not placed between the two power supplies, at least 3-1/2 inches of space must be provided between the power supplies to permit free circulation of air.

Make connections between the power blocks of the power supplies terminals #1 and #2 and the transfer switch terminal blocks TB1 and TB2 respectively, connecting like numbered terminals. Connect the AC power input to terminals 1 and 2 of TB3. Connect like numbered terminals on the consolette power terminal block 4TB to the remaining terminals of TB3. For wire sizes see power connections for the Type BC-2B consolette.

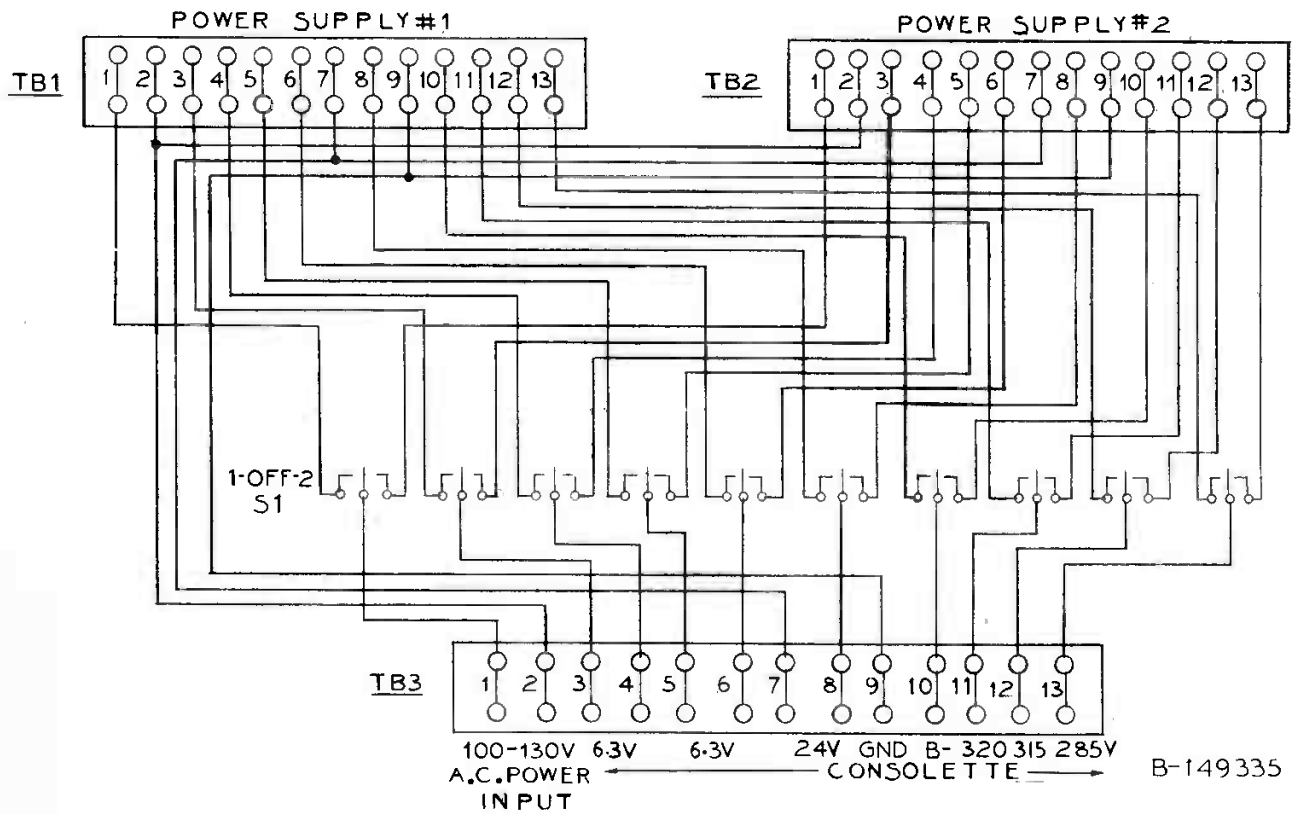


Figure 5 - Schematic for Power Transformer Switch

Connections

Like terminal numbers in the power supply are to be connected to like numbers on the consolette power terminal block. Wires for supplying heater current should be twisted pairs, #18 or larger depending on length. The other wires may be #18, and those used for the B supply, must be insulated for 500 volts. The AC line connects to terminals 1 and 2. The power supply is connected at the factory to furnish power to the MI-11632 consolette with two dual preamplifiers. If a third preamplifier is installed in the consolette, jumper terminals 5 and 6 on the resistor 6R2. Refer to the wiring diagram, Figure 7. The following chart shows the connections at power block 6TB1:

CONNECTIONS AT POWER BLOCK 6TB1

	Terminal
100–130 v AC, 50–60 cps	1–2
Heater, preamplifier, 6.3 v	3–4
Heater, Program, Mon. Amp. and VU Meter, 6.3 v	5–6
Relay Supply –, Relay Supply +, 24 v	7–8
Ground	9
B–	10
Monitor Amplifier, B+, 320 v	11
Program Amplifier, B+, 315 v	12
Preamplifier, B+, 285 v	13
No connection	14–15

OPERATION

The ON-OFF toggle switch together with the two fuses are mounted on the apron of the power supply chassis which can be reached through the aperture in the cabinet door.

Turn the switch to ON and allow 5 minutes operating time before going on the air.

MAINTENANCE

Hum Adjustment

Two screwdriver adjustments on top of the chassis are provided to adjust the hum in the preamplifiers and the monitor and program amplifiers in the consolette or the amplifiers of any unit being supplied power. See the instruction book IB-24748 page 22 for hum adjustment procedures with the Type BC-2B Consolette.

Selenium Rectifier

The output of the selenium rectifier 6CR1 should be tested periodically. Over a period of use the selenium rectifier ages and the output gradually decreases. When the output of terminals 7 and 8 is lower than 22 volts, change the tap on the secondary of transformer 6T2 to the higher voltage tap. Remove the green and black wire from terminal 6 of 6T2 and connect it to terminal 7 of 6T2.

Fuse Replacement

When replacing a blown fuse, make sure that the replacement fuse is of the same type and rating, 3 amp and 1/4 amp, as the ones provided with the equipment.

Replacement Parts

The following parts list is included to provide identification when ordering replacement parts. Order from RCA Replacement Parts Department, Camden, New Jersey, giving the Stock Number and Description of the parts wanted. Replacement parts supplied may be slightly different in form or size from the original parts but will be completely interchangeable with them.

LIST OF PARTS

Symbol No.	*Description*	*Stock No.*
6C1A, 6C1B, 6C2A, 6C2B, 6C3A, 6C3B, 6C4A, 6C4B, 6C5A, 6C5B	Capacitor, dry electrolytic, dual, 40–40 mf, –10%, +50%, 450 v	58567
6C6	Capacitor, dry electrolytic, 2000 mf, –10%, +250%, 30 v	94149
6C7	Capacitor, fixed, moulded paper tubular, 0.1 mf, ±10%, 400 v	73551
6F1	Fuse, 3 amp	10907
6F2	Fuse, 1/4 amp	72104
6R1A, 6R1B 6R1C	Resistor, tapped, wire wound, 3 sections; 1 of 130 ohms, 12 watt and 2 of 500 ohms, 2.2 w. overall 1130 ohms, 16.4 w	94150

Symbol No.	Description	Stock No.
6R2A, 6R2B, 6R2C, 6R2D 6R2E	Resistor, tapped, wire wound, 5 sections; 1 of 500 ohms, 9 w, 3 of 1000 ohms, 1.5 w, 1 of 1500 ohms, 1.5 w Overall 5000 ohms, 15 w	94151
6R3, 6R4	Resistor, variable, wire wound, 100 ohms, ±10%, 2 w	45390
6R5, 6R6	Resistor, fixed, composition, 82,000 ohms, ±10%, 2 w	43495
6R7	Resistor, fixed, composition, 3900 ohms, ±10%, 1 w	38894
6R8	Resistor, fixed, composition, 1200 ohms, ±10%, 1 w	512212
6S1	Switch, toggle, SPST	48791
6CR1	Rectifier, selenium	94152

Symbol No.	Description	Stock No.
6T1	Transformer, power, 50/60 cy. Single Phase, 125-115/105 v Secondary: H.V. 770 V. CT 0.2 A. DC: Rect. Fil. 5 v. 2 amps; Fil. #1-6.3 v. 3 amps; Fil. #2-6.3 v. 2 amps	94153
6T2	Transformer, power, 50/60 cy. Single Phase, 125/115/105 v. Secondary 25 v. 0.25 A. DC, tapped 23 v. 0.25 A. DC	94154
6XF1, 6XF2	Fuse, holder	48894
6XV1	Socket, tube	31319
	Plate, capacitor mounting, for 6C1, 6C2, 6C3, 6C4, 6C5, 6C6	18469

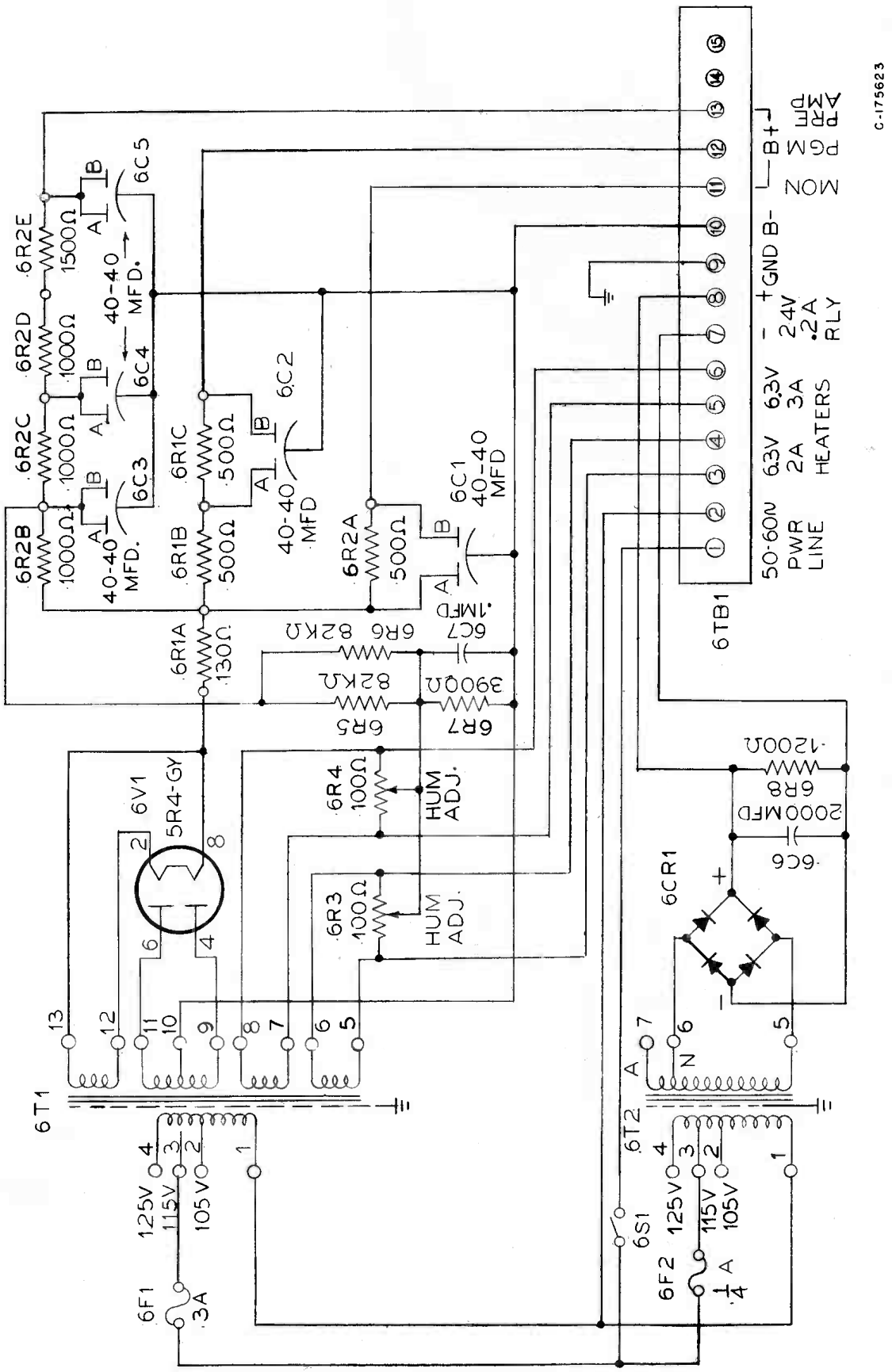
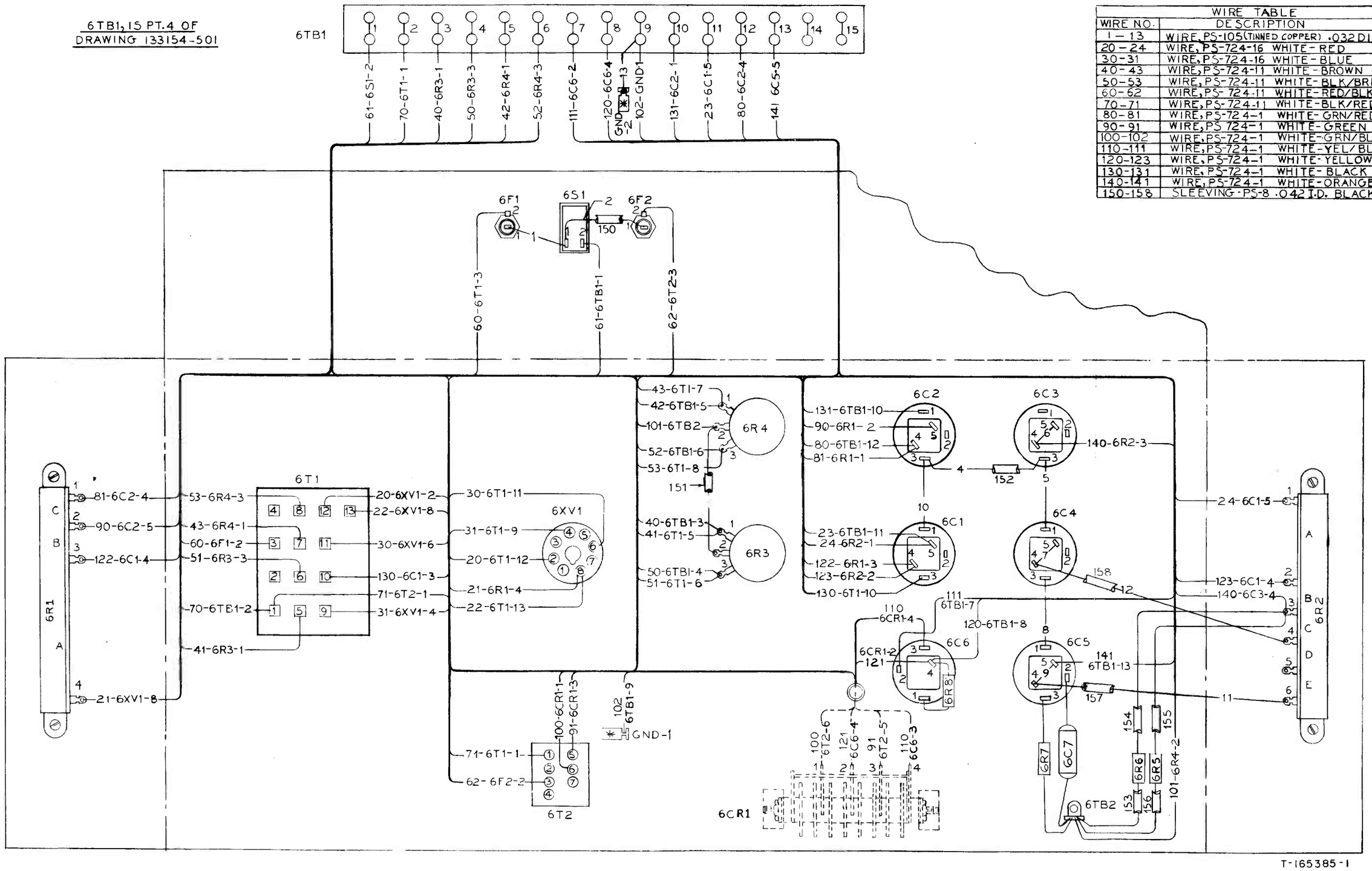


Figure 7 - Power Supply Schematic

6TB1, 15 PT. 4 OF DRAWING 133154-501

WIRE TABLE		
WIRE NO.	DESCRIPTION	PT. NO. SEE A-8B7214
1 – 13	WIRE, PS-105 (TINNED COPPER) .032 DIA.	38
20 – 24	WIRE, PS-724-16 WHITE - RED	40
30 – 31	WIRE, PS-724-16 WHITE - BLUE	41
40 – 43	WIRE, PS-724-11 WHITE - BROWN	42
50 – 53	WIRE, PS-724-11 WHITE - BLK/BRN.	43
60 – 62	WIRE, PS-724-11 WHITE - RED/BLK.	44
70 – 71	WIRE, PS-724-11 WHITE - BLK/RED	45
80 – 81	WIRE, PS-724-1 WHITE - GRN/RED	46
90 – 91	WIRE, PS 724-1 WHITE - GREEN	47
100 – 102	WIRE, PS-724-1 WHITE - GRN/BLK.	48
110 – 111	WIRE, PS-724-1 WHITE - YEL/BLK.	49
120 – 123	WIRE, PS-724-1 WHITE - YELLOW	50
130 – 131	WIRE, PS-724-1 WHITE - BLACK	51
140 – 141	WIRE, PS-724-1 WHITE - ORANGE	52
150 – 158	SLEEVING - PS-8 .042 I.D. BLACK	39



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Power Supply Connection Diagram 11-12