

Volume II.

WESTERN ELECTRIC D-156000 RADIO TRANSMITTER INSTALLATION AND ASSEMBLY INFORMATION

The installation and assembly information for the D-156000 Radio Transmitter is covered in the following sections:

- I Installation and Assembly Instructions.
- II Photographs and Wiring Diagram.
- III Apparatus and Designation List.
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I. INSTALLATION AND ASSEMBLY INSTRUCTIONS

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I. INSTALLATION AND ASSEMBLY INFORMATION FOR

D-156000 RADIO TRANSMITTER

1. GENERAL

The D-156000 Radio Transmitter has been partially disassembled for shipment in order to prevent damage to the equipment. A complete description of the transmitter is given in the "Description, Operation and Maintenance Bulletin for the D-156000 Radio Transmitter". Some of the panels and other parts are shipped in separate boxes. The contents of the boxes are clearly labelled and this information is also given in the bill of lading. The interconnecting cables in the units have been left in place as much as possible. The interconnecting cables will have to be soldered to terminals on the panels in some cases, and in others, attached by means of screws after the panels are in place. Reference should be made to the tables of "Interconnections and External Connections" given in ES-782852 to 59 inclusive. These tables list all of the wires connecting to any terminal, their terminating point, the color code, wire size, etc. All meters, shafts, etc. which have been removed from the panels for shipment have tags attached indicating where they should be installed.

The D-156000 Radio Transmitter is normally equipped for twin channel single sideband transmission and alternate single channel double sideband transmission. Equipment arrangements for the double sideband channel are optional.

2. INSTALLATION OF UNITS

The D-156000 Radio Transmitter has a base dimension of 5 ft. 3/4-inch by 2 ft. 3 inches. The height of the cabinets is 7 ft. 0 inches. However, a wooden base upon which the transmitter may be placed is 1-9/16 inches thick. The output insulators extend about 3 inches above the top. The overall height is then just under 7 ft. 5 inches. The three doors at the rear of the transmitter swing open 90° and the width of each door is 19 inches. Operating controls are on the front. ES-761267 shows the base dimensions and ES-761264 is an outline front view of the transmitter. (See Photograph No. 89725).

The external power connections to the transmitter are shown on ES-761266. The power supply required is approximately 5 kilowatts at 220-235 volts, 3 phase. In case the mean line voltage of the supply does not stay within the limits of 220 to 235 volts, it is necessary to provide a means of adjusting the supply voltage to within this range. A suitable device is the American Transformer Company "Transtat" Specification No. 29286. This has a rated output of 5.75 k.v.a. continuous, 3 phase, 230 volts, 50/60 cycles. Adjustable for any input line voltage between 190 and 260 volts.

The power frequency must be either 50 or 60 cycles according to the customer's specification. The frequency for which the transmitter is equipped is specified on Page 1 of the Inspection Test Data. A separate interlocked service switch is provided which may be mounted as desired. The dimensions of the switch are shown on ES-761268. For testing the low power portion of the transmitter a polarized, one side grounded, 115 volt outlet should be available in the vicinity of the transmitter. Not more than 500 watts will be used for these tests.

Power connections to the transmitter are made on the fuse block on panel A of rectifier 4. This block is about 33 inches above the floor and 16 inches from the rear on the extreme right hand side of the set when viewed from the rear. This is shown in the Photograph No. 89720. Terminals 25 and 26 on the distribution panel of the power bay which is at the bottom of Photograph No. 89720 are to be connected to the blade and jaw, respectively, of one pole of the service switch.

The audio input impedance of the D-156000 transmitter is 600 ohms and it is arranged for +5 VU input of speech and a test tone input of one milliwatt. However, the input pads can be changed to accommodate input volumes as low as -14 VU of speech and 14 db below one milliwatt of test tone.

Terminals 1 and 2 of the low frequency bay distribution panel are the input terminals for channel A. Terminals 3 and 4 are the input terminals of channel B when provided. Terminals 5 and 6 are the input terminals for the test tone. Terminal 7 is the terminal of the control circuit for operating the test tone keying relay. Terminal 8 is the terminal of the control circuit for starting the 1,000 cycle generator. Terminals 9 and 10 are the terminals of a 0-5 milliammeter which may be used with an output indicator on an associated power amplifier. Terminal 16 is the terminal of the control circuit for remotely operating the single to double sideband relay. These terminals all appear on the distribution panel of the low frequency bay which is on the left when the transmitter is viewed from the rear. (See Photograph No. 89717). The terminals are about 10 inches above

the floor. The output terminals of the monitor and output indicator appear on the distribution panel of the power bay. Terminals 1 and 2 are the monitor output terminals and 3 and 4 are the output indicator terminals.

Conduits for the power and audio cables may be brought through the floor under the cabinets. All the conduits may be brought up under the power bay, or the power conduits may be brought up there, and the audio input and monitoring circuits may be brought up under the low frequency bay. The conduits should be terminated about 5 inches above the floor. The input or monitoring cables can be run with the inter-unit connecting cable through a bushing connecting the two cabinets. ES-761267 is a sketch of the area beneath the transmitter available for conduit entrance.

Radio frequency output terminals are located at the top of the center panel of the transmitter. ES-761265 is a sketch showing the position of these terminals.

The complete D-156000 Radio Transmitter weighs about twenty-four hundred pounds.

3. ASSEMBLY OF TRANSMITTER

All the apparatus should be unpacked and checked to determine that nothing has been broken in shipment before assembly is started. Any dust or dirt on the apparatus should be thoroughly removed. It is suggested that all of the parts to be assembled in any one bay be kept separate from others.

Drawing No. ESR-793700 which is attached, gives a front and back assembled view of the transmitter. The exact vertical location of the panels on the racks can be determined from the rear view of this drawing by referring to the screw holes in the racks. In some cases the shafts which extend through the mats from the panels will determine the exact horizontal position of the panels.

The three bays of equipment in the transmitter as viewed from the front, starting on the right, will be referred to as the low frequency bay, the radio frequency bay and the power bay. The mats should be removed from the front of each bay before assembly is started. This may be accomplished by unlocking the mat locks with the keys which have been tied to the key transfer interlock and by removing two screws in the top of each bay which allows the mat to be pulled out at the top and lifted so as to disengage the two hooks which hold it in place at the bottom. The skids on which the transmitter was mounted for shipping should be removed and the transmitter set in place on wooden base which is furnished with the transmitter. This should be done carefully so as not to damage the equipment.

A detailed outline of the procedure to be followed in assembling the apparatus in each bay is given below.

3.1 Low Frequency Bay

The attenuator panels, the jack panel, the distribution panel, the key panel and rectifier #1 panel are the only panels that have not been removed from this bay. The panels in this bay should be assembled in the order given below.

Order of assembly:

- Fan
- Rectifier #6
- Rectifier #5
- Modulator 1B Panel
- Modulator 1A Panel
- Double Sideband Panel
- Multi-Circuit Low Frequency Panel
- Crystal Filter Panel

3.11 Fan

The fan should be mounted in the large hole provided in the top of this bay. The fan is held to the underside of the top of the bay by means of three bolts. These bolts also clamp a protective screen and ring on the top side of cabinet. See Photograph No. 89722. The bolts, the screen and the ring are attached to the fan for shipment. There are two leads from the motor which must be connected to the terminal blocks which are located on the left-hand side of this unit as viewed from the rear. (In the high frequency unit the terminals for the fan are on the right-hand side as viewed from the rear).

3.12 Rectifier #6

The rectifier has one terminal block on the left side as viewed from the rear. (See Photograph No. 89717). The terminals are numbered progressively from 1 to 8 beginning at the top. ES-782853 lists the interconnection terminals, etc. for the panel. To facilitate mounting the rectifier unit, the right-hand copper oxide stack should be loosened from the panel. The wires need not be disconnected.

3.13 Rectifier #5

Same as rectifier #6.

3.14 Modulator 1B

This modulator has two terminal blocks on the left-hand side as viewed from the rear. (See Photograph No. 89716). The terminals are numbered progressively from 1 to 16 beginning at the top. ES-782853 lists the interconnections, terminals, etc., for this panel.

3.15 Modulator 1A

This modulator has two terminal blocks on the left-hand side as viewed from the rear. (See Photograph No. 89716). The terminals are numbered progressively from 1 to 16 beginning at the top. ES-782853 lists the interconnections, terminals, etc., for this panel.

3.16 Double Sideband Panel

As viewed from the front this panel has two terminal blocks on the upper right-hand corner on the front of the panel under the mat. (See Photograph No. 89728). The end of the cable should be inserted through the bushing in the end of the panel before securing the panel to the rack. The terminals are numbered progressively from 1 to 16 going from left to right. ES-782853 and ES-782854 list the interconnections, terminals, etc., for this panel. There are two, 3 watt type S6, 130 volt Mazda lamps, which should be installed at this time in the lamp sockets which are mounted on the bracket which extends from the front of this panel. These lamps will be found in the shipment of vacuum tubes.

In case a double sideband panel is to be installed in a D-156000 Transmitter not previously so equipped, it will be necessary to remove the cover strip over the holes in the low frequency unit mat and to install the nameplates associated with the double sideband panel. View (Z) on ESR 793700 shows the position and method of mounting.

The looped connections in the interconnecting cable should be cut and the connections made in accordance with the tables of interconnections. The strap on terminals 13 and 14 of the multi-circuit low frequency unit should be removed.

3.17 Multi-Circuit Low Frequency Panel

This panel has two terminal blocks on the left-hand side as viewed from the rear (See Photograph No. 89724). The terminals are numbered progressively from 1 to 16 beginning at the top. ES-782854 lists the interconnections, terminals, etc., for the panel. There is one lead covered cable which

terminates on the panel. The inner conductor of this cable terminates on transformer T7 terminal #1 as shown on Photograph No. 89724. (See also ES-782854). The lead cover is connected to the transformer case by means of the terminal on the left-hand side of the case as viewed from the rear. The shaft of the general radio potentiometer, for control of "Carrier Level" which extends through the front mat has been removed for shipment. The potentiometer parts have been attached to the 1/4 inch diameter bakelite shaft which is attached to the panel for shipment. The potentiometer arm does not have to be removed from the shaft in mounting. The potentiometer must be removed from the panel, the shaft inserted in the potentiometer from the winding side and the collar attached to the end of the shaft by means of the set screws in the collar. The potentiometer may then be mounted on the panel. A clearance hole has been provided in the key panel for the potentiometer shaft.

3.18 Crystal Filter Panel

Special care should be used in handling this panel since any severe jar might injure the quartz crystal elements which are a part of the filter.

This filter panel has only one terminal block. Some of the connections are made directly on the filter. The terminals on the filter are numbered progressively from 1 to 4 from the top. There are the same number of terminals on the terminal block but they are not numbered progressively. The terminals on the terminal block are the extended terminals of filter for channel B, which is mounted with its back to the back of the filter for channel B and on the mat side of the panel. Both the filter and the terminal block have a ground terminal marked (G). ES-782853 lists the interconnections, terminals, etc., for the panel and ES-751333 is a wiring diagram for this panel.

3.19 Installation of Meter Mat and Knob

Meter M12, a 0-5 milliammeter should be installed in the mat at this time. The two 4-40 machine screws are placed in the two tapped holes in the mat. The special slotless headed screw is inserted in the remaining hole and the nut tightened from the rear of the mat. These screws have been placed in a marked envelope for shipment.

When the above work has been completed the mat for this bay may be installed. The dial for control of "Carrier Level" may then be attached. This has been tagged in accordance with the item number shown on ESR-793700. The shaft should be turned as far as it will go in a counter-clockwise direction and the dial then attached with the zero mark on the dial opposite the index. The tone telegraph key knob, the two knobs for the channel key and two knobs for the double sideband panel have been removed and placed in an envelope for shipment.

3.2 Radio Frequency Bay

There are two isolantite lead-in bushings to be mounted in the two holes provided in the top of this bay. (See Photograph No. 89726). Each bushing consists of two isolantite parts which are held together and to the panel by means of the threaded rod which passes through them. A lead washer is furnished for each bushing which should be placed under the half which goes on the top of the panel.

The grounding panel, the monitor panel and the low power high frequency panel are the only panels that have not been removed from this bay. The panels in this bay should be assembled in the order given below.

Order of assembly:

- Antenna Matching Panel
- Amplifier #5 Panel
- Amplifier #2 Panel
- Amplifier #3 Panel
- Amplifier #4 Panel
- Fan

The position of these panels on the racks can be determined by referring to the screw holes in the racks as shown on ESR-793700. (See also Photograph No. 89722). The exact horizontal position of the panels is determined by shafts projecting from the panels which must pass through the holes provided for them in the mats. The screws which hold these panels to the rack should not be tightened too firmly until the mat is in place.

3.21 Antenna Matching Transformer Panel

This panel does not have any terminal block since there are only four radio frequency leads which connect to the equipment on the panel. These leads are tied together and attached to the panel for shipment. Two of these leads connect to the lead-in bushings as shown in Photographs No. 89719

and No. 89722 and to the rear bearing terminal of L₁ and L₂. The other two leads which connect to the switch on this panel and to condensers C₁₄ and C₁₅ on amplifier #5, as shown on Photograph No. 89719, should not be installed until amplifier #5 is in place.

3.22 Amplifier #5 Panel

This panel has two terminal blocks on the right-hand side as viewed from the rear. (See Photograph No. 89714). The terminals are numbered from 2 to 13. The sheath of the lead-covered conductor is connected to the ground terminal on the panel just above the terminal blocks. ES-782858 lists the "Interconnections and External Connection" for this panel. From this it will be noted that there is one high voltage lead which connects to the common connection (terminal #1) of the two radio frequency chokes L₅ and L₆ and C₂₀ which are located under the shelf. The way this lead is brought in and terminated is shown in Photograph No. 89714.

The quartz condenser C₁₀ should be mounted above the fibre cam shaft as shown in Photograph No. 89719. The electrical connections are shown on the wiring diagram ESR-782861. This condenser has been tagged and packed for shipment with amplifier #5.

The lead-covered wire by means of which some of the radio frequency output is applied to the monitor, terminates on the small terminal block (B2) on the right side at the top of the shelf as viewed from the rear. This terminal block is attached to the interconnecting cable for shipment. It should be mounted on the two studs on the shelf as shown in Photograph No. 89719.

The radio frequency leads from condenser C₁₄ and C₁₅ on this panel to the switch S₁ on the antenna matching panel may now be connected. (See Photograph No. 89719).

3.23 Amplifier #2 Panel

This panel should be mounted just above the low power high frequency panel as indicated on ESR-793700. There is one terminal block on the right-hand side of this panel as viewed from the rear. (See Photograph No. 89721). The terminals are numbered from 1 to 8. ES-782857 lists the "Interconnections and External Connections" for this panel. There is a small shield for the tube which is mounted partly in the low power high frequency unit and partly in this panel. This shield is held in place by two screws which engage threads in a collar that is mounted on the bottom of

amplifier #2 panel. This shield is tagged and has been packed separate from the panel. The screws have been placed in a marked envelope for shipment.

The plug-in pretuned circuits mounted in this panel have been removed for shipment.

3.24 Amplifier #3 Panel

This panel should be mounted just above amplifier #2 panel as indicated on ESR-793700. There is one terminal block and one high voltage terminal on the lower right-hand side as viewed from the rear. The terminals are numbered from 1 to 9. ES-782857 and ES-782858 lists the "Interconnections and External Connections" for this panel. (Also see Photograph No. 89721).

There are two collars mounted on the bottom of this panel which serve as partial shields for amplifier #3 tubes which extend up into this panel. These collars have been drilled and tapped and the top of amplifier #2 panel has been drilled for screws to hold this collar in contact with amplifier #3 panel. The screws for holding these collars in contact with the top of amplifier #2 panel must be inserted from amplifier #2. The screws have been placed in a marked envelope for shipment. The panel may have to be shifted slightly in order to line up collars and control shafts.

3.25 Amplifier #4 Panel

This panel should be mounted in place just above amplifier #3 panel as indicated on ESR-793700. There is one terminal block and one high voltage lead terminal on the lower right-hand side as viewed from the rear. The terminals are numbered 1 and 2. ES-782858 lists the "Interconnections and External Connections" for this panel. (Also see Photograph No. 89721). This panel has two collars mounted on the bottom similar to amplifier #3 panel. The screws for holding these collars in contact with the top of amplifier #3 panel must be inserted from amplifier #3. The screws have been placed in a marked envelope for shipment. The panel may have to be shifted slightly in order to line up the collars and control shafts.

There is a balanced air condenser mounted on the top of this panel which is used to neutralize amplifier #5. The cable which is used to operate the condenser is permanently attached to the drum on the condenser shaft. A spring inside the drum keeps the correct tension on the cable and allows the cable to be installed without disconnecting it from the condenser shaft drum. The cable lead on the left-

hand track of the condenser shaft drum should go to the top one of the two idler pulleys on amplifier #5 panel and thence to the top of the drum on the shaft which extends through the mat. The cable makes one and one-half turns around this drum, but is not fastened to it in any other way. (See Photographs No. 89714 and 89719). The coils L₁ and L₂ in the neutralizing circuit which are tied to the bottom side of the shelf on amplifier #5 panel should now be installed as shown in Photograph No. 89715.

3.26 Installation of Monitor and Low Power High Frequency Equipment

The monitor and low power high frequency equipment are separately mounted on chassis so that they may be readily removed from the panels for check and inspection. The monitor is shown in Photographs No. 89741 and 89743. The low power high frequency equipment is shown in Photographs No. 89744 and 89746. This equipment has been removed from the panels for shipment. The equipment may be slid into the panels by lining up the shafts with the holes provided in the front of the panel. When the unit is in the proper front to back position the two small bars on the rear of the equipment will drop into two slots in the bottom of the can. No other locating device or clamping screw is required. All connections to the equipment except the connection to the grid of amplifier #2 are made by means of plugs which fit into jacks provided in the equipment. The plugs are permanently attached to the interconnecting cable.

The 5AA quartz plates have been removed, and their positions marked on tags which are attached for shipment.

3.27 Installation of Mat, Knobs and Meters

The instructions for installing the knobs and meters on the mat are given here for the sake of completeness, but it is recommended that the work be postponed until after the assembly of the power bay has been completed.

Before the mat on this bay is installed all the meters must be installed in the mat. The screws for the meters and all other mat screws for this bay have been removed and placed in an envelope for shipment. Each meter and knob has been tagged in accordance with the item numbers on ESR-793700. Tags are also attached to one of the leads to each meter giving the polarity for that lead.

Each meter is fastened to the mat by means of two screws which fit into the two tapped holes and by a special slotless headed screw which is held by a nut on the rear of the mat.

The switch S₃ in the output lead of "Output Indicator Amplifier #5" should be attached to the mat by means of two round head screws and the lead connected as shown in view "A" of ESR-793700. The switch has been removed from the mat and tied to the rack for shipment.

There are two small flat head screws which are used to hold the mat for this bay in contact with the panels. One of these is located just below the shaft for "Inductance Amplifier #5" and other is just above the shaft for "Inductance Amplifier #3". The two screws have been removed and placed in the marked envelope with the meter screws.

The dials have been tagged in accordance with the item numbers given on ESR-793700.

The "Output Transfer" switch knob should be attached to the left-hand shaft of the "Antenna Matching Transformer Panel" with the marking "Antenna" opposite the index when the switch blades are in contact with the jaws on the left-hand side of the switch as viewed from the rear.

The small hand cranks for rotating "Output Transformer Inductance", "Inductance Amplifier #4" and "Inductance Amplifier #3" may all be attached without regard to their position since the dial indicators are independent of the cranks.

The knob "Output Transformer Capacitance" should be attached to the shaft with zero on the dial opposite the index when the condenser is set at minimum capacity.

The knob "Frequency Range Amplifier #5" should be attached with the marking "High" opposite the index when the cams on the rear of the shaft are in the position to not compress the springs which put the condensers C₆, C₇, C₈, C₉, C₁₂ and C₁₃ in the plate circuit of amplifier #5.

The knob "Inductance Amplifier #5" is arranged so that one of two inductances L₃, L₄, may be rotated plus or minus a half turn in respect to the other, or both rotated together, by means of two concentric cones, one of which is fastened to each of two concentric shafts. The knob consists of four parts; inner cone, outer cone, spring and cap screw. To assemble the knob, the inner cone which bears the plus and minus markings, should be mounted on the outer shaft after the rollers on the inductances have both been put at one or the other extreme ends of the inductances. The outer cone should then be slipped over the inner shaft which is keyed. There are two possible positions for this cone. The correct position is the one which puts the index on the outer cone at zero on the scale of the inner cone.

The springs should then be installed concentric with the shaft and the cap screw screwed in by means of a strong pair of dividers.

The knob "Neutralize Amplifier #5" should be mounted with zero opposite the index when the condenser is set at maximum.

The knobs "Output Loading Amplifier #4", "Output Loading Amplifier #3", "Tuned Circuit Selector Amplifier #2", "Tuned Selector Harmonic Generator Modulator No. 3, Amplifier #1", "Crystal Selector", "Input Selector Monitor", and "Tuned Circuit Selector Monitor" should be mounted in place with number 1 opposite the index after the shafts have been turned as far as possible in a clockwise direction.

The knobs "Output Harmonic Generator" and "Output Monitor, H.G." should be mounted in place with the zero mark opposite the index after the shaft has been turned as far as possible in a counter-clockwise direction.

The knob "Input Attenuator Monitor" should be mounted in place with 100 on the dial opposite the index after the shaft has been turned in such a position as to give a minimum output from the monitor. This position has to be determined after the transmitter is placed in operation.

Shield covers for the rear openings of the amplifier #2, low power high frequency, and monitor panels should be placed in position before operating the transmitter.

3.3 Power Bay

The distribution panel, the voltage regulator panel, rectifier #2 panel, rectifier #3 panel, rectifier #4 panel A, and rectifier #4 panel B, are the panels that have not been removed from this bay. However, transformers T₁, T₂ and T₃ have been removed from rectifier #4 panels A and B. Equipment and panels in this bay should be assembled in the order given below.

Order of assembly:

- Rectifier #4 Transformer (Panel A)
- Rectifier #4 Transformer (Panel B)
- Rectifier #4 Panel C
- Screen Supply Regulator Panel
- Voltage Regulator
- Voltmeter Switching Panel

3.31 Rectifier #4 Transformer (Panel A)

One of the large plate transformers, marked T₁, for rectifier #4 should be mounted on the front of this panel as shown in Photograph No. 89726. The leads are tagged and the

terminals have been marked according to the wiring diagram ES-754911. A fuse block is located on the lower right-hand side of this panel as viewed from the rear. A rear view of this panel is given in Photograph No. 89721. The incoming, three phase, 230 volt power cable, terminates on the right-hand terminals of this fuse block as indicated in ES-782859.

3.32 Rectifier #4 Transformer (Panel B)

The large plate transformers marked T_2 and T_3 for rectifier #4 should be mounted on this panel as shown in Photographs No. 89726 and 89721. Two of the bolts should be inserted from the front and two from the rear of the panel. This will allow the removal of either of the transformers without removing the other. The leads to these transformers are tagged and the terminals have been marked according to "Wiring Diagram" ES-754910. There are five separate terminals at the top and seven at the bottom of this panel as can be seen in Photograph No. 89721. The terminals at the bottom correspond with seven terminals at the top of panel A. Seven hollow, metallic connectors two inches long and one-half inch in diameter are provided for establishing these inter-panel connections. The connectors have been left in place for shipment.

3.33 Rectifier #4 (Panel C)

This panel should be located on the rack in accordance with instructions on ESR-793700 so as to allow space between it and rectifier #4 and panel B, for the voltmeter switching panel.

There are no terminal blocks on this panel. There are five separate terminals at the bottom of the panel which are opposite those at the top of panel B. Two hollow metallic connectors two inches long and one-half inch in diameter are provided for establishing the two inter-panel connections at the lower right side of this panel as viewed from the rear. Three Western Union, 2,500 volts, 2 ampere, standard fuses are used to establish the three inter-panel connections at the lower left-hand side of this panel as viewed from the rear. The two hollow connectors and the three fuses have been removed and placed in a marked envelope for shipment. A lead in the interconnecting cable opposite this panel on the left-hand side as viewed from the rear must be soldered to the left-hand terminal of the choke L_1 . (See Photograph No. 89719).

The "Cory" interlock unit which is mounted on the front of this panel should be connected up with the switch on the antenna matching transformer panel. The key for this lock has been tied to it. A small bar about 1/4" square and 16" long is used for this purpose. This bar has been tied to the rack for shipment. The bar has a bolt and nut at one end and a pin in the other. Both should be removed. The pin end should be inserted in the guide which is mounted on the frame between the power bay and the high frequency bay and then connected to the back of the interlock arm by means of the screw. The pin may then be inserted. (See Photograph No. 89726).

3.34 Screen Supply Regulator Panel

This panel does not have any terminal block, but has several terminals as may be seen from Photograph No. 89718.

The terminals on this panel have been marked on the panel and may be checked on the wiring diagram ESR-782870. ES-782857 lists the interconnections and external connections for this panel. There is one connection between this panel and rectifier #4 panel C which is not mentioned on ES-782857. The connection is soldered to terminal 1 on T₄ and will be left this way for shipment. The other end of this connection should be fastened to the strap which connects the lower ends of R₃ and R₅ together. The resistances R₂ = 35 ohms, R₃ = 100,000 ohms, R₄ = 20,000 ohms, R₅ = 15,000 ohms and R₆ = 1,000 ohms have been removed from the panel for shipment.

3.35 Voltage Regulator Panel

This panel has been left in place but the voltage regulator itself has been removed for shipment. The regulator should be mounted with the screws which have been left in the panel and the regulator should be connected as is shown on the wiring diagram ESO-754912. (See Photograph No. 89720.)

3.36 Voltmeter Switching Panel

This panel should be mounted just under "Rectifier #4 Panel C". (See Photograph No. 89721). It may be mounted most easily by slipping it into place from the front of the transmitter. It has two terminal blocks at the left-hand side as viewed from the rear. The list of "Interconnections and External Connections" for this panel is given in ES-782856.

3.37 Installation of Mat, Knobs and Meters

The mat on this bay may be installed in the same manner as those on the other two bays, but the following equipment should be installed before the mat is put in place.

The jack labelled "Monitor" is attached to the inter-connecting cable. It should be fastened to the mat by means of the small screw which screws into the back of the bakelite bushing in the mat.

The two meters and the elapsed time indicator should be installed according to the information given on ESR-793700. The screws for mounting the meters have been placed in a marked envelope for shipment.

The "3,000 Volt Switch" S_1 has been removed from the mat and tied to "Rectifier #4 Panel B" for shipment. The screws for attaching the switch to the mat have been placed in a marked envelope for shipment.

The mat may then be put in place. The dial "Voltmeter Switch" may be attached to the shaft with the index opposite the "Off" position after the shaft has been rotated as far as possible in a counter-clockwise direction.

3.4 Interlocks

The key transfer interlock should be mounted at some convenient point near the transmitter. Two holes in the back of the interlock have been provided for mounting it, but no bolts or screws are supplied. The front of the interlock may be removed when mounting the interlock. Care should be taken not to injure the locks in any way while they are removed from the case. Holes have been provided in two of the screws which hold the locks in the case so that a wire seal may be installed to prevent tampering after the interlock has been mounted.

An interlock is provided which is intended for installation in an associated power amplifier when the transmitter is connected to the power amplifier by means of a concentric transmission line. This interlock should be mounted on the door or means of access to the compartment containing the equipment excited by this transmitter. The key can only be obtained when the "Output Transfer" switch in the D-156000 Transmitter is in the antenna position. The interlocks may then be opened. The purpose of this is to protect operating personnel from burns due to radio power from the D-156000 Transmitter.

The equipment described in this bulletin
was designed and developed for the

Western Electric Company,

by

BELL TELEPHONE LABORATORIES

II. PHOTOGRAPHS AND WIRING DIAGRAMS

D-156000 RADIO TRANSMITTER

Photographs

89714 Amplifiers #4 and #5, Rear View.

89715 Amplifier #5, Rear View.

89716 Crystal Filter, First Modulators, Rectifier #1 and Jack Panel, Rear View.

89717 Rectifiers #5 and #6 and Distribution Panel, Rear View.

89718 Screen Supply Regulator Panel and Rectifier #5, Rear View.

89719 Antenna Matching Transformer and Amplifier #5, Diagonal View.

89720 Rectifier #4 Panel A, Rectifier #3, Rectifier #2, Voltage Regulator Panel and Distribution Panel, Rear View.

89721 Voltmeter Switching Panel, Rectifier #4 Panel B, Rectifier #4 Panel A, Rear View.

89722 Transmitter with Doors Open, Rear View.

89724 Attenuator Panel, Multi-Circuit Low Frequency Panel, and Double Sideband Panel, Rear View.

89725 Transmitter, Front View.

89726 Transmitter, Front View with Mats off.

89728 Attenuator Panels, Multi-Circuit Low Frequency Panel, Double Sideband Panel, Crystal Filter, First Modulators and Rectifier #1, Front View.

89741 Monitor, Top View, Cover off.

89743 Monitor, Bottom View.

89744 Low Power High Frequency Panel, Top View, Cover off.

89746 Low Power High Frequency Panel, Bottom View.

Drawings

ES-761264	D-156000 Radio Transmitter - Overall Front Dimensions.
ES-761265	D-156000 Radio Transmitter - Top Layout.
ES-761266	D-156000 Radio Transmitter - External Power Connections.
ES-761267	D-156000 Radio Transmitter - Base Layout.
ES-761268	D-156000 Radio Transmitter - Service Switch Mounting.
ESXX-782860	D-156000 Radio Transmitter - Schematic.
ESR-793700	Radio Transmitter - General Assembly.
ESR-793701	Double Sideband Panel - Assembly.

Wiring Diagrams

Low Frequency Bay

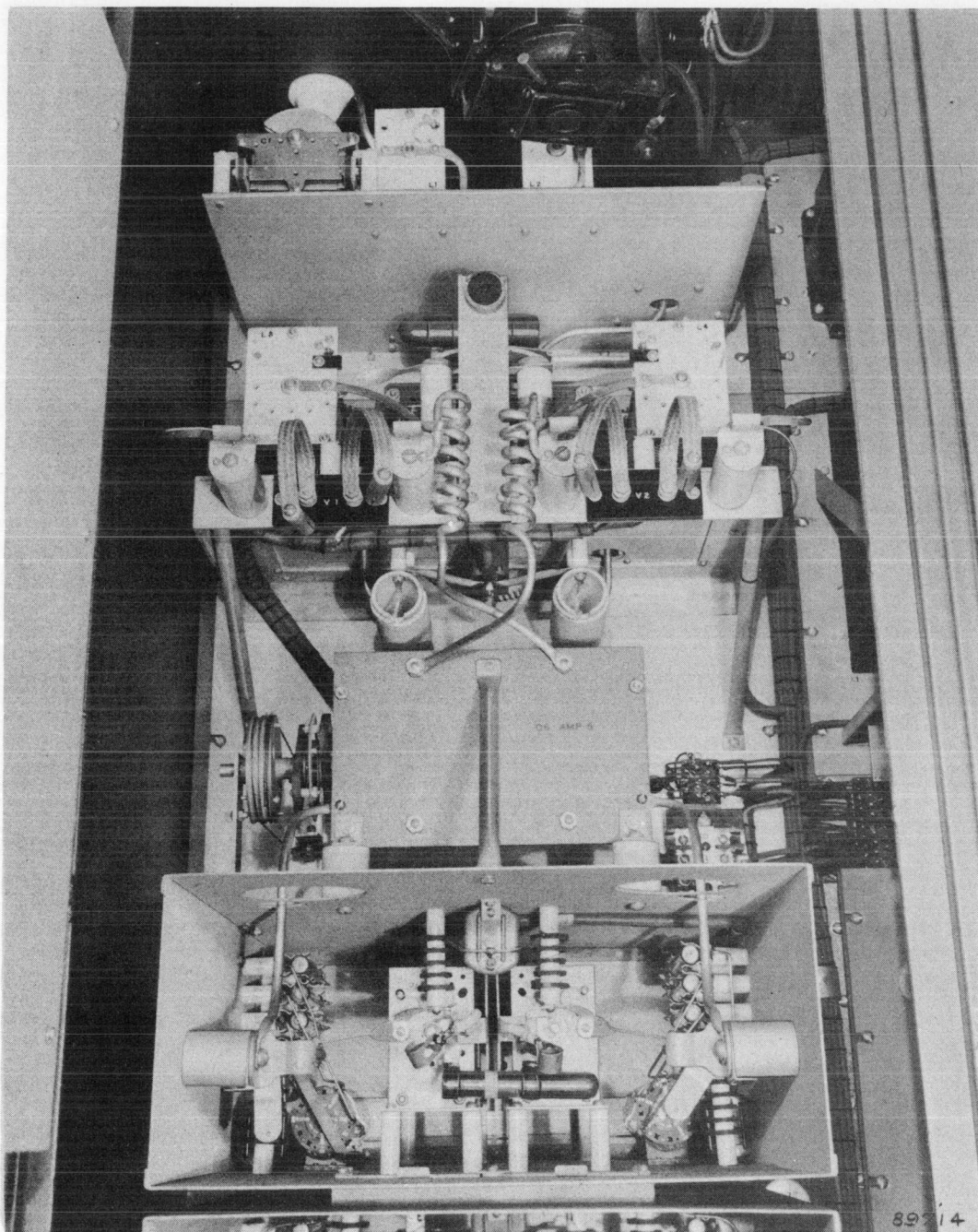
Attenuator Panels A and B	ESO-759142
Multi-Circuit Low Frequency Panel	ESX-751331
Key Panel	ESO-793075
Double Sideband Input Panel	ES-793703
Crystal Filter Panel	ESO-751333
Modulator 1A and 1B	ESO-751332
Rectifier #1	ESR-750883
Jack Panel	ESO-782862
Rectifier #5 and #6	ESR-782868

High Frequency Bay

Antenna Matching Panel	ESO-754909
Amplifier #5	ESR-782861
Amplifier #4	ESR-782869
Amplifier #3	ESR-782851
Amplifier #2	ESR-793727
Low Power High Frequency	ESX-793084
Monitor Panel	ESR-793079

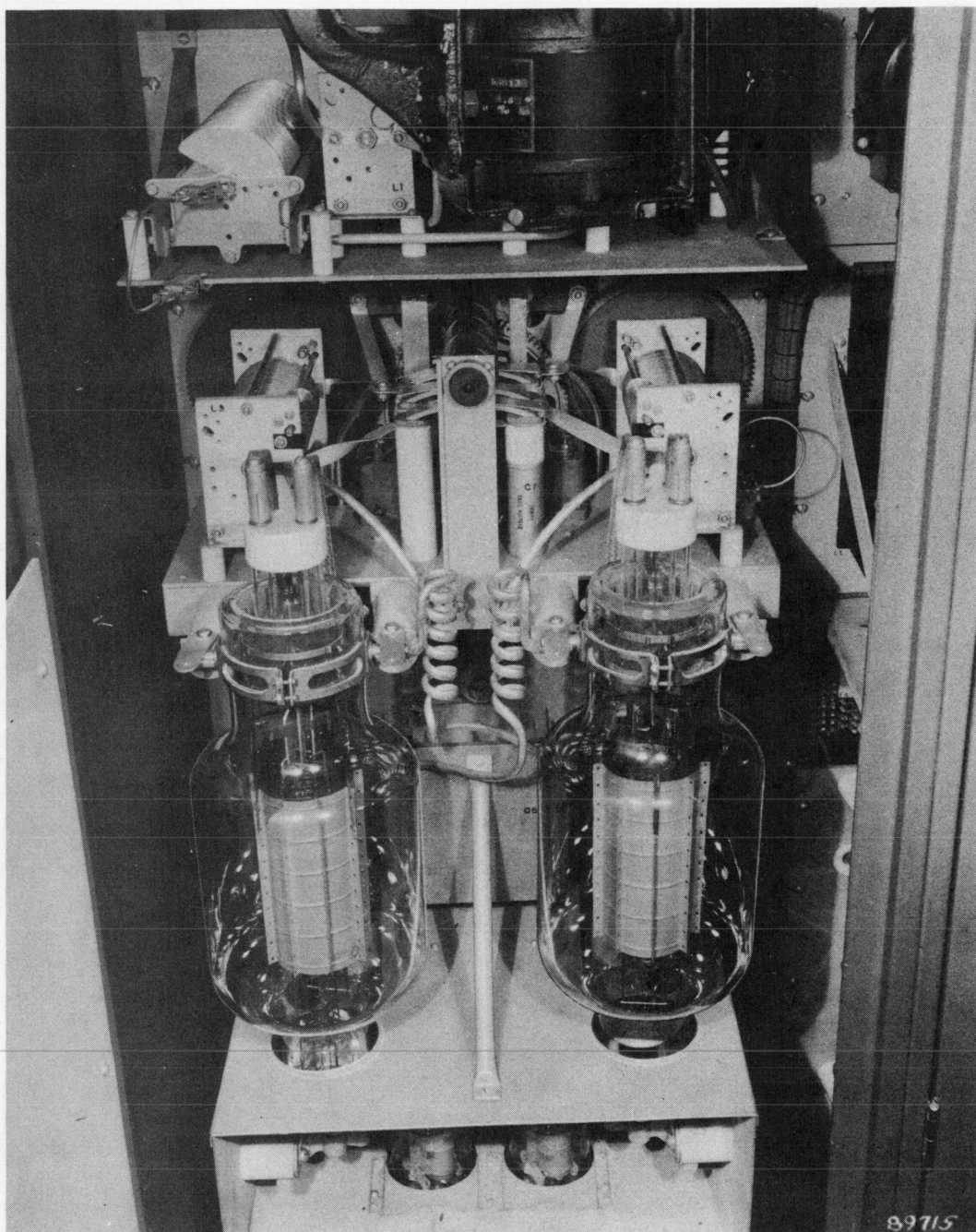
Power Bay

Screen Supply Regulator Panel	ESR-782870
Rectifier #4 Panel C	ESO-751338
Voltmeter Switching Panel	ESO-782871
Rectifier #4 Panel B	ESO-754910
Rectifier #4 Panel A	ESO-754911
Rectifier #3	ESR-751335
Rectifier #2	ERS-751334
Voltage Regulator Panel	ESO-754912
Distribution Panel	ESO-782863



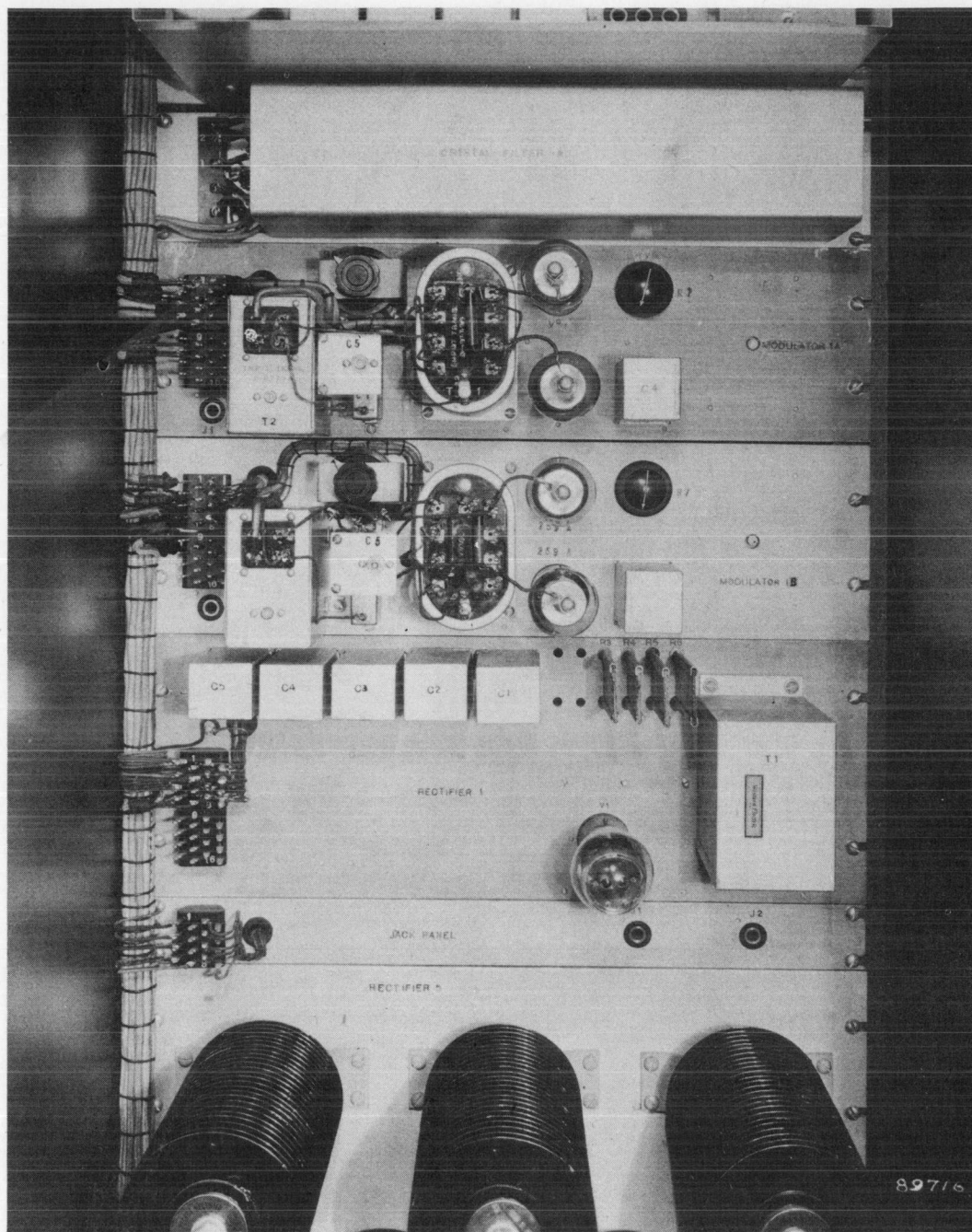
Amplifiers #4 and #5, Rear View

89714



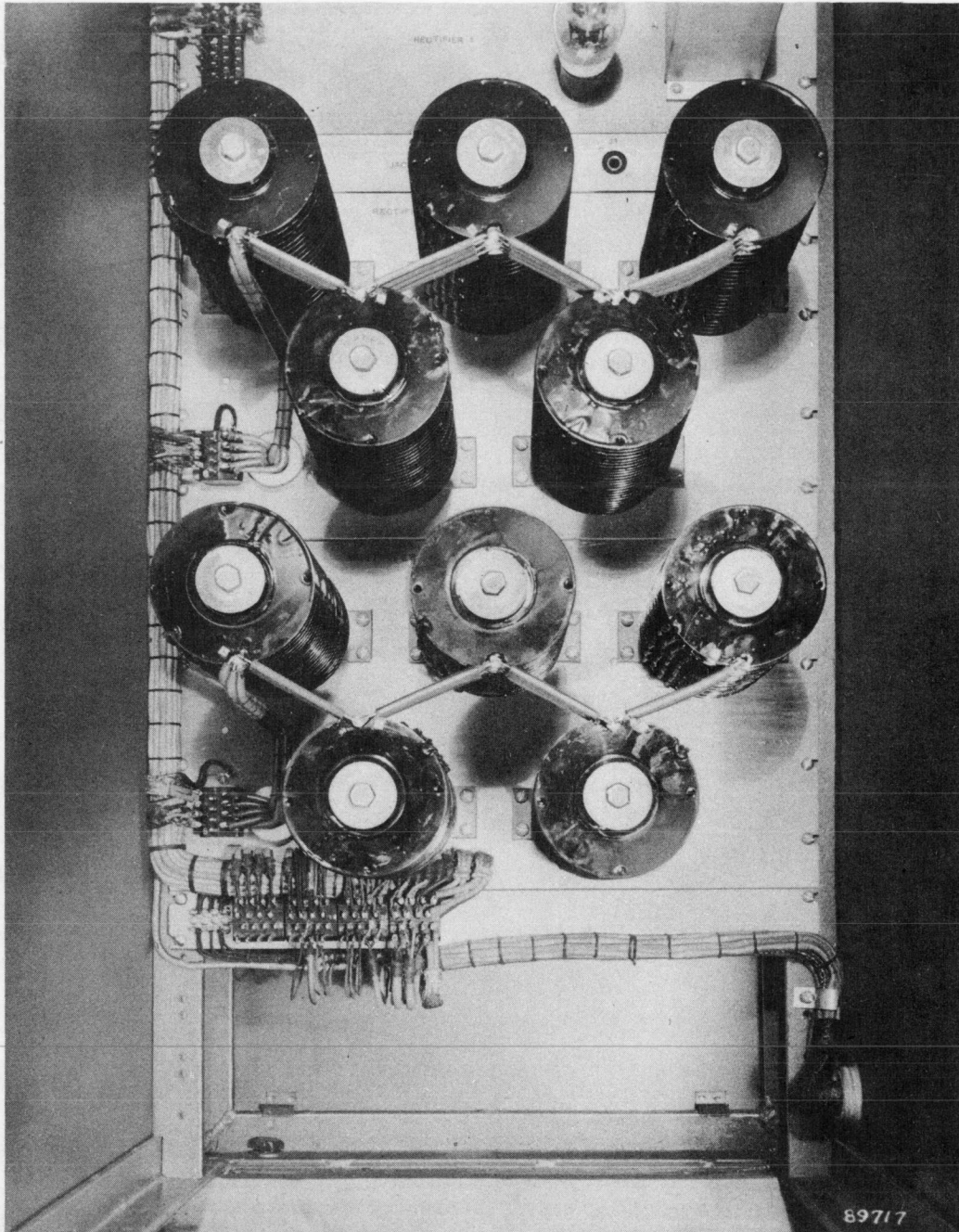
89715

Amplifier #5, Rear View



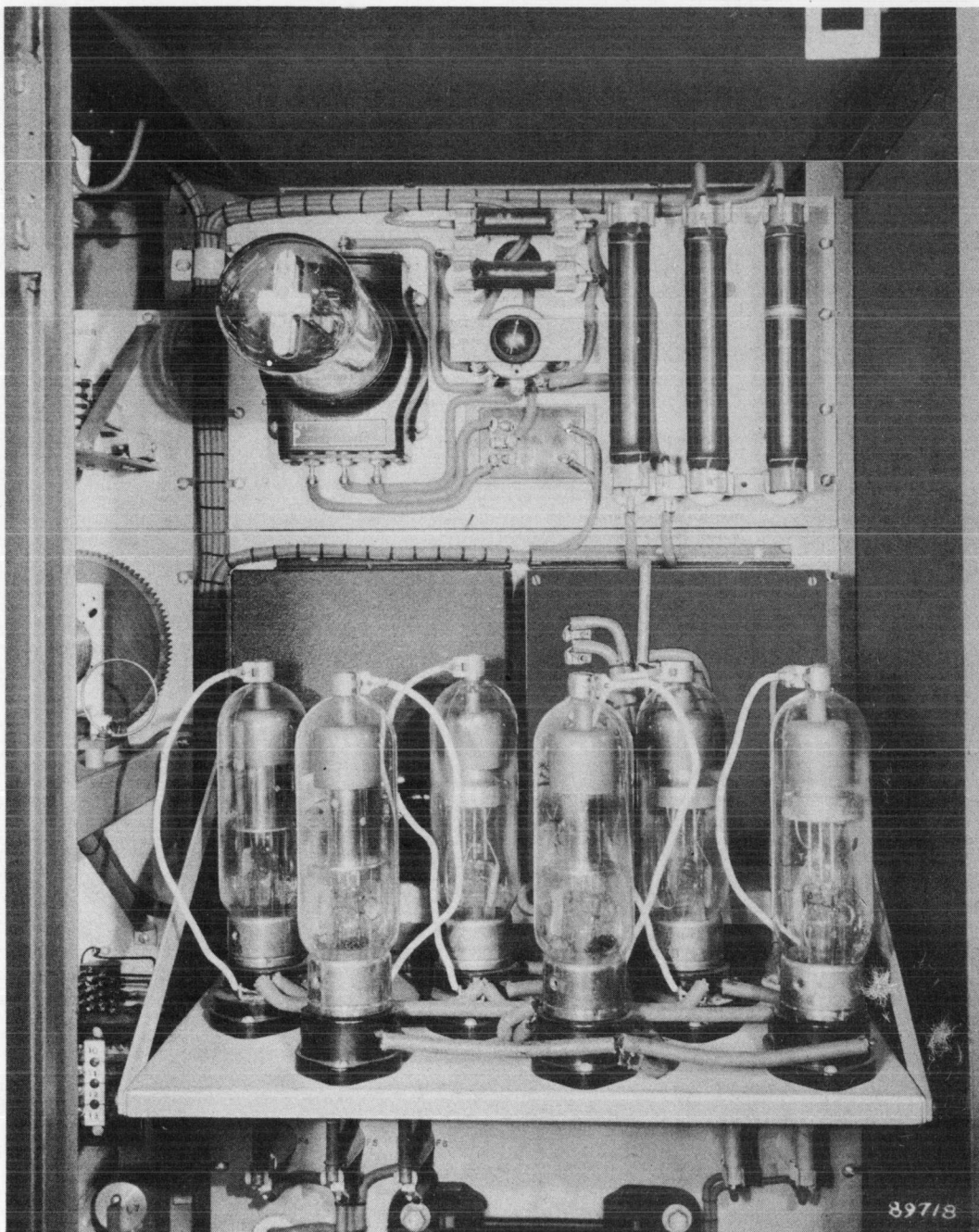
Crystal Filter, First Modulators, Rectifier #1
and Jack Panel, Rear View

89716



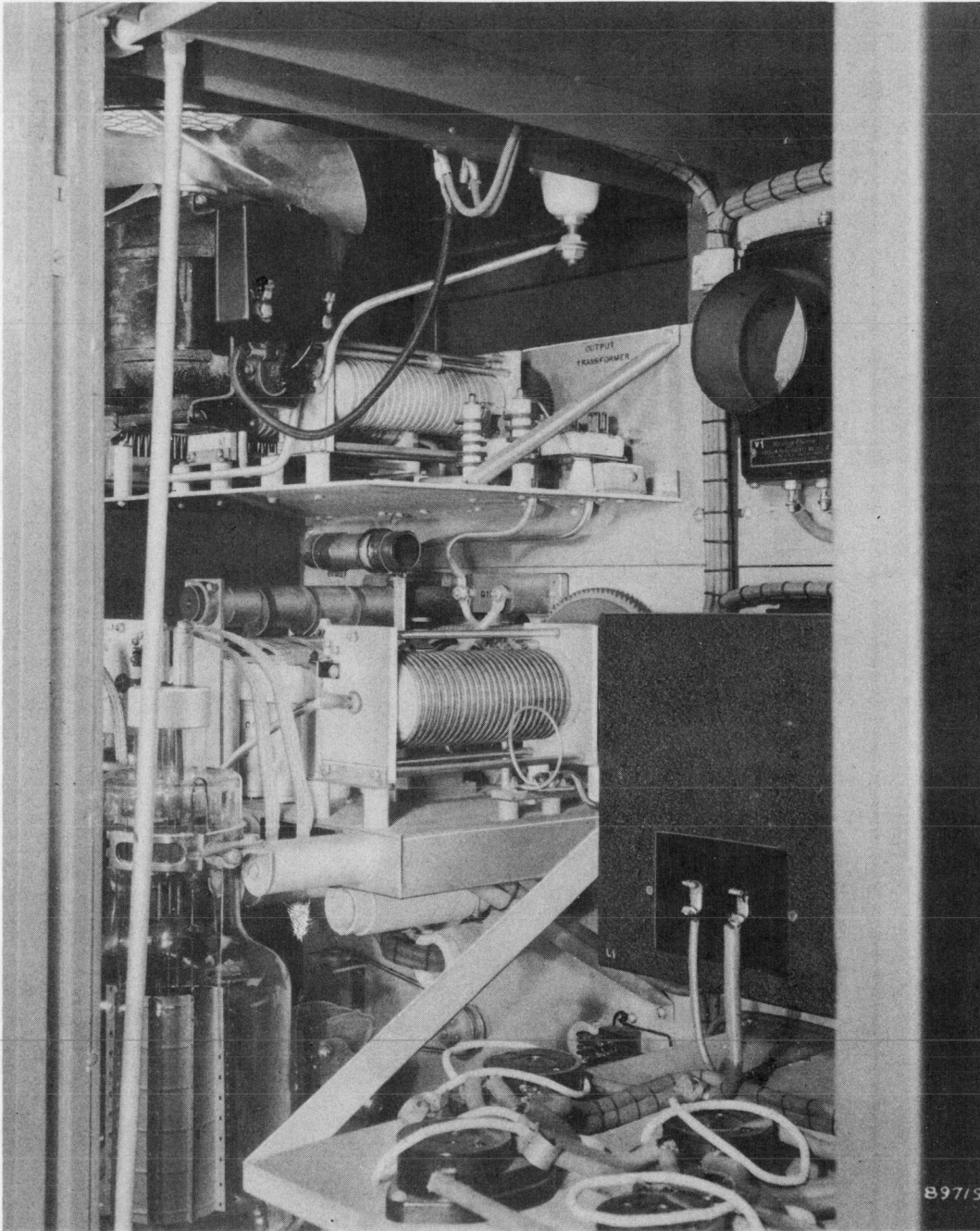
89717

Rear View for Input Connections



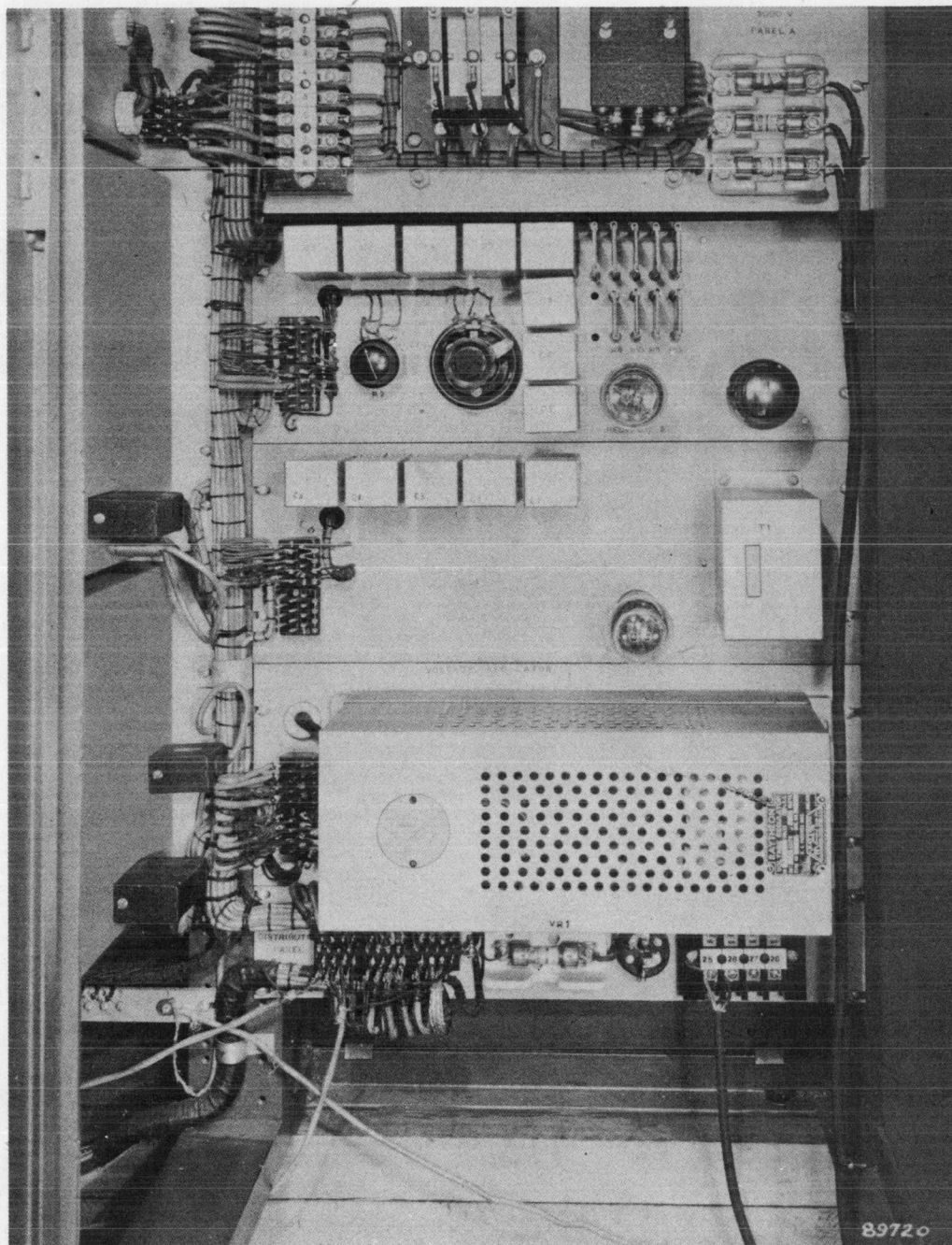
Screen Supply Regulator Panel and Rectifier #5,
Rear View

89718



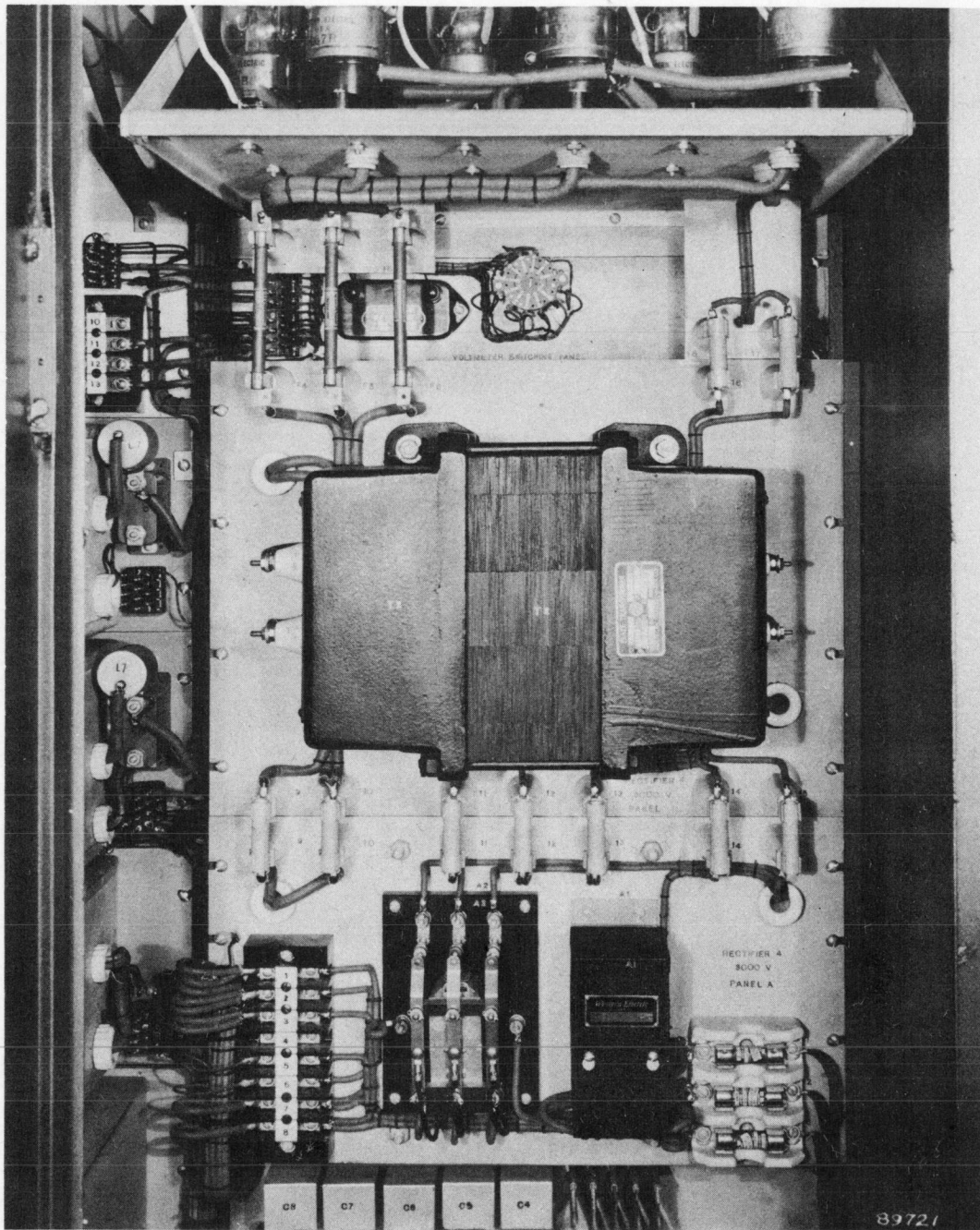
89719

Antenna Matching Transformer and Amplifier #5,
Diagonal View



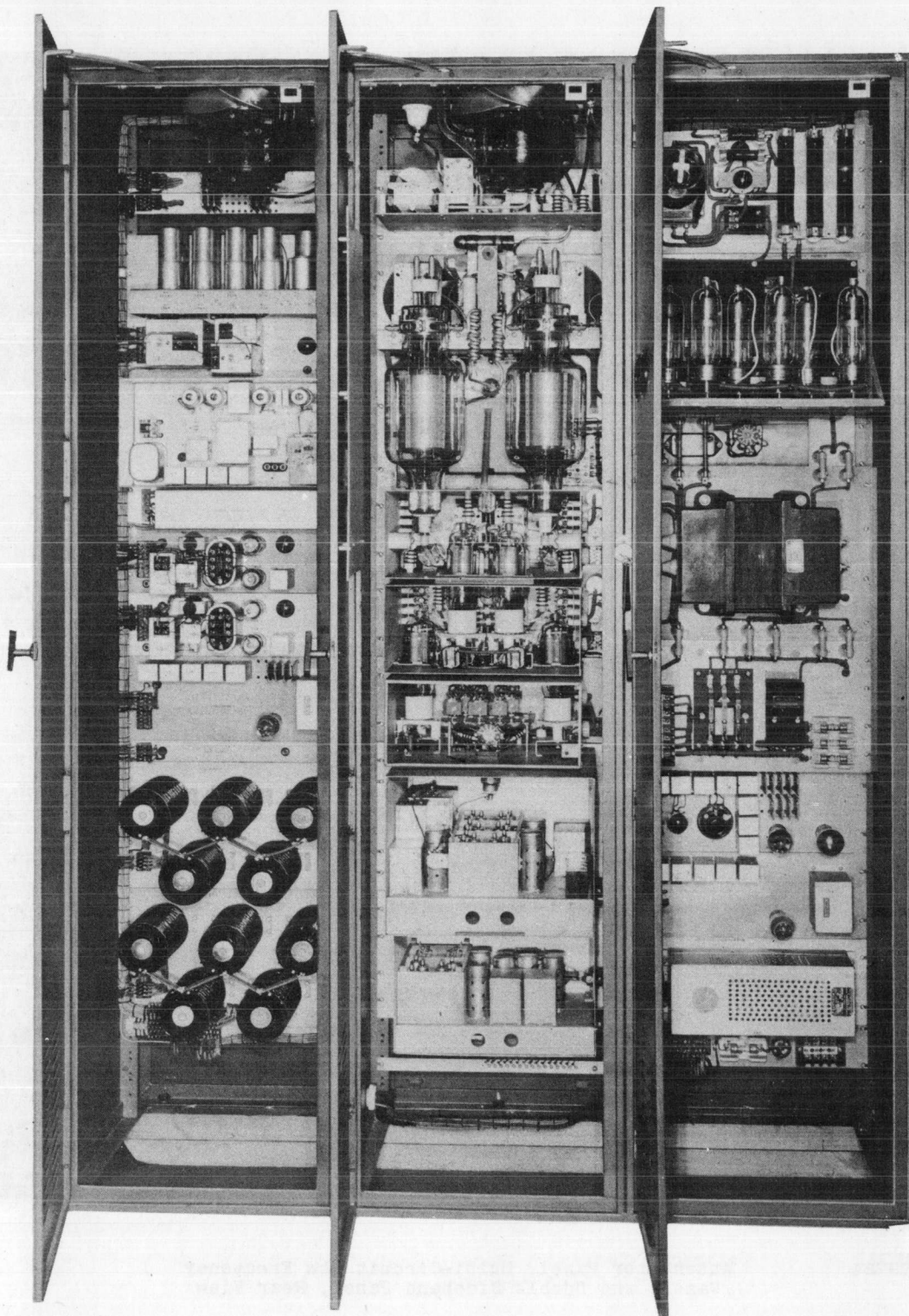
Rear View for Power Connections

89720



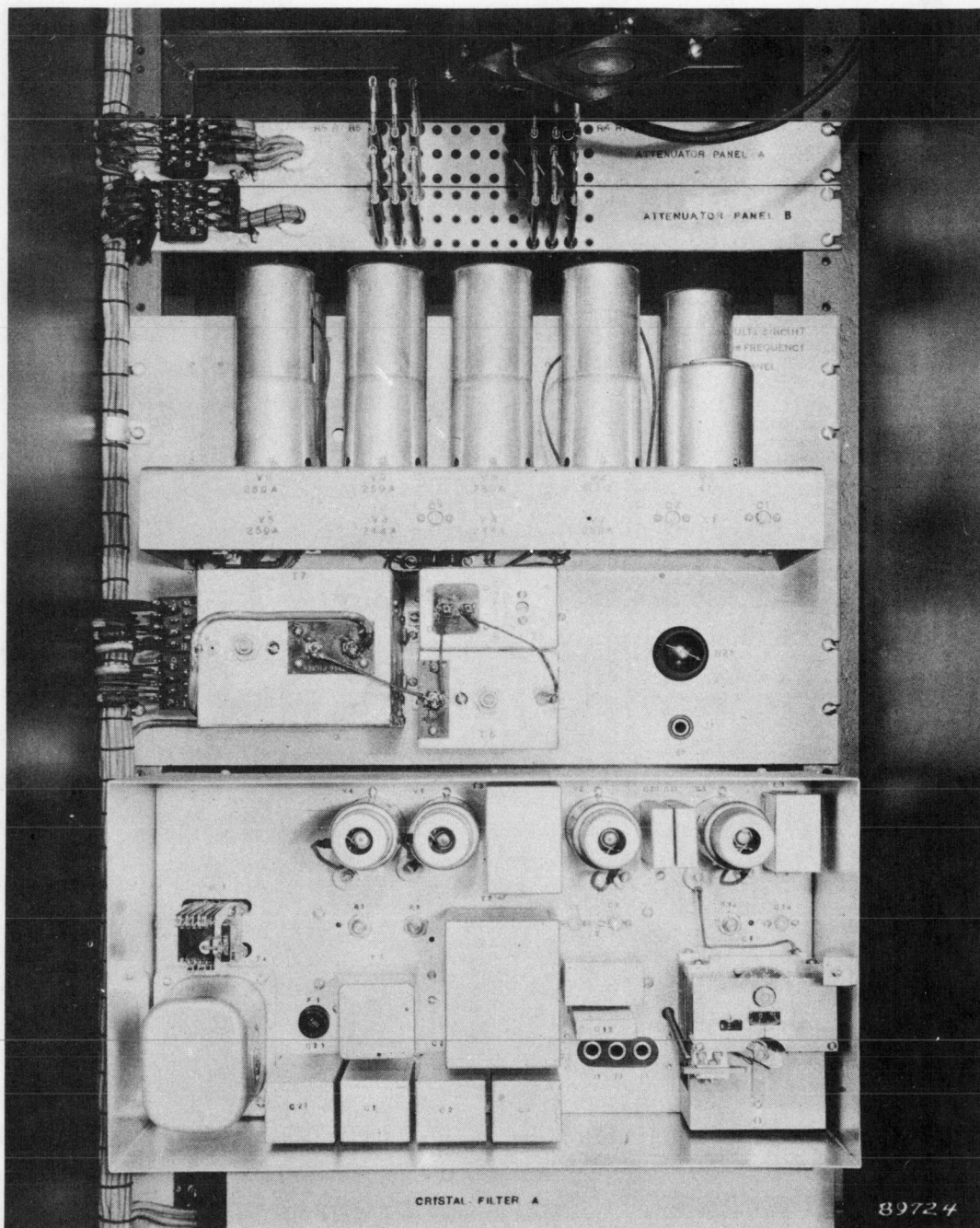
89721

Voltmeter Switching Panel, Rectifier #4 Panel B,
Rectifier #4 Panel A, Rear View



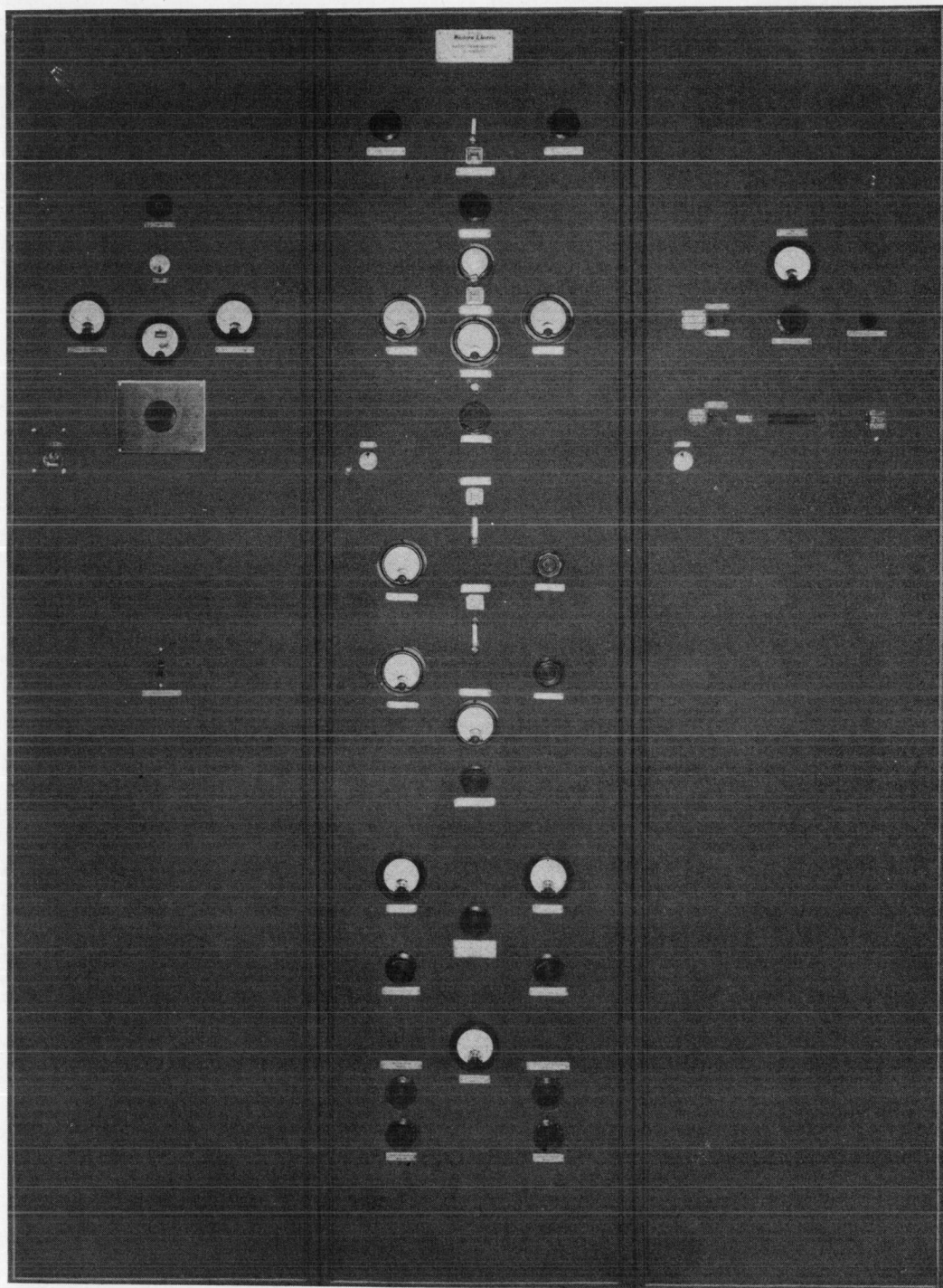
D-156000 Radio Transmitter, Rear View, Doors Open

89722



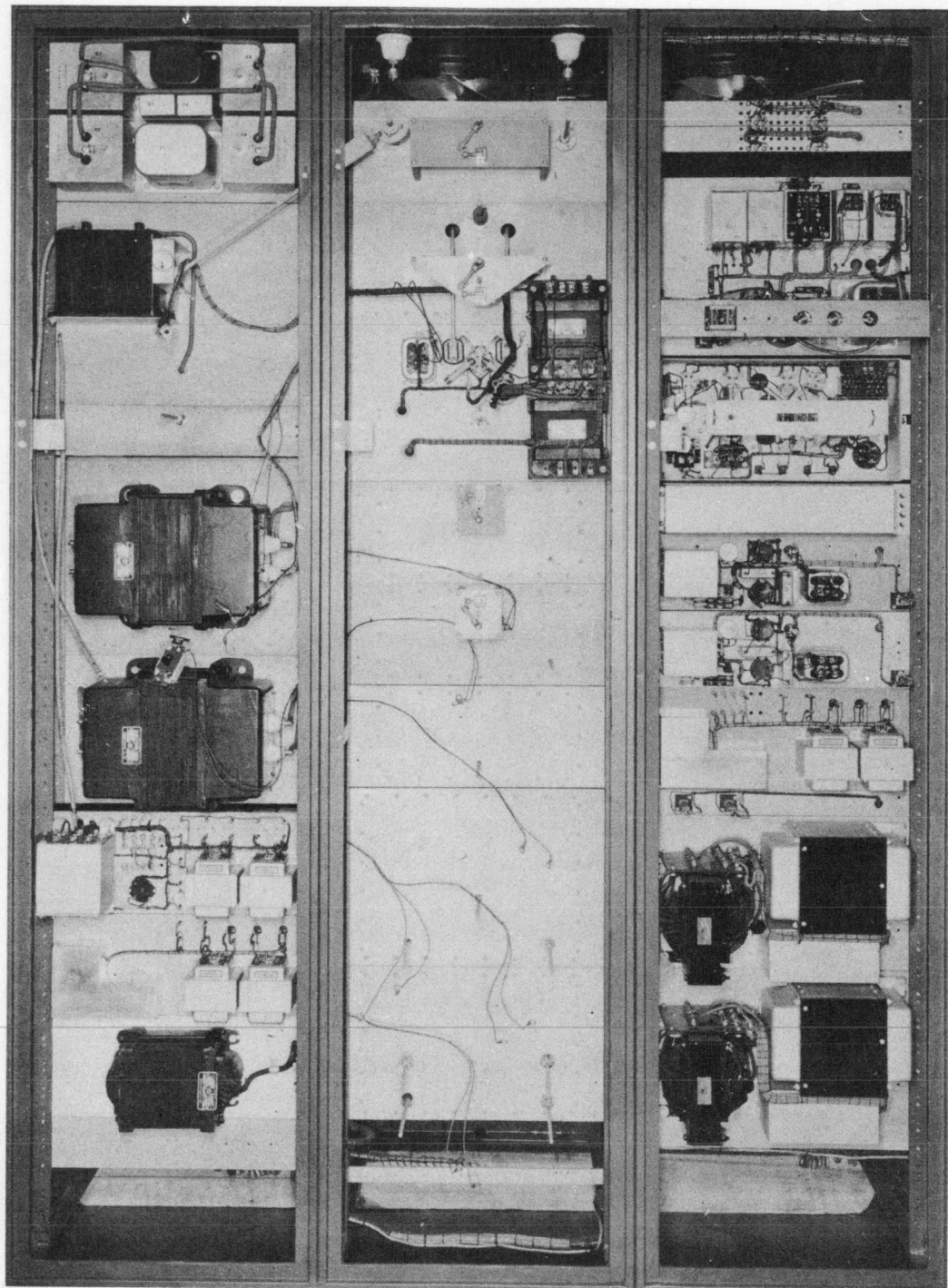
89724

Attenuator Panel, Multi-Circuit Low Frequency
Panel, and Double Sideband Panel, Rear View



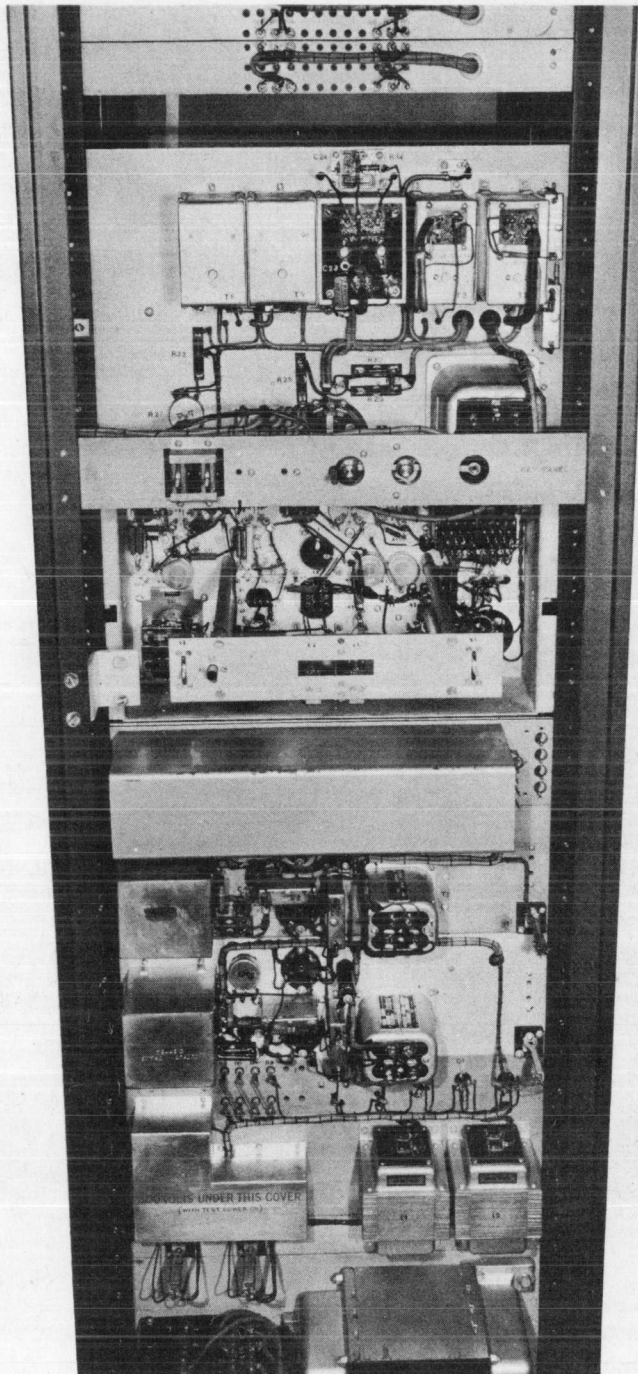
D-156000 Radio Transmitter - Front View

89725



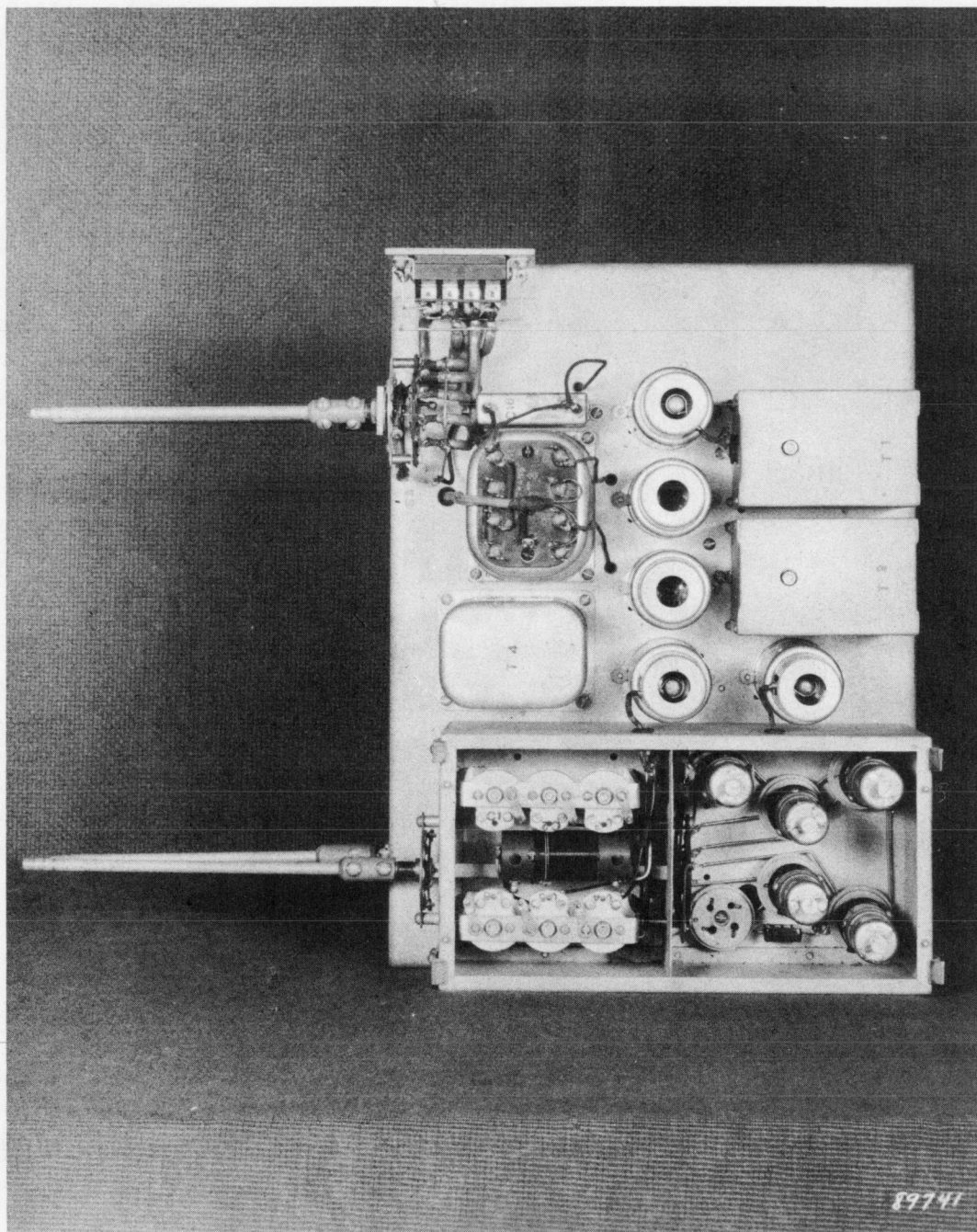
89726

D-156000 Radio Transmitter, Front View, Mats Removed



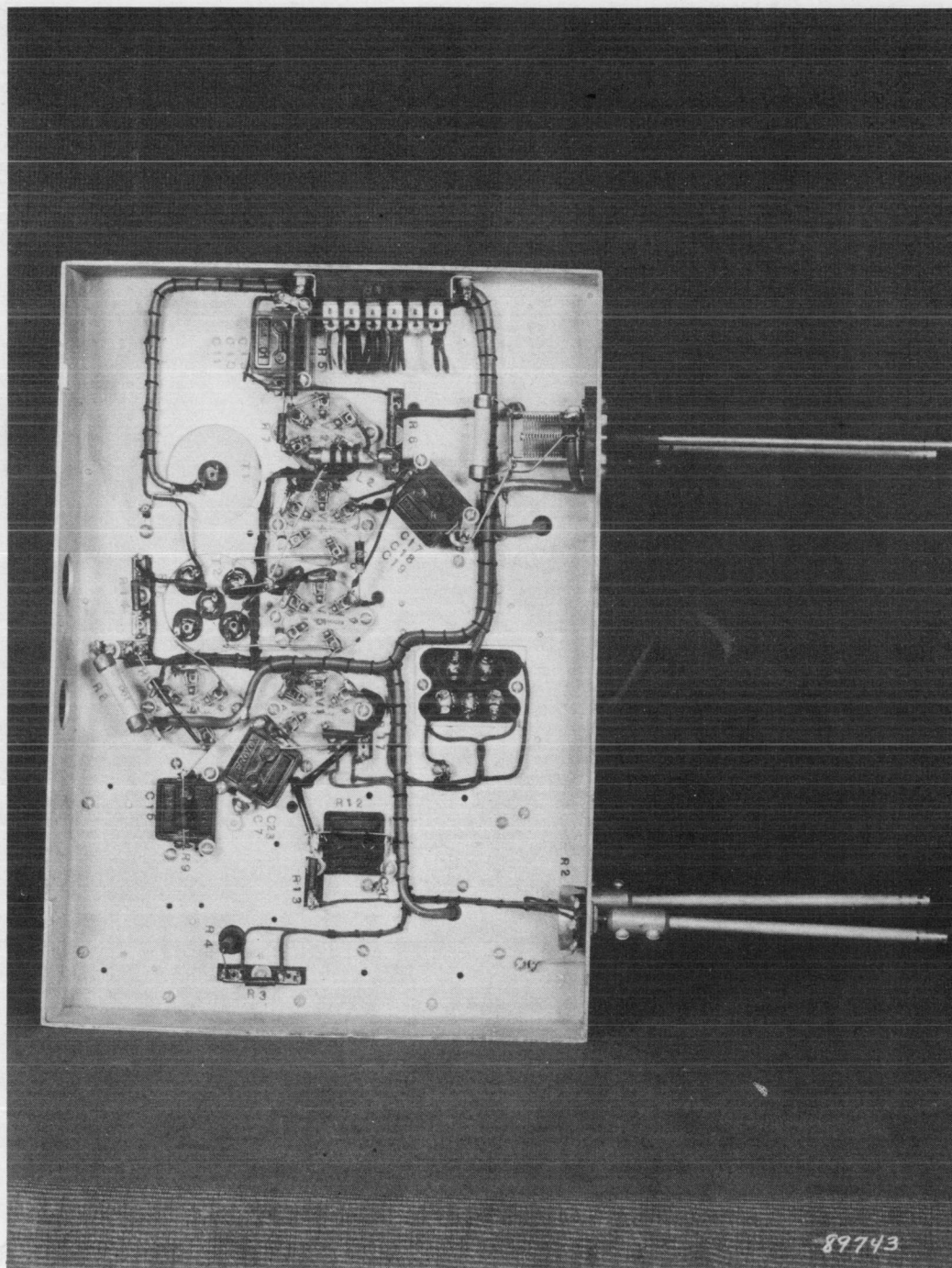
89728

Attenuator Panels, Multi-Circuit Low Frequency
Panel, Double Sideband Panel, Crystal Filter,
First Modulators and Rectifier #1, Front View



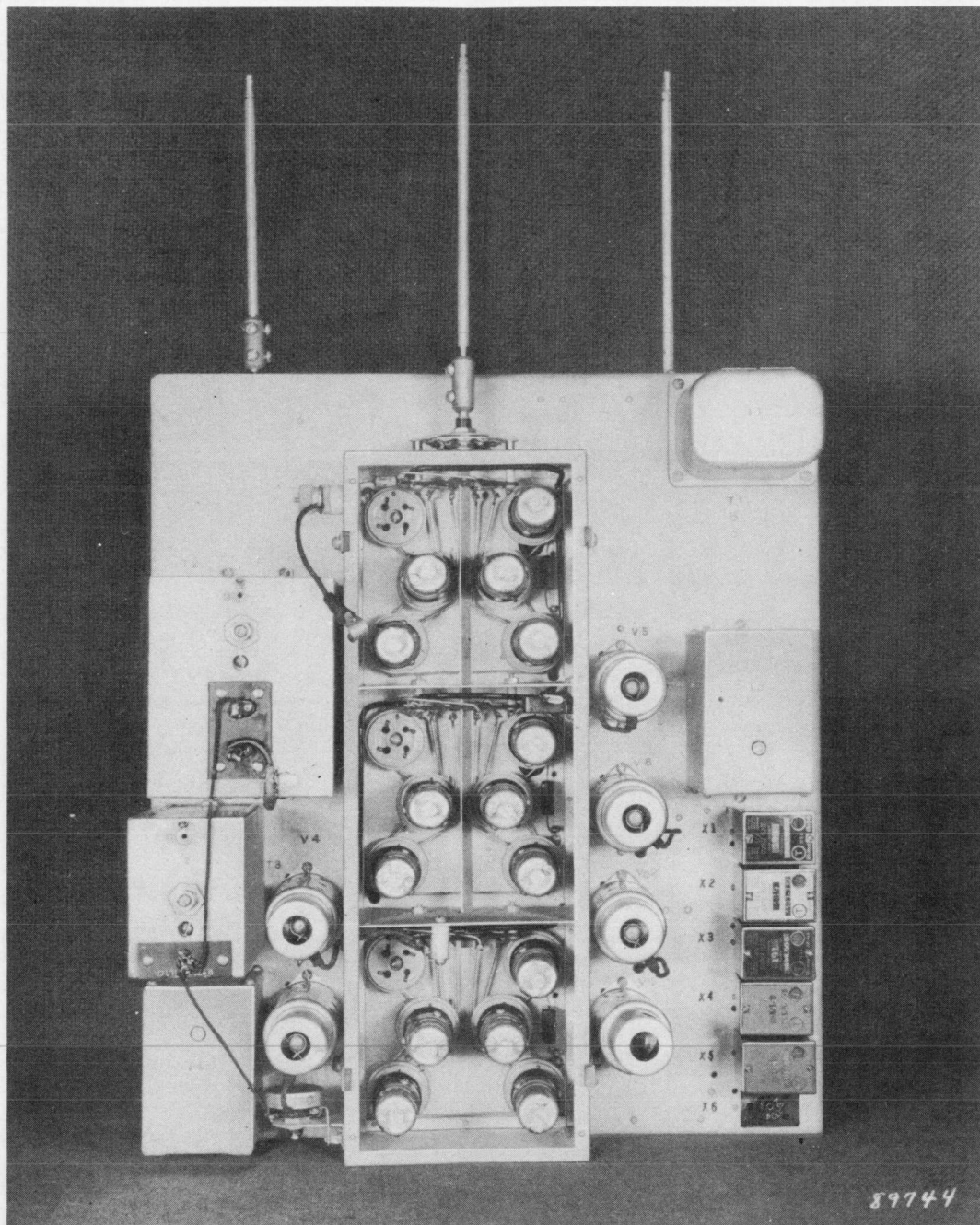
89741

Monitor, Top View, Cover Off



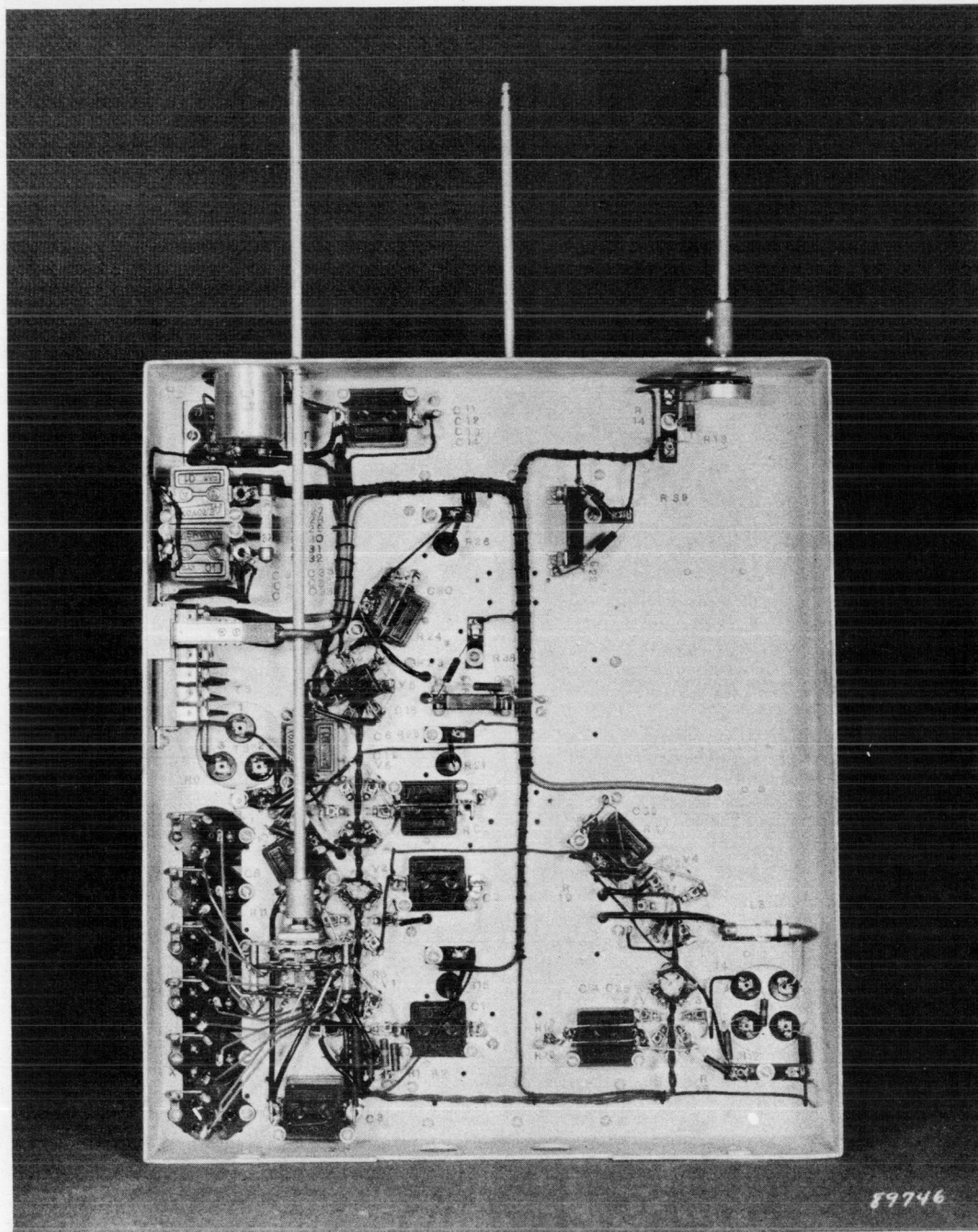
Monitor, Bottom View

89743



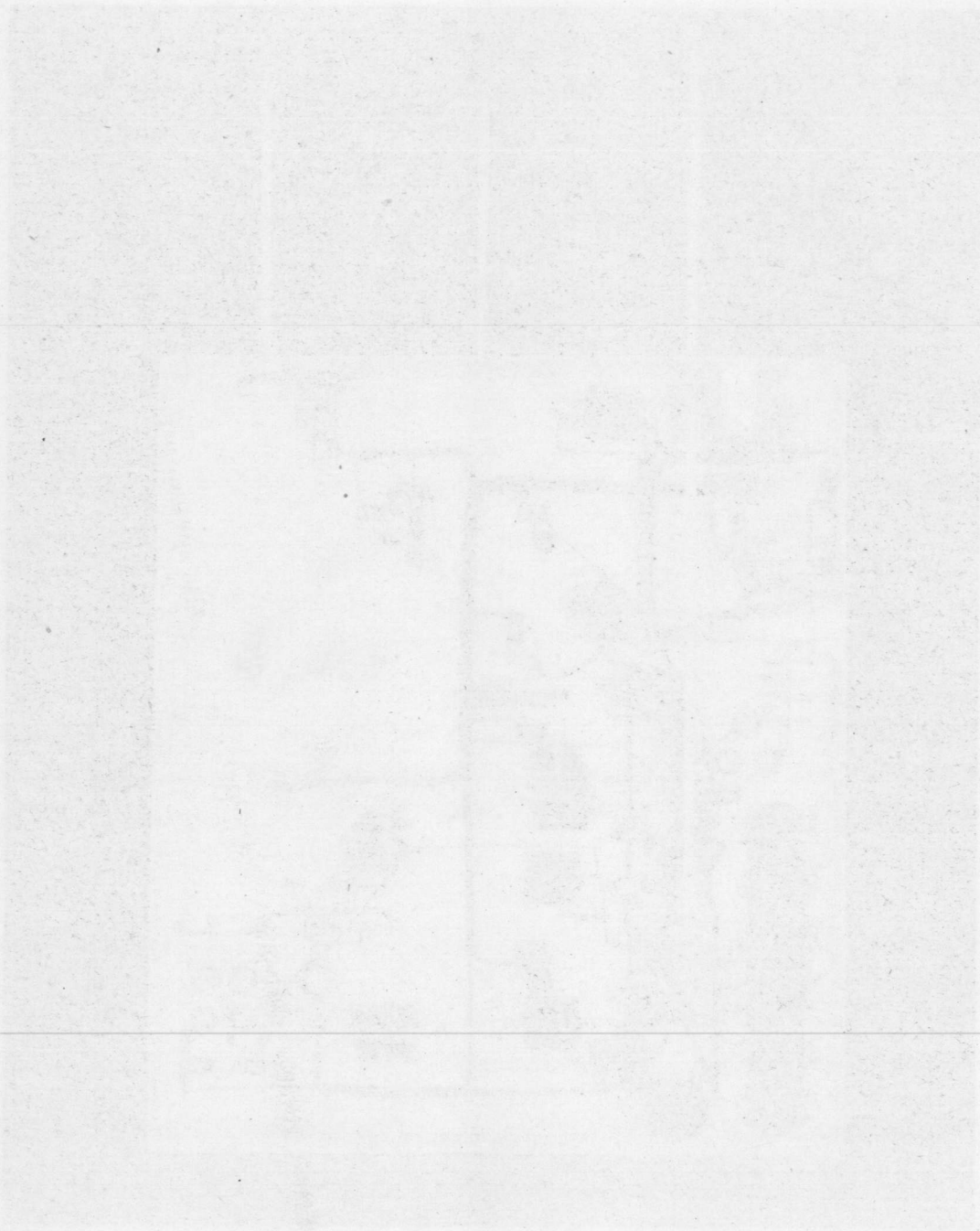
89744

Low Power High Frequency Panel, Top View, Cover Off

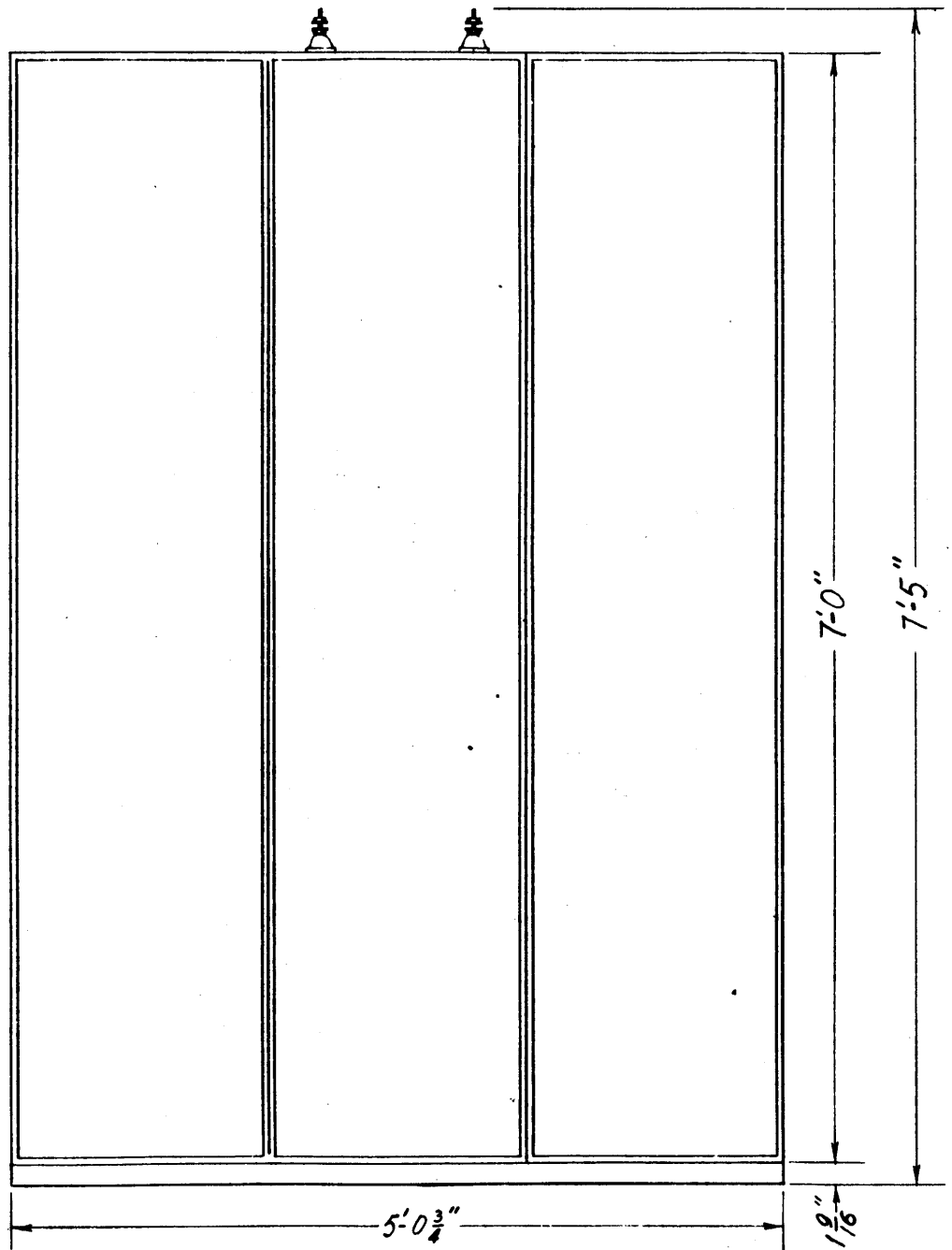


Low Power High Frequency Panel, Bottom View

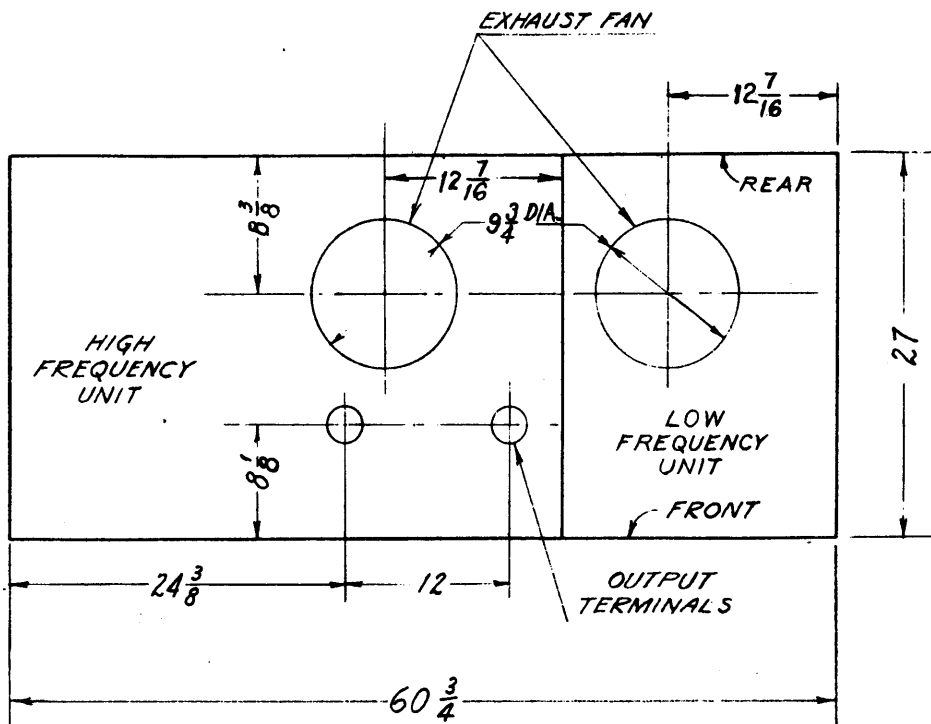
89746



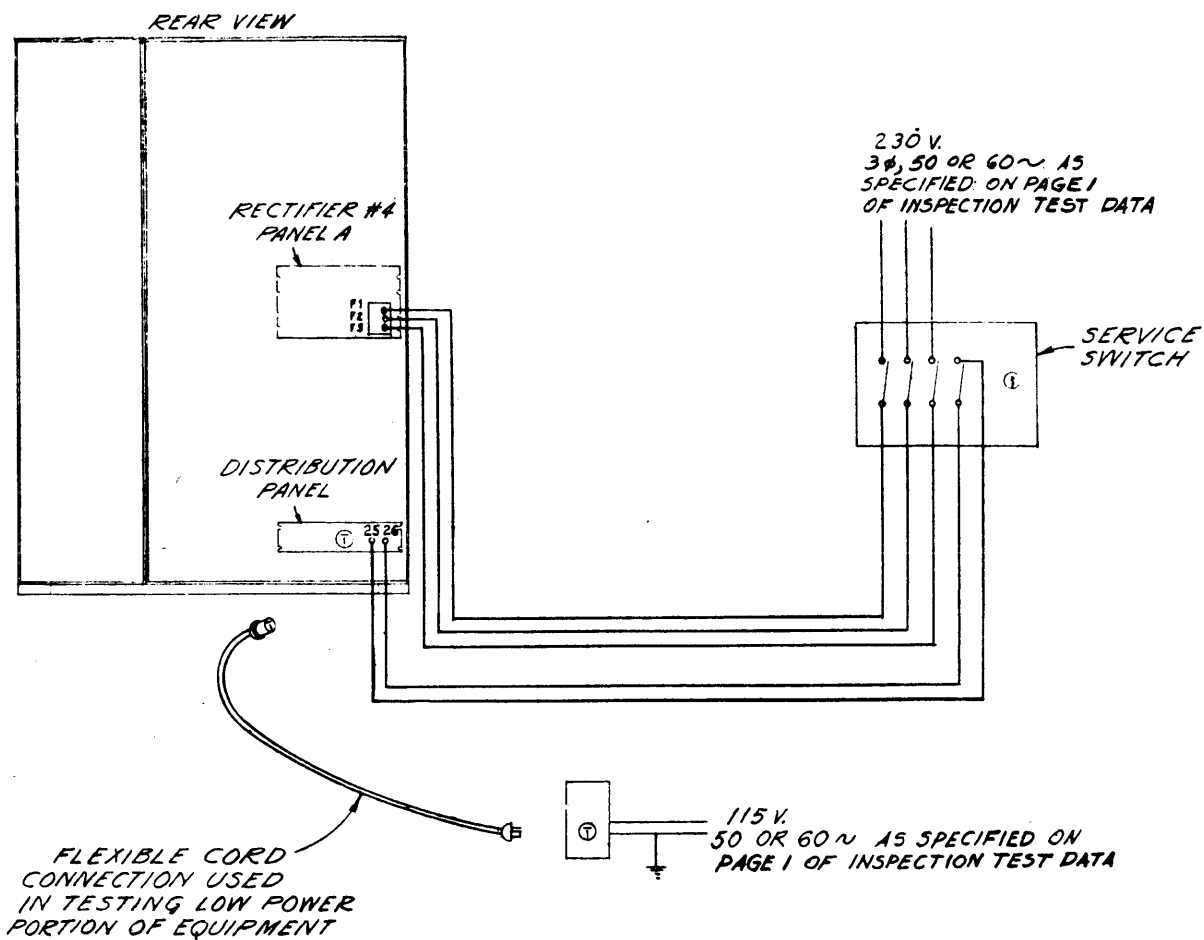
THE FINEST LINE IN THE WORLD

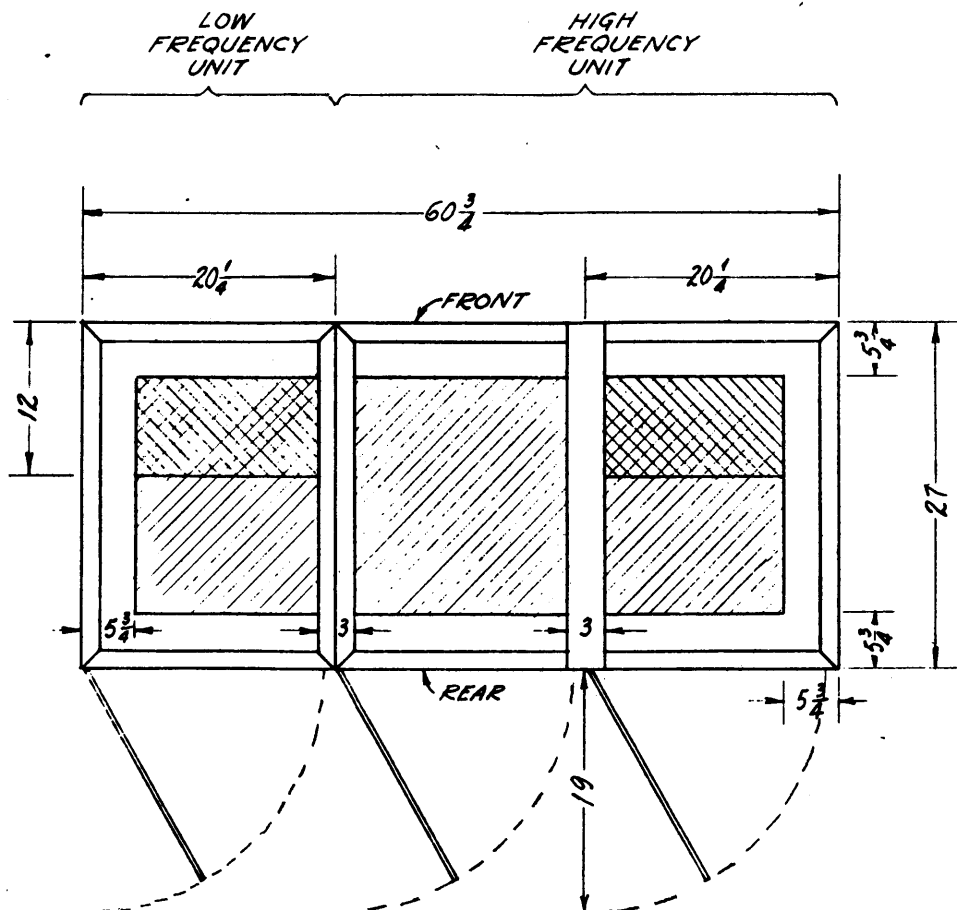


D-156000
RADIO TRANSM.
OVERALL
FRONT DIMENSIONS



D-156000
RADIO TRANSM.
TOP
LAYOUT

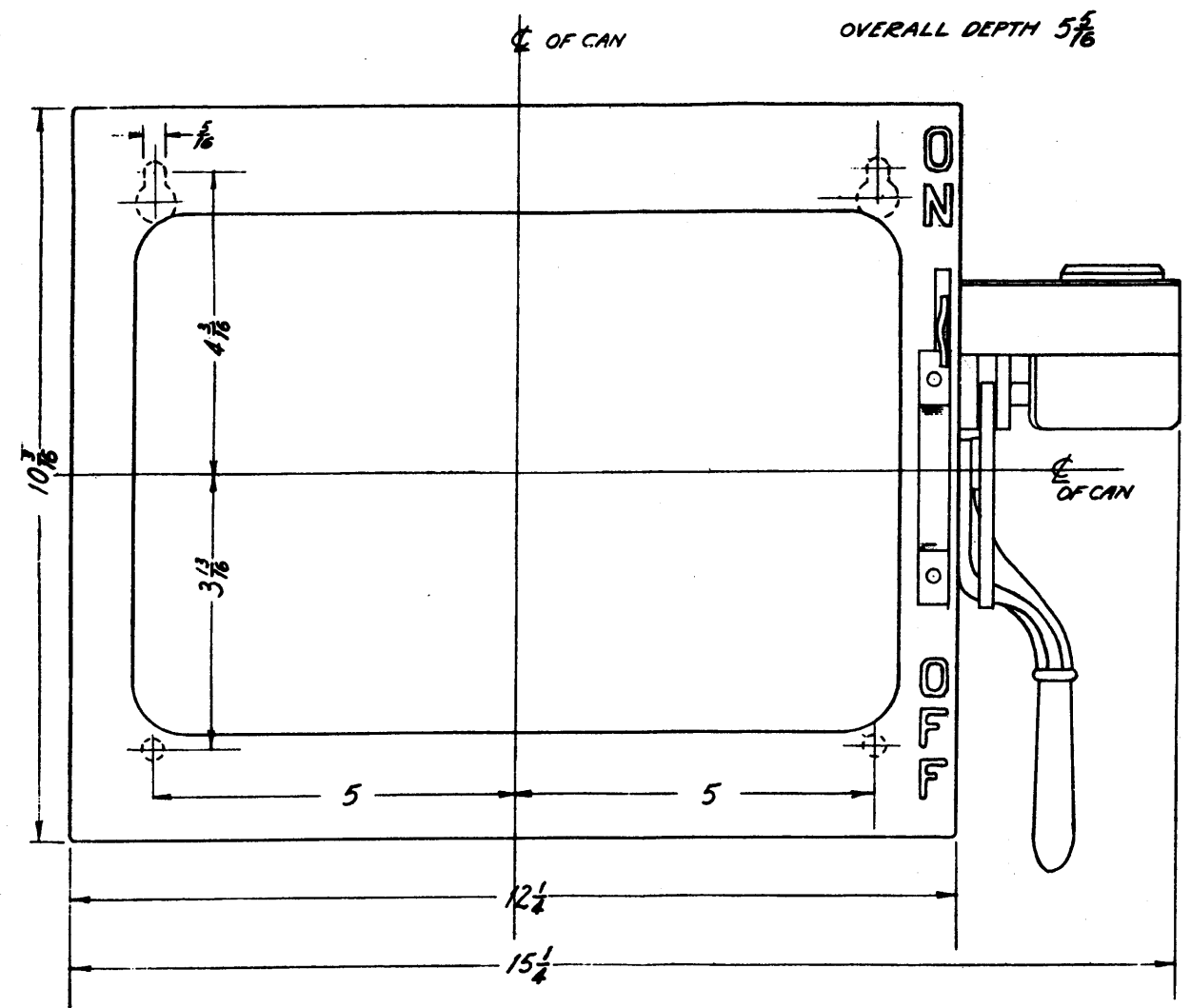




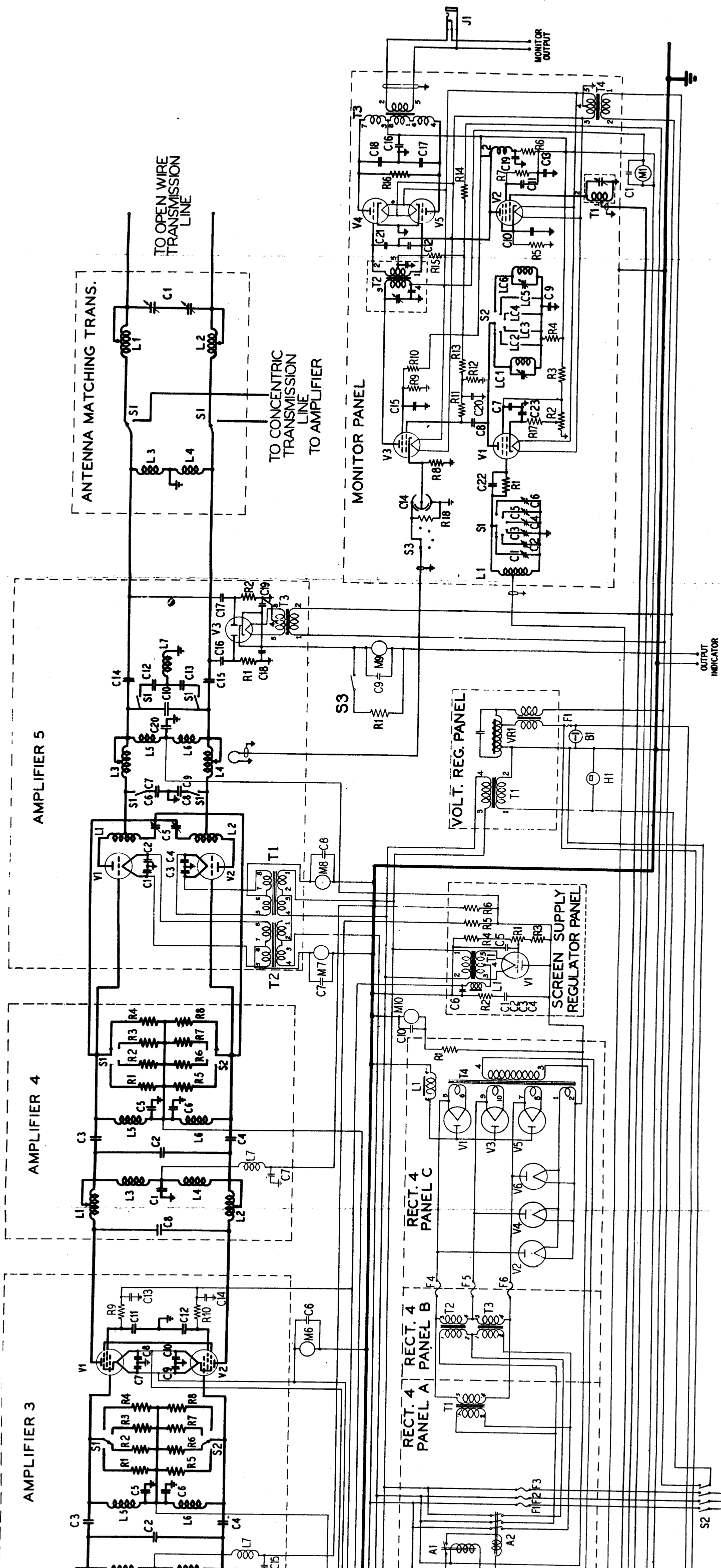
AREA AVAILABLE FOR CONDUIT ENTRANCE



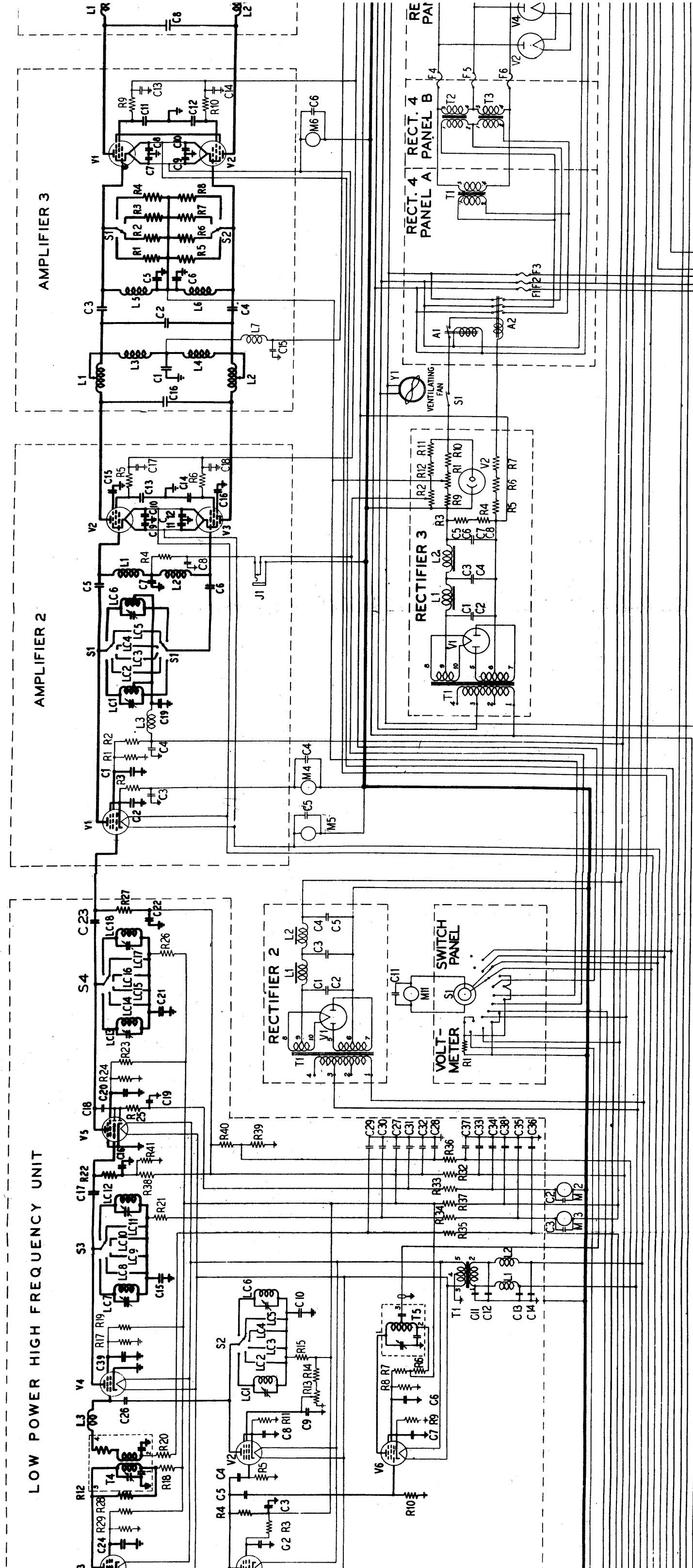
D-156000
RADIO TRANSM.
BASE
LAYOUT



D-156000
RADIO TRANSM.
SERVICE SWITCH
MOUNTING
INFORMATION

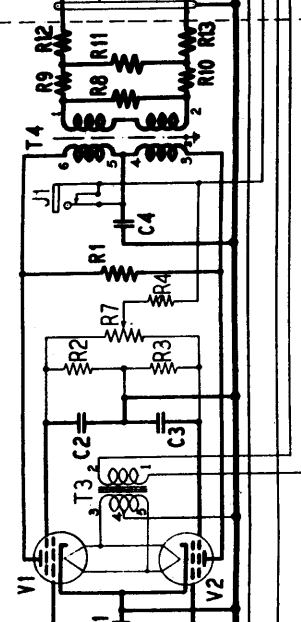


230V 3# 50-60~
AS SPECIFIED ON
PAGE 1 OF
INSPECTION TEST DATA

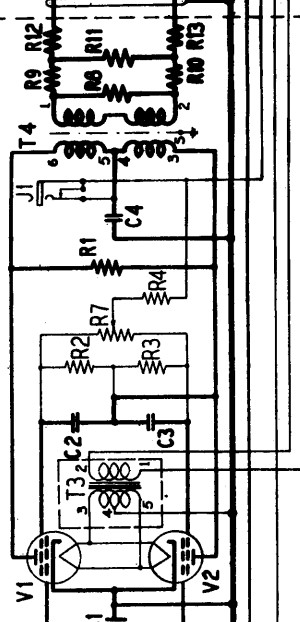


230V. 3Ø 50-60~
AS SPECIFIED ON
PAGE 1 OF
INSPECTION TEST DATA

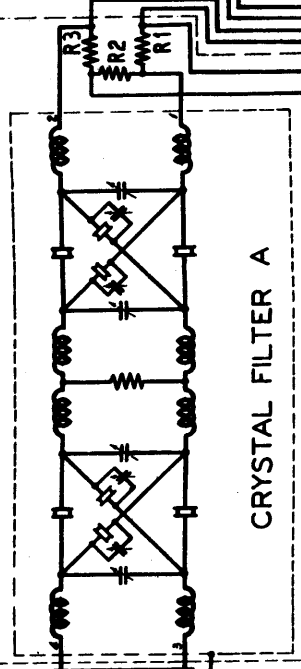
MODULATOR 1A



MODULATOR 1B

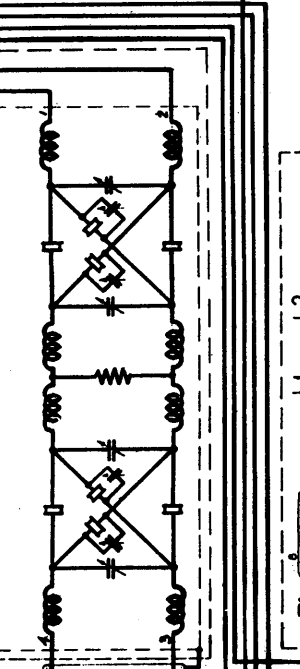


CRYSTAL FILTER UNITS

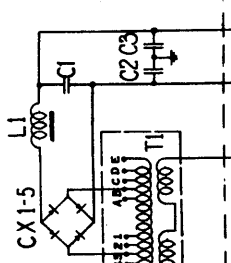


CRYSTAL FILTER A

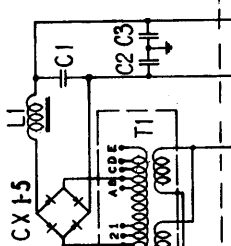
CRYSTAL FILTER B



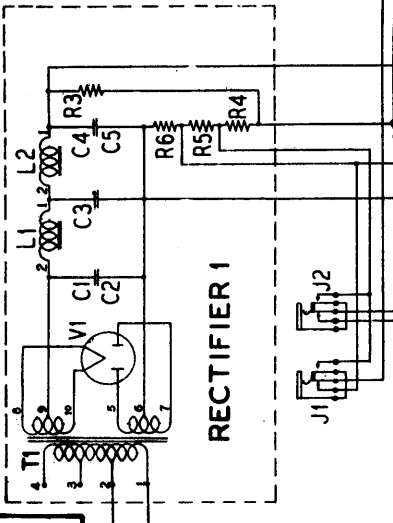
RECTIFIER 6



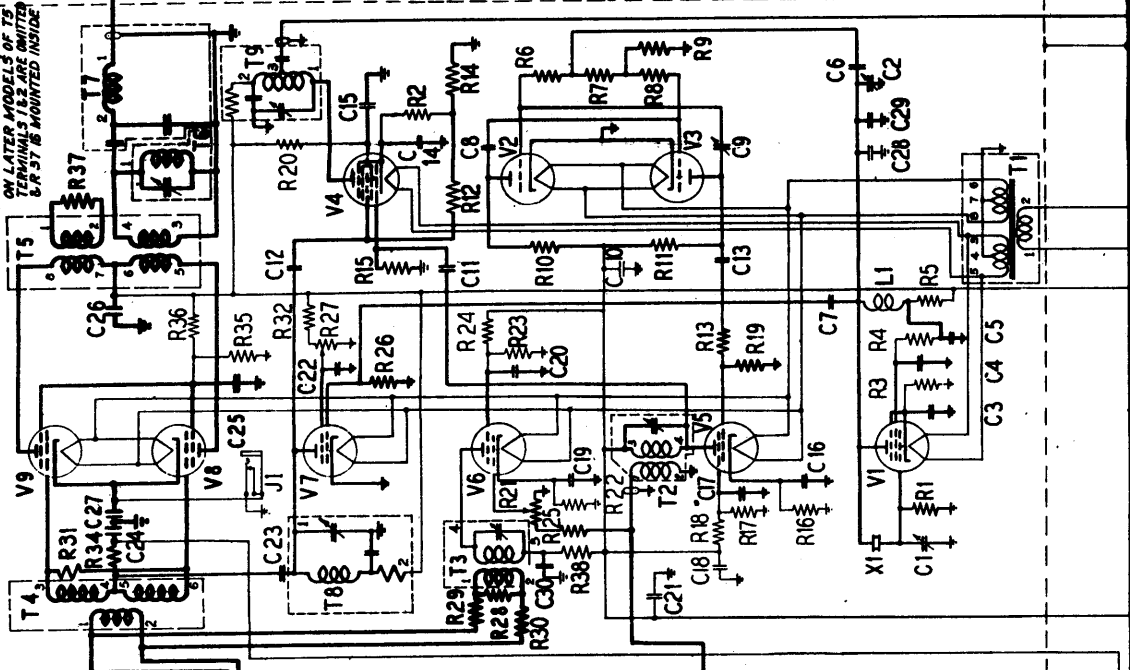
RECTIFIER 5



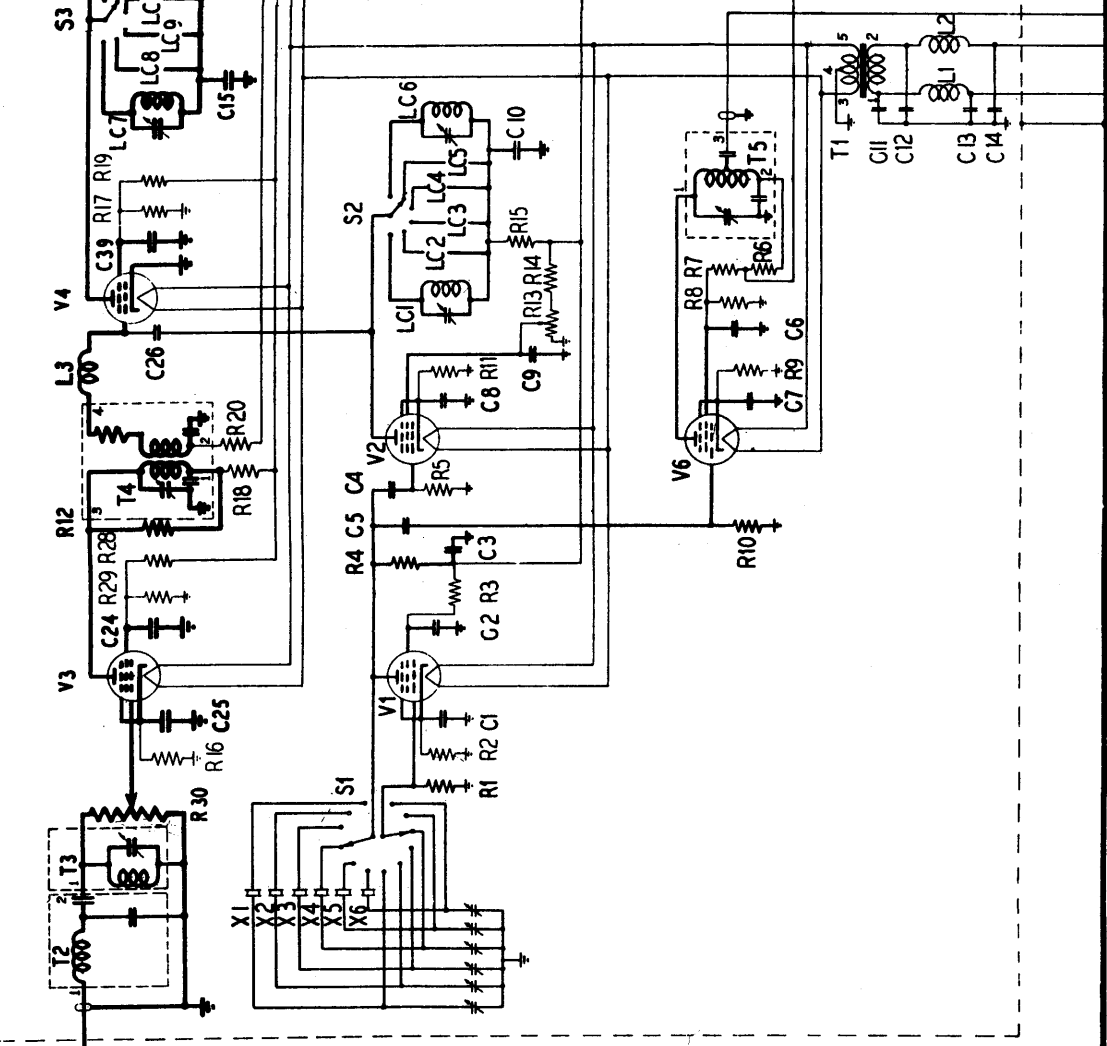
RECTIFIER 1

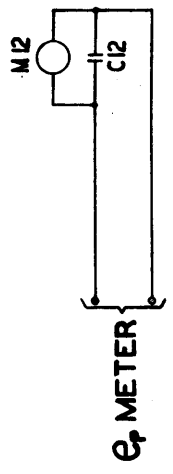
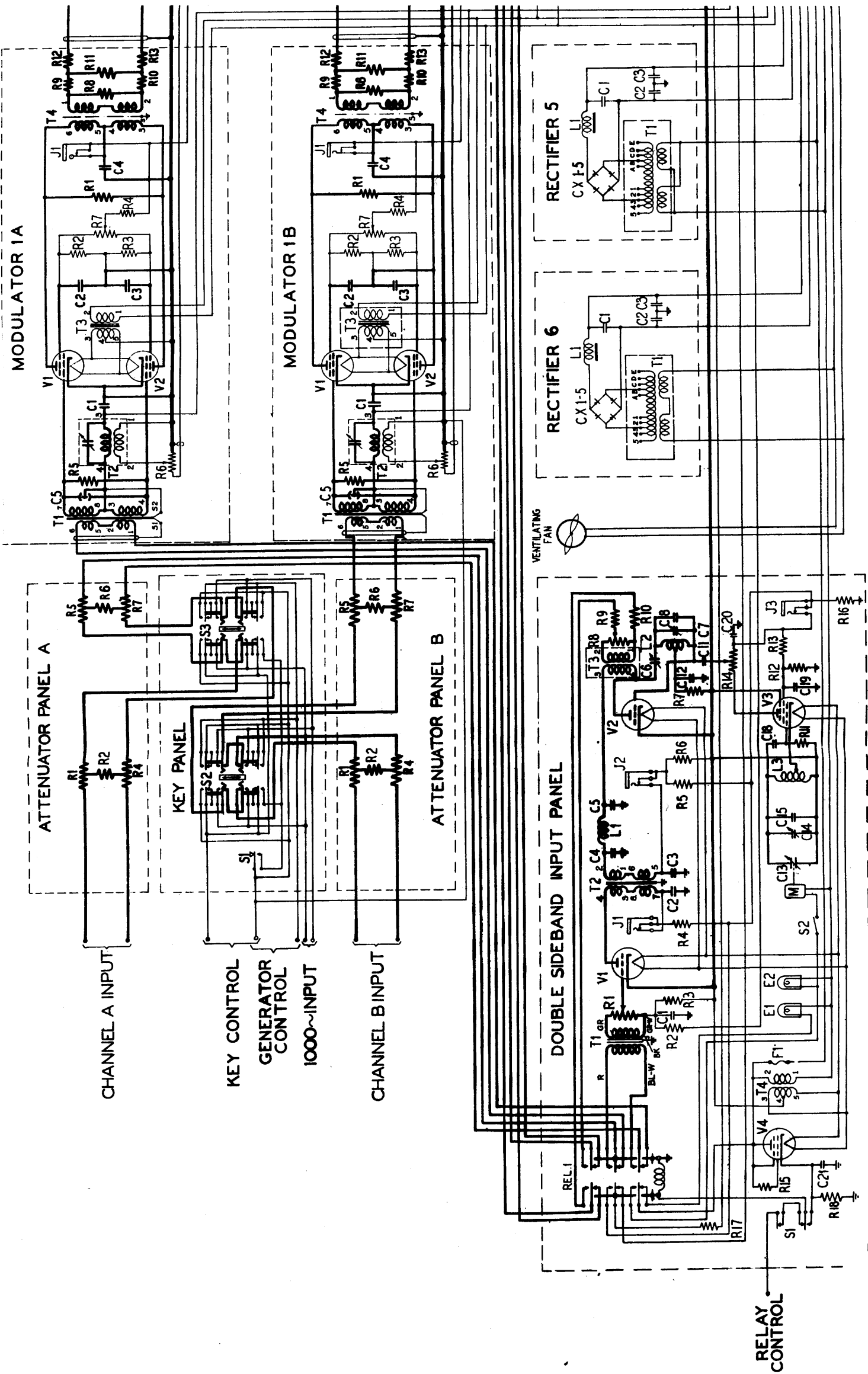


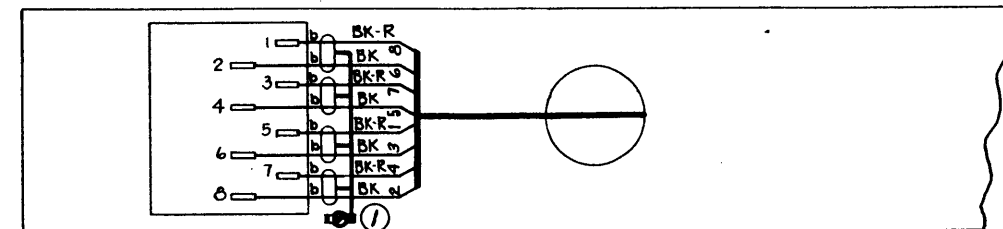
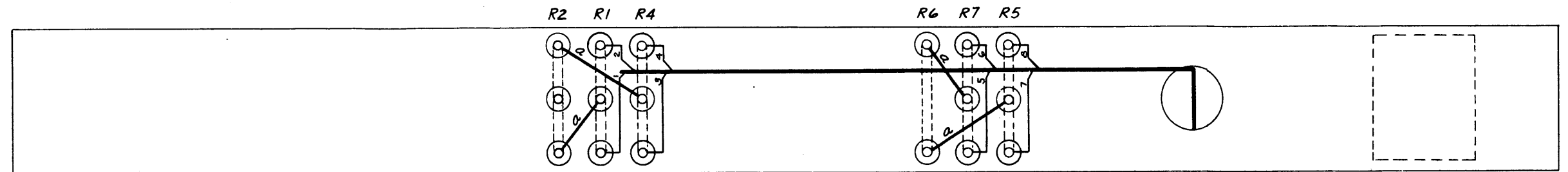
MULTI CIRCUIT LOW FREQUENCY PANEL



LOW POWER HIGH FREQUENCY

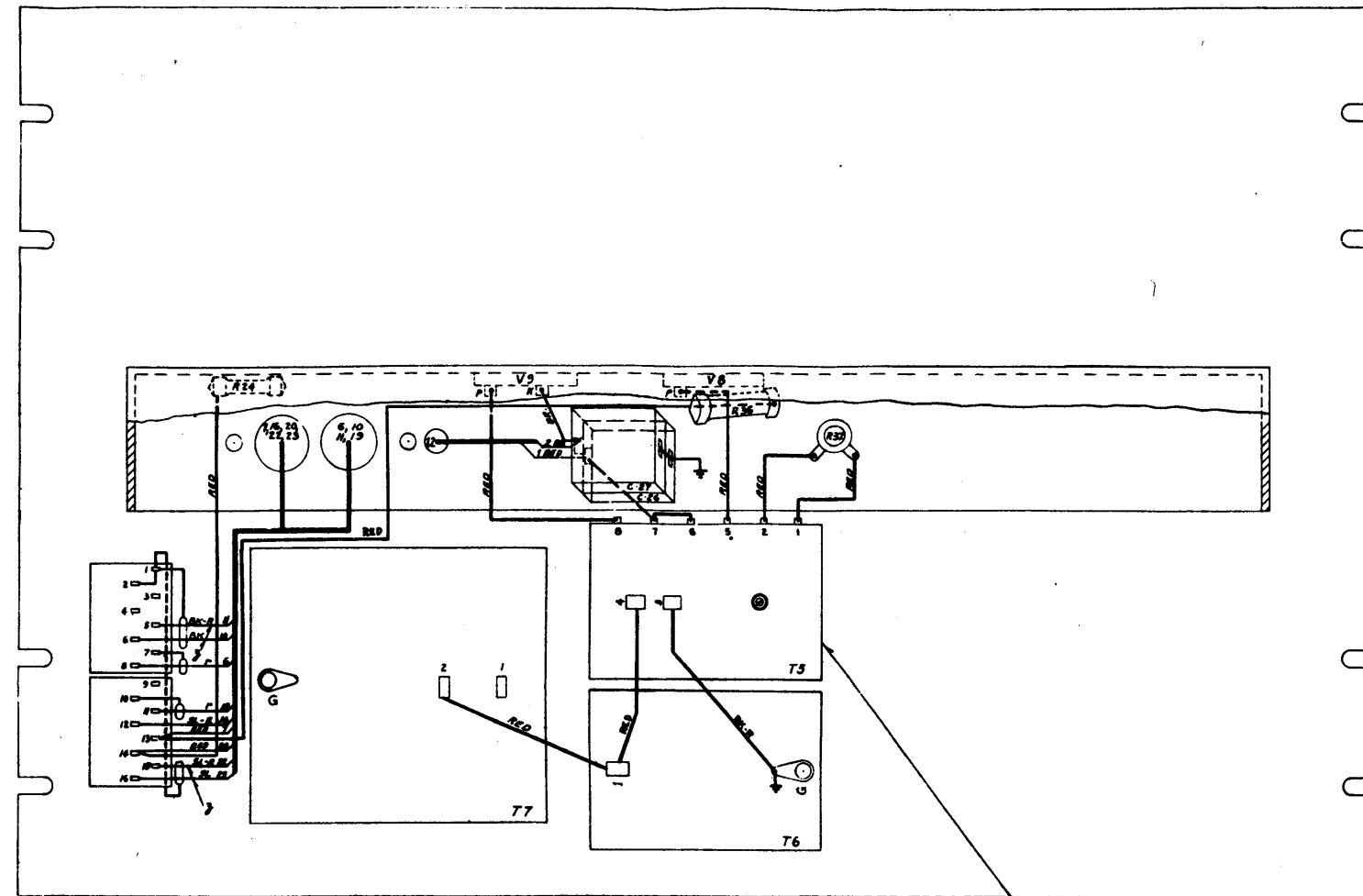






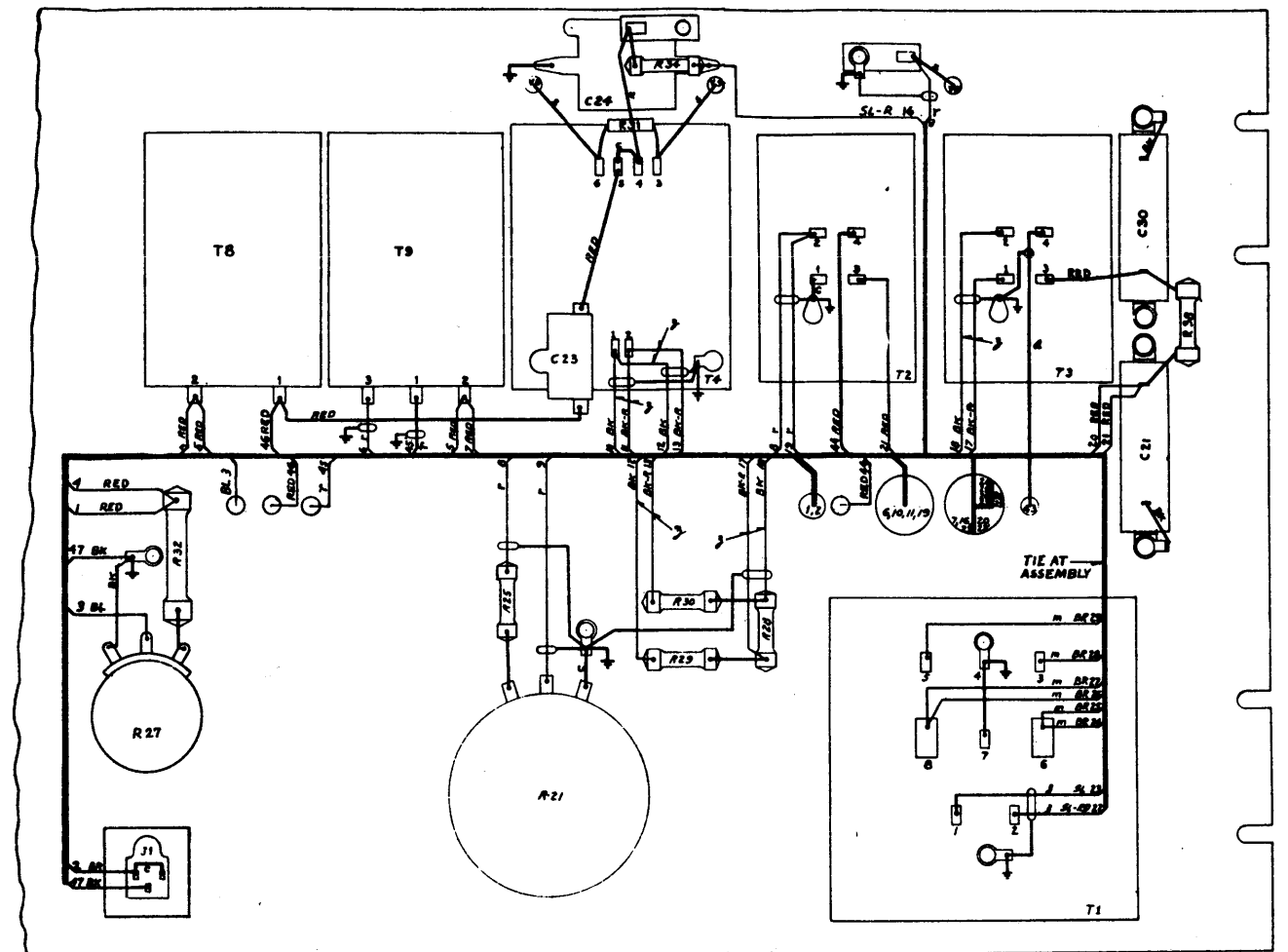
"a" WIRES TO BE #20 TYPE "F" BLACK WIRES.
 b-#22 PAIR TYPE "P" WIRE, COLOR AS SPECIFIED
 GROUND PER ESP-796850 AT TERMINAL BLOCK ONLY
 NO GROUND NEEDED AT THE OTHER END

RADIO TRANSMITTER
ATTENUATOR PANEL
WIRING DIAGRAM

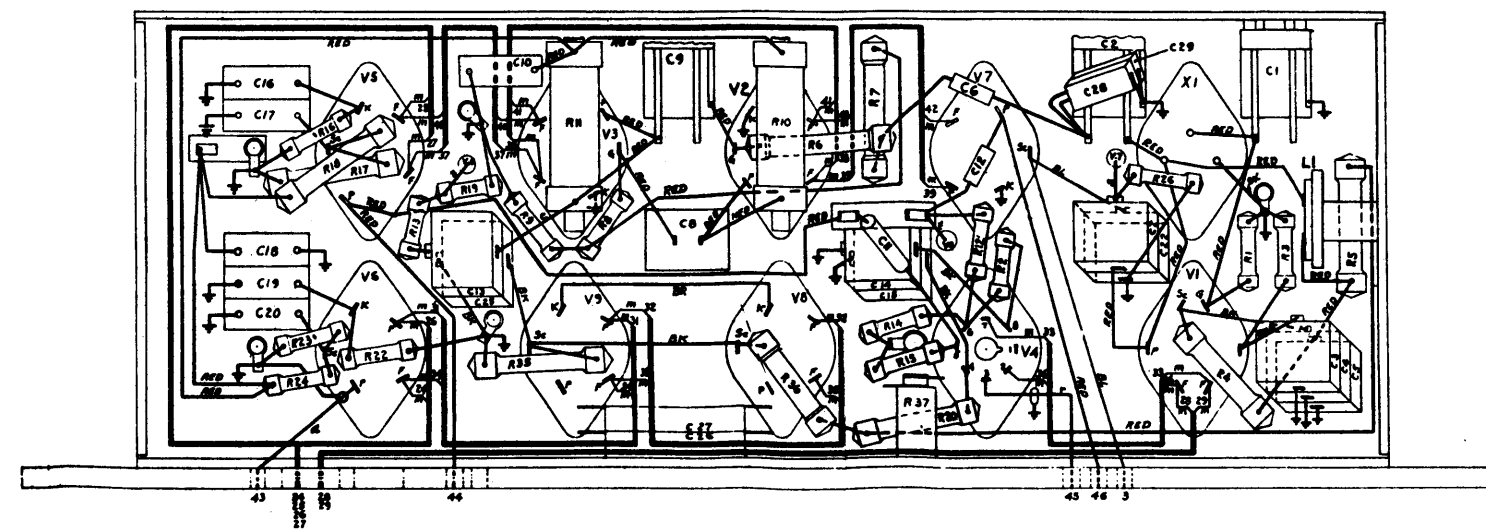


FRONT VIEW

NOTE:
ON LATER MODELS OF T5,
TERMS 1 & 2 ARE OMITTED
& R37 IS MOUNTED INSIDE



REAR VIEW



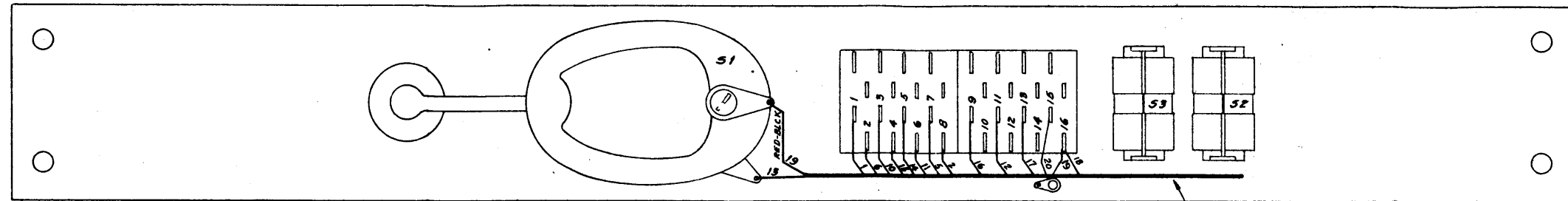
BOTTOM VIEW OF SHELF

NOTES:

- ALL WIRES #20 TYPE "F" UNLESS OTHERWISE SPECIFIED. COLOR AS DESIGNATED.
- C - #20 BARE THINNED COPPER WIRE.
- m - #16 TYPE "F" WIRE, COLOR BROWN, TWISTED PAIR.
- f - #18 B.F.S. SOLID, SINGLE CONDUCTOR, LEAD COVERED CABLE.
- s - FLEXIBLE GRID LEAD PER ESP-79819+ FURNISHED WITH PANEL. USED ON V5, V6, V7, V8 & V9.
- t - YEL-RED FLEXIBLE WIRE, USED FOR GRID CONNECTION ON V4.
- j - #22 PAIR - TYPE "P" WIRE - COLOR AS SPECIFIED.
- ⊕ GROUND BOTH ENDS PER ESP-796850

EXPOSED LENGTHS OF SHIELDED WIRE SHOULD BE AS SHORT AS POSSIBLE.

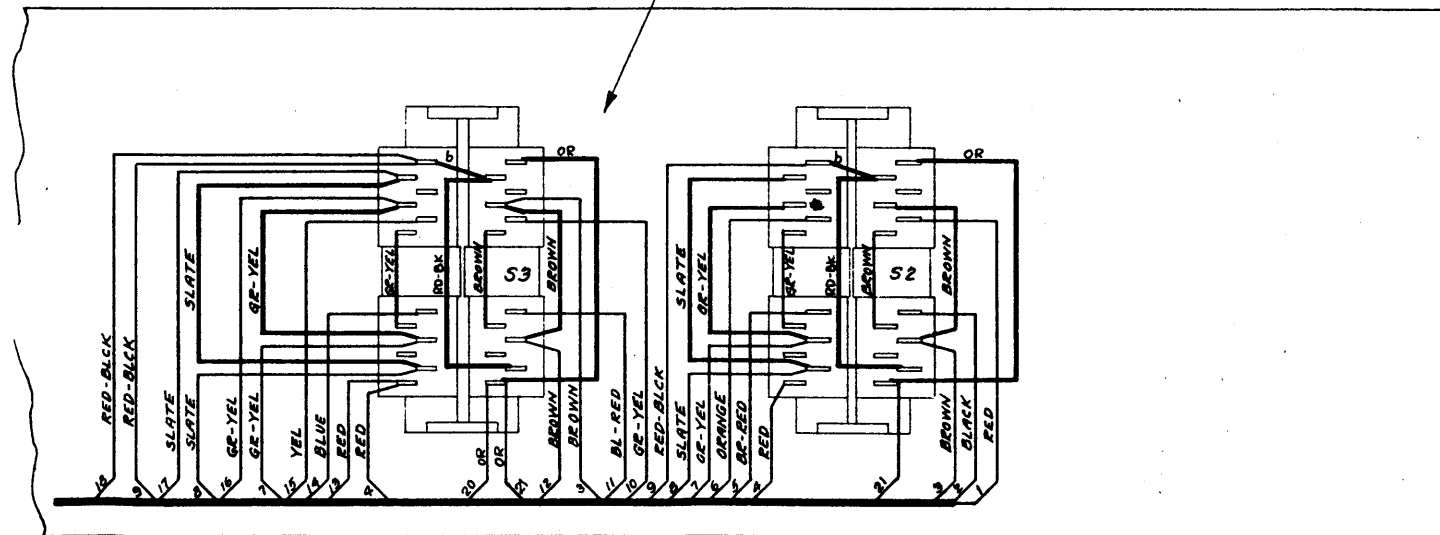
⊕ - K5-0006 CABLE. ⊕ INDICATES THAT END IS GROUNDING WITH TYPE "F" BLACK WIRE AND TAPED



BACK VIEW

SEE ENLARGED VIEW

SEE NOTE 2

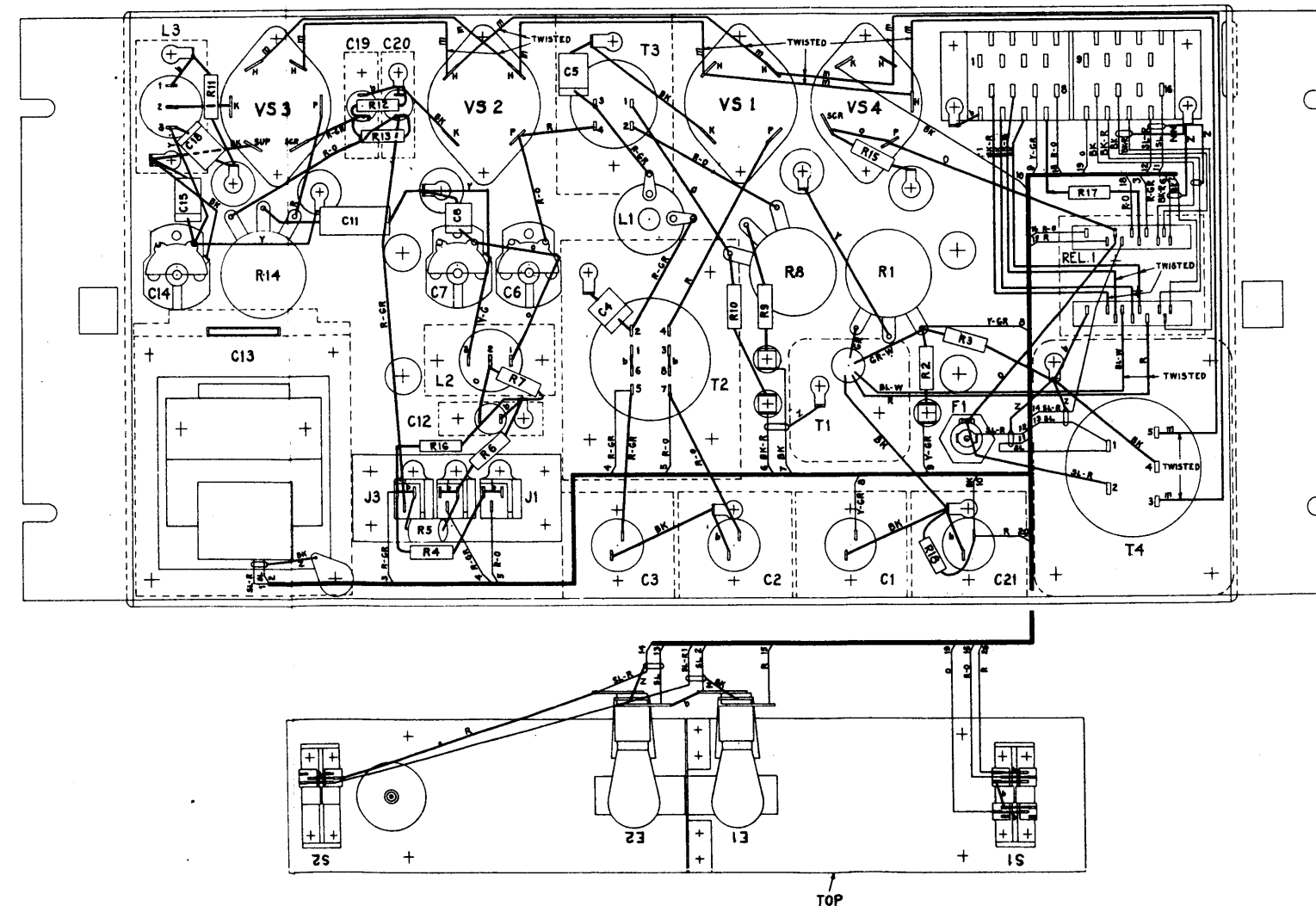


ENLARGED VIEW

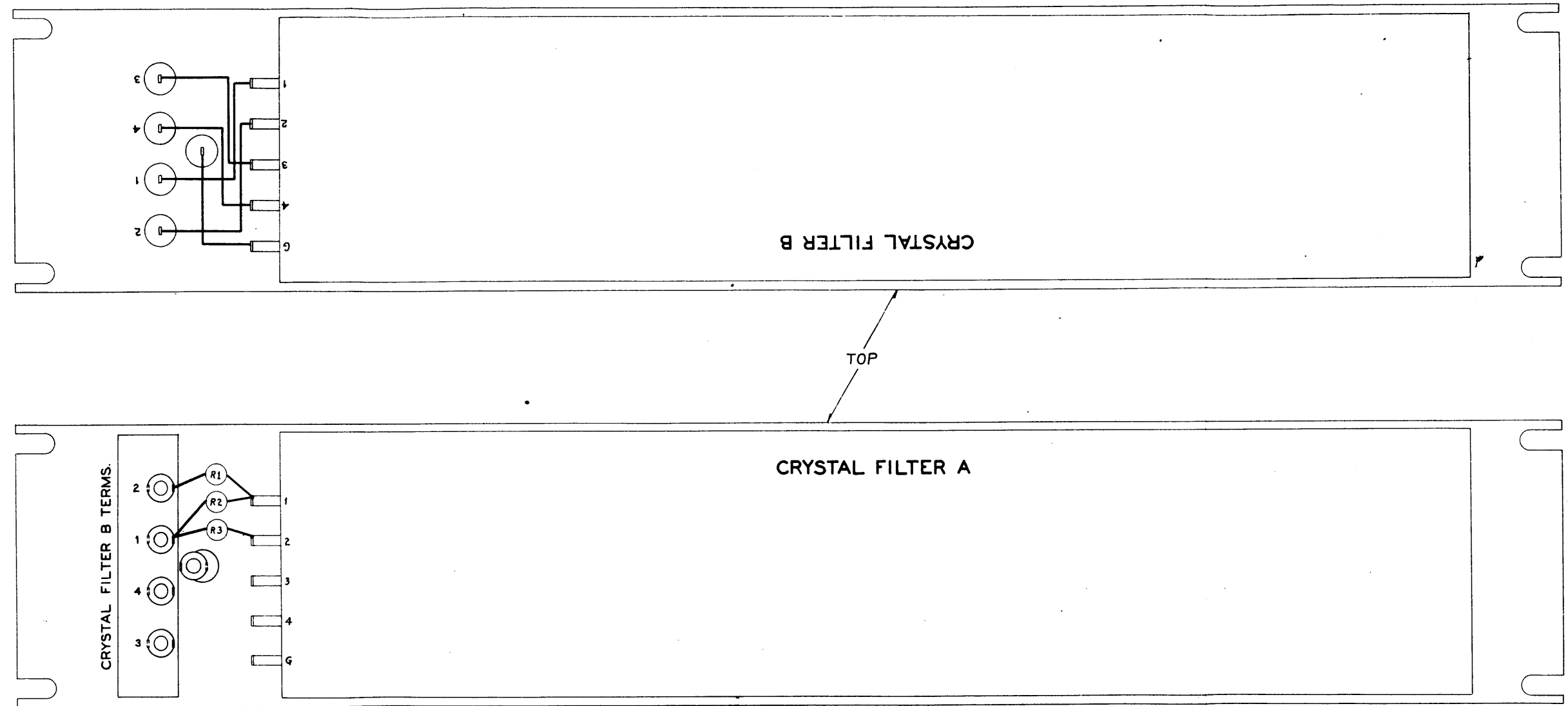
NOTES

- 1.- ALL WIRES #20 TYPE F
COLORS AS DESIGNATED
- 2.- ALLOW AMPLE SLACK IN LEADS
AT KEYS TO PERMIT REMOVAL OF
KEYS FOR CONTACT ADJUSTMENT
- 3.- "b" TO BE #16 BARE TINNED COPPER
WIRE.

RADIO TRANSMITTER
KEY PANEL
WIRING DIAGRAM

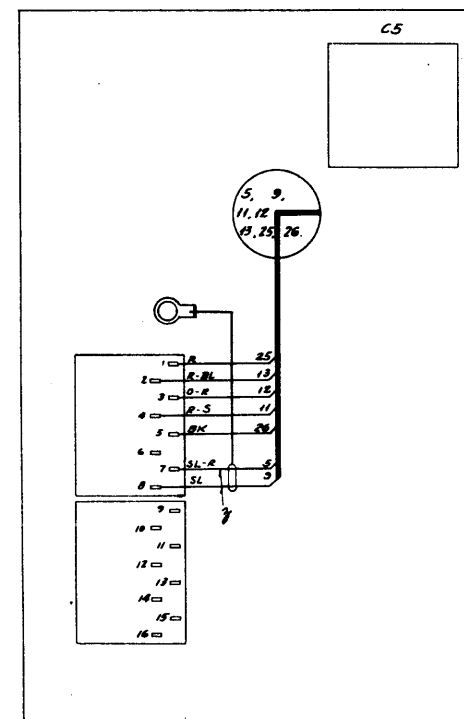
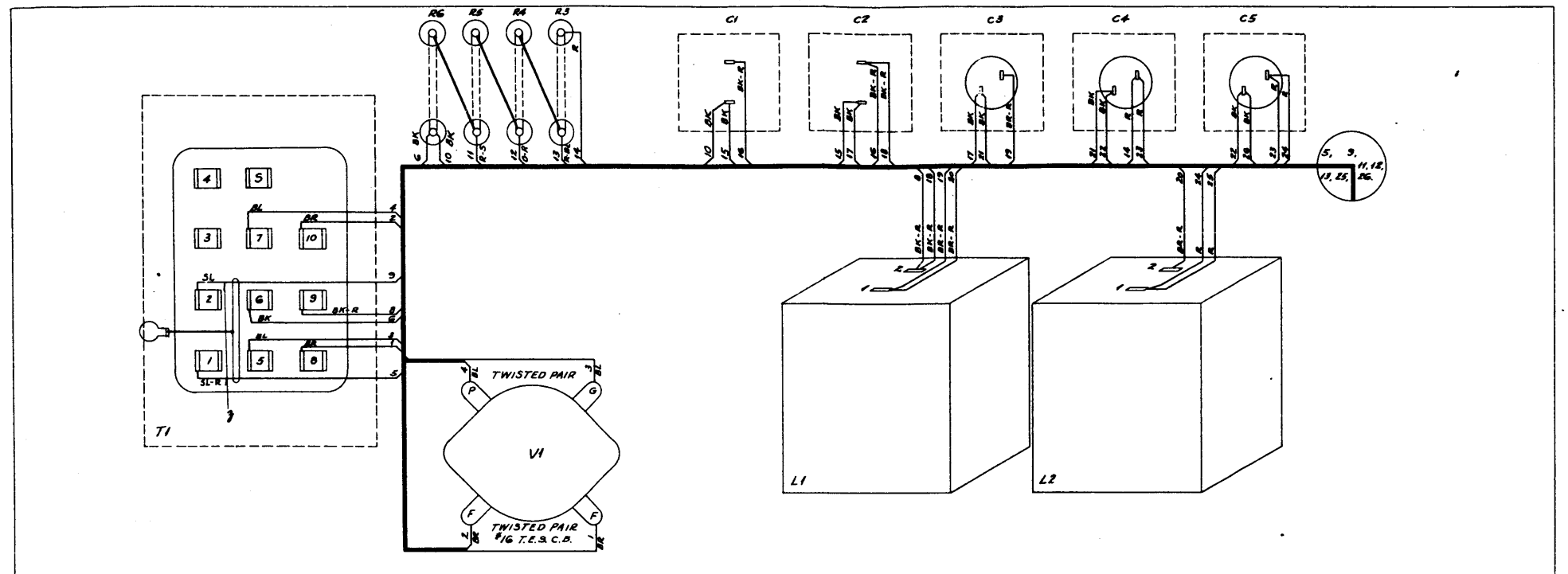


Z * #22 PAIR - TYPE P WIRE, COLOR AS SPECIFIED.
GROUND ENDS AS SHOWN - PER ESP-796850.



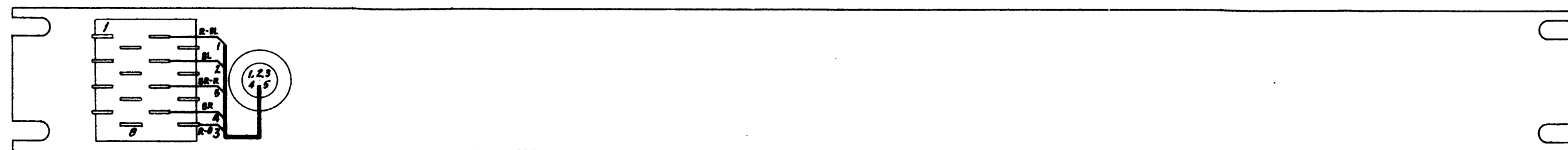
ALL WIRE #20 T.E.S.C.B. COLOR BLACK.

SINGLE SIDEBAND TRANSMITTER
CRYSTAL FILTER PANEL
WIRING DIAGRAM

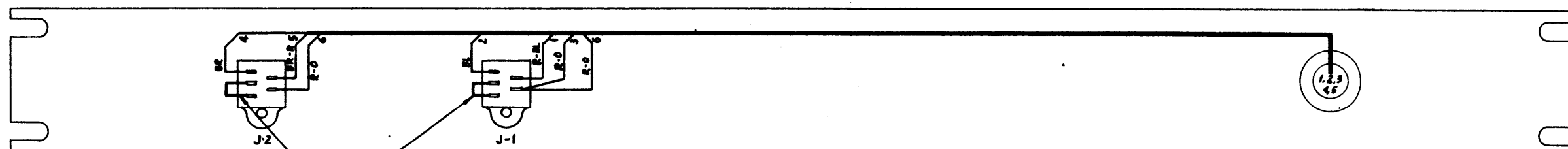


ALL WIRE #20 T.E.S.C.B. UNLESS OTHERWISE SPECIFIED.
 COLORS AS DESIGNATED.
 3-#22 PAIR TYPE P WIRE COLOR AS SPECIFIED
 GROUND BOTH ENDS PER ESP-796850

RADIO TRANSMITTER
 RECTIFIER #1
 WIRING DIAGRAM



FRONT VIEW

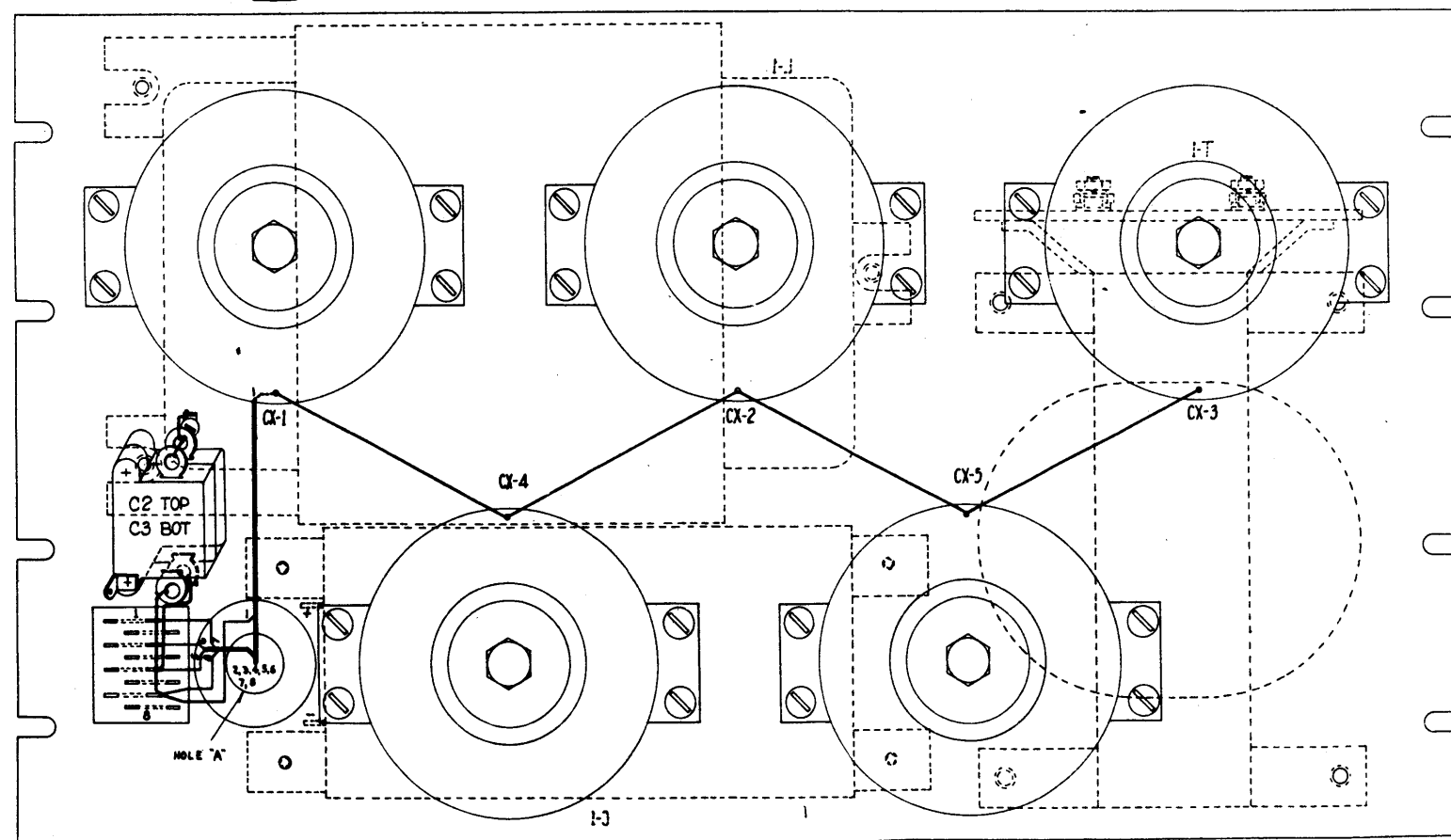
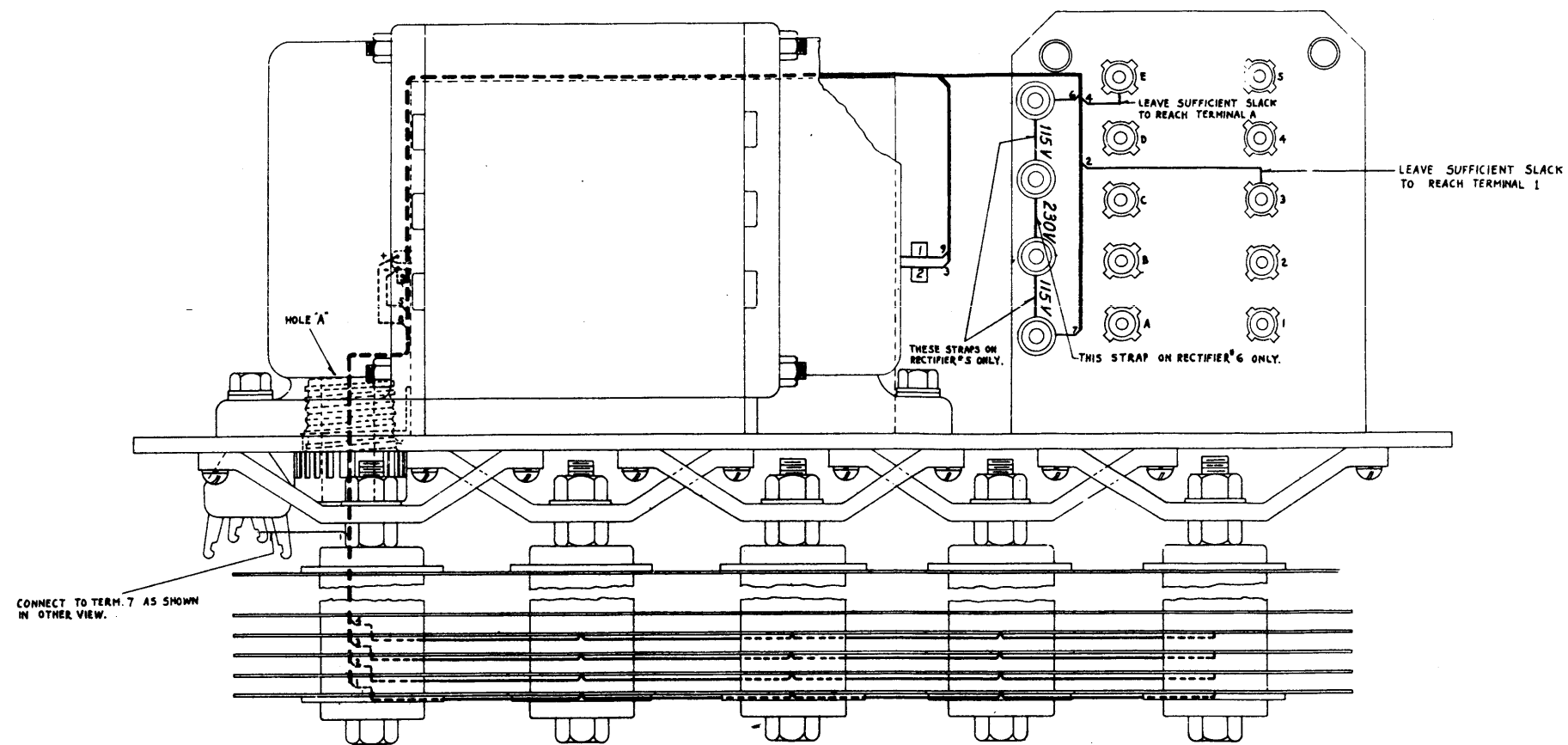


#16 BARE TINNED
COPPER WIRE

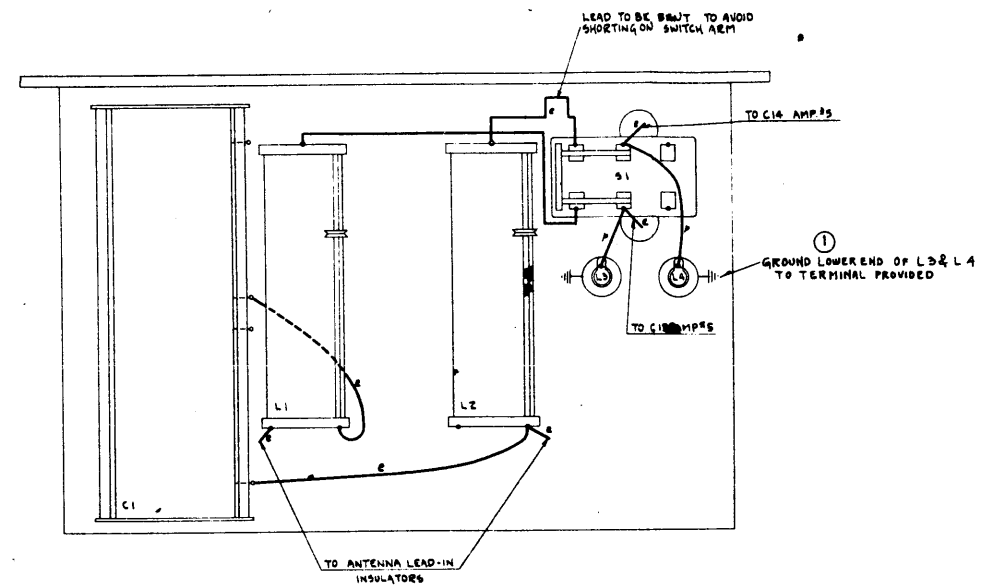
REAR VIEW

ALL WIRE # 20 T.E.S.C.B. UNLESS OTHERWISE
SPECIFIED. COLORS AS DESIGNATED.

RADIO TRANSMITTER
LOW FREQUENCY UNIT
JACK PANEL
WIRING DIAGRAM

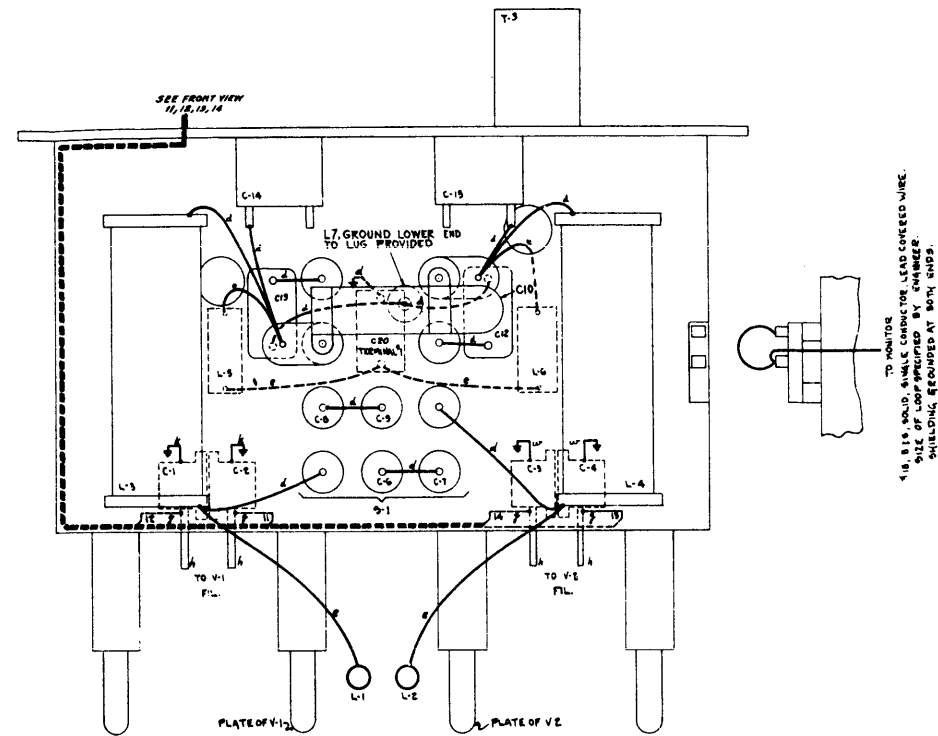


NOTE: - ALL WIRE TO BE G.E.CE #14 YK-4161.

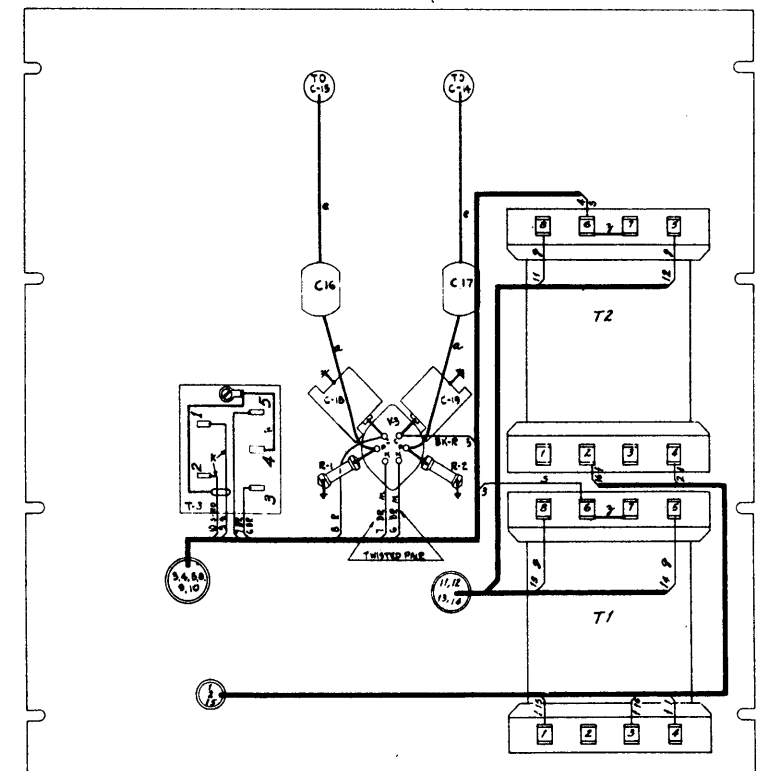
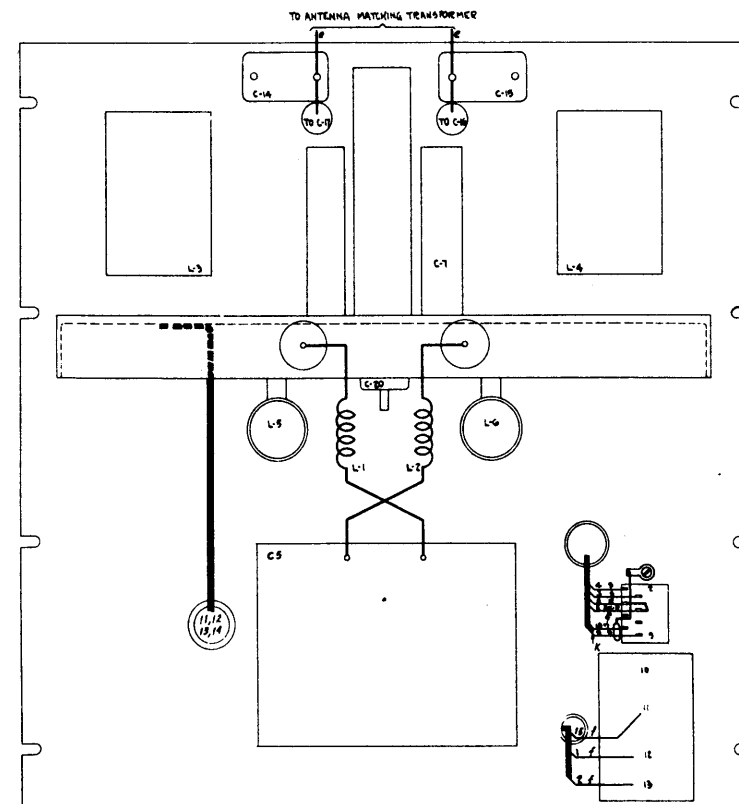


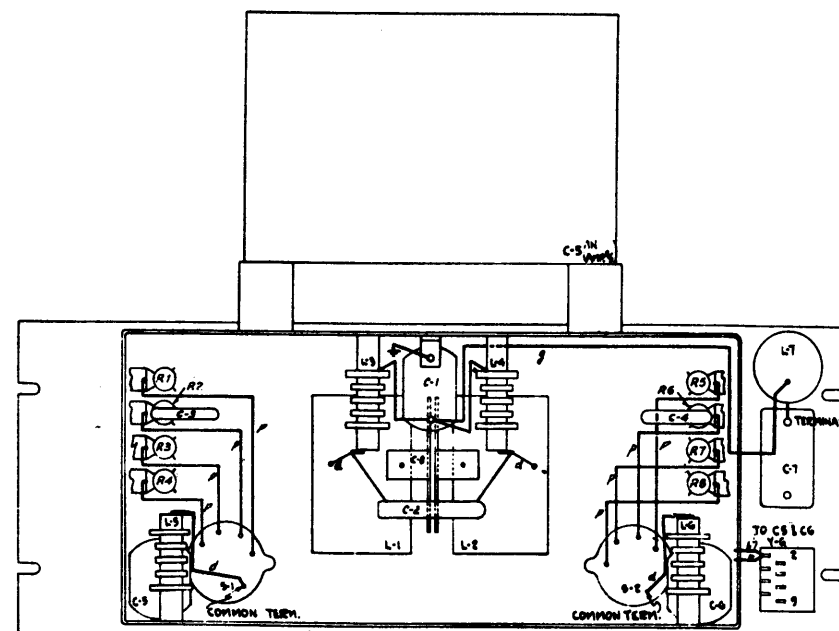
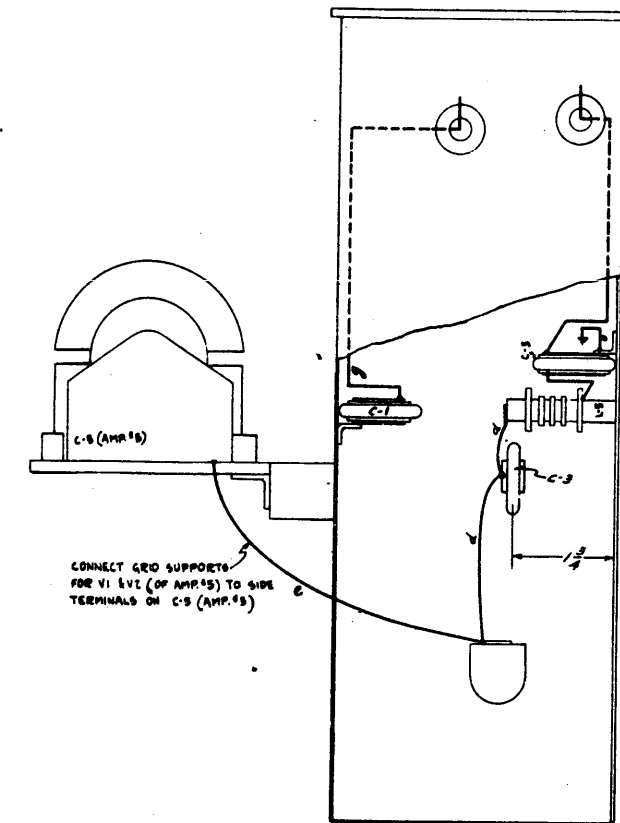
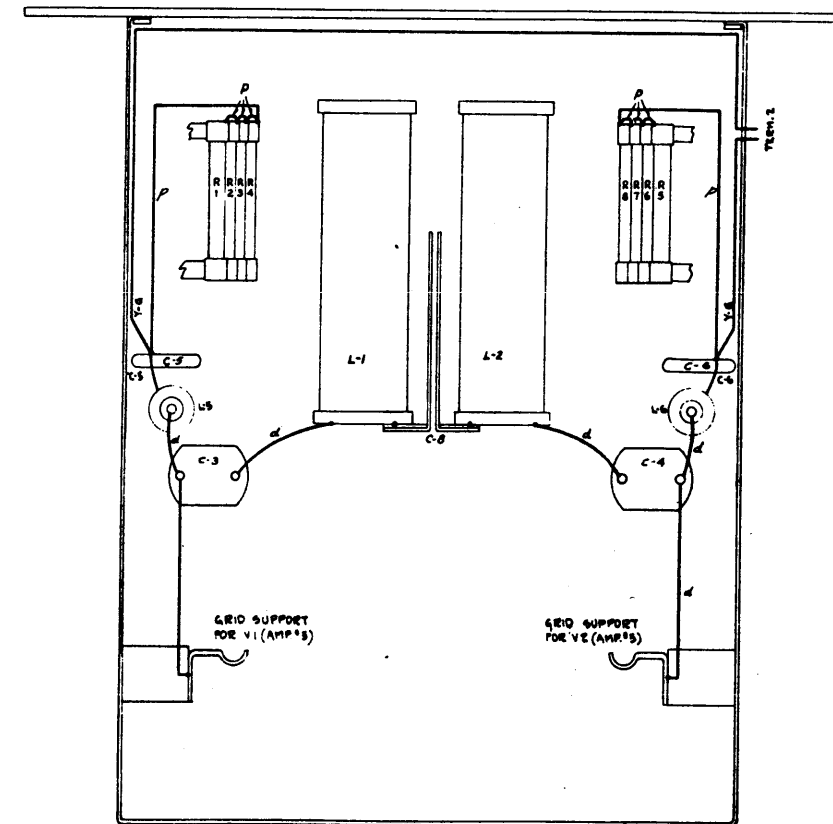
NOTES:
 S = 1/4" COPPER TUBING
 P = #14 BARE TINNED COPPER WIRE

RADIO TRANSMITTER
 ANTENNA MATCHING TRANSFORMER
 WIRING DIAGRAM

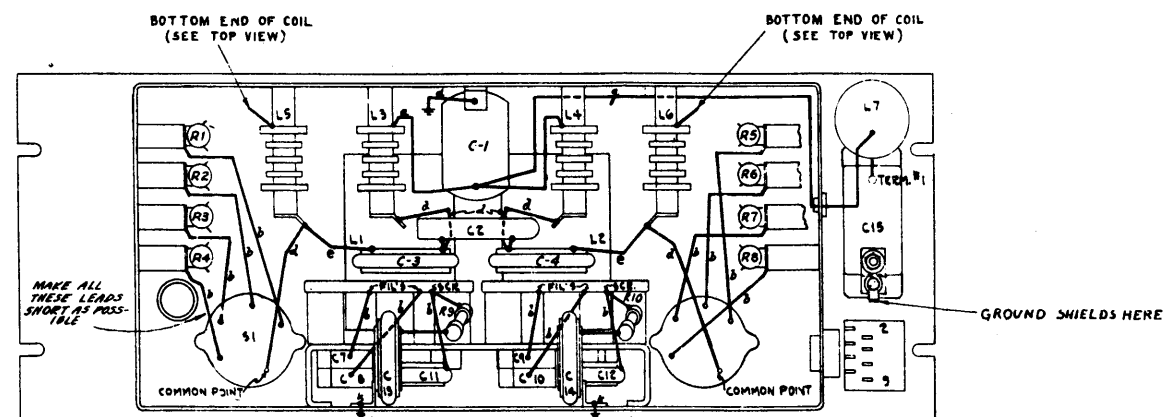
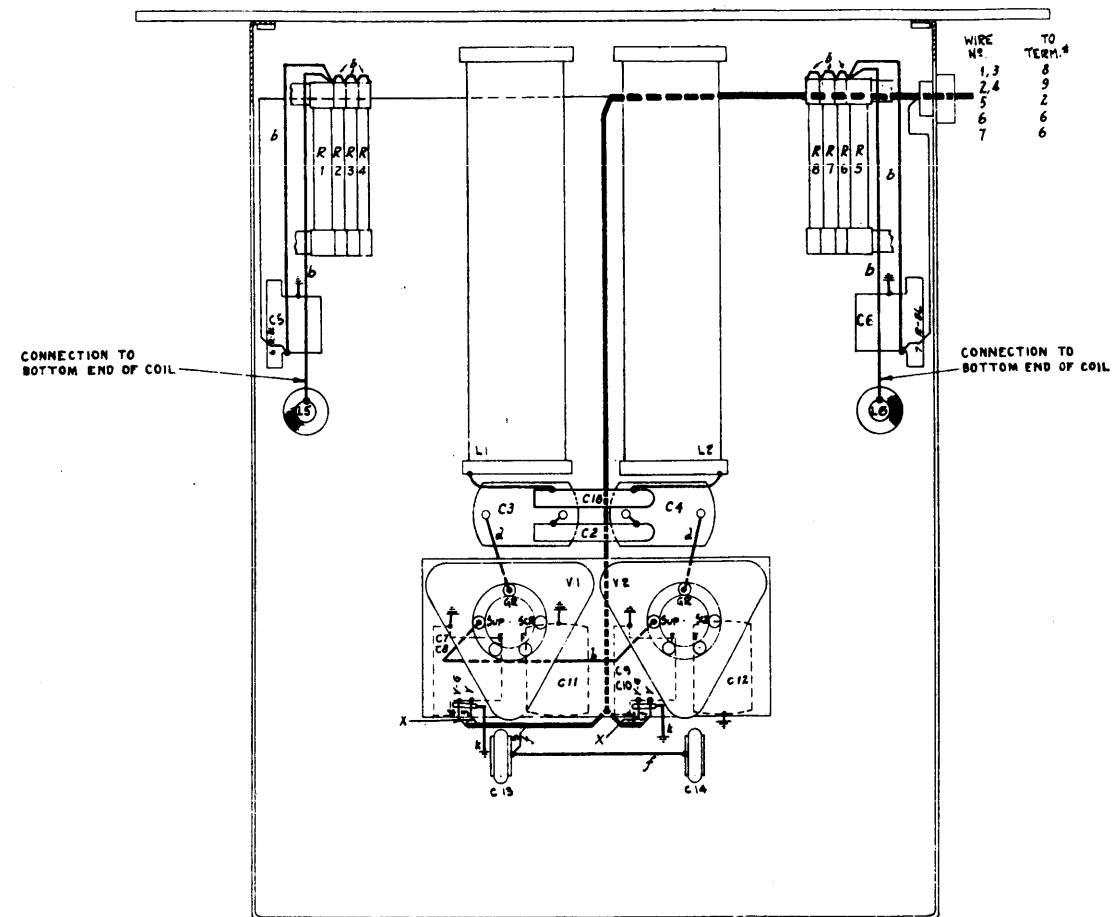


- NOTES
- ALL WIRE #20-TYPE F UNLESS OTHERWISE SPECIFIED.
COLOR AS DESIGNATED
- a - #16 BARE TINNED COPPER WIRE
d - #16 1/2 COPPER STRAP
e - 1/4 COPPER TUBING
f - G.E. CO. #14 YK-4181 WIRE
g - #6 STRANDED G.E. CO. YK-4261
- A - CONNECTION BY MEANS OF BRASS STUD
W - GROUND BY MEANS OF BRASS STUD
m - #16-TYPE F WIRE
L1, L2, COIL PER ESP-754379
J - #16 BARE TINNED COPPER WIRE
K - #22 PAIR-TYPE P-WIRE, COLOR AS SPECIFIED
GROUND BOTH ENDS PER ESP-796850





NOTES:
 ALL WIRE #20 T.E.C.B. UNLESS OTHERWISE SPECIFIED. COLOR AS DESIGNATED.
 d - 1/16" x 1/2" COPPER STRAP
 e - 1/16" COPPER TUBING
 f - G.E. Co #14 TYPE YK 4161 FOR 3000V.
 g - GROUND BY MEANS OF BRASS STRAP
 h - 1/16" BARE THINNED COPPER WIRE
 MAKE LEADS SHORT AS POSSIBLE



NOTES.

ALL WIRE #20 T.E.S.C.B. UNLESS OTHERWISE SPECIFIED.
COLOR AS DESIGNATED

a = #16 BARE TINNED COPPER WIRE COVERED WITH BLACK CAMBRIC SLEEVING.

b = #12 BARE TINNED COPPER WIRE.

c = 1/32" x 1/2" COPPER STRAP

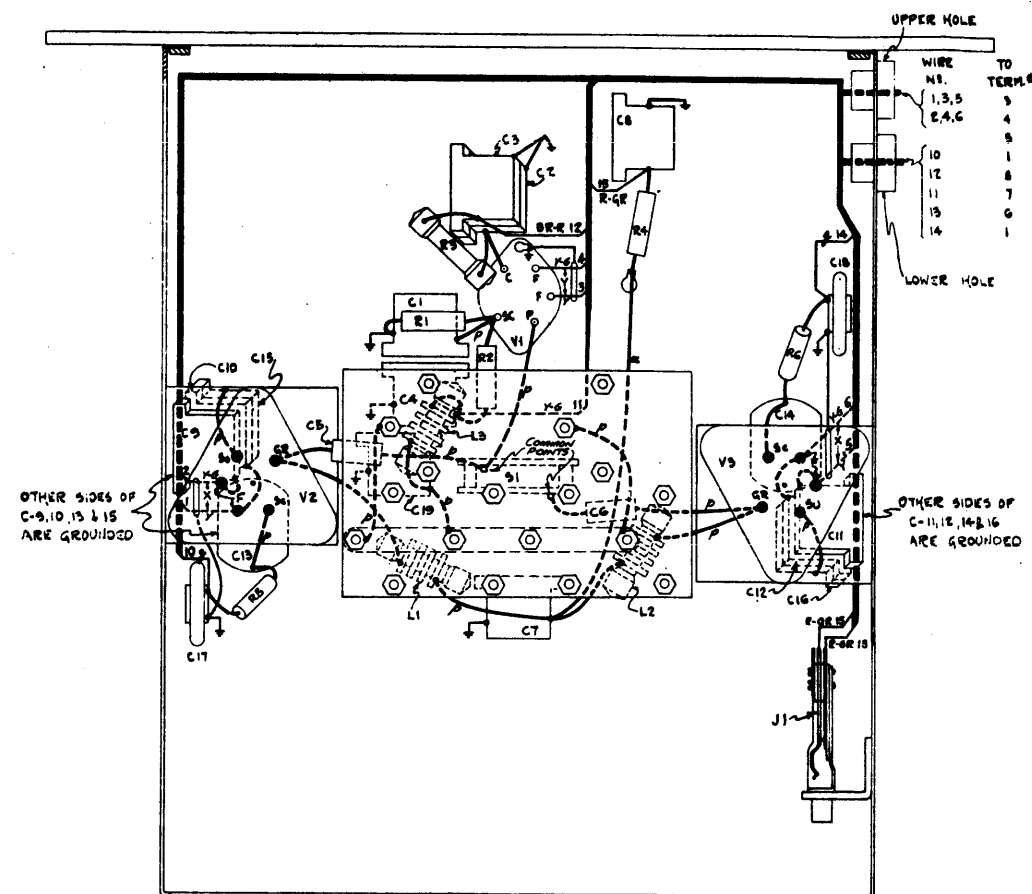
d = 1/8" COPPER TUBING

f = G.E. CO. #14 TYPE YK-4161

g = G.E. CO. #14 TYPE YK-4161 FOR 3000 V.

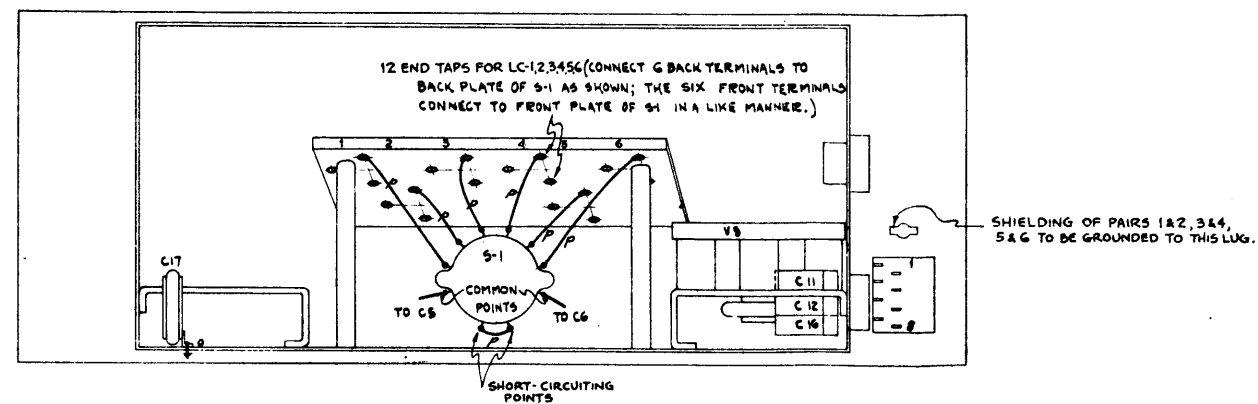
h = GROUND BY MEANS OF BRASS STUD.

x = SHIELDED PWR PER P-360919
GROUND SHIELD AT BOTH ENDS

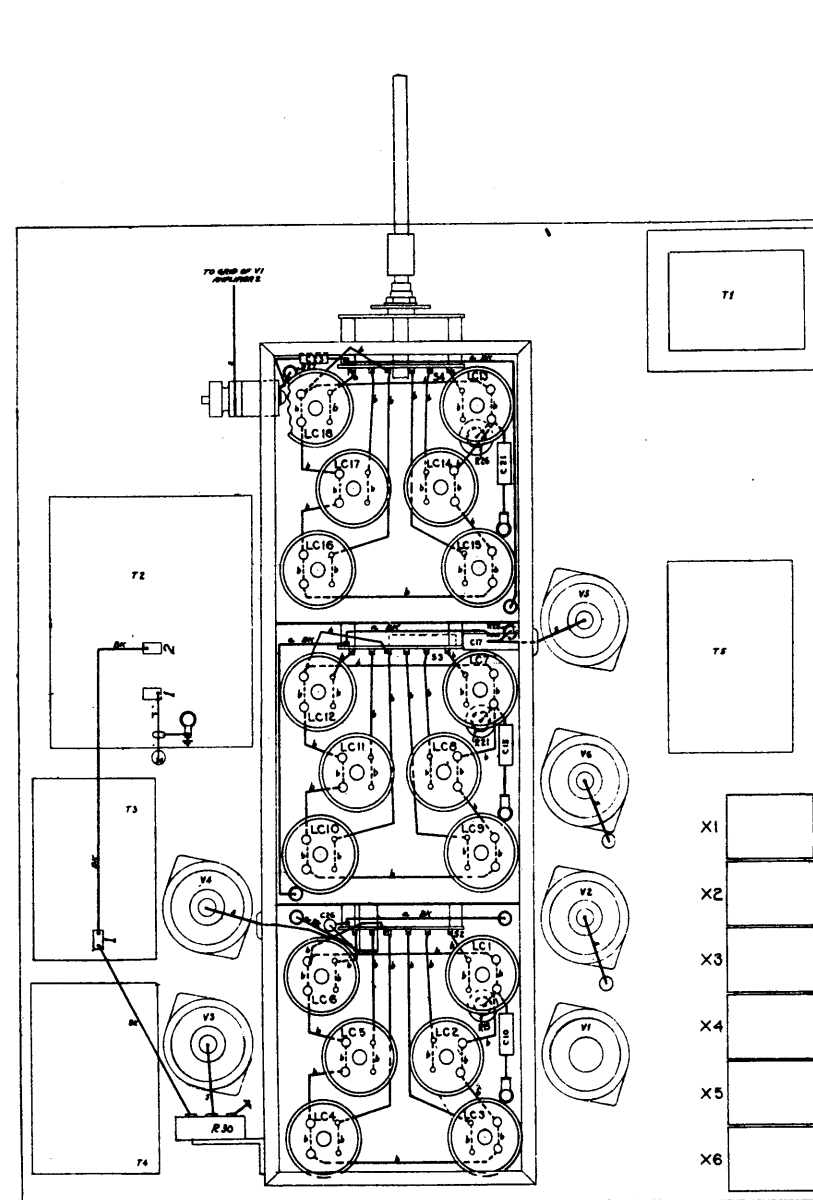


NOTES.

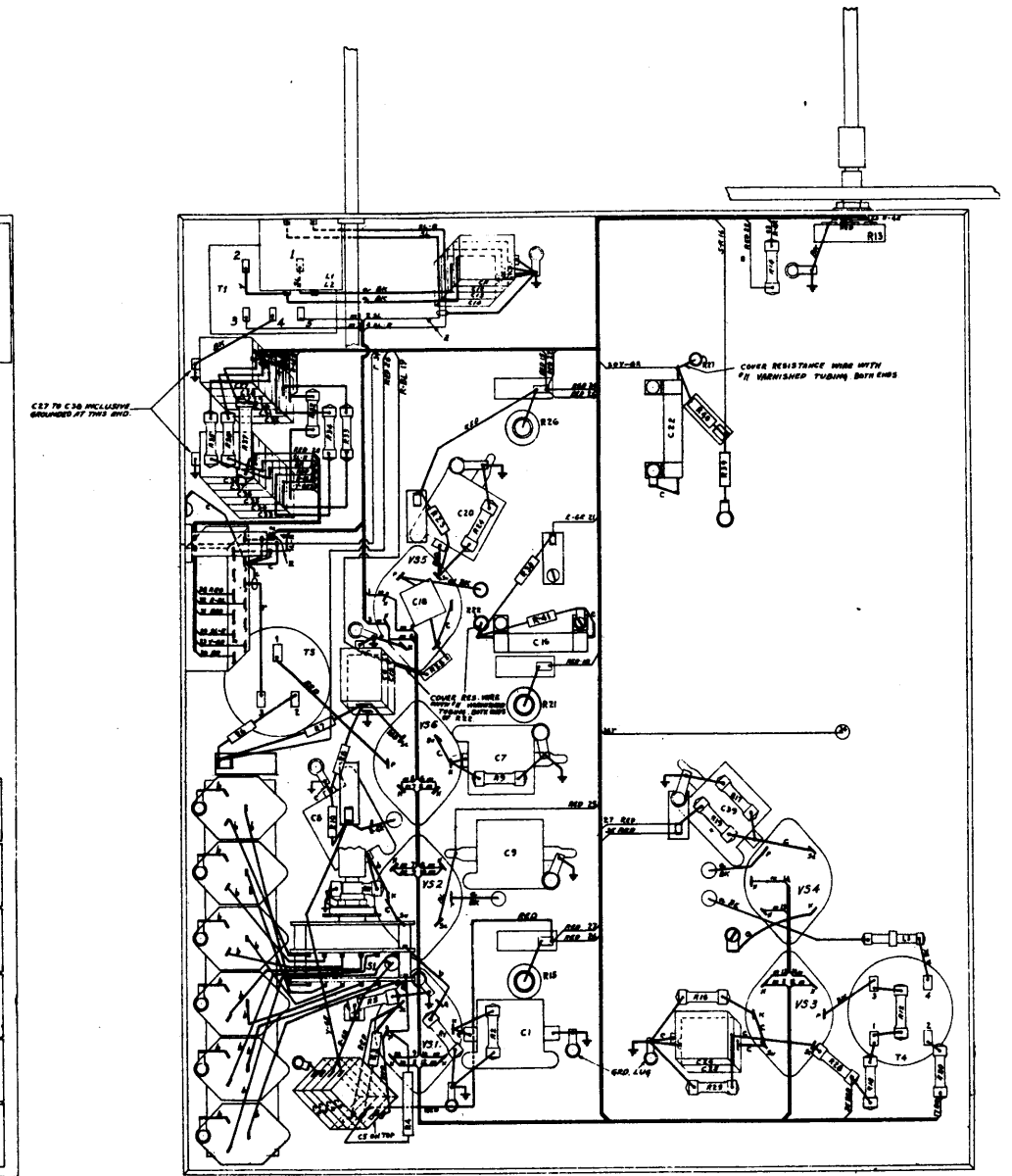
- ALL WIRE #20 T.E.S.C.B. UNLESS OTHERWISE SPECIFIED.
COLOR AS DESIGNATED.
- a #14 BARE TINNED COPPER WIRE COVERED WITH BLACK VARNISHED CAMBRIC SLEEVING.
- f G.E. CO. #14 TYPE YK-41G1
- g G.E. CO. #14 TYPE YK-41G1 FOR 3000V.
- m #16 T.E.S.C.B. WIRE. COLOR AS DESIGNATED.
- o GROUND BY MEANS OF BRASS STEAP
- p #12 BARE TINNED COPPER WIRE
- x SHIELDED PAIR PER P-360919 (GROUND BOTH ENDS AS SHOWN.)
- y TYPE "P" SHIELDED PAIR (GROUND AT BOTH ENDS PER ESP-796850)



RADIO TRANSMITTER
AMPLIFIER #2
WIRING DIAGRAM



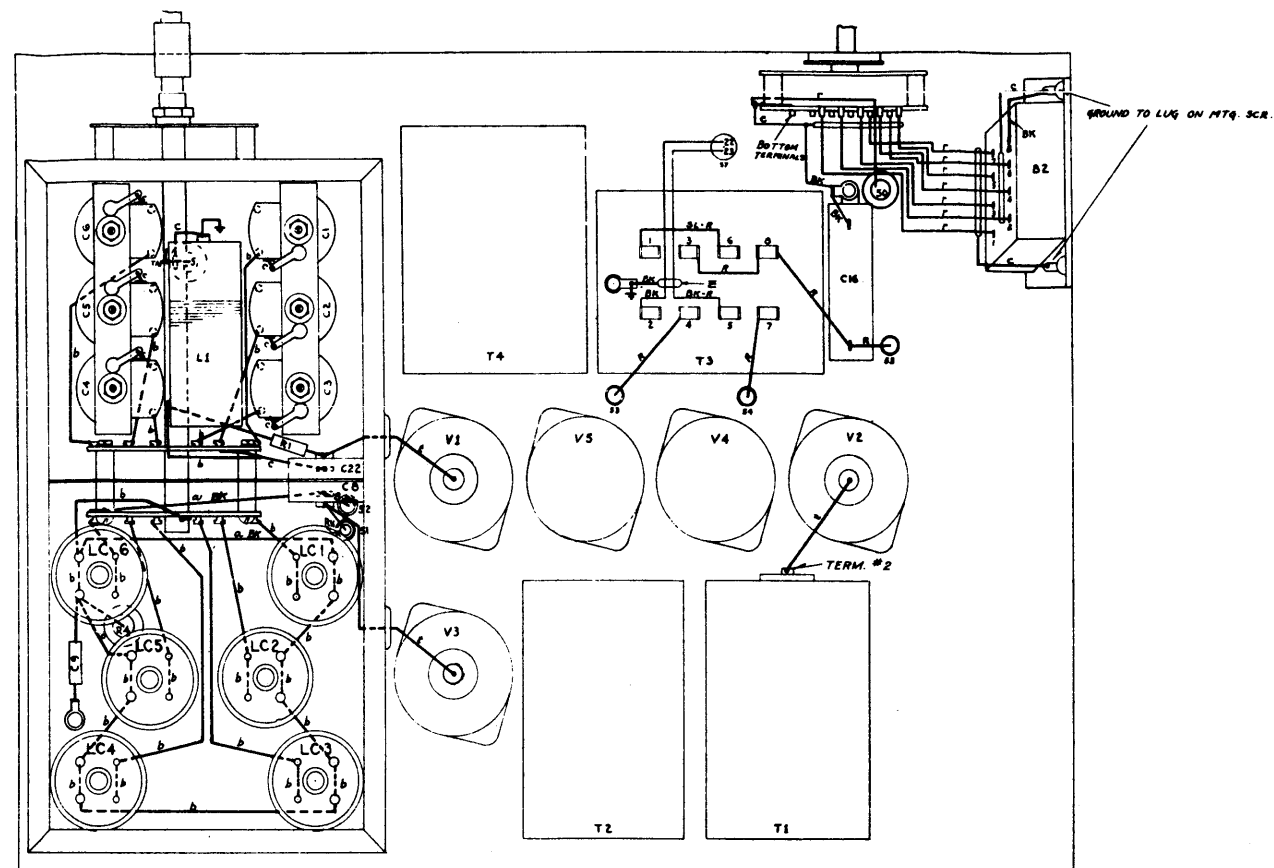
FRONT VIEW



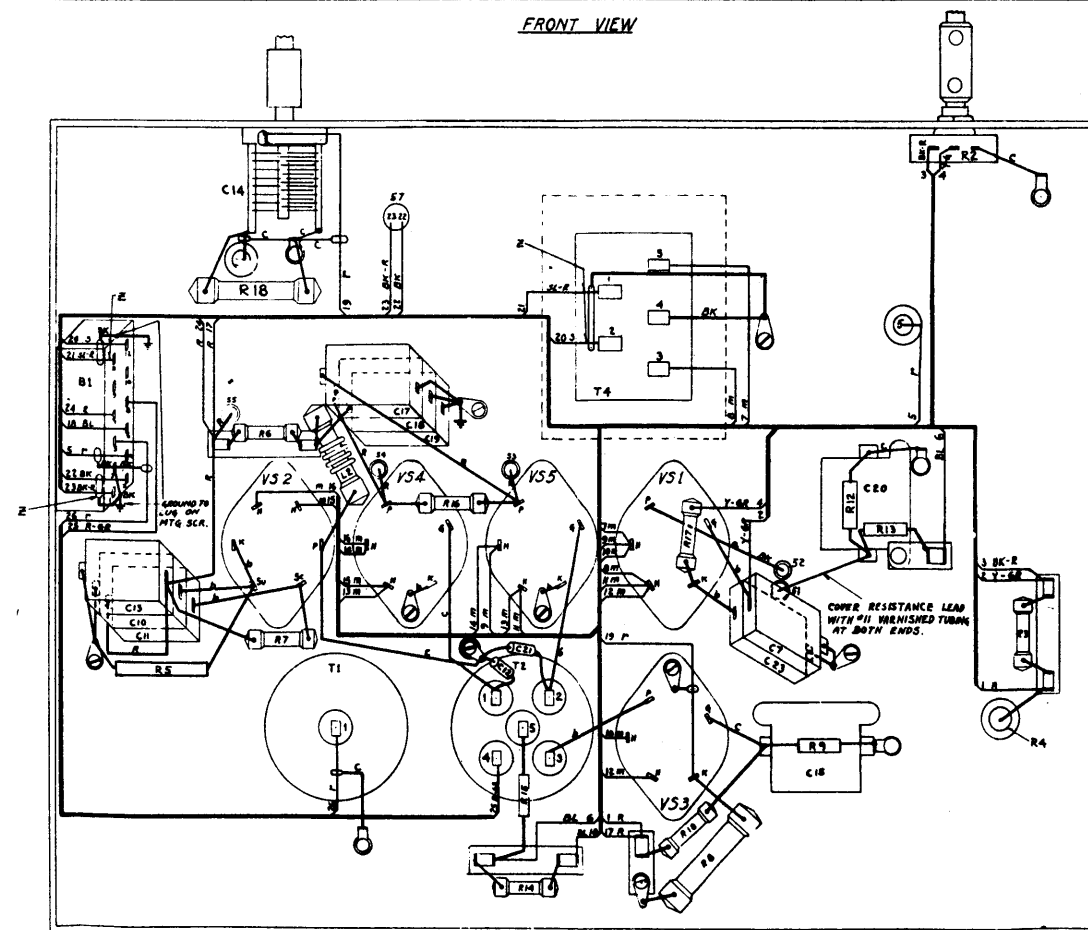
REAR VIEW

NOTES:

- ALL WIRES #20 T.E.S.C.B. UNLESS OTHERWISE SPECIFIED.
COLOR AS DESIGNATED.
- A - #18 BARE THINNED COPPER WIRE COVERED WITH #18 VARNISHED TUBING COLOR AS DESIGNATED.
 - B - #18 BARE THINNED COPPER WIRE.
 - C - #16 BARE THINNED COPPER WIRE.
 - D - #16 T.E.S.C.B. WIRE, COLOR BROWN, TWISTED PAIR.
 - E - #18 B.T.S. SOLID, SINGLE CONDUCTOR, LEAD COVERED WIRE.
 - F - FLEXIBLE BOND LEAD PER ESP-792184, FURNISHED WITH PANEL.
 - G - #18 PHN. TYPE P. WIRE COLOR AS SPECIFIED.
 - GROUND BOTH ENDS PER ESP-792184.

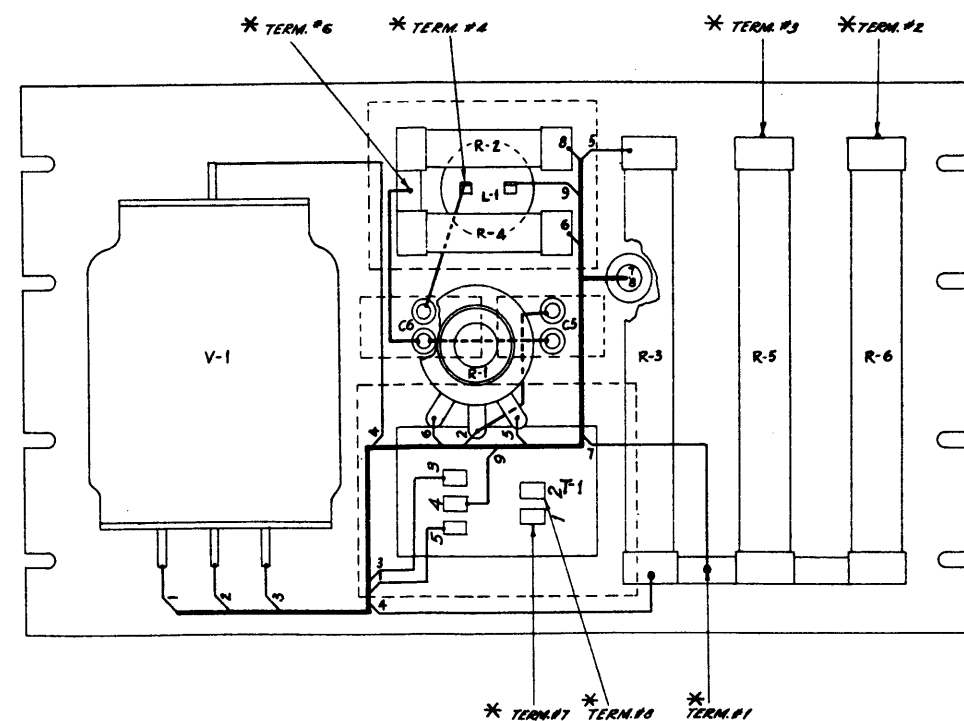


FRONT VIEW



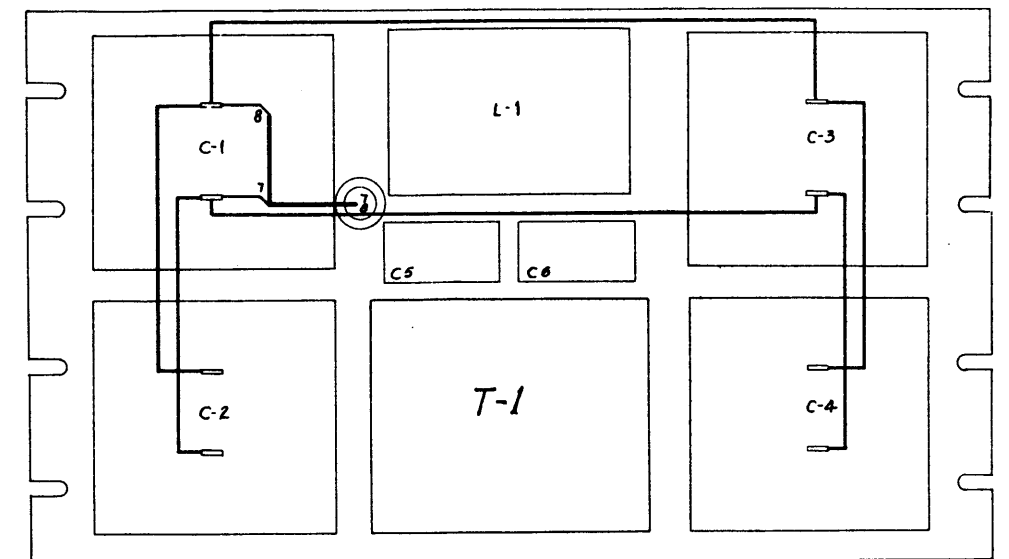
REAR VIEW

- NOTES:**
- ALL WIRES #20 T.E.S.C.B. UNLESS OTHERWISE SPECIFIED.
 - A - #14 BARE TINNED COPPER WIRE COVERED WITH #11 VARNISHED TUBING, COLOR AS DESIGNATED.
 - B - #14 BARE TINNED COPPER WIRE.
 - C - #16 BARE TINNED COPPER WIRE.
 - M - #16 T.E.S.C.B. WIRE, COLOR BROWN, TWISTED PAIR.
 - F - #18 O.F.S. SOLID, SINGLE CONDUCTOR, LEAD COVERED WIRE.
 - I - FLEXIBLE GRID LEAD PER ESP-792194 FURNISHED WITH PANEL.
 - E - #22 PAIR-TYPE P-WIRE, COLOR AS SPEC. GROUND BOTH ENDS PER ESP-796850.

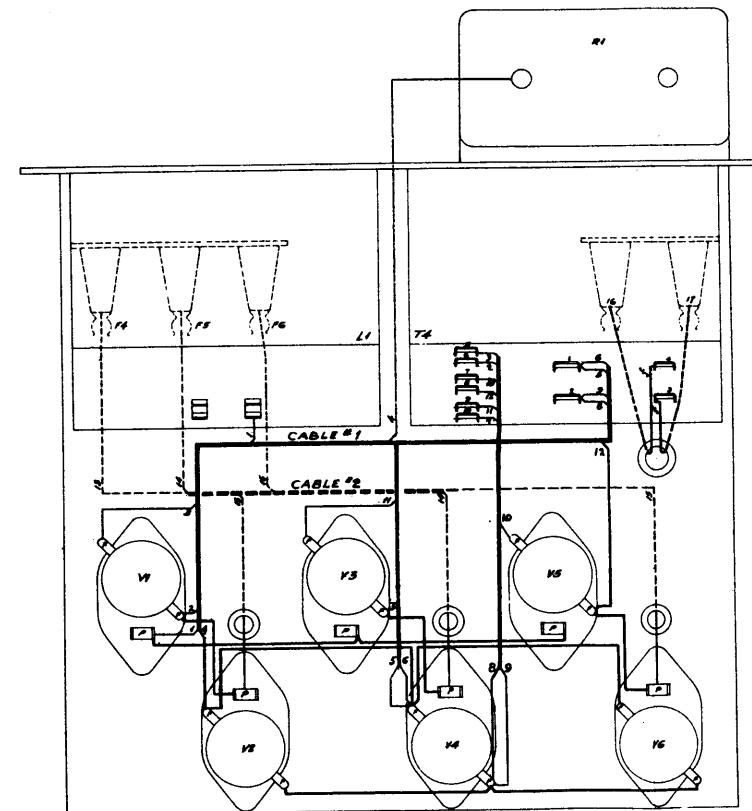


REAR VIEW

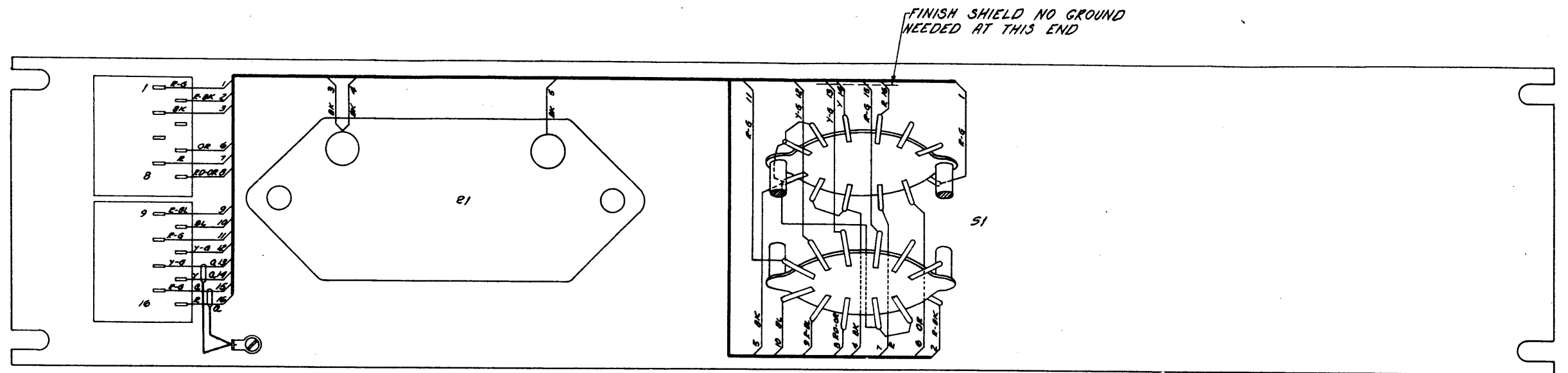
ALL WIRE TO BE G.E. Co TYPE YK-4161 #14
FOR 3000 VOLTS.



FRONT VIEW

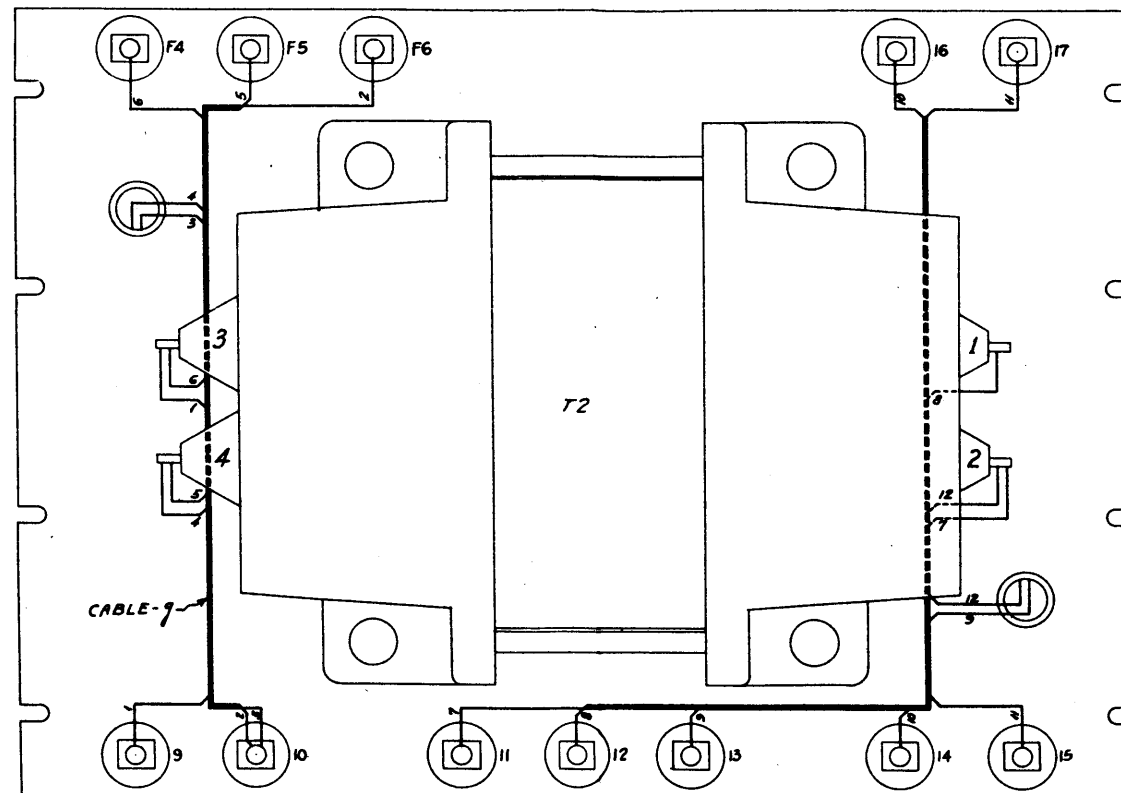


ALL WIRE TO BE G.E. #14 YK-4161 FOR 3000 VOLTS
UNLESS OTHERWISE SPECIFIED.
f = G.E. #14 YK-4161



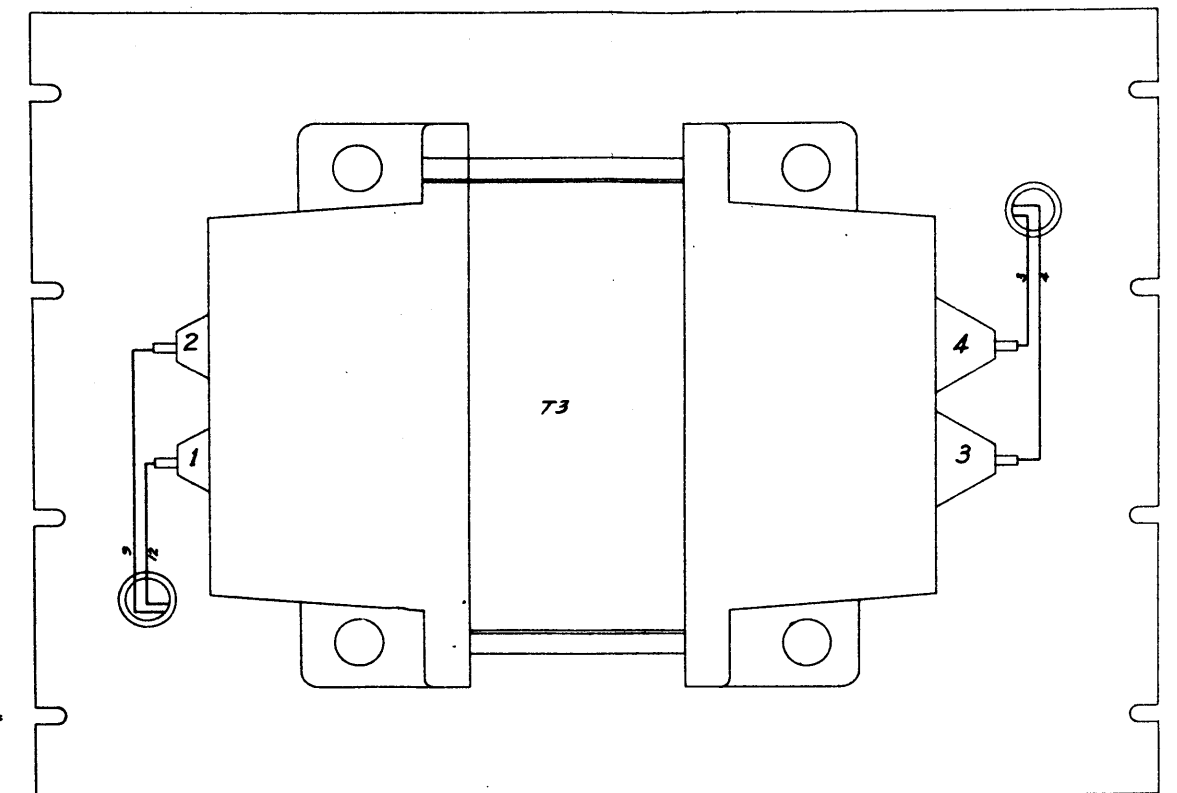
ALL WIRE #20 T.R. S.C.D. UNLESS OTHERWISE SPECIFIED
 COLORS AS DESIGNATED
 Q-#22 PAIR, TYPE "P" WIRE COLOR AS SPECIFIED GROUND
 PER ESP-796850

RADIO TRANSMITTER
 VOLTMETER SWITCHING PANEL
 WIRING DIAGRAM

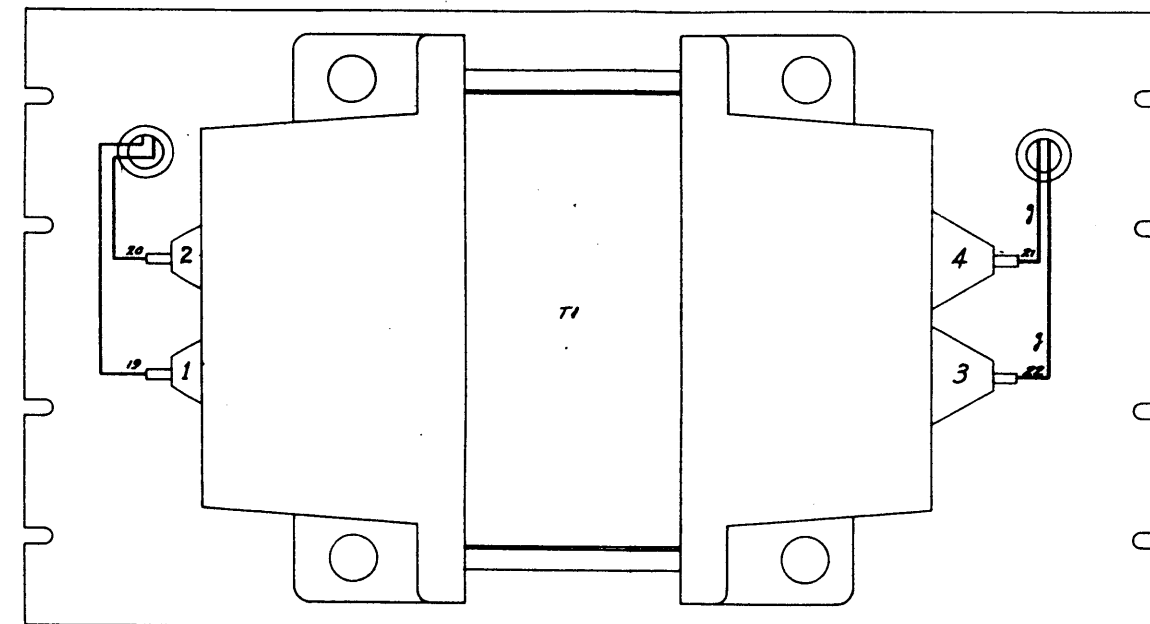
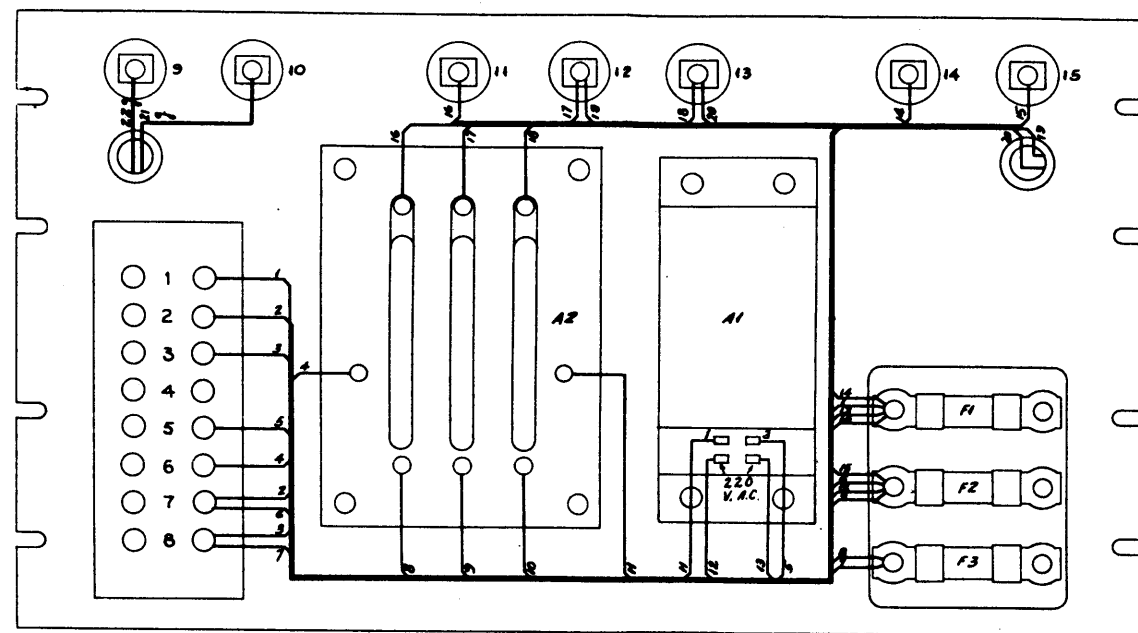


FRONT VIEW

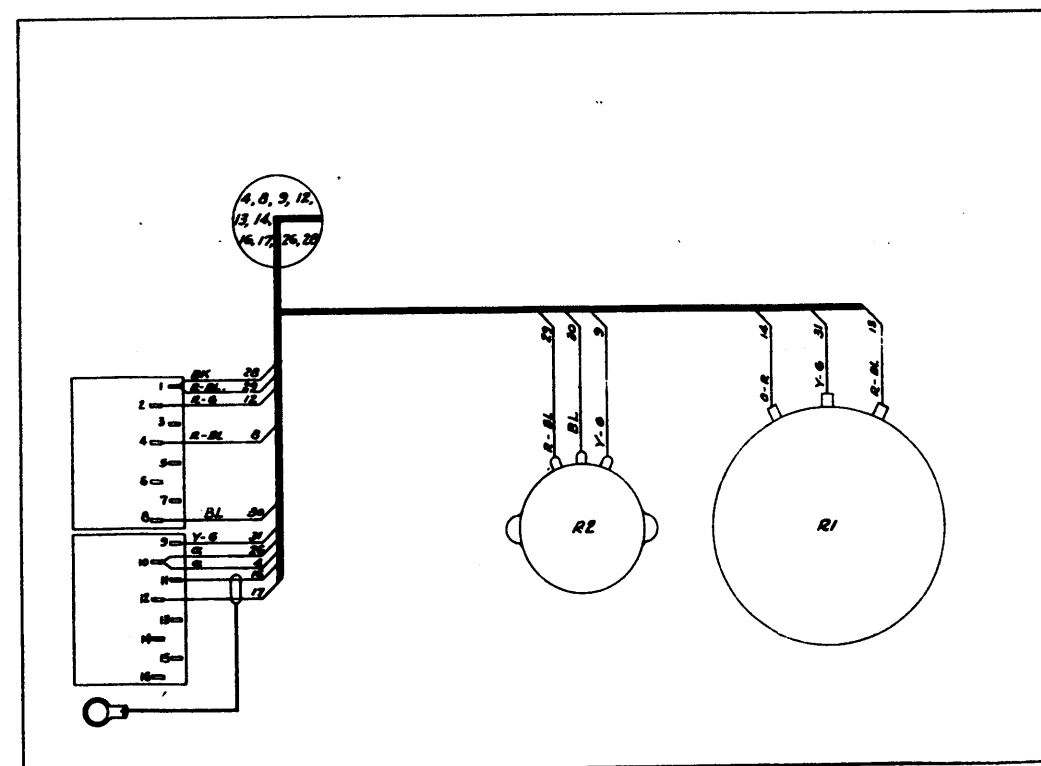
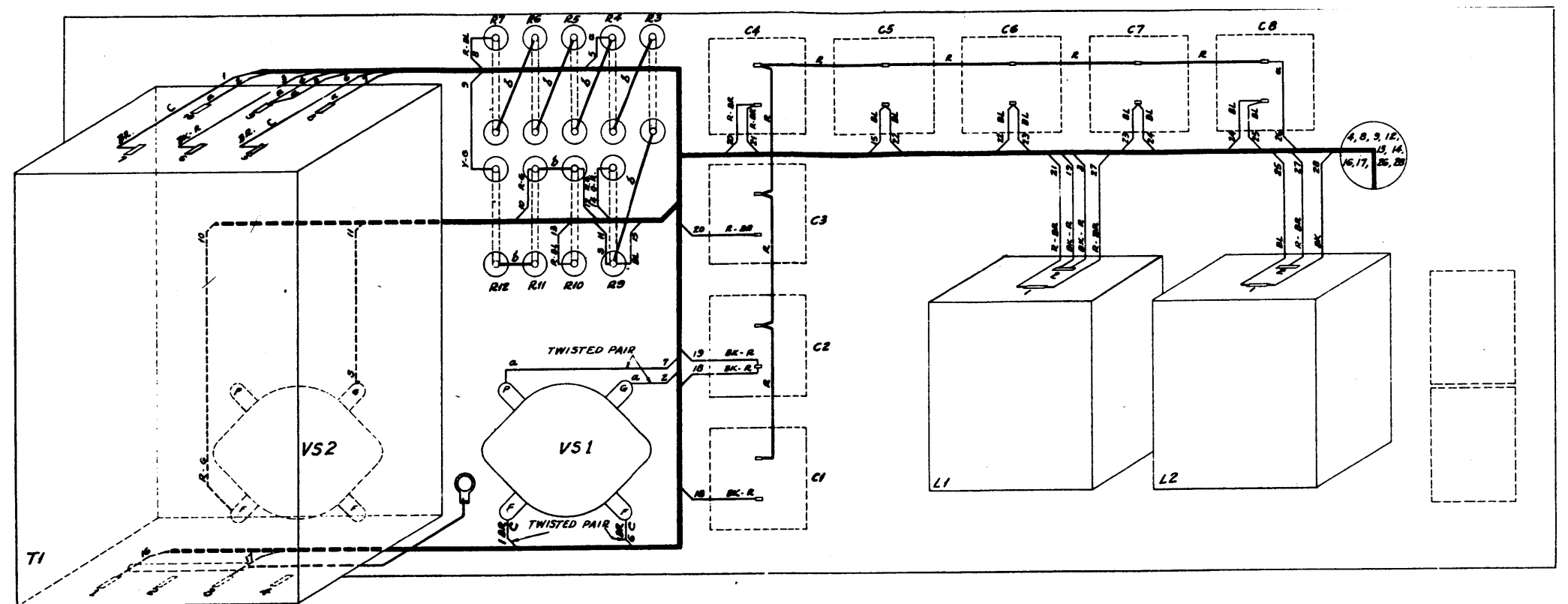
ALL WIRES IN CABLE-7 TO BE G.E. #14 YK-4161 FOR 3000 VOLTS
ALL OTHER WIRES TO BE G.E. #14 YK-4161



REAR VIEW



g - G.E. #14 YK-4161 FOR 3000 VOLTS
ALL OTHER WIRES #14 YK-4161



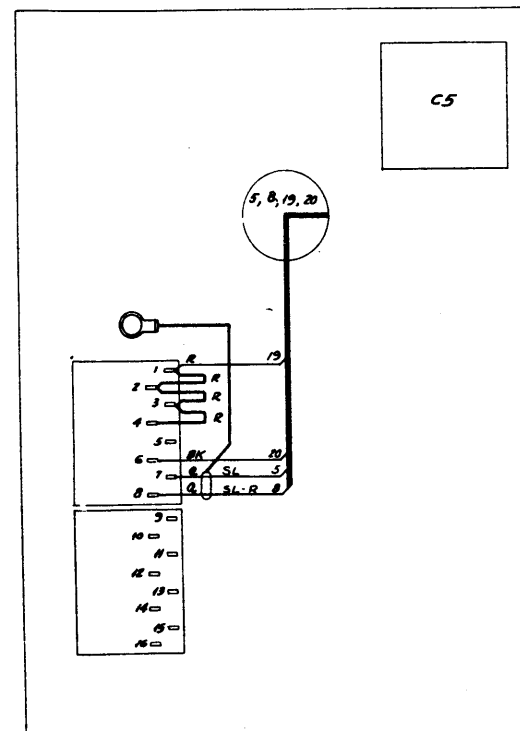
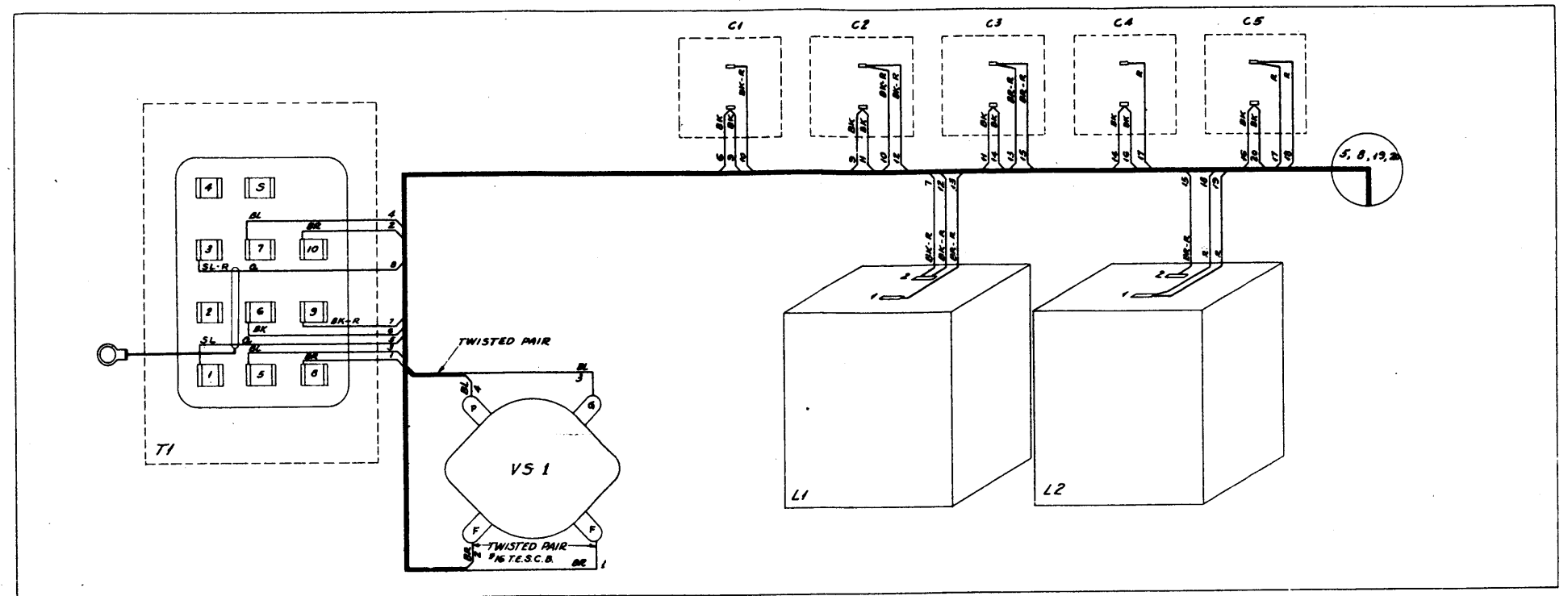
a - D-157375 #16 WIRE BLACK

b - #16 BARE TINNED COPPER WIRE.

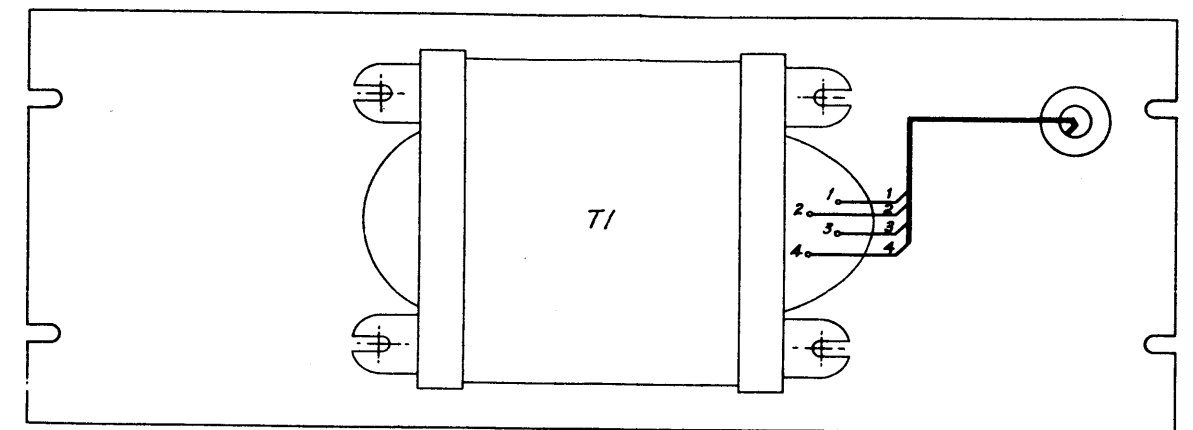
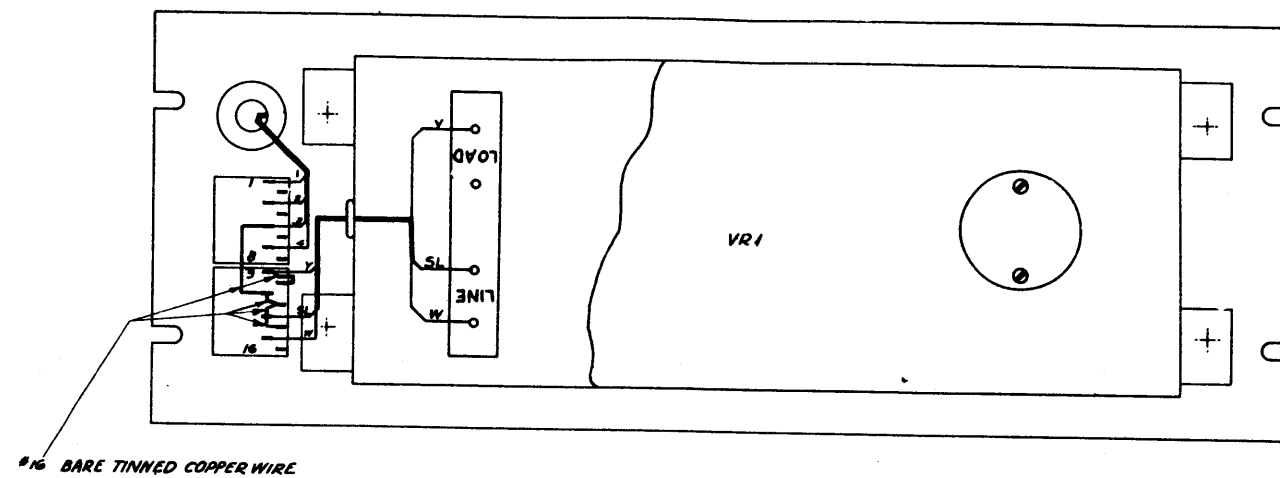
m - #16 T.E.S.C.D. WIRE

ALL OTHERS #20 TYPE F, COLORS AS DESIGNATED UNLESS OTHERWISE SPECIFIED.

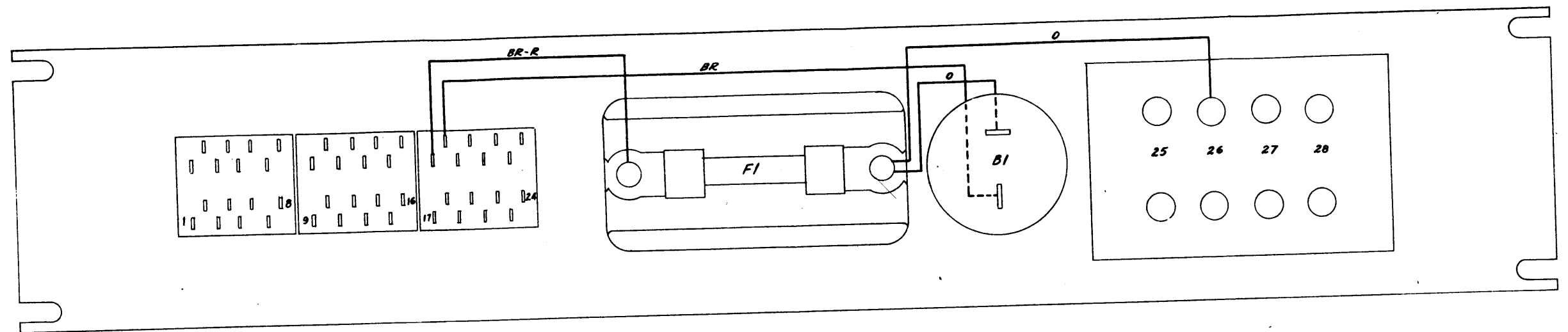
LEADS TO BE SHIELDED PAIR MADE OF S.E.CO. YK-4161 #16 WIRE IN BELDEN BRID



ALL WIRE #20 T.E.S.C.B. UNLESS OTHERWISE SPECIFIED
 COLORS AS DESIGNATED.
 2-#22 PAIR-TYPE P-WIRE COLOR AS SPECIFIED
 GROUND BOTH ENDS PER MSP-796650



W, SL ARE RUBBER COVERED PAIR SUPPLIED
WITH VOLTAGE REGULATOR.
Y IS # 20 T.E.S.C.B
LEADS 1,2,3,4 ARE EXTENSION LEADS OF
TRANSFORMER (T1)



ALL WIRE #20 T.E.S.C.B. COLORS AS DESIGNATED

RADIO TRANSMITTER
HIGH FREQUENCY UNIT
DISTRIBUTION PANEL
WIRING DIAGRAM

WESTERN ELECTRIC D-156000 RADIO TRANSMITTER
APPARATUS AND DESIGNATION LIST

For Circuit Schematic See ESXX-782860

KEY TO DESIGNATIONS

A	Relay
B	Service Outlet
C	Condenser
CX	Copper Oxide Rectifier
F	Fuse
H	Elapsed Time Indicator
J	Jack
L	Inductance, Choke, Retard Coil
LC	Tuning Unit
M	Meter
R	Resistance, Rheostat, Potentiometer
S	Switch
T	Transformer
V	Vacuum Tube
VR	Voltage Regulator
X	Quartz Crystal
Y	Ventilating Fan

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1. VOLTAGE REGULATOR

- T1 American Transformer Co., Insulating Transformer as per Spec. No. 24999, 230/115 V., single phase, 50-60 cycles, 1000VA continuous.
- VR1 Raytheon Mfg. Co., Voltage Regulator, Type VR4, Class I, 250 W. Primary 115 V. $\pm 10\%$, single phase, 50 or 60 cycles. Shall deliver 115 V. $\pm 1\%$ into a load of 185 W. having an 89% inductive power factor. Cat. #W-245. (Frequency to be specified).

2. RECTIFIER #2

C1 Western Electric Co., Condenser, Type 228A, 2 mf., 400 V. d-c.
C2
C3 Western Electric Co., Condenser, Type 137A, 4 mf.,
C4 200 V. d-c.
C5
L1 Western Electric Co., Retardation Coil, Type 172B, 18.5 H.
L2
T1 Western Electric Co., Transformer, Type 333A, Primary
107.5/115/122.5 V.; Secondary 500/5.05 V.
V1 Western Electric Co., Vacuum Tube, Type 274A.

3. RECTIFIER #3

C1 Western Electric Co., Condenser, Type 228A, 2 mf., 400 V.
C2 d-c.
C3
C4
C5
C6
C7
C8

L1 Western Electric Co., Retardation Coil, Type 172 B, 18.5 H.
L2

R1 General Radio Co., Potentiometer, Type 214A, 400 ohms. Metal
shaft replaced by a phenol fibre shaft.

R2 International Resistance Co., Volume Control Type 11-116,
10,000 ohms.

R3 Western Electric Co., Resistance, Type 18FJ, 5,000 ohms.

R4 Western Electric Co., Resistance, Type 18EC, 6,000 ohms.

R5 Western Electric Co., Resistance, Type 18AC, 500 ohms.
R6
R7

R9 Western Electric Co., Resistance, Type 18AJ, 400 ohms.

R10 Western Electric Co., Resistance, Type 18BH, 1,000 ohms.

R11 Western Electric Co., Resistance, Type 18EC, 6,000 ohms.

R12 Western Electric Co., Resistance, Type 18EA, 9,000 ohms.

T1 Western Electric Co., Transformer, Type D-97483, Primary
215/230/245 V.; Secondary 720/5.0 V.

V1 Western Electric Co., Vacuum Tube, Type 274A.

V2 R.C.A., Vacuum Tube, Type 874.

4. RECTIFIER #4

- A1 W.E. Co. - 250A Time Delay Relay.
- A2 Struthers Dunn, Inc., Dunco relay, Type 84CXX, Contacts rated 220 V. a-c., 15A. Coil to operate on 100 m.a. d-c. $\pm 15\%$.
The resistance of this coil to be 300 ohms.
- F1 D. & W., Fuse, Cat. #91136, 20A., 250 V.
F2
F3
- F4 D. & W., Western Union Fuse, 2A., 2,500 V.
F5
F6
- L1 American Transformer Co., Retardation Coil as per Spec. No. 24368.
- R1 Weston Electrical Instrument Corp., Multiplier in Type 4-1 box, supplied with 3,500 V. meter.
- T1 American Transformer Co., Transformer as per Spec. No. 19993,
T2 Drawing #S-26993, 230/2260 V., single phase, 50-60 cycles,
T3 2.1 KVA,
- T4 American Transformer Co., Transformer as per Spec. No. 20067,
230 to 5.1/5.1/5.1/5.1 V., single phase, 50-60 cycles, 306VA.
- V1 Western Electric Co., Vacuum Tube, Type 267B.
V2
V3
V4
V5
V6

5. SCREEN SUPPLY REGULATOR PANEL

C1 Western Electric Co., Condenser, Type D-96887, 1 mf., 4,000 V.
C2 d-c.
C3
C4

R1 Ohmite, Potentiometer, model J 10,000 ohms, 0.07 amperes,
insulated for 300 volts.

R2 Ward-Leonard Electric Co., Resistor, Type 3-1/2" B, with Band
Ferrules, Type 308, 35 ohms.

R3 Ward-Leonard Electric Co., Resistor, Type 8-1/2" D, with Band
Ferrules, Type 310, 100,000 ohms.

R4 Ward-Leonard Electric Co., Resistor, Type 3-1/2" B, with Band
Ferrules, Type 308, 20,000 ohms.

R5 Ward-Leonard Electric Co., Resistor, Type 8-1/2" D, with Band
Ferrules, Type 310, 15,000 ohms.

R6 Ward-Leonard Electric Co., Resistor, Type 8-1/2" D, with Band
Ferrules, Type 310, 1,000 ohms.

T1 American Transformer Co., Filament Transformer as per Spec.
No. 22102 in case 5B. 230/14 V., single phase, 50-60 cycles,
85VA.

V1 Western Electric Co., Vacuum Tube, Type 212E.

C5 Western Electric Co., Condenser, Type 290A, 3.5 mf.
C6

L1 American Transformer Co., Filter Reactor Type L216B

6. VOLTMETER SWITCHING PANEL

- R1 Weston Electrical Instrument Corp., Multiplier Type 8 supplied with 35/350 V. meter.
- S1 Yaxley Co., Switch, Type RL, Two gang, Two circuit, 1 to 11 points, non-shorting.

7. RECTIFIER #1

C1	Western Electric Co., Condenser, Type 228A, 2 mf., 400 V.
C2	d-c.
C3	Western Electric Co., Condenser, Type 137A, 4 mf., 200 V.
C4	d-c.
C5	
L1	Western Electric Co., Retardation Coil, Type 172B, 18.5 H.
L2	
R3	Western Electric Co., Resistance, Type 18FJ, 5,000 ohms.
R4	Western Electric Co., Resistance, Type 18S, 20 ohms.
R5	Western Electric Co., Resistance, Type 18D, 120 ohms.
R6	Western Electric Co., Resistance, Type 18ED, 75 ohms.
T1	Western Electric Co., Transformer, Type 333A, Primary 105.5/115/122.5 V., Secondary 500/5.05 V.
V1	Western Electric Co., Vacuum Tube, Type 274A.

8. ATTENUATOR PANEL, A OR B

R1 Western Electric Co., Resistor, Type 19LG, 84-84 ohms.
R2 Western Electric Co., Resistor, Type 19ET, 983 ohms.
R4 Western Electric Co., Resistor, Type 19LG, 84-84 ohms.
R5 Western Electric Co., Resistor, Type 19AJ, 200-200 ohms.
R6 Western Electric Co., Resistor, Type 18AM, 250 ohms.
R7 Western Electric Co., Resistor, Type 19AJ, 200-200 ohms.

9. KEY PANEL

- 81 Western Electric Co., Telegraph key, Type 1A, modified as per
ESL-759357.
- 82 Western Electric Co., Key Unit, Type 2DH.
- 83 Western Electric Co., Key Unit, Type 2DH.

10. MODULATOR #1A AND #1B

C1 Western Electric Co., Condenser, Type 233A, 0.7 mf., 400 V.
C2 d-c.
C3
C4 Western Electric Co., Condenser, Type 137A, 4 mf., 200 V. d-c.
C5 Western Electric Co., Condenser, D-170103 balancing type (75 mmf.)
J1 Western Electric Co., Jack, Type 218A.
R1 International Resistance Co., Resistor, Type BT-1, 0.3 megohm.
R2 International Resistance Co., Resistor, Type BT-1/2, 50,000
R3 ohms.
R4 Western Electric Co., Resistance, Type 38E, 20,000 ohms.
R5 International Resistance Co., Resistor, Type BT-1, 60,000
ohms.
R6 General Radio Co., Rheostat, Type 410A or 301A, 200 ohms.
R7 International Resistance Co., Volume Control, Type 11-120,
25,000 ohms.
R8 International Resistance Co., Resistor, Type BT-1/2 800 ohms.
R9 International Resistance Co., Resistor, Type F-1/2 100 ohms.
R10
R11 International Resistance Co., Resistor, Type BT-1/2 200 ohms.
R12 International Resistance Co., Resistor, Type BT-1/2 150 ohms.
R13
T1 Western Electric Co., Input Transformer, Type D-97793
T2 Western Electric Co., Input Transformer, Type D-97798
T3 American Transformer Co., Filament Transformer as per Spec.
No. 19989, 115/2.1 V., single phase, 50-60 cycles, 10.7 VA.
T4 Western Electric Co., Output Transformer, Type D-97794 for
Modulator #1A. Type D-97799 for Modulator #1B.
V1 Western Electric Co., Vacuum Tube, Type 259A
V2

11. CRYSTAL FILTERS

Crystal Filter A: Western Electric Co., Type D-156023

Crystal Filter B: Western Electric Co., Type D-156024

R1 International Resistance Co., Resistor, Type BT-1/2, 300 ohms.

R2

R3

12. MULTI CIRCUIT LOW FREQUENCY PANEL

- C1 Hammarlund Mfg. Co., Air Padding Condenser, Code #APC-100,
Cap. 100 mmf. or Western Electric Co., Condenser per drawing
ESA-682070 - Detail 18.
- C2 Hammarlund Mfg. Co., Air Padding Condenser, Code #APC-100,
Cap. 100 mmf. or Western Electric Co., Condenser per drawing
ESA-682070 - Detail 18.
- C3 Aerovox Corp., Condenser, Type 1455, 0.01 mf., 500 V. d-c.
C4
C5
- C6 Erie Resistor Corp. Condenser Ceramicon, Type P120K, 10 mmf.
- C7 Aerovox Corp., Condenser, Type 1455, 0.001 mf., 500 V. d-c.
- C8 Western Electric Co., Condenser, Type AG-2, 100 mmf., 200 V.
d-c.
- C9 Hammarlund Mfg. Co., Air Padding Condenser, Code #APC-100,
Cap. 100 mmf. or Western Electric Co., Condenser per drawing
ESA-682070 - Detail 18.
- C10 Western Electric Co., Condenser, Type 312A, 0.1 mf., 300 V. d-c.
- C11 Erie Resistor Corp., Condenser, Ceramicon Type N750E, 500 mmf.
- C12 Erie Resistor Corp., Condenser, Ceramicon, Type P120K, 10 mmf.
- C13 Aerovox Corp., Condenser, Type 1455, 0.0001 mf., 500 V. d-c.
- C14 Aerovox Corp., Condenser, Type 1455, 0.01 mf., 500 V. d-c.
C15
- C16 Western Electric Co., Condenser, Type 312A, 0.1 mf., 300 V. d-c.
C17
C18
C19
C20
- C21 Western Electric Co., Condenser 233A, .7 mf.
- C22 Aerovox Corp., Condenser, Type 1455, 0.01 mf., 500 V. d-c.
- C23 Aerovox Corp., Condenser, Type 1463, 0.00025 mf., 500 V. d-c.
- C24 Aerovox Corp., Condenser, Type 1455, 0.01 mf., 500 V. d-c.
C25
C26
C27

(Continued)

12. MULTI CIRCUIT LOW FREQUENCY PANEL (Continued)

C28 Cornell Dubilier Type 2R, 250 mmf.
C29 Cornell Dubilier Type 2R, 50 mmf.
C30 Western Electric, Condenser, Type 233A, 0.7 mf.
J1 Western Electric Co., Jack, Type 218A.
L1 Automatic Winding Co., Inductance Coil, Type 400-5, 0.2 mh.
R1 International Resistance Co., Resistor, Type BT-1/2, 0.25 megohm.
R2 International Resistance Co., Resistor, Type BT-1/2, 750 ohms.
R3 International Resistance Co., Resistor, Type BT-1/2, 1,000 ohms.
R4 International Resistance Co., Resistor, Type BT-1, 1,000 ohms.
R5 International Resistance Co., Resistor, Type BT-1, 20,000 ohms.
R6 International Resistance Co., Resistor, Type BT-1/2, 15,000 ohms..
R7 International Resistance Co., Resistor, Type BT-1/2, 20,000 ohms.
R8 International Resistance Co., Resistor, Type BT-1/2, 30,000 ohms.
R9
R10 Western Electric Co., Resistance, Type 38AH, 25,500 ohms.
R11
R12 International Resistance Co., Resistor, Type BT-1/2, 0.25 megohm.
R13 International Resistance Co., Resistor, Type BT-1/2, 0.1 megohm.
R14 International Resistance Co., Resistor, Type BT-1/2, 300 ohms.
R15 International Resistance Co., Resistor, Type BT-1/2, 250,000 ohms.
R16 International Resistance Co., Resistor, Type BT-1/2, 1,000 ohms.

(Continued)

12. MULTI CIRCUIT LOW FREQUENCY PANEL (Continued)

R17 International Resistance Co., Resistor, Type BT-1, 20,000 ohms.

R18 International Resistance Co., Resistor, Type BT-1, 20,000 ohms.

R19 International Resistance Co., Resistor, Type BT-1/2, 1,000 ohms.

R20 International Resistance Co., Resistor, Type BT-1, 10,000 ohms.

R21 General Radio Co., Potentiometer, Type 214A, 2,000 or 2,500 ohms.

R22 International Resistance Co., Resistor, Type BT-1/2, 1,000 ohms.

R23 International Resistance Co., Resistor, Type BT-1/2, 5,000 hms.

R24 International Resistance Co., Resistor, Type BT-1/2, 50,000 hms.

R25 International Resistance Co., Resistor, Type BT-1/2, 3,000 hms.

R26 International Resistance Co., Resistor, Type BT-1/2, 0.1 megohm.

R27 International Resistance Co., Volume Control, Type 11-120 25,000 ohms.

R28 International Resistance Co., Resistor, Type BT-1/2, 250 ohms

R29 International Resistance Co., Resistor, Type BT-1/2, 500 ohms.

R30

R31 International Resistance Co., Resistor, Type BT-1/2, 125,000 ohms.

R32 International Resistance Co., Resistor, Type BT-1, 20,000 ohms.

R34 International Resistance Co., Resistor, Type BT-1/2, 0.5 megohm.

R35 International Resistance Co., Resistor, Type BT-1, 20,000

R36 hms.

(C ntinued)

12. MULTI CIRCUIT LOW FREQUENCY PANEL (Continued)

R37 Western Electric Co., Resistance, Type 1L, 100 ohms.
(Supplied with T5)

R38 International Resistance Co., Resistor, Type BT-1/2, 1,000 ohms.

T1 American Transformer Co., Filament Transformer as per Spec.
No. 20064, 115 V. to 2.1/6.4 V., single phase, 50-60 cycles,
40VA.

T2 Western Electric Co., Output Transformer, Type D-97797.
T3

T4 Western Electric Co., Input Transformer, Type D-97796.

T5 Western Electric Co., Output Transformer, Type D-97795.

T6 Western Electric Co., Filter, Type D-97985.

T7 Western Electric Co., Filter, Type D-97986.

T8 Western Electric Co., 2,500 kc. Output as per Drawing
ESL-548940.

T9 Western Electric Co., 2,625 kc. Output as per Drawing
ESL-548934.

V1 RCA, Vacuum Tube, Type 41.

V2 Western Electric Co., Vacuum Tube, Type 244A.
V3

V4 RCA, Vacuum Tube, Type 6L7G.

V5 Western Electric Co., Vacuum Tube, Type 259A.
V6
V7
V8
V9

X1 Western Electric Co., Quartz plate, Type 7B, 625.00 KC. For
use in D-156000 Radio Transmitter.

13. LOW POWER HIGH FREQUENCY UNIT

C1 Aerovox Corp., Condenser, Type 1455, 0.01 mf., 500 V. d-c.
C2
C3
C4 Aerovox Corp., Condenser, Type 1455, 0.001 mf., 500 V. d-c.
C5
C6 Aerovox Corp., Condenser, Type 1455, 0.01 mf., 500 V. d-c.
C7
C8
C9
C10 Aerovox Corp., Condenser, Type 1467, 0.01 mf., 500 V. d-c.
C11 Aerovox Corp., Condenser, Type 1455, 0.01 mf., 500 V. d-c.
C12
C13
C14
C15 Aerovox Corp., Condenser, Type 1467, 0.01 mf., 500 V. d-c.
C16 Aerovox Corp., Condenser, Type 1455, 0.01 mf., 500 V. d-c.
C17 Aerovox Corp., Condenser, Type 1455, 0.001 mf., 500 V. d-c.
C18 Aerovox Corp., Condenser, Type 1467, 0.0005 mf., 500 V. d-c.
C19 Aerovox Corp., Condenser, Type 1455, 0.01 mf., 500 V. d-c.
C20
C21 Aerovox Corp., Condenser, Type 1467, 0.01 mf., 500 V. d-c.
C22 Aerovox Corp., Condenser, Type 1455, 0.01 mf., 500 V. d-c.
C23 Erie Resistor Corp., Condenser, Ceramicon, Type P-120K, 5
 mf. \pm .25 mf.
C24 Aerovox Corp., Condenser, Type 1455, 0.01 mf., 500 V. d-c.
C25
C26 Erie Resistor Corp., Condenser, Ceramicon, Type P-120K, 10
 mf. \pm .25 mf.

(Continued)

13. LOW POWER HIGH FREQUENCY UNIT (Continued)

C27 Aerovox Corp., Condenser, Type 1455, 0.01 mf., 500 V. d-c.
C28
C29
C30
C31
C32
C33
C34
C35
C36
C37
C38
C39

L1 Western Electric Co., Choke Coil as per Drawing ESP-550615.
L2

L3 National Co., R. F. Choke, Type R-100, 2.5 mh. 125 ma. All
but one section removed.

LC1- Western Electric Co., Tuned Circuit as per ESL-793744.
18 Specify operating frequency and position.

R1 International Resistance Co., Resistor, Type BT-1/2, 0.1
megohm.

R2 International Resistance Co., Resistor, Type BT-1/2, 1,000
ohms.

R3 International Resistance Co., Resistor, Type BT-1/2, 10,000
ohms.

R4 International Resistance Co., Resistor, Type BT-1, 5,000 ohms.

R5 International Resistance Co., Resistor, Type BT-1/2, 0.1
megohm.

R6 International Resistance Co., Resistor, Type BT-1/2, 1,000
ohms.

R7 International Resistance Co., Resistor, Type BT-1/2, 20,000
R8 ohms.

R9 International Resistance Co., Resistor, Type BT-1/2, 1,000
ohms.

R10 International Resistance Co., Resistor, Type BT-1/2, 0.25
megohm.

(Continued)

13. LOW POWER HIGH FREQUENCY UNIT (Continued)

R11 International Resistance Co., Resistor, Type BT-1/2, 3,000 ohms.

R12 International Resistance Co., Resistor, Type BT-1/2, 100,000 ohms.

R13 International Resistance Co., Volume Control, Type 11-120, 25,000 ohms.

R14 International Resistance Co., Resistor, Type BT-1/2, 5,000 ohms.

R15 International Resistance Co., Resistor, Type BT-1, 1,000 ohms.

R16 International Resistance Co., Resistor, Type BT-1/2, 1,000 ohms.

R17 International Resistance Co., Resistor, Type BT-1/2, 20,000 ohms.

R18 International Resistance Co., Resistor, Type BT-1/2, 1,000 ohms.

R19 International Resistance Co., Resistor, Type BT-1/2, 10,000 ohms.

R20 International Resistance Co., Resistor, Type BT-1/2, 1,000 ohms.

R21 International Resistance Co., Resistor, Type BT-1, 1,000 ohms.

R22 International Resistance Co., Resistor, Type BT-1/2, 15,000 ohms.

R23 International Resistance Co., Resistor, Type BT-1/2, 10,000 ohms.

R24 International Resistance Co., Resistor, Type BT-1/2, 20,000 ohms.

R25 International Resistance Co., Resistor, Type BT-1/2, 0.25 megohm.

R26 International Resistance Co., Resistor, Type BT-1, 1,000 ohms.

R27 International Resistance Co., Resistor, Type BT-1/2, 15,000 ohms.

(Continued)

13. LOW POWER HIGH FREQUENCY UNIT (Continued)

R28	International Resistance Co., Resistor, Type BT-1/2, 20,000
R29	ohms.
R30	International Resistance Co., Potentiometer, Type 14-118,
	15,000 ohms.
R32	International Resistance Co., Resistor, Type BT-1/2, 1,000
	ohms.
R33	International Resistance Co., Resistor, Type BT-1/2, 10,000
	ohms.
R34	International Resistance Co., Resistor, Type BT-1/2, 1,000
R35	ohms.
R36	International Resistance Co., Resistor, Type BT-1/2, 10,000
	ohms.
R37	International Resistance Co., Resistor, Type F-1, 100 ohms.
R38	International Resistance Co., Resistor, Type BT-1/2, 10,000
	ohms.
R39	International Resistance Co., Resistor, Type BT-1/2, 10,000
	ohms.
R40	International Resistance Co., Resistor, Type BT-1/2, 5,000
	ohms.
R41	International Resistance Co., Resistor, Type BT-1/2, 5,000
	ohms.
S1	P. R. Mallory & Co., Switch, Type RL, per Western Electric Co.
	drawing BL-310976 or TYPE RM per W. E. drawing B-461099
S2	P. R. Mallory & Co., Switch, Type RL, per Western Electric Co.
S3	drawing BA-310504 or TYPE RM per W. E. drawing B-461098
S4	
T1	American Transformer Co., Filament Transformer as per Spec.
	No. 20065 in case 1B, 115/6.4 V., single phase, 50-60 cycles,
	20VA.
T2	Western Electric Co., Filter, Type D-97986.

(Continued)

13. LOW POWER HIGH FREQUENCY UNIT (Continued)

T3 Western Electric Co., Filter, Type D-97985.

T4 Western Electric Co., Amplifier Output Transformer as per
ESL-549064.

T5 Western Electric Co., Monitor Supply Output Unit, as per
ESL-548946.

V1 RCA, Vacuum Tube, Type 41.

V2 RCA, Vacuum Tube, Type 6C6.

V3

V4 RCA, Vacuum Tube, Type 36.

V5 RCA, Vacuum Tube, Type 6B7.

V6 RCA, Vacuum Tube, Type 6D6.

X1 Western Electric Co., Quartz Plate, Type 5AA.

X2 Frequency to be specified.

X3

X4

X5

X6

14. AMPLIFIER #2

C1 Aerovox Corp., Condenser, Type 1455, 0.01 mf., 500 V. d-c.
C2
C3
C4

C5 Cornell-Dubilier, Condenser, Type 2R, 0.001 mf.
C6

C7 Aerovox Corp., Condenser, Type 1455, 0.01 mf., 500 V. d-c.
C8

C9 Aerovox Corp., Condenser, Type 1455, 0.03 mf., 500 V. d-c.
C10
C11
C12

C13 Sangamo Electric Co., Condenser, Type A2-2110, 0.01 mf., 2,500 V.
C14 d-c test with one hole enlarged to .147 diameter.

C15 Aerovox Corp., Condenser, Type 1455, 0.01 mf., 500 V. d-c.
C16

C17 Sangamo Electric Co., Condenser, Type A2-2110, 0.01 mf., 2,500 V.
C18 d-c test with one hole enlarged to .147 diameter.

C19 Aerovox Corp., Condenser, Type 1455, 0.01 mf., 500 V. d-c.

J1 Western Electric Co., Jack, Type 218A.

L1 National Co., R. F. Choke, Type R-100, 2.5 mh., 125 ma.
L2
L3

LC1 Western Electric Co., Tuned Circuit as per ESL-793745.
LC2 Specify operating frequency.
LC3
LC4
LC5
LC6

R1 International Resistance Co., Resistor, Type BT-1, 15,000
ohms.

(C ntinued)

14. AMPLIFIER #2 (Continued)

R2 International Resistance Co., Resistor, Type BT-1, 5,000 ohms.

R3 International Resistance Co., Resistor, Type F-1, 100 ohms.

R4 International Resistance Co., Resistor, Type BT-1, 5,000 ohms.

R5 International Resistance Co., Resistor, Type BT-2, 1,000 ohms.

R6

S1 P. R. Mallory & Co. Switch, Type RL, per Western Electric Co.
drawing BA-310506 or Type RM per W. E. drawing B-461101.

V1 Western Electric Co., Vacuum Tube, Type 311A.

V2 Western Electric Co., Vacuum Tube, Type 332A.

V3

15. AMPLIFIER #3

- C1 Sangamo Electric Co., Condenser, Type A2-5220, 0.002 mf.,
5,000 V. d-c test.
- C2 Western Electric Co., Condenser, Type D-156095, 60 mmf.
(For 4-20 m.c. operating frequency range use Type D-160097,
120 mmf.)
- C3 Sangamo Electric Co., Condenser, Type A2-5220, 0.002 mf.,
C4 5,000 V. d-c test.
- C5 Aerovox Corp., Condenser, Type 1455, 0.01 mf., 500 V. d-c.
C6
- C7 Aerovox Corp., Condenser, Type 1455, 0.03 mf., 500 V. d-c.
C8
C9
C10
- C11 Sangamo Electric Co., Condenser, Type A2-2110, 0.01 mf.,
C12 2,500 V. d-c test.
C13
C14
- C15 Western Electric Co., Condenser, Type D-156092, 2,000 mmf.
- C16 Western Electric Co., Condenser, Type D-156095, 30 mmf.
(For 4-20 m.c. operating frequency range use Type D-156095,
60 mmf.)
- L1 Western Electric Co., Tuning Coil, per drawing ES-550307,
Assembly D
- L2 Western Electric Co., Tuning Coil, per drawing ES-550307,
Assembly C
- L3 National Co., R. F. Choke, Type R-154U, with metal base removed,
L4 1 mh., 0.6 A.
L5
L6
- L7 Western Electric Co., Choke Coil as per Drawing ESP-550034.
- R1 Western Electric Co., Resistor B0-383786, 250 ohm \pm 5%.
- R2 Western Electric Co., Resistor B0-383786, 500 ohm \pm 5%.

(Continued)

15. AMPLIFIER #3 (C ntinued)

R3 Western Electric Co., Resistor B0-383786, 1,000 ohm \pm 5%.
R4 Western Electric Co., Resistor B0-383786, 2,000 ohm \pm 5%.
R5 Western Electric Co., Resistor B0-383786, 250 ohm \pm 5%.
R6 Western Electric Co., Resistor B0-383786, 500 ohm \pm 5%.
R7 Western Electric Co., Resistor B0-383786, 1,000 ohm \pm 5%.
R8 Western Electric Co., Resistor B0-383786, 2,000 ohm \pm 5%.
R9 International Resistance Co., Resistor, Type BT-2,
R10 1,000 ohms.
S1 Yaxley Co., Switch Type RL, one circuit, four positions
S2 spaced 60 degrees apart. Modified as per ESP-759356.
V1 Western Electric Co., Vacuum Tube, Type 332A.
V2

16. AMPLIFIER #4

- C1 Sangamo Electric Co., Condenser, Type A2-5220, 0.002 mf.,
5,000 V. d-c test.
- C2 Western Electric Co., Condenser, Type D-156096, 60 mmf.
(For 4-20 m.c. operating frequency range use two D-156096,
60 mmf. in parallel.)
- C3 Sangamo Electric Co., Condenser, Type A2-5220, 0.002 mf.,
C4 5,000 V. d-c test.
- C5 Sangamo Electric Co., Condenser, Type A2-2110, 0.01 mf.,
C6 2,500 V. d-c test.
- C7 Western Electric Co., Condenser, Type D-156092, 2,000 mmf.
- C8 Western Electric Co., Condenser, as per Drawing ESP-757986
using spacer, Det. 1, ESP-759368. (For 4-20 m.c. operating
frequency range use spacer, Det. 2, ESP-759368.)
- L1 Western Electric Co., Tuning Coil, per drawing ES-550307,
Assembly C
- L2 Western Electric Co., Tuning Coil, per drawing ES-550307,
Assembly D
- L3 National Co., R. F. Choke, Type R-154U, with metal base removed,
L4 1 mh., 0.6 A.
L5
L6
- L7 Western Electric Co., Choke Coil as per Drawing ESP-550034.
- R1 Western Electric Co., Resistor B0-383786, 1,500 ohms \pm 5%.
- R2 Western Electric Co., Resistor B0-383786, 2,000 ohms \pm 5%.
- R3 Western Electric Co., Resistor B0-383786, 3,000 ohms \pm 5%.
- R4 Western Electric Co., Resistor B0-383786, 4,000 ohms \pm 5%.
- R5 Western Electric Co., Resistor B0-383786, 1,500 ohms \pm 5%.
- R6 Western Electric Co., Resistor B0-383786, 2,000 ohms \pm 5%.
- R7 Western Electric Co., Resistor B0-383786, 3,000 ohms \pm 5%.

(Continued)

16. AMPLIFIER #4 (Continued)

R8 Western Electric Co., Resistor B0-383786, 4,000 ohms \pm 5%.

S1 Yaxley Co., Switch, Type RL, one circuit, four positions
S2 spaced at 60 degrees apart. Modified as per ESP-759356.

17. AMPLIFIER #5

C1 Aerovox Corp., Condenser, Type 1455, 0.03 mf., 500 V. d-c.
C2
C3
C4

C5 Western Electric Co., Condenser, per W.E. drawing ES-550332

C6 Western Electric Co., Condenser, Type D-156094, 40 mmf.
C7
C8
C9

C10 Western Electric Co., Condenser, Type D-159080, 150-175 mmf.

C12 Western Electric Co., Condenser, Type D-156093, 350 mmf.
C13

C14 Western Electric Co., Condenser, Type D-156092, 2,000 mmf.
C15

C16 Sangamo Electric Co., Condenser, Type A2-5450, .00005 mf.,
C17 5,000 V. d-c test.

C18 Aerovox Corp., Condenser, Type 1455, 0.01 mf., 500 V. d-c.
C19

C20 Western Electric Co., Condenser, Type D-156092, 2,000 mmf.,
 3,000 V. d-c.

L1 Western Electric Co., Choke Coil, per W.E. drawing ES-754379,
 Det. 1.

L2 Western Electric Co., Choke Coil, per W.E. drawing ES-754379,
 Det. 2.

L3 Western Electric Co., Tuning Coil, per W.E. drawing ES-550309,
 Assembly A.

L4 Western Electric Co., Tuning Coil, per W.E. drawing ES-550309,
 Assembly B.

(Continued)

17. AMPLIFIER #5 (Continued)

L5 Western Electric Co., Choke Coil as per Drawing ESP-549453.
L6

L7 National Co., R. F. Choke, Type 154U, 1 mh., 0.6 A., with metal
base removed.

R1 International Resistance Co., Resistor, Type F-3, 0.1 megohm.
R2

S1 Western Electric Co., Special Switch.

T1 American Transformer Co., Filament Transformer as per Spec.
T2 No. 24407, 230/199/115 V to 5.05-5.05 V., 50-60 cycles, 250VA.

T3 American Transformer Co., Filament Transformer as per Spec.
No. 19992, 115/25 V., single phase, 50-60 cycles, 7.5VA.

V1 Western Electric Co., Vacuum Tube, Type 279A.
V2

V3 RCA, Vacuum Tube, Type 25Z5.

18. ANTENNA MATCHING PANEL

- C1 Cardwell Co., Condenser, Type XP-325-KD, mycalex insulation, max. cap 650 mmf., min. cap. 76 mmf.
- L1 Western Electric Co., Tuning Coil, per W.E. drawing ES-550307, Assembly A.
- L2 Western Electric Co., Tuning Coil, per W.E. drawing ES-550307, Assembly B.
- L3 National Co., R. F. Choke, Type R-154U, modified, 1 mh. 0.6 A.,
L4 with metal base removed.
- S1 Trumbull Electric Mfg. Co., Switch, Type #710, double pole, double throw, 25A.

19. MONITOR

C1 Hammarlund Mfg. Co., Air Padding Condenser, Code #APC-100,
C2 cap. 100 mmf. or Western Electric Co., per ESA-682070, Det. 18.
C3
C4
C5
C6

C7 Aerovox Corp., Condenser, Type 1455, 0.01 mf., 500 V. d-c.

C8 Aerovox Corp., Condenser, Type 1455, 0.001 mf., 500 V. d-c.

C9 Aerovox Corp., Condenser, Type 1467, 0.01 mf., 500 V. d-c.
C10
C11

C12 Erie Resistor Corp., Condenser, Ceramicon Type P120K, 10 mmf.
± .25 mmf.

C13 Aerovox Corp., Condenser, Type 1455, 0.01 mf., 500 V. d-c.

C14 Western Electric Co., Condenser, KS-9674-100 mmf.

C15 Aerovox Corp., Condenser, Type 1455, 0.01 mf., 500 V. d-c.

C16 Western Electric Co., Condenser, Type 233A, 0.7 mf., 400 V.
d-c.

C17 Aerovox Corp., Condenser, Type 1455, 0.001 mf., 500 V. d-c.
C18

C19 Aerovox Corp., Condenser, Type 1455, 0.01 mf., 500 V. d-c.
C20

C21 Erie Resistor Corp., Condenser, Ceramicon Type P120K, 10 mmf.
± .25 mmf.

C22 Aerovox Corp., Condenser, Type 1455, 0.001 mf.

C23 Aerovox Corp., Condenser, Type 1455, 0.01 mf.

L1 Western Electric Co., Coil as per Drawing ESP-550008.

L2 National Co., R. F. Cheke, Type R-100, one section removed.

(Continued)

19. MONITOR (Continued)

LC1 Western Electric Co., Tuned Circuit as per ESL-793744.
LC2 Specify frequency and position.
LC3
LC4
LC5
LC6

R1 International Resistance Co., Resistor, Type BT-1/2", 1 megohm.

R2 International Resistance Co., Volume Control, Type 11-120, 25,000 ohms.

R3 International Resistance Co., Resistor, Type BT-1/2, 20,000 ohms.

R4 International Resistance Co., Resistor, Type BT-1, 1,000 ohms.
R5

R6 International Resistance Co., Resistor, Type BT-1/2, 1,000 ohms.

R7 International Resistance Co., Resistor, Type BT-1/2, 25,000 ohms.

R8 International Resistance Co., Resistor, Type F-1, 100 ohms.

R9 International Resistance Co., Resistor, Type BT-1/2, 25,000 ohms.
R10

R11 International Resistance Co., Resistor, Type BT-1/2, 0.2 megohm.

R12 International Resistance Co., Resistor, Type BT-1/2, 30,000 ohms.

R13 International Resistance Co., Resistor, Type BT-1/2, 15,000 ohms.

R14 International Resistance Co., Resistor, Type BT-1/2, 10,000 ohms.

(Continued)

19. MONITOR (Continued)

R15 International Resistance Co., Resistor, Type BT-1/2, 0.25 megohm.

R16 International Resistance Co., Resistor, Type BT-1/2, 75,000 ohms.

R17 International Resistance Co., Resistor, Type BT-1/2, 1,000 ohms.

R18 International Resistance Co., Resistor, Type F-1, 100 ohms.

S1-S2 P. R. Mallory, Switch, Type RL, per W.E. drawing BA-310509 or Type RM per W.E. drawing B-461100.

S3 P. R. Mallory, Yaxley Switch, Type RL, one circuit, non-shorting, eleven positions.

T1 Western Electric Co., Carrier Amplifier Input Unit as per ESL-550029.

T2 Western Electric Co., 2,625 kc. Transformer as per Drawing ESL-550026.

T3 Western Electric Co., Output Transformer, Type 127C.

T4 American Transformer Co., Filament Transformer as per Spec. No. 20065 in case 1B, 115 V. to 6.4/3.2 V., single phase, 50-60 cycles, 20VA.

V1 RCA, Vacuum Tube, Type 36.

V2 RCA, Vacuum Tube, Type 6D6.

V3 RCA, Vacuum Tube, Type 36.

V4 RCA, Vacuum Tube, Type 76.

V5

20. HIGH FREQUENCY DISTRIBUTION PANEL

B1 Graybar Electric Co., Hubbell polarized plug, Cat. #6279.

F1 D & W, Fuse, Cat. #91127, 5A., 250 V.

21. MISCELLANEOUS EQUIPMENT

C1 Aerovox Corp., Condenser, Type 1455, 0.01 mf., 500 V. d-c.
C2
C3
C4
C5
C6
C7
C8
C9
C10
C11
C12

H1 Weston Electrical Instrument Corp., Elapsed Time Indicator,
Model 691, Type 2, 115 volt, 50 or 60 cycle, flush mounting,
bakelite case. Frequency to be specified.

J1 Western Electric Co., Jack, Type 218J.

M1 Weston Electrical Instrument Corp., d-c. Milliammeter,
Model 301, Scale 0-3. Flush mounting, bakelite case and
calibrated for vertical mounting in 1/32" steel panel.

M2 Weston Electrical Instrument Corp., d-c. Microammeter, Model
301 or Model 600, Scale 0-50. Flush Mounting, bakelite case
and calibrated for vertical mounting in 1/32" steel panel.
Meter to have critical damping in series with 100,000 ohms.

M3 Weston Electrical Instrument Corp., d-c. Milliammeter, Model
301, Scale 0-3. Flush mounting, bakelite case and calibrated
for vertical mounting in 1/32" steel panel.

M4 Weston Electrical Instrument Corp., d-c. Milliammeter, Model
301, Scale 0-50. Flush mounting, bakelite case and cali-
brated for vertical mounting in 1/32" steel panel.

M5 Weston Electrical Instrument Corp., d-c. Milliammeter, Model
301, Scale 0-150. Flush mounting, bakelite case and cali-
brated for vertical mounting in 1/32" steel panel.

M6 Weston Electrical Instrument Corp., d-c. Milliammeter, Model
301, Scale 0-500. Flush mounting, bakelite case and cali-
brated for vertical mounting in 1/32" steel panel.

(Continued)

21. MISCELLANEOUS EQUIPMENT (Continued)

M7 Weston Electrical Instrument Corp., d-c. Ammeter, Model 301,
M8 Scale 0-1. Flush mounting, bakelite case and calibrated for
vertical mounting in 1/32" steel panel.

M9 Weston Electrical Instrument Corp., d-c. Milliammeter, Model
301, Scale 0-1.5. Flush mounting, bakelite case and cali-
brated for vertical mounting in 1/32" steel panel.

M10 Weston Electrical Instrument Corp., d-c. Voltmeter, Model 301,
Scale 0-3500 supplies with multiplier mounted in a type 4-1
box. With bushings 1" high. Flush mounting, bakelite case
and calibrated for vertical mounting in 1/32" steel panel.

M11 Weston Electrical Instrument Corp., d-c. Voltmeter, Model 301,
Scale 0-35 and 0-350 with a 1 ma. movement. Supplied with a
multiplier, type 8 for 350 volt range. Flush mounting, bake-
lite case and calibrated for vertical mounting in 1/32" steel
panel.

M12 Weston Electrical Instrument Corp., d-c. Milliammeter, Model
301, Scale 0-5 ma. Flush mounting, bakelite case and cali-
brated for vertical mounting in 1/32" steel panel.

R1 International Resistance Co., Resistor, Type ABA, 7.5 ohms.
(Adjust to 6.75 ohms.)

S1 Graybar Electric Co., Bryant Tumbler Switch, Type 3951, Black.

S2 Western Electric Co., Safety Switch, ES0-793786, Item 6.

S3 Western Electric Co., Key Type 272G.

Y1-Y2 L. J. Wing Mfg. Co., Wing Fan, Size No. 58813. 1/20 H.P.,
single phase, 220 V., 50-60 cycles.

22. FILAMENT SUPPLY RECTIFIER

- C1 P. R. Mallory & Co., Electrolytic condenser 8,000 mf., 25
volts working voltage. Spec. No. TS-7168.
- C2 Aerovox Corp., Condenser, Type 1455, 0.03 mf., 500 V. d-c.
C3
- CX1 Westinghouse Electric and Mfg. Co., Cooper oxide rectifier,
CX2 Style No. 920831 with 3 coats of insulating varnish.
CX3
CX4
CX5
- L1 Western Electric Co., Retardation Coil, KS-5183.
- T1 Westinghouse Electric and Mfg. Co., Transformer per Style
No. 1089885.

23. JACK PANEL

J1 Western Electric Co., Jack Type 225C.
J2

24. DOUBLE SIDEBAND PANEL

C1 Western Electric Co., Condenser, Type 137A, 4mf., 200 V. d-c.
C2
C3

C4 Cornell Dubilier, Condenser, Type 2R, 100 mmf.

C5 Cornell Dubilier, Condenser, Type 2R, 1,000 mmf.

C6 Hammarlund Mfg. Co., Condenser, Type APC-25, 25 mmf.

C7 Hammarlund Mfg. Co., Condenser, Type APC-100, 100 mmf.

C8 Western Electric Co., Condenser, Type 401B, 1,800 mmf.

C11 Cornell Dubilier, Condenser, Type 2R, 10 mmf.

C12 Western Electric Co., Condenser, Type 141B, 0.5 mf.

C13 Western Electric Co., Wobbler Condenser, per W. E. drawing BR-310320

C14 Hammarlund Mfg. Co., Condenser, Type APC-100, 100 mmf.

C15 Western Electric Co., Condenser, Type 401B, 1,800 mmf.

C18 Cornell Dubilier, Condenser, Type 2R, 1,000 mmf.

C19 Western Electric Co., Condenser, Type 141B, 0.5 mf.
C20

C21 Western Electric Co., Condenser, Type 137A, 4 mf.

E1 General Electric Co., Lamp, Type S6 Mazda, 6 W. - 120 V.
E2

F1 Littlefuse Laboratories, Fuse, Type 3AG, #1040, 1 amp.

J1 Western Electric Co., Jack, Type 218A.
J2
J3

L1 Automatic Winding Co., Inductance, Type 400-23, 20 mh.

(Continued)

24. DOUBLE SIDEBAND PANEL (Continued)

L2 Western Electric Co., Inductance Coil as per ESL-793737.
L3

R1 International Resistance Co., Volume Control, Type CS "C",
75,000 ohms. Shaft length is 1", with screwdriver slot.

R2 International Resistance Co., Resistor, Type BT-1/2,
R3 10,000 ohms.
R4

R5 International Resistance Co., Resistor, Type BT-2,
20,000 ohms.

R6 International Resistance Co., Resistor, Type BT-1/2,
2,500 ohms.

R7 International Resistance Co., Resistor, Type BT-1/2,
0.2 megohm.

R8 International Resistance Co., Volume Control, Type C,
100 ohms. Shaft length is 1", with screwdriver slot.

R9 International Resistance Co., Resistor, Type BT-1/2,
R10 500 ohms.

R11 International Resistance Co., Resistor, Type BT-1/2,
1.0 megohm.

R12 International Resistance Co., Resistor, Type BT-1/2,
R13 50,000 ohms.

R14 International Resistance Co., Volume Control, Type CS "A"
100,000 ohms. Shaft length is 1", with screwdriver slot.

R15 International Resistance Co., Resistor, Type BT-1/2,
1.0 megohm.

R16 International Resistance Co., Resistor, Type BT-2,
25,000 ohms.

R17 International Resistance Co., Resistor, Type BT-1/2,
200 ohms.

(Continued)

24. DOUBLE SIDEBAND PANEL (Continued)

R18 International Resistance Co., Resistor, Type BT-1/2,
100,000 ohms.

Rel.1 Western Electric Co., Relay, Type U611.

S1 Western Electric Co., Key Unit, Type 2C.

S2 Western Electric Co., Key Unit, Type 2A.

T1 Western Electric Co., Input Transformer, Type 285L.

T2 Western Electric Co., Input Transformer, Type D-157347.

T3 Western Electric Co., Output Transformer, Type D-156450.

T4 American Transformer Co., Filament Transformer, Type H526B.
Prim. 115 V. Sec. 10/5, 20 VA. 50-60 cycles.

V1 Western Electric Co., Vacuum Tube, Type 262B.
V2

V3 Western Electric Co., Vacuum Tube, Type 337A.

V4 Western Electric Co., Vacuum Tube, Type 311A.

IV. CABLE CONNECTIONS

ES-782852	D-156000 Radio Transmitter - Interconnection and External Connections.
ES-782853	D-156000 Radio Transmitter - Interconnection and External Connections.
ES-782854	D-156000 Radio Transmitter - Interconnection and External Connections.
ES-782855	D-156000 Radio Transmitter - Interconnection and External Connections.
ES-782856	D-156000 Radio Transmitter - Interconnection and External Connections.
ES-782857	D-156000 Radio Transmitter - Interconnection and External Connections.
ES-782858	D-156000 Radio Transmitter - Interconnection and External Connections.
ES-782859	D-156000 Radio Transmitter - Interconnection and External Connections.

FROM	TERM.#	TO	TERM.#	WIRE			PURPOSE
				SIZE #	COLOR	CODE #	
INTERCONNECTIONS							
LOW FREQUENCY UNIT							
Distribution Panel							
	1	Attenuator Panel "A"	7	22	HK-R	Type P	Channel "A"
	2	" " "B"	8	"	HK-R	"	Input
	3	" " "C"	7	"	HK-R	"	Channel "B"
	4	" " "D"	8	"	HK-R	"	Input
	5	Key Panel	9	"	HK-R	"	1000 Cycle Input
	6	" " "E"	11	"	HK-R	"	"
	7	" " "F"	13	"	HK-R	"	1000 Cycle Keying Control
	8	" " "G"	15	"	HK-R	"	Gener.
	9	Meter M12	-	"	HK-R	"	"
	10	" " "H"	-	"	HK-R	"	"
	11	Ground to Panel	-	"	HK-R	"	"
	12	Key Panel	16	20	HK	"	Ground
	13	Rectifier #1	2	"	HK	"	"
	14	Modulator #1B	8	"	"	"	"
	15	Double Sideband Panel	1	"	"	"	"
	16	Modulator #1A	8	"	"	"	"
	17	Multi Circuit L.F. Unit	1	"	"	"	"
	18	H.F. Unit Distr. Panel	4	16	"	"	"
	19	Multi Circuit L.F. Unit	8	18	"	E-20101	2625 K.C. to Monitor
	20	(Ground lead sheath at each end.)	-	"	"	"	"
	21	H.F. Unit Distr. Panel	5	"	"	"	"
	22	(Ground lead sheath at each end.)	-	"	"	"	"
	23	Rectifier #1	1	20	R	"	Plate Supply
	24	H.F. Unit Distr. Panel	6	"	R-GR	"	Voltmeter
	25	Rectifier #1	5	"	R-GR	"	Amp. #1, #2, & Mon. Bias Supply
	26	H.F. Unit Distr. Panel	7	"	"	"	"
	27	Double Sideband Panel	9	"	BL	"	Relay Control
	28	Rectifier #1	4	"	R-BL	"	Mod. #1, #2 Bias
	29	H.F. Unit Distr. Panel	8	"	"	"	Voltmeter
	30	Jack Panel	7	"	BR-R	"	Mod. #3 Bias
	31	H.F. Unit Distr. Panel	9	"	"	"	"
	32	Jack Panel	5	"	BR	"	Mod. #3 Grid
	33	H.F. Unit Distr. Panel	10	"	BR	"	"
	34	Rectifier #1	8	22	SL-R	Type P	115 V. Reg. A.C. High
	35	Mod. #1B	11	"	"	"	"
	36	Mod. #1A	11	"	"	"	"
	37	Multi Circuit L.F. Unit	15	"	"	"	"
	38	H.F. Unit Distr. Panel	11	"	"	"	"
	39	Rectifier #1	7	"	SL	Paired with above	Ground
	40	Mod. #1B	12	"	"	"	"
	41	Mod. #1A	12	"	"	"	"
	42	Multi Circuit L.F. Unit	16	"	"	"	"
	43	H.F. Unit Distr. Panel	12	"	"	"	"
	44	Rectifier #5	7	16	Y-GR	P-360919	Output +
	45	H.F. Unit Distr. Panel	13	"	"	"	"
	46	Rectifier #5	5	"	Y	Paired with above	"
	47	" " " " " "	5	"	"	"	"
	48	H.F. Unit Distr. Panel	14	"	"	"	"
	49	Rectifier #6	7	"	Y-GR	P-360919	"
	50	H.F. Unit Distr. Panel	15	"	"	"	"
	51	Rectifier #6	5	"	Y	Paired with above	"
	52	" " " " " "	5	"	"	"	"
	53	H.F. Unit Distr. Panel	16	"	"	"	"
	54	Rectifier #5	1	22	BR-R	Type P	Unreg. 115 V. High
	55	H.F. Unit Distr. Panel	17	"	"	"	"
	56	Double Sideband Panel	15	"	"	"	"
	57	Rectifier #5	3	"	BR	Paired with above	Ground
	58	H.F. Unit Distr. Panel	18	"	"	"	"
	59	Double Sideband Panel	16	"	"	"	"
	60	Rectifier #6	1	16	Gray	GEO. YK 416	230 V. }
	61	Fan	1	"	"	"	"
	62	H.F. Unit Distr. Panel	20	"	"	"	"
	63	Rectifier #6	3	"	"	"	"
	64	Fan	2	"	"	"	"
	65	H.F. Unit Distr. Panel	22	"	"	"	"

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ISSUE 2 FROM 1-18-40
 REVISIONS MADE
 BECAUSE OF EXTENSIVE CHANGES
 ISSUE 3 1-18-40
 REISSUED BECAUSE OF CHANGES
 ISSUE 4 3-4-40

D-156000 RADIO TELEPHONE TRANSMITTER
 INTERCONNECTIONS
 & EXTERNAL CONNECTIONS
 All Wire Type F Unless Otherwise Specified.

BELL TELEPHONE LABORATORIES, INC., NEW YORK
 ES-782852 ENG. SHEET #1
 OF 8 SHEETS

FROM	TERM.#	TO	TERM.#	WIRE			PURPOSE
				SIZE #	COLOR	CODE #	
Rectifier #6	1	Distribution Panel	31*	16	Gray	GECo.YK4161	230 V. Paired in Belden
	3	"	32*	"	"	"	Braid
	5	"	28*	16	Y	P-360919	Output -
	7	"	27*	"	Y-GR	Paired with above	" +
Rectifier #5	1	Distribution Panel	29*	22	BR-R)	Type P	Unreg. 115 V. High
	3	"	30*	"	BR	"	" " Ground
	5	"	26*	16	Y	P-360919	Output -
	7	"	25*	"	Y-GR	Paired with above	" +
	"	"	25*	"	"	"	" +
Jack Panel	1	Multi Circuit L.F. Unit	12	20	BL	"	Mod. #2 Grid
	3	Rectifier #1	4	"	R-BL	"	Mod. #2 Bias
	5	Distribution Panel	20*	"	BR	"	Mod. #3 Grid
	7	Distribution Panel	19*	"	BR-R	"	Mod. #3 Bias
Rectifier #1	8	Rectifier #1	3	"	R-OR	"	Test Bias
	1	Multi Circ. L.F. Unit	13	20	R	"	Plate & Screen Supply
	3	Modulator #1A	10	20	"	"	" " " "
	5	Distribution Panel	14*	"	"	"	" " " "
Modulator #1B	7	Double Sideband Panel	7	"	"	"	" " " "
	2	Distribution Panel	11*	"	BK	"	Ground
	3	Jack Panel	8*	"	R-OR	"	Test Bias
	4	Modulator #1A	5	"	R-BL	"	Bias
	5	Jack Panel	3*	"	"	"	"
	6	Distribution Panel	18*	"	"	"	"
	7	Double Sideband Panel	15*	"	R-GR	"	Amp. 1, 2, & Mon. Bias
	8	Distribution Panel	23*	22	SL	Type P	115 Reg. A.C. Ground
	9	Crystal Filter #B	21*	"	SL-R)	"	High
	10	Attenuator Panel #B	3	"	BK-R)	Type P	Output
Modulator #1A	11	Rectifier #1	4	"	BK	"	"
	12	Attenuator Panel #B	3	"	BK-R)	"	Channel "B" Input
	1	Rectifier #1	4*	"	BK	"	Bias
	2	Modulator #1A	6	18	R-BL	"	"
	3	Distribution Panel	7	Shield	Wire	E-20101	125 K.C. Supply
	4	Rectifier #1	11*	20	Lead	"	Ground
	5	Distribution Panel	1*	20	R	"	Plate & Screen Supply
	6	Rectifier #1	21*	22	SL-R	Type P	115 V. A.C. High Side
	7	Distribution Panel	23*	"	SL	"	Ground Side
	8	Crystal Filter #A	3	"	BK-R)	Type P	Output
See note on Double Sideband Panel	9	Double Sideband Panel	4	"	BK	"	"
	10	Rectifier #1	3	"	BK-R)	"	Channel "A" Input
	11	Modulator #1B	4*	20	R-BL	"	Bias
	12	Multi Circ. L.F. Unit	6*	18	Wire	E-20101	125 K.C. Supply
	1	Distribution Panel	7*	Shield	Lead	"	" " " "
	2	Rectifier #1	11	18	Wire	"	" " " "
	3	Distribution Panel	10	Shield	Lead	"	Ground
	4	Rectifier #1	12*	20	BK	"	"
	5	Distribution Panel	1*	20	R	"	Plate & Screen Supply
	6	Rectifier #1	22*	22	SL-R	Type P	115 V. A.C. High Side
Crystal Filter B	7	Distribution Panel	24*	"	SL	"	Ground Side
	1	Double Sideband Panel	11*	22	BK-R)	Type P	See Double Sideband Panel
	2	Modulator #1B	2*	"	BK-R)	"	Input
	3	"	"	"	BK	"	"
Crystal Filter A	4	Double Sideband Panel	10*	22	BK	Type P	See Double Sideband Panel
	5	Modulator #1A	2*	"	BK-R)	"	Input
	6	"	"	"	BK	"	"
	7	Distribution Panel	11*	20	BK-R)	Type P	Ground
Double Sideband Panel Note: When making cable make these pairs continuous. When this panel is installed loop will be cut and wired as shown.	1	Modulator 1A	3*	22	BK	Type P	Input to Mod. 1A
	2	Attenuator A	4*	"	BK-R)	"	"
	3	Rectifier 1	3	"	BK-R)	"	Input
	4	"	4	"	BK	"	Bias
	5	"	5*	20	R-GR	"	Plate Supply
	6	"	1*	"	R	"	"
	7	"	"	"	"	"	"

FROM	TERM. #	TO	TERM. #	WIRE			PURPOSE
				SIZE #	COLOR	CODE #	
See note on sheet #2	8	Multi Circ. L.F. Unit	14	20	R-BL		Plate Supply
	9	Distribution Panel	16*	"	BL		Relay Control
	10	Crystal Filter A	22	"	BL	Type P	Output of Crystal
	11	Crystal Filter B	22	"	BK-R		Filters
	12	Multi Circ. L.F. Unit	5	22	BK	Type P	Output to
Multi Circuit Low Frequency Unit	13		6	"	BK-R		Mod. 2
	14	Distribution Panel	29*	"	BR-R		Unreg. 115 V. High
	15		30*	"	BR	Type P	Ground
	16	Distribution Panel	12*	20	BK		Ground
	1						
See note on Double Sideband Panel	2						
	3						
	4	Double Sideband Panel	12*	22	BK	Type P	Input
	5	Double Sideband Panel	13*	"	BK-R		Paired with above
	6	Distribution Panel	12*	Shield	Lead		
Note: When double sideband panel is not supplied strap these two terminals.	7		13*	18	Wire	E-20101	2625 K.C. Supply to Mon.
	8	Modulator #1A	7*	Shield	Lead		
	9		6*	18	Wire		125 K.C. Supply to Mod.
	10	Jack Panel	1*	20	BL		#1A & #1B
	11	Rectifier #1	1*	"	R		Mod. #2 Bias
	12	Double Sideband Panel	8*	"	R-BL		Plate & Screen Supply
	13	Distribution Panel	22*	22	SL-R	Type P	Multi Vibrator Plate Supply
	14		24*	"	SL		115 V. A.C. High Side
	15	Low Power H.F. Unit	Plug	18	L.C.	E-20101	Ground
	16						Sideband Output
Attenuator #A	Term. #1						
	1	Key Panel	1	20	BK-R	Type P	Channel "A" Input
	2		2	"	BK		
	3	Double Sideband Panel	4*	"	BK-R		
	4		5*	"	BK		
See note on double sideband panel	5	Key Panel	8	"	BK-R		
	6		7	"	BK		
	7	Distribution Panel	1*	"	BK-R		
	8		2*	"	BK		
	9						
Attenuator #B	1	Key Panel	3	"	BK-R		Channel "B" Input
	2		4	"	BK		
	3	Modulator #1B	3*	"	BK-R		
	4		4*	"	BK		
	5	Key Panel	5	"	BK-R		
Key Panel	6		6	"	BK		
	7	Distribution Panel	3*	"	BK-R		
	8		4*	"	BK		
	9	Attenuator #A	1*	"	BK-R		Channel "A" Input
	10		2*	"	BK		
	11	" #B	1*	"	BK-R		Channel "B" Input
	12	"	2*	"	BK		
	13	"	5*	"	BK-R		
	14	"	6*	"	BK		
	15	" #A	6*	"	BK		Channel "A" Input
	16		5*	"	BK-R		
	1	Distribution Panel	5*	"	BK-R		
	2		6*	"	BK		1000 Cycle Input
	3	"	7*	"	BK-R		
	4	"	8*	"	BK		1000 Cycle Keying Control
Fan	5	"	11*	20	BK		1000 Cycle Gener. Control
	6	Distribution Panel	31*	16	Gray	E-20101	230 V.) Paired in Belden
	7		32*	"			Ground Braid
	8						
	9						
Front Mat. Meter, M12	Pos.	Distribution Panel	9*	20	BK-R	Type P	p Meter
	Neg.	"	10*	"	BK		
HIGH FREQUENCY UNIT							
Ground Strip							
	1	Regulator Panel	14	20	BK		Ground
	2	Distribution Panel	4	16	"		
	3	Rectifier #3	1	20	BK		
	4	Vm. Switching Panel	3	"	"		
	5	Monitor, term.bl, B-1	3	"	"		

1-18-40
 ISSUE 2 FROM ES-782854 ISSUE-1
 BECAUSE OF EXTENSIVE CHANGES.
 1-18-40
 ISSUE 3
 REISSUED BECAUSE OF CHANGES
 3-4-40
 ISSUE 4
 REISSUED TO ROUTE CRYSTAL
 FILTER OUTPUT THROUGH
 DOUBLE SIDEBAND PANEL
 ISSUE 5
 1-8-41

D-156000 RADIO TELEPHONE TRANSMITTER

INTERCONNECTIONS & EXTERNAL CONNECTIONS

All Wire Type F Unless Otherwise Specified.

BELL TELEPHONE LABORATORIES, INC., NEW YORK

ES-782854

ENG. R.L.W. SHEET #3
 A.A.O. OF 8 SHEETS

FROM	TERM. #	TO	TERM. #	WIRE			PURPOSE
				SIZE #	COLOR	CODE #	
Distribution Panel	7	Low Power H.F. Unit	3	20	BK		Ground
	8	Meter, M3	16	16	"		Ap. 45
	9	" M7	"	"	"		" 25
	10	" M6	"	20	"		" 24
	11	" M5	"	"	"		" 23
	12	" M4	"	"	"		" 22
	13	" M2	"	"	"		" 21
	14	Rectifier #2	Pos. 6	"	"		Ground
	15	Screen Supp. Reg. Panel	6	14	Gray	G.E.Co. YK-4161	
	16	Rectifier #4, Panel C	Choke	"	"		"
	1	Monitor Jack	Frame	22	BK-R)	Type P	Monitor Output
	2	"	Spring	18	BK	E-20101	Output Indicator
	3	Meter M3	"	"	"		"
	4	Ground lead sheath at both ends.)	3"	16	BK		Ground
	5	Ground Strip	12"	"	"		"
	6	L.F. Unit Distr. Panel	13"	18	L.C.	"	"
	7	Monitor term. bl. B-1	6	20	R-OR		Bias Supply
	8	Low Power H.F. Unit	11	"	R-CR		"
	9	L.F. Unit Distr. Panel	15"	"	R-BL		Mod. Bias - Voltmeter
	10	Vm. Switching Panel	9	"	R-BR		Mod. 3 - Bias
	11	L.F. Unit Distr. Panel	18"	"	BR		"
	12	Low Power H.F. Unit	10	"	SL-R	Type P	Reg. 115 V. A.C. High
	13	L.F. Unit Distr. Panel	19"	"	SL	Paired with above	"
	14	Regulator Panel	12	"	Y-GR	P-360919	Ground
	15	L.F. Unit Distr. Panel	24"	16	"	"	"
	16	Amplifier #2	4	"	"	"	"
	17	L.F. Unit Distr. Panel	25"	"	"	"	"
	18	Amplifier #2	3	"	"	"	"
	19	"	"	"	"	"	"
	20	L.F. Unit Distr. Panel	26"	"	"	"	"
Regulator Panel	21	Amplifier #3	9	"	Y-GR	P-360919	"
	22	L.F. Unit Distr. Panel	27"	"	"	"	"
	23	Amplifier #3	8	"	"	"	"
	24	"	"	"	"	"	"
	25	L.F. Unit Distr. Panel	28"	"	"	"	"
	1	Regulator Panel	15	22	BR-R	Type P	Unreg. 115 V. A.C. High
	2	L.F. Unit Distr. Panel	29"	"	BR	Paired with above	"
	3	Regulator Panel	14	"	"	"	"
	4	L.F. Unit Distr. Panel	30"	"	"	"	"
	5	Rectifier #4 Panel A	1	16	Gray	G.E.Co. YK 4161	230V. Paired in Belden Braid
	6	L.F. Unit Distr. Panel	31"	"	"	"	"
	7	Rectifier #4 Panel A	3	"	"	"	"
	8	L.F. Unit Distr. Panel	32"	"	"	"	"
	9	Regulator Panel	7	14	Gray	G.E.Co. YK-4161	Supply Interlock
	10	Rectifier #4 Panel A	7	14	Gray	G.E.Co. YK-4161	230V. A.C. Supply
	11	Rectifier #4 Panel A	8	14	"	"	230V A.C. Supply

REORDER FROM ES-782855 151-5
 BECAUSE OF CHANGES
 10000 4
 3-4-40
 J.B.M.

D-156000 RADIO TELEPHONE TRANSMITTER
 INTERCONNECTIONS
 & EXTERNAL CONNECTIONS
 All Wire Type P Unless Otherwise Specified

BELL TELEPHONE LABORATORIES, INC., NEW YORK
 ES-782855 ENG. SHEET #4
 OF 8 SHEETS

FROM	TERM. #	TO	TERM. #	WIRE			PURPOSE
				SIZE #	COLOR	CODE #	
Rectifier #2	5	Elapsed Time Indicator	1	22	BR-R)	Type P	Hour Counter
	6	Distribution Panel	25*	14	Gray	G.E.Co. YK-4161	115 V. Circ. to Serv.Sw.
	7	Elapsed Time Indicator	2	22	BR)	Type P	Hour Counter
	8	Rectifier #2	8	22	SL-R	"	115 V. A.C. High Side
	9	Low Power H.F. Unit	2	"	"	"	"
	10	Amplifier #5	8	"	"	"	"
	11	Distribution Panel	11*	"	"	"	"
	12	Monitor, term.bl. B-1	11	"	"	"	"
	13	Rectifier #2	7	"	SL	Paired with above	Ground
	14	Low Power H.F. Unit	1	"	"	"	"
	15	Amplifier #5	9	"	"	"	"
	16	Distribution Panel	12*	"	"	"	"
	17	Monitor, term.bl. B-1	12	"	"	"	"
	18	Ground Strip	12*	20	BK	"	Ground
	19	Distribution Panel	18*	22	BR)	Type P	Unreg. 115V. A.C. Ground
	20	Distribution Panel	17*	"	BR-R	"	High
Rectifier #3	1	Low Power H.F. Unit	6	20	R	"	Plate & Screen Supply
	2	Meter, M3	Pos. 7	"	"	"	Mod. #3
	3	Monitor, term.bl. B-1	7	"	"	"	Plate & Screen Supply
	4	Meter, M1	Pos. 7	"	"	"	Monitor, 1st Det. 1p
	5	Vm. Switching Panel	7	"	"	"	Voltmeter
	6	Amplifier #2	7	"	"	"	Plate & Screen Supply
	7	Ground Strip	14*	20	BK	"	Ground
	8	Regulator Panel	11*	22	SL)	Type P	115V. A.C. Ground Side
Rectifier #4	1	Ground Strip	9*	"	SL-R	"	High
	2	Ground Strip	4*	20	BK	"	Ground
	3	Control Switch S1	"	"	BR-R	"	H.V. Control
	4	Rectifier #4 Panel A	6	20	OR	"	H.V. Control
	5						
	6						
	7						
	8	Vm. Switching Panel	10	20	BL	"	Voltmeter
	9	Amplifier #2	6	"	R-GR	"	Amp. #3 Bias
	10	Vm. Switching Panel	11	"	"	"	Voltmeter
	11	Amplifier #3	6	"	Y-GR	"	Amp. #4 Bias
	12	Vm. Switching Panel	12	"	"	"	Voltmeter
Rectifier #4 Panel A	1	Amplifier #4	2	"	"	"	Amp. #5 Bias
	2	Rectifier #4 Panel A	2	14	Gray	G.E.Co. YK-4161	230V. A.C. Supply
	3	" " "	1	"	"	"	"
	4	Rectifier #3	12*	14	Gray	G.E.Co. YK-4161	230V. A.C. Supply
	5	Amplifier #5	11	"	"	"	"
	6	Distribution Panel	20*	16	"	"	"
	7	Rectifier #3	11*	14	Gray	G.E.Co. YK-4161	"
	8	Ventilating Fan	1	"	"	"	"
	9	Screen Supply Regulator Panel	8	"	"	"	"
	10	Amplifier #5	12	"	"	"	"
	11	Ventilating Fan	2	"	"	"	"
	12	Screen Supply Regulator Panel	7	"	"	"	"
	13	Amplifier #5	13	"	"	"	"
	14	Distribution Panel	22*	16	"	"	"
	15	Control Switch S1	4*	20	SL-R	"	H.V. Control
	16	Rectifier #3	"	"	OR	"	"
Voltmeter Switching Panel	1	Regulator Panel	1*	14	Gray	G.E.Co. YK-4161	230V. A.C. Supply
	2	" " "	3*	"	"	"	"
	3	Meter, M11	Pos. 5	20	R-GR	"	Low Voltage Supplies
	4	Ground Strip	Neg. 5	"	BK-R	"	Ground
	5				BK	"	"
	6						
	7	Distribution Panel	6*	20	OR	"	Rectifier #1
	8	Rectifier #2	3*	"	R-OR	"	#2
	9	Distribution Panel	7*	"	R-BL	"	Amp. #1 & #2 & Mon. Bias
	10	"	8*	"	BL	"	Mod. #1A & #1B Bias
	11	Rectifier #3	8*	"	R-GR	"	Amp. #3 Bias
	12	"	9*	"	Y-GR	"	#4
	13	Amplifier #2	10*	"	Y-GR	"	#5
	14	"	3	22	Y-GR	Type P	#3 Filament
	15	"	4	"	R	"	#4
	16	" #3	8	"	R-GR	"	"
		"	9	"	"	"	"

ISSUE 2
 REVISED FROM ES-782856 ISSUE 1
 BECAUSE OF EXTENSIVE CHANGES
 ISSUE 3
 REVISED BECAUSE OF CHANGES
 ISSUE 4
 3-4-40

D-156000 RADIO TELEPHONE TRANSMITTER

INTERCONNECTIONS
 & EXTERNAL CONNECTIONS

All Wire Type F Unless Otherwise Specified

BELL TELEPHONE LABORATORIES, INC., NEW YORK

ES-782856

INC

SHEET #5
 OF 8 SHEETS

ES-782856

Issue 4

FROM	TERM.#	TO	TERM.#	WIRE			PURPOSE
				SIZE #	COLOR	CODE #	
Rectifier #4 Panel C	Choke	Ground Strip	16*	14	Gray	G.E.Co. YK-4161	Ground
Screen Supply	1	Amplifier #5	1	14	Gray	G.E.Co. YK-4161 for 3000V	Plate Supply
Regulator Panel	2	" #4	1	"	"	"	"
	3	" #3	1	"	"	"	"
	4	" #3	2	14	"	G.E.Co. YK-4161	Screen "
		" #2	1	"	"	"	"
	5	Ground Strip	15*	"	"	"	Ground
	6	Rectifier #4, Panel A	3*	"	"	"	230V. A.C. Supply
	7	"	2*	"	"	"	"
Monitor, Terminal Block B-1	1	Monitor Jack	Tip	22	BK-R	Type P	Monitor Output
	2	"	Frame	20	BK	"	Ground
	3	Ground Strip	6*	18	BK	"	Crystal Frequency Supply
	4	Low Power H.F. Unit	3*	Shield	Lead	E-20101	2625 K.C. Supply
	5	Distribution Panel	4*	Shield	Lead	E-20101	Bias Supply
	6	"	7*	20	R-GR	"	Plate & Screen Supply
	7	Rectifier #2	2*	"	R	"	1st. Det. I _p
	8	Meter, M1	Neg.	"	OR	"	"
	10						
	11	Regulator Panel	10*	22	SL-R	Type P	115V. A.C. High Side
	12	"	12*	22	SL	"	Ground "
Terminal Block B-2	1	Amplifier #5	Loop	18	L.C.	E-20101	Monitoring
	2	"	"	"	"	"	"
	3	"	"	"	"	"	"
	4	"	"	"	"	"	"
	5	"	"	"	"	"	"
	6	"	"	"	"	"	"
	7	"	"	"	"	"	"
	8	Shields on L.C. Leads	"	"	"	"	Ground
Low Power High Frequency Unit	1	Regulator Panel	11*	22	SL	Type P	115V A.C. High Side
	2	"	9*	20	SL-R	"	Ground
	3	Ground Strip	7*	20	BK	"	Crystal Frequency
	4	Monitor, term.bl, B-1	3*	Shield	Lead	E-20101	Supply
	5	"	4*	18	Wire	"	"
	6	Rectifier #2	1*	20	R	"	Plate & Screen Supply
	7	Meter, M2	Neg.	20	SL-R	"	Amp. #1, I _p
	8	" M3	"	"	R-BL	"	Mod. #3, I _p
	9	"	"	"	"	"	"
	10	Distribution Panel	9*	20	R-BR	"	Mod. #3, Bias
	11	"	7*	"	R-GR	"	Amp. #1 & #2 Bias
	12	"	10*	"	BR	"	Mod. #3 Bias
Plug		Multi Circ. L.F. Unit T-7	1*	18	L.C.	E-20101	Sideband Input
Amplifier #2	1	Screen Supply Reg. Panel	4*	14	Gray	G.E.Co. YK-4161	Amp. #5 Screen Sup.
	2	"	"	"	"	"	"
	3	Distribution Panel	14*	16	Y	P-360919	Fil. Sup. -
		Voltmeter Switching Panel	13*	22	"	Type P	Voltmeter
	4	Distribution Panel	13*	16	Y-GR	Paired with above	Fil. Sup. +
		"	"	"	"	"	"
		Voltmeter Switching Panel M5	14*	22	Y-GR	"	Voltmeter
	5	Meter M5	Pos.	20	QR	"	Amp. #3 I _s
	6	Rectifier, #3	8*	"	BL	"	" " Bias Supply
	7	" #2	4*	"	R	"	Plate Screen Supply
	8	Meter, M4	Pos.	"	R-BR	"	Amp. #2, I _s
Amplifier #3	1	Screen Supp.Reg.Panel	3*	14	Gray	G.E.Co. YK-4161 3000 V.	Plate Supply
	2	" " " "	4*	14	"	G.E.Co. YK-4161	Amp. #4 Screen Supply
	6	Rectifier #3	9*	20	R-GR	"	Amp. #4 Bias Supply
	8	Distribution Panel	16*	16	Y	P-360919	Fil. Sup. -
		Voltmeter Switch.Panel	15*	22	R-	Type P	Voltmeter

1-19-40
 RETYPED FROM ES-782857 ISSUE-1
 BECAUSE OF EXTENSIVE CHANGES.
 1-19-40
 ISSUE-2
 REISSUED BECAUSE OF CHANGES
 3-6-40
 ISSUE-3
 3-6-40
 ISSUE-4

D-156000 RADIO TELEPHONE TRANSMITTER
 INTERCONNECTIONS
 & EXTERNAL CONNECTIONS

All Wire Type P Unless Otherwise Specified

BELL TELEPHONE LABORATORIES, INC., NEW YORK

ES-782857

ENG.

SHEET #6
 OF 8 SHEETS

WIRE	TERM.#	TO	TERM.#	WIRE			PURPOSE
				SIZE	COLOR	CODE #	
Amplifier #4	9	Distribution Panel	15*	16	Y-CR	Paired with above	Fil. Sup. +
		"	"	"	"	"	"
		Voltmeter Switch. Panel	16*	22	R-CR	"	Voltmeter
		Meter, M6	Pos.	20	BL	"	Amp. #4, I _s
	1	Screen Supp.Reg.Panel	2*	14	Gray	G.E.Co. YK-4161 for 3000V.	Plate Supply
Amplifier #5	2	Rectifier #3	10*	20	Y-CR	"	Amp. #5 Bias Supply
	1	Screen Supp.Reg.Panel	1*	14	Gray	G.E.Co. YK-4161 for 3000V.	Plate Supply
		"	"	"	"	"	"
	2	Meter, (Right) M8	Pos.	16	BR	"	I _{sr}
	3	Meter, (Left) M7	"	"	"	"	I _{sl}
	5	Meter, M9	"	18	Wire	E-20101	Output Indicator
	6	"	"	Shield	Lead	"	"
	7	"	"	"	"	"	"
	8	Regulator Panel	9*	22	SL-R	Type P	115V. A.C. High Side
	9	"	11*	"	SL	"	Ground
	10	"	"	"	"	"	"
	11	Rectifier #4, Panel A	1*	14	Gray	G.E.Co. YK-4161	230V A.C. Supply
	12	"	2*	"	"	"	"
	13	"	3*	"	"	"	"
	Loop	Monitor, term.bl. B-2	1*	18	Wire	E-20101	Output Monitoring
	Ground	"	8*	Shield	Lead	"	"
Ventilating Fan	1	Rectifier #4, Panel A	2*	14	Gray	G.E.Co. YK-4161	230V. A.C. Supply
	2	"	3*	"	"	"	"
Front Mat.		"	"	"	"	"	"
Meter, M11	Pos.	Vm.Switching Panel	1*	20	R-CR	"	Low Voltage Supplies
	Neg.	"	2*	"	BR	"	"
Control Switch S1		Rectifier #4, Panel A	3*	"	SL-R	"	H.V. Control
		"	5*	"	BR-R	"	"
Jack	Tip	Monitor, term.bl B-1	1*	22	BR-R	Type P	Monitor Output
	Frame	"	2*	"	BR	"	"
		Distribution Panel	1*	"	BR-R	"	"
	Spring	"	2*	"	BR	"	"
Elapsed Time Indicator	1	Regulator Panel	5*	"	BR-R	"	Hour Counter
	2	"	7*	"	BR	"	"
Switch S3		Meter, M9	Pos.	20	BL	"	Not in cable. See ESR-793000 View A.
		Resistance R1 (Mounted on M9)	"	"	"	"	"
Meter, M9	Pos.	Amplifier #5	5*	20	R-BL	E-20101	Output Indicator
		Switch S3	"	18	L.C.	"	(Not in cable. See ESR-793000 View A)
		"	"	20	BL	"	Output Indicator
	Neg.	Distribution Pane	3*	18	L.C.	"	(Not in cable. See ESR-793000 View A)
		"	"	"	"	"	Amp. #2, I _{sr}
Meter, M8	R1	Switch S3	"	20	R-BL	E-20101	"
	Pos.	Amplifier #5	2*	16	BR	"	"
Meter, M7	Neg.	Ground Strip	8*	"	BR	"	"
	Pos.	Amplifier #5	3*	"	BR	"	"
Meter, M6	Neg.	Ground Strip	9*	"	BR	"	"
	Pos.	Amplifier #3	9*	"	BR	"	"
Meter, M5	Neg.	Ground Strip	10*	20	BL	"	"
	Pos.	Amplifier #2	4*	"	BR	"	"
Meter, M4	Neg.	Ground Strip	11*	"	BR	"	"
	Pos.	Amplifier #2	8*	"	R-BR	"	"
Meter, M2	Neg.	Ground Strip	12*	"	BR	"	"
	Pos.	Ground Strip	13*	"	BR	"	"
Meter, M3	Neg.	Low Power H.F. Unit	1*	"	SL-R	"	"
	Pos.	Rectifier #2	7*	"	BR	"	"
Meter, M1	Neg.	Low Power H.F. Unit	8*	"	R-BL	"	"
	Pos.	Rectifier #2	8*	"	BR	"	"
	Neg.	Monitor, term.Bl. B-1	8*	"	OR	"	Mon., 1st, det., I _p
EXTERNAL CONNECTIONS							
LOW FREQUENCY UNIT							
		Distribution Panel	1)				Channel "A" Input
		"	2)				"
		"	3)				" "B" Input
		"	4)				"
		"	5)				1000 Cycle Input
		"	6)				"
		"	7)				1000 Cycle Keying Control
		"	8)				" " Generator "
1-19-40 REVISED FROM ES-782858 ISSUE-1 BECAUSE OF EXTENSIVE CHANGES IN THE CIRCUITRY REQUIRED BECAUSE OF CHANGES IN THE CIRCUITRY 1-24-40				D-156000 RADIO TELEPHONE TRANSMITTER			
				INTERCONNECTIONS & EXTERNAL CONNECTIONS			
				All Wire Type F Unless Otherwise Specified			
				BELL TELEPHONE LABORATORIES, INC., NEW YORK			
				ES-782858		ENG.	SHEET #7 OF 8 SHEETS

FROM	TERM. #	TO	TERM. #	WIRE			PURPOSE
				SIZE #	COLOR	CODE #	
HIGH FREQUENCY UNIT Distribution Panel Rectifier #4, Panel A Monitor, Term. Block B-2	9						Pos. op Meter
	10						Neg. op Meter
	11						Ground
	16						Input Transfer Control
	1)						Monitor Output
	2)						
	3)						Output Indicator
	4)						
	25)						Supply Interlock
	26)						
	F1						230V. A.C. Supply
	F2						
	F3						
	2						Amp. #6 Monitoring
	3						Amp. #7 Monitoring
	8						
NOTES: All copper braided or lead covered leads to have shield grounded at each end. Asterisk indicates leads previously described in these tables.							
ISSUE 2 1-19-40 RETYPED FROM ES-782859 ISSUE 1 BECAUSE OF EXTENSIVE CHANGES. ISSUE 3a, r. 1-19-40				D-156000 RADIO TELEPHONE TRANSMITTER INTERCONNECTIONS & EXTERNAL CONNECTIONS			
				All Wire Type F Unless Otherwise Specified			
				BELL TELEPHONE LABORATORIES, INC., NEW YORK			
				ES-782859	ENG.	SHEET #8 OF 8 SHEETS	

