INSTRUCTION BOOK

FOR

MODEL 150-B

RADIO TRANSMITTING EQUIPMENT

CONSISTING OF
TYPE 02520 RADIO TRANSMITTER
AND
TYPE 02433 EXITER UNIT

OUTPUT: 150 WATTS RADIOTELEGRAPH
OUTPUT: 150 WATTS RADIOTELEPHONE

MANUFACTURED FOR

SIGNAL CORPS U. S. ARMY

BY

MEISSNER MANUFACTURING CO.
MT. CARMEL, ILLINOIS

ORDER NO. 13759-PHILA-43 DATED: OCTOBER 18, 1942

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ILLUSTRATIONS:

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RECORD OF INSTALLATION

The following data, affecting replacement, should be filled in by the operating personnel immediately after installation of the equipment:

Order No: 13759-PHILA-43 Date of Order: October 18, 1942

Serial Number of Equipment .....

Date of Acceptance .....

Date of delivery to Contract Destination .....

Date placed in service .....

GUARANTEE

This equipment is guaranteed against defects in material, workmanship or manufacture, for a period of one year from the date of delivery. The obligation of the manufacturer, under this guarantee, is limited to repairing or replacing any item which shall prove by manufacturers examination to be defective, provided the item is returned to the factory for inspection with all transportation charges paid.

Before returning any item believed to be of defective material, workmanship or manufacture, a detailed report must be submitted to the manufacturer giving exact information as to the nature of the defect. The information shall include, in as much detail as possible, all subject material listed under instructions for replacement parts.

Upon receipt of the report by the manufacturer, a returned equipment tag will be forwarded to the shipper without delay. The returned equipment tag must accompany all shipments of defective parts. No action can be taken on any equipment sent to the company unless the shipment includes the return tag.

MEISSNER MANUFACTURING CO.
MT. CARMEL, ILLINOIS

FAILURE REPORT

Report of failure of any part of this equipment, during its guaranteed life, shall be made in accordance with the latest instructions issued by the Signal Corps. One copy of this report must be received by the Chicago Signal Corps Inspection Zone, Chicago, Illinois. Such reports of failure shall include:

(a) Reporting Activity .....

(b) Order No..... Date of Order .....

(c) Model of Equipment .....

(d) Serial Number of Equipment .....

(e) Date of Acceptance .....

(f) Date placed in Service .....

(g) Part which failed (Name and Number) .....

.....

(h) Nature and cause of failure .....

.....

(i) Covered by Contract Guarantee: Yes..... No.....

(j) Replacement needed: Yes..... No. .....

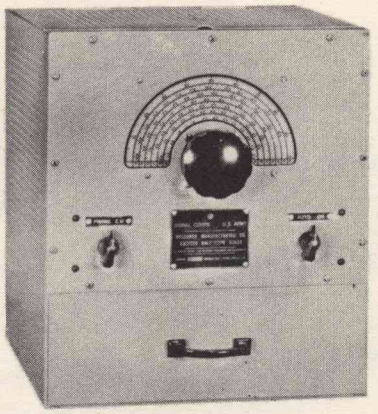
(k) Remedy used or proposed to prevent recurrence .....

.....

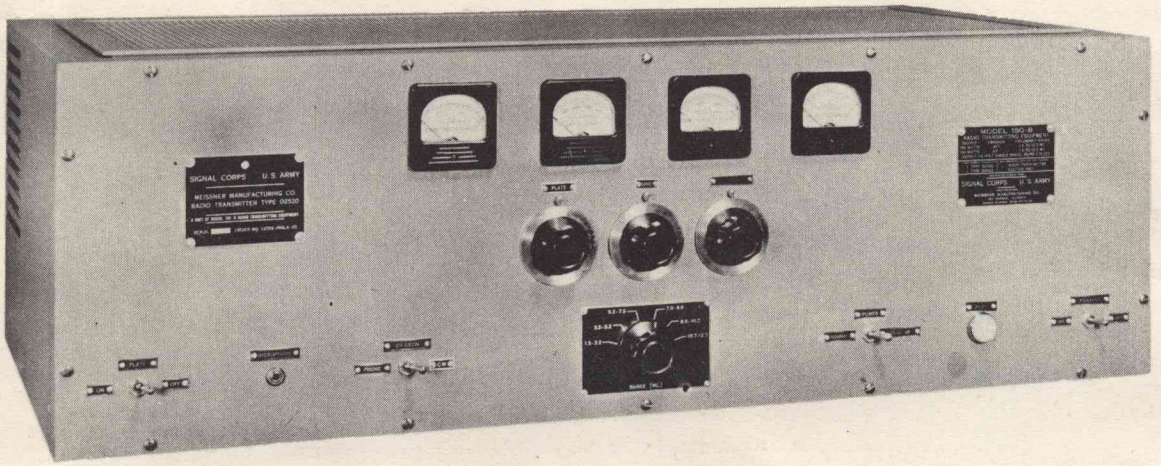
FIG. NO. 1 (A)

MODEL 150-B RADIO TRANSMITTING EQUIPMENT

TYPE 02520 RADIO TRANSMITTER AND TYPE 02433 EXCITER UNIT



TYPE 02433 EXCITER UNIT



TYPE 02520 RADIO TRANSMITTER

FIG. NO. 1 (B)

MODEL 150-B RADIO TRANSMITTING EQUIPMENT

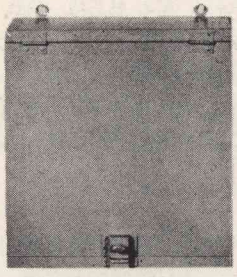
OPERATING ACCESSORIES AND SPARE PARTS

A

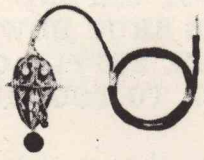
B

C

D



E



F

G

J

N

I

K

M

H

L

O

A . . . CA-703 EXCITER UNIT POWER CABLE
B . . . CA-704 MAIN POWER CABLE
C . . . CA-702 72 OHM R.F. LINE CABLE
D . . . MI-701 SINGLE BUTTON CARBON MICROPHONE
E . . . CABINET AND COILS FOR TRANSMITTER
F . . . K-701 KEY AND CABLE ASSEMBLY
G . . . SPARE RESISTORS AND FUSES
H . . . SPARE TELEGRAPH KEY
I . . . SPARE FILTER CONDENSER (C-401 OR C-402)
J . . . SPARE PAPER AND ELECTROLYTIC CONDENSERS
K . . . SPARE WIREWOUND RESISTORS
L . . . SPARE SINGLE BUTTON CARBON MICROPHONE
M . . . SPARE FILTER CONDENSER (C-301 OR C-302)
N . . . SPARE PILOT LAMPS
O . . . PLUG-IN CONDENSERS FOR TRANSMITTER

WARNING

OPERATION OF THIS EQUIPMENT INVOLVES THE USE OF HIGH VOLTAGES WHICH ARE DANGEROUS TO HUMAN LIFE. OPERATING PERSONNEL SHOULD AT ALL TIMES OBSERVE ALL THE SAFETY RULES LISTED BELOW. DO NOT CHANGE TUBES OR COILS OR MAKE ADJUSTMENTS INSIDE EQUIPMENT WITH HIGH VOLTAGE SUPPLY TURNED ON. DO NOT DEPEND UPON THE DOOR SWITCH FOR PROTECTION BUT ALWAYS SHUT DOWN POWER EQUIPMENT AND OPEN MAIN SWITCH IN POWER SUPPLY CIRCUIT. ALWAYS DISCHARGE AND GROUND CIRCUITS PRIOR TO TOUCHING THEM.

Since the use of high voltages which are dangerous to human life is necessary to the successful operation of the Radio Transmitting Equipment covered by these instructions, certain precautionary measures must be carefully observed by the Operating Personnel during the adjustment and operation of the equipment.

The two units of the Model 150-B Radio Transmitting Equipment are housed within metal cabinet enclosures. The cabinet of the Type 02520 Radio Transmitter is provided with an access door which is fitted with a safety interlock door switch. This switch automatically removes dangerous voltages within the cabinet when the access door is opened.

KEEP AWAY FROM LIVE CIRCUIT: Under no circumstances should any person reach within a cabinet while power supply line switches to the equipment are closed; or handle any portion of exposed equipment which is supplied with power; or to connect any apparatus external to the cabinets to circuits within the cabinets; or to apply high voltages to the equipment even for testing purposes while any non-interlocked portion of the equipment is removed. Whenever feasible in testing circuits, make continuity and resistance checks rather than directly checking voltage at various points when any high voltage is applied to the transmitter circuits.

DO NOT SERVICE OR ADJUST ALONE: Under no circumstances should any person reach within a cabinet for the purpose of servicing or adjusting the equipment without the presence or assistance of another person capable of rendering aid.

DO NOT TAMPER WITH THE SAFETY INTERLOCK SWITCH: The safety interlock switch fitted to the access door of the Radio Transmitter cabinet should not be removed or short circuited, nor should reliance be placed upon this switch for removing voltages from the equipment.

SECTION 1
GENERAL DESCRIPTION

EQUIPMENT

1. The Model 150-B Radio Transmitting Equipment comprises all equipment required for a complete radio transmitter installation, exclusive of antenna and AC power source. The equipment is designed for operation on a 115 volt, single phase, 50/60 cycle AC line and, as shown in Fig. No. 1, pages 7 and 8, consists of the following:

1....Type 02520 Radio Transmitter.
1....Type 02433 Exciter Unit.
1....Set of Vacuum Tubes.
1....Set of Accessories.
1....Set of Spare Parts.

2. The Type 02520 Radio Transmitter components are housed in a steel cabinet 13.5 inches high, 20 inches deep and 40 inches wide. The weight of the Transmitter, ready for operation, is 305 pounds.

3. The Type 02433 Exciter Unit components are housed in a steel cabinet 13.5 inches high, 12 inches deep and 11.5 inches wide. The weight of the Exciter Unit, ready for operation, is 39 pounds.

4. Designed for table mounting, the Model 150-B Radio Transmitting Equipment requires an area 53 inches wide by 20 inches deep. Approximately 3 inches clearance should be allowed at the rear of the equipment for antenna and power connections.

TUBE COMPLEMENT

5. The vacuum tubes, specified in Table No. 1, page 11, are required and are supplied as a part of Model 150-B Radio Transmitting Equipment.

GENERAL

6. The Model 150-B Radio Transmitting Equipment provides a complete, medium power, general purpose radiotelephone and radiotelegraph transmitter installation. The equipment is especially applicable in services requiring operation on any frequency from 1,500 KC to 12,500 KC.

7. The steel cabinets, housing the Type 02520 Radio Transmitter and Type 02433 Exciter Unit, are of the console type suitable for table mounting. Ventilating holes are provided in the top and sides of the Exciter Unit cabinet. A combination of holes and slots are provided in the top, back and sides of the Transmitter cabinet. Adequate ventilation is provided for all heat producing elements. The cabinets are constructed of heavy gauge, electrically welded sheet steel with a durable gray wrinkle finish outside and a flat gray enamel finish inside.

8. Components of the Type 02520 Radio Transmitter are so arranged that unit construction is possible, the Transmitter consisting of five units as follows:

(a) No. 02321 Front Panel Assembly.
(b) No. 02322 Radio Frequency Unit.
(c) No. 02323 Modulator Unit.
(d) No. 02324 Power Supply Unit.
(e) No. 02426 Cabinet.

9. With the exception of the cable to the safety interlock cabinet door switch, all wiring in the Type 02520 Radio Transmitter is entirely independent of the cabinet. All units may readily be removed from the cabinet for inspection or replacement.

TABLE NO. 1

VACUUM TUBE TABLE

FOR

TYPE 02520 RADIO TRANSMITTER

TUBE TYPE	SIGNAL CORPS TYPE	SCHEMATIC SYMBOL	FUNCTION
813	VT-144	V-201	Class "C" R. F. Amplifier Tube
811	VT-217	V-301	Class "B" Modulator Tubes
811	VT-217	V-302	
6V6GT	VT-107A	V-303	Audio "Driver" Tubes
6V6GT	VT-107A	V-304	
866A	VT-46A	V-305	Rectifier Tubes. Modulator Supply
866A	VT-46A	V-306	
6J5GT	VT-94D	V-307	Audio Amplifier Tube
866A	VT-46A	V-401	Rectifier Tubes. R. F. Amplifier Supply
866A	VT-46A	V-402	
5U4G	VT-244	V-403	Rectifier Tube. Speech Amplifier Supply

VACUUM TUBE TABLE

FOR

TYPE 02433 EXCITER UNIT

TUBE TYPE	SIGNAL CORPS TYPE	SCHEMATIC SYMBOL	FUNCTION
6L6G	VT-115A	V-501	2nd Doubler Tube
VR-150	VT-139	V-502	Voltage Regulator Tubes
VR-105	VT-200	V-503	
6F6G	VT-66A	V-504	Oscillator and 1st Doubler Tube
5U4G	VT-244	V-505	Rectifier Tube for Power Supply

10. Components of the Type 02433 Exciter Unit are mounted on a single chassis. This chassis assembly may readily be removed from its cabinet for inspection or replacement.

TYPE OF EMISSION

11. Radiotelegraph (A1) and Radiotelephone (A3) emission are available with the Model 150-B Radio Transmitting Equipment. Keying of the carrier for radiotelegraph operation is accomplished in the Type 02433 Exciter Unit, an efficient key-click filter assuring clean cut telegraphy in both high and low speed service. In radiotelephone operation the audio frequency response is uniform within plus or minus 3 db. from 200 to 4,000 cycles per second. The upper and lower limits of the audio frequency range are deliberately attenuated to improve speech intelligibility. Audio frequency amplitude distortion is less than 10% total harmonics at any modulation level.

RADIO FREQUENCY RANGE

12. The radio frequency range of the Model 150-B Radio Transmitting Equipment is 1,500 KC to 12,500 KC. Any desired frequency, within this range, may be utilized.

ANTENNA REQUIREMENTS

13. The Model 150-B Radio Transmitting Equipment is designed to work into an unbalanced antenna or transmission line. An extremely wide range impedance matching network, incorporated in the equipment, enables the operator to match the impedance of practically any type of unbalanced antenna or transmission line normally encountered and considered to be good engineering practice.

FREQUENCY CHANGE AND CONTROL METHOD

14. The RF output frequency of the Model 150-B Radio Transmitting Equipment is controlled by the Type 02433 Exciter Unit. The unique functional characteristics of the Exciter Unit make possible the complete elimination of quartz crystals as a frequency control medium. **Model 150-B Radio Transmitting Equipment features rapid selection and use of any frequency within the range of 1,500 KC to 12,500 KC.**

POWER OUTPUT

15. The nominal rated power output of the Model 150-B Radio Transmitting Equipment is 150 watts radiotelegraph and 150 watts radiotelephone, delivered into a 72 ohm artificial load at any frequency within the 1,500 KC to 12,500 KC range.

MODULATION

16. The Model 150-B Radio Transmitting Equipment is capable of 100% modulation in radiotelephone operation.

POWER SOURCE AND INPUT REQUIREMENTS

17. The Model 150-B Radio Transmitting Equipment is designed to operate from a 115 volt, single phase, 50/60 cycle AC power source. The AC input requirement is approximately 925 watts at 0.87 power factor.

POWER CONTROLS

18. A simplified system of power control is incorporated in the Model 150-B Radio Transmitting Equipment. Two

heavy duty toggle switches, located on the front panel of the Type 02520 Radio Transmitter, control the filament and plate power circuits including the filament and plate power circuits of the Type 02433 Exciter Unit. The rectifier tubes (mercury vapor type) in high voltage circuits are protected by time delay relays; plate power cannot be applied until the rectifier tube filaments have reached normal operating temperature.

19. A push-to-talk switch, located on the handle of the microphone, serves the same purpose as the plate power switch located on the Transmitter front panel. In radiotelephone operation, use of the microphone switch is recommended for convenience, especially when transmissions of short duration or break-in operation are contemplated. When the microphone switch button is depressed (or the **PLATE** switch turned **ON**), the Transmitter and Exciter Unit are automatically placed in operation. When the microphone switch button is released (or the **PLATE** switch turned **OFF**), the Transmitter and the Exciter Unit become inoperative and non-interfering with the station receiving equipment.

20. A two position **POWER** switch, located on the front panel of the Type 02520 Radio Transmitter, provides for reduced power during the initial process of "tuning-up". When the equipment is properly tuned to the desired frequency, full power may be applied by throwing this switch from the **TUNE-UP** to the **NORMAL** position.

21. The two position **EMISSION** switch, located on the front panel of the Type 02520 Radio Transmitter, enables the operator to select the type emission desired; either radiotelegraph (A1) or radiotelephone (A3).

ACCESSORIES

22. The operating accessories, shown in Fig. No. 1, pages 7 and 8, are required and are supplied as a part of Model 150-B Radio Transmitting Equipment.

SECTION II
CIRCUIT DESCRIPTION

CONTROL CIRCUITS

23. The power circuits of Model 150-B Radio Transmitting Equipment are controlled from the front panel of the Type 02520 Radio Transmitter by means of two toggle switches, S-101 and S-104. When both switches are in the **OFF** position, all power circuits are open.

24. When the **FILAMENT** switch, S-104, is turned **ON**, power is supplied to the following circuits:

(a) Filament circuits of the Type 02520 Radio Transmitter and filament circuits of the Type 02433 Exciter Unit. The rectifier filament circuit of the modulator power supply is energized only when the front panel **EMISSION** switch, S-102, is in the **PHONE** position. When the **EMISSION** switch is in the **CW** position, the modulator power circuits are open and inoperative.

(b) Grid bias power supply and speech amplifier plate supply circuits of the Type 02520 Radio Transmitter.

(c) Time delay relay circuits. The Modulator time delay relay, K-402, is energized only when the front panel **EMISSION** switch, S-102, is in the **PHONE** position. When the **EMISSION** switch is in the **CW** position, the modulator power circuits are open and inoperative.

(d) Pilot light circuits of the Type 02520 Radio Transmitter and the Type 02433 Exciter Unit.

(e) Plate-screen power supply circuit of the Type 02433 Exciter Unit. The plate screen power supply circuit of the Type 02433 Exciter Unit is permitted to run constantly after the front panel filament switch, S-104, is turned **ON**. The RF output of the Type 02433 Exciter Unit is started and stopped by relay, K-501, located in the Exciter Unit. Relay, K-501, stops the RF output of the Exciter Unit by shorting out the grid (coil) circuit of the oscillator tube, V-504.

25. When the **PLATE** switch, S-101, located on the front panel of the Type 02520 Radio Transmitter, is thrown to the **ON** position, power is supplied to the following circuits:

(a) High voltage plate-screen power supply circuit of the Class C, RF power amplifier.

(b) High voltage plate power supply circuit of the Class B modulator. The high voltage modulator power supply circuit is energized only when the front panel **EMISSION** switch, S-102, is in the **PHONE** position. When this switch is in the **CW** position, the high voltage modulator power supply circuit is open and inoperative.

(c) Relay circuit controlling RF output of the Type 02433 Exciter Unit. Normally the contacts of relay, K-501, located in the Type 02433 Exciter Unit, are closed. In this position, the grid (coil) circuit of the oscillator tube, V-504, is shorted out and RF output of the Exciter Unit is stopped. When the **PLATE** switch, S-101, located on the front panel of the Type 02520 Radio Transmitter, is turned **ON**, the Exciter Unit relay, K-501, is energized which opens its normally closed contacts. This removes the short across the grid (coil) circuit of the oscillator tube, and starts RF output.

(d) Modulation transformer relay, K-301. This relay is incorporated to short out the secondary winding of the modulation transformer, T-301, when the Radio Transmitting Equipment is used in radiotelegraph (CW) service. When the **EMISSION** switch, S-102, is in the **PHONE** position and the **PLATE** switch, S-101, is turned **ON**, power is supplied to relay,

K-301, which opens its normally closed contacts. When the **EMISSION** switch, S-102, is in the **CW** position and the **PLATE** switch, S-101, is turned **ON**, the control circuit of relay, K-301, is open and the relay remains inoperative. In this position, the contacts of the relay short out the secondary winding of the modulation transformer, T-301.

26. A push-to-talk switch, located in the handle of the microphone, MI-701, may be used instead of **PLATE** switch, S-101, when transmissions are of short duration or when break-in operation is employed. When the push-to-talk microphone switch is used, the front panel **PLATE** switch, S-101, must be in the **OFF** position.

27. A two position **POWER** switch, S-103, located on the front panel of the Type 02520 Radio Transmitter, is incorporated to provide reduced power during the process of "tuning-up" the Model 150-B Radio Transmitting Equipment. When tuning adjustments are to be made, the **POWER** switch, S-103, should be thrown to the **TUNE-UP** position. In this position, reduced plate voltage is applied to the Class C RF power amplifier tube, V-201, protecting this tube against possible overload due to inaccurate tuning. When the Class C RF amplifier circuit is properly adjusted to the desired frequency, the **POWER** switch, S-103, may be thrown to the **NORMAL** position.

28. A two position **EMISSION** switch, S-102, located on the front panel of the Type 02520 Radio Transmitter, is used to select the desired type of emission. When phone emission (Radiotelephony) is desired, the **EMISSION** switch should be thrown to the **PHONE** position. In addition, the two position switch, located on the front panel of the Type 02433 Exciter Unit, (lower left hand corner), should be turned to the **PHONE** position. When CW emission (Radiotelegraphy) is desired, the **EMISSION** switch should be thrown to the **CW** position. In addition, the two position switch, located on the front panel of the Type 02433 Exciter Unit, (lower left hand corner), should be turned to the **CW** position.

KEYING CIRCUIT

29. Keying is accomplished in the Model 150-B Radio Transmitting Equipment by interruption of the cathode circuit of the 2nd doubler tube, V-501, in the Type 02433 Exciter Unit. A 6L6G vacuum tube is employed in this position.

FREQUENCY CONTROL SYSTEM

30. The operating frequency of Model 150-B Radio Transmitting Equipment is established and controlled by the Type 02433 Exciter Unit. This unit is supplied with six sets of plug-in coils, making operation possible on any desired frequency within the range of 1500 KC to 12,500 KC.

31. A self-contained power supply, employing a type 5U4G full wave rectifier tube, V-505, is incorporated in the Type 02433 Exciter Unit. Oscillator plate and screen voltages are regulated by voltage regulator tubes, V-502 and V-503.

32. Basically, the Type 02433 Exciter Unit consists of an electron coupled oscillator and 1st frequency doubler designed around a type 6F6G vacuum tube, V-504. This stage is capactively coupled to a 2nd doubler stage, designed around a type 6L6G vacuum tube, V-501.

33. Six sets of plug-in coils are supplied with the Type 02433 Exciter Unit. Each set of coils consists of three coils; the "Osc. Grid Coil", the "Osc. Plate Coil" and the "Output Coil". The RF range, function and band designation are clearly imprinted on each coil.

34. The "Osc. Grid Coil" is designed to mount in coil socket, X-508. In this position, the coil is tunable over its range by the first section of the 3-gang variable condenser, C-501C. The "Osc. Plate Coil" mounts in coil socket, X-505. In this position, the coil is tunable over its range by the second section of variable condenser, C-501B. The "Output Coil" mounts in socket, X-501, and is tunable over its range by the third section of variable condenser, C-501A.

35. The tuned circuits of the Type 02433 Exciter Unit are ganged together to provide "single dial control" of Transmitter frequency.

36. The RF output of the Type 02433 Exciter Unit is taken from the plate circuit of the 2nd doubler stage. The "Output Coil" is provided with an output winding, having an impedance of 72 ohms, which terminates at the output receptacle, J-501, located on the back of the Type 02433 Exciter Unit. The 72 ohm output circuit is balanced on all bands and may be matched to a doublet antenna through a 72 ohm transmission line. A simple arrangement of this type makes possible the use of the Exciter Unit alone as an emergency transmitter.

RF POWER AMPLIFIER CIRCUIT

37. The RF power amplifier of Model 150-B Radio Transmitting Equipment is a component unit of the Type 02520 Radio Transmitter. RF driving power for this amplifier is supplied by the Type 02433 Exciter Unit through cable, CA-702. (The impedance of cable, CA-702, is 72 ohms, matching the output circuit impedance of the Exciter Unit and the input circuit impedance of the Type 02520 Radio Transmitter).

38. The RF power amplifier consists of a type 813 vacuum tube, V-201, operating as a Class C, RF amplifier. A combination of fixed and automatic (grid leak) bias is employed, the fixed bias preventing excessive plate current in the event RF grid excitation should fail. Approximately 1600 volts DC is applied to the plate of the 813 tube. Screen potential of approximately 400 volts DC is obtained from a heavy bleeder system consisting of tapped resistor, R-201. Obtainment of screen voltage from a bleeder system offers a decided advantage over the usual arrangement of series resistor; in the event RF grid excitation should fail, the screen bleeder system prevents screen voltage from rising to an excessive value and protects the 813 tube from otherwise possible injury.

39. A capacity divider, consisting of condensers, C-206, and C-207, is connected in parallel with the screen bleeder. This arrangement provides the proper value of screen by-pass and, in addition, maintains the overall fidelity of the Transmitter.

40. The tuned grid circuit of the 813 amplifier consists of six grid coils designed to cover the R. F. frequency range of 1500 KC to 12,500 KC. The grid coils are tunable over their respective ranges by grid tuning condenser, C-202, front panel controlled by the **GRID** dial. A six position selector switch, S-201, is provided to facilitate selection of the proper grid coil; specifically, the grid coil that can be tuned to resonance with the R. F. output frequency established in the Type 02433 Exciter Unit. The grid coil selector switch, S-201, is front panel controlled by the **RANGE** knob. The frequency range of each of the six grid coils is designated on the front panel in "megacycles". Variable "trimmer" condenser, C-201, located on the R. F. Unit chassis, is adjusted at factory prior to shipment. Further adjustment should not be necessary when the equipment is installed. This condenser

is adjusted so that the grid (input) coils of the Type 02520 Radio Transmitter have approximately the same tuning ranges as the output coils of the Type 02433 Exciter Unit.

41. The output circuit of the 813 R. F. power amplifier consists of a pi network designed to operate into an unbalanced antenna or transmission line. Use of this type of output network greatly simplifies the tuning procedure. In addition, the output network functions as a low pass filter, providing adequate harmonic attenuation. The elements of the output network are arranged to simplify antenna impedance matching over an extremely wide range. Seven plug-in type output coils are suppleid with the Type 02520 Radio Transmitter. The desired output frequency is established by plugging the proper coil into the network circuit and adjusting the **PLATE** tuning condenser, C-209, and the **ANTENNA** tuning condenser, C-210, to resonance. The proper network coil for any given output frequency, as well as the settings of the network tuning condensers, C-209 and C-210, is entirely dependent on the impedance of the particular antenna to which the Transmitter is connected. Complete instructions covering the selection of the proper output coil and the adjustment of the output circuit will be found in Section IV, under the heading "Output Circuit Adjustment", starting at paragraph 85.

POWER SUPPLY

42. Three independent power supplies, complete with rectifier and filter circuits, are incorporated in the Type 02520 Radio Transmitter.

43. Power supply No. 1 delivers 1600 volts at 183 ma. to the 813 Class C RF power amplifier. A full wave rectifier circuit is employed, using Type 866A/866 tubes, V-401 and V-402, followed by a two section choke input filter. The rectifier tubes are protected by time delay relay, K-403. Power supply No. 1 is fused by cartridge fuses, F-402 and F-403.

44. Power supply No. 2 delivers 1250 volts at 220 ma. (maximum) to the 811 Class B modulator. A full wave rectifier circuit is employed, using Type 866A/866 tubes, V-305 and V-306, followed by a two section choke input filter. The rectifier tubes, are protected by time delay relay, K-402. Power supply No. 2 is fused by cartridge fuses, F-402 and F-404.

45. Power supply No. 3 delivers 260 volts at 105 ma. to the speech amplifier and driver. In addition, this supply delivers 70 volts grid bias potential to the 813 Class C RF amplifier. A full wave rectifier circuit is employed, using a type 5U4G tube V-403, followed by a single section filter. Power supply No. 3 is fused by cartridge fuse, F-402.

46. The audio system of the Type 02520 Radio Transmitter consists of speech amplifier, driver and modulator. A type 6J5GT tube, V-307, functions as the speech amplifier and is transformer coupled to the push-pull driver stage in which type 6V6GT tubes, V-303 and V-304, are employed. The driver stage is transformer coupled to the Class B modulator. Type 811 tubes, V-301 and V-302, are employed in the Class B modulator.

47. Microphone current for the single button carbon microphone is obtained from the cathode circuit of the 6V6GT driver tubes, V-303 and V-304. Microphone current is filtered by condenser, C-305, resistor, R-307, and condenser, C-307. An audio gain control, R-311, is incorporated to provide adjustment of input level to the 6J5GT grid circuit. Cathode bias is employed in both the speech amplifier and driver stages.

48. A push-to-talk switch, located on the handle of the microphone, may be used to operate power supply relay, K-401.

SECTION III
INSTALLATION

UNCRATING

49. The Type 02520 Radio Transmitter is packed in a wood box, designed especially for this application. The following instructions for uncrating the Transmitter apply:

(a) Place the wood box on the floor near the table or bench on which the Transmitter is to be installed. See that the arrows on the sides of the box point up.

(b) Cut the steel bands that encircle the wood box.

(c) With a wrench of suitable size, remove the six (6) square head lag screws from the ends of the box. Three lag screws will be found on each end.

(d) The box is now free of its base and may be lifted off the base assembly, exposing the Transmitter to view.

(e) The Transmitter is held in position on the wood base by guard rails on the front, back and sides of the unit. Remove the wood screws which attach the front and back guard rails to the base and set the rails aside. The Transmitter may now be lifted off the wood base and placed on the bench or table where it will be used.

50. The Type 02433 Exciter Unit, all operating accessories, coils, and spare parts are packed in a second wood box. To open this box, place it on the floor with box arrows pointing up and pry off the nailed cover. The contents will be found packed in individual cardboard containers, each container stenciled or labeled to show contents.

51. Remove the Type 02433 Exciter Unit from its cardboard container and place the unit on the bench or table where it will be used.

52. The coil case, containing the seven (7) plug-in type Transmitter coils, should be mounted on the wall near the Transmitter. Two metal mounting brackets are provided on the back of the case.

53. Spare parts should be stored in a convenient place for possible future use. The items supplied as "Spare Parts" are listed in Table No. 10, pages 70, 71 and 72 of this book.

54. The operating accessories, shown in Fig. No. 1, pages 7 and 8, should be removed from the box, to be used in making the equipment installation.

55. All packing boxes, cartons, wrapping, etc., should be retained for possible future use.

56. Vacuum tubes for the Transmitter and Exciter Unit as well as spare vacuum tubes for each, are packed in a separate box. Open this box and remove the necessary number and types of tubes to equip the Transmitter and Exciter Unit. See Vacuum Tube Table No. 1, page 11. The spare tubes, remaining in the box, should be carefully stored in a safe and convenient place for future use.

INSPECTION

57. Inspect cables and wiring for possible broken or displaced wires. Make sure that all terminal connections are tight. Inspect each unit for loose screws or bolts. Make certain all controls such as switches, dials, etc., operate properly.

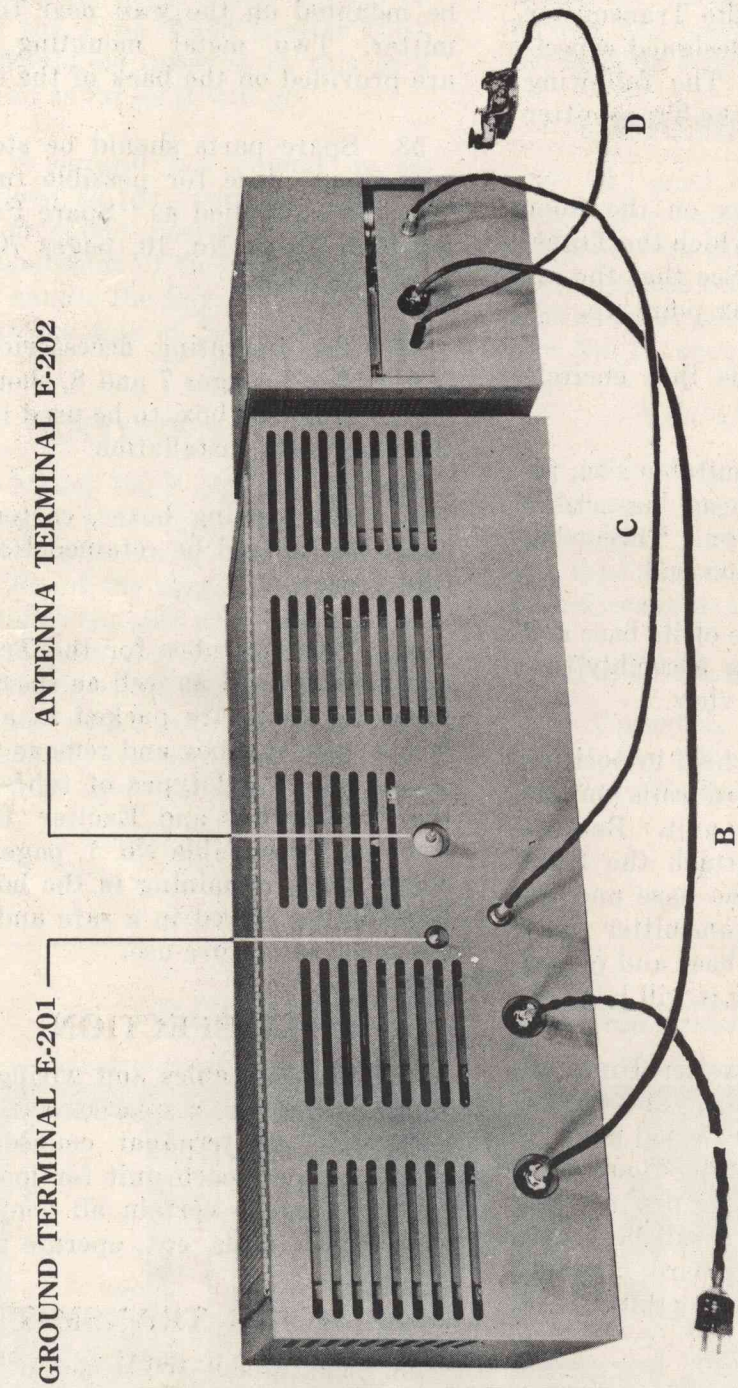
PLACING TRANSMITTER

58. The Model 150-B Radio Transmitting Equipment is designed to be placed on the operating table adjacent to the receiving apparatus or on a second table so located that the Transmitter controls may

FIG. NO. 2

MODEL 150-B RADIO TRANSMITTING EQUIPMENT

REAR VIEW SHOWING CABLE CONNECTIONS



A . . . CA-704 MAIN POWER CABLE

B . . . CA-703 EXCITER UNIT POWER CABLE

C . . . CA-702 72 OHM R.F. LINE CABLE

D . . . CA-701 TELEGRAPH KEY CABLE ASSEMBLY

be adjusted from the operating position. The Model 150-B Radio Transmitting Equipment occupies a space 53 inches wide by 20 inches deep. Approximately 3 inches clearance should be allowed at the rear of the equipment for making antenna and power connections. Sufficient clearance at the sides of the equipment should be provided for free circulation of air.

FUSES

59. All fuses should be examined and their ratings checked against the ratings shown in Fig. No. 3, page 21. All fuses are mounted on top of the Power Supply Chassis, under a protective dust cover. To check or replace fuses, the dust cover, which mounts with six screws, must be removed. The dust cover, as shown in Fig. No. 18, page 59, is imprinted with the words "**RELAYS-FUSES**".

EXTERNAL CONNECTIONS

60. Place all power switches in the **OFF** position before attempting to make any external connections to the Model 150-B Radio Transmitting Equipment. All cables required for external connections are supplied as a part of the equipment and should be used as shown in Fig. No. 2, page 19.

61. To prevent error in making external connections to the Model 150-B Radio Transmitting Equipment, each cable plug is designed to fit only one of the chassis receptacles. If the plug fits the receptacle, the cable is properly connected.

POWER LINE

62. The Model 150-B Radio Transmitting Equipment is designed to operate from a 115 volt, single phase, 50/60 cycle AC power source. The supply line should be checked for these specifications before any connections are made. The power line is connected to the Type 02520 Radio Transmitter by means of cable, CA-704. One end of the cable is plugged into the flush receptacle, J-402, located on the back of the Type 02520 Radio Transmitter. The other end of this cable should be plugged into a standard 115 volt, AC power outlet. See Fig. No. 2, page 19.

63. Power connections to the Type 02433 Exciter Unit are made by means of cable, CA-703. The plug at one end of this cable is designed to fit the flush receptacle, J-401, located on the back of the Type 02520 Radio Transmitter. The plug at the opposite end can be fitted into receptacle, J-503, located **on the back** of the Type 02433 Exciter Unit.

RF CONNECTIONS

64. The RF connection between the Type 02520 Radio Transmitter and the Type 02433 Exciter Unit is made by means of cable, CA-702. The plugs at each end of this cable may be fitted into receptacles, J-201 and J-501, located on the back of the Radio Transmitter and Exciter Unit respectively. The locking collar, which is a part of each RF plug, should be firmly screwed down over the threaded shoulder of each RF receptacle.

MICROPHONE

65. The microphone is equipped with a flexible cord and plug, the plug designed to fit the **MICROPHONE** jack, J-101, located on the **front panel** of the Type 02520 Radio Transmitter. The microphone plug, P-708, should be inserted into this jack and pushed in as far as it will go.

TELEGRAPH KEY

66. The telegraph key is connected to the Model 150-B Radio Transmitting Equipment by means of cable, CA-701. One

end of this cable is connected to the two terminals of the key. The opposite end of this cable is terminated by a plug, P-702, designed to fit the jack, J-502, located **on the back** of the Type 02433 Exciter Unit. The plug should be inserted in this jack and pushed in as far as it will go.

67. The telegraph key should be securely fastened to the operating table in the most convenient position; convenient from the standpoint of the operating personnel who handle the key. This position is usually at one side of the receiving apparatus.

ANTENNA

68. The Model 150-B Radio Transmitting Equipment is designed for use with an unbalanced antenna system on all frequencies. One of the simplest unbalanced antenna systems consists of a length of antenna wire, connected at one end to the antenna terminal post of the Radio Transmitter, and suspended in the air in a vertical, semi-vertical, horizontal or combination of vertical and horizontal position. The length of antenna is not critical; practically any length of antenna may be employed. The antenna wire must be well insulated from ground and should be located in a clear position away from trees and surrounding objects.

GROUND CONNECTION

69. A good, low resistance ground should be connected to the ground terminal located **on the back** of the Type 02520 Radio Transmitter. The ground lead must be as short as possible and wire, no smaller than No. 12, should be used.

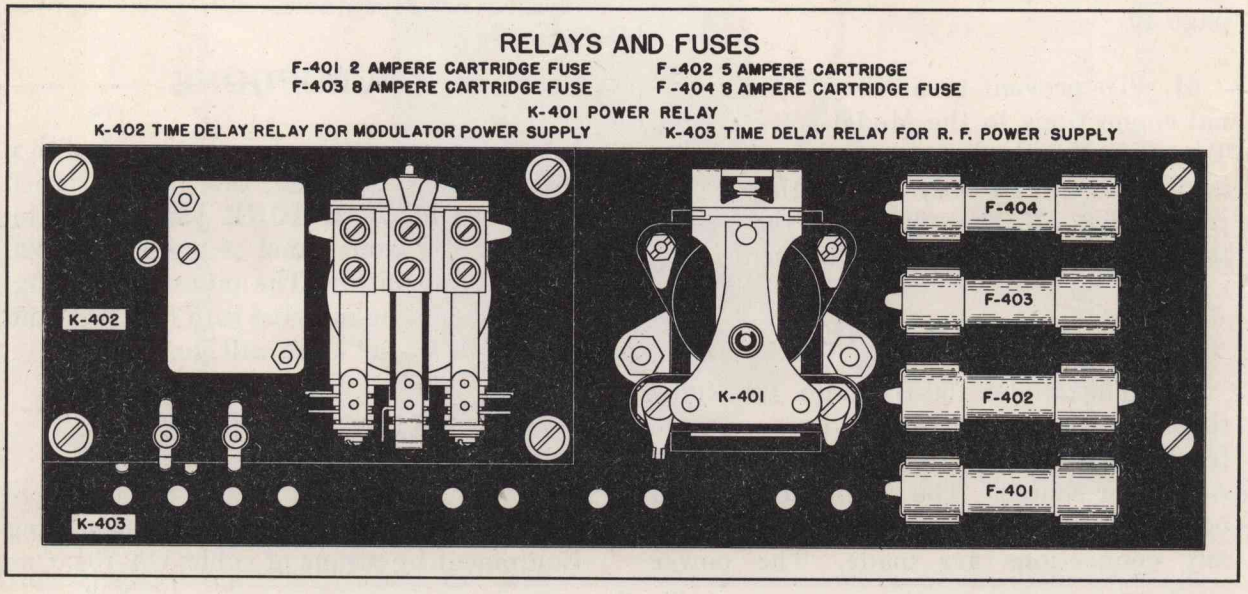
VACUUM TUBES

70. The vacuum tubes shown in Table No. 1, page 11, may now be installed in the Transmitter and Exciter Unit. Proper tube type is clearly designated on chassis top, adjacent to each tube socket.

INSTALLATION RECORD

71. Operating personnel should now fill out the "Record of Installation" on page 4 of this Instruction Book.

FIG. NO. 3



SECTION IV
OPERATION AND ADJUSTMENT

SAFETY NOTICE

72. OPERATION OF THIS EQUIPMENT INVOLVES THE USE OF HIGH VOLTAGES WHICH ARE DANGEROUS TO LIFE. OPERATING PERSONNEL SHOULD AT ALL TIMES OBSERVE ALL SAFETY PRECAUTIONS. DO NOT CHANGE TUBES OR COILS OR MAKE ADJUSTMENTS INSIDE EQUIPMENT WITH HIGH VOLTAGE SUPPLY ON. ALWAYS SHUT DOWN POWER EQUIPMENT AND OPEN THE MAIN SWITCH IN SUPPLY LINE TO THE EQUIPMENT BEFORE REACHING INTO THE CABINET.

PRELIMINARY

73. Before making preliminary adjustments in the Model 150-B Radio Transmitting Equipment, see that the front panel **PLATE** and **FILAMENT** switches, S-101 and S-104, are in the **OFF** position. Place the **POWER** switch, S-103, in the **TUNE-UP** position and the **EMISSION** switch, S-102, in the **PHONE** position. The front panel switches of the Type 02433 Exciter Unit should be placed in the **PHONE** and **AUTO** positions respectively.

74. As shown in Table No. 2, at the bottom of this page, six sets of plug-in coils are supplied with the Type 02433 Exciter Unit, each set consisting of three coils. The coils are stored in the drawer type compartment located in the bottom of the Exciter Unit cabinet. Note the frequency range of each of the six coil sets and select the set having the range in which the desired frequency falls. The frequency range of each coil set is designated, in the table below and also on the top of each coil form, in Megacycles ("MC."). A Megacycle is 1000 Kilocycles.

75. Open the hinged lid of the Type 02433 Exciter Unit and lift the three coil shields from their chassis bases. Insert the three plug-in-coils in the coil sockets and see that each coil is firmly seated. Replace the coil shields, pushing each shield down as far as possible. Close the lid of the Exciter Unit.

76. The **FILAMENT** switch, S-104, located on the front panel of the Type 02520 Radio Transmitter may now be turned **ON.** This lights the front panel pilot lamp of the Radio Transmitter, the dial scale lamps of the Exciter Unit and applies

TABLE NO. 2
COIL TABLE
FOR TYPE 02433 EXCITER UNIT

FREQUENCY RANGE (MEGACYCLES)	BAND DESIGNATION	SET OF THREE PLUG-IN COILS, CONSISTING OF NO'S.
1.36 to 3.30	A	18-3341, 18-3342 and 18-3343
3.20 to 5.20	B	18-3344, 18-3345 and 18-3346
5.08 to 7.08	C	18-3347, 18-3348 and 18-3349
6.93 to 8.90	D	18-3350, 18-3351 and 18-3352
8.72 to 10.82	E	18-3353, 18-3354 and 18-3355
10.70 to 12.70	F	18-3356, 18-3357 and 18-3358

heater current to all vacuum tube filaments.

77. The Model 150-B Radio Transmitting Equipment should now be permitted to run for 30 minutes without further adjustment. This initial run of 30 minutes is necessary only when the equipment is first installed or when a mercury vapor rectifier tube, Type 866A, is replaced.

78. Now turn the **AUTO ON** switch, S-502, to the **ON** position. This switch is located on the front panel of the Type 02433 Exciter Unit.

79. Refer to the calibrated dial scale of the Exciter Unit and adjust the tuning control to the desired frequency. The signal produced by the Exciter Unit will be audible in the station receiver. Check this by tuning the receiver, with BFO turned **ON**, to the frequency to which the Exciter Unit is adjusted.

80. The output (transmission) frequency of the Model 150-B Radio Transmitting Equipment is established and controlled by the Type 02433 Exciter Unit. In general, point-to-point, communications service, operating personnel will find the accuracy of the calibrated dial to be adequate. When extreme accuracy is required, the output frequency may be checked against a Frequency Standard or a precision type "wave-meter".

81. With the Exciter Unit now adjusted to the desired frequency, the operator may proceed with adjustment of the Type 02520 Radio Transmitter. The Exciter Unit front panel **AUTO ON** switch, S-502, should remain in the **ON** position while the following adjustments are made:

INPUT CIRCUIT ADJUSTMENT

82. First, turn the **RANGE (MC.)** selector switch, S-201, located on the front panel of the Type 02520 Radio Transmitter, to the range in which the pre-set frequency of the Exciter Unit falls. For example, if the pre-set frequency of the Exciter Unit is "6.4 MC." (6400 KC.), the **RANGE** switch should be turned to the **5.2-7.0** position (5200 to 7000 KC.).

83. Now adjust the **GRID** tuning dial, controlling the grid tuning condenser, C-202, and observe the **FINAL GRID CURRENT** meter, M-101. Adjustment of the **GRID** tuning dial should be made to the point where **maximum** meter reading is obtained.

84. The grid input circuit of the Type 02520 Radio Transmitting Equipment is now tuned to resonance with the output frequency of the Type 02433 Exciter Unit and the operator may proceed with the following final adjustments:

OUTPUT CIRCUIT ADJUSTMENT

85. Turn the Exciter Unit **AUTO ON** switch, S-502, to the **AUTO** position. In this position the Exciter Unit output is controlled automatically by either the **PLATE** switch, S-101, located on the front panel of the Radio Transmitter or by the push-to-talk switch located on the handle of the Microphone, MI-701. The **EMISSION** switch, S-102, located on the front panel of the Type 02520 Radio Transmitter, may be turned to the **CW** position. In this position, the 811 class "B" modulator is inoperative; a desirable condition during the initial process of tuning up the Transmitter.

86. As stated in paragraphs 41 and 68, the output circuit of the Type 02520 Radio Transmitting Equipment consists of a pi network designed to work into an unbalanced antenna or transmission line. Seven plug-in type coils and three fixed padding condensers, for the pi network, are supplied with the Transmitter. By selecting

and using the proper coil and padding condenser combination, the operator can match the impedance of practically any length of unbalanced antenna over a frequency range of 1500 KC to 12,500 KC.

87. The proper network coil and padding condenser combination to use for a given frequency is entirely dependent on the impedance of the particular antenna to which the Transmitter is connected. Three tables will be found at the end of this section, pages 31 to 35 inclusive, showing the proper network coil, proper padding condensers and approximate settings of the **PLATE** and **ANTENNA** tuning dials, for given frequencies over the range of 1500 to 12,500 KC.

88. Table No. 4 on pages 31 and 32 should be used when the impedance of the antenna is known to be approximately 72 ohms.

89. Table No. 5, on page 32 and 33 should be used when the impedance of the antenna is approximately 150 ohms.

90. Table No. 6, on pages 34 and 35 should be used when the impedance of the antenna is approximately 300 ohms.

91. When antenna impedance is unknown, as is usually the case, use Table No. 4, on pages 31 and 32, as a rough guide for initial "tune-up" adjustments.

92. Assuming antenna impedance is unknown, first select from Table No. 4, a network coil and padding condenser combination that will tune to the desired frequency. It will be noted in Table No. 4 that, in many cases, more than one coil and padding condenser combination may be used to obtain a desired frequency. For example, a combination consisting of coil, L-204, and padding condenser, C-211, could be used to obtain an output frequency of 2.6 MC. A second combination, consisting of coil, L-205, and padding condensers, C-211 and C-212, could also be used to obtain a frequency of 2.6 MC. A third combination, consisting of coil, L-206, and padding condensers, C-212 and C-213, might also be used. In general, the operator should select and use the combination that provides the desired frequency with the network coil nearest the middle of its frequency range. The desired frequency of 2.6 MC should be obtained by using network coil, L-205, and padding condensers, C-211 and C-212, since 2.6 MC is nearest the center of the L-205 coil range.

93. Next, see that the front panel **FILAMENT** and **PLATE** switches, S-101 and S-104, are in the **OFF** position and that the front panel **POWER** switch, S-103, is in the **TUNE-UP** position.

SAFETY NOTICE

94. OPERATION OF THIS EQUIPMENT INVOLVES THE USE OF HIGH VOLTAGES WHICH ARE DANGEROUS TO LIFE. OPERATING PERSONNEL SHOULD AT ALL TIMES OBSERVE ALL SAFETY PRECAUTIONS. DO NOT CHANGE TUBES OR COILS OR MAKE ADJUSTMENTS INSIDE EQUIPMENT WITH HIGH VOLTAGE SUPPLY ON. ALWAYS SHUT DOWN POWER EQUIPMENT AND OPEN THE MAIN SWITCH IN SUPPLY LINE TO THE EQUIPMENT BEFORE REACHING INTO THE CABINET.

95. Open the hinged lid of the Type 02520 Radio Transmitter and insert the selected network coil in the two large jacks located on the insulated mounting plate behind the 813 R. F. amplifier tube. See Fig. No. 16, page 57. Now insert the selected padding condenser or condensers in the jacks provided on the same mounting plate (behind the network coil, as shown in Fig. No. 16, page 57). Three pair of

jacks are provided to accommodate three padding condensers. When only one padding condenser is used, the condenser may be inserted in any one of the three pair of jacks. When two padding condensers are used, the two condensers may be plugged in any two of the three pair of jacks.

96. Now close the hinged lid of the Radio Transmitter and throw the front panel **FILAMENT** switch, S-104, to the **ON** position.

97. Set the front panel **PLATE** and **ANTENNA** tuning dials to the approximate settings shown in Table No. 4, pages 31 and 32. Now throw the front panel **PLATE** switch, S-101, to the **ON** position. This applies approximately 900 volts DC (tune-up voltage) to the Plate of the 813 class "C" R. F. amplifier tube.

98. Now observe the **FINAL PLATE CURRENT** meter, M-103, and adjust the front panel **PLATE** tuning dial for **minimum** plate current. When the **PLATE** tuning dial is adjusted to the point of **minimum** current, the **FINAL PLATE CURRENT** meter should read "100 MA".

99. If minimum plate current is found to be **higher** than "100 MA", **more** antenna capacity is required. Additional capacity can be obtained by adjusting the front panel **ANTENNA** tuning dial to a **lower** number or by using a plug-in padding condenser (or condensers) having higher capacity, or both.

100. If minimum plate current is found to be **lower** than "100 MA", **less** antenna capacity is required. Antenna capacity can be lowered by adjusting the front panel **ANTENNA** tuning dial to a **higher** number or by using a plug-in padding condenser (or condensers) having lower capacity, or both.

101. Assuming the **PLATE** tuning dial is adjusted to the point of minimum plate current and the reading is found to be **higher** than "100 MA", turn the **ANTENNA** tuning dial to a lower number (try 10 divisions lower) and readjust the **PLATE** tuning dial for minimum plate current. If the meter reading is still higher than "100 MA", turn the **ANTENNA** tuning dial to a new setting, approximately 10 divisions lower, and readjust the **PLATE** tuning dial for minimum plate current. If the meter reading is still higher than "100 MA", adjustment should be continued, progressively lowering the **ANTENNA** dial setting in steps of 10 divisions, **always readjusting the PLATE tuning dial for minimum meter reading.**

102. If minimum meter reading is found to be higher than "100 MA", with the **ANTENNA** tuning dial set on "**0**", and the **PLATE** tuning dial adjusted to resonance (minimum current), a larger padding condenser or combination of padding condensers must be used.

103. In Table No. 3, on page 26, the capacities of the three plug-in padding condensers and combinations thereof, are given.

104. First, check the capacity of the padding condenser or condensers being used and, from Table No. 3, select a combination that provides the next higher capacity. For example, if padding condensers, C-211 and C-213, are being used, the padding capacity is 1500 Mmfd. The next higher capacity, as shown in Table No. 3, is 1800 Mmfd; provided by condensers, C-212 and C-213.

105. Throw the front panel **PLATE** and **FILAMENT** switches, S-101 and S-104, to the **OFF** position, open the hinged lid of the Radio Transmitter cabinet and replace the padding condenser or condensers with the selected combination that provides the next higher capacity. Close

the lid of the cabinet and throw the front panel **FILAMENT** switch, S-104, to the **ON** position.

106. Set the **ANTENNA** tuning dial on "90" and throw the **PLATE** switch, S-101, to the **ON** position.

107. Adjust the **PLATE** tuning dial to obtain a minimum reading of the **FINAL PLATE CURRENT** meter, M-103. If the minimum reading is still higher than "100 MA", set the **ANTENNA** tuning dial 10 divisions **lower** and readjust the **PLATE** tuning dial for minimum meter current. If necessary, adjustment should be continued in this manner until a minimum current reading of "100 MA" is obtained. Always readjust the **PLATE** tuning dial for **minimum** meter reading after each change in the setting of **ANTENNA** tuning dial.

108. If minimum meter reading persists in remaining higher than "100 MA", the operator must employ additional padding capacity, selecting new combinations from Table No. 3. If minimum meter reading is higher than "100 MA", when maximum padding capacity (2100 Mmfd.) is used, select and use the next larger network coil; repeating the tune-up procedure described in paragraphs 92 to 108 inclusive. When a reading of "100 MA" is obtained on the **FINAL PLATE CURRENT** meter, M-103, (with the **PLATE** tuning dial adjusted to the point of minimum current), the Type 02520 Radio Transmitter is properly "tuned up" at reduced power.

109. The tuning adjustments covered in paragraphs 99 to 108 inclusive, show procedure to be followed when minimum final plate current is initially found to be **higher** than "100 MA".

110. As stated in paragraph 100, if minimum plate current is found to be **lower** than "100 MA", **less** antenna capacity is required. Antenna capacity can be lowered by adjusting the front panel **ANTENNA** tuning dial to a **higher** number or by using a plug-in padding condenser (or condensers) having lower capacity, or both.

111. Assuming the **PLATE** tuning dial is adjusted to the point of minimum plate current and the reading of the **FINAL PLATE CURRENT** meter, M-103, is found to be lower than "100 MA", turn the **ANTENNA** tuning dial to a higher number (try 10 divisions higher) and readjust the **PLATE** tuning dial for minimum plate current. If the meter reading is still lower than "100 MA", turn the **ANTENNA** tuning dial to a new setting, approximately 10 divisions higher, and readjust the **PLATE**

TABLE NO. 3

PADDING CONDENSER TABLE
FOR TYPE 02520 RADIO TRANSMITTER

FOR A PADDING CAPACITY OF:	USE PLUG-IN CONDENSER NO'S:
300 Mmfd.	C-211
600 Mmfd.	C-212
1200 Mmfd.	C-213
1500 Mmfd.	C-211 and C-213
1800 Mmfd.	C-212 and C-213
2100 Mmfd.	C-211 and C-212 and C-213

tuning dial for minimum plate current. If the meter reading is still lower than "100 MA", adjustment should be continued, progressively increasing the **ANTENNA** dial setting in steps of 10 divisions, always readjusting the **PLATE** tuning dial for minimum meter reading.

112. If minimum reading is found to be lower than "100 MA", with the **ANTENNA** tuning dial set on **"100"**, and the **PLATE** tuning dial adjusted to resonance (minimum meter current), a smaller padding condenser or combination of padding condensers must be used.

113. In Table No. 3, at the bottom of page 26, the capacities of the three plug-in padding condensers and combinations thereof are given.

114. First, check the capacity of the padding condenser or condensers being used and, from Table No. 3, select a combination that provides the next lower capacity. For example, if padding condensers, C-212 and C-213 are being used, the padding capacity is 1800 Mmfd. The next lower capacity, as shown in Table No. 3, is 1500 Mmfd; provided by condensers, C-211 and C-213.

115. Throw the front panel **PLATE** and **FILAMENT** switches, S-101 and S-104, to the **OFF** position, open the hinged lid of the Radio Transmitter cabinet and replace the padding condenser or condensers with the selected combination that provides the next lower capacity. Close the lid of the cabinet and throw the front panel **FILAMENT** switch, S-104, to the **ON** position.

116. Set the **ANTENNA** tuning dial on "10" and throw the **PLATE** switch, S-101, to the **ON** position.

117. Adjust the **PLATE** tuning dial to obtain a minimum reading of the **FINAL PLATE CURRENT** meter, M-103. If the minimum reading is still lower than "100 MA", set the **ANTENNA** tuning dial 10 divisions higher and readjust the **PLATE** tuning dial for minimum meter current. If necessary, adjustment should be continued in this manner until a minimum current reading of "100 MA" is obtained. Always readjust the **PLATE** tuning dial for **minimum** meter reading after each change in the setting of **ANTENNA** tuning dial.

118. If minimum meter reading persists in remaining lower than "100 MA", the operator must employ less padding capacity, selecting new combinations from Table No. 3. If minimum meter reading is less than "100 MA", when **no** padding capacity is used, select and use the next smaller network coil; repeating the tune-up procedure described in paragraphs 111 to 118 inclusive.

119. When a reading of "100 MA" is obtained on the **FINAL PLATE CURRENT** meter, M-103, (with the **PLATE** tuning dial adjusted to the point of **minimum** current), the Type 02520 Radio Transmitter is properly "tuned up" at reduced power.

120. Now throw the front panel **POWER** switch, S-103, to the **NORMAL** position. This applies full operating power to the 813 class "C" R. F. amplifier tube (1600 volts DC). The **FINAL PLATE CURRENT** meter, M-103, should read "175 MA". Carefully readjust the **PLATE** tuning dial for minimum meter reading. If the minimum meter reading is "175 MA", the Radio Transmitter is properly tuned up for "on the air" operation.

121. If the minimum meter reading is found to be slightly higher than "175 MA", decrease the setting of the **ANTENNA** tuning dial (try one division lower) and carefully readjust the **PLATE** tuning dial for the minimum meter reading. Ad-

justment of the **ANTENNA** and **PLATE** tuning dials should be continued, in this manner, until the required minimum meter reading of "175 MA" is obtained.

122. If the minimum meter reading is found to be slightly lower than "175 MA", increase the setting of the **ANTENNA** tuning dial (try one division higher) and carefully readjust the **PLATE** tuning dial for minimum meter reading. Adjustment of the **ANTENNA** and **PLATE** tuning dials should be continued, in this manner, until the required minimum meter reading of "175 MA", is obtained.

123. Now observe the **FINAL GRID CURRENT** meter, M-101, and adjust the **GRID** tuning dial to the point where a meter reading of "5 MA", is obtained.

CW OPERATION

124. The Model 150-B Radio Transmitter Equipment is now ready for final adjustment prior to radiotelegraph (CW) operation.

125. Turn the **PHONE CW** switch, located on the front panel of the Type 02433 Exciter Unit, to the **CW** position. See that the circuit closing lever on the telegraph key, K-701, is in the **open** position. With the key **up**, the **FINAL PLATE CURRENT** meter, M-103, will read **approximately** "80 MA". With key **down**, normal meter reading is "175 MA". The Model 150-B Radio Transmitting Equipment may now be employed in radiotelegraph communication service.

126. The front panel **PLATE** switch, S-101, of the Type 02520 Radio Transmitter, may be thrown to the **OFF** position during transmitter "stand-by" periods. The **PLATE** switch **must** be in the **ON** position when the Transmitter is used in radiotelegraph (CW) service.

PHONE OPERATION

127. With the **PLATE** switch, S-101, in the **OFF** position, throw the **EMISSION** switch, S-102, located on the front panel of the Type 02520 Radio Transmitter, to the **PHONE** position. Now turn the **PHONE CW** switch, S-501, located on the front panel of the Type 02433 Exciter Unit, to the **PHONE** position.

128. In radiotelephone service, it is customary to use the "push-to talk" switch, located on the handle of the Microphone, MI-701, to start and stop the Transmitter; the front panel **PLATE** switch, S-101, remaining in the **OFF** position at all times. When the "push-to-talk" microphone switch is depressed, operating voltages of approximately 1600 volts DC and 1300 volts DC are applied to the 813 class "C" R. F. amplifier and 811 class "B" modulator respectively.

129. Pick up the Microphone, M-701, depress the "push-to-talk" switch button on the handle and, in a normal tone of voice, speak into the microphone. Separation of 3 or 4 inches, between microphone and lips, is usually satisfactory.

130. While speaking into the microphone, observe the **MODULATION** meter, M-102, located on the front panel of the Type 02520 Radio Transmitter. It will be noted that this meter "follows" the speech input to the microphone. When speech is stopped, the **MODULATION** meter, M-102, will read approximately "50", which is the normal static (no-signal) reading.

131. Continue speaking into the microphone and observe the **peak** or maximum swings of the **MODULATION** meter. Voice modulation consists of complex wave forms which invariably contain peaks of considerable amplitude. The Type 02520 Radio Transmitter will be

completely modulated at voice inputs when the maximum (peak) meter swings fall within the **MODULATION** meter range of "200 to 220". If the peak swings are lower than "200", the operator should speak louder, or move the microphone nearer the lips or both. If the peak swings are higher than "220", the operator should speak more softly or move the microphone farther from the lips or both.

132. In installations where "background" noise level is extremely high, it may be desirable to speak directly into the microphone with a minimum of separation between microphone and lips. If this results in peak **MODULATION** meter swings greater than "220", the operator may reduce speech input level by turning the gain control, R-311, in a counter-clockwise direction, stopping at the point where peak **MODULATION** meter swings fall within the range of "200 to 220". A hole is provided on the left side of the Transmitter cabinet through which the gain control, R-311, may be adjusted. Use a screw driver to rotate the slotted shaft of the gain control.

133. In some cases, particularly at the higher frequencies, modulation may be improved by detuning the **GRID** tuning dial to the point where a **FINAL GRID CURRENT** meter reading of "3" or "4" MA is obtained. The 813 class "C" R. F. amplifier is biased sufficiently to provide good class "C" operation with as little as 2.5 MA grid current. As stated in paragraph 123, the Transmitter should be initially "tuned up" with grid current of "5 MA"; then, if modulation appears to be imperfect, the **GRID** tuning dial should be detuned an amount sufficient to provide a **FINAL GRID CURRENT** meter reading of "3" or "4" and the **PLATE** tuning dial adjusted to the point of minimum plate current.

ANTENNA CURRENT

134. The **ANTENNA CURRENT** meter, M-104, is incorporated in the Type 02520 Radio Transmitter to indicate **only** that R. F. power, generated by the Transmitter, is flowing into the antenna system. The **ANTENNA CURRENT** meter does not indicate the absolute value of output power. In some cases, the meter reading may be so small that it is difficult to detect. In other cases, the reading may be fairly high. The presence of a low or a high reading cannot be considered as an indication of Transmitter performance or efficiency.

TUNE-UP RECORD TABLE

THIS IS A SAMPLE SHOWING HOW THE BLANK TABLE ON PAGES XX AND XX SHOULD BE FILLED IN BY THE OPERATING PERSONNEL.

SET EXCITER UNIT DIAL ON:	USE EXCITER UNIT COIL SET	SET RANGE (MC.) SWITCH ON:	SET GRID DIAL ON:	USE NET WORK COIL NO:	USE PADDING CONDENSER NO'S:	SET PLATE DIAL ON:	SET ANTENNA DIAL ON:	DESCRIPTION OF ANTENNA USED:
5.6 Mc.	"C"	5.2-7.0	48	L-207	C-211 & C-212	70	100	160 Ft. "T"
8.2 Mc.	"D"	7.0-8.8	61	L-208	C-213	51	60	#2
3.1 Mc.	"A"	1.5-3.2	37	L-205	C-212	75	83	#2

Suffice to say, if the Transmitter is tuned up in accordance with preceeding instructions and the **ANTENNA CURRENT** meter indicates the presence of current (regardless of value), the Transmitter is functioning in a normal manner.

TUNE-UP LOG

135. The Model 150-B Radio Transmitting Equipment is designed for operation on any desired frequency within the range of 1500 KC to 12,500 KC. In general communications service, where any one of a large number of transmission frequencies may be employed and where frequency change must be made with a minimum of delay, it is recommended that the operating personnel maintain a log or record showing proper coils, padding condenser combination and dial settings for each of the frequencies normally employed. For the convenience of the operating personnel, blank tables are provided in the back of this book, pages 76 and 77. When the Model 150-B Radio Transmitting Equipment is first installed, the equipment should be tuned up on each frequency to be used and a record of dial settings, etc., maintained on pages 76 and 77. The illustration on the preceeding page shows how the blank table may be filled in by the operating personnel.

TABLE NO. 4

Sheet 1 of 2 Sheets

NETWORK COIL AND TUNING DATA FOR A 72 OHM ANTENNA

(USE THIS TABLE WHEN ANTENNA IMPEDANCE IS 72 OHMS, OR IS UNKNOWN)

FREQUENCY (MC.)	USE PLATE (NETWORK) COIL NO.	USE PLUG-IN CONDENSER NO'S.	"PLATE" DIAL SETTING (Approx)	"ANTENNA" DIAL SETTING (Approx)
1.5	L-202	C-213	26	70
1.6	L-202	C-211 and C-212	39	75
1.8	L-202	C-211	59	40
1.6	L-203	C-211 and C-213	18	60
1.8	L-203	C-211 and C-212	40	30
2.0	L-203	C-212	58	40
2.2	L-203	C-211	69	50
1.8	L-204	C-211 and C-213	18	35
2.0	L-204	C-213	40	75
2.2	L-204	C-211 and C-212	54	80
2.4	L-204	C-212	65	60
2.6	L-204	C-211	74	10
2.8	L-204	C-211	81	50
2.0	L-205	C-212 and C-213	13	65
2.2	L-205	C-212 and C-213	32	85
2.4	L-205	C-213	47	100
2.6	L-205	C-211 and C-212	59	60
2.8	L-205	C-212	68	15
3.0	L-205	C-212	75	80
3.2	L-205	C-211	81	20
3.4	L-205	C-211	85	50
3.6	L-205	C-211	90	80
2.6	L-206	C-212 and C-213	19	40
2.8	L-206	C-211 and C-213	33	40
3.0	L-206	C-213	44	35
3.2	L-206	C-211 and C-212	54	10
3.4	L-206	C-211 and C-212	63	50
3.6	L-206	C-211 and C-212	69	90
3.8	L-206	C-212	74	40
4.0	L-206	C-212	79	70
4.2	L-206	C-211	83	0
4.4	L-206	C-211	87	10
4.6	L-206	C-211	91	30
3.8	L-207	C-211 and C-212 and C-213	10	70
4.0	L-207	C-212 and C-213	21	50
4.2	L-207	C-211 and C-213	30	10
4.4	L-207	C-211 and C-213	39	50
4.6	L-207	C-211 and C-213	46	90
4.8	L-207	C-213	52	45
5.0	L-207	C-213	58	90
5.2	L-207	C-211 and C-212	62	30
5.4	L-207	C-211 and C-212	67	60
5.6	L-207	C-211 and C-212	70	100
5.8	L-207	C-212	74	15
6.0	L-207	C-212	77	25
6.2	L-207	C-212	80	45
6.4	L-207	C-212	83	75
6.6	L-207	C-212	85	90
6.8	L-207	C-211	87	5
7.0	L-207	C-211	89	15
7.2	L-207	C-211	92	25
6.6	L-208	C-211 and C-212 and C-213	12	40
6.8	L-208	C-212 and C-213	17	10
7.0	L-208	C-212 and C-213	23	60
7.2	L-208	C-212 and C-213	29	100
7.4	L-208	C-212 and C-213	34	20
7.6	L-208	C-212 and C-213	38	70
7.8	L-208	C-213	42	0
8.0	L-208	C-213	47	30
8.2	L-208	C-213	51	60
8.4	L-208	C-213	54	90
8.6	L-208	C-213	55	100
8.8	L-208	C-211 and C-212	59	0
9.0	L-208	C-211 and C-212	62	30
9.2	L-208	C-211 and C-212	64	50
9.4	L-208	C-211 and C-212	67	70

TABLE NO. 4 (Cont'd)

Sheet 2 of 2 Sheets

NETWORK COIL AND TUNING DATA FOR A 72 OHM ANTENNA

(USE THIS TABLE WHEN ANTENNA IMPEDANCE IS 72 OHMS, OR IS UNKNOWN)

FREQUENCY (MC.)	USE PLATE (NETWORK) COIL NO.	USE PLUG-IN CONDENSER NO'S.	"PLATE" DIAL SETTING (Approx)	"ANTENNA" DIAL SETTING (Approx)
9.6	L-208	C-211 and C-212	69	100
9.8	L-208	C-212	71	5
10.0	L-208	C-212	73	20
10.2	L-208	C-212	75	35
10.4	L-208	C-212	76	50
10.6	L-208	C-212	78	60
10.8	L-208	C-212	80	75
11.0	L-208	C-212	82	85
11.2	L-208	C-212	83	100
11.4	L-208	C-212	84	100
11.6	L-208	C-211	85	0
11.8	L-208	C-211	87	5
12.0	L-208	C-211	88	15
12.2	L-208	C-211	90	20
12.4	L-208	C-211	91	25
12.6	L-208	C-211	92	30

TABLE NO. 5

Sheet 1 of 2 Sheets

NETWORK COIL AND TUNING DATA FOR A 150 OHM ANTENNA

(USE TABLE NO. 4 WHEN ANTENNA IMPEDANCE IS UNKNOWN)

FREQUENCY (MC.)	USE PLATE (NETWORK) COIL NO.	USE PLUG-IN CONDENSER NO'S.	"PLATE" DIAL SETTING (Approx)	"ANTENNA" DIAL SETTING (Approx)
1.5	L-202	C-211 and C-212	21	20
1.6	L-202	C-211 and C-212	34	75
1.8	L-202	C-212	54	65
2.0	L-202	C-211	68	30
2.2	L-202	C-211	78	85
2.4	L-202	None	86	30
1.6	L-203	C-213	13	50
1.8	L-203	C-211 and C-212	36	60
2.0	L-203	C-212	53	50
2.2	L-203	C-211	66	5
2.4	L-203	C-211	75	50
2.6	L-203	C-211	83	75
2.8	L-203	None	88	10
1.8	L-204	C-213	14	45
2.0	L-204	C-211 and C-212	34	55
2.2	L-204	C-212	51	30
2.4	L-204	C-212	63	80
2.6	L-204	C-211	71	20
2.8	L-204	C-211	79	50
3.0	L-204	C-211	84	80
3.2	L-204	None	89	15
2.0	L-205	C-213	7	10
2.2	L-205	C-211 and C-212	27	15
2.4	L-205	C-211 and C-212	43	75
2.6	L-205	C-212	55	30
2.8	L-205	C-212	64	70

TABLE NO. 5 (Cont'd)

Sheet 2 of 2 Sheets

NETWORK COIL AND TUNING DATA FOR A 150 OHM ANTENNA

(USE TABLE NO. 4 WHEN ANTENNA IMPEDANCE IS UNKNOWN)

FREQUENCY (MC.)	USE PLATE (NETWORK) COIL NO.	USE PLUG-IN CONDENSER NO'S.	"PLATE" DIAL SETTING (Approx)	"ANTENNA" DIAL SETTING (Approx)
3.0	L-205	C-211	71	15
3.2	L-205	C-211	78	40
3.4	L-205	C-211	83	65
3.6	L-205	C-211	85	85
3.8	L-205	None	93	10
2.5	L-206	C-211 and C-213	6	60
2.6	L-206	C-213	15	0
2.8	L-206	C-213	29	75
3.0	L-206	C-211 and C-212	41	50
3.2	L-206	C-212	51	5
3.4	L-206	C-212	59	40
3.6	L-206	C-212	67	70
3.8	L-206	C-211	72	0
4.0	L-206	C-211	77	20
4.2	L-206	C-211	81	35
4.4	L-206	C-211	85	50
4.6	L-206	C-211	89	60
4.8	L-206	C-211	92	75
3.9	L-207	C-211 and C-213	6	55
4.0	L-207	C-213	17	10
4.2	L-207	C-213	27	50
4.4	L-207	C-213	36	80
4.6	L-207	C-211 and C-212	43	20
4.8	L-207	C-211 and C-212	50	50
5.0	L-207	C-212	55	0
5.2	L-207	C-212	60	30
5.4	L-207	C-212	64	50
5.6	L-207	C-212	68	65
5.8	L-207	C-212	72	75
6.0	L-207	C-212	76	100
6.2	L-207	C-211	78	5
6.4	L-207	C-211	81	20
6.6	L-207	C-211	84	35
6.8	L-207	C-211	86	50
7.0	L-207	C-211	88	60
7.2	L-207	C-211	91	70
7.4	L-207	C-211	93	75
6.7	L-208	C-211 and C-213	12	25
6.8	L-208	C-211 and C-213	15	40
7.0	L-208	C-211 and C-213	21	75
7.2	L-208	C-213	27	0
7.4	L-208	C-213	31	35
7.6	L-208	C-213	36	90
7.8	L-208	C-211 and C-212	40	0
8.0	L-208	C-211 and C-212	44	15
8.2	L-208	C-211 and C-212	48	30
8.4	L-208	C-211 and C-212	52	50
8.6	L-208	C-211 and C-212	55	70
8.8	L-208	C-211 and C-212	58	90
9.0	L-208	C-212	60	0
9.2	L-208	C-212	62	20
9.4	L-208	C-212	65	40
9.6	L-208	C-212	67	45
9.8	L-208	C-212	69	65
10.0	L-208	C-212	71	85
10.2	L-208	C-212	73	100
10.4	L-208	C-211	74	0
10.6	L-208	C-211	76	10
10.8	L-208	C-211	78	15
11.0	L-208	C-211	80	20
11.2	L-208	C-211	81	30
11.4	L-208	C-211	83	35
11.6	L-208	C-211	84	40
11.8	L-208	C-211	86	45
12.0	L-208	C-211	87	50
12.2	L-208	C-211	88	55
12.4	L-208	C-211	89	60
12.6	L-208	C-211	90	65

TABLE NO. 6

Sheet 1 of 2 Sheets

NETWORK COIL AND TUNING DATA FOR A 300 OHM ANTENNA

(USE TABLE NO. 4 WHEN ANTENNA IMPEDANCE IS UNKNOWN)

FREQUENCY (MC.)	USE PLATE (NETWORK) COIL NO.	USE PLUG-IN CONDENSER NO'S.	"PLATE" DIAL SETTING (Approx)	"ANTENNA" DIAL SETTING (Approx)
1.5	L-202	C-211 and C-212	14	85
1.6	L-202	C-212	28	35
1.8	L-202	C-211	49	5
2.0	L-202	C-211	64	50
2.2	L-202	C-211	75	85
2.4	L-202	None	83	20
2.6	L-202	None	91	45
1.6	L-203	C-211 and C-212	8	50
1.8	L-203	C-212	32	35
2.0	L-203	C-211	50	5
2.2	L-203	C-211	63	40
2.4	L-203	C-211	73	70
2.6	L-203	C-211	80	85
2.8	L-203	None	87	20
1.8	L-204	C-211 and C-212	8	50
2.0	L-204	C-212	31	30
2.2	L-204	C-212	46	80
2.4	L-204	C-211	59	25
2.6	L-204	C-211	70	50
2.8	L-204	C-211	76	70
3.0	L-204	None	82	10
3.2	L-204	None	87	25
2.1	L-205	C-211 and C-212	14	65
2.2	L-205	C-211 and C-212	23	90
2.4	L-205	C-212	39	55
2.6	L-205	C-212	52	80
2.8	L-205	C-211	62	20
3.0	L-205	C-211	70	55
3.2	L-205	C-211	75	75
3.4	L-205	C-211	80	90
3.6	L-205	None	85	15
3.8	L-205	None	90	30
2.6	L-206	C-211 and C-212	12	30
2.8	L-206	C-211 and C-212	25	85
3.0	L-206	C-212	40	55
3.2	L-206	C-212	50	85
3.4	L-206	C-211	57	10
3.6	L-206	C-211	63	35
3.8	L-206	C-211	69	55
4.0	L-206	C-211	74	65
4.2	L-206	C-211	79	75
4.4	L-206	C-211	84	90
4.6	L-206	None	87	10
4.0	L-207	C-211 and C-212	8	30
4.2	L-207	C-211 and C-212	17	55
4.4	L-207	C-211 and C-212	29	90
4.6	L-207	C-212	38	25
4.8	L-207	C-212	44	45
5.0	L-207	C-212	51	75
5.2	L-207	C-211	56	0
5.4	L-207	C-211	60	25
5.6	L-207	C-211	65	30
5.8	L-207	C-211	69	35
6.0	L-207	C-211	73	55
6.2	L-207	C-211	76	60
6.4	L-207	C-211	78	75
6.6	L-207	C-211	81	85
6.8	L-207	None	84	8
7.0	L-207	None	85	12
7.2	L-207	None	88	17
6.8	L-208	C-213	12	100
7.0	L-208	C-211 and C-212	16	10
7.2	L-208	C-211 and C-212	23	35
7.4	L-208	C-211 and C-212	27	55
7.6	L-208	C-211 and C-212	32	80
7.8	L-208	C-211 and C-212	36	90

TABLE NO. 6 (Cont'd)

Sheet 2 of 2 Sheets

NETWORK COIL AND TUNING DATA FOR A 300 OHM ANTENNA

(USE TABLE NO. 4 WHEN ANTENNA IMPEDANCE IS UNKNOWN)

FREQUENCY (MC.)	USE PLATE (NETWORK) COIL NO.	USE PLUG-IN CONDENSER NO'S.	"PLATE" DIAL SETTING (Approx)	"ANTENNA" DIAL SETTING (Approx)
8.0	L-208	C-212	40	5
8.2	L-208	C-212	44	20
8.4	L-208	C-212	48	30
8.6	L-208	C-212	52	55
8.8	L-208	C-212	55	80
9.0	L-208	C-212	57	85
9.2	L-208	C-211	60	0
9.4	L-208	C-211	62	10
9.6	L-208	C-211	64	15
9.8	L-208	C-211	66	25
10.0	L-208	C-211	68	30
10.2	L-208	C-211	70	45
10.4	L-208	C-211	72	50
10.6	L-208	C-211	74	55
10.8	L-208	C-211	76	65
11.0	L-208	C-211	78	70
11.2	L-208	C-211	79	75
11.4	L-208	C-211	81	80
11.6	L-208	C-211	83	95
11.8	L-208	None	84	5
12.0	L-208	None	85	8
12.2	L-208	None	87	13
12.4	L-208	None	88	17
12.6	L-208	None	89	20

SECTION V

MAINTENANCE INSTRUCTIONS

136. **THE MODEL 150-B RADIO TRANSMITTING EQUIPMENT IS CONSTRUCTED OF MATERIALS CONSIDERED TO BE THE BEST OBTAINABLE FOR THE PURPOSE. ALL UNITS OF THE EQUIPMENT HAVE BEEN CAREFULLY INSPECTED AND ADJUSTED USING ACCURATE TEST EQUIPMENT. NO ONE BUT AN AUTHORIZED AND COMPETENT TECHNICAN, EQUIPPED WITH PROPER TEST FACILITIES, SHOULD BE PERMITTED TO SERVICE THIS EQUIPMENT.**

ROUTINE INSPECTION

137. Routine inspection schedules should be set up for periodic checks of the Model 150-B Radio Transmitting Equipment. This inspection should include examination of the mechanical system for excessive wear or binding and of the electrical system for electrical defects. Examine the prongs of all tubes to make sure that they are free from corrosion. See that all tubes are replaced correctly and fully in their sockets and that good electrical contact is made between the prongs of the tubes and sockets. Check all relays for proper operation and inspect relay contacts to make certain that the contact surfaces (points) are clean and free from pits or projections. Make certain the contacts of all receptacles and plugs, such as microphone, key and cable connectors, are clean and that firm mechanical connection is made between plugs and corresponding receptacles.

138. If the routine inspection of the Model 150-B Radio Transmitting Equipment is carried out faithfully, the possibility of improper operation of the equipment is greatly minimized. It is important, therefore, that this inspection be made as frequently as possible and in a sufficiently thorough manner to include all major electrical circuits of the equipment as well as the mechanical portions.

CLEANING

139. The greatest enemy to uninterrupted service in any radio equipment is corrosion and dirt. Corrosion itself is accelerated by the presence of dust and moisture on the component parts of the equipment. It is impossible to keep moisture out of the equipment in certain localities but foreign particles and dust can be periodically removed by means of a soft brush, cloth or a dry oil-free jet of air. Dust should be removed as often as a perceptible quantity accumulates in any part of the equipment. It is very important that rotating equipment, such as variable condensers and tap switches, be kept free from dust to prevent undue wear. Likewise, variable condenser plates should be kept free from dust and dirt to avoid flashover on modulation peaks.

RELAYS

140. Contact adjustment of the relays, employed in the Model 150-B Radio Transmitting Equipment, is not critical. However, relay contacts should be periodically inspected and cleaned whenever necessary. Use a coarse cloth or extremely fine sandpaper to clean relay contacts. Relays which have excessive hum are usually not seating properly. This may be caused by dirt on the pole face.

FUSES

141. The Model 150-B Radio Transmitting Equipment is supplied with fuses of correct rating in each position. A

blown fuse should be replaced with a spare but only after the fused circuit has been carefully checked to make certain that no permanent fault exists. Always replace a blown fuse with a fuse of like rating. See Fig. No. 3, page 21.

TROUBLE SHOOTING

142. Improper operation of radio equipment most generally is caused by tube failure. A complete set of tested tubes for Model 150-B Radio Transmitting Equipment should be kept on hand at all times. If faulty operation of the Transmitter is observed and tube failure suspected, each tube may be checked by replacing it with a like tube known to be in good condition.

143. An open fuse is usually an indication of overload on some circuit in the Transmitter. The overload may be caused by a short circuit. The short circuit may be due to a foreign object being dropped into the cabinet, a defective condenser, a defective tube or a high voltage arc. A direct short is most readily found by means of continuity meter. The short circuit may usually be located by checking the various circuits for continuity.

144. Defective tubes causing an overload in power circuits may often be located by inspection. It will be found that excessive heating or sputtering within a vacuum tube is a good indication of a defect, either in the tube itself or in the tube circuit. High voltage arcs may be caused by a bent variable condenser plate or by corrosion and dust which has been allowed to accumulate on the variable condenser plates. One of the greatest sources of trouble in radio equipment, being operated in a salt laden atmosphere, is corrosion. Corrosion, resulting from salt laden atmosphere, may cause failure of the equipment for no apparent reason. In general, it will be found that the contacts of tap switches, tube prongs, cable plugs, receptacles and relays, are most affected by corrosion. When it is necessary to operate the equipment in localities subject to corrosive atmosphere, inspection of tube contacts, cable plugs, relays, etc., should be made more frequently in order to keep the equipment in good operating condition.

TROUBLE SHOOTING PROCEDURE

145. After determining that trouble exists in the Model 150-B Radio Transmitting Equipment, first check the position of all switches. One of the switches may have accidentally been thrown to an improper position.

146. Next, observe the meters located on the front panel of the Type 02520 Radio Transmitter. Quite often an improper meter reading directly indicates the circuit or section wherein the trouble lies. For example, if the **FINAL GRID CURRENT** meter, M-101, reads correctly but an improper reading is obtained on the **FINAL PLATE CURRENT** meter, M-103, it is apparent that all circuits of the Equipment, up to the plate circuit of the 813 class "C" amplifier, are functioning properly. The trouble, in this case, will undoubtedly be found either in the plate or screen circuits of the 813 amplifier stage or in the antenna circuit to which this amplifier is connected.

147. Next, see that proper coils are installed in both the Type 02433 Exciter Unit and the Type 02520 Radio Transmitter. If the Equipment has been previously used, complete information, including dial settings, should be found (as previously recorded) in the "Tune-up Record", Table No. 12, pages 76 and 77. See that the Equipment is adjusted in accordance with the data recorded in this table.

148. If, at this point, the trouble re-

mains undetected, it is recommended that the preceding sections of this Instruction Book be reviewed. Some point may have been overlooked in the preceding sections; a point that my be responsible for the apparent failure of the Equipment.

149. In the event it becomes necessary to service the Model 150-B Radio Transmitting Equipment, the chassis assembly of the Type 02520 Radio Transmitter may be removed from its cabinet in the following manner:

TO REMOVE CHASSIS ASSEMBLY OF TYPE 02520 TRANSMITTER FROM CABINET

150. Disconnect all cable and antenna-ground connections from receptacles located on the back of the Transmitter.

151. Now refer to Fig. No. 4, page 42.

152. Remove the front panel screws, designated in Fig. No. 4 as numbers "1" to "14" inclusive. The screws are located around the edges of the front panel.

153. Now open the hinged lid of the Transmitter and remove the four screws, located on the top side of the modulator and power supply chassis and designated, in Fig. No. 4, as numbers "15, 16, 17, and 18". These screws are ¼" in diameter and are sufficiently long to reach from the top of each chassis to the bottom or base plate of the cabinet into which they are threaded.

154. Disconnect the plug of the safety interlock switch cable. This plug is normally fitted in the socket, located on top of the power supply chassis, designated in Fig. No. 4 as "J-403".

155. The entire chassis assembly of the Type 02520 Radio Transmitter may now be pulled from the cabinet.

156. Inspection of the complete Transmitter assembly (outside cabinet) will show that it consists of three major chassis units, each attached to the front panel and supported at the rear by a substantial back plate. To provide additional strength, two pair of brackets are incorporated in the assembly; one pair supporting the Modulator Unit and front panel, the second pair supporting the Power Supply Unit and front panel.

157. In the majority of cases, the Type 02520 Radio Transmitter may be serviced as a complete assembly; i. e., without removing individual chassis units. Prior to servicing the Transmitter, it is recommended that the entire assembly be "blocked up" in the position illustrated in Fig. No. 5 (A), page 43. **CAUTION:** When raising the Transmitter to the position shown in Fig. No. 5 (A), make sure that the antenna terminal, on the back of the Transmitter is 'in the clear'. The antenna terminal is mounted on a white ceramic insulator which will not support the weight of the Transmitter. The wood blocks, supporting the Transmitter, must be sufficiently high and placed in such position that the weight of the Transmitter does not rest on the antenna terminal.

158. **IN SERVICING THE TYPE 02520 RADIO TRANSMITTER, IT IS RECOMMENDED THAT OPERATING PERSONNEL ATTEMPT TO LOCATE THE SOURCE OF TROUBLE WITHOUT PLACING THE EQUIPMENT IN OPERATION. ALL SUPPLY VOLTAGES SHOULD REMAIN OFF (POWER CABLES DISCONNECTED).**

159. Use a continuity meter to check circuits and locate shorts. Use an Ohmmeter to measure resistor values. Examine component parts for discoloration which often follows over-heating. Care-

fully inspect the plug and jack connectors located on the under side of each chassis unit. Make every effort to locate trouble with the Transmitter inoperative.

160. **IF IT IS FOUND THAT POWER MUST BE APPLIED AND THE EQUIPMENT PLACED IN OPERATION, UNDER NO CIRCUMSTANCES SHOULD THIS BE DONE WITHOUT THE PRESENCE AND ASSISTANCE OF A SECOND PARTY. THE SECOND PARTY SHOULD BE STATIONED AT THE MAIN POWER SWITCH IN A POSITION WHERE HE CAN OBSERVE CLEARLY THE ADJUSTMENTS BEING MADE BY THE OPERATOR.**

161. Before power can be applied to the equipment, a "jumper" must be placed across the terminals of the two prong socket, located on the top of the Power Supply Unit chassis and designated in Fig. No. 4 as "J-403". If a standard 2-circuit power plug is available, the "jumper" may be wired across the terminals of the plug, after which it may be inserted in the socket, J-403, automatically closing the power circuit.

162. Voltage measurements may be checked against the "D.C. Voltage Chart", Table No. 7, pages 44 and 45. Fixed resistor and fixed condenser values may be checked against the "Color Code", Table No. 8, page 46. The values of component parts may be checked against the "Component Parts List", Table No. 9, pages 61 to 69 inclusive.

163. In the event removal of one or more of the individual chassis units becomes necessary, the following instructions apply:

TO REMOVE R. F. UNIT

164. With the Transmitter assembly placed in the position shown in Fig. No. 5 (A), disengage the 2-circuit plug, P-105 from jack, J-203, and the 5-circuit plug, P-104, from jack, J-202. The jacks are located inside the R. F. Unit chassis as shown in Fig. No. 17, page 58.

165. Now lower the Transmitter assembly so that it rests on the table or bench in the position shown in Fig. No. 5, (B), page 43.

166. Remove the bakelite pointer knob of the **RANGE (MC.)** switch, located on the front panel. This knob is attached to switch shaft by a set screw slotted for screw driver control.

167. Now refer to Fig. No. 4, page 42.

168. Loosen the six set screws of the variable condenser shaft couplings. The screws are designated in Fig. No. 4 as "A, B, C, D, E, and F".

169. Now remove the three screws designated "26, 27, and 28".

170. The back plate, supporting all chassis units, must now be removed. A total of eighteen screws are employed in this plate, designated in Fig. No.4 as screws "36" to "53" inclusive. Remove the eighteen screws and set the back plate aside.

171. The R. F. Unit is now free and may be removed from the Transmitter assembly.

TO REMOVE THE MODULATOR UNIT

172. With the Transmitter assembly placed in the position shown in Fig. No. 5 (A), disengage the 2-circuit plug, P-101, from the chassis jack, J-301. Disengage the 4-circuit plug, P-102, from the chassis jack, J-302. Disengage the 5-circuit plug,

P-103, from the chassis jack, J-303. The jacks are located inside the Modulator Unit chassis as shown in Fig. No. 15, page 56.

173. Lower the Transmitter assembly so that it rests on the table or bench as shown in Fig. 5 (B), page 43.

174. Now refer to Fig. No. 4, page 42.

175. Remove the seven screws, designated in Fig. No. 4, as "19" to "25" inclusive.

176. The back plate, supporting all chassis units, must now be removed. A total of eighteen screws are employed in this plate; designated in Fig. No. 4 as screws, "36" to "53" inclusive. Remove the eighteen screws and set the back plate aside.

177. The Modulator Unit is now free and may be removed from the Transmitter assembly.

TO REMOVE THE POWER SUPPLY UNIT

178. With the Transmitter assembly placed in the position shown in Fig. No. 5 (A), disengage the 5-circuit plug, P-106, from the chassis jack, J-404. Now disengage the 4-circuit plug, P-107, from the chassis jack, J-405. Disengage the 5-circuit plug, P-108, from the chassis jack, J-406. The jacks are located inside the Power Supply Unit chassis as shown in Fig. No. 19, page 60.

179. Lower the Transmitter assembly so that it rests on the table or bench as shown in Fig. No. 5 (B), page 43.

180. Now remove the seven screws designated in Fig. No. 4, page 42, as screws "29" to "35" inclusive.

181. The back plate, supporting all chassis units, must now be removed. A total of eighteen screws are employed in this plate, designated in Fig. No. 4 as screws, "36" to "53" inclusive. Remove the eighteen screws and set the back plate aside.

182. The Modulator Unit is now free and may be removed from the Transmitter assembly.

TO REMOVE CHASSIS ASSEMBLY OF TYPE 02433 EXCITER UNIT FROM CABINET

183. First, remove the drawer type coil compartment from the cabinet.

184. Now refer to Fig. No. 4, page 42.

185. With a short stubby screw driver, remove the four screws designated, "66, 67, 68 and 69". The four screws are located within the compartment, normally occupied by the coil drawer, on the under side of the shelf supporting the Exciter Unit chassis. Now remove the twelve screws, around the edges of the front panel, designated as screws, "54" to "65" inclusive.

186. The chassis assembly of the Exciter Unit is now free and may be pulled from the cabinet.

ALIGNMENT INSTRUCTIONS FOR TYPE 02433 EXCITER UNIT

187. The Type 02433 Exciter Unit is accurately aligned at factory prior to shipment and realignment should not be necessary when the Unit is installed. However, in the event the equipment has been subjected to extremely rough handling, there is a remote possibility that realignment of the Exciter Unit may be necessary. The following adjustments should be made only by competent personnel:

188. With the Model 150-B Radio Transmitting Equipment installed in accordance with the instructions contained in paragraphs 58 to 70 inclusive, open the hinged lid of the Exciter Unit and lift the three coil shields from their chassis bases. Insert the three plug-in coils, designated "F", designed to cover a frequency range of 10.7 to 12.7 MC. See that each coil is firmly seated in socket. Replace the coil shields, pushing each shield down as far as possible.

189. Now throw the **FILAMENT** switch, S-104, located on the front panel of the Type 02520 Radio Transmitter, to the **ON** position. The **AUTO ON** switch and the **PHONE CW** switch, located on the front panel of the Type 02433 Exciter Unit, may now be turned to the **ON** and **PHONE** positions respectively. Allow fifteen minutes for the Exciter Unit to "warm up".

190. At this point, an accurately calibrated receiver is required to indicate proper alignment. Tune the receiver to 12.5 MC and place the B. F. O. in operation.

191. Now carefully tune the Exciter Unit to "12.5" MC, as indicated by the calibrated dial scale.

192. With a screw driver, adjust condenser, C-516, located on top of the Exciter Unit chassis as shown in Fig. No. 11, page 52. Adjustment should be made to the point where the signal is audible in the receiver and then carefully made to the "zero beat" point.

193. Now, hold a neon bulb against the rear top lug of the three gang tuning condenser. The proper lug is shown in Fig. No. 11, page 52, and designated as point "X". With screw driver, adjust condenser, C-509, to the point that provides maximum glow in the neon bulb.

194. With the neon bulb still held against lug "X", adjust condenser, C-502, to the point of maximum neon bulb glow. Now recheck the adjustment of condenser, C-509, and condenser, C-502. Proper adjustment, in each case, is indicated by maximum glow in the neon bulb.

195. The Type 02433 Exciter Unit is now properly aligned for operation.

GENERAL NOTICE

196. **IT MUST BE RECOGNIZED THAT MAINTENANCE PROCEDURE, COVERED IN THE PRECEDING PARAGRAPHS, SHOULD NOT BE PERFORMED ON THE MODEL 150-B RADIO TRANSMITTING EQUIPMENT UNTIL THIS INSTRUCTION BOOK HAS BEEN CAREFULLY READ IN ITS ENTIRETY. OPERATING PERSONNEL SHOULD BECOME COMPLETELY FAMILIAR WITH THE MECHANICAL AND ELECTRICAL CHARACTERISTICS OF THIS EQUIPMENT....EQUIPMENT WHICH THE PERSONNEL MUST OPERATE AND MAINTAIN.**

FIG. NO. 4

TO DISASSEMBLE MODEL 150-B RADIO TRANSMITTING EQUIPMENT

IN CONNECTION WITH PARAGRAPHS 151 TO 185 INCLUSIVE

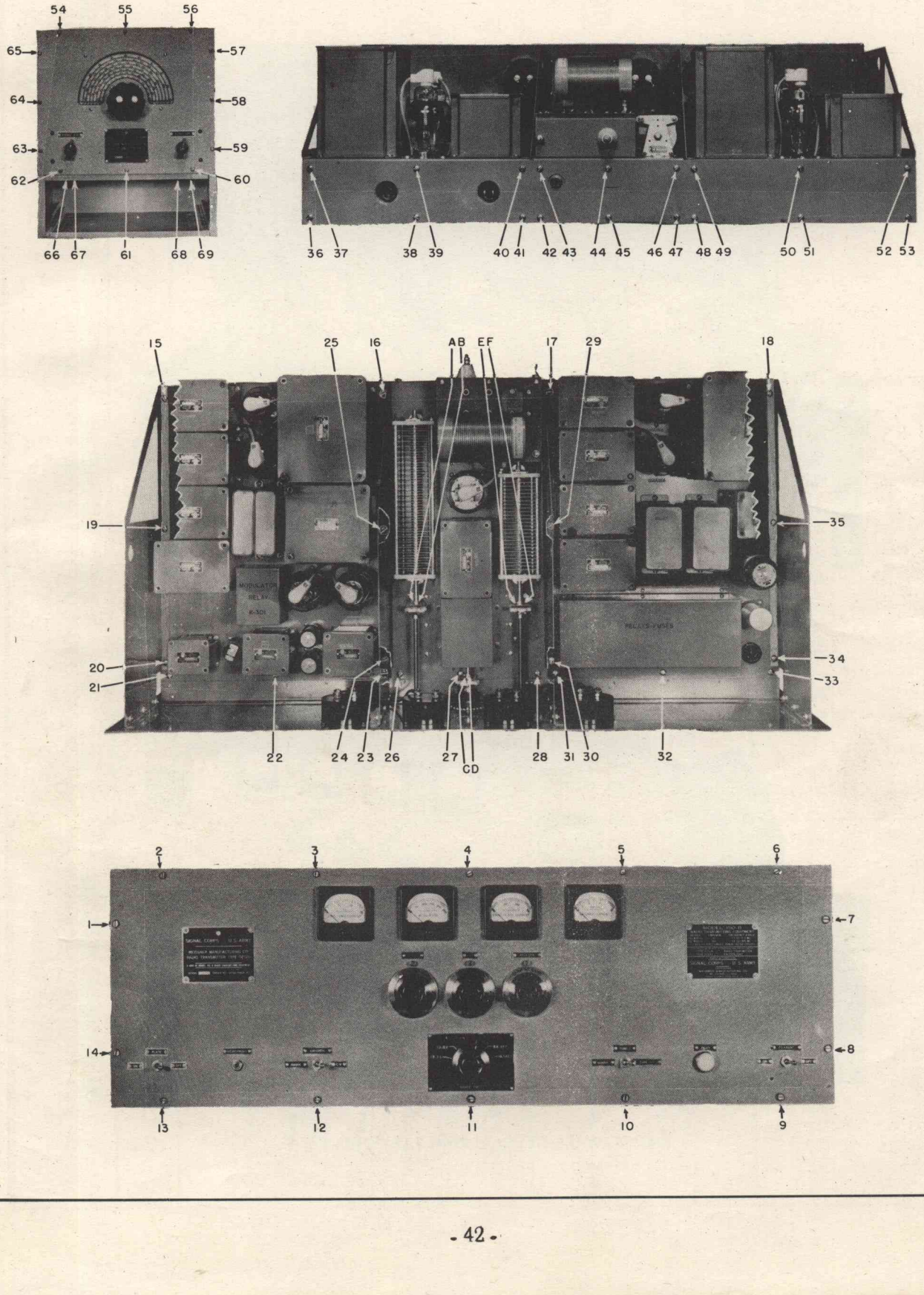
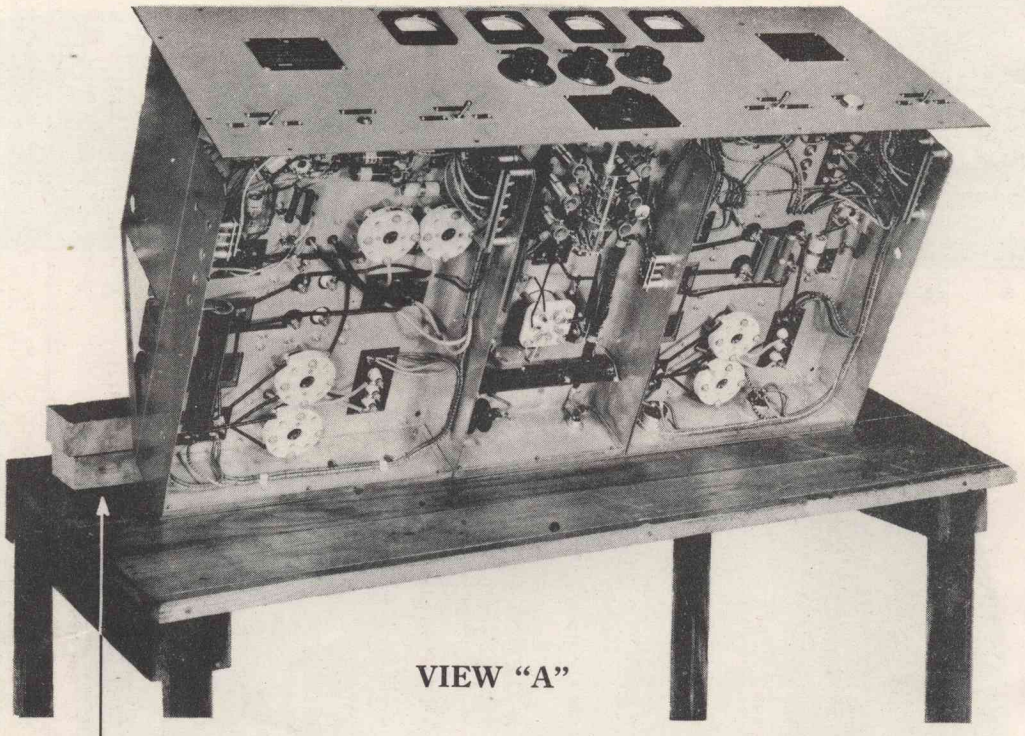


FIG. NO. 5

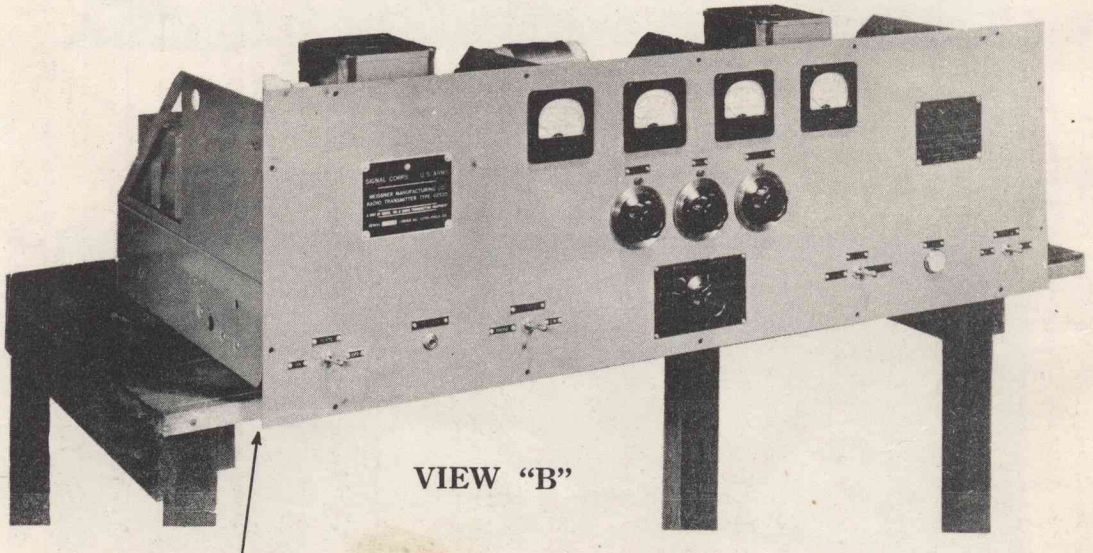
SERVICING THE TYPE 02520 RADIO TRANSMITTER

IN CONNECTION WITH SECTION V, MAINTENANCE INSTRUCTIONS



VIEW "A"

BLOCK UP IN POSITION SHOWN



VIEW "B"

FRONT PANEL OVERLAPPING TABLE EDGE

CONTRACTOR
MEISSNER MANUFACTURING CO.
MT. CARMEL, ILLINOIS

TABLE No. 7

D.C. VOLTAGE CHART

Sheet 1 of 2 Sheets

MODEL 150-B
RADIO TRANSMITTING EQUIPMENT

MODULATOR UNIT CHASSIS

TO MEASURE:	CONNECT METER:	*D.C. VOLTAGE	METER RESISTANCE (Ohms Per Volt)	METER SCALE USED:
Microphone Circuit Voltage	Across the 2 terminals of terminal strip, J-301	17	1000	0 to 50
6J5GT Plate Voltage	To terminal 3 of tube socket, X-307, and ground	213	1000	0 to 250
6J5GT Cathode Voltage	To terminal 8 of tube socket, X-307, and ground	6	1000	0 to 10
6V6GT Plate Voltage	To terminal 3 of tube socket, X-303 or X-304, and ground	260	1000	0 to 500
6V6GT Screen Voltage	To terminal 4 of tube socket, X-303 or X-304, and ground	265	1000	0 to 500
6V6GT Cathode Voltage	To terminal 8 of tube socket, X-303 or X-304, and ground	17	1000	0 to 250
811 Plate Voltage	To plate cap of 811 tube, V-301 or V-302, and ground	1325	1000	0 to 2000
Voltage Input to Filter, Modulator Power Supply	To input terminal of choke, L-302, and ground	1350	1000	0 to 2000
Voltage Output from Filter, Modulator Power Supply	To output terminal of choke, L-301, and ground	1325	1000	0 to 2000

R.F. UNIT CHASSIS

TO MEASURE:	CONNECT METER:	*D.C. VOLTAGE	METER RESISTANCE (Ohms Per Volt)	METER SCALE USED:
813 Plate Voltage	To plate cap of 813 tube, V-201, and ground	1550	1000	0 to 2000
813 Screen Voltage	To screen terminal of 813 tube socket, X-201, and ground	400	1000	0 to 2000

POWER SUPPLY CHASSIS

TO MEASURE:	CONNECT METER:	*D.C. VOLTAGE	METER RESISTANCE (Ohms Per Volt)	METER SCALE USED:
Voltage Input to Filter, High Voltage Power Supply	To input terminal of filter choke, L-401, and ground	1600	1000	0 to 2000
Voltage Output from Filter, High Voltage Power Supply	To output terminal of filter choke, L-402, and ground	1550	1000	0 to 2000
Voltage Input to Filter, Low Voltage Power Supply	To input terminal of filter choke, L-403, and ground	280	1000	0 to 500
Voltage Output from Filter, Low Voltage Power Supply	To output terminal of filter choke, L-403, and ground	265	1000	0 to 500

CONTRACTOR
MEISSNER MANUFACTURING CO.
MT. CARMEL, ILLINOIS

TABLE No. 7 (Cont'd)

D.C. VOLTAGE CHART

Sheet 2 of 2 Sheets

MODEL 150-B
RADIO TRANSMITTING EQUIPMENT

EXCITER UNIT CHASSIS

TO MEASURE:	CONNECT METER:	*D.C. VOLTAGE	METER RESISTANCE (Ohms Per Volt)	METER SCALE USED:
6L6G Plate Voltage	To terminal 3 of tube socket, X-503, and ground	320	1000	0 to 500
6L6G Screen Voltage	To terminal 4 of tube socket, X-503, and ground	250	1000	0 to 500
6L6G Cathode Voltage	To terminal 8 of tube socket, X-503, and ground	16	1000	0 to 50
6F6G Plate Voltage	To terminal 3 of tube socket, X-506, and ground	255	1000	0 to 500
6F6G Screen Voltage	To terminal 4 of tube socket, X-506, and ground	105	1000	0 to 200
6F6G Cathode Voltage	To terminal 8 of tube socket, X-506, and ground	6.2	1000	0 to 10
VR-105 Regulator Tube Voltage	To terminal 5 of tube socket, X-504, and ground	105	1000	0 to 200
VR-150 Regulator Tube Voltage	To terminal 5 of tube socket, X-502, and ground	255	1000	0 to 200
Voltage Input to Filter, Exciter Unit Power Supply	To input terminal of filter choke, L-509, and ground	350	1000	0 to 500
Voltage Output from Filter, Exciter Unit Power Supply	To output terminal of filter choke, L-509, and ground	320	1000	0 to 500

*THE VOLTAGE READINGS INDICATED MAY VARY AS MUCH AS 10% IN DIFFERENT EQUIPMENTS.

*THE INDICATED VOLTAGE READINGS WERE OBTAINED UNDER THE FOLLOWING CONDITIONS:

A. Complete equipment properly tuned up. (On any frequency within its range).
B. PLATE and FILAMENT switches of Transmitter in the ON position.
C. POWER switch of Transmitter in the NORMAL position.
D. EMISSION switch of Transmitter in the PHONE position.
E. AUTO ON switch of Exciter Unit in the AUTO position.
F. PHONE CW switch of Exciter Unit in the PHONE position.

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MT. CARMEL, ILLINOIS

TABLE NO. 8

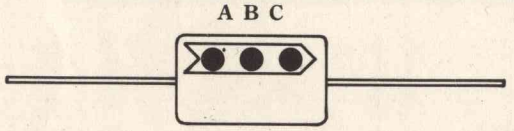
COLOR CODES

Sheet 1 of 1 Sheet

MODEL 150-B
RADIO TRANSMITTING
EQUIPMENT

COLOR CODE FOR CAPACITORS (MMFD)

COLOR	A 1st DIGIT	B 2nd DIGIT	C MULTIPLIER
Silver			0.01
Gold			0.1
Black	0	0	1.0
Brown	1	1	10
Red	2	2	100
Orange	3	3	1,000
Yellow	4	4	10,000
Green	5	5	100,000
Blue	6	6	1,000,000
Purple	7	7	10,000,000
Gray	8	8	100,000,000
White	9	9	1,000,000,000



READ COLOR CODE WITH CAPACITOR IN POSITION SHOWN ABOVE
(ARROW POINTING TO THE RIGHT)

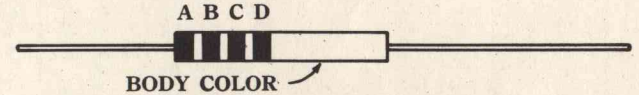
RMA COLOR CODE FOR RESISTORS (OHMS)

COLOR	A 1st DIGIT	B 2nd DIGIT	C MULTIPLIER
Silver			0.01
Gold			0.1
Black		0	1.0
Brown	1	1	10
Red	2	2	100
Orange	3	3	1,000
Yellow	4	4	10,000
Green	5	5	100,000
Blue	6	6	1,000,000
Purple	7	7	10,000,000
Gray	8	8	100,000,000
White	9	9	

D - TOLERANCE CODE:

Gold 5% Silver 10% No Color 20%

OLD COLOR ARRANGEMENT



NEW COLOR ARRANGEMENT

BODY COLOR (NEW COLOR ARRANGEMENT ONLY)
INDICATES TYPE OF RESISTORS, AS FOLLOWS:—

BLACK—COMPOSITION, NON-INSULATED
TAN, OLIVE OR WHITE—COMPOSITION, INSULATED
DARK BROWN—WIRE-WOUND, INSULATED

FIG. NO. 6

FRONT PANEL CONTROLS

TYPE 02520 RADIO TRANSMITTER

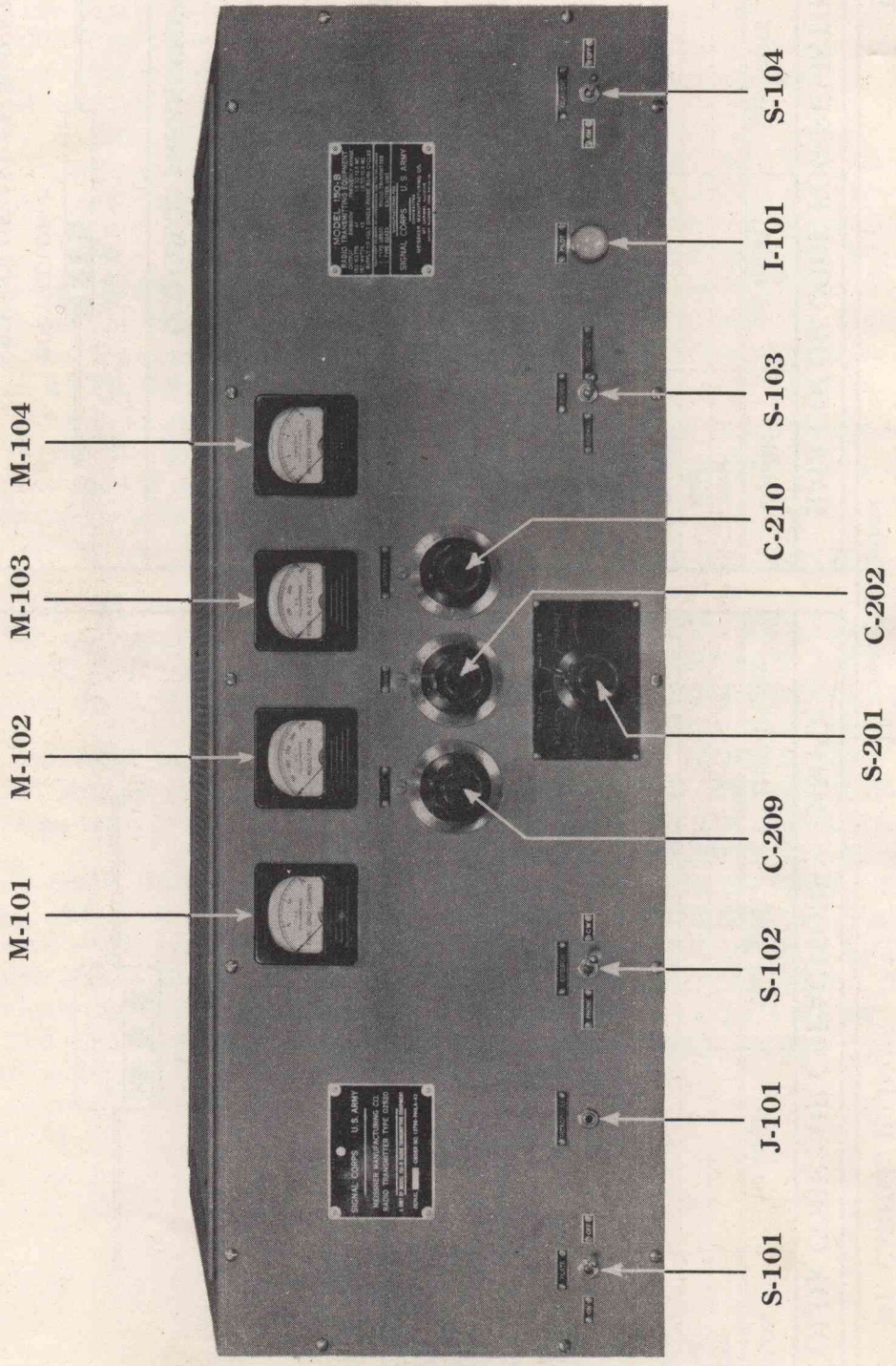


FIG. NO. 7

FRONT PANEL CONTROLS

TYPE 02433 EXCITER UNIT

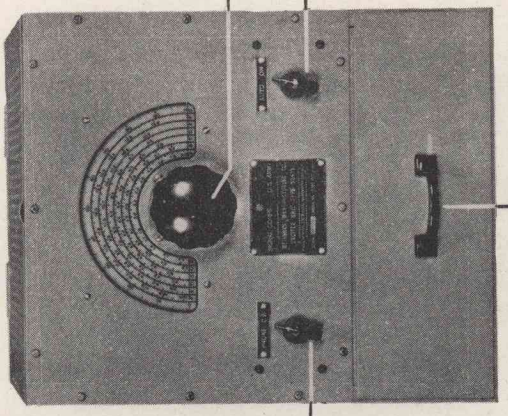


FIG. NO. 8

TOP VIEW. RADIO TRANSMITTER

TYPE NO. 02520

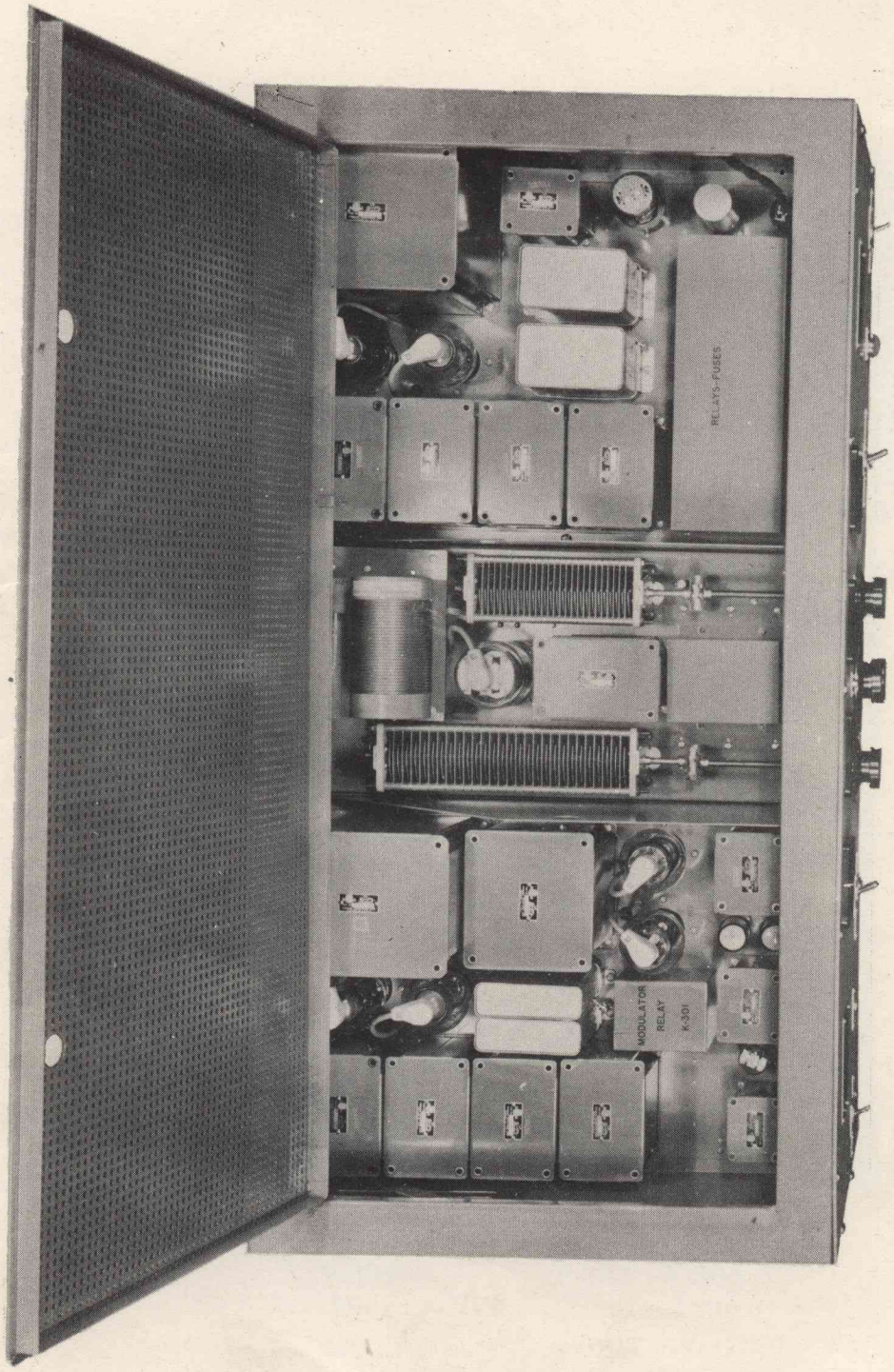


FIG. NO. 9

TOP VIEW. EXCITER UNIT

TYPE NO. 02433

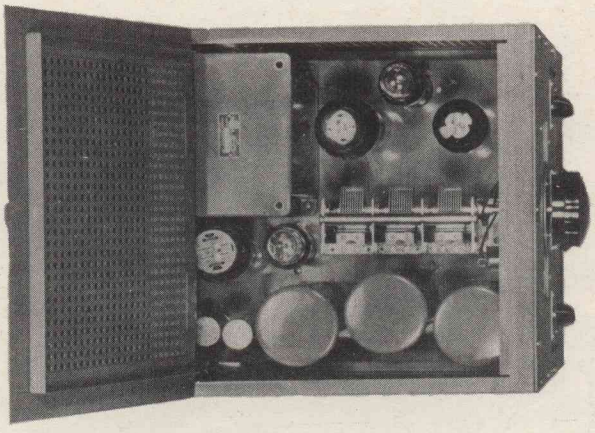


FIG. NO. 10

TOP VIEW. RADIO TRANSMITTER CHASSIS ASSEMBLY

TYPE NO. 02520

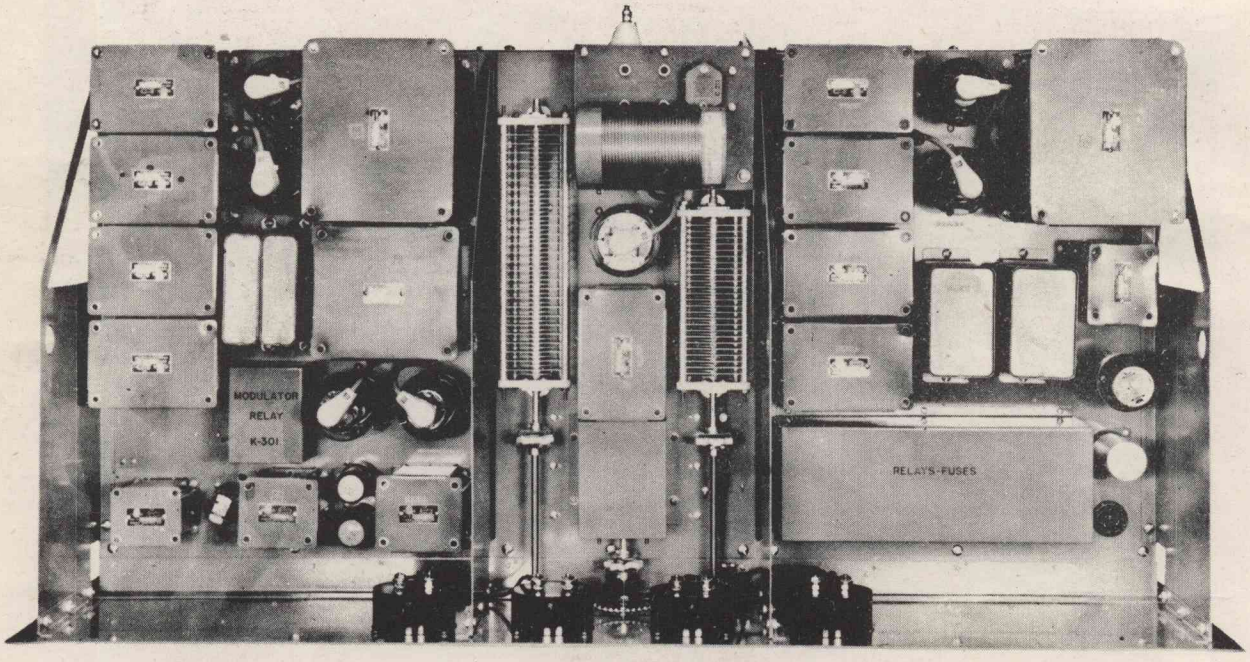


FIG. NO. 11

TOP VIEW. EXCITER UNIT CHASSIS ASSEMBLY

UNIT NO. 02433

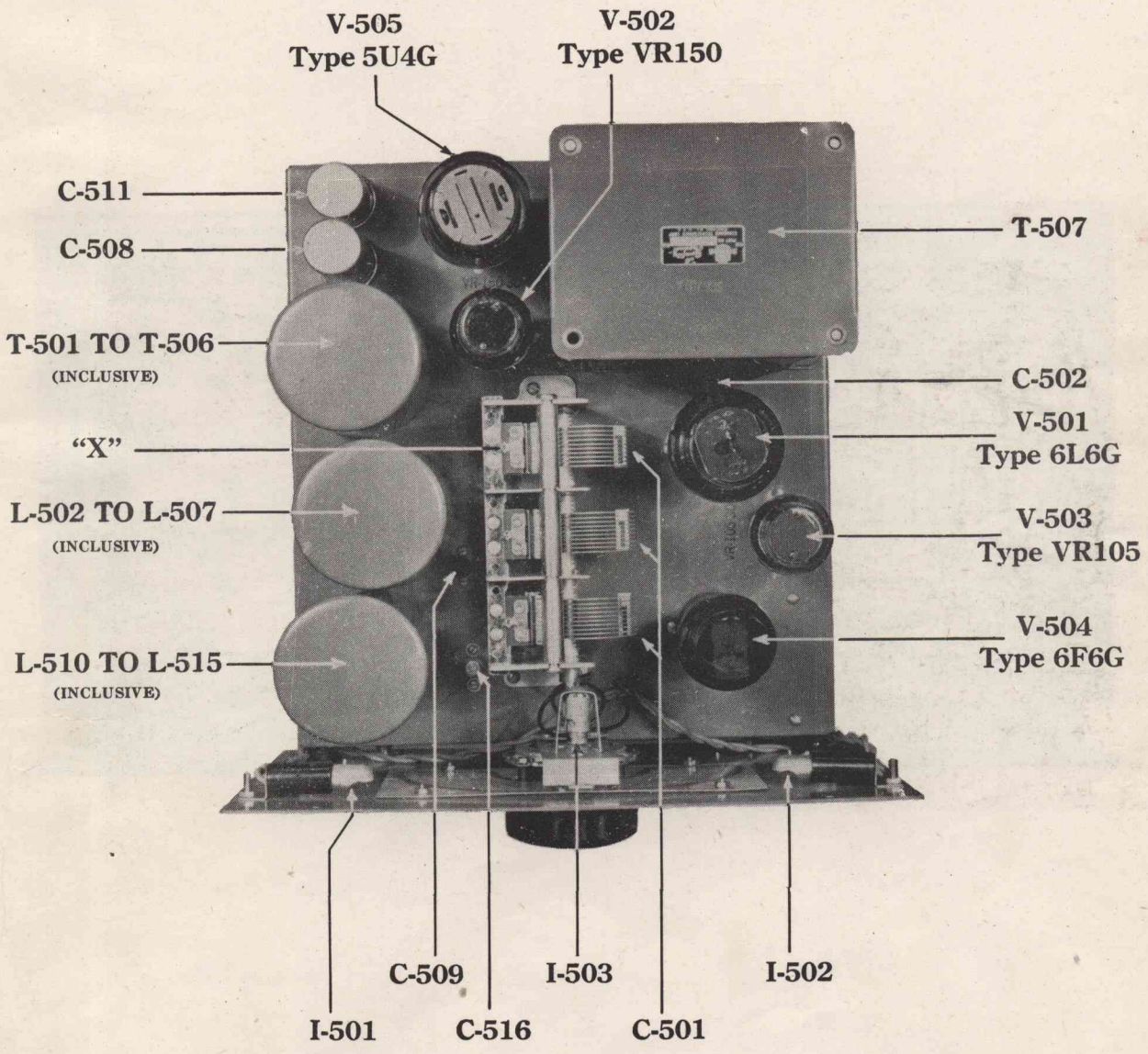


FIG. NO. 12

BOTTOM VIEW. RADIO TRANSMITTER CHASSIS ASSEMBLY

TYPE NO. 02520

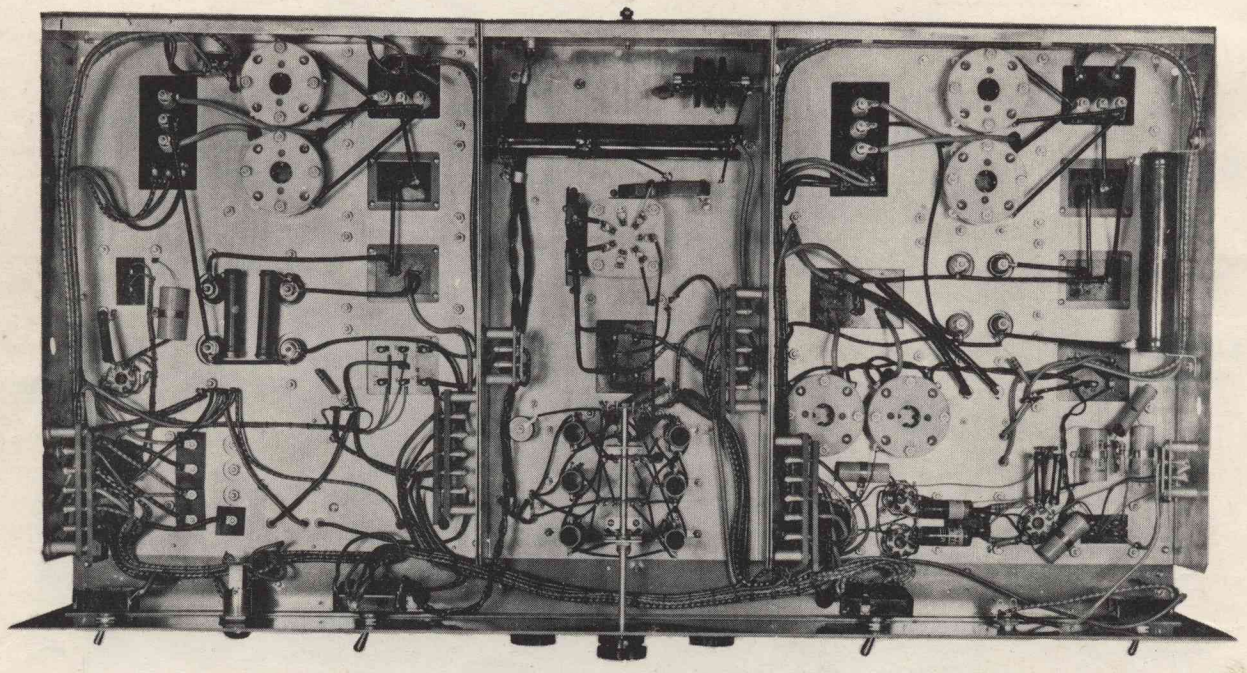


FIG. NO. 13

BOTTOM VIEW. EXCITER UNIT CHASSIS ASSEMBLY

UNIT NO. 02433

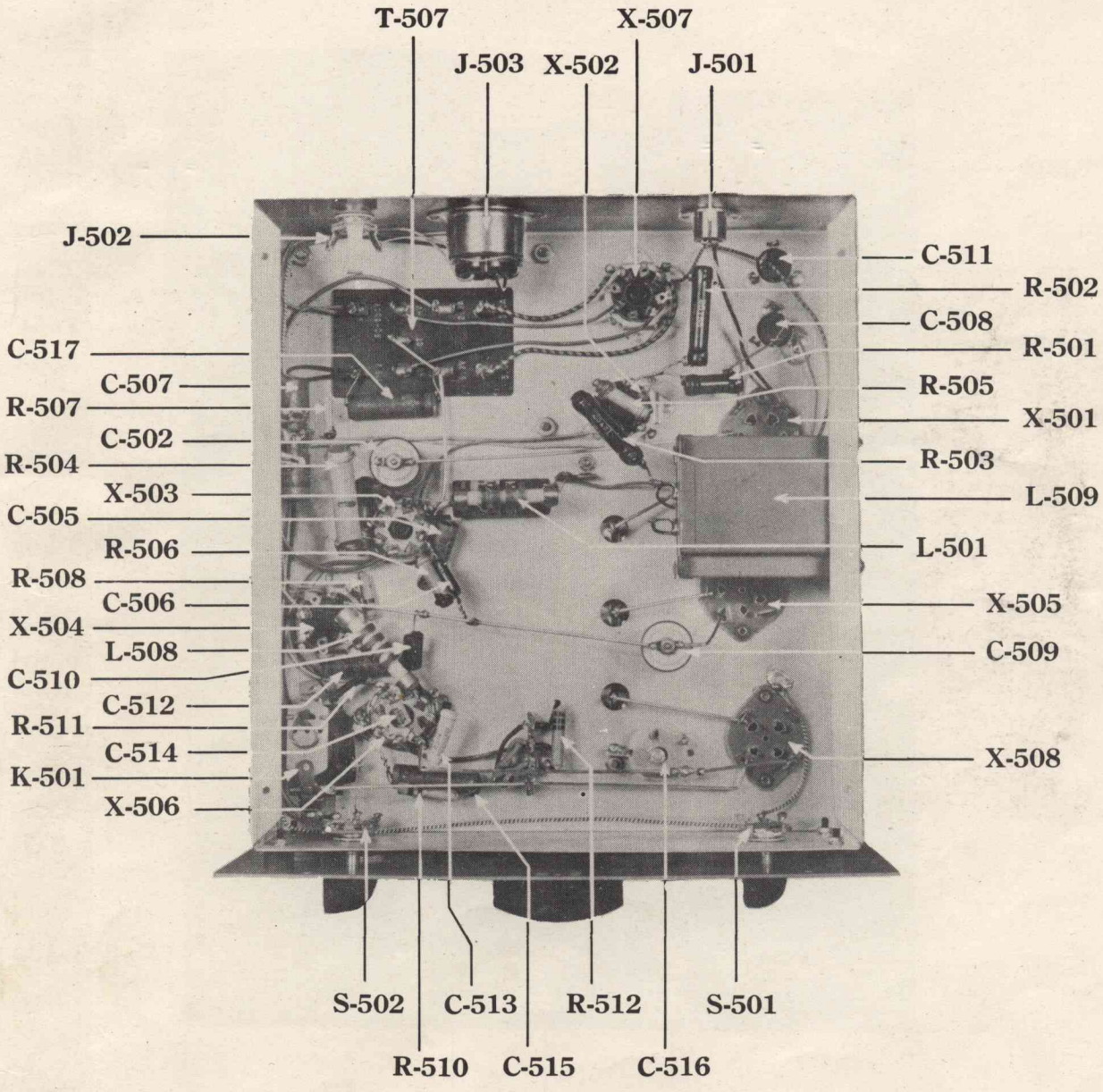


FIG. NO. 14

TOP VIEW. MODULATOR UNIT CHASSIS ASSEMBLY

UNIT NO. 02323

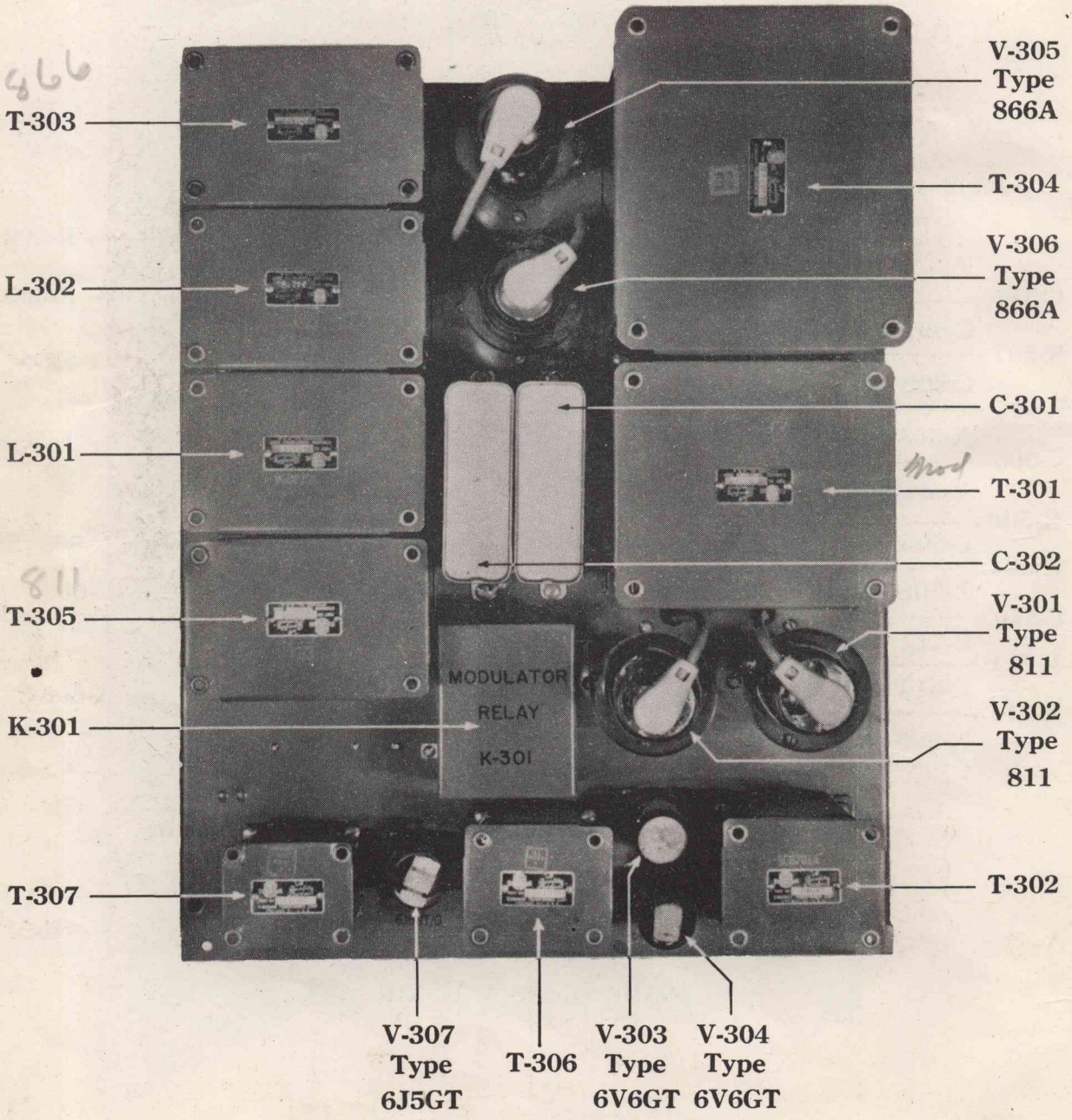


FIG. NO. 15

BOTTOM VIEW MODULATOR UNIT CHASSIS ASSEMBLY

UNIT NO. 02323

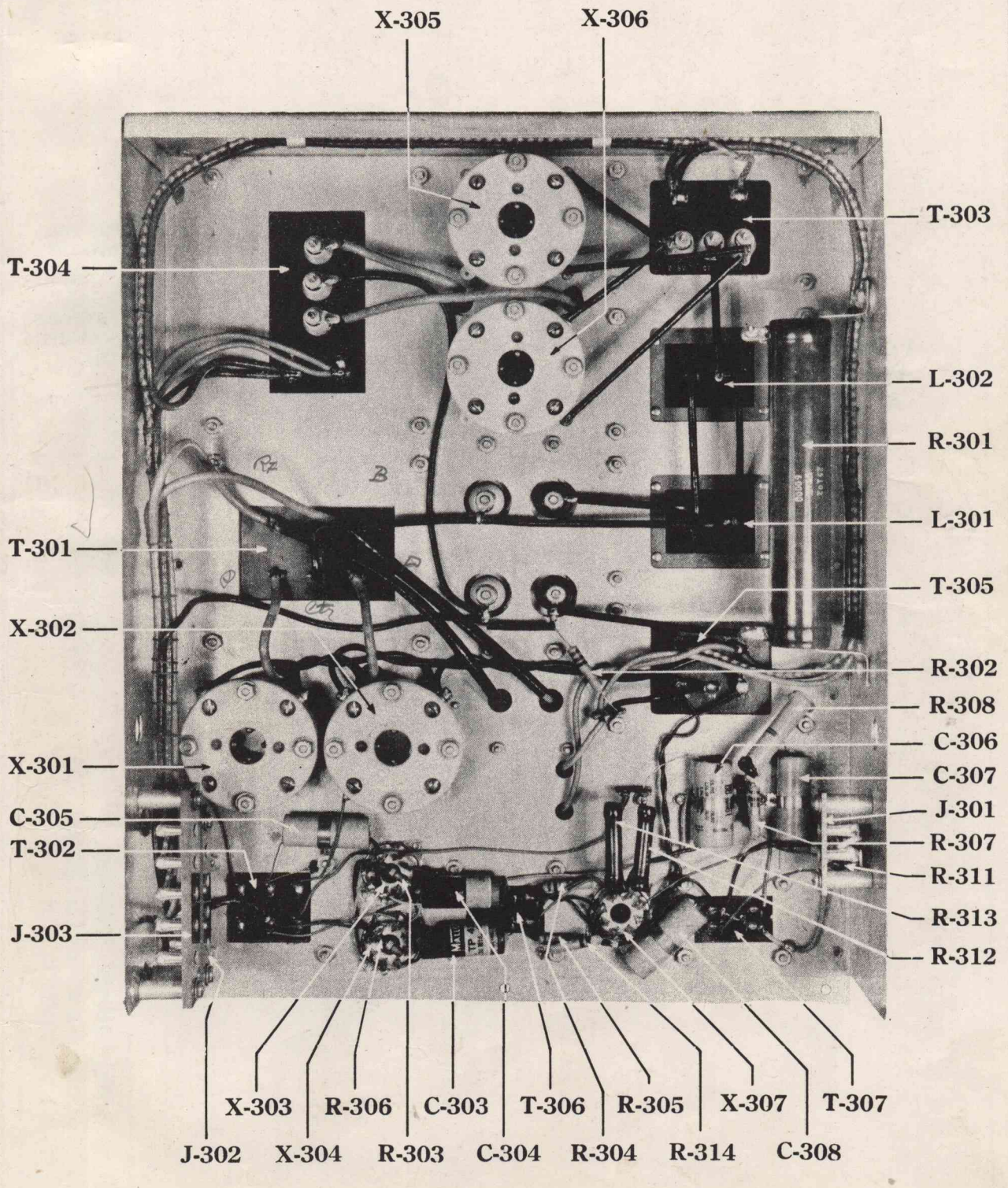


FIG. NO. 16

TOP VIEW. R. F. UNIT CHASSIS ASSEMBLY

UNIT NO. 02322

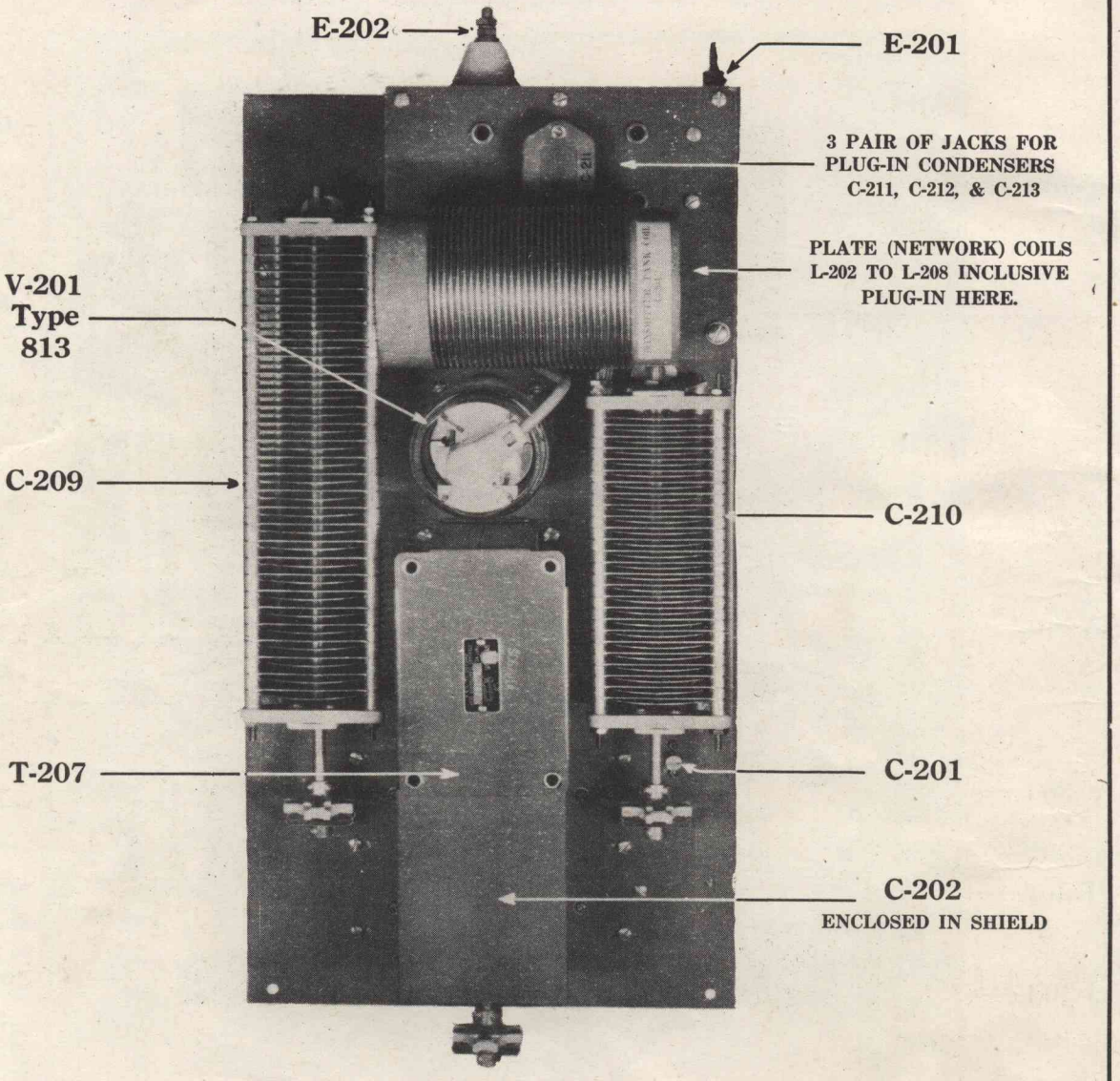


FIG. NO. 17

BOTTOM VIEW. R. F. UNIT CHASSIS ASSEMBLY

UNIT NO. 02322

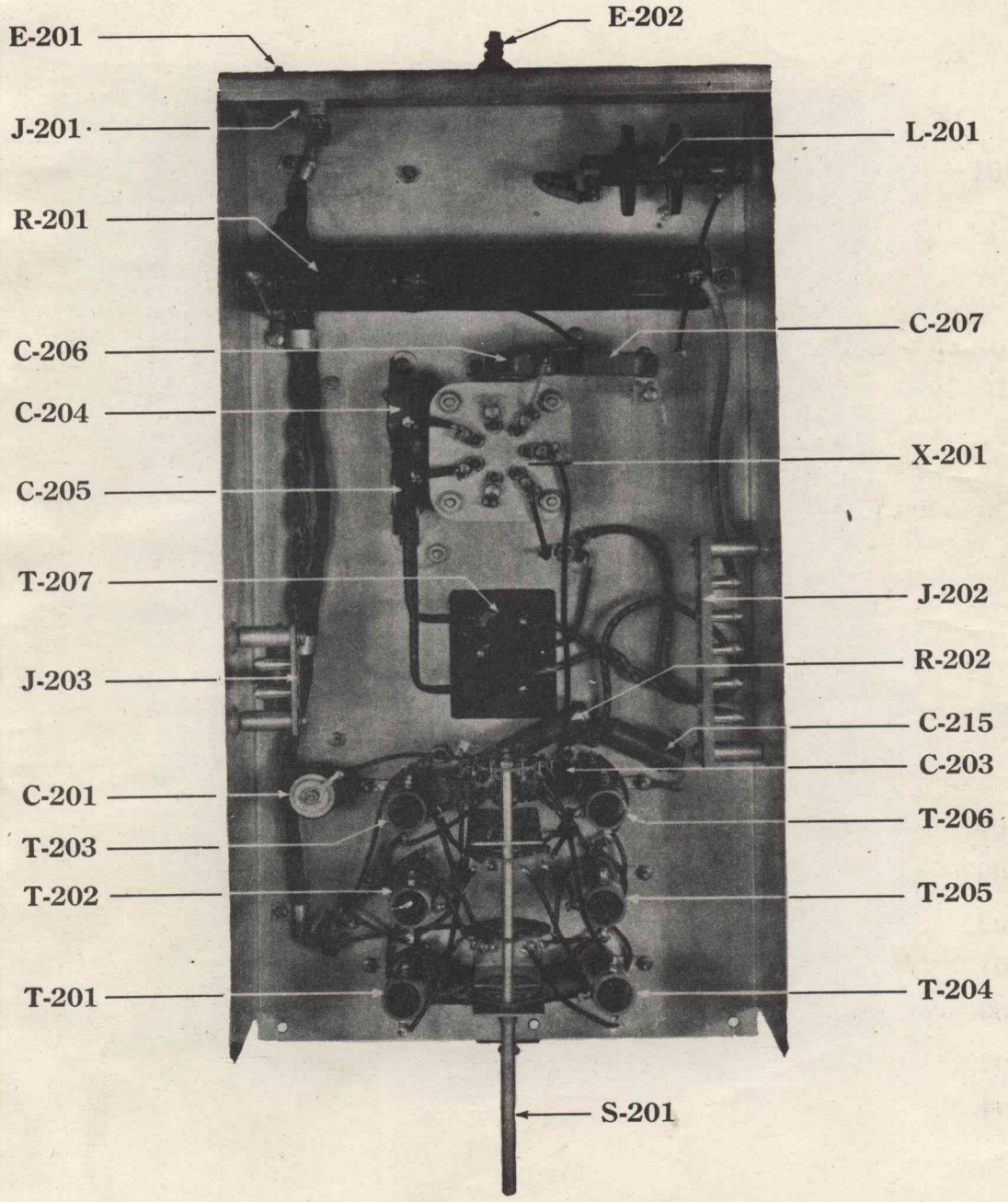


FIG. NO. 18

TOP VIEW. POWER SUPPLY UNIT CHASSIS ASSEMBLY

UNIT NO. 02324

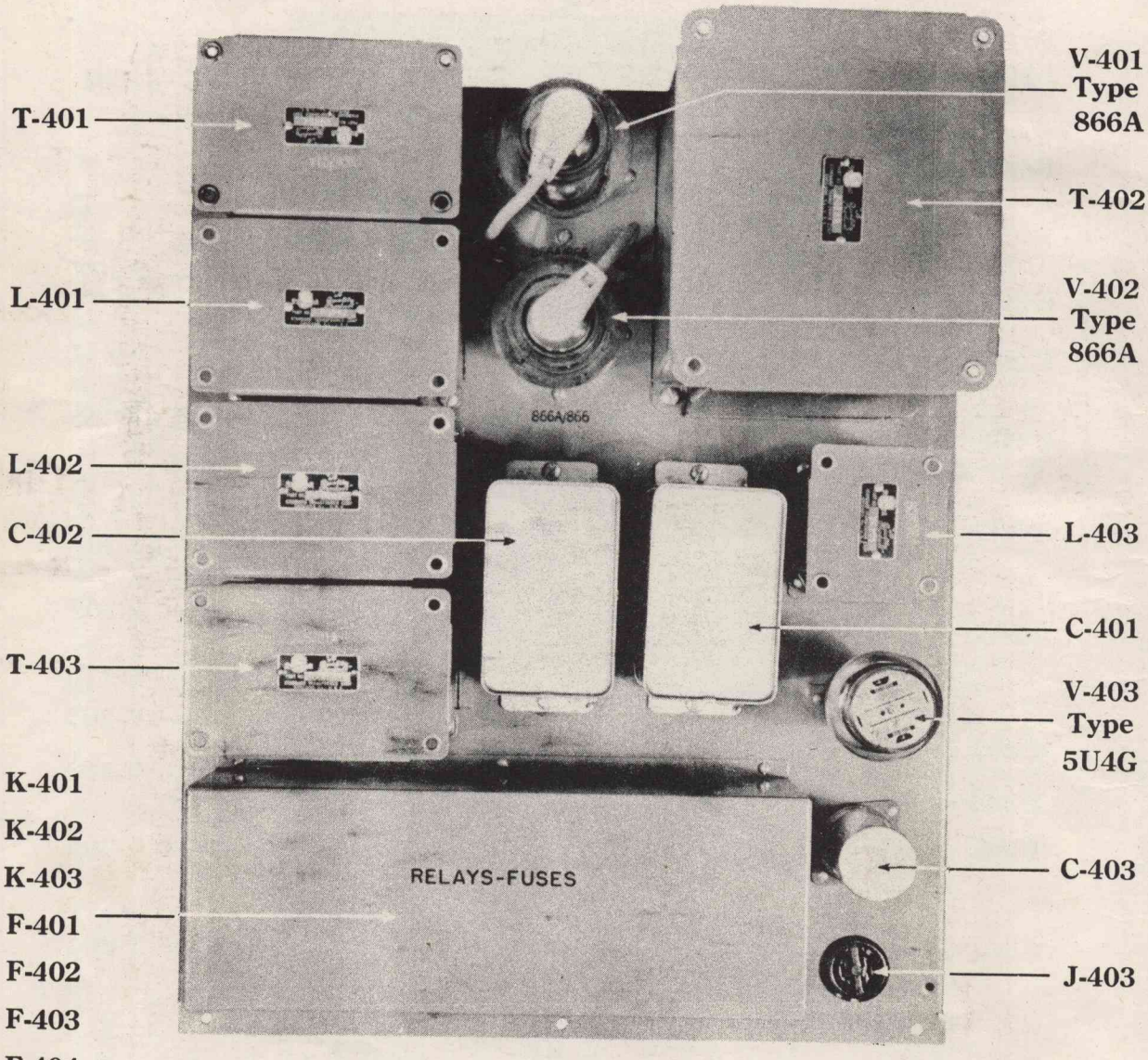
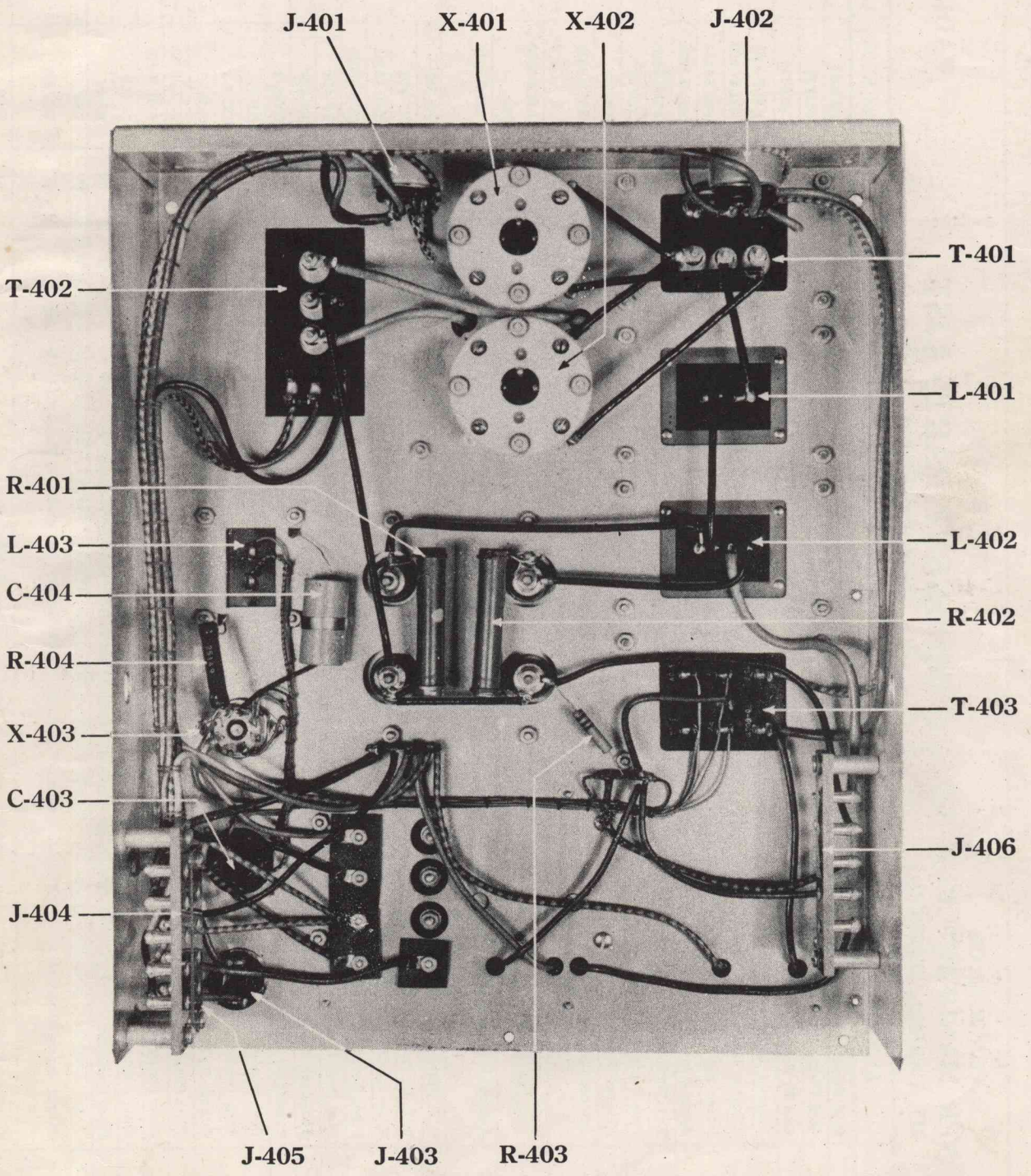


FIG. NO. 19

BOTTOM VIEW. POWER SUPPLY UNIT CHASSIS ASSEMBLY

UNIT NO. 02324



CONTRACTOR
MEISSNER MANUFACTURING CO.
MT. CARMEL, ILLINOIS

TABLE NO. 9

COMPONENT PARTS LIST

Sheet 1 of 9 Sheets

MODEL 150-B
RADIO TRANSMITTING EQUIPMENT

SYMBOL	FUNCTION	DESCRIPTION	*MFR.	*MFR. No.	CONTR. No.	STOCK No.
C-201	Grid Trimmer Condenser	Variable Condenser, "Trimmaire", 5 to 25 Mmfd., 5 Cup.	21	22-5232	22-5232	
C-202	Grid Tuning Condenser	Variable Condenser, 350 Mmfd., 39 Plates, Spacing 0.045".	15	350F15	25121	
C-203	Grid By-Pass Condenser	Silver Mica Condenser, 150 Mmfd., Plus-Minus 5%, 500 V. DC. (Working Voltage).	8	5R-5T15	17148	
C-204	Filament By-Pass Condenser	Mica Condenser, 0.006 Mfd., Plus-Minus 10%, 600 V. DC. (Working Voltage).	28	A2LS-1260	24173	
C-205	Filament By-Pass Condenser	Mica Condenser, 0.006 Mfd., Plus-Minus 10%, 600 V. DC. (Working Voltage).	28	A2LS-1260	24173	
C-206	Screen By-Pass Condenser	Mica Condenser, 0.006 Mfd., Plus-Minus 5%, 1200 V. DC. (Working Voltage).	28	A2LS-2260	24172	
C-207	Audio Compensating Condenser	Mica Condenser, 0.002 Mfd., Plus-Minus 5%, 2500 V. DC. (Working Voltage).	28	A2LS-5220	24174	
C-208	Plate Blocking Condenser	Mica Condenser, 0.006 Mfd., Plus-Minus 10%, 2500 V. DC. (Working Voltage).	28	A2LS-5260	24171	
C-209	Plate Tuning Condenser	Variable Condenser, 245 Mmfd., 55 Plates, Spacing 0.125".	15	250E45	25122	
C-210	Antenna Tuning Condenser	Variable Condenser, 350 Mmfd., 51 Plates, Spacing 0.075".	15	350E30	25123	
C-211	Antenna Padding Condenser	Mica Condenser, 0.0003 Mfd., Plus-Minus 5%, 2500 V. DC. (Working Voltage). Equipped with Banana Plugs. Contractor's Assembly No. 02687.	28	A2LS-5330	25133	
C-212	Antenna Padding Condenser	Mica Condenser, 0.0006 Mfd., Plus-Minus 5%, 2500 V. DC. (Working Voltage). Equipped with Banana Plugs. Contractor's Assembly No. 02688.	28	A2LS-5360	25134	
C-213	Antenna Padding Condenser	Mica Condenser, 0.0012 Mfd., Plus-Minus 5%, 2500 V. DC. (Working Voltage). Equipped with Banana Plugs. Contractor's Assembly No. 02689.	28	A2LS-5212	25135	
C-214	R. F. Filter Condenser	Paper Condenser, 0.1 Mfd., 200 V. DC. (Working Voltage).	14	PT 202	15142	
C-215	R. F. By-Pass Condenser	Paper Condenser, 0.1 Mfd., 200 V. DC. (Working Voltage).	14	PT 202	15142	
C-301	Filter Condenser	Paper Condenser, Oil Filled, 4.0 Mfd., 1500 V. DC. (Working Voltage).	8	TJU-15040	25112	
C-302	Filter Condenser	Paper Condenser, Oil Filled, 4.0 Mfd., 1500 V. DC. (Working Voltage).	8	TJU-15040	25112	
C-303	Feed Back Condenser	Paper Condenser, 0.1 Mfd., 600 V. DC. (Working Voltage).	19	TP-418	16166	
C-304	Feed Back Condenser	Paper Condenser, 0.1 Mfd., 600 V. DC. (Working Voltage).	19	TP-418	16166	
C-305	Cathode By-Pass Condenser	Electrolytic Condenser, 50 Mfd., 25 V. DC. (Working Voltage).	19	93544-3	25116	
C-306	Filter Condenser	Electrolytic Condenser 8 Mfd., 450 V. DC. (Working Voltage).	19	BB-61	16113	
C-307	Filter Condenser	Electrolytic Condenser, 50 Mfd., 25 V. DC. (Working Voltage).	19	93544-3	25116	
C-308	Cathode By-Pass Condenser	Electrolytic Condenser, 50 Mfd., 25 V. DC. (Working Voltage).	19	93544-3	25116	
C-401	Filter Condenser	Paper Condenser, Oil Filled, 4 Mfd., 2000 V. DC. (Working Voltage).	8	TJU-20040	25109	
C-402	Filter Condenser	Paper Condenser, Oil Filled, 4 Mfd., 2000 V. DC. (Working Voltage).	8	TJU-20040	25109	
C-403	Filter Condenser	Electrolytic Condenser, Dual Section, 40-40 Mfd., 450 V. DC. (Working Voltage).	19	101227-5	25110	
C-404	Filter Condenser	Electrolytic Condenser, 40 Mfd., 150 V. DC. (Working Voltage).	19	BB-27	25146	
C-501A C-501B C-501C	Ganged Tuning Condenser	Variable Condenser, 3 Section. Each Section; 362 Mmfd., 19 Plates, 0.015" Spacing.	26	25137-M	25137	
C-502	Trimmer Condenser	Variable Condenser, "Trimmaire", 15 to 50 Mmfd., 7 Cup.	21	9995	9995	

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COMPONENT PARTS LIST

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MODEL 150-B
RADIO TRANSMITTING EQUIPMENT

SYMBOL	FUNCTION	DESCRIPTION	*MFR.	*MFR. No.	CONTR. No.	STOCK No.
C-503	Plate Blocking Condenser	Mica Condenser, 500 Mmfd., Plus-Minus 20%, 500 V. DC. (Working Voltage).	8	5W-5T5	14139	
C-504	Cathode By-Pass Condenser	Paper Condenser, 0.01 Mfd., 400 V. DC. (Working Voltage).	14	PT 170	14110	
C-505	Screen By-Pass Condenser	Paper Condenser, 0.01 Mfd., 600 V. DC. (Working Voltage).	8	ZB 6018	18131	
C-506	Grid Condenser	Mica Condenser, 250 Mmfd., Plus-Minus 20%, 500 V. DC. (Working Voltage).	8	5W-5T25	14102	
C-507	Keying Filter Condenser	Paper Condenser, 0.25 Mfd., 400 V. DC. (Working Voltage).	14	PT 174	15197	
C-508	Filter Condenser	Electrolytic Condenser, Dual Section, 10 Mfd., 450 Volt, 15 Mfd., 450 Volt.	19	1010123	17192	
C-509	Trimmer Condenser	Variable Condenser, "Trimmaire", 15 to 50 Mmfd., 7 Cup.	21	9995	9995	
C-510	Plate Blocking Condenser	Mica Condenser, 500 Mmfd., Plus-Minus 20%, 500 V. DC. (Working Voltage).	8	5W-5T5	14139	
C-511	Filter Condenser	Electrolytic Condenser, 15 Mfd., 450 V. DC. (Working Voltage).	19	1012435	17193	
C-512	Screen By-Pass Condenser	Paper Condenser, 0.01 Mfd., 400 V. DC (Working Voltage).	14	PT 170	14110	
C-513	Grid Coupling Condenser	Mica Condenser, NPOD, 100 Mmfd., Plus-Minus 10%.	12	25148-M	25148	
C-514	Temperature Compensator	Temperature Compensating Condenser. N470K. 25 Mmfd., Plus-Minus 10%.	12	25147-M	25147	
C-515	Cathode By-Pass Condenser	Paper Condenser, 0.05 Mfd., 400 V. DC. (Working Voltage).	14	PT 172	14181	
C-516	Trimmer Condenser	Variable Condenser, 5 to 55 Mmfd., 19 Plate, 0.020" Spacing.	4	55-L	25157	
C-517	Line Buffer Condenser	Paper Condenser, 0.05 Mfd., 400 V. DC. (Working Voltage).	14	PT 172	14181	
E-201	Ground Terminal	10-32x1" Round Head Machine Screw with Hex Nuts and Washers.	5	17628-M	17628	
E-202	Antenna Terminal	Two Piece Ceramic Insulator, Feed-through Hardware.	21	27-1010	27-1010	
F-401	Cartridge Fuse	2 Ampere, 250 Volts, Cartridge Fuse, Non-renewable Type.	11	1102	24282	
F-402	Cartridge Fuse	5 Ampere, 250 Volts, Cartridge Fuse, Non-renewable Type.	11	1105	24283	
F-403	Cartridge Fuse	8 Ampere, 250 Volts, Cartridge Fuse, Non-renewable Type.	11	1108	24284	
F-404	Cartridge Fuse	8 Ampere, 250 Volts, Cartridge Fuse, Non-renewable Type.	11	1108	24284	
I-101	Pilot Lamp	Clear Candelabra Screw Base Lamp, 125 Volt.	13	S-6	24225	
I-501	Pilot Lamp	Tubular Pilot Lamp, Bayonet Base, 6-8 Volt, Clear.	33	T-44	19370	
I-502	Pilot Lamp	Tubular Pilot Lamp, Bayonet Base, 6-8 Volt, Clear.	33	T-44	19370	
I-503	Pilot Lamp	Round Pilot Lamp, Bayonet Base, 6-8 Volt, Clear.	33	T-51	19262	
J-101	Microphone Jack	Signal Corps Standard 3 Circuit Jack for PL-68 Microphone Plug.	6	JK-33-A	24274	JK-33-A
J-201	R. F. Input Jack	2 Circuit Female Connector, Locking Type.	3	PC2F	19998	
J-202	Power Input Jack	5 Circuit Female Terminal Strip.	16	5-43	19981	
J-203	Antenna Meter Jack	2 Circuit Female Terminal Strip.	16	2-42	19988	
J-301	Microphone Circuit Jack	2 Circuit Female Terminal Strip.	16	2-42	19988	

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MODEL 150-B
RADIO TRANSMITTING EQUIPMENT

SYMBOL	FUNCTION	DESCRIPTION	*MFR.	*MFR. No.	CONTR. No.	STOCK No.
J-302	Power Input Jack	4 Circuit Female Terminal Strip.	16	4-43	19996	
J-303	Power Input Jack	5 Circuit Female Terminal Strip.	16	5-43	19981	
J-401	Power Output Jack	Flush Mounting, 4 Circuit Female Power Output Connector.	3	S4	19985	
J-402	Power Input Jack	Flush Mounting, 2 Circuit Male, Power Input Connector.	3	61-MP	19983	
J-403	Interlock Circuit Jack	2 Circuit, Female, Power Connector for Safety Interlock Circuit.	3	61-F	24231	
J-404	Power Output Jack	5 Circuit, Female Terminal Strip.	16	5-43	19981	
J-405	Power Output Jack	4 Circuit, Female Terminal Strip.	16	4-43	19996	
J-406	Power Output Jack	5 Circuit, Female Terminal Strip.	16	5-43	19981	
J-501	R. F. Output Jack	Chassis Connector, 2 Pole Female, Threaded for Locking Ring.	3	PC2-CR	24222	
J-502	Key Circuit Jack	Standard Signal Corps, 2 Circuit Jack.	6	JK-34-A	24273	JK-34-A
J-503	Power Input Jack	Power Receptacle, 4 Circuit, Male, Mounted in Flush Motor Shell.	3	61-CP4	24221	
K-301	Short Circuiting Relay	Single Pole—Single Throw Relay, Normally Closed, 115 Volt AC Coil.	25	M-24230	24230	
K-401	Plate Power Relay	Single Pole—Single Throw Relay, Normally Open, Coil 2300 Ohms—70 Volts DC.	25	M-19977	19977	
K-402	Time Delay Relay	Single Pole—Single Throw Time Delay Relay, Normally Open, 115 Volt AC Coil.	2	Spec-305B	19666	
K-403	Time Delay Relay	Single Pole—Single Throw Time Delay Relay, Normally Open, 115 Volt AC Coil.	2	Spec-305B	19978	
K-501	Automatic-On Relay	Single Pole—Single Throw Relay, Normally Closed, 115 Volt AC Coil.	25	19229-M	19229	
K-701	Telegraph Key	Standard Telegraph Key. Shielded Cable, CA-701, and Plug, P-702, are attached to this Telegraph Key. The Key, Cable and Plug Assembly is Contractor's No. 02518.	20	300	24216	
L-201	R. F. Plate Choke	R. F. Choke. 10.32 MH., 200 M. A. DC., Resistance 28.17 Ohms (DC.), 2-pie Winding.	21	02441	02441	
L-202	Plate Coil	Plug-in Coil. Designation "L-202, 02504".	21	02504	02504	
L-203	Plate Coil	Plug-in Coil. Designation "L-203, 02505".	21	02505	02505	
L-204	Plate Coil	Plug-in Coil. Designation "L-204, 02506".	21	02506	02506	
L-205	Plate Coil	Plug-in Coil. Designation "L-205, 02507".	21	02507	02507	
L-206	Plate Coil	Plug-in Coil. Designation "L-206, 02508".	21	02508	02508	
L-207	Plate Coil	Plug-in Coil. Designation "L-207, 02509".	21	02509	02509	
L-208	Plate Coil	Plug-in Coil. Designation "L-208, 02519".	21	02519	02519	
L-301	Smoothing Choke	Filter Choke. 12.0 H., Plus 50% Minus 10%, 180 M. A. DC., 145 Ohms Plus-Minus 10%.	30	307C3	24263	
L-302	Input Filter Choke	Filter Choke. 18.0 H., Plus 50% Minus 10%, at 80 M. A. DC. and 3.5 H., Plus 50% Minus 10% at 200 M. A. DC. Resistance, 110 Ohms (DC.) Plus-Minus 10%.	30	307C6	24276	
L-401	Input Filter Choke	Filter Choke. 11.0 H., Plus 50% Minus 10% 180 M. A. DC., 145 Ohms Plus-Minus 10%.	30	307C2	24262	
L-402	Smoothing Choke	Filter Choke. 12.0 H., Plus 50% Minus 10%, 180 M. A. DC., 145 Ohms Plus-Minus 10%.	30	307C3	24263	

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MODEL 150-B
RADIO TRANSMITTING EQUIPMENT

SYMBOL	FUNCTION	DESCRIPTION	*MFR.	*MFR. No.	CONTR. No.	STOCK No.
L-403	Filter Choke	Filter Choke. 8.0 H., Plus 50% Minus 10%, 100M. A. DC., 235 Ohms Plus-Minus 10%.	30	307C5	24275	
L-501	R. F. Plate Choke	Universal R. F. Choke. 2.5 MH., 125 M. A. DC., Resistance 35.0 Ohms (DC.), 4-pie.	21	19-1996	19-1996	
L-502	Oscillator Plate Coil	Plug-in Coil, Range 1360 KC to 3300 KC, Band "A".	21	18-3342	18-3342	
L-503	Oscillator Plate Coil	Plug-in Coil, Range 3200 KC to 5200 KC, Band "B".	21	18-3345	18-3345	
L-504	Oscillator Plate Coil	Plug-in Coil, Range 5080 KC to 7080 KC, Band "C".	21	18-3348	18-3348	
L-505	Oscillator Plate Coil	Plug-in Coil, Range 6930 KC to 8900 KC, Band "D".	21	18-3351	18-3351	
L-506	Oscillator Plate Coil	Plug-in Coil, Range 8725 KC to 10,825 KC, Band "E".	21	18-3354	18-3354	
L-507	Oscillator Plate Coil	Plug-in Coil, Range 10,700 KC to 12,700 KC, Band "F".	21	18-3357	18-3357	
L-508	R. F. Plate Choke	Universal R. F. Choke. 2.5 MH., 125 M. A. DC., Resistance 35.0 Ohms (DC.), 4-pie.	21	19-1996	19-1996	
L-509	Filter Choke	Smoothing Choke. 8.0 H., Plus 50% Minus 10%,100 M. A. DC., 235 Ohms Plus-Minus 15%.	30	307C4	24264	
L-510	Oscillator Grid Coil	Plug-in Coil, Range 1360 KC to 3300 KC, Band "A".	21	18-3341	18-3341	
L-511	Oscillator Grid Coil	Plug-in Coil. Range 3200 KC to 5200 KC, Band"B".	21	18-3344	18-3344	
L-512	Oscillator Grid Coil	Plug-in Coil, Range 5080 KC to 7080 KC, Band "C".	21	18-3347	18-3347	
L-513	Oscillator Grid Coil	Plug-in Coil, Range 6930 KC to 8900 KC, Band "D".	21	18-3350	18-3350	
L-514	Oscillator Grid Coil	Plug-in Coil, Range 8725 KC to 10,825 KC, Band "E".	21	18-3353	19-3353	
L-515	Oscillator Grid Coil	Plug-in Coil, Range 10,700 KC to 12,700 KC, Band "F".	21	18-3356	18-3356	
M-101	Grid Current Meter	DC Milliammeter, Square Case, 0-15 M. A. DC.	32	327-A	24208	
M-102	Modulator Current Meter	DC Milliammeter, Square Case, 0-250 M. A. DC.	32	327-A	24209	
M-103	Plate Current Meter	DC Milliammeter, Square Case, 0-300 M. A. DC.	32	327-A	24210	
M-104	Antenna Current Meter	RF Thermo-Ammeter, Square Case, 0-5 R. F. Amperes.	32	327-A	24211	
MI-701	Microphone	Single Button Carbon Microphone. Nominal Resistance, 120 Ohms. Equipped with "Push-to-talk" Switch, 5 ft. Cable and Plug, P-708.	29	91-708	24212	
P-101	Microphone Circuit Plug	2 Circuit Male Terminal Strip, Plug-in Connector.	16	2-99A	19989	
P-102	Power Input Plug	4 Circuit Male Terminal Strip, Plug-in Connector.	16	4-100	19997	
P-103	Power Input Plug	5 Circuit Male Terminal Strip, Plug-in Connector.	16	5-100	19982	
P-104	Power Input Plug	5 Circuit Male Terminal Strip, Plug-in Connector.	16	5-100	19982	
P-105	Antenna Meter Plug	2 Circuit Male Terminal Strip, Plug-in Connector.	16	2-99A	19989	
P-106	Power Output Plug	5 Circuit Male Terminal Strip, Plug-in Connector.	16	5-100	19982	
P-107	Power Output Plug	4 Circuit Male Terminal Strip, Plug-in Connector.	16	4-100	19997	
P-108	Power Output Plug	5 Circuit Male Terminal Strip, Plug-in Connector.	16	5-100	19982	
P-601	Interlock Circuit Plug	2 Circuit Male Power Plug. A Part of Cable CA-601.	3	61-MP11	24247	

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MODEL 150-B
RADIO TRANSMITTING EQUIPMENT

SYMBOL	FUNCTION	DESCRIPTION	*MFR.	*MFR. No.	CONTR. No.	STOCK No.
P-701	R. F. Output Plug	2 Circuit Male Plug, Locking Type. A Part of Cable, CA-702.	3	MC2M	24218	
P-702	Key Plug	2 Circuit Male Plug. A Part of Cable, CA-701.	6	PL-55	24272	PL-55
P-703	Power Input Plug	4 Circuit Female Power Plug. A Part of Cable, CA-703.	3	PF4-11	24217	
P-704	R. F. Input Plug	2 Circuit Male Plug, Locking Type. A Part of Cable, CA-702.	3	MC2M	24218	
P-705	Power Output Plug	4 Circuit Male Power Plug. A Part of Cable, CA-703.	3	PM4-11	24220	
P-706	Power Input Plug	2 Circuit Female Power Plug. A Part of Cable, CA-704.	3	61-F11	19984	
P-707	Line Power Plug	2 Circuit Male Power Plug. A Part of Cable, CA-704.	3	61-M11	19987	
P-708	Microphone Plug	3 Circuit Microphone Plug. A Part of Microphone, MI-701.	29	PL-68	None	PL-68
R-101	Meter Shunt Resistor	Carbon Resistor, 1 Watt, 220 Ohm, Plus-Minus 10%.	24	PB	18158	
R-201	Voltage Divider Resistor	Wirewound tapped (Divider) Resistor. Section "A", 30,000 Ohms Plus-Minus 5%, 30 Watts. Section "B"; 36,000 Ohms Plus-Minus 5%, 70 Watts.	35	X-1161	25104	
R-202	Grid Resistor	Carbon Resistor, 3 Watt, 22,000 Ohms, Plus-Minus 10%.	24	X	25168	
R-301	Bleeder Resistor	Wirewound Resistor, 50 Watt, 60,000 Ohms, Plus-Minus 10%.	35	X-1164	25102	
R-302	Meter Shunt Resistor	Carbon Resistor, 1 Watt, 22 Ohms, Plus-Minus 20%.	24	PB	25162	
R-303	Audio Feed-Back Resistor	Carbon Resistor, ½ Watt, 100,000 Ohms, Plus-Minus 5%.	24	PJ	24184	
R-304	Andio Feed-Back Resistor	Carbon Resistor, 1 Watt, 25,000 Ohms, Plus-Minus 5%.	24	PB	25158	
R-305	Audio Feed-Back Resistor	Carbon Resistor, 1 Watt, 25,000 Ohms, Plus-Minus 5%.	24	PB	25158	
R-306	Audio Feed-Back Resistor	Carbon Resistor, ½ Watt, 100,000 Ohms, Plus-Minus 5%.	24	PJ	24184	
R-307	Filter Resistor	Carbon Resistor, 1 Watt, 500 Ohms, Plus-Minus 10%.	24	PB	18104	
R-308	Cathode Bias Resistor	Carbon Resistor, 2 Watt, 300 Ohms, Plus-Minus 10%.	24	F	15182	
R-309	Load Resistor	Carbon Resistor, ½ Watt, 100,000 Ohms, Plus-Minus 5%.	24	PJ	24184	
R-310	Load Resistor	Carbon Resistor, ½ Watt, 100,000 Ohms, Plus-Minus 5%.	24	PJ	24184	
R-311	Gain Control	Potentiometer, 500,000 Ohms, Modified Log Taper.	6	35	24228	
R-312	Bleeder Resistor	Wirewound Resistor, 10 Watt, 12,500 Ohms, Plus-Minus 5%.	35	X-1168	25155	
R-313	Plate Filter Resistor	Wirewound Resistor, 10 Watt, 1500 Ohms, Plus-Minus 5%.	17	25101-M	25101	
R-314	Cathode Bias Resistor	Carbon Resistor, 1 Watt, 900 Ohms, Plus-Minus 10%.	24	PB	24197	
R-401	Bleeder Resistor	Carbon Resistor, 5 Watt, 750,000 Ohms, Plus-Minus 10%.	24	V	25164	
R-402	Bleeder Resistor	Carbon Resistor, 5 Watt, 750,000 Ohms, Plus-Minus 10%.	24	V	25164	
R-403	Meter Shunt Resistor	Carbon Resistor, 1 Watt, 22 Ohms, Plus-Minus 20%.	24	PB	25162	
R-404	Grid Bias Resistor	Wirewound Resistor, 10 Watt, 1000 Ohms, Plus-Minus 5%.	35	X-1163	25149	
R-501	Voltage Divider Resistor	Wirewound Resistor, 5 Watt, 2500 Ohms, Plus-Minus 5%.	35	5-VWQ	25156	
R-502	Voltage Divider Resistor	Wirewound Resistor, 10 Watt, 12,500 Ohms, Plus-Minus 5%.	35	X-1168	25155	
R-503	Regulator Shunt Resistor	Wirewound Resistor, 10 Watt, 3500 Ohms, Plus-Minus 5%.	35	X-1167	25161	

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COMPONENT PARTS LIST

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MODEL 150-B
RADIO TRANSMITTING
EQUIPMENT

SYMBOL	FUNCTION	DESCRIPTION	*MFR.	*MFR. No.	CONTR. No.	STOCK No.
R-504	Cathode Resistor	Carbon Resistor, 2 Watt, 300 Ohm, Plus-Minus 10%.	24	F	15182	
R-505	Tube Shunt Resistor	Carbon Resistor, ½ Watt, 47,000 Ohm, Plus-Minus 10%.	24	J	25141	
R-506	Grid Resistor	Carbon Resistor, ½ Watt, 30,000 Ohm, Plus-Minus 10%.	24	J	24140	
R-507	Keying Filter Resistor	Carbon Resistor, ½ Watt, 300 Ohm, Plus-Minus 20%.	24	J	14175	
R-508	Dampening Resistor	Carbon Resistor, 1 Watt, 100,000 Ohm, Plus-Minus 10%.	24	PB	24177	
R-509	Grid Resistor	Carbon Resistor, ½ Watt, 40,000 Ohm, Plus-Minus 10%.	24	J	25139	
R-510	Cathode Resistor	Carbon Resistor, 1 Watt, 400 Ohm, Plus-Minus 10%.	24	PB	15184	
R-511	Short Circuiting Resistor	Carbon Resistor, ½ Watt, 50 Ohm, Plus-Minus 20%.	24	L	16143	
R-512	Voltage Dropping Resistor	Wirewound Resistor, 1 Watt, 15 Ohm, Plus-Minus 20%.	24	PBW	24117	
S-101	Plate Power Switch	Single Pole—Single Throw Power Switch, Toggle Type, 125 Volts—15 Amperes.	9	CH-7361	24204	
S-102	Emission Switch	Single Pole—Single Throw Power Switch, Toggle Type, 125 Volts—15 Amperes.	9	CH-8690K1	24206	
S-103	Power Selector Switch	Single Pole—Double Throw Power Switch, Toggle Type, 125 Volts—15 Amperes.	9	CH-8690K1	24206	
S-104	Filament Power Switch	Single Pole—Single Throw Power Switch, Toggle Type, 125 Volts—15 Amperes.	9	CH-7361	24204	
S-201	Grid Coil Selector Switch	6 Position, 3 Section Rotary Tap Switch.	23	25608-H3	24200	
S-501	Phone CW Switch	Single Pole—Single Throw Switch, Rotary Type, Bakelite Wafer Section, ¼ inch Shaft.	23	24855-23	24227	
S-502	Automatic-On Switch	Single Pole—Double Throw Switch, Rotary Type, Bakelite Wafer Section, ¼ inch Shaft.	23	24854-22	19447	
S-601	Safety Interlock Switch	Single Pole—Single Throw Safety Switch, Normally "On", 125 Volts—15 Amperes. This Switch is connected to Plug, P-601, by Cable, CA-601. Contractor's Assembly No. 02655.	1	XA-1A-1L	24207	
T-201	Grid Transformer	Grid Input Transformer, Range 1360 KC to 3300 KC, Band "A". 160	21	02510	02510	
T 202	Grid Transformer	Grid Input Transformer, Range 3200 KC to 5200 KC, Band "B". 80	21	02511	02511	
T-203	Grid Transformer	Grid Input Transformer, Range 5080 KC to 7080 KC, Band "C".	21	02512	02512	
T-204	Grid Transformer	Grid Input Transformer, Range 6930 KC to 8900 KC, Band "D". 40	21	02513	02513	
T-205	Grid Transformer	Grid Input Transformer, Range 8725 KC to 10,825 KC, Band "E".	21	02514	02514	
T-206	Grid Transformer	Grid Input Transformer, Range 10,700 KC to 12,700 KC, Band "F". 20	21	02515	02515	
T-207	Filament Transformer	Primary; 115 Volts, 50/60 Cycle. Secondary; 10.0 Volts C. T., 5.0 Amperes.	30	307P4	24260 ✓	813 Fil.
T-301	Modulation Transformer	Primary; To Match Class "B" 811 Modulator Tubes. 1250 DC. Plate Voltage, 200 M. A. DC. Plate Current. Effective Load Resistance, 15,000 Ohms. Secondary; To Match Class "C" 813 Tube Load of 8750 Ohms. 1600 Volts DC. and 183 M. A. DC. through this Secondary to Class "C" R. F. Stage.	30	307A11	24268	
T-302	Driver Transformer	Primary; To Match 6V6GT P. P. Plates. Secondary; To Match Class "B" 811 Grids. Turns Ratio, 2.8 to 1 (Full Primary to One-half Secondary).	30	307A10	24267	

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MODEL 150-B
RADIO TRANSMITTING EQUIPMENT

SYMBOL	FUNCTION	DESCRIPTION	*MFR.	*MFR. No.	CONTR. No.	STOCK No.
T-303	Filament Transformer	Primary; 115 Volts 50/60 Cycle. Secondary; 2.5 Volts C. T., 10.0 Amperes. Insulation, 6000 R. M. S.	30	307P6	24258	
T-304	Plate Transformer	Primary; 115 Volts 50/60 Cycle. Secondary; To deliver 1250 Volts DC. at Maximum 220 MA. (After Filter). See Schematic Diagram.	30	307P3	24256	
T-305	Filament Transformer	Primary; 115 Volts 50/60 Cycle. Secondary; 6.3 Volts C. T., 9.2 Amperes.	30	307P5	24259	
T-306	Interstage Transformer	Primary; To Match Plate of Single 6J5GT Tube. Secondary; Split Winding, Each Section Loaded with 100,000 Ohm Resistor, working into P. P. Grids of 6V6GT Driver Tubes. Turns Ratio, 1 to 1.5 (Full Primary to Each Secondary).	30	307A9	24266	
T-307	Microphone Transformer	Primary; To Match Single Button Carbon Microphone (MI-701), Contractor's No. 24212. Nominal Resistance, 120 Ohms. Secondary; To Match 250,000 Ohm Resistive Load.	30	307A8	24265	
T-401	Filament Transformer	Primary; 115 Volts 50/60 Cycle. Secondary; 2.5 Volts C. T., 10.0 Amperes. Insulation 6000 R. M. S. Voltage.	30	307P6	24258	
T-402	Plate Transformer	Primary; 115 Volts 50/60 Cycle with Low Voltage Tap to reduce Secondary Voltage. Secondary; To Deliver (after Filter) either 1600 Volts DC. or 900 Volts DC., depending on Setting of Primary Tap. Output Current, 183 M. A. DC.	30	307P2	24255	
T-403	Power Transformer	Primary; 115 Volts 50/60 Cycle. High Voltage Secondary; To Deliver 350 Volts DC. at 105 M. A. across 40 Mfd., Input Filter Condenser, Filament Secondary; 5.0 Volts at 3.0 Amperes, not Center-tapped. See Schematic Circuit Diagram.	30	307P8	24257	
T-501	R. F. Output Transformer	Plug-in Type, Range 1360 KC to 3300 KC, Band "A".	21	18-3343	18-3343	
T-502	R. F. Output Transformer	Plug-in Type, Range 3200 KC to 5200 KC, Band "B".	21	18-3346	18-3346	
T-503	R. F. Output Transformer	Plug-in Type, Range 5080 KC to 7080 KC, Band "C".	21	18-3349	18-3349	
T-504	R. F. Output Transformer	Plug-in Type, Range 6930 KC to 8900 KC, Band "D".	21	18-3352	18-3352	
T-505	R. F. Output Transformer	Plug-in Type, Range 8725 KC to 10,825 KC, Band "E".	21	18-3355	18-3355	
T-506	R. F. Output Transformer	Plug-in Type, Range 10,700 KC to 12,700 KC, Band "F".	21	18-3358	18-3358	
T-507	Power Transformer	Plate and Filament Transformer. Primary; 115 Volts 50/60 Cycle. High Voltage Secondary; To Deliver 350 Volts DC. at 105 M. A. (after Filter). Filament Secondaries; 6.3 Volts at 2.3 Amperes and 5.0 Volts at 3.0 Amperes.	30	307P7	24269	
TC-201	Thermocouple	External Thermocouple 0-5 R. F. Amperes, for Meter No. 24211 (M-104).	32	TC-347A	25201	
V-201	R. F. Amplifier Tube	Vacuum Tube Type 813.	27	813	813	VT-144
V-301	Modulator Tube	Vacuum Tube Type 811.	27	811	811	VT-217
V-302	Modulator Tube	Vacuum Tube Type 811.	27	811	811	VT-217
V-303	Driver Tube	Vacuum Tube Type 6V6GT.	27	6V6GT	6V6GT	VT-107A

CONTRACTOR
MEISSNER MANUFACTURING CO.
MT. CARMEL, ILLINOIS

TABLE NO. 9 (Cont'd)

COMPONENT PARTS LIST

Sheet 8 of 9 Sheets

MODEL 150-B
RADIO TRANSMITTING EQUIPMENT

SYMBOL	FUNCTION	DESCRIPTION	MFR.	MFR. No.	CONTR. No.	STOCK No.
V-304	Driver Tube	Vacuum Tube Type 6V6GT.	27	6V6GT	6V6GT	VT-107A
V-305	Rectifier Tube	Vacuum Tube Type 866A.	27	866A	866A	VT-46A
V-306	Rectifier Tube	Vacuum Tube Type 866A.	27	866A	866A	VT-46A
V-307	Audio Amplifier Tube	Vacuum Tube Type 6J5GT.	27	6J5GT	6J5GT	VT-94D
V-401	Rectifier Tube	Vacuum Tube Type 866A.	27	866A	866A	VT-46A
V-402	Rectifier Tube	Vacuum Tube Type 866A.	27	866A	866A	VT-46A
V-403	Rectifier Tube	Vacuum Tube Type 5U4G.	27	5U4G	5U4G	VT-244
V-501	Buffer-Doubler Tube	Vacuum Tube Type 6L6G.	27	6L6G	6L6G	VT-115A
V-502	Voltage Regulator Tube	Vacuum Tube Type VR-150/30.	27	VR-150	VR-150	VT-139
V-503	Voltage Regulator Tube	Vacuum Tube Type VR-105/30.	27	VR-105	VR-105	VT-200
V-504	Oscillator Tube	Vacuum Tube Type 6F6G.	27	6F6G	6F6G	VT-66A
V-505	Rectifier Tube	Vacuum Tube Type 5U4G.	27	5U4G	5U4G	VT-244
X-101	Pilot Light Socket	Candelabra Base Socket and Red Color Jewel.	10	75	24213	
X-201	813 Tube Socket	Ceramic Wafer Socket, 7 Prong, for 813 Tube.	15	237	19937	
X-301	811 Tube Socket	Ceramic 4 Prong Bayonet Type Socket.	15	209	19920	
X-302	811 Tube Socket	Ceramic 4 Prong Bayonet Type Socket.	15	209	19920	
X-303	6V6GT Tube Socket	Ceramic Octal Socket.	34	25-8437-M	25-8437	
X-304	6V6GT Tube Socket	Ceramic Octal Socket.	34	25-8437-M	25-8437	
X-305	866A Tube Socket	Ceramic 4 Prong Bayonet Type Socket.	15	209	19920	
X-306	866A Tube Socket	Ceramic 4 Prong Bayonet Type Socket.	15	209	19920	
X-307	6J5GT Tube Socket	Ceramic Octal Socket.	34	25-8437-M	25-8437	
X-401	866A Tube Socket	Ceramic 4 Prong Bayonet Type Socket.	15	209	19920	
X-402	866A Tube Socket	Ceramic 4 Prong Bayonet Type Socket.	15	209	19920	
X-403	5U4G Tube Socket	Ceramic Octal Socket.	34	25-8437-M	25-8437	
X-501	R. F. Output Transformer Socket	Bakelite Wafer Socket, 6 Prong.	22	8304-6	19236	
X-502	Regulator Tube Socket	Molded Bakelite Socket for Octal Tube.	7	9950	9309	
X-503	Buffer-Doubler Tube Socket	Ceramic Socket for Octal Tube.	34	25-8437-M	25-8437	
X-504	Regulator Tube Socket	Molded Bakelite Socket for Octal Tube.	7	9950	9309	
X-505	Plate Coil Socket	Bakelite Wafer Socket, 5 Prong.	22	8304-5	19235	
X-506	Oscillator Tube Socket	Ceramic Socket for Octal Tube.	34	25-8437-M	25-8437	
X-507	Rectifier Tube Socket	Molded Bakelite Socket for Octal Tube.	7	9950	9309	
X-508	Grid Coil Socket	Bakelite Wafer Socket, 4 Prong.	22	8304-4	19234	
X-509	Pilot Light Socket	Miniature Bayonet Base Socket for Pilot Lamp, Screw Mounting.	10	10448	19804	

CONTRACTOR
MEISSNER MANUFACTURING CO.
MT. CARMEL, ILLINOIS

TABLE NO. 9 (Cont'd)

COMPONENT PARTS LIST

Sheet 9 of 9 Sheets

MODEL 150-B
RADIO TRANSMITTING EQUIPMENT

SYMBOL	FUNCTION	DESCRIPTION	*MFR.	*MFR. No.	CONTR. No.	STOCK No.
X-510	Pilot Light Socket	Miniature Bayonet Base Socket for Pilot Lamp, Screw Mounting.	10	10448	19804	
X-511	Pilot Light Socket	Miniature Bayonet Base Socket for Pilot Lamp, Clip Mounting.	31	19805-M	19805	
CA-601	Interlock Circuit Cable	3 ft. of 2 Conductor, No. 14, Unshielded Power Cable Brown Braid Overall. One end connected to Safety Interlock Switch, S-601. Opposite end terminated with Power Plug, P-601. This Cable, Switch and Plug Assembly is Contractor's No. 02655.	18	1120	17475	
CA-701	Key Circuit Cable	5 ft. of 2 Conductor, No. 18, Shielded Cable, Brown Braid Overall. One end connected to Telegraph Key, K-701. Opposite end terminated with Plug, P-702. This Cable and Plug Assembly is Contractor's No. 02518.	18	1170	17477	
CA-702	R. F. Line Cable	5 ft. of 2 Conductor, No. 18, Shielded Cable, Brown Braid Overall. One end connected to Plug, P-701. Opposite end terminated with Plug, P-704. This Cable and Plug Assembly is Contractor's No. 02453.	18	1170	17477	
CA-703	Power Cable	5 ft. of 4 Conductor, No. 18, Shielded Power Cable, Brown Braid Overall. One end connected to Plug, P-703. Opposite end connected to Plug, P-705. This Cable and Plug Assembly is Contractor's No. 02452.	18	1174	17476	
CA-704	Power Cable	10 ft. of 2 Conductor, No. 14, Unshielded Power Cable, Brown Braid Overall. One end connected to Plug, P-707. This Cable and Plug Assembly is Contractor's No. 02450.	18	1120	17475	

*Or Equivalent

CONTRACTOR
MEISSNER MANUFACTURING CO.
MT. CARMEL, ILLINOIS

TABLE NO. 10

SPARE PARTS LIST

Sheet 1 of 3 Sheets

MODEL 150-B
RADIO TRANSMITTING
EQUIPMENT

QUANTITY	ITEM	SPARE FOR.	DESCRIPTION	*MFR.	*MFR. No.	CONTR. No.	STOCK No.
1	Silver Mica Condenser	C-203	150 Mmfd., Plus-Minus 5%, 500 V. DC.	8	5R-5T15	17148	
1	Mica Condenser	C-204 or C-205	0.006 Mfd., Plus-Minus 10%, 600 V. DC.	28	A2LS-1260	24173	
1	Mica Condenser	C-206	0.006 Mfd., Plus-Minus 5%, 1200 V. DC.	28	A2LS-2260	24172	
1	Mica Condenser	C-207	0.002 Mfd., Plus-Minus 5%, 2500 V. DC.	28	A2LS-5220	24174	
1	Mica Condenser	C-208	0.006 Mfd., Plus-Minus 10%, 2500 V. DC.	28	A2LS-5260	24171	
1	Mica Condenser	C-211	0.0003 Mfd., Plus-Minus 5%, 2500 V. DC.	28	A2LS-5330	25133	
1	Mica Condenser	C-212	0.0006 Mfd., Plus-Minus 5%, 2500 V. DC.	28	A2LS-5360	25134	
1	Mica Condenser	C-213	0.0012 Mfd., Plus-Minus 5%, 2500 V. DC.	28	A2LS-5212	25135	
1	Paper Condenser	C-214 or C-215	0.1 Mfd., 200 V. DC.	14	PT 202	15142	
1	Paper Condenser	C-301 or C-302	4.0 Mfd., 1500 V. DC. (Oil Filled)	8	TJU-15040	25112	
1	Paper Condenser	C-303 or C-304	0.1 Mfd., 600 V. DC.	19	TP-418	16166	
3	Electrolytic Condenser	C-305, C-307 or C-308	50 Mfd., 25 V. DC.	19	93544-3	25116	
3	Electrolytic Condenser	C-306	8 Mfd., 450 V. DC.	19	BB-61	16113	
1	Paper Condenser	C-401 or C-402	4.0 Mfd., 2000 V. DC. (Oil Filled)	8	TJU-20040	25109	
3	Electrolytic Condenser	C-403	Dual 40-40 Mfd., 450 V. DC.	19	101227-5	25110	
3	Electrolytic Condenser	C-404	40 Mfd., 150 V. DC.	19	BB-27	25146	
1	Mica Condenser	C-503 or C-510	500 Mmfd., Plus-Minus 20%, 500 V. DC.	8	5W-5T5	14139	
1	Paper Condenser	C-504 or C-512	0 01 Mfd., 400 V. DC.	14	PT-170	14110	
1	Paper Condenser	C-505	0.01 Mfd., 600 V. DC.	8	ZB 6018	18131	
1	Mica Condenser	C-506	250 Mmfd., Plus-Minus 20%, 500 V. DC.	8	5W-5T25	14102	
1	Paper Condenser	C-507	0.25 Mfd., 400 V. DC.	14	PT 174	15197	
3	Electrolytic Condenser	C-508	Dual, 10 Mfd.,450 V. DC., 15 Mfd., 450 V. DC.	19	1010123	17192	
3	Electrolytic Condenser	C-511	15 Mfd., 450 V. DC.	19	1012435	17193	
1	Mica Condenser	C-513	100 Mmfd., NPOD, Plus-Minus 10%	12	25148-M	25148	
1	Mica Condenser	C-514	25 Mmfd., N470K, Plus-Minus 10%	12	25147-M	25147	
1	Paper Condenser	C-515 or C-517	0.05 Mfd., 400 V. DC.	14	PT 172	14181	
3	Cartridge Fuse	F-401	2 Ampere, 250 Volt, Non-renewable	11	1102	24282	
3	Cartridge Fuse	F-402	5 Ampere, 250 Volt, Non-renewable	11	1105	24283	
6	Cartridge Fuse	F-403 or F-404	8 Ampere, 250 Volt, Non-renewable	11	1108	24284	
3	Pilot Lamp	I-101	125 Volt Candelabra Screw Base	13	S-6	24225	
6	Pilot Lamp	I-501 or I-502	6-8 Volt, Bayonet Base, Tubular	33	T-44	19370	
3	Pilot Lamp	I-503	6-8 Volt, Bayonet Base, Round	33	T-51	19262	

CONTRACTOR
MEISSNER MANUFACTURING CO.
MT. CARMEL, ILLINOIS

TABLE NO. 10 (Cont'd)
SPARE PARTS LIST
Sheet 2 of 3 Sheets

MODEL 150-B
RADIO TRANSMITTING EQUIPMENT

QUANTITY	ITEM	SPARE FOR:	DESCRIPTION	*MFR.	*MFR. No.	CONTR. No.	STOCK No.
1	Telegraph Key	K-701	Standard Telegraph Key	20	300	24216	
1	Carbon Microphone	MI-701	Single Button Carbon Microphone with Cord and Plug	29	91-708	24212	
1	Carbon Resistor	R-101	220 Ohms, Plus-Minus 10%, 1 Watt	24	PB	18158	
1	Wirewound Resistor	R-201	30,000 Ohms, 5%, 30 Watt; 36,000 Ohms, 5%, 70 Watt	35	X-1161	25104	
1	Carbon Resistor	R-202	22,000 Ohms, Plus-Minus 10%, 3 Watt	24	X	25168	
1	Wirewound Resistor	R-301	60,000 Ohms, Plus-Minus 10%, 50 Watt	35	X-1164	25102	
1	Carbon Resistor	R-302 or R-403	22 Ohms, Plus-Minus 20%, 1 Watt	24	PB	25162	
1	Carbon Resistor	R-303, R-306, R-309 or R-310	100,000 Ohms, Plus-Minus 5%, ½ Watt	24	PJ	24184	
1	Carbon Resistor	R-304 or R-305	25,000 Ohms, Plus-Minus 5%, 1 Watt	24	PB	25158	
1	Carbon Resistor	R-307	500 Ohms, Plus-Minus 10%, 1 Watt	24	PB	18104	
1	Carbon Resistor	R-308 or R-504	300 Ohms, Plus-Minus 10%, 2 Watt	24	F	15182	
1	Wirewound Resistor	R-312 or R-502	12,500 Ohms, Plus-Minus 5%, 10 Watt	35	X-1168	25155	
1	Wirewound Resistor	R-313	1,500 Ohms, Plus-Minus 5%, 10 Watt	17	25101-M	25101	
1	Carbon Resistor	R-314	900 Ohms, Plus-Minus 10%, 1 Watt	24	PB	24197	
1	Carbon Resistor	R-401 or R-402	750,000 Ohms, Plus-Minus 10%, 5 Watt	24	V	25164	
1	Wirewound Resistor	R-404	1,000 Ohms, Plus-Minus 5%, 10 Watt	35	X-1163	25149	
1	Wirewound Resistor	R-501	2,500 Ohms, Plus-Minus 5%, 5 Watt	35	5-VWQ	25156	
1	Wirewound Resistor	R-503	3,500 Ohms, Plus-Minus 5%, 10 Watt	35	X-1167	25161	
1	Carbon Resistor	R-505	47,000 Ohms, Plus-Minus 10%, ½ Watt	24	J	25141	
1	Carbon Resistor	R-506	30,000 Ohms, Plus-Minus 10%, ½ Watt	24	J	24140	
1	Carbon Resistor	R-507	300 Ohms, Plus-Minus 20%, ½ Watt	24	J	14175	
1	Carbon Resistor	R-508	100,000 Ohms, Plus-Minus 10%, 1 Watt	24	PB	24177	
1	Carbon Resistor	R-509	40,000 Ohms, Plus-Minus 10%, ½ Watt	24	J	25139	
1	Carbon Resistor	R-510	400 Ohms, Plus-Minus 10%, 1 Watt	24	PB	15184	
1	Carbon Resistor	R-511	50 Ohms, Plus-Minus 20%, ½ Watt	24	L	16143	
1	Carbon Resistor	R-512	15 Ohms, Plus-Minus 20%, 1 Watt	24	PBW	24117	
2	813 Tube	V-201	Type 813 Vacuum Tube	27	813	813	VT-144
4	811 Tube	V-301 or V-302	Type 811 Vacuum Tube	27	811	811	VT-217
4	6V6GT Tube	V-303 or V-304	Type 6V6GT Vacuum Tube	27	6V6GT	6V6GT	VT-107A
8	866A Tube	V-305, V-306, V-401 or V-402	Type 866A Vacuum Tube	27	866A	866A	VT-46A
2	6J5GT Tube	V-307	Type 6J5GT Vacuum Tube	27	6J5GT	6J5GT	VT-94D

CONTRACTOR
MEISSNER MANUFACTURING CO.
MT. CARMEL, ILLINOIS

TABLE NO. 10 (Cont'd)

SPARE PARTS LIST

Sheet 3 of 3 Sheets

MODEL 150-B
RADIO TRANSMITTING
EQUIPMENT

QUANTITY	ITEM	SPARE FOR:	DESCRIPTION	*MFR.	*MFR. No.	CONTR. No.	STOCK No.
4	5U4G Tube	V-403 or V-505	Type 5U4G Vacuum Tube	27	5U4G	5U4G	VT-244
2	6L6G Tube	V-501	Type 6L6G Vacuum Tube	27	6L6G	6L6G	VT-115A
2	VR-150/30 Tube	V-502	Type VR-150/30 Vacuum Tube	27	VR-150/30	VR-150/30	VT-139
2	VR-105/30 Tube	V-503	Type VR-105/30 Vacuum Tube	27	VR-105/30	VR-105/30	VT-200
2	6F6G Tube	V-504	Type 6F6G Vacuum Tube	27	6F6G	6F6G	VT-66A

*Or Equivalent

TABLE NO. 11

IDENTIFYING TABLE OF MANUFACTURER

Sheet 1 of 2 Sheets

CODE NUMBER	MANUFACTURER	CODE NUMBER	MANUFACTURER
1	Acro Electric Company, 1305 Superior Ave., Cleveland, Ohio	11	Economy Fuse and Manufacturing Co., Greenview Ave. at Diversey Parkway, Chicago, Illinois
2	Advance Electric Company 1260 West Second St., Los Angeles, Calif.	12	Erie Resistor Corp., Erie, Pa.
3	American Phenolic Corp., 1830 South Fifty-Fourth Ave., Chicago, Illinois	13	General Electric Supply Corp., 2653 Locust St., St. Louis, Mo.
4	American Steel Package Co., Defiance, Ohio	14	Industrial Condenser Corp., 1725 West North Ave., Chicago, Illinois
5	Central Screw Co., 3501 Shields Ave., Chicago, Illinois	15	Johnson, E. F. Co., Waseca, Minn.
6	Chicago Telephone Supply Co., Elkhart, Ind.	16	Jones, Howard B., 2300 Wabansia Ave., Chicago, Illinois
7	Cinch Manufacturing Corp., 2335 West Van Buren St., Chicago, Illinois	17	Lectrohm, Inc., 5125 West 25th Place Cicero, Illinois
8	Cornell-Dubilier Electric Corp., 333 Hamilton Blvd., South Plainfield, N. J.	18	Lenz Electric Mfg. Co., 1751 North Western Ave., Chicago, Illinois
9	Cutler-Hammer, Inc., 1914 Washington Ave., St. Louis, Mo.	19	Mallory, P. R. & Co., Inc., Indianapolis, Ind.
10	Drake Manufacturing Co., 1713 West Hubbard St., Chicago, Illinois	20	McElroy & Goode, Inc., 325 West Huron St., Chicago, Illinois

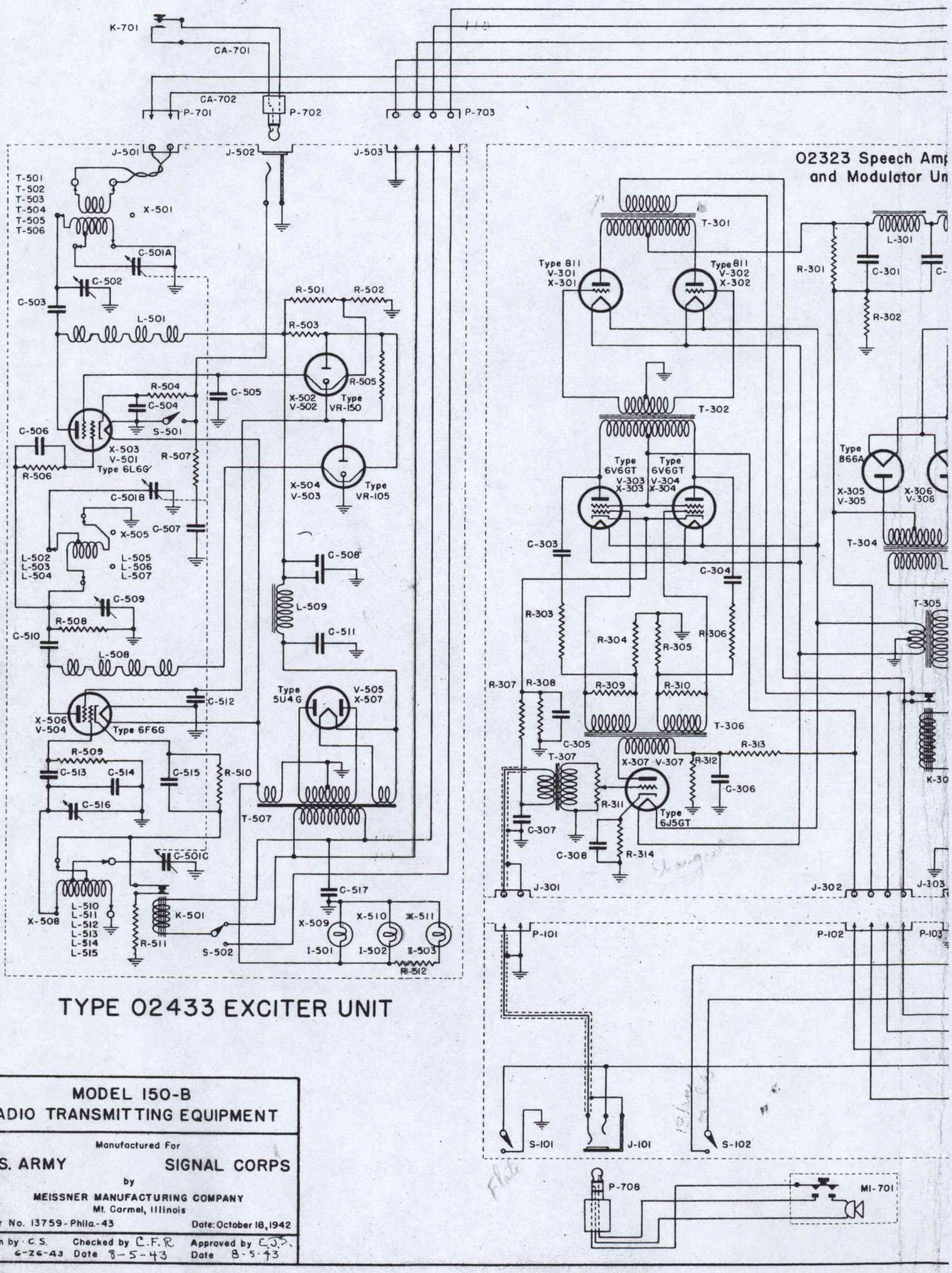
TABLE NO. 11 (Cont'd)

IDENTIFYING TABLE OF MANUFACTURER

Sheet 2 of 2 Sheets

CODE NUMBER	MANUFACTURER
21	Meissner Manufacturing Co., Mt. Carmel, Illinois
22	National Fabricated Products 2650 Belden Ave., Chicago, Illinois
23	Oak Manufacturing Co., 1260 Clybourn Ave., Chicago, Illinois
24	Ohio Carbon Company, 12508 Berea Road, Cleveland, Ohio
25	Potter & Brumfield Mfg. Co., Inc., Princeton, Indiana
26	Radio Condenser Company, Camden, New Jersey
27	RCA Victor Division Radio Corporation of America Harrison, New Jersey
28	Sangamo Electric Co., Springfield, Illinois
29	Shure Brothers, 225 W. Huron St., Chicago, Illinois
30	Standard Transformer Corp., 1500 North Halsted St., Chicago, Illinois
31	Tingstol Corp., 1461-63 W. Grand Ave., Chicago, Illinois
32	Triplett Electrical Instrument Co., Bluffton, Ohio
33	Tung-Sol Lamp Works, Inc., 95 Eighth Ave., Newark, New Jersey
34	Ucinite Company, Newtonville, Mass.
35	Utah Radio Products Co., 812-20 Orleans St., Chicago, Illinois

MODEL 150-B RAD



TYPE 02433 EXCITER UNIT

MODEL 150-B
RADIO TRANSMITTING EQUIPMENT

Manufactured For

U. S. ARMY SIGNAL CORPS

by

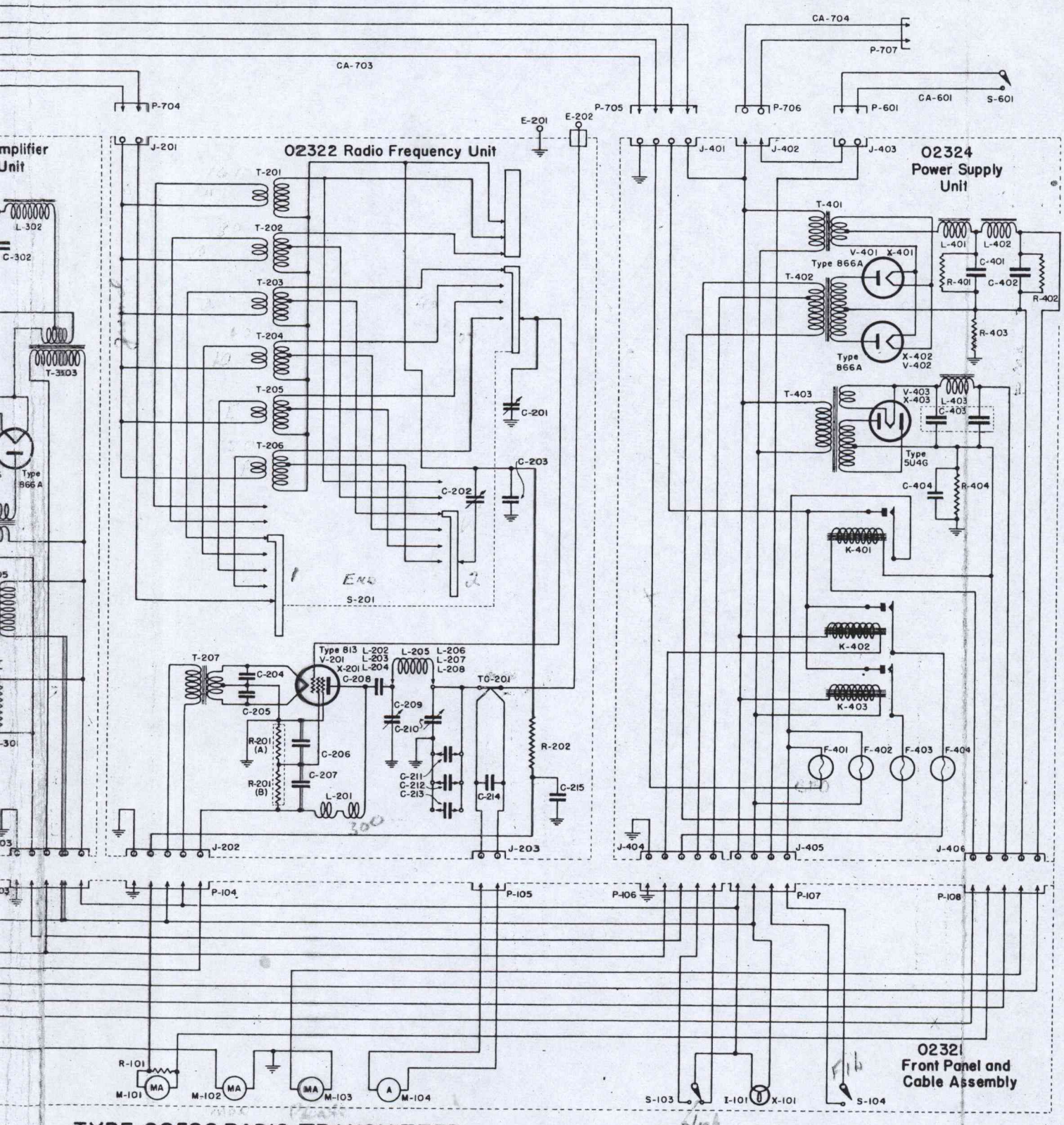
MEISSNER MANUFACTURING COMPANY
Mt. Carmel, Illinois

Order No. 13759-Phila.-43 Date: October 18, 1942

Drawn by	Checked by	Approved by
C. S.	C. F. R.	C. J. S.
Date 6-26-43	Date 8-5-43	Date 8-5-43

Schematic Circuit Diagram

ADIO TRANSMITTING EQUIPMENT



TYPE 02520 RADIO TRANSMITTER

TABLE NO. 12

TUNE-UP RECORD TABLE

TO BE FILLED IN BY THE OPERATING PERSONNEL

(SEE SAMPLE ON PAGE XX)

SET EXCITER UNIT DIAL ON:	USE EXCITER UNIT COIL SET	SET RANGE (MC.) SWITCH ON:	SET GRID DIAL ON:	USE NET WORK COIL NO:	USE PADDING CONDENSER NO'S:	SET PLATE DIAL ON:	SET ANTENNA DIAL ON:	DESCRIPTION OF ANTENNA USED:
7.1	D	7/8.8	17	208	212	14	20	Single wire
3.9	B	3.2/5.2	53	206	none	60	54