INSTRUCTION BOOK

FOR

RADIO TRANSMITTING EQUIPMENT MODEL TDQ

NAVSHIPS 900,474-IB

RESTRICTED

(For Official Use Only)

MANUFACTURED
BY

RCA VICTOR DIVISION, RADIO CORPORATION OF AMERICA

Camden, New Jersey, U. S. A.

FOR

U. S. NAVY DEPT. BUREAU OF SHIPS

Contract NXss-29644

Approved 13 November, 1944
IB-38239/38333

NAVY DEPARTMENT—BUREAU OF SHIPS

Washington 25, D. C.

13 November 1944
(Date of Approval)

1. NAVSHIPS 900,474-IB is a restricted non-registered instruction book covering the installation, operation, maintenance, parts and spare parts lists of TDQ Transmitting Equipment.

2. When superseded by a later edition, or when no longer required, this publication should be destroyed. No report of such destruction is required.

3. Spare Parts lists for the equipment are contained herein.

4. Copies of the instruction book or appropriate spare parts lists (for contract number see equipment nameplate) should be obtained from the nearest Radio Material Pool.

/s/ J. B. Dow
By direction

SECURITY NOTICE

NOTICE: This document contains information affecting the national defense of the United States within the meaning of the Espionage Act, 50 U.S.C. 31 and 32, as amended. Its transmission or the revelation of its contents in any manner to an unauthorized person is prohibited by law. (ARTS 75½ & 76, U.S.N. REGS-1920). The information contained in restricted documents and the essential characteristics of restricted material will not be communicated to the public or to the press, but may be given to any person known to be in the service of the United States and to persons of undoubted loyalty and discretion who are cooperating in Government work.

RECORD OF CORRECTIONS MADE

Change No.	Date	Signature of Officer Making the Correction

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CONTRACTUAL GUARANTEE

The equipment including all parts and spare parts, except vacuum tubes, batteries, rubber and material normally consumed in operation, is guaranteed for a period of one year from the date of delivery of the equipment to and acceptance by the Government with the understanding that all such items found to be defective as to material, workmanship or manufacture will be repaired or replaced, f.o.b. any point within the continental limits of the United States designated by the Government, without delay and at no expense to the Government; provided that such guarantee will not obligate the Contractor to make repair or replacement of any such defective items unless the defect appears within a reasonable time and the defect is not the result of normal expected shelf deterioration.

To the extent the equipment, including all parts and spare parts, as defined above, is of the Contractor's design or is of a design selected by the Contractor, it is also guaranteed, subject to the foregoing conditions, against defects in design with the understanding that if ten per cent (10%) or more of any such said item, but not less than two of any such item, of the total quantity comprising such item furnished under the contract, are found to be defective as to design, such item will be conclusively presumed to be of defective design and subject to one hundred per cent (100%) correction or replacement by a suitable redesigned item.

All such defective items will be subject to ultimate return to the Contractor. In view of the fact that normal activities of the Naval Service may result in the use of equipment in such remote portions of the world or under such conditions as to preclude the return of the defective items for repair or replacement without jeopardizing the integrity of Naval communications, the exigencies of the Service, therefore, may necessitate expeditious repair of such items in order to prevent extended interruption of communications. In such cases the return of the defective items for examination by the Contractor prior to repair or replacement will not be mandatory. The report of a responsible authority, including details of the conditions surrounding the failure, will be acceptable as a basis for affecting expeditious adjustment under the provisions of this contractual guarantee.

The above one-year period will not include any portion of time the equipment fails to perform satisfactorily due to any such defects, and any items repaired or replaced by the Contractor will be guaranteed anew under this provision.

VACUUM TUBE GUARANTEE

"RCA Manufacturing Company, Inc., warrants vacuum tubes furnished on this contract to be free from defects of design, material or workmanship. Any tube which fails due to such defects within the first 50 hours of operation will be replaced without delay and without cost to the Government; provided that the failure occurs within a period of TWO YEARS from the date of acceptance of the tubes and equipment and the tube is returned to the contractor within TWO AND ONE-HALF YEARS from the above-mentioned date of acceptance."

REPORT OF FAILURE

"Report of failure of any part of this equipment, during its service life, shall be made to the Bureau of Ships in accordance with current instructions. The report shall cover all details of the failure and give the date of installation of the equipment. For procedure in reporting failures see Chapter 67 of the 'Bureau of Ships Manual,' or superseding instructions."

INSTALLATION RECORD

Contract Number ..... NXss-29644 ..... Date of Contract ..... 17 May, 1943 .....

Serial Number of Equipment .....

Date of delivery to contract destination .....

Date placed in service .....

Date of acceptance by the Navy .....

Date of completion of installation .....

REQUISITIONS FOR REPLACEMENT MATERIAL

All requests or requisitions for replacement material should include complete descriptive data covering the part desired, in the following form:

1. Name of part desired.
2. Federal Stock number (if assigned).
3. Navy Type number (if assigned) (including prefix and suffix as applicable).
4. Commercial designation.
5. Model designation (including suffix) of equipment in which used.
6. Navy Type designation (including prefix and suffix where applicable) of major unit in which part is used.
7. Contract, purchase order, requisition, etc., which which the equipment was procured.
8. Circuit symbol designation of part.

CRYSTAL REPLACEMENTS

New crystals shall be ordered on Form NBS-370. Refer to Bureau of Ships Radio and Sound Bulletin No. 10, dated April 1, 1943—Article: New Procedure for Ordering Piezo-Electric Crystals.

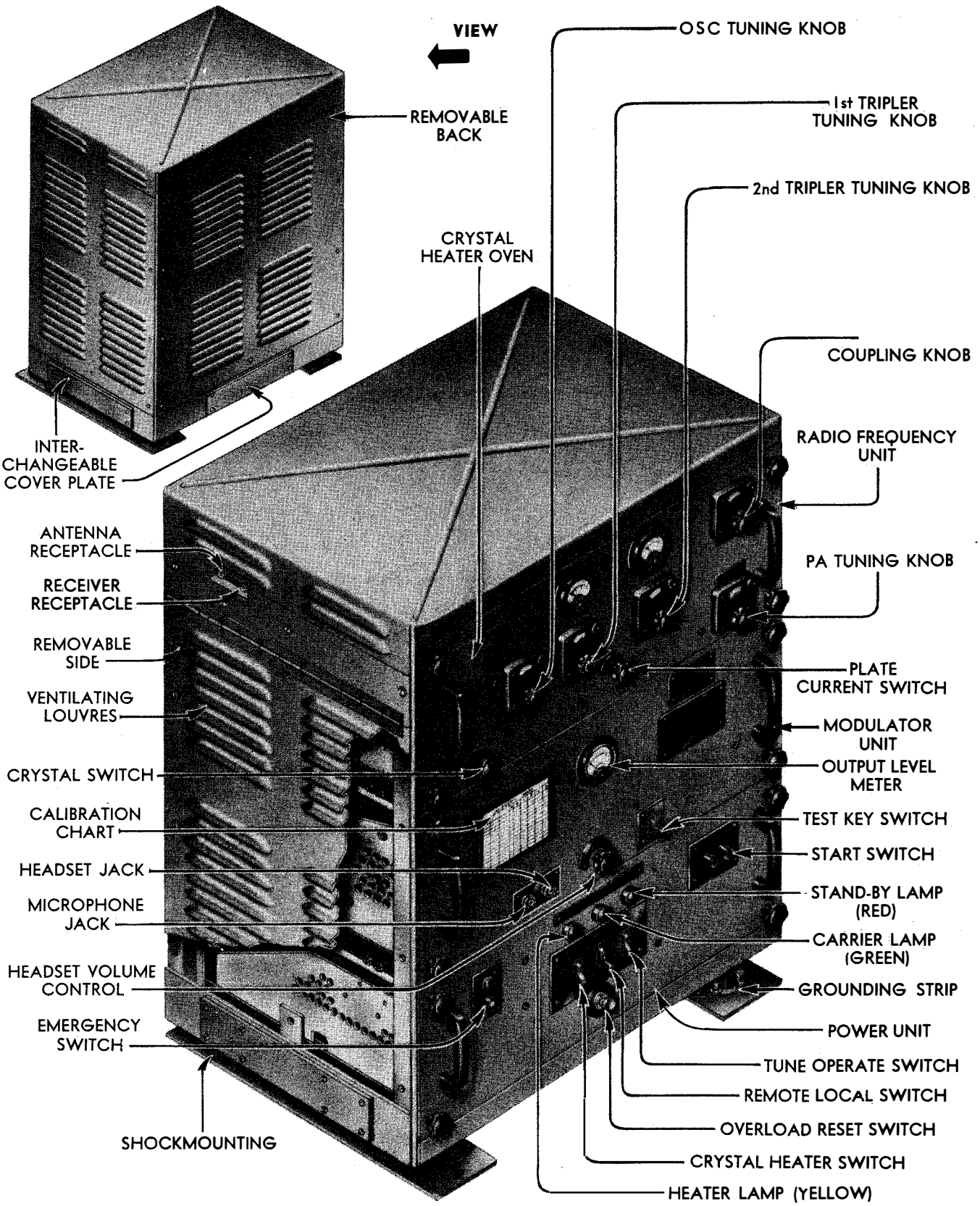
SAFETY NOTICE

"THIS EQUIPMENT EMPLOYS VOLTAGES WHICH ARE DANGEROUS AND MAY BE FATAL IF CONTACTED BY OPERATING PERSONNEL. EXTREME CAUTION SHOULD BE EXERCISED WHEN WORKING WITH THE EQUIPMENT.

"AN APPROVED POSTER ILLUSTRATING THE RULES FOR RESUSCITATION BY THE PRONE PRESSURE METHOD SHALL BE PROMINENTLY DISPLAYED IN EACH RADIO, RADAR OR SONAR ENCLOSURE. POSTERS MAY BE OBTAINED UPON REQUEST TO THE BUREAU OF MEDICINE AND SURGERY."

SECTION I

DESCRIPTION



ASSEMBLY VIEW

Figure 1—TDQ Radio Transmitter

I

GENERAL DESCRIPTION

The Navy Model TDQ Radio Transmitting Equipment provides voice transmission (A3) and MCW (tone) telegraph transmission (A2) at any frequency from 115 to 156 megacycles. It is designed for shipboard installation and consists of the radio transmitter, the antenna and sufficient R-F (coaxial) cable (not supplied by Contractor) to interconnect them. A 10-foot length of Navy Type RG8/U coaxial cable is supplied and is used in installations requiring a transmission line longer than 100 feet. (Refer to Figure 56 on Page 31.) The equipment can be controlled locally (at the transmitter) or remotely by the standard 4 wire or 6 wire remote control system.

The antenna supplied with the TDQ transmitter is a fixed, vertically polarized, half-wave dipole. It is connected to the transmitter by means of a coaxial transmission line.

The transmitter will operate from either a 115 volt or a 230 volt 50/60 cycle supply line. With a 440 volt, 50/60 cycle power source, a stepdown line transformer is used to reduce the voltage to 115 volts. It can also be operated from a 115 volt or a 230 volt D-C power source by using the proper motor generator and its respective magnetic controller.

The radio transmitter has a power output of 45 watts of carrier energy. The modulator unit is capable of voice modulating this carrier up to 100 per cent with good quality. During MCW telegraph emission, the carrier is modulated 85 per cent with a 1000 cycle tone. Keying speeds up to 40 words per minute are possible.

The transmitter consists of three units which will be called Radio Frequency, Modulator, and Power units. As shown in Figure 1, these units are housed in a metal cabinet. Louvres in the back and each end of the cabinet provide the necessary ventilation. The units are supported on metal tracks, and may be withdrawn separately from the cabinet. Receptacles mounted on the rear of each unit engage the plugs located on the rear inside wall of the cabinet when the units are mounted in place to provide the electrical interconnections between the various units.

A nameplate (not shown in illustrations) is installed below the START SWITCH and bears the following text: WARNING. DO NOT OPERATE TRANSMITTER UNLESS ANTENNA IS CONNECTED TO TRANSMITTER. SEE INSTRUCTION BOOK—SECTION 3.

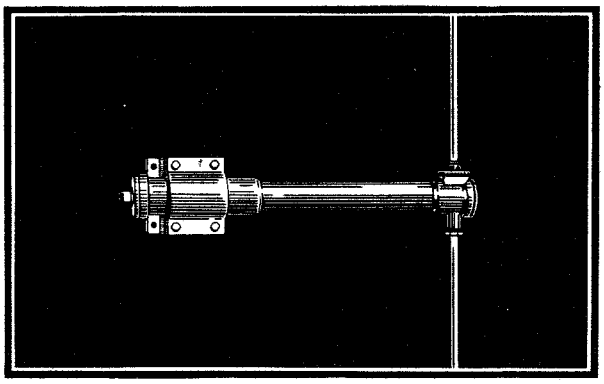


Figure 2

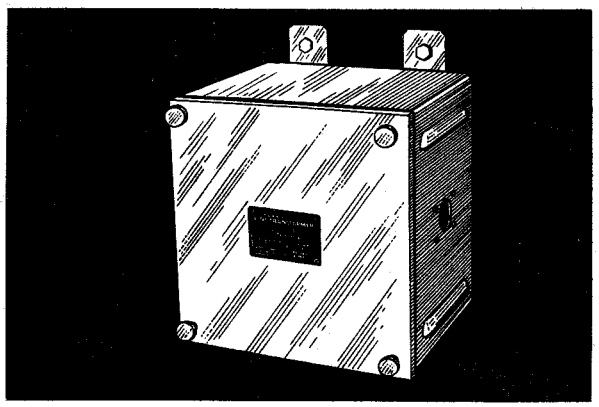


Figure 3

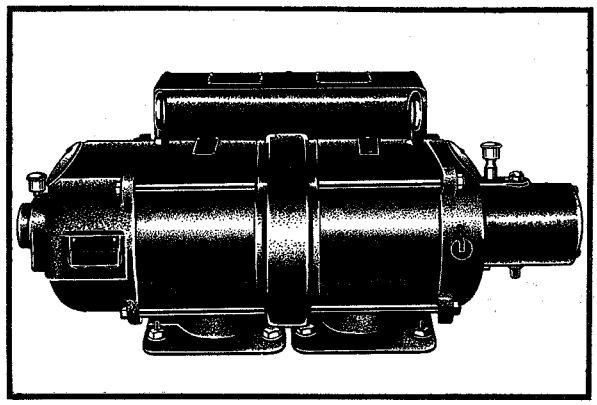


Figure 4

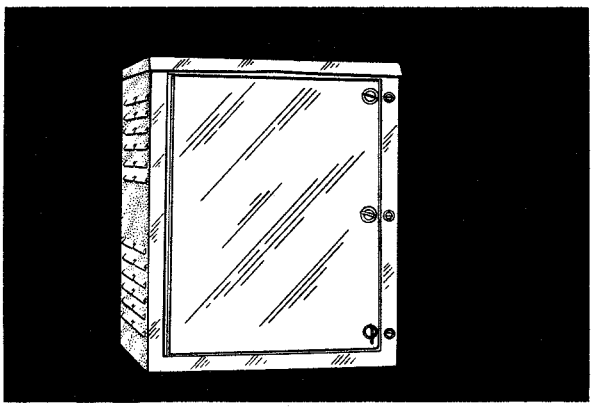


Figure 5

RADIOPHONE UNITS

The Navy Types –23172 or –23211 series (or similar) Radiophone (remote control) Units may be used with the Model TDQ Radio Transmitting Equipment. The Type –23172 Units are known as four wire control units, since starting and keying of the transmitter is effected through four interconnecting wires. The Type –23211 Units are known as six wire control units, since six wires are required for the starting and keying interconnections. However, more interconnecting wires are used to provide phone, indicator lamp, and power circuits between the transmitter and the Radiophone Unit. Also, some connections to the radio receiver are made from the Radiophone Unit. Operation of Radiophone Units is possible from distances up to 1000 feet from the transmitter.

Handsets are provided at the unit, as well as plugs for connection of remote headsets. Connections are available at the rear for connection of a telegraph key.

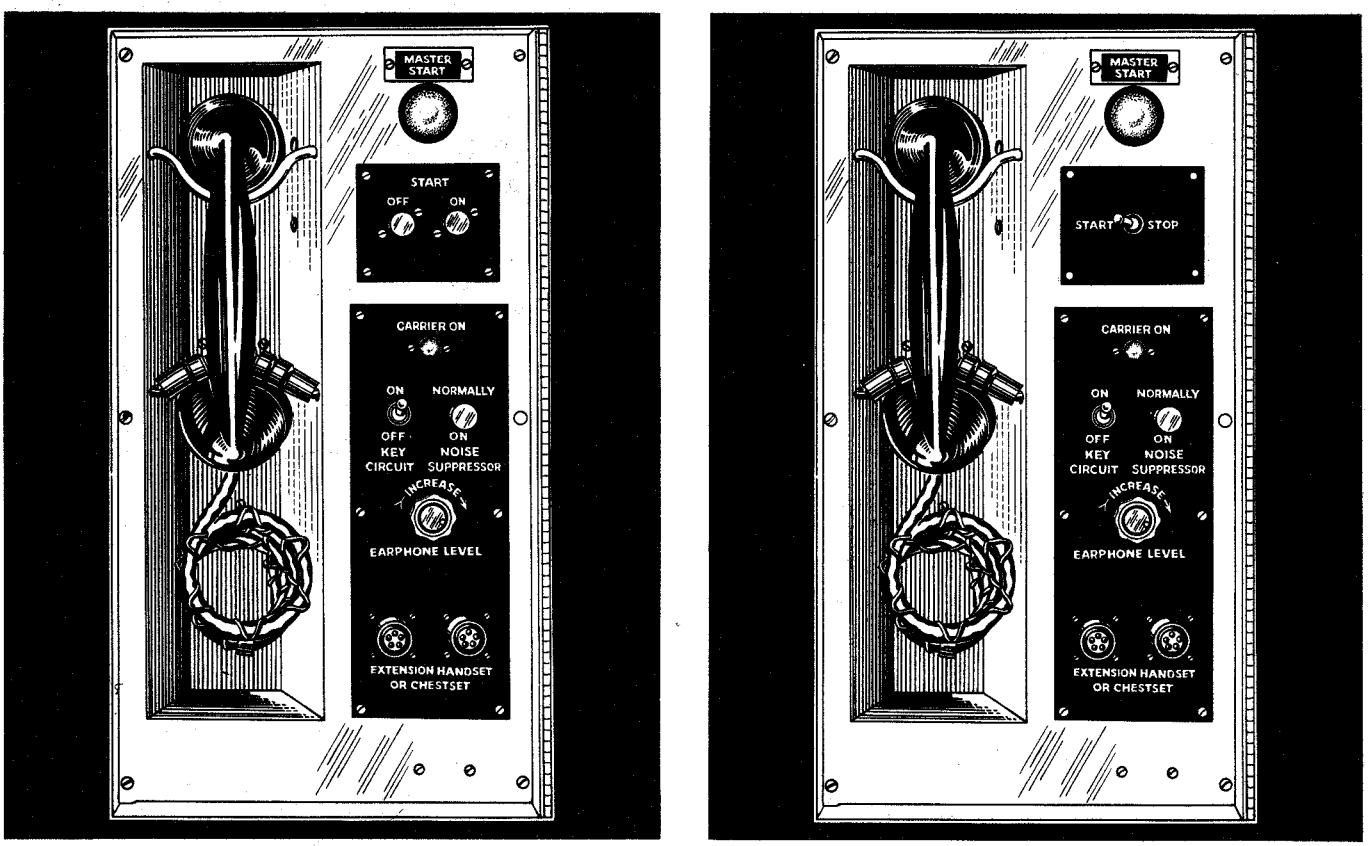


Figure 6

TDQ EQUIPMENT

Major Units—Dimensions and Weight

NAME	Navy Type Number	DIMENSIONS (Inches)						Weight (Pounds)	
		UNCRATED			CRATED				
		Height	Width	Depth	Length	Width	Depth	Uncrated	Crated
RADIO TRANSMITTER	CRV-52328	32¼	25¼	18⅜	43	33	28	283	450
ANTENNA ASSEMBLY	CLS-66095	24¼	46½	4¾	51	28	7	17	71
LINE TRANSFORMER	CRV-30984	13¾	11	9	18½	14½	12½	57	70
MOTOR GENERATOR (230-Volt DC)	CG-211093	11¾	27⅜	13⅜	34	18¾	16½	210	280
MOTOR STARTER (230-Volt DC) (Magnetic Controller)	CG-211091	21	17⅜	13	23	21½	25¾	16	37
MOTOR GENERATOR (115-Volt DC)	CG-211092	11¾	27⅜	13⅜	34	18¾	16½	210	280
MOTOR STARTER (115-Volt DC) (Magnetic Controller)	CG-211090	21	17⅜	13	23	21½	25¾	16	37
MICROPHONE	NAF-213264-6	2 7/16	2⅛	1 5/16				½	2

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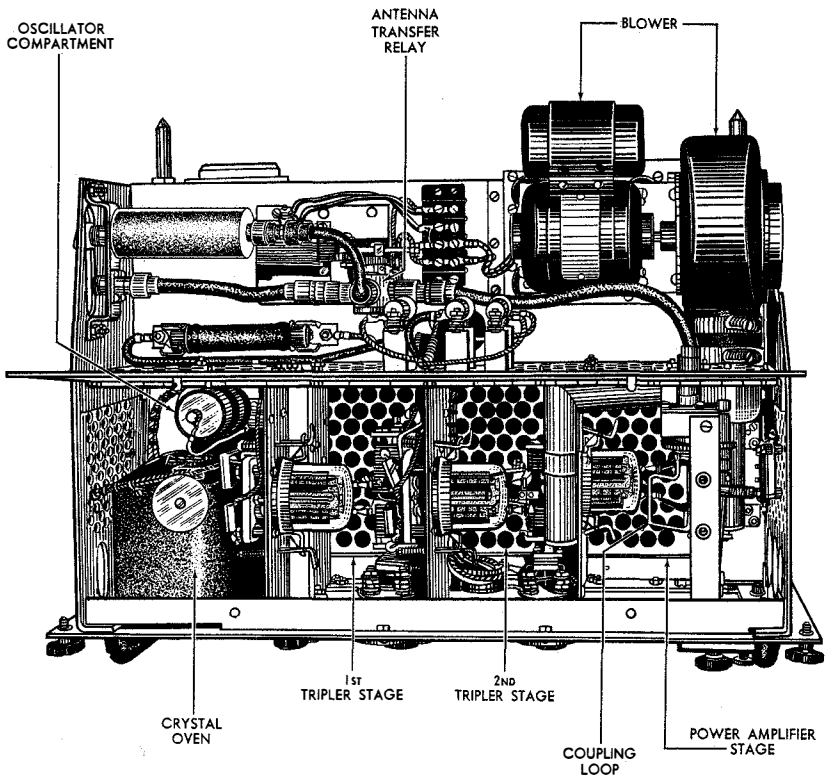


Figure 7—R-F Unit Chassis

R-F UNIT

R-F UNIT TUBE COMPLEMENT

Function	Type	Symbol
OSCILLATOR	807	V101
1ST TRIPLER	829/829B	V102
2ND TRIPLER	829/829B	V103
POWER AMPLIFIER	829/829B	V104

The R-F unit consists of an oscillator, two tripler stages, and a power amplifier stage.

The electron coupled, crystal controlled oscillator operates at 1/9 of the output frequency of the R-F unit. Any one of four crystals, covering a frequency range from 12.8 megacycles to 17.3 megacycles can be switched into the oscillator circuit. The crystals are installed in a crystal heater oven which is thermostatically controlled at a constant temperature of 70° C. The oscillator tube (V101) is a Type —807 beam power tetrode.

The first tripler employs a push-pull R-F beam power amplifier tube (V102) Type —829. Excitation for this tube is obtained from the crystal oscillator. The plate tuning circuit of this stage has a range from 38 megacycles to 52 megacycles. This band of frequencies is 1/3 that of the output frequency of the R-F unit.

The second tripler stage also employs a push-pull R-F beam power amplifier tube (V103) Type 829. Excitation for this tube is obtained from the output tube of the first tripler, V102. The plate tuning circuit of the 2nd tripler has a frequency range from 115 megacycles to 156 megacycles. This band of frequencies is the same as the output range of the transmitter. A push-pull R-F beam power amplifier tube (V104) Type —829, is used in the power-amplifier, the final stage. This stage is excited by the output of the second tripler. The plate tuning circuit of this stage also has a tuning range from 115 megacycles to 156 megacycles. The output of this stage is coupled to the transmission line through a coupling loop. The coupling may be varied as required for different operating frequencies. An antenna transfer relay in the antenna circuit automatically connects the antenna transmission line to the receiver when transmission is not taking place.

A blower which provides air circulation for the two final R-F amplifier tubes is mounted on the right rear section of the Radio Frequency unit.

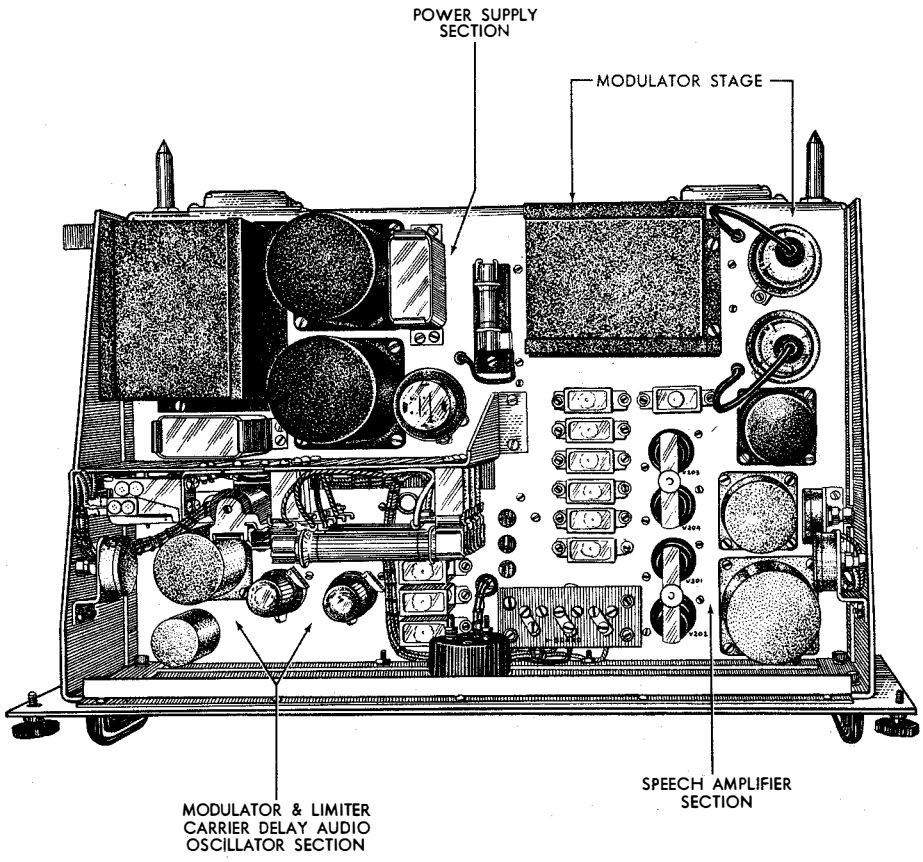


Figure 8—Modulator Unit Chassis

MODULATOR UNIT

MODULATOR UNIT TUBE COMPLEMENT

Function	Type	Symbol
1ST AUDIO AMPLIFIER	6SK7	V201, V202
2ND AUDIO AMPLIFIER	6J5	V203, V204
MODULATOR	807	V205, V206
MODULATION LIMITER	6X5-GT	V207
AUDIO OSCILLATOR AND CARRIER CONTROL	6SN7-GT	V208
RECTIFIER	5R4-GY	V209

The modulator unit contains the speech amplifier and modulator stages, a modulation limiter (audio gain control) stage, an audio oscillator stage, a carrier delay stage and a 275-volt D-C power supply.

The speech amplifier has two audio stages. The first stage has two Type 6SK7 pentode tubes (V201, V202) in a push-pull circuit. The second stage has two Type 6J5 triode tubes (V203, V204) in a push-pull circuit. The two audio stages are coupled into a class B modulator stage which uses two Type 807 beam power tetrode (V205, V206) tubes.

The modulation limiter circuit utilizes the Type 6X5GT duo-diode tube (V207). This circuit automatically limits the output voltage of the audio amplifier to prevent overmodulation of the carrier wave. It operates in a manner similar to radio-frequency automatic volume control circuits.

The audio oscillator which uses one section of the Type 6SN7GT twin triode tube (V208) produces a 1000 cycle tone for MCW (tone) telegraph transmission. Its output (the keying signal) is fed into the speech amplifier.

The carrier delay circuit utilizes the remaining section of the Type 6SN7GT twin triode tube (V208). During tone transmission, this circuit prevents shut-down of the carrier for one second after each keying impulse. Thus, at any time the transmitter is not keyed for a time interval of more than one second, the transmitter automatically switches to standby operation.

The 275-volt power supply provides the intermediate voltage required for the audio and R-F stages (i.e., audio tube plate voltage, modulator and R-F tube screen grid voltages) and provides relay energizing current for one of the control circuit relays. It uses the Type 5R4GY full wave, vacuum type rectifier tube (V209).

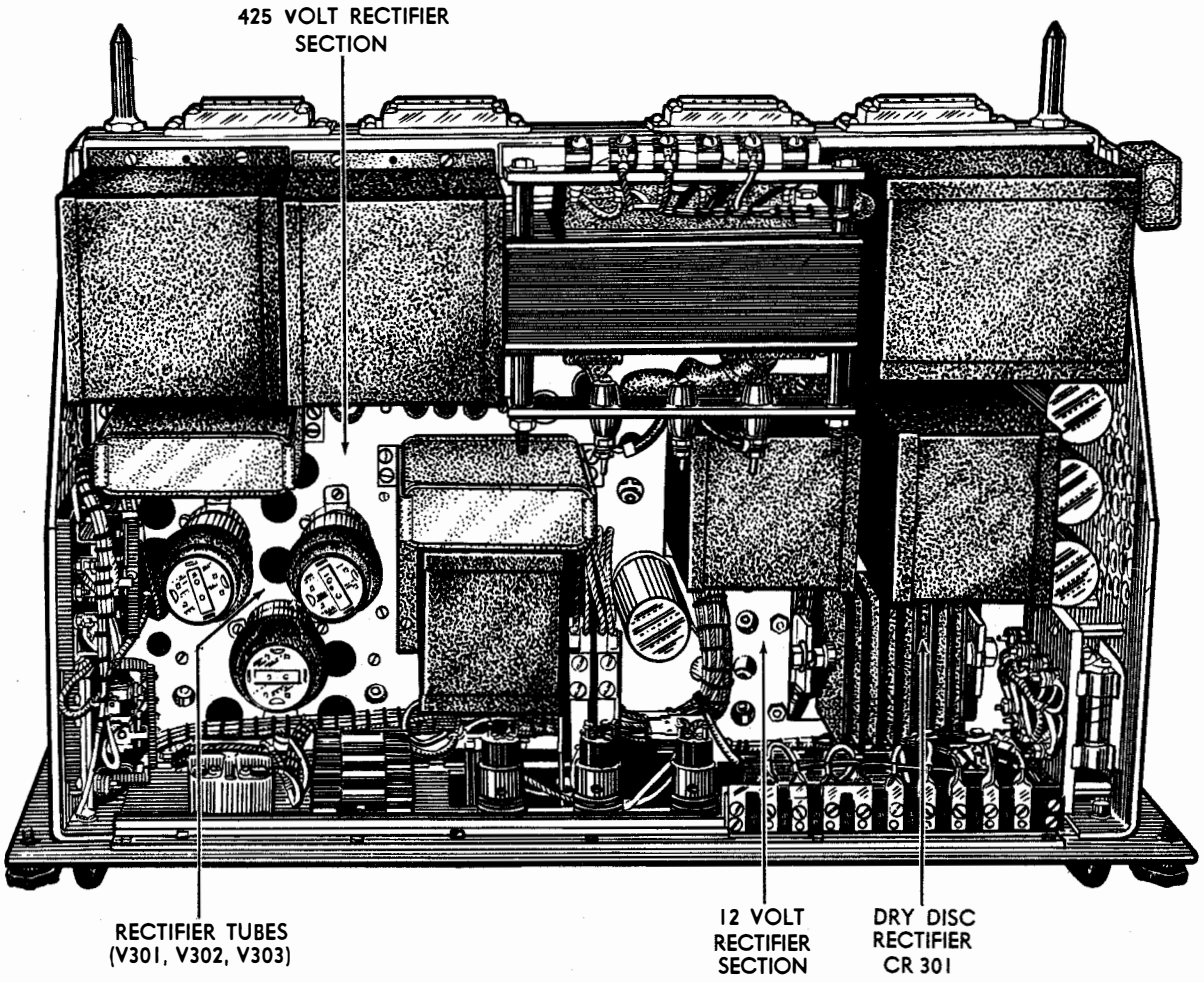


Figure 9—Power Unit Chassis

POWER UNIT

POWER UNIT TUBE COMPLEMENT

Function	Type	Symbols
RECTIFIER	5R4-GY	V301, V302, V303

The power unit contains a 425-volt rectifier section, and a 12-volt rectifier section.

The 425-volt rectifier section supplies D-C plate voltage to the modulator and all the R-F tubes, as well as screen voltage to the power amplifier (R-F) tube. It utilizes three Type 5R4GY high vacuum rectifier tubes (V301, V302, V303) in a full wave rectifying circuit.

Good voltage regulation and low voltage ripple (i.e., hum level) in the D-C output voltage is provided by a two-stage choke-input filter. The rectifier high voltage circuit is protected with a one ampere fuse to prevent damage due to an accidental overload.

The rectifier filament transformer (T301) has additional windings to provide filament voltage for the remaining tubes in the transmitter.

The high voltage rectifier is disconnected automatically to provide "standby" operation when transmission is not taking place. The green pilot light on the power unit panel goes out when this rectifier ceases operation.

The 12-volt rectifier uses a dry-disc rectifier unit (CR301) and the rectified output is filtered by a 2-section, low-resistance, choke coil and high-capacitance electrolytic filter capacitors. The rectifier output voltage is used for operating the microphone and the carrier control relay (K302).

Terminal board connections permit connection of external apparatus operating on 12 volts D-C.

AUXILIARY EQUIPMENT

The motor-generators for 115 volts D-C and for 230 volts D-C are identical, except for the D-C motor windings which are only sufficiently different to accommodate the difference in D-C input voltage. Both the 115-volt and the 230-volt motors are of 1 horsepower rating. Running at a speed of 3600 RPM, the alternator (A-C generator) provides 115 volts at 60 cycles, single phase. A self-contained speed regulator stabilizes the operation of the unit. The maximum power rating is 644 volt-amperes at a power-factor of 1.0.

Each motor-generator unit is controlled by a magnetic controller (motor starter), which is of the remote controlled, magnetic contactor type.

When a 440 volt A-C ship's line is used as the source of power for the equipment, a four-to-one stepdown line transformer is used to obtain 115 volts for the transmitter. Secondary taps permit compensation for small deviations of voltage.

The vertically polarized dipole antenna is constructed of brass tubing. A clamp is provided to secure the dipole support mast in a horizontal position. The unit occupies a space approximately two feet square. The coaxial line connector is mounted at the end of the dipole support. The coaxial transmission line between the transmitter and the antenna should be kept as short as possible. No adjustments to this antenna are required.

POWER INPUT REQUIREMENTS

Power input data for the Model TDQ Transmitting Equipment is given in the tabulation which follows:

Nominal Supply	115V. D.C.	230V. D.C.	115V. A.C.	230V. A.C.	440V. A.C.
Starting—Line Amperes	50	25	2.6	1.23	.75
Starting Kilowatts	5.8	5.6	.27	.24	.3
Starting KVA			.30	.28	.33
Starting % Power Factor			.9	.85	.9
Standby—Line Amperes	8.7	4.4	2.6	1.23	.75
Standby Kilowatts	1.0	1.0	.27	.24	.3
Standby KVA			.30	.28	.33
Standby % Power Factor			.9	.85	.9
85% Modulation—Line Amperes	13	6.5	6.8	3.5	1.8
85% Modulation Kilowatts	1.5	1.5	.7	.68	.71
85% Modulation KVA			.78	.8	.8
85% Modulation % Power Factor			.9	.85	.9

Crystal Frequency Stability _____ better than .01 per cent

Audio Frequency characteristics are shown in the following chart, Figure 10:

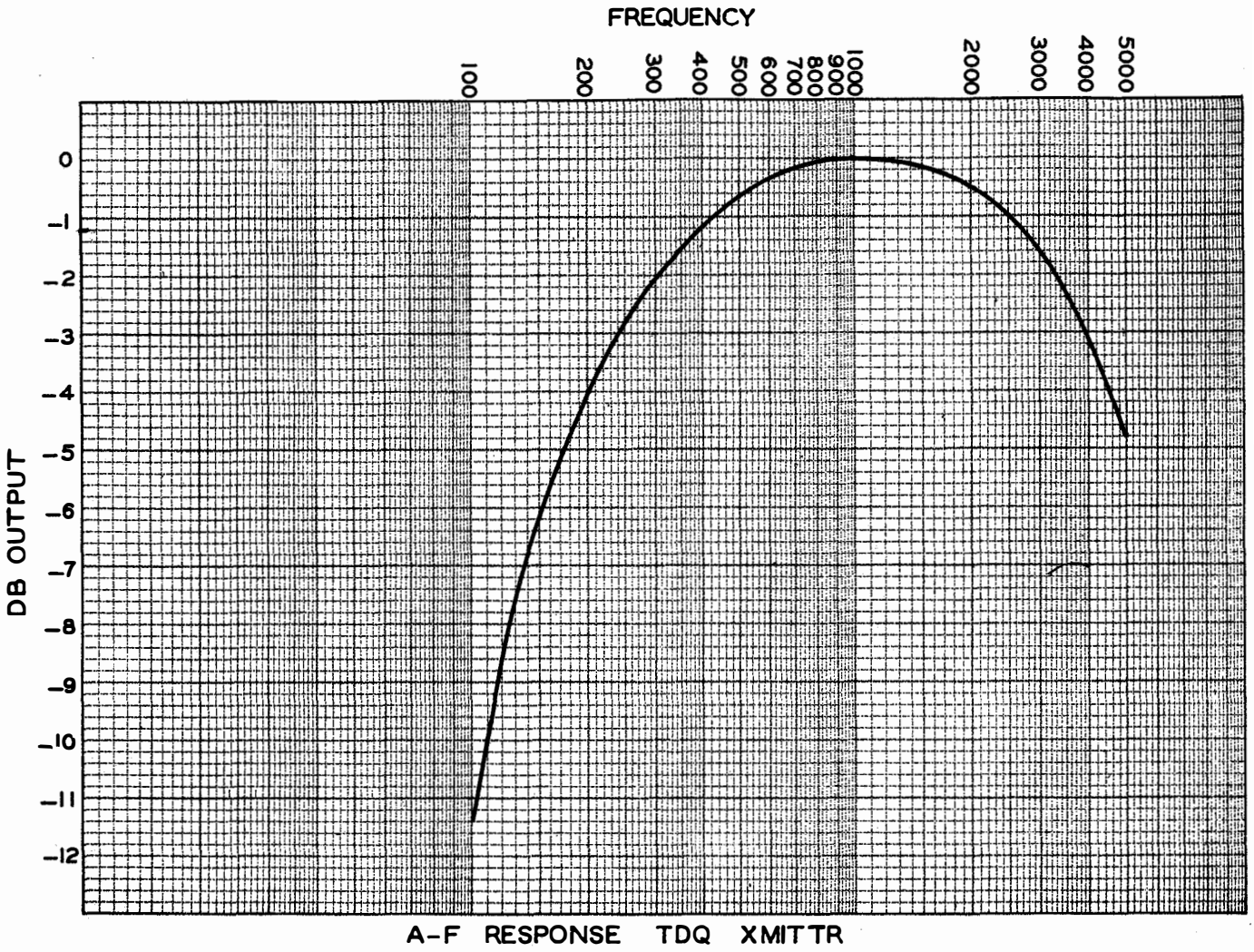


Figure 10—Audio Frequency Characteristics

INPUT CONDITIONS:

A sine wave A-F voltage of approximately 0.53 volt at 1,000 c.p.s. (producing 70% modulation) connected to the 600-ohm line input terminals 9 and 10 on terminal board "A."

OUTER CONDITIONS:

(1) Transmitter fully loaded into appropriate 50-ohm, water-cooled dummy load equivalent to RCA TX-2268.

(2) A-F voltage from R-F rectifier located in dummy load fed to standard distortion and noise level measuring equipment LOW AUDIO and GND input terminals.

NOTES AND SKETCHES

NOTES AND SKETCHES

SECTION II

INSTALLATION

II

INSTALLATION

The equipment is shipped in wooden crates. Handle the equipment carefully; do not use hooks or crowbars on the crates.

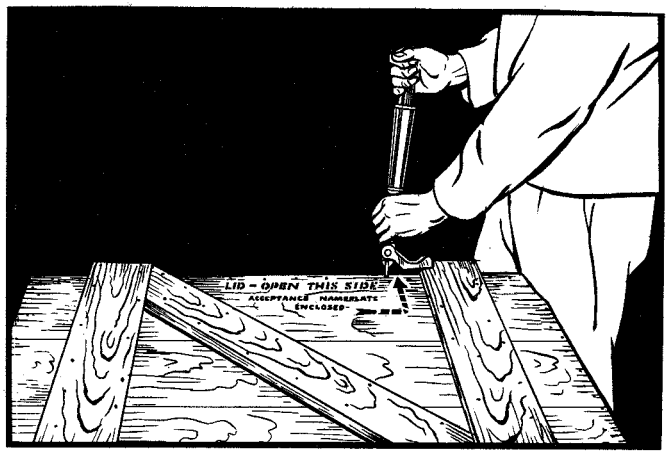


Figure 11

UNCRATING

Step 1 (Figure 11)

Exercise extreme care in unpacking the transmitter. Use a NAIL PULLER to remove the nails from the lid of the packing box. Avoid the use of tools which may damage the equipment.

Figure 12

Step 2 (Figure 12)

After removing the lid, take out the paper nesting between the wooden packing box and the cardboard box containing the transmitter.

NOTE

A copy of the instruction book will be found under the nesting on top of the cardboard box.

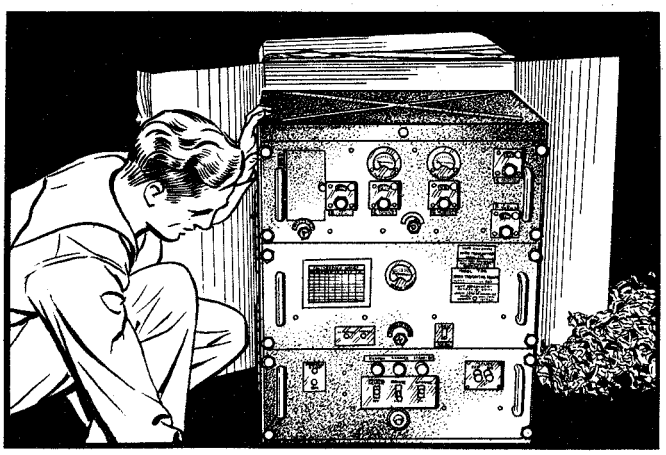


Figure 13

Step 3 (Figure 13)

Turn the crate over and slide the cardboard box out on to the deck keeping the TOP of the box up. Open the cardboard box, remove the package containing the crystals, then remove the transmitter.

INSPECTION

Step 4 (Figure 14)

Inspect the transmitter for damaged meters, lost knobs, broken switches, and any apparent external defects.

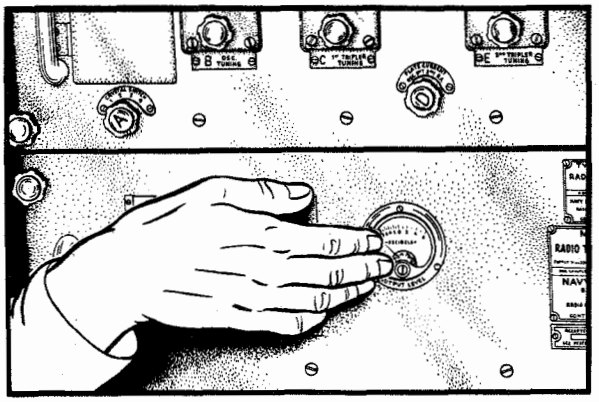


Figure 14

MOUNTING THE TRANSMITTER

Step 5 (Figure 15)

Carefully remove the skid cleats from the bottom of the transmitter. Bolt the transmitter firmly to the mounting surface with four ½-inch bolts. See Figure 84 for mounting dimensions.

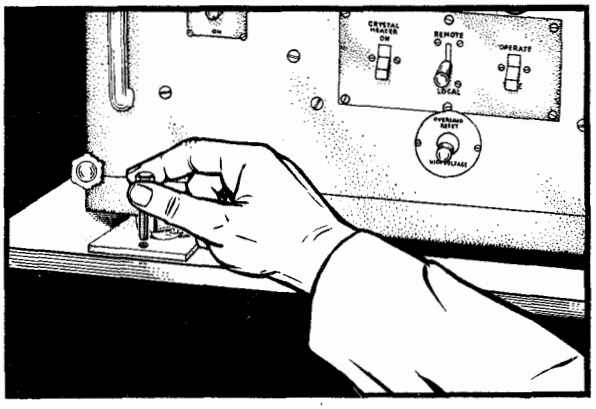


Figure 15

MOTOR GENERATOR AND MAGNETIC CONTROLLER INSTALLATION

Step 6 (Figure 16)

If the power source is 115 or 230-volt D-C, a MOTOR-GENERATOR set is required to convert the power to 115-volt, 60-cycle, A-C to operate the transmitter. The MOTOR-GENERATOR set should be installed some distance from the transmitter, in another compartment if possible. Bolt down the MOTOR-GENERATOR securely with its axis running FORE-and-AFT. See Figure 85 for mounting dimensions.

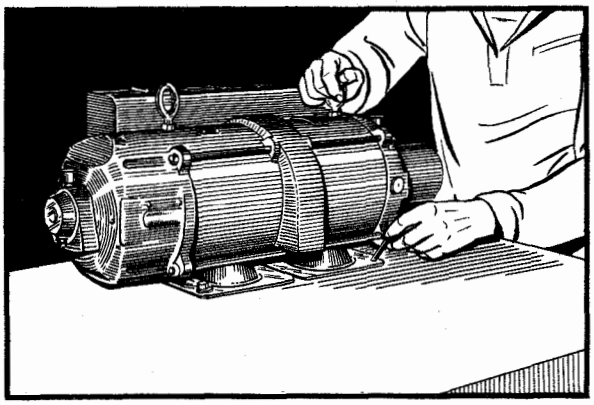


Figure 16

Step 7 (Figure 17)

The MAGNETIC CONTROLLER should be installed as closely as possible to the motor-generator set. Mount it on a bulkhead close to its associated motor-generator.

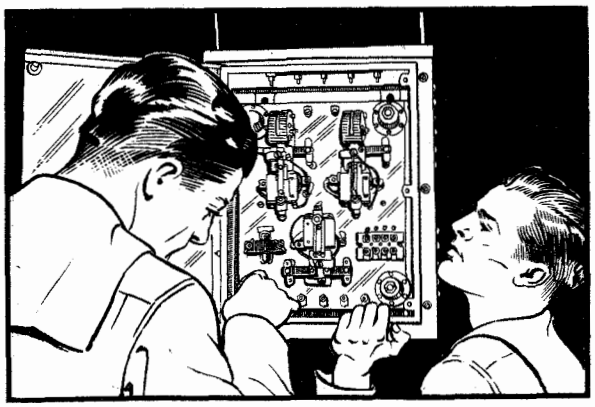


Figure 17

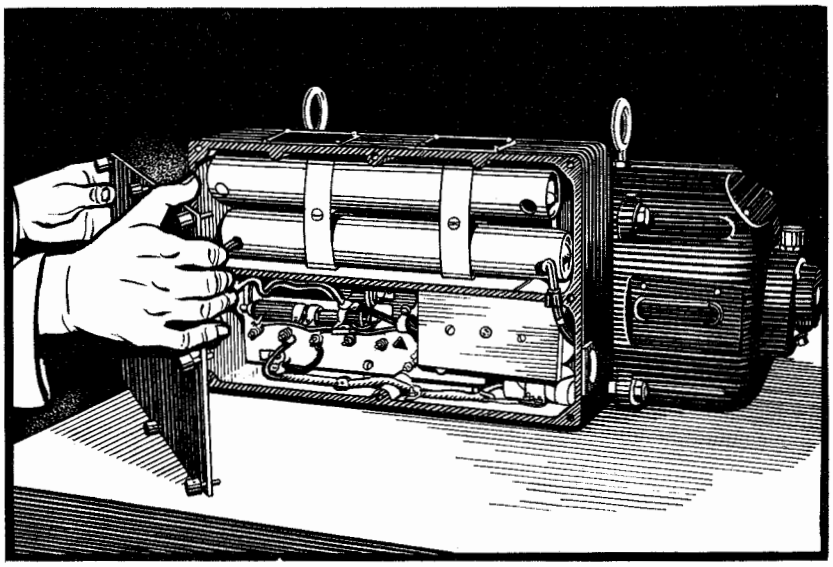


Figure 18

Step 8 (Figure 18)

Remove the JUNCTION BOX cover of the motor-generator to make the necessary electrical connections between the MOTOR-GENERATOR and the MAGNETIC CONTROLLER.

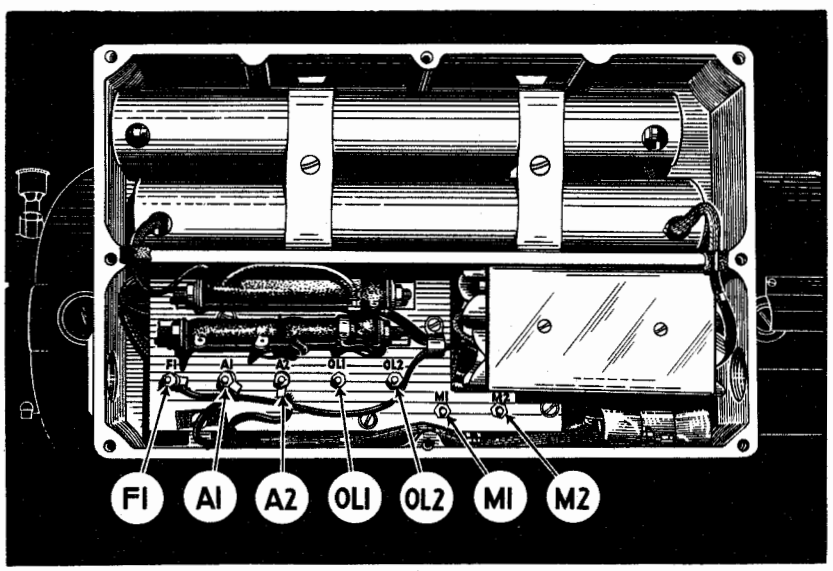


Figure 19

Step 9 (Figure 19)

Connect the terminals (F1, A1, A2, OL1, OL2, M1, M2) in the motor-generator junction box . . .

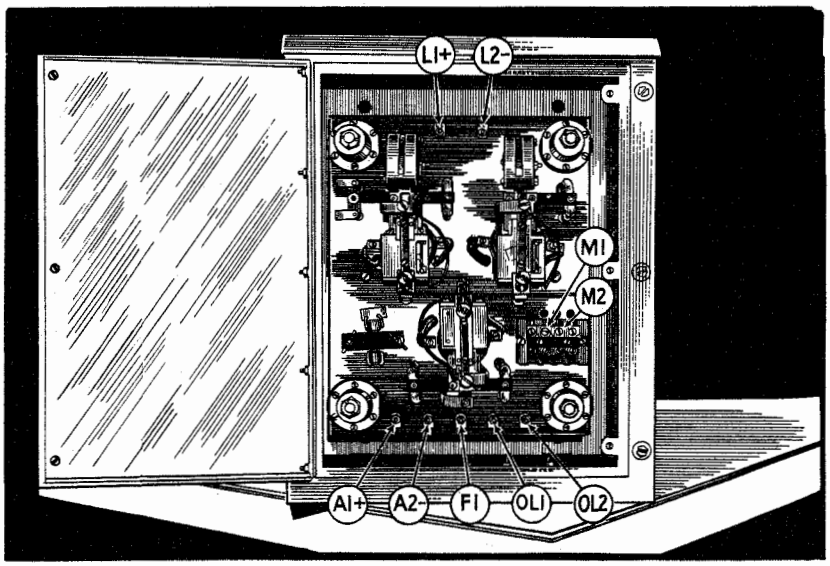


Figure 20

Step 10 (Figure 20)

. . . to the terminals (F1, A1+, A2—, OL1, OL2, M1, M2) in the magnetic controller. Connect F1 in the motor-generator junction box to F1 in the magnetic controller and A1 in the motor-generator junction box to A1+ in the magnetic controller, etc. After these connections have been made, replace the motor-generator JUNCTION BOX cover.

NOTE

Terminal tubes may be installed in either the top or the bottom cover plates of the magnetic controller.

Step 11 (Figure 21)

If there is a Main power supply switch, make certain that it is open; then connect the terminals on the load side of that switch to terminals L1+ and L2— on the magnetic controller. If no external power supply switch has been provided, do not connect the transmitter to the line at this time.

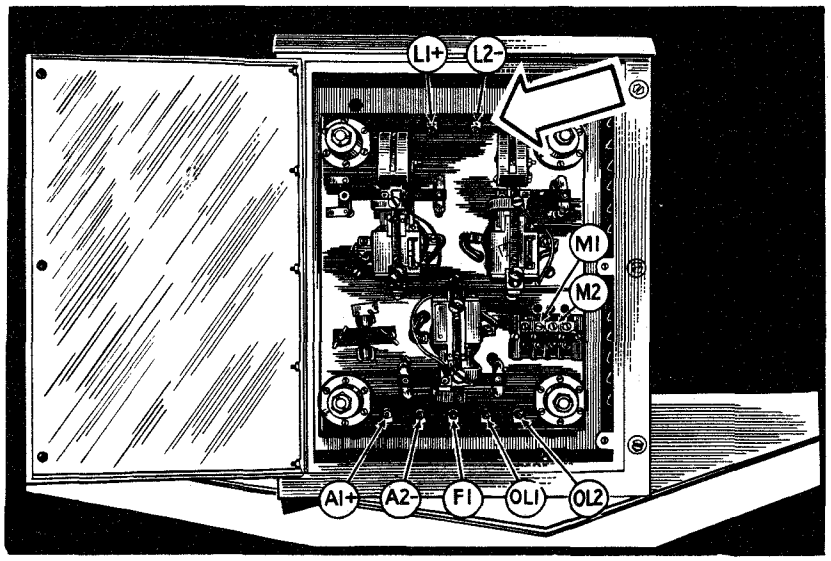


Figure 21

INSTALLING THE LINE TRANSFORMER

Step 12 (Figure 22)

Since the transmitter operates on 115-volt, 60-cycle A-C, it requires a LINE TRANSFORMER when its power source is 440-volt, 60-cycle A-C. The TRANSFORMER should be bolted to a bulkhead (see Figure 85 for mounting dimensions) and connections made as follows:

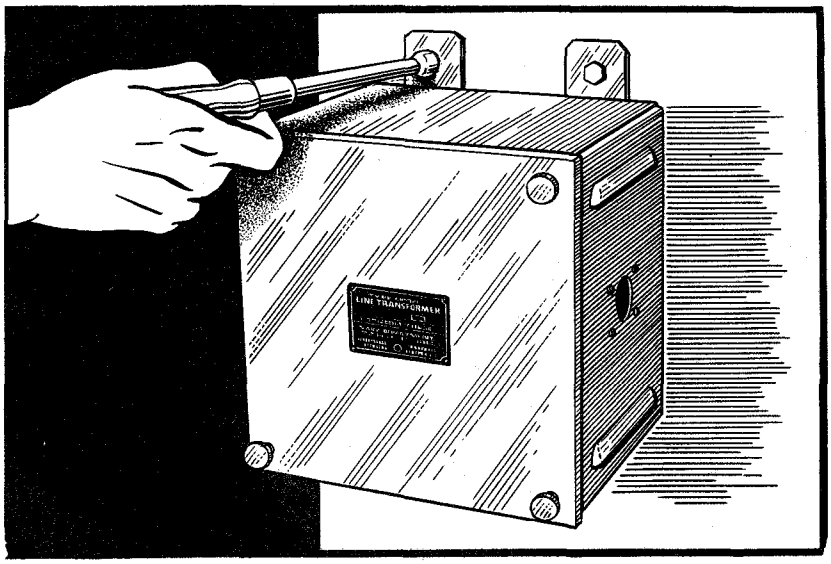


Figure 22

Step 13 (Figure 23)

Connect a jumper between terminals 2 and 3 of the LINE TRANSFORMER. Leads from terminals 5 and 7 connect to the transmitter, as described in Step 41.

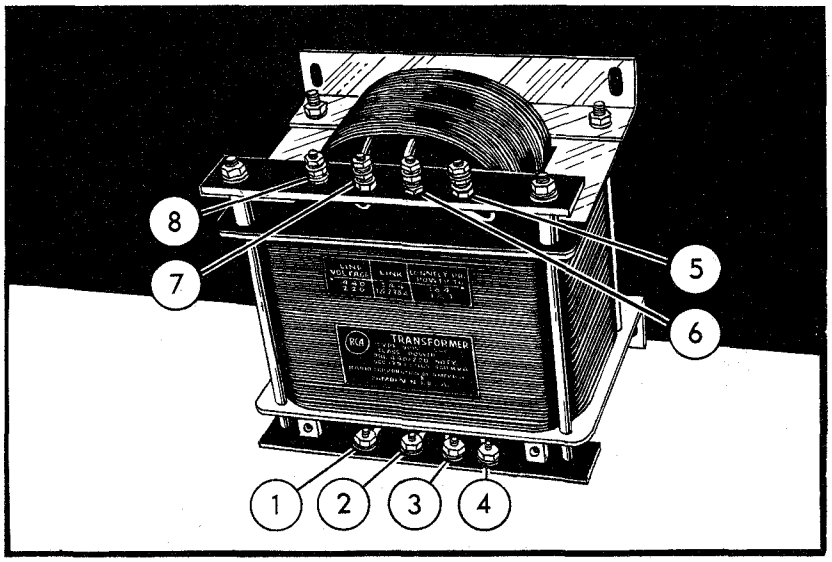


Figure 23

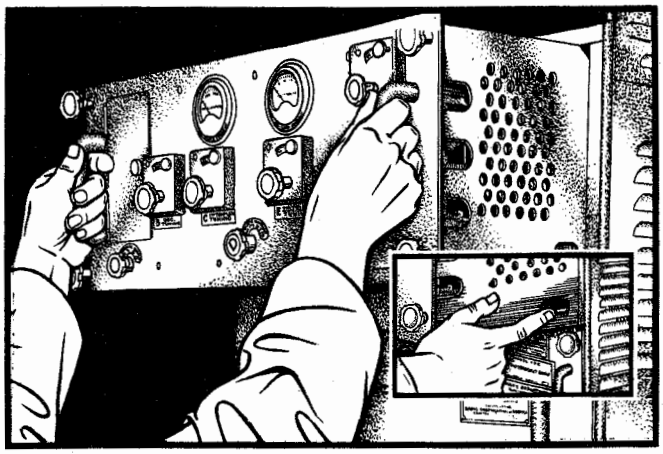


Figure 24

PREPARATION OF THE TRANSMITTER

Before making connections from the power supply to the TRANSMITTER, make sure that the tubes and crystals are correctly installed and that all internal TRANSMITTER connections are completed by performing the following steps:

Step 14 (Figure 24)

Unscrew the retaining knobs at the corners of the TRANSMITTER cabinet, and remove the R-F unit to permit the installation of the oscillator, tripler and power amplifier tubes. Release the stop on each side, as shown in the insert.

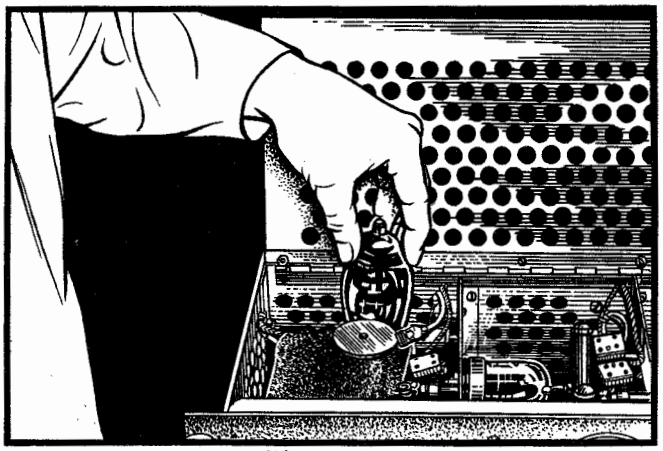


Figure 25

Step 15 (Figure 25)

Loosen the Dzus fasteners, and lift the cover from the top of the unit. Install the oscillator tube (V101), type 807, in its socket.

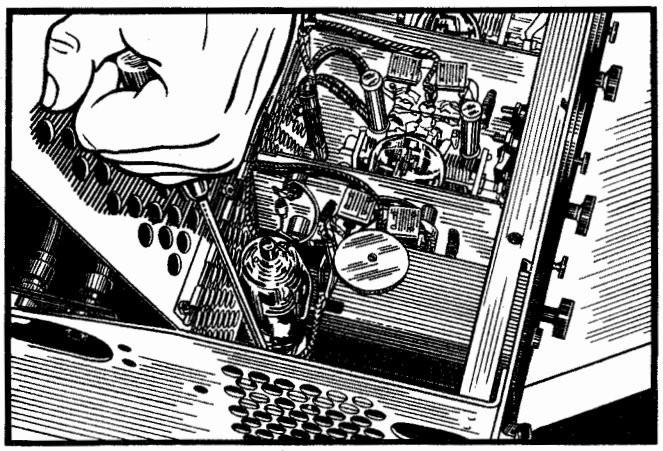


Figure 26

Step 16 (Figure 26)

Secure the tube in position by fastening the snap catch on the tube socket with a screwdriver.

Step 17 (Figure 27)

To install the tripler tubes (V102 and V103), type 829B, in the first and second tripler stages in the R-F unit, place hold down rings on the tubes, and . . .

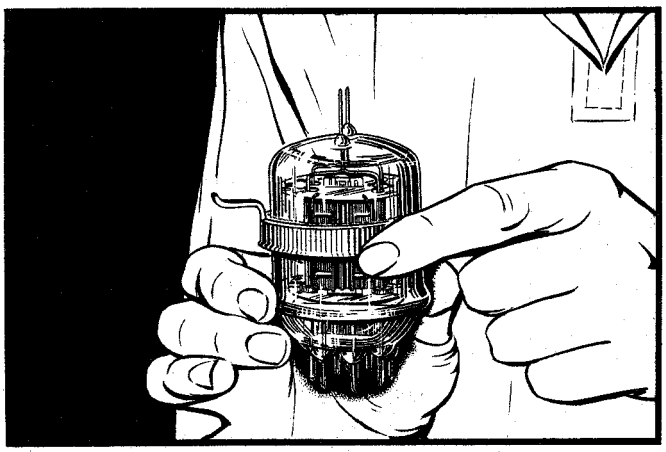


Figure 27

Step 18 (Figure 28)

. . . insert each tube horizontally in the correct socket (with the large connector pin at the top of the socket).

NOTE

In some of the earlier models of the TDQ transmitters, type 829 instead of type 829B tubes were supplied for V102, V103 and V104. Type 829 and type 829B tubes are interchangeable.

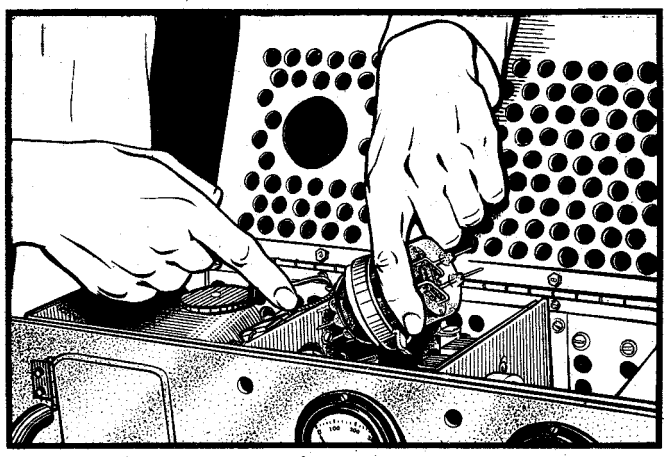


Figure 28

Step 19 (Figure 29)

Hold the projection on one side of the hold down ring in position, and with a pair of pliers hook the socket fastening clamp over the projection on the other side of the hold down ring.

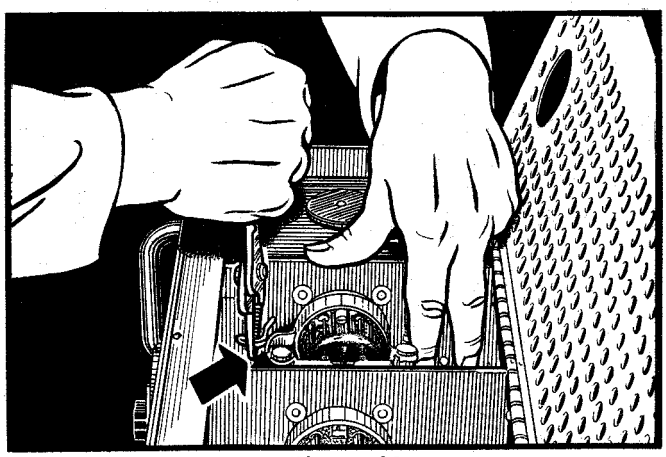


Figure 29

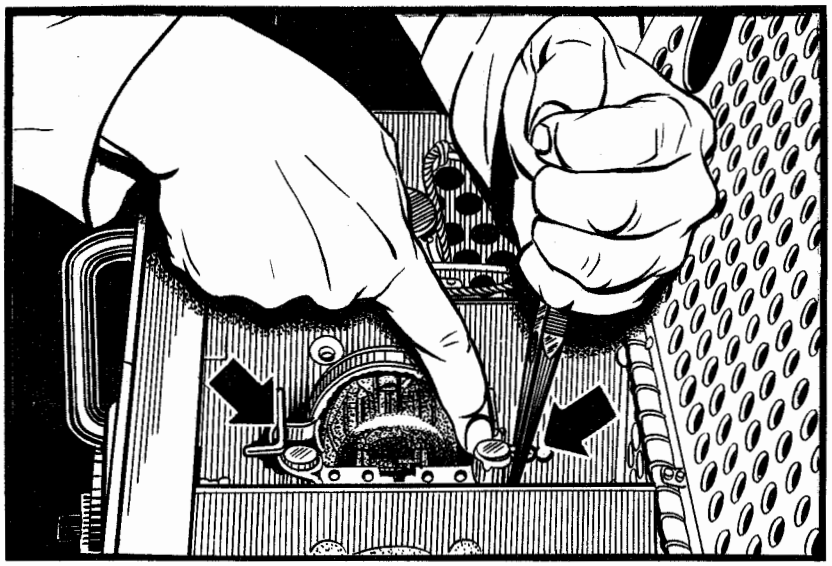


Figure 30

Step 20 (Figure 30)

Hook the remaining projection of the hold-down ring into the socket fastening clamp, and place the plate leads in position at the top of the tube pins. Follow the same procedure when installing the second tripler tube.

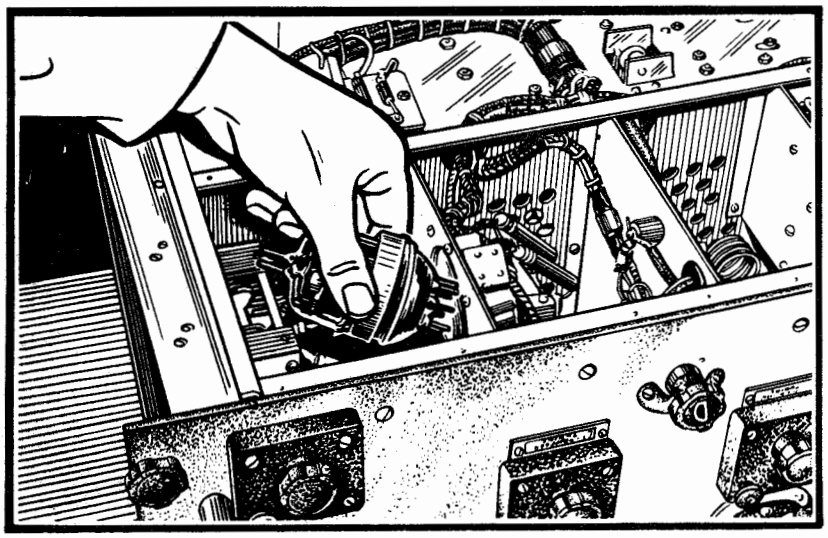


Figure 31

Step 21 (Figure 31)

Turn the R-F unit over, remove the bottom cover, and install the POWER-AMPLIFIER tube, type 829B (V104), horizontally in the correct socket of the R-F unit. After the tube has been installed, replace the cover on the bottom of the unit.

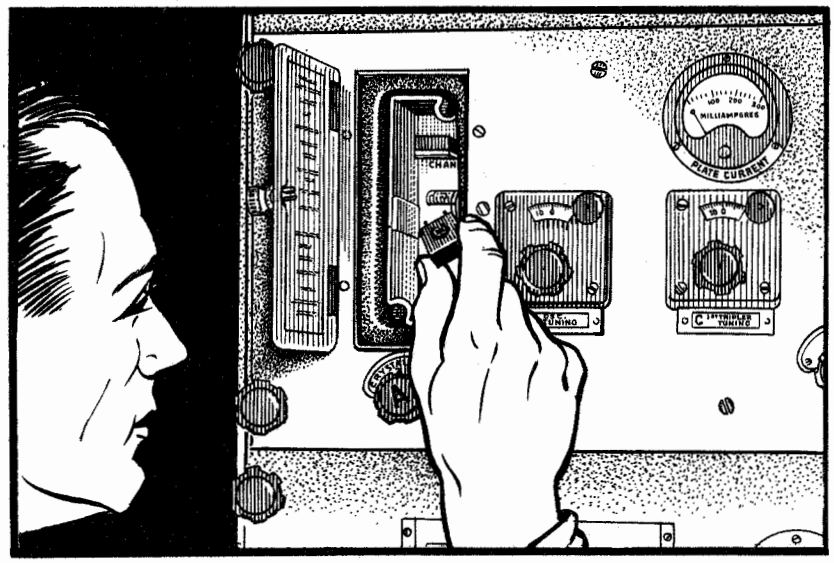


Figure 32

Step 22 (Figure 32)

Replace the R-F unit in the transmitter cabinet, and fasten the retaining knobs. Install the FOUR CRYSTALS in their respective sockets in the CRYSTAL OVEN of the R-F unit. Each socket is marked for a specific channel.

Step 23 (Figure 33)

Unscrew the retaining knobs, and remove the MODULATOR UNIT from the transmitter cabinet to permit the proper connections to be made to the transformer T-206 and the terminal board "1." Push in the chassis stops as shown in insert, in order to completely remove the unit.

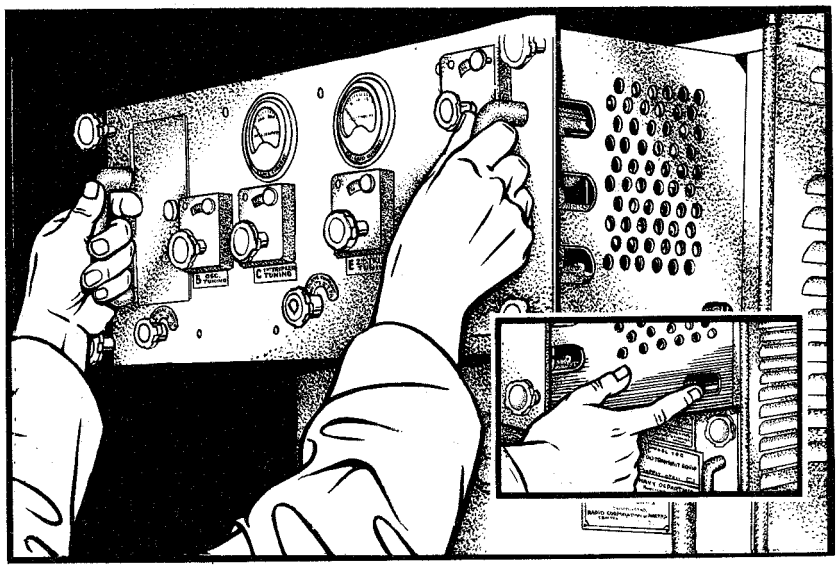


Figure 33

Step 24 (Figure 34)

The connections to be made to the TRANSFORMER T-206 (located on the underside of the modulator unit) are as follows:

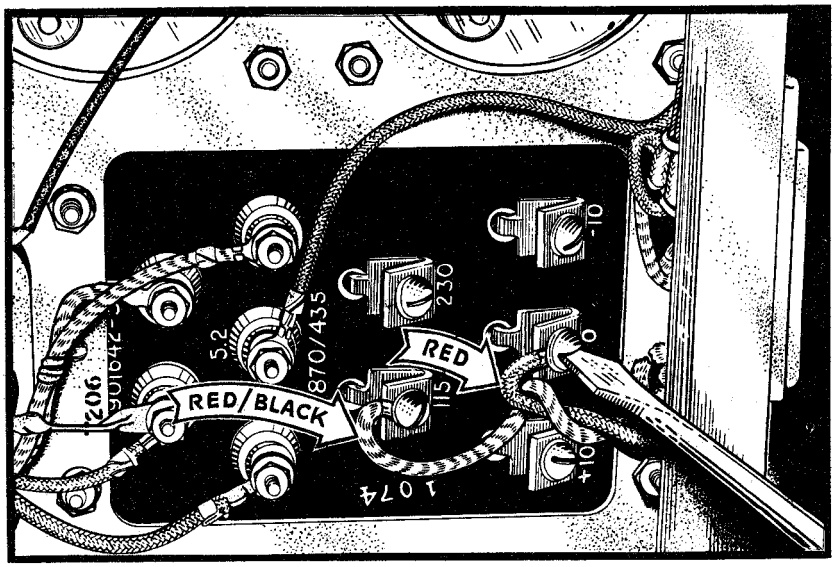


Figure 34

a. If the power source is 115-volt A-C (or if 115- or 230-volt D-C is converted to 115-volt A-C by a motor-generator), connect the RED-BLACK lead to the 115-volt terminal, and the RED lead to the 0 (zero) terminal. Check the line voltage with a voltmeter. If the voltage is LESS than 110 volts, connect the RED lead to the +10 terminal. If the line voltage is MORE than 120 volts, connect the RED lead to the —10 terminal.

b. If the power source is 230-volt A-C, connect the RED-BLACK lead to the 230-volt terminal and the RED lead to the 0 terminal. Check the line voltage with a voltmeter. If the voltage is LESS than 220 volts, connect the RED lead to the +10 terminal. If the line voltage is MORE than 240 volts, connect the RED lead to the —10 terminal.

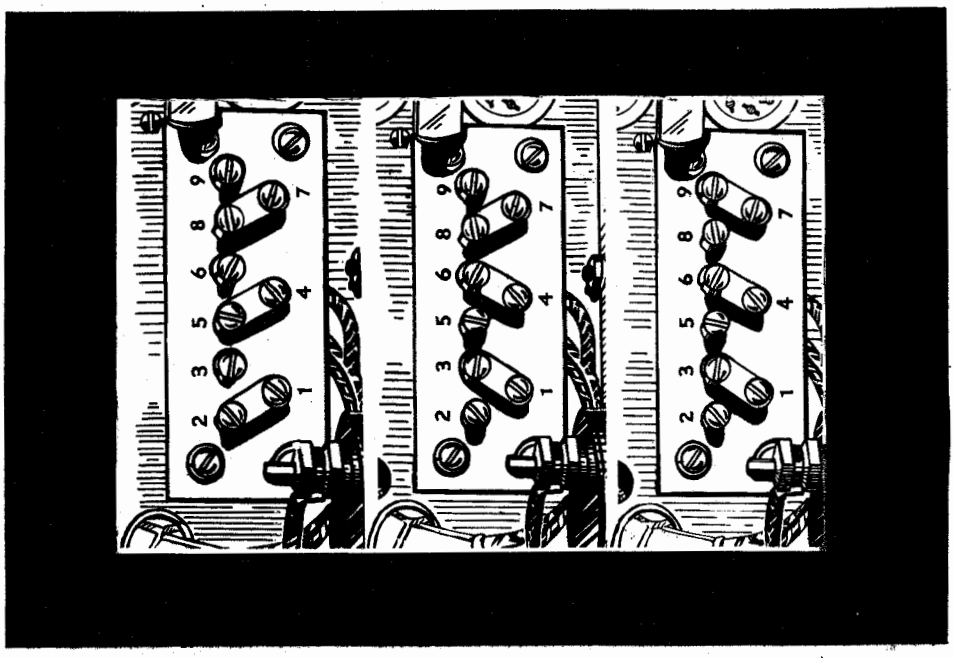


Figure 35

Step 25 (Figure 35)

The connections to be made to the terminal board "I" (located on the top front section of the modulator unit) are as follows:

a. For all A-C operation, and for operation using a 6-wire remote control system with 115- and 230-volt D-C, link the following terminals: 2 to 1, 5 to 4, and 8 to 7.

b. For operation with a 4-wire remote control system, and 115-volt D-C power supply, link the following terminals: 3 to 1, 6 to 4, and 8 to 7.

c. If the transmitter is to be operated with a 4-wire remote control system, and the power supply is 230-volt D-C, link the following terminals: 3 to 1, 6 to 4, and 9 to 7.

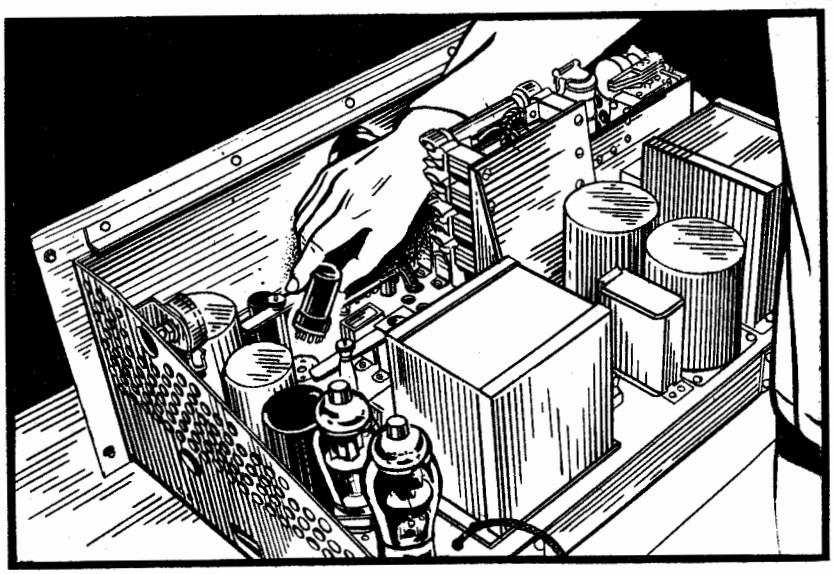


Figure 36

Step 26 (Figure 36)

Install in their designated sockets the two tubes V201 and V202, type 6SK7, which are to be used in the first AUDIO AMPLIFIER stage. Secure the tubes in position by tightening the tube retaining bar.

Step 27 (Figure 37)

Install the two tubes V203 and V204, type 6J5, in their designated sockets for use with the second AUDIO AMPLIFIER stage. Secure the tubes in position by firmly tightening the tube retaining bar.

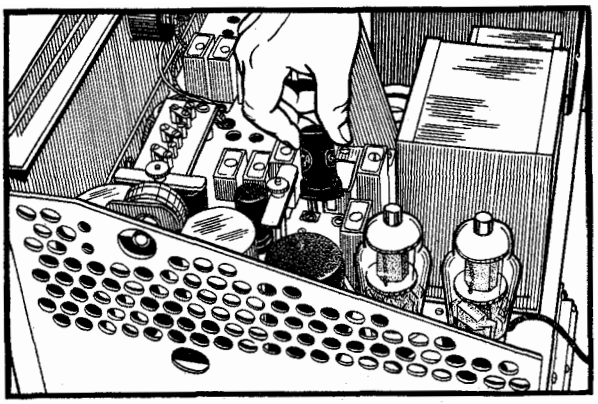


Figure 37

Step 28 (Figure 38)

Install the MODULATOR tubes V205 and V206, type 807, in their designated sockets in the modulator unit.

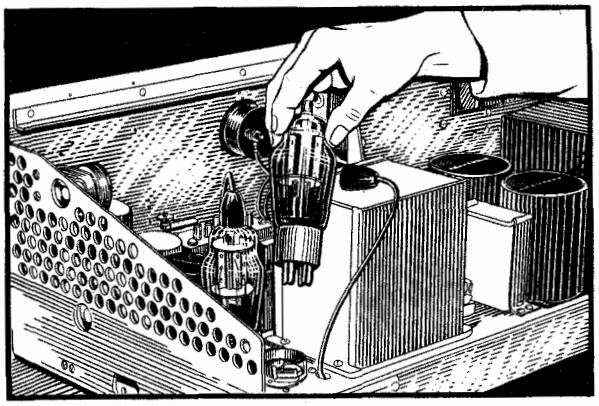


Figure 38

Step 29 (Figure 39)

Hold the tubes in position by firmly fastening each tube retaining clamp. Fit the tube connectors having flexible leads onto the cap connections on top of each modulator tube.

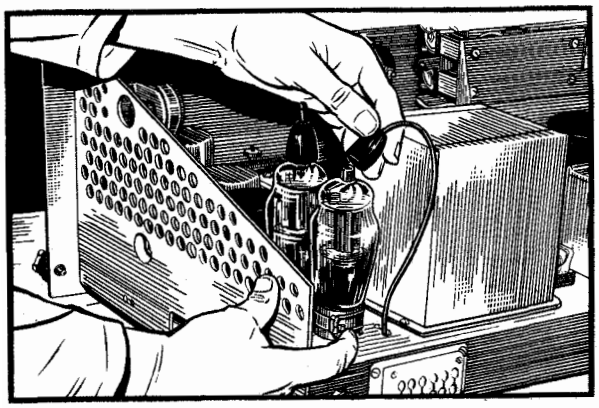


Figure 39

Step 30 (Figure 40)

Install the MODULATION LIMITER tube V207, type 6X5GT, in the designated socket, and install the CARRIER DELAY and AUDIO OSCILLATOR tube V208 type 6SN7GT in its socket.

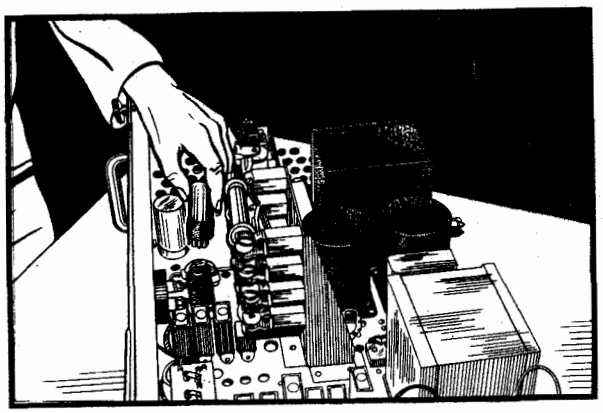


Figure 40

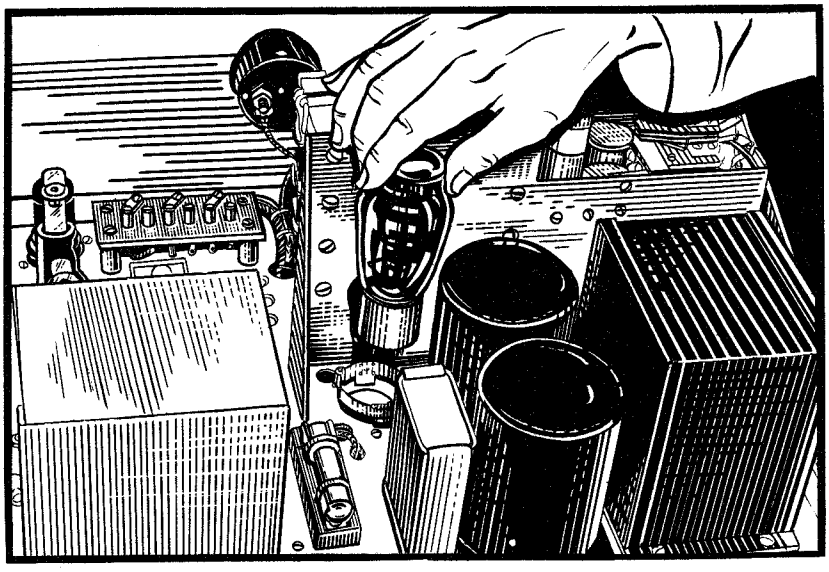


Figure 41

Step 31 (Figure 41)

Install the RECTIFIER tube V209, type 5R4GY, in the designated socket, and firmly fasten the socket retaining clamp.

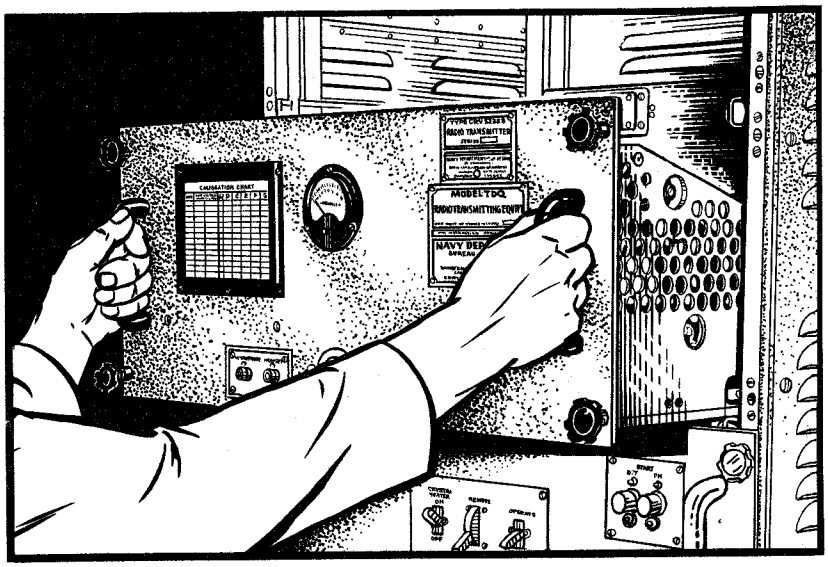


Figure 42

Step 32 (Figure 42)

When all the tubes have been installed in their sockets, and the connections have been made on the terminal board "I" as specified in Step 25, install the MODULATOR UNIT in the transmitter cabinet. Tighten the retaining knobs.

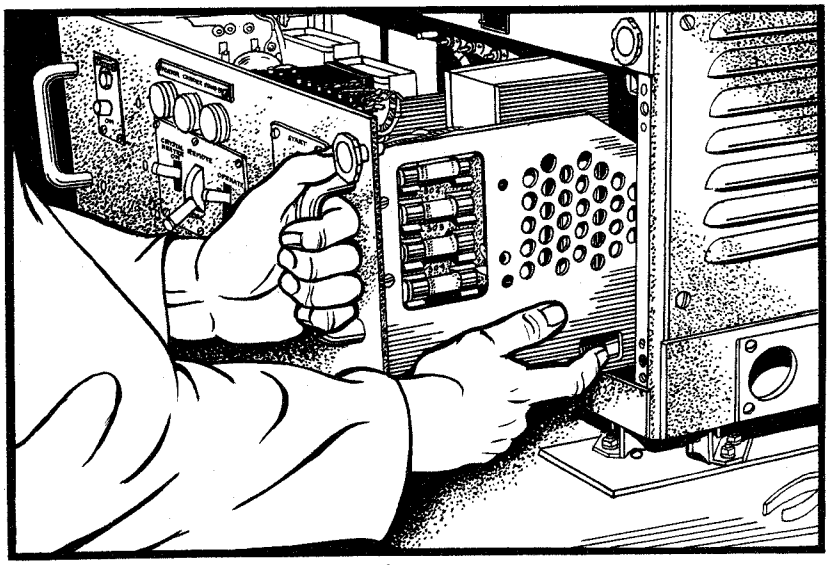


Figure 43

Step 33 (Figure 43)

Unfasten the retaining knobs, and remove the POWER UNIT from the transmitter cabinet to permit connections to be made to TRANSFORMERS T-301, T-302, T-303, T-304 and terminal boards "B" and "C." Push in the chassis stops in order to completely remove the unit.

Step 34 (Figure 44)

The connections to be made to the TRANSFORMER T-301 are as follows:

a. If the power supply is 115-volt A-C (or if 115- or 230-volt D-C is converted to 115-volt A-C by a motor-generator), connect the RED-BLACK lead to the 115-volt terminal, and the RED lead to the 0 (zero) terminal. Measure the voltage of the input power source with a voltmeter. If the voltage is LESS than 110 volts, connect the RED lead to the +10 terminal. If the line voltage is MORE than 120 volts, connect the RED lead to the —10 terminal.

NOTE: Do not remove the RED-GREEN lead from terminal "B."

b. If the input power supply is 230-volt A-C, connect the RED-BLACK lead to the 230-volt terminal, and the RED lead to the 0 (zero) terminal. Measure the line voltage with a voltmeter. If the voltage is LESS than 220 volts, connect the RED lead to the +10 terminal. If the line voltage is MORE than 240 volts, connect the RED lead to the —10 terminal.

NOTE: Do not remove the RED-GREEN lead from terminal "B."

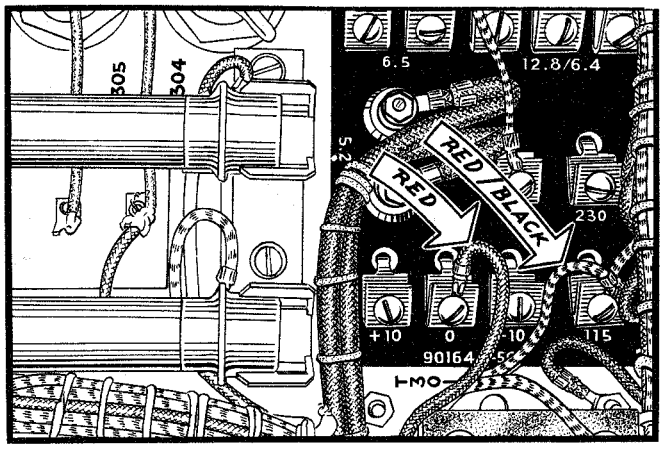


Figure 44

Step 35 (Figure 45)

The connections to be made to the TRANSFORMER T-302 are as follows:

a. If the input power supply is 115-volt A-C (or if 115- or 230-volt D-C is converted to 115-volt A-C by a motor-generator), connect the two RED-BLACK leads to the 115-volt terminal and the three RED leads to the 0 (zero) terminal. Measure the input line voltage with a voltmeter. If the voltage is LESS than 110 volts, connect the three RED LEADS to the +10 terminal. If the voltage is MORE than 120 volts, connect the three RED leads to the —10 terminal.

b. If the input power supply is 230-volt A-C, connect the two RED-BLACK leads to the 230-volt terminal, and the three RED leads to the 0 terminal. Measure the input line voltage with a voltmeter, and if the voltage is LESS than 220 volts, connect the three RED leads to the +10 terminal. If the voltage is MORE than 240 volts, connect the three RED leads to the —10 terminal.

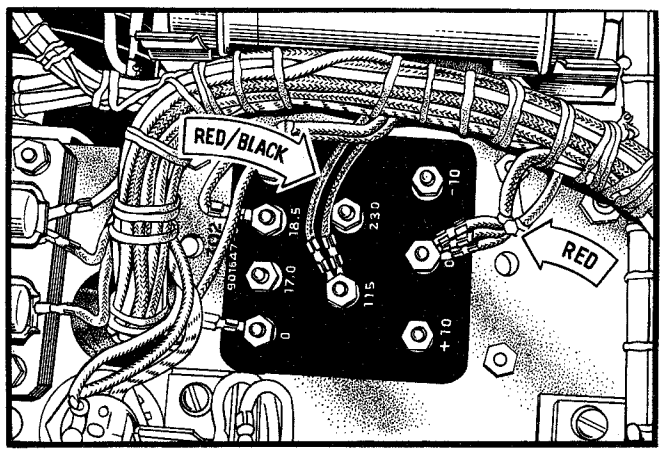


Figure 45

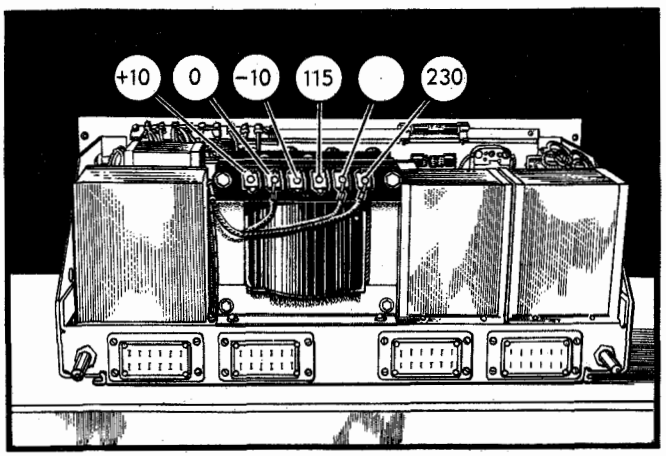


Figure 46

Step 36 (Figure 46)

The connections to be made to the TRANSFORMER T-303 are as follows:

a. If the input power supply is 115-volt A-C (or if 115- or 230-volt D-C is converted to 115-volt A-C by a motor-generator), connect the RED-BLACK lead to the 115-volt terminal, and the RED lead to the 0 (zero) terminal. Measure the line voltage with a voltmeter. If the voltage is MORE than 120 volts, connect the RED lead to the —10 terminal. If the voltage is LESS than 110 volts, connect the RED lead to the +10 terminal.

b. If the input power source is 230-volt A-C, connect the RED-BLACK lead to the 230-volt terminal, and the RED lead to the 0 (zero) terminal. Measure the input line voltage with a voltmeter. If the voltage is LESS than 220 volts, connect the RED lead to the +10 terminal. If the voltage is MORE than 240 volts, connect the RED lead to the —10 terminal.

NOTE: Do not remove the RED-YELLOW lead from terminal "I."

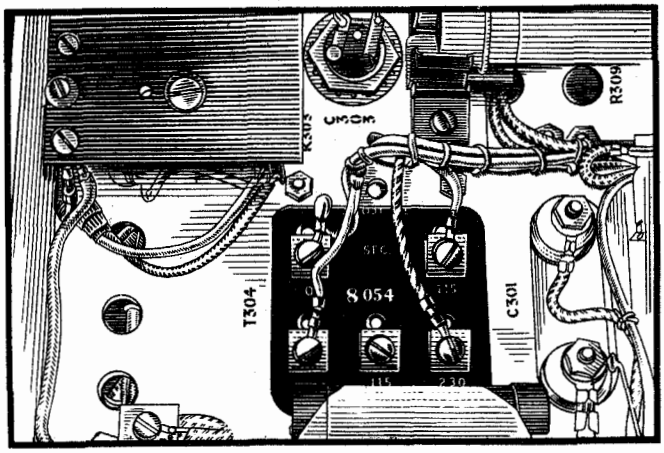


Figure 47

Step 37 (Figure 47)

The connections to be made to the TRANSFORMER T-304 are as follows:

a. If the input power source is 115-volt A-C (or if 115- or 230-volt D-C is converted by a motor-generator), connect the RED-BLACK lead to the 115-volt terminal and the RED lead to the 0 (zero) terminal.

b. If the power supply is 230-volt A-C, connect the two RED-BLACK leads to the 230-volt terminal, and the RED lead to the 0 (zero) terminal.

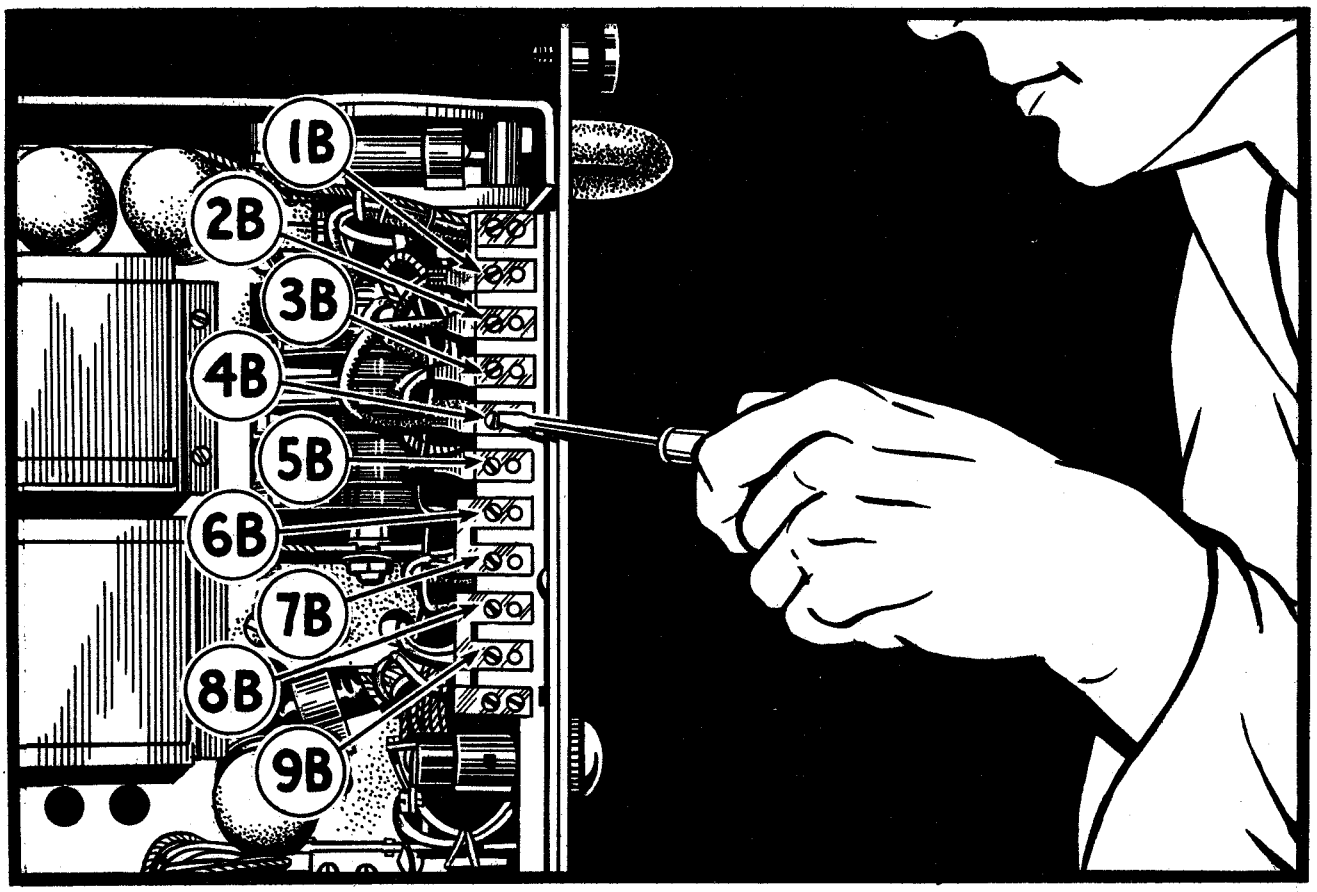


Figure 48

Step 38 (Figure 48)

The TDQ TRANSMITTER usually is connected for 115-volt, 60-cycle, 6-wire control operation. Links are provided on the terminal boards for 4-wire control, and for operation at other voltages. The connections to be made to terminal board "B" (located on top of the front section of the power unit) are as follows:

a. To use 6-wire control when the power supply is 115-volt A-C, 230-volt A-C, 115-volt D-C, or 230-volt D-C, connect the LEADS from the START switches S-305 and S-306 to terminals 1B, 2B, 3B, and 4B. Also connect the links from terminal 5B to terminal 6B and connect terminal 9B to the end (ground) terminal.

b. To use 4-wire control when the power supply is either 115- or 230-volt A-C, connect the START switch S-307 to the terminals 2B and 4B. Connect terminal 6B to terminal 7B and terminal 8B to terminal 9B, and connect terminal 9B to the end (ground) terminal.

c. To use 4-wire control when the power supply is either 115- or 230-volt D-C, connect the START switch S-307 to the terminals 2B and 4B. Connect terminal 6B to terminal 7B and terminal 8B to terminal 9B. Make certain that there is no link connection between terminal 9B and ground.

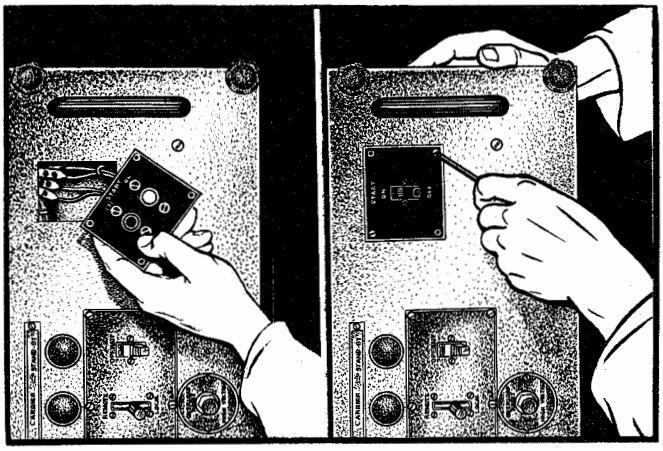
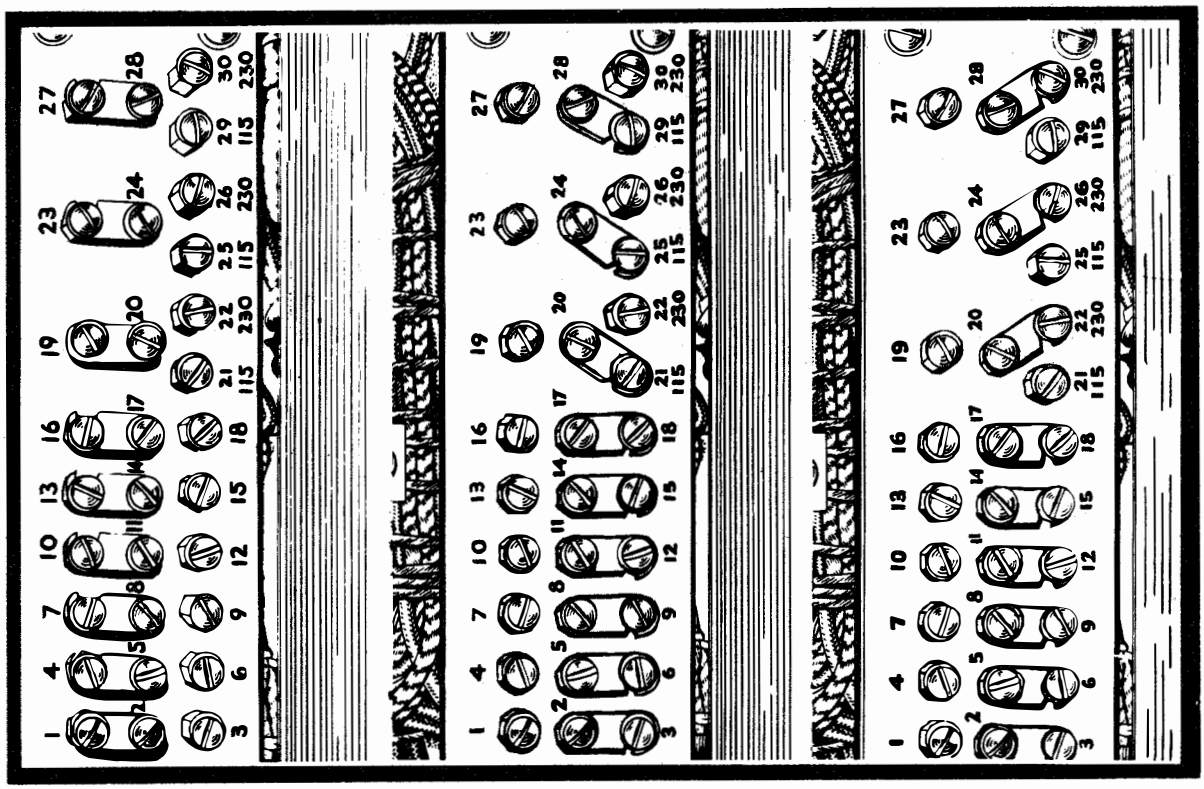


Figure 49

Step 39 (Figure 49)

To change the 6-wire remote control system, disconnect the switch leads from terminals 1B, 2B, 3B, and 4B of terminal board "B." Then remove the 6-wire START switch from the transmitter, and install the 4-wire remote control START switch. Connect the LEADS from the 4-wire remote control START switch S-307 to terminals 2B and 4B on terminal board "B."



115/230 V. D-C 115 V. D-C 230 V. D-C

Figure 50

Step 40 (Figure 50)

The connections to be made on terminal board "C" (located on the bottom of the rear section of the power unit) are as follows:

a. If the power supply is 115- or 230-volt A-C, connect the following terminals: 1 to 2, 4 to 5, 7 to 8, 10 to 11, 13 to 14, 16 to 17, 19 to 20, 23 to 24, 27 to 28.

b. If the power supply is 115-volt D-C, connect the following terminals: 2 to 3, 5 to 6, 8 to 9, 11 to 12, 14 to 15, 17 to 18, 20 to 21, 24 to 25, 28 to 29.

c. If the power source is 230-volt D-C, connect the following terminals: 2 to 3, 5 to 6, 8 to 9, 11 to 12, 14 to 15, 17 to 18, 20 to 22, 24 to 26, 28 to 30.

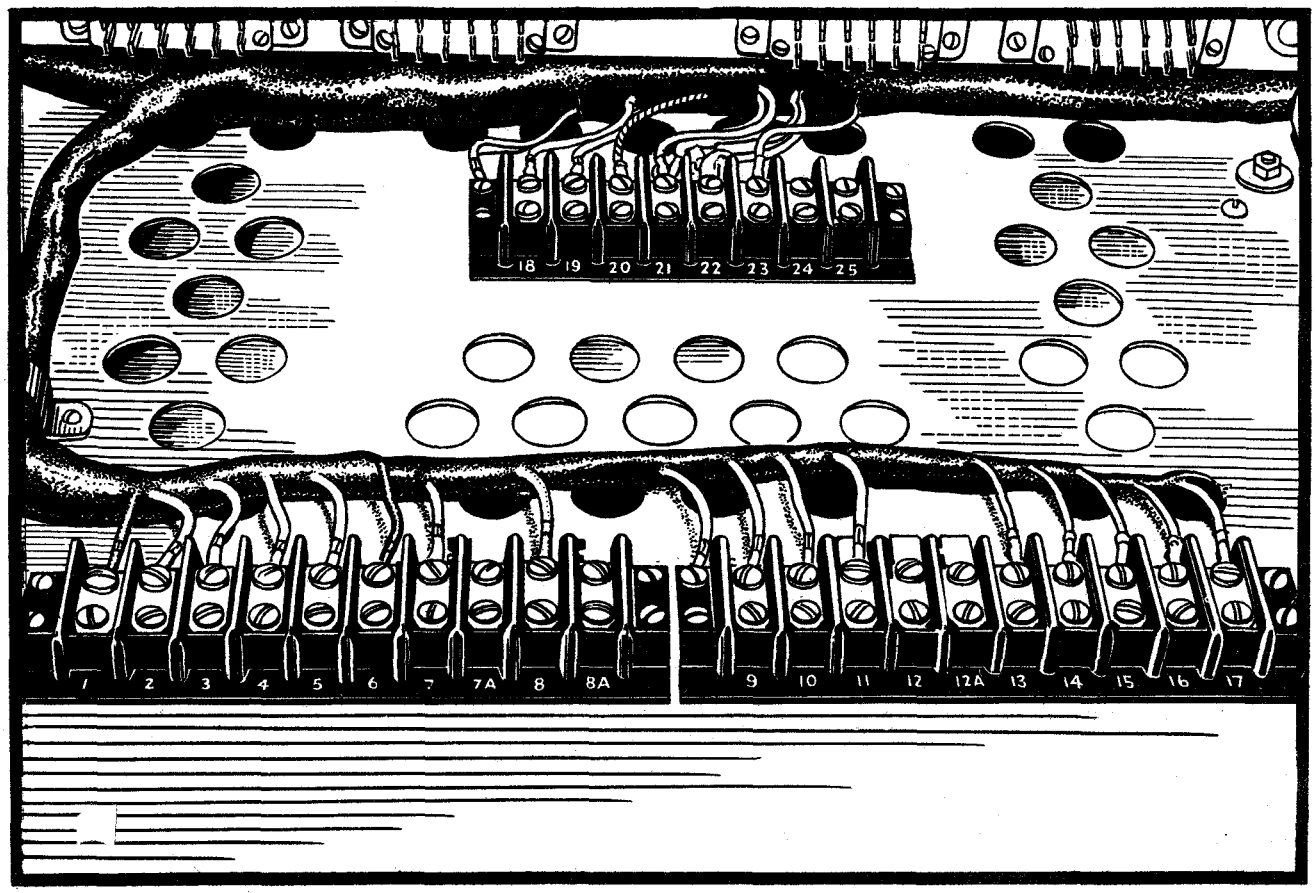


Figure 51

Step 41 (Figure 51)

Before replacing the power unit in the transmitter cabinet, connect the POWER SUPPLY source to terminal "A." CAUTION: If there is no switch in the supply line, make sure all transmitter switches are in "OFF" position.

a. If the power supply is 115- or 230-volt A-C, connect the supply line to terminals A19 and A20.

b. If the power supply is 440-volt, 60-cycle A-C, wire the transmitter for 115-volt A-C, and then connect terminal 5 of the LINE TRANSFORMER to terminal A19, and terminal 7 of the LINE TRANSFORMER to terminal A20.

c. If the power supply is 115- or 230-volt D-C, a MOTOR-GENERATOR and MAGNETIC CONTROLLER are required to supply the transmitter. Connect terminal L1 in the MAGNETIC CONTROLLER to terminal A19. Connect terminal L2– in the MAGNETIC CONTROLLER to terminal A20; terminal M2 in the MAGNETIC CONTROLLER to terminal A22; terminal M1 in the MAGNETIC CONTROLLER to terminal A21; and terminal LL1 in the MAGNETIC CONTROLLER to terminal A23.

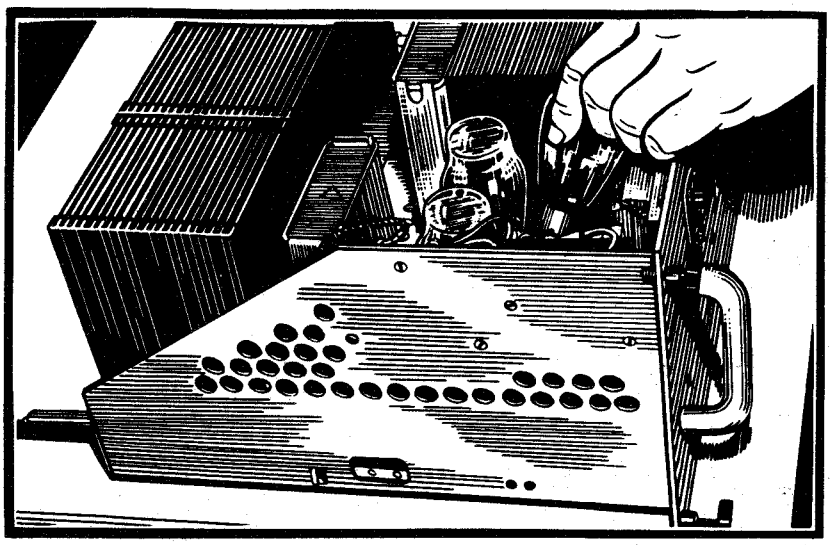


Figure 52

Step 42 (Figure 52)

Install the three RECTIFIER tubes V301, V302, V303, type 5R4GY, in their sockets in the power unit chassis. Secure the tubes in position by fastening the retaining clamps.

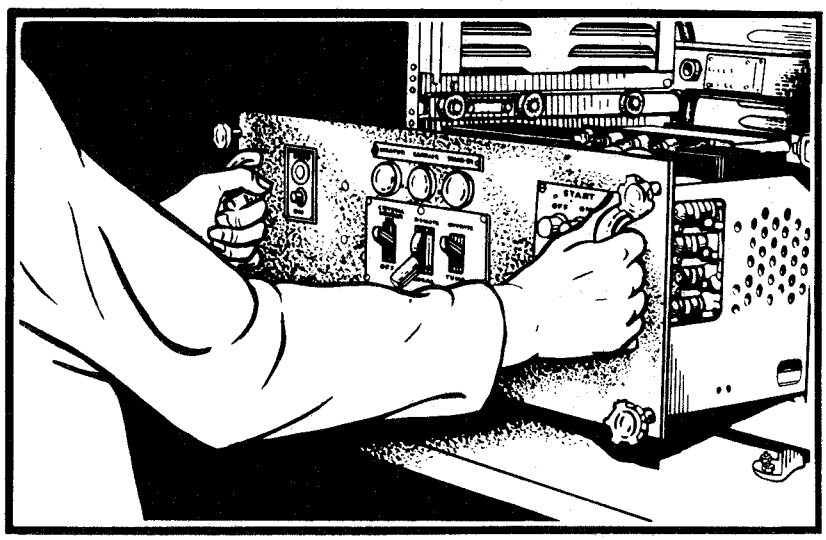


Figure 53

Step 43 (Figure 53)

When all the tubes have been installed, and all the transformer terminal board connections completed, replace the power unit in the transmitter. Tighten the retaining knobs.

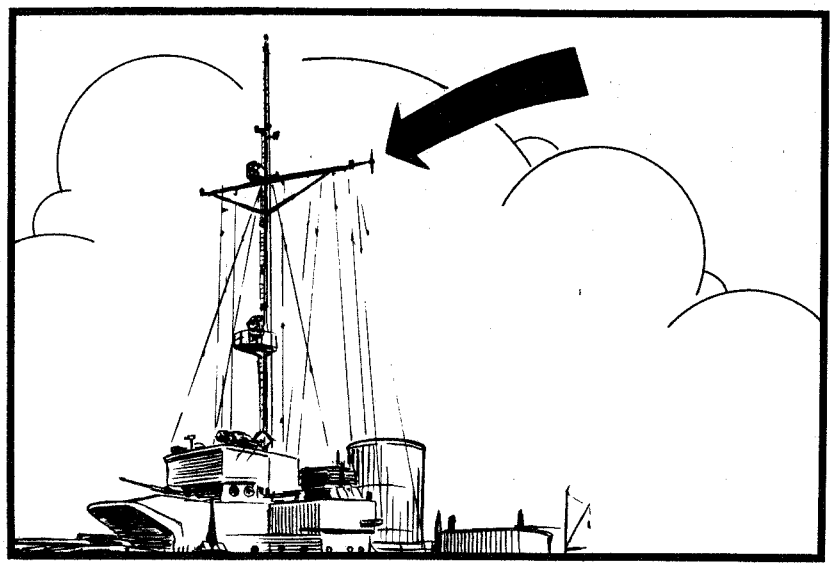


Figure 54

ANTENNA AND TRANSMISSION LINE INSTALLATION

Step 44 (Figure 54)

The DIPOLE ANTENNA assembly, shown in Figure 88, should be mounted as high as practical on the SUPERSTRUCTURE of the ship, away from metal objects, such as stacks and vents. The transmission line between the TRANSMITTER and the ANTENNA assembly should be kept as short as possible.

A mounting clamp is provided to attach the antenna support securely to the mounting surface. When mounted in position, the dipoles are approximately two feet from the mounting structure and extend about two feet above and below the antenna support. Electrical connection to the antenna conductor is made at the mounting end of the antenna support tube by means of a standard Navy type transmission line connector. No adjustments of the antenna assembly are required.

Bolt the mounting base plate to the selected location in such manner that the antenna supporting tube will lie in a horizontal position.

Place base end of the antenna support tube in the concave section of the mounting plate, with the antenna support tube in a horizontal position and the dipoles (indicated by 46½ inch dimension in Figure 26) in a vertical position with the insulated radiator uppermost. Place the mounting clamp over the base end of the antenna support tube, then insert and tighten the four retaining cap screws. The position of the antenna support tube may be changed through a maximum of 2⅛ inches by slipping it through the mounting clamp before the cap screws are made secure.

Step 45 (Figure 55)

For installations requiring less than 100 feet of coaxial line between the transmiter and the antenna, use the two Navy type 49268 connectors (supplied with the transmitter), and Navy type 10/U coaxial line (not supplied).

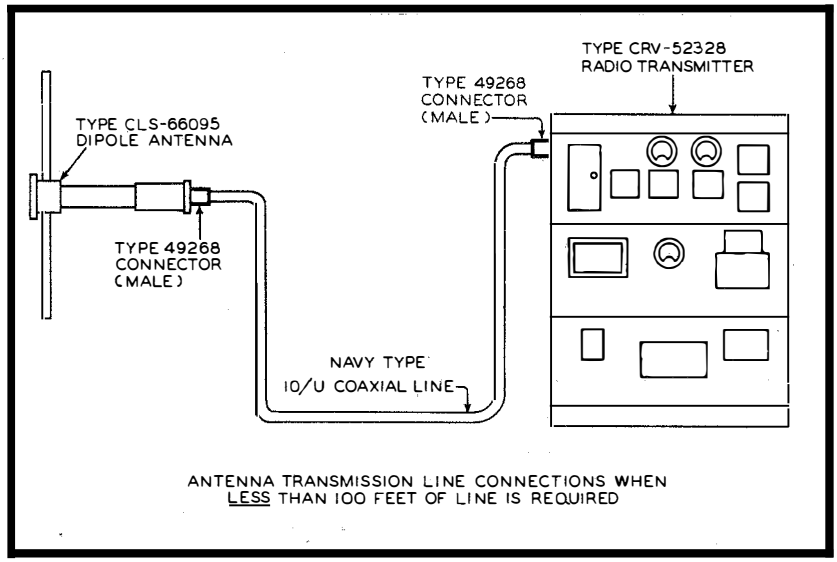


Figure 55

Step 46 (Figure 56)

For installations requiring more than 100 feet of coaxial line between the transmitter and the antenna, use the Navy type RG 18/U coaxial cable (not supplied) and a 10-foot length of RG 8/U coaxial cable (supplied). Because of its greater flexibility, the RG 8/U coaxial cable is used at the transmitter. Connecting fittings (illustrated in Figure 57) are supplied with the equipment.

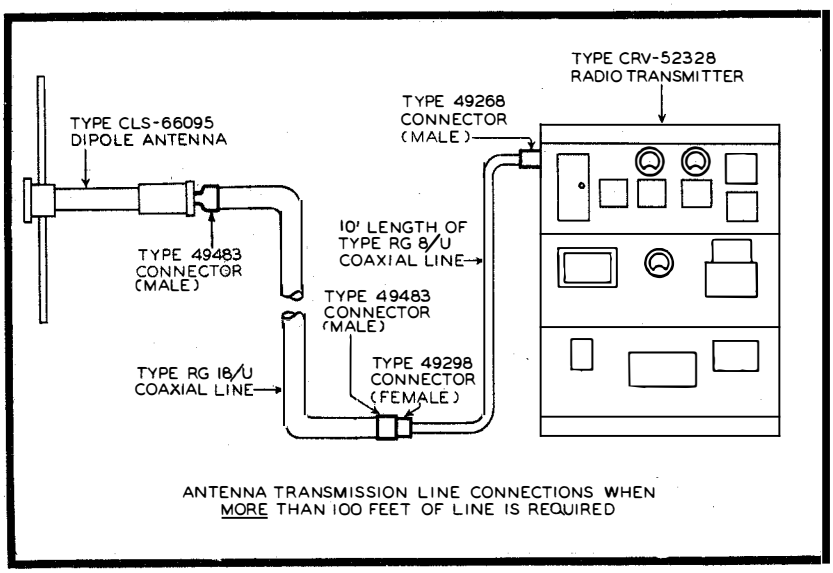


Figure 56

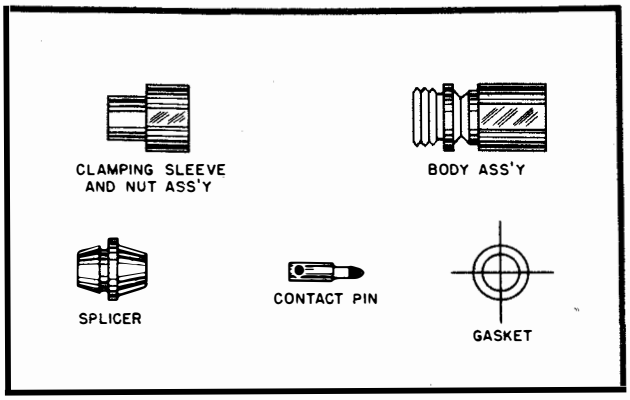


Figure 57

Step 47 (Figures 58 to 70 inclusive)

To install connectors on the coaxial transmission line proceed as follows:

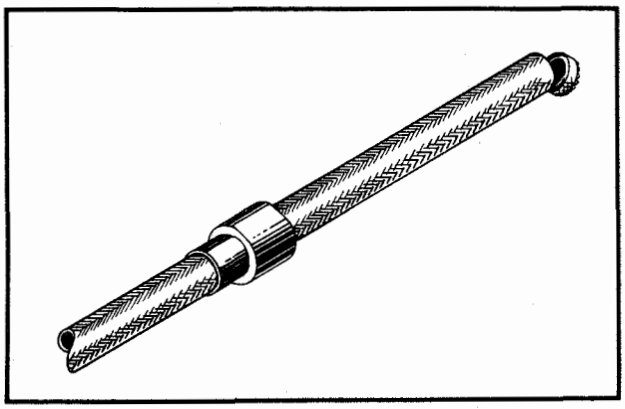


Figure 58

(1) A—Cut end of cable even.

B—Slide clamping sleeve and nut assembly over cable. See Figure 58.

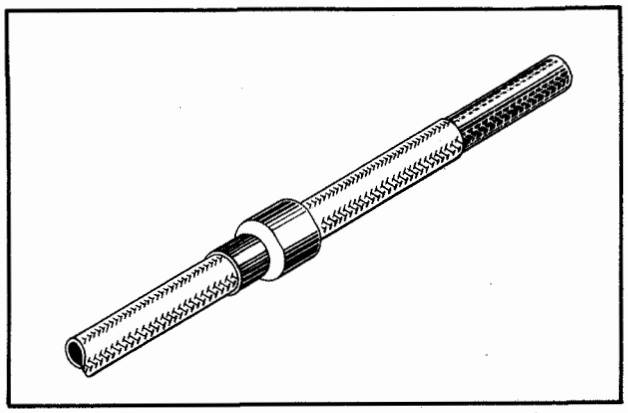


Figure 59

(2) Cut off vinyl jacket 1½ from end of cable exposing braid, being careful not to nick braid. See Figure 59.

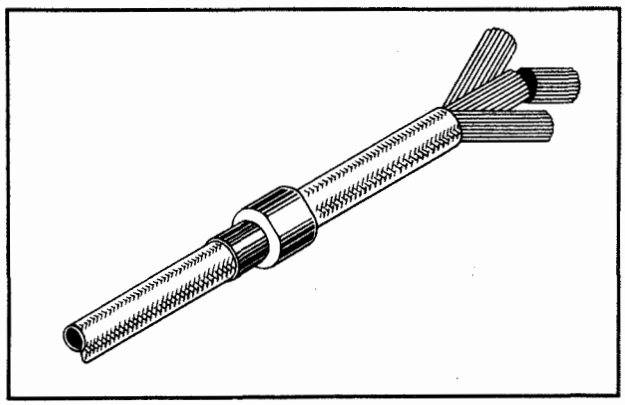


Figure 60

(3) Fan brand out, cut off insulation and center conductor ½. (Purpose of this is to leave sharp end.) See Figure 60.

(4) Taper end of braid (as shown), purpose of this is to slip splicer over braid and under vinyl jacket. See Figure 61.

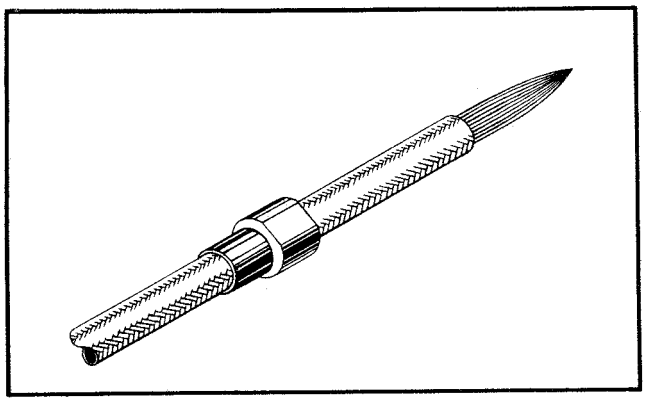


Figure 61

(5) Slide splicer over tapered braid and force under outer vinyl jacket. See Figure 62.

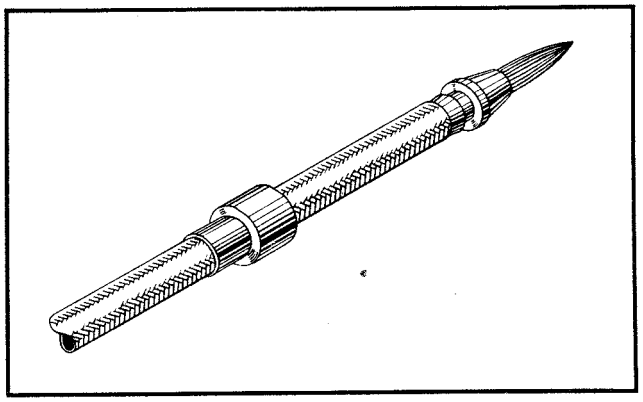


Figure 62

(6) With splicer in place trim braid approximately $\frac{3}{16}$.

NOTE

If cable is double braid shielded trim off outer braid close to splicer. See Figure 63.

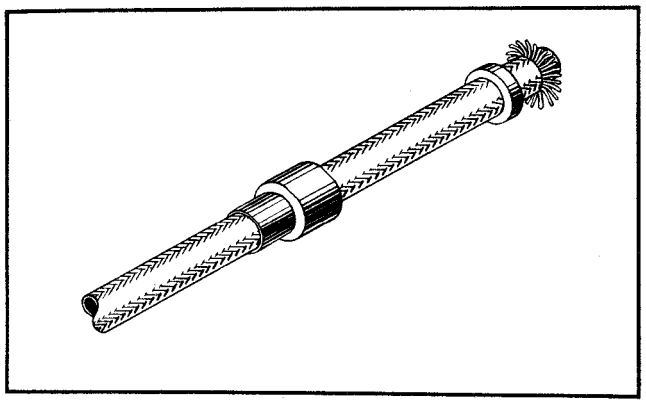


Figure 63

(7) Fold braid back over splicer and smooth. See Figure 64.

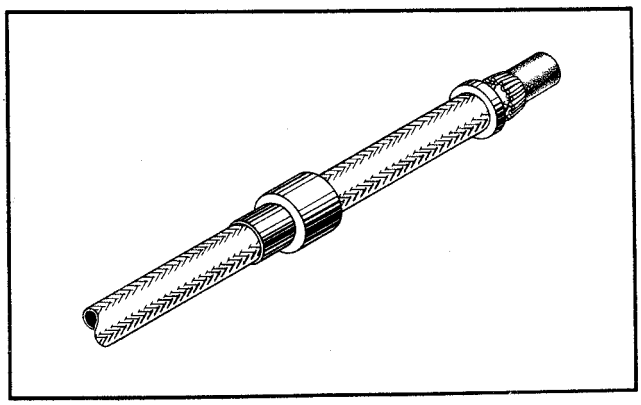


Figure 64

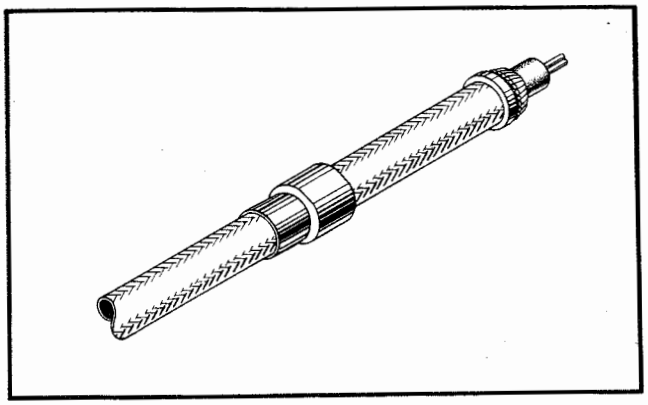


Figure 65

(8) A—Cut inner insulation approximately ¼ measuring from splicer.

B—Remove inner insulation leaving 3/16 of center conductor exposed.

C—Tin center conductor.

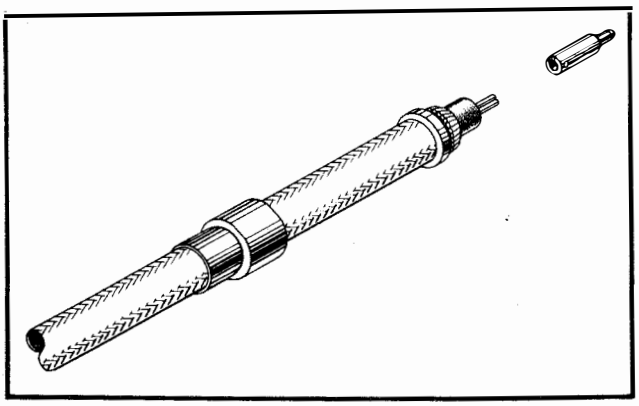


Figure 66

(9) Hold contact pin with pliers and insert center. Fill hole with solder.

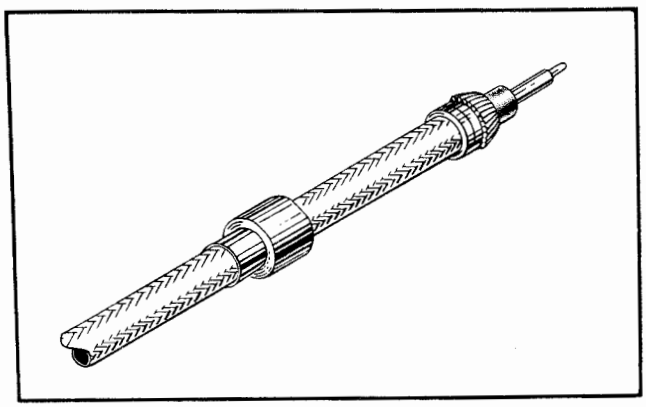


Figure 67

(10) Remove excess solder. Slip gasket over splicer (as shown, see Figure 67).

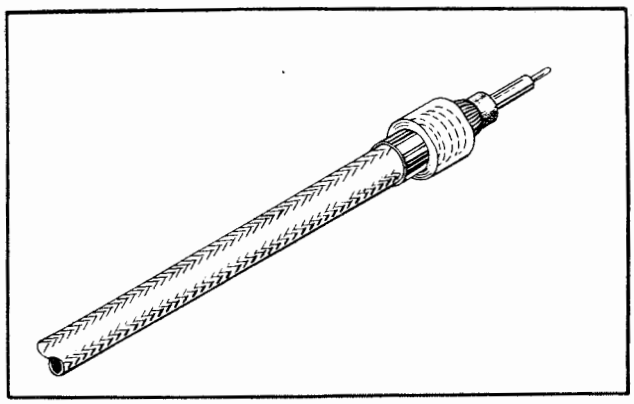


Figure 68

(11) Slide clamping sleeve and nut assembly as close as possible in preparation to receiving body assembly. See Figure 68.

(12) Body assembly (illustrated). Slide cable into body assembly, screw nut into place with a wrench. **Do not turn body while tightening nut as this twists the rubber washer making the connector or jack non-waterproof.**

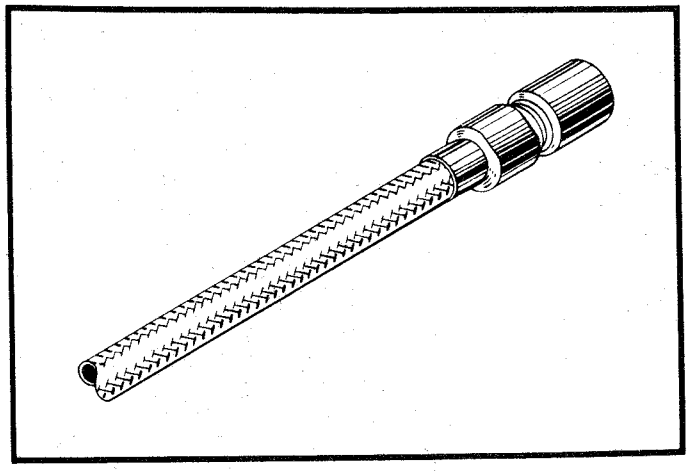


Figure 69

(13) Completed assembly shown in section. See Figure 70.

Precautions for handling coaxial cable:

(1) Avoid kinks and sharp bends. Keep bends 6 inches in radius or larger.

(2) When soldering on connections, wrap a damp cloth around shield close to joint. Use no more heat than necessary for proper joint.

(3) When pulling cable through conduit, it should be fed in at one end at the same time it is pulled from the other end, in order to avoid strain and damaged insulation.

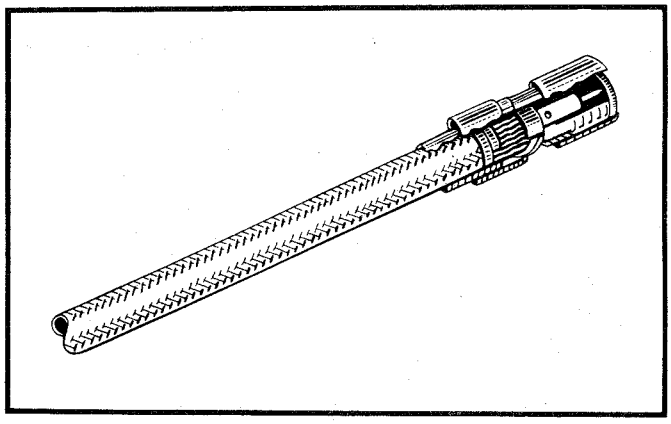


Figure 70

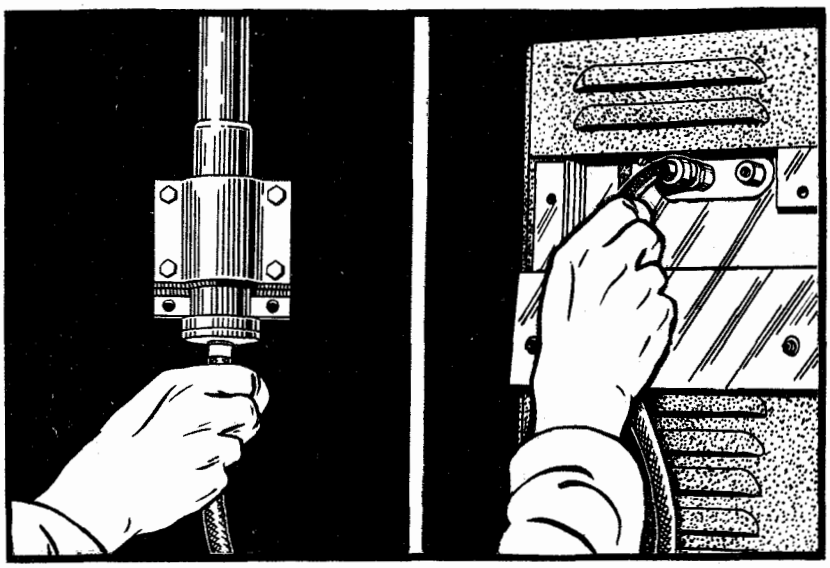


Figure 71

Step 48 (Figure 71)

a. Insert one end of the transmission cable into the socket on the end of the ANTENNA support tube, and run the transmission line down to the TRANSMITTER using clamps or clips to hold the line in place.

b. Open the cover on the left side of the TRANSMITTER cabinet, and insert the plug on the transmission line into the socket marked ANT.

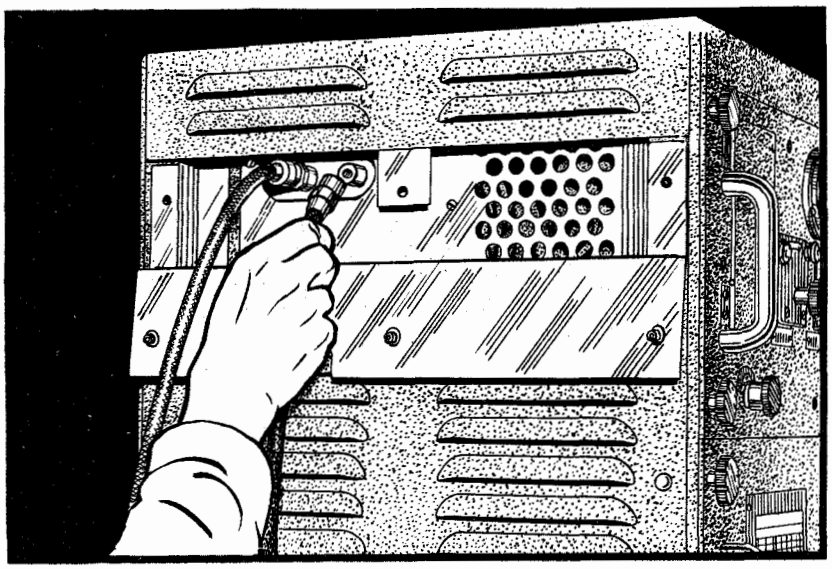


Figure 72

Step 49 (Figure 72)

The socket marked REC is just forward of the ANT socket. Insert the plug on the receiver transmission line into the REC socket.

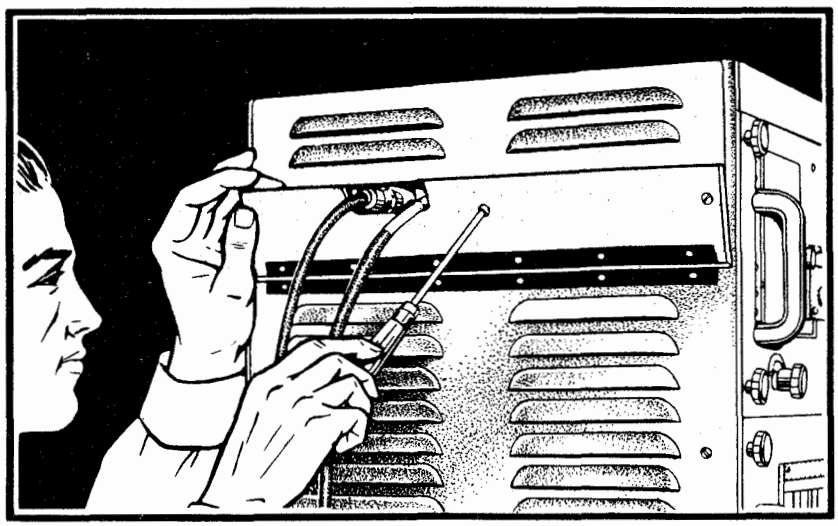


Figure 73

Step 50 (Figure 73)

After the transmission lines have been placed in position, close the TRANSMITTER CABINET COVER and secure the Dzus fasteners.

OPERATING CHECK OF CONTROL CIRCUITS

WARNING

THIS EQUIPMENT INVOLVES THE USE OF HIGH VOLTAGES WHICH MAY BE FATAL IF NOT HANDLED PROPERLY. IT IS OF THE UTMOST IMPORTANCE FOR OPERATING PERSONNEL TO CAREFULLY OBSERVE EVERY SAFETY REGULATION AT ALL TIMES. SEE THE SECTION OF THIS INSTRUCTION BOOK HEADED "SAFETY." (PAGE iii.)

BEFORE CHANGING TUBES OR MAKING ADJUSTMENTS INSIDE THE EQUIPMENT, TURN OFF THE HIGH VOLTAGE SUPPLY BY SHUTTING OFF THE MOTOR-GENERATOR OR OTHER POWER EQUIPMENT, AND OPENING THE MAIN SWITCH IN THE SUPPLY LINE TO THE EQUIPMENT.

Step 51 (Figure 74)

Depress the REMOTE-LOCAL switch, in the center of the power unit panel, to the LOCAL position.

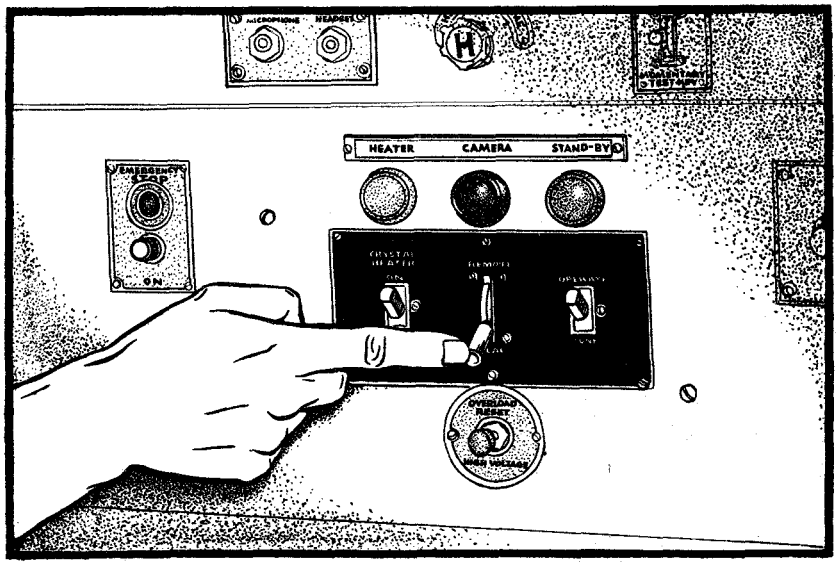


Figure 74

Step 52 (Figure 75)

Make certain that the TEST KEY on the modulator panel is in the neutral (center) position.

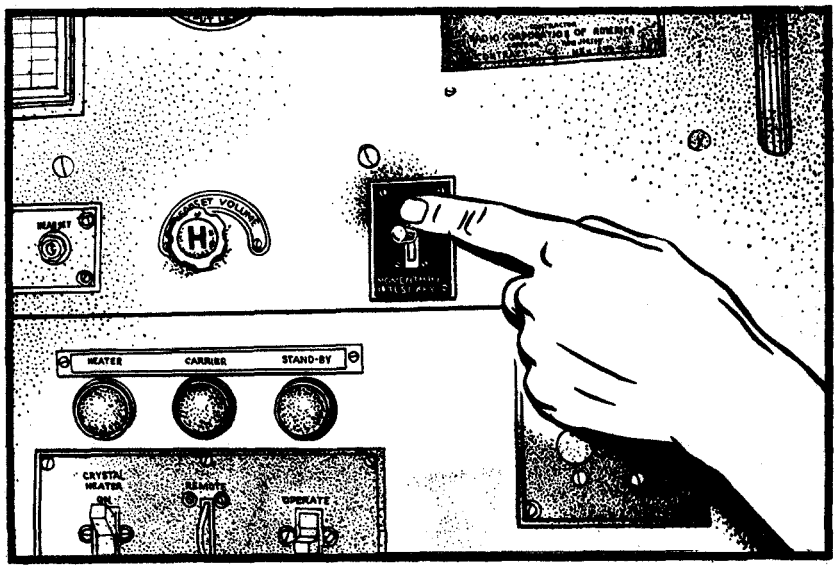


Figure 75

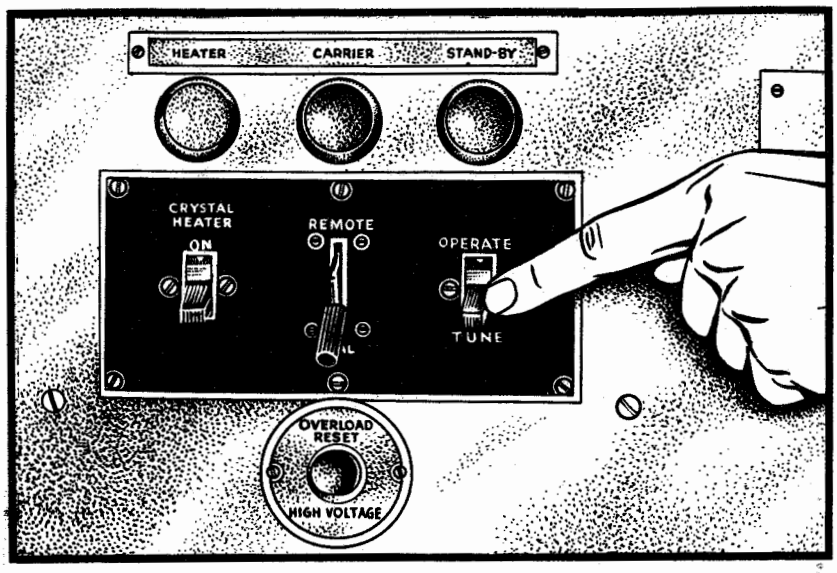


Figure 76

Step 53 (Figure 76)

Depress the TUNE-OPERATE switch, on the power unit panel, to the TUNE position.

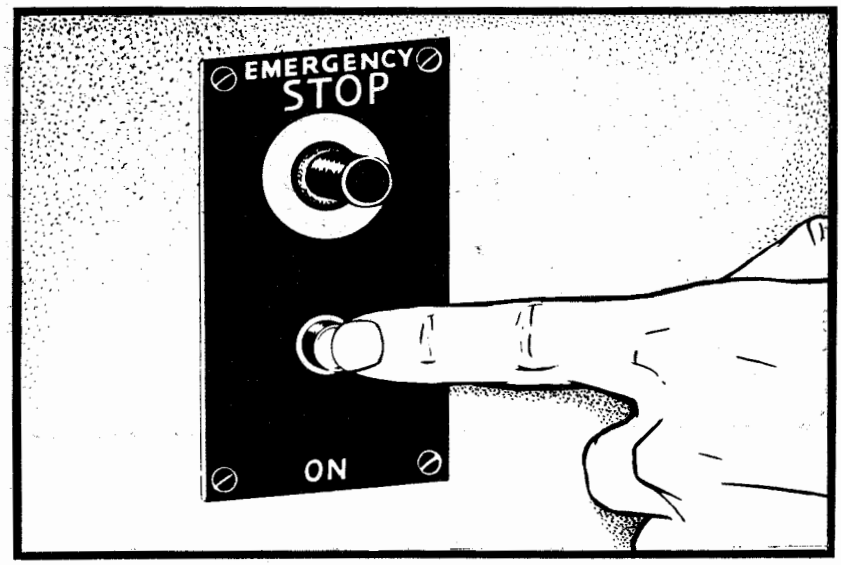


Figure 77

Step 54 (Figure 77)

Press the ON button of the EMERGENCY switch on the power unit panel.

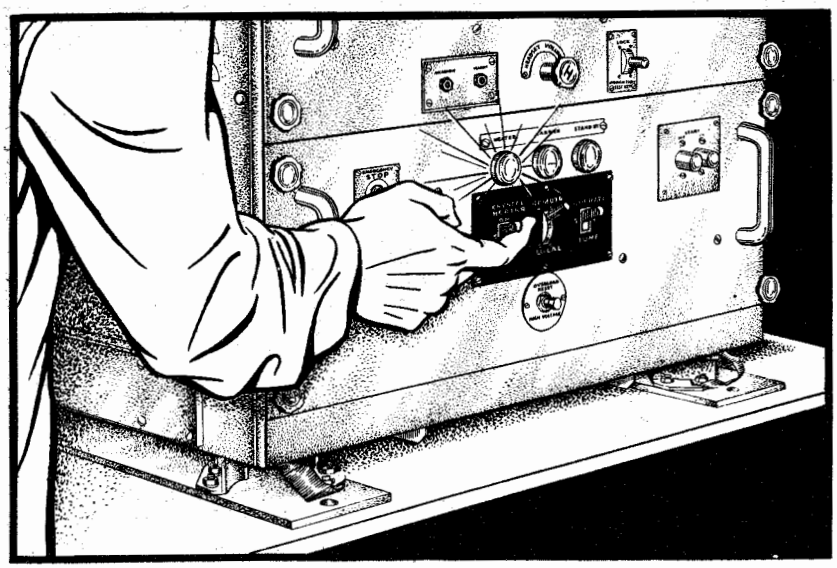


Figure 78

Step 55 (Figure 78)

Lift the CRYSTAL HEATER switch on the power unit panel, to the ON position. The heater (yellow) indicator lamp above the CRYSTAL HEATER switch should light.

Step 56 (Figure 79)

Press the ON button of the START switch on the power unit panel. (If the 4-wire control system is being used to operate the transmitter, lift the 4-wire control START switch to the ON position.) The STAND-BY (red) lamp on the transmitter power unit panel should light, and if a motor-generator set is being used, it should start.

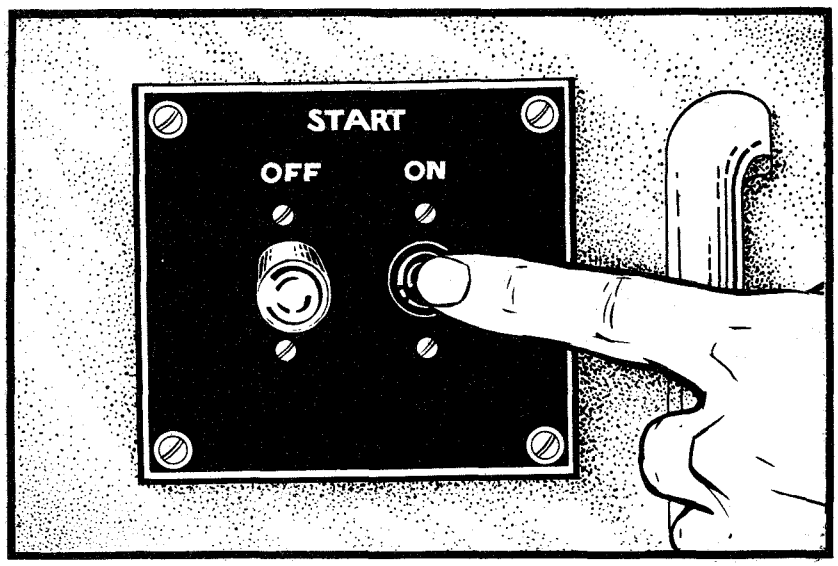


Figure 79

Step 57 (Figure 80)

Allow the tubes in the transmitter at least 30 seconds to warm up. With the HEATER and STAND-BY lamps lit (and the motor-generator set running in case of D-C operation), momentarily depress the TEST KEY switch on the modulator unit panel to the MOMENTARY position. The CARRIER (green) lamp on the power unit panel should light.

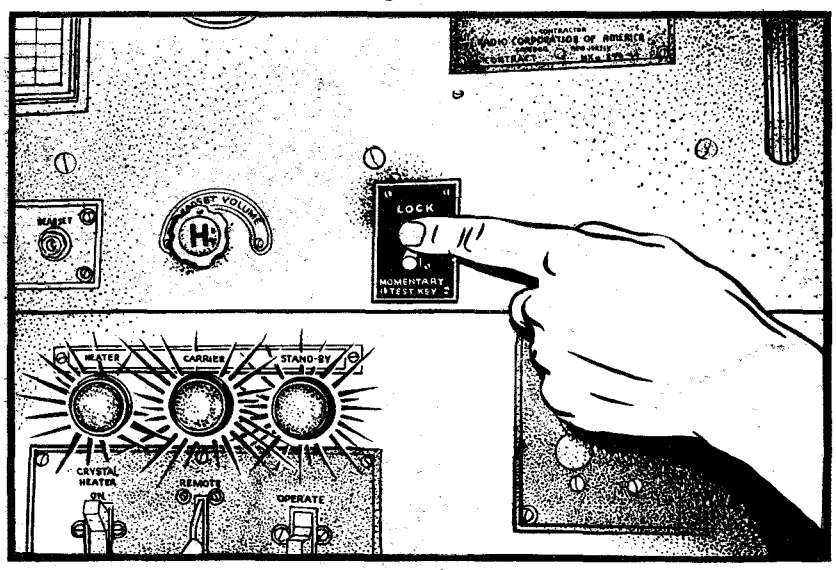


Figure 80

Step 58 (Figure 81)

If the green lamp fails to light, the overload relay may be open. Press the OVERLOAD RESET-HIGH - VOLTAGE button, and again momentarily depress the test key.

NOTE

When the preceding steps have been satisfactorily carried out, it may be assumed that the transmitter has been correctly installed and is ready for tuning.

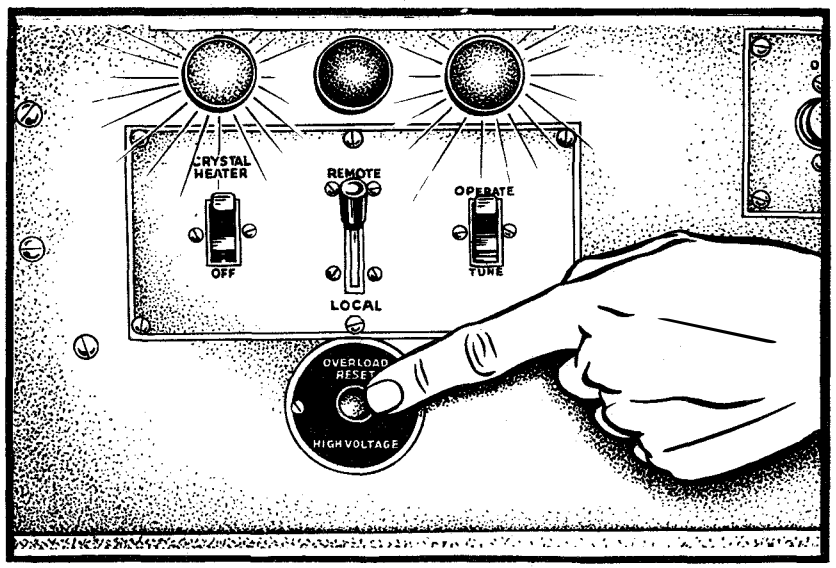


Figure 81

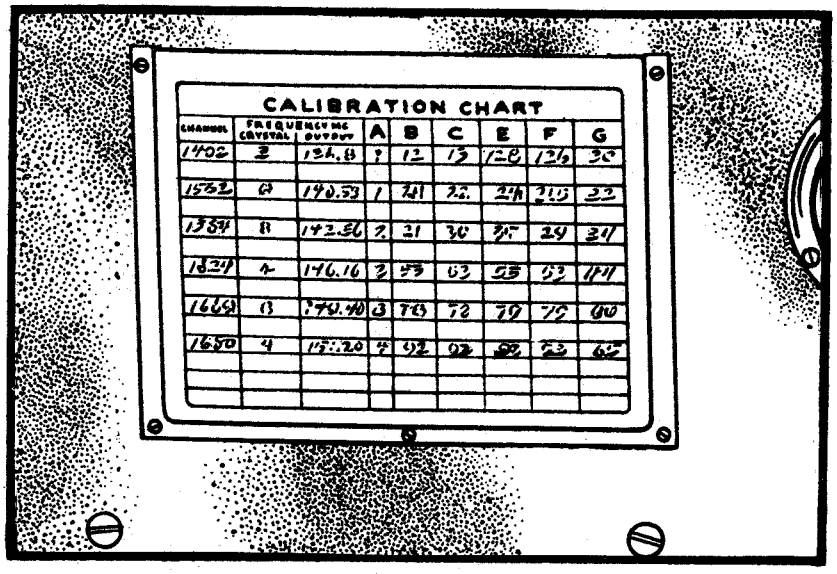


Figure 82

Figure 83

TUNING

Step 59 (Figure 82)

The transmitter should be tuned to each of the assigned operating frequencies. The entire tuning procedure should be completed for each of the crystals supplied with the transmitter, and the output frequencies should be checked against a standard frequency meter. The setting of each dial for each frequency should be recorded on the calibration chart, on the transmitter front panel.

Step 60 (Figure 83)

The complete tuning procedure must be performed each time a new frequency is to be used. When tuning, refer to the procedure outlined in Section III.

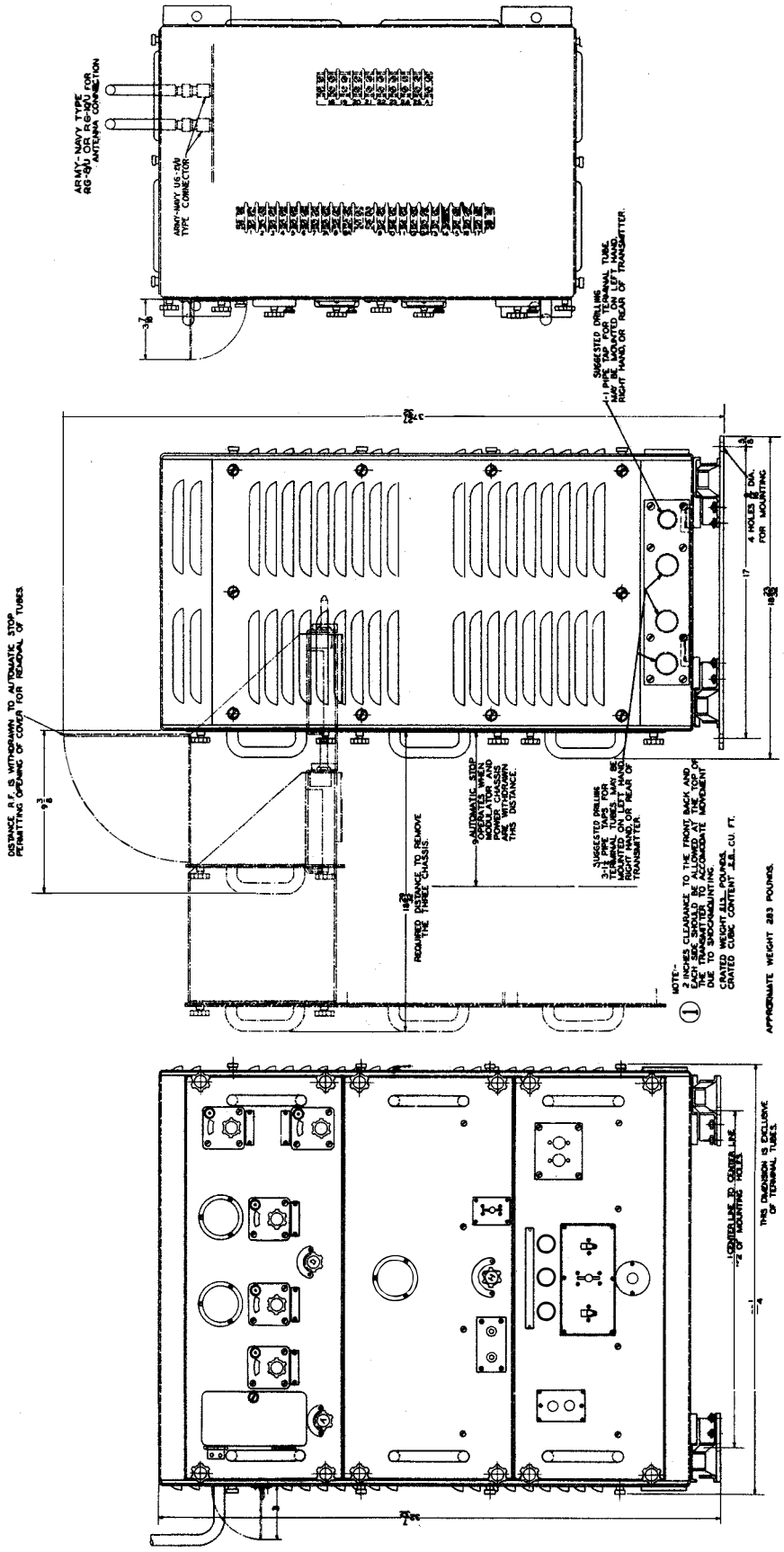


Figure 84—Type CRV-52328 Radio Transmitter (Outline)

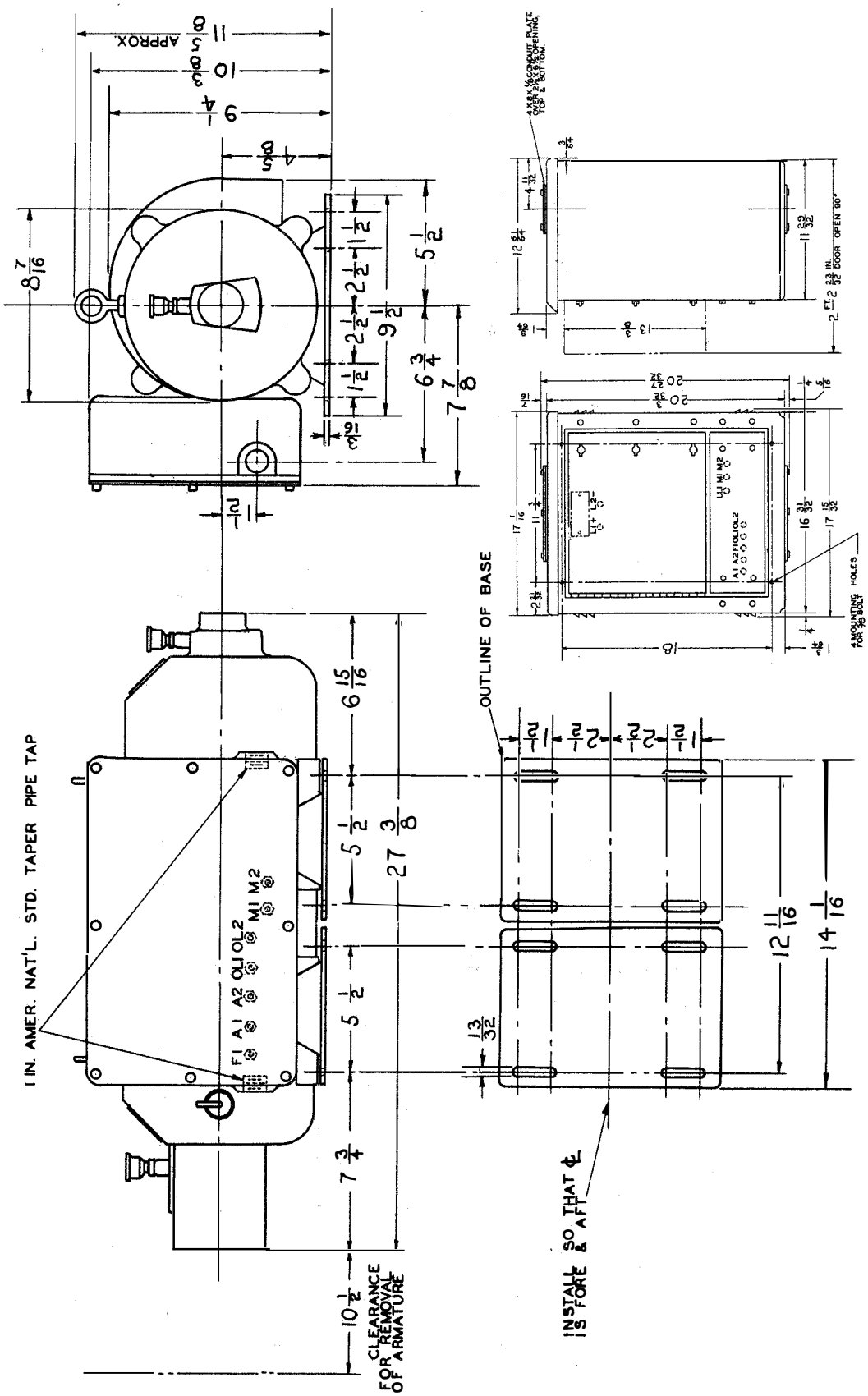


Figure 85—Type CG-211092 Motor Generator and Type CG-211090 Magnetic Controller (Outline)

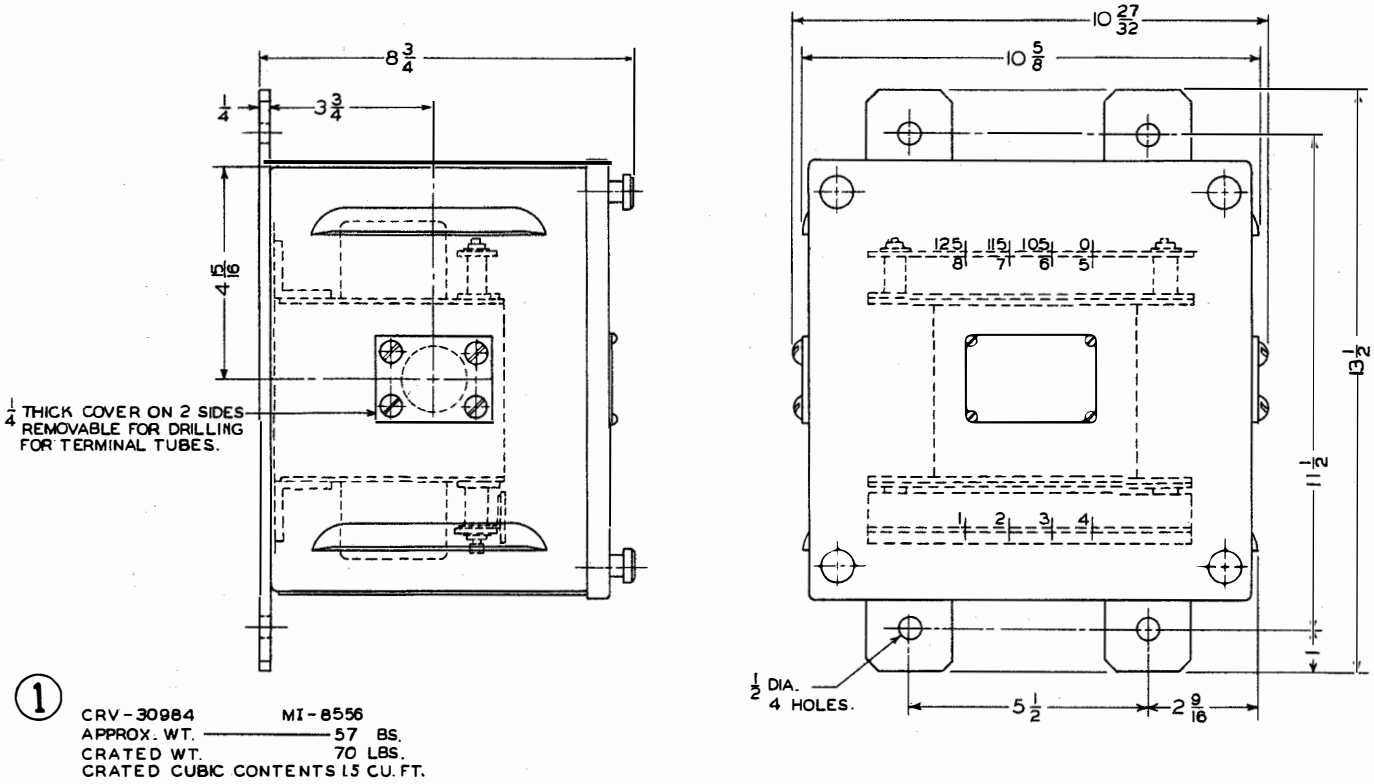


Figure 86—Type CG-30984 Line Transformer (Outline)

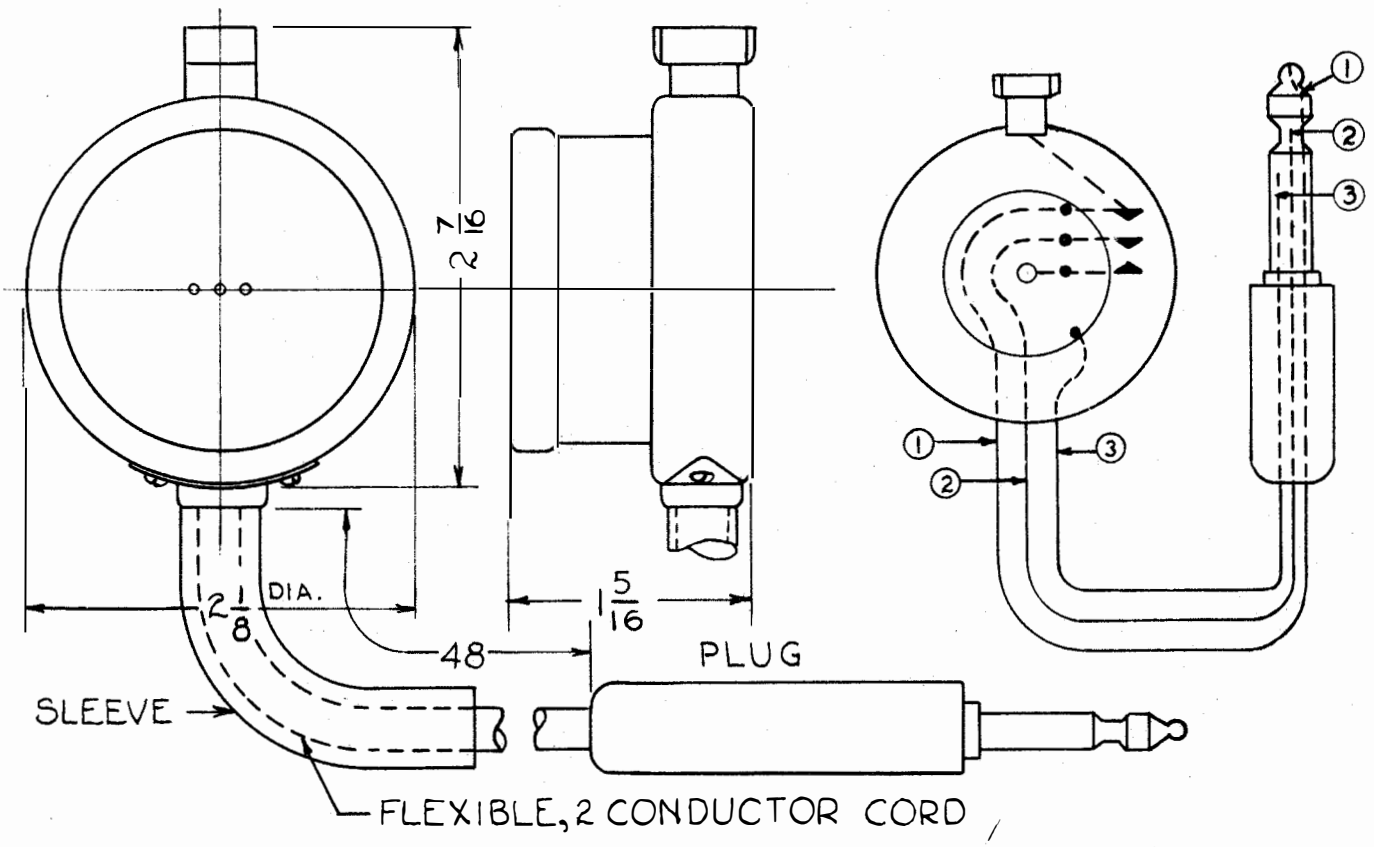


Figure 87—Type NAF-213264-6 Microphone (Outline)

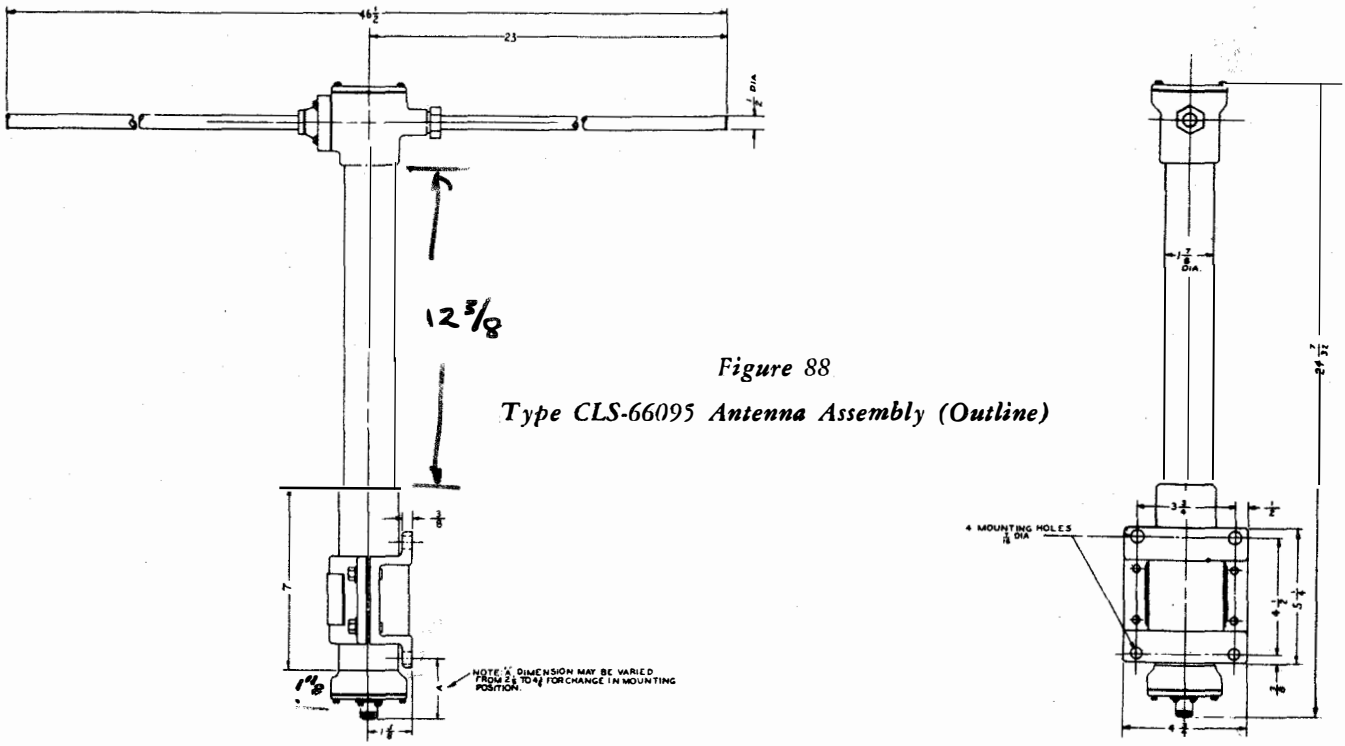
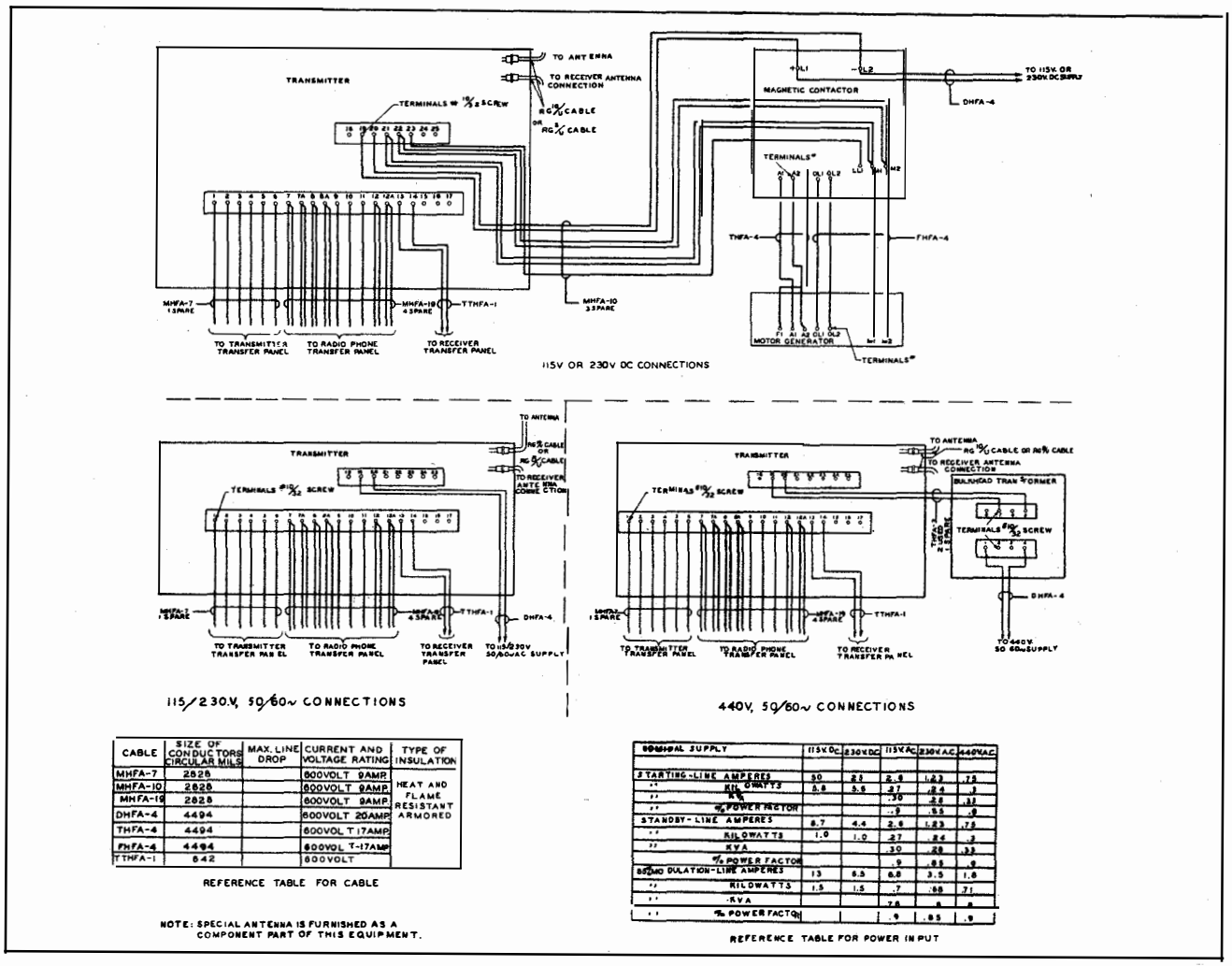


Figure 88

Type CLS-66095 Antenna Assembly (Outline)



CABLE	SIZE OF CONDUCTORS CIRCULAR MILS	MAX. LINE DROP	CURRENT AND VOLTAGE RATING	TYPE OF INSULATION
MHFA-7	2828		600VOLT 9AMP	HEAT AND FLAME RESISTANT ARMORED
MHFA-10	2828		600VOLT 9AMP	
MHFA-19	2828		600VOLT 9AMP	
DHFA-4	4494		600VOLT 20AMP	
THFA-4	4494		600VOL T 17AMP	
FHFA-4	4494		600VOL T-17AMP	
TTHFA-1	642		600VOLT	

REFERENCE TABLE FOR CABLE

NOTE: SPECIAL ANTENNA IS FURNISHED AS A COMPONENT PART OF THIS EQUIPMENT.

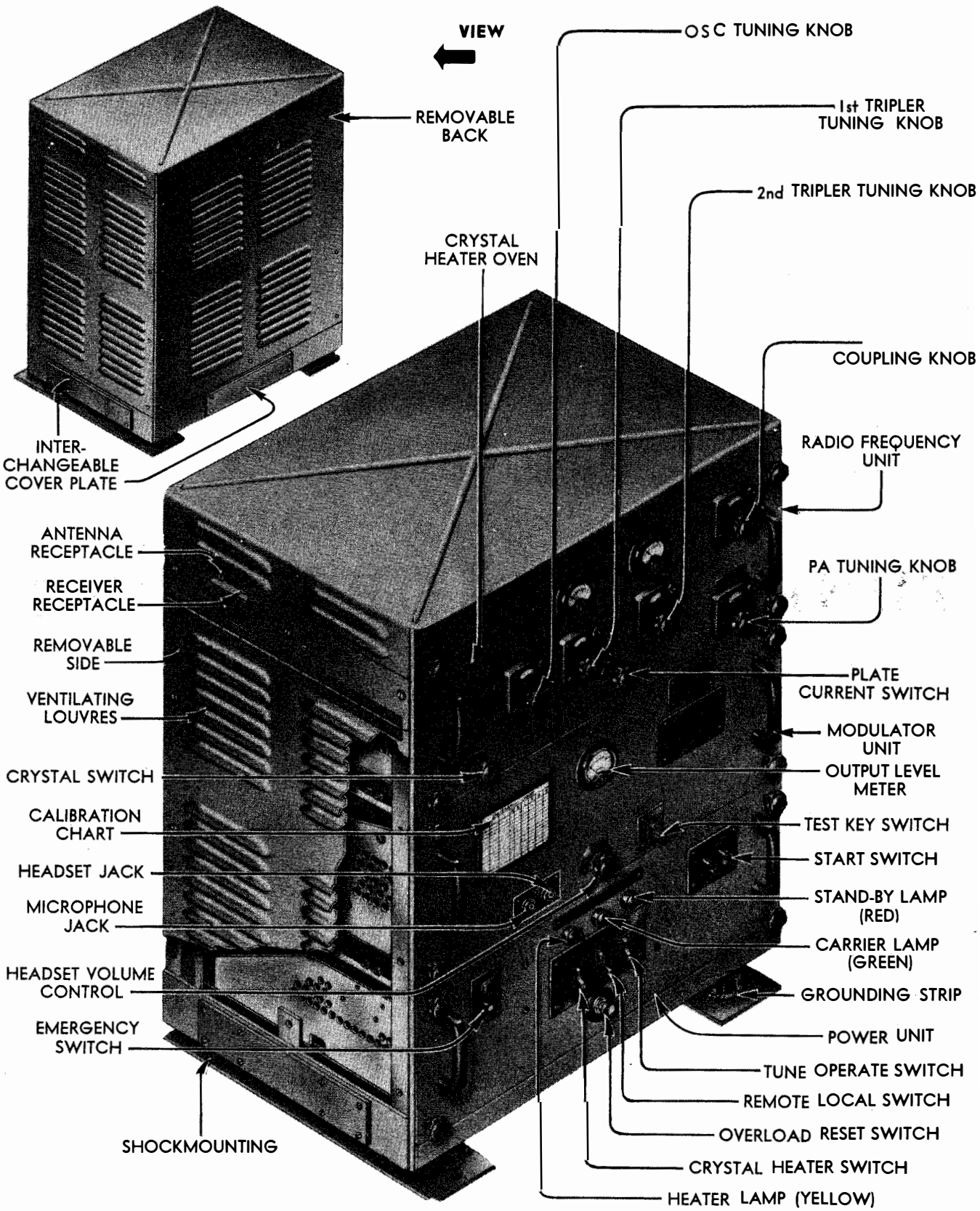
NOMINAL SUPPLY	115V DC	230V DC	115V AC	230V A.C.	440VAC
STARTING-LINE AMPERES	50	23	2.9	1.23	.75
" KILOWATTS	5.8	5.6	.27	.24	.3
" KVA			.30	.28	.33
" % POWER FACTOR			.9	.85	.9
STANDBY-LINE AMPERES	8.7	4.4	2.6	1.23	.75
" KILOWATTS	1.0	1.0	.27	.24	.3
" KVA			.30	.28	.33
" % POWER FACTOR			.9	.85	.9
SECOND DULATION-LINE AMPERES	13	8.5	6.8	3.5	1.8
" KILOWATTS	1.5	1.5	.7	.68	.71
" KVA			7.8	8	8
" % POWER FACTOR			.9	.85	.9

REFERENCE TABLE FOR POWER INPUT

Figure 89—TDQ Equipment Interconnections

SECTION III

TUNING AND OPERATING PROCEDURE



ASSEMBLY VIEW

Figure 90—TDQ Radio Transmitter

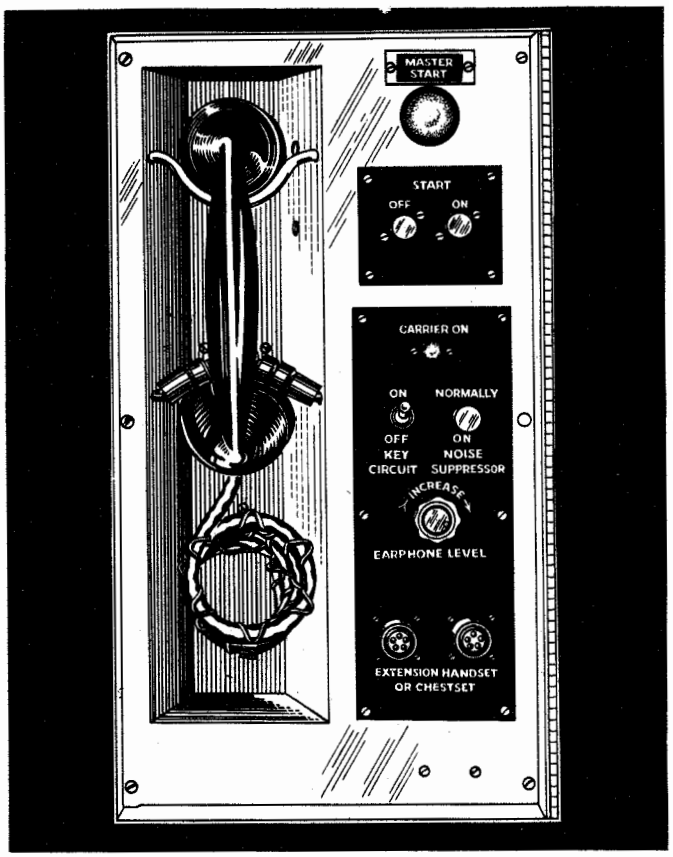
GENERAL DESCRIPTION

The Navy Model TDQ Radio Transmitting Equipment is designed for shipboard installation. The transmitter provides MCW (tone) telegraph transmission (A2) and voice transmission (A3) at any frequency between the limits of 115 and 156 megacycles. Basic equipment consists of the radio transmitter, the antenna, and sufficient r-f (coaxial) cable (not supplied by Contractor) to interconnect them. A 10-foot length of Navy Type RG 8/U coaxial cable is supplied with the transmitter. This cable should be used, as illustrated in Figure 56, when the transmission line distance between the transmitter and the antenna assembly is more than 100 feet. The transmitter consists of three separate units housed in a metal cabinet; they are the R-F Unit, the Modulator Unit, and the Power Unit. These units are supported on metal tracks, and may be withdrawn separately from the cabinet for servicing or inspection.

The equipment is usually operated from an a-c source but it is wired to permit operation from a d-c source with the aid of a motor-generator.

The equipment normally is operated from one or more remote control units. However, provision is made for transmission directly from the transmitter unit.

The Navy Type –23172 or –23211 series (or similar) Radiophone (remote control) Units may be used to control the Model TDQ Radio Transmitting Equipment. The Type –23172 Unit is known as a four-wire control unit, since starting and keying of the transmitter is effected through four interconnecting wires. The Type –23211 Unit is known as a six-wire control unit, since six wires are required for the starting and keying interconnections. However, more interconnecting wires are used to provide phone, indicator lamp, and power circuits between the transmitter and the Radiophone Unit. Also, some connections to the radio receiver are made from the Radiophone Unit.



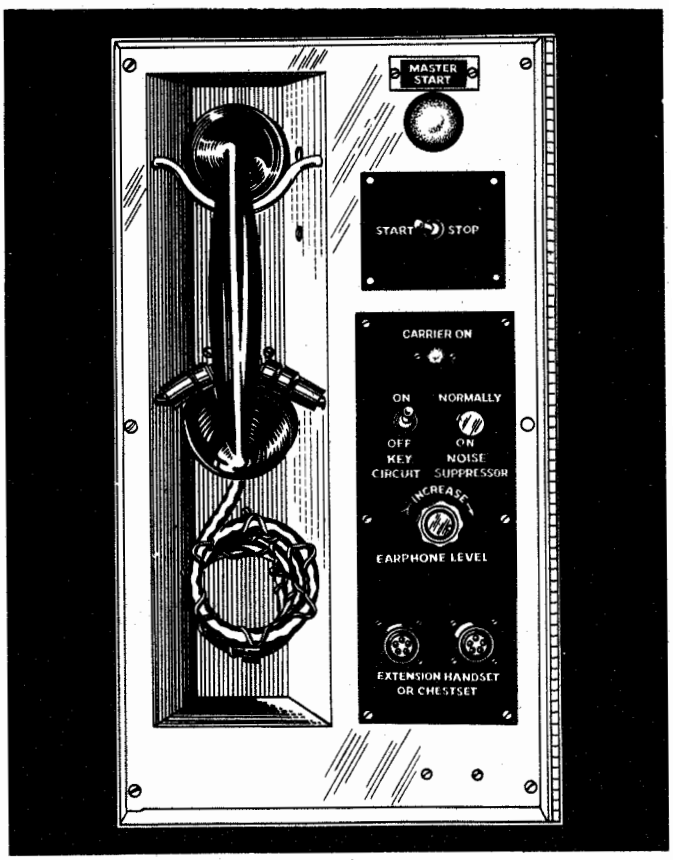


Figure 91

Referring to the front views of the Radiophone Units shown in Figure 91, it may be seen that the following controls and connections are available:

1. The transmitter START switch (note the difference between the four wire and six wire units) and the associated MASTER START (red) indicator lamp. They control and indicate the turning off and on of the Model TDQ Transmitter.

2. The CARRIER ON (green) indicator lamp. When phone or code is being transmitted from the Model TDQ Equipment, this lamp lights.

3. The KEY CIRCUIT (OFF-ON) switch, which connects the circuits for code transmission (at ON) or phone transmission (at OFF).

4. The NOISE SUPPRESSOR push button. By holding in this button, the noise suppressor action of the receiver can be cut out.

5. The EARPHONE LEVEL knob, which controls the headset volume.

6. The EXTENSION HANDSET or HEADSET receptacles, which permit the connection of external handsets or chest sets.

The handset included with each unit has a press-to-talk button located in the handle for the microphone. This handset is connected into the circuit automatically when it is removed from its holder.

A telegraph key may be connected to the terminal board No. 1 (not shown). Provision is made for connection of an external speaker amplifier, also at this terminal board.

The schematic diagram for these units (Figure 164) will be found on page 103 of this book.

TUNING PROCEDURE

The TDQ Radio Transmitter must be tuned to the desired transmission frequency before messages can be transmitted. The tuning procedure which follows should be carefully observed each time it is necessary to retune the transmitter.

Step 1 (See Figure 90)

Start the transmitter by operating the following controls:

EMERGENCY OFF switch to ON.

CRYSTAL HEATER switch to ON.

REMOTE - LOCAL switch to LOCAL.

START switch to ON.

Step 2 (Figure 92)

Depress the TUNE-OPERATE switch, on the power unit panel, to the TUNE position. Place the TEST KEY in the neutral (center) position.

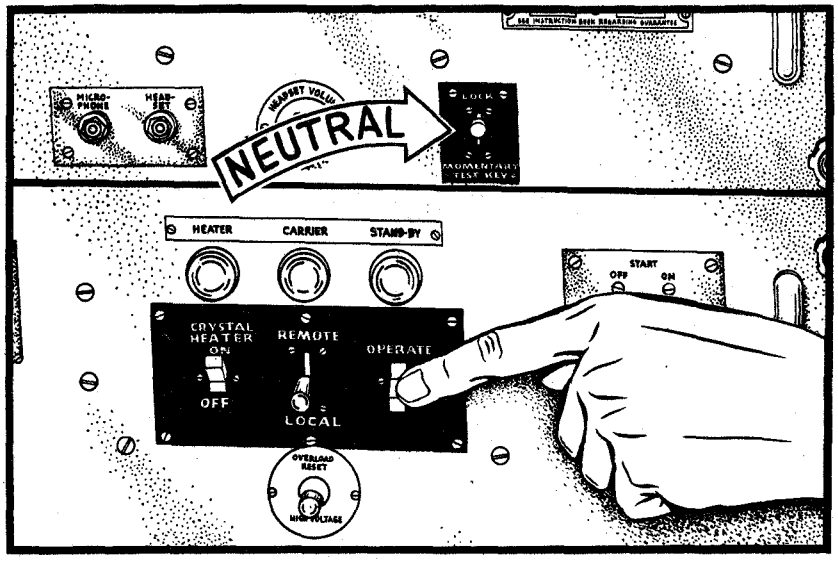


Figure 92

Step 3 (Figure 93)

Turn CRYSTAL SWITCH knob A to the position (1, 2, 3, or 4) corresponding to the crystal of the desired frequency.

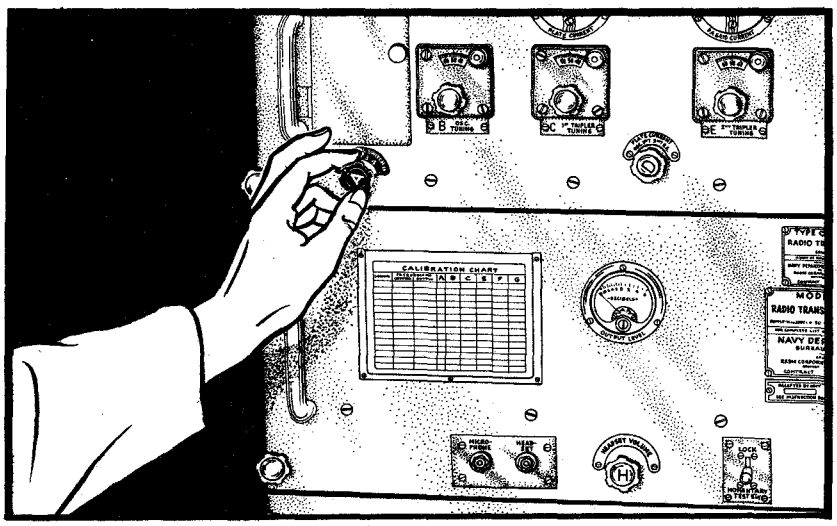


Figure 93

Step 4 (Figure 94)

Unlock ANTENNA COUPLING knob G by turning the locking knob in a counter-clockwise direction.

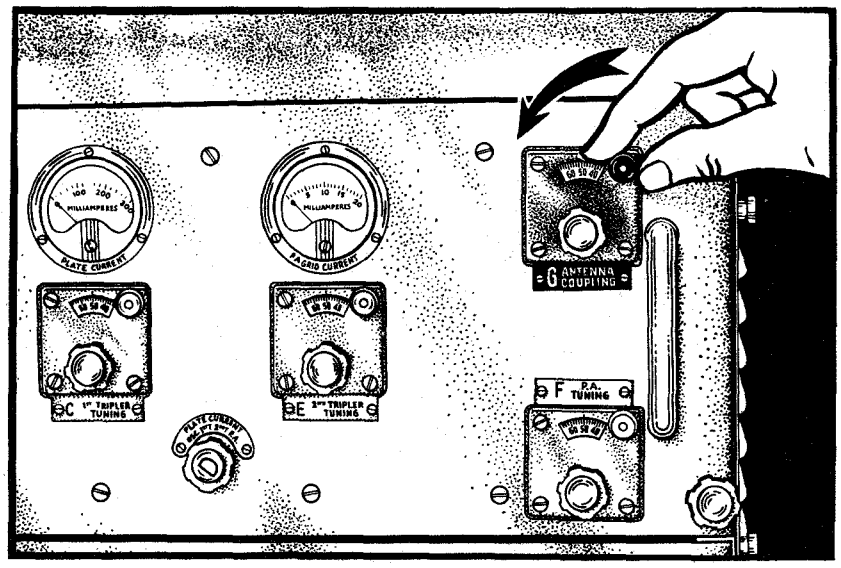


Figure 94

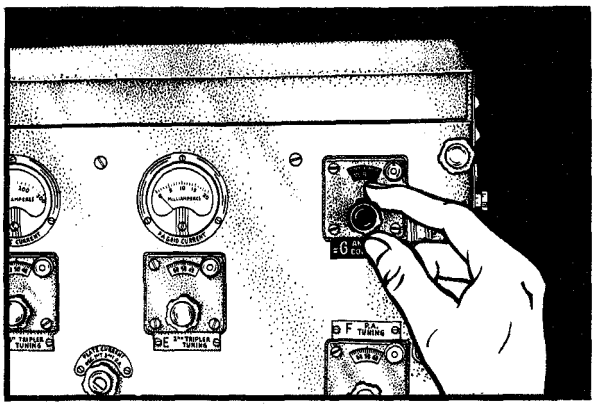


Figure 95

Step 5 (Figure 95)

Set the ANTENNA COUPLING knob G to the 0 position.

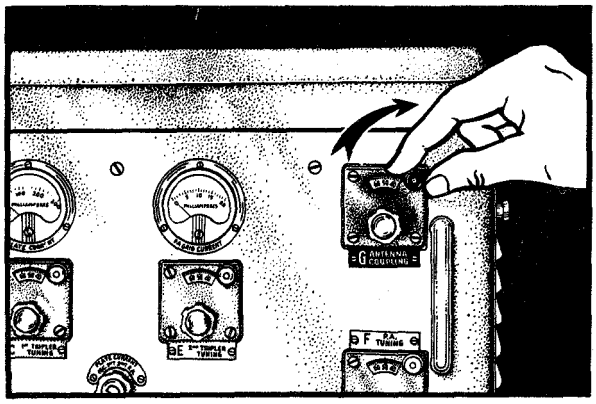


Figure 96

Step 6 (Figure 96)

Lock the ANTENNA COUPLING knob G by turning the locking knob in a clockwise direction.

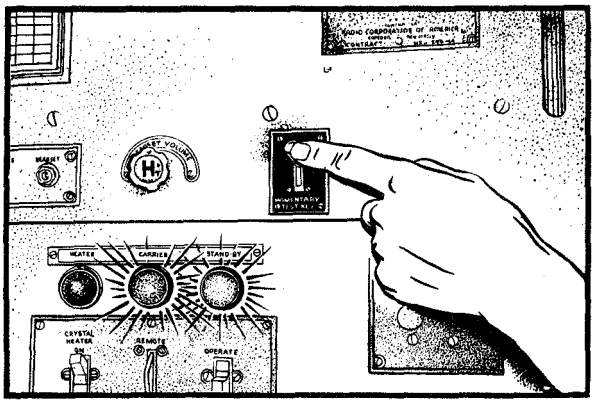


Figure 97

Step 7 (Figure 97)

Lift the TEST KEY switch on the modulator unit panel to the LOCK position; the green CARRIER ON lamp on the power unit panel should light.

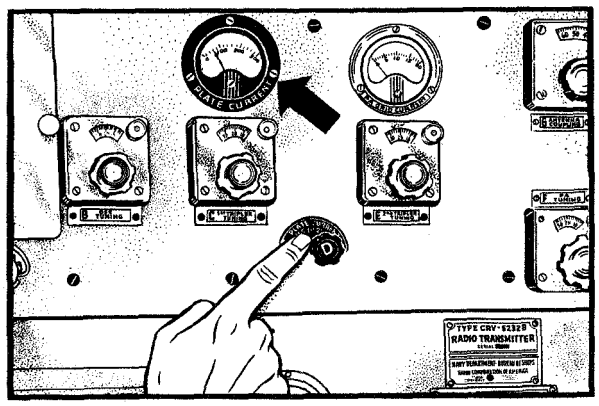


Figure 98

Step 8 (Figure 98)

Turn the PLATE CURRENT switch knob D on the r-f unit panel, to the OSC. position. Oscillator plate current will be indicated on the PLATE CURRENT meter.

Step 9 (Figure 99)

Unlock the OSC. TUNING knob B on the r-f unit panel by turning the locking knob in a counter-clockwise direction.

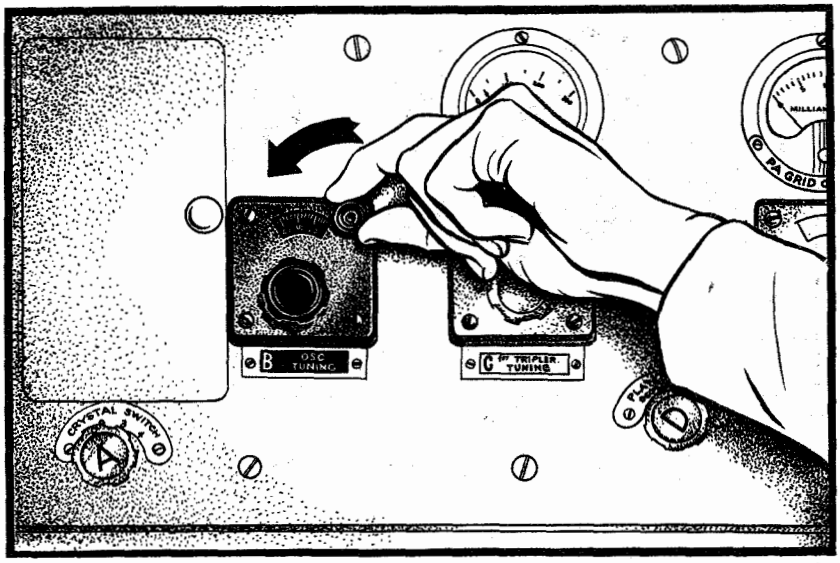


Figure 99

Step 10 (Figure 100)

Refer to the calibration chart on the transmitter front panel for a preliminary setting for the OSC. TUNING dial B. Then turn the dial from slightly below this setting toward the high-frequency, until the dip (minimum plate current reading) is indicated on the PLATE CURRENT meter. When the dip is reached, turn knob B in the direction of a higher dial reading until the meter pointer rises about ½ of a small division.

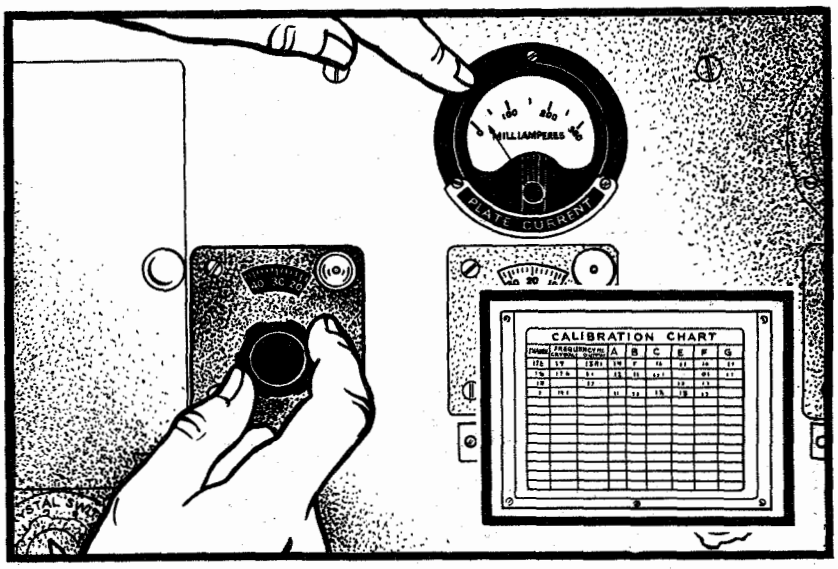


Figure 100

Step 11 (Figure 101)

Lock the OSC. TUNING dial B by turning the locking knob in a clockwise direction.

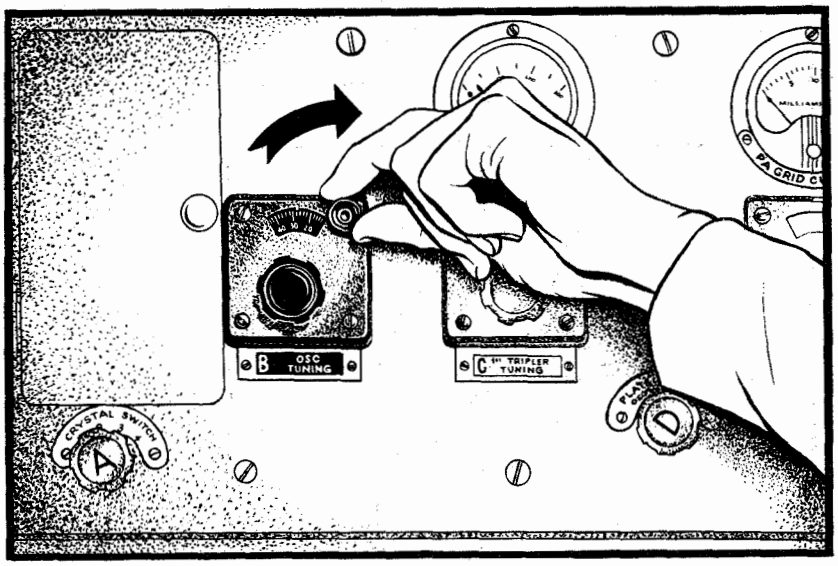


Figure 101

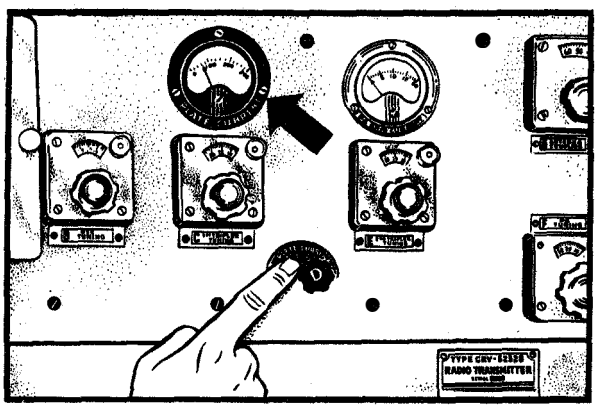


Figure 102

Step 12 (Figure 102)

Turn the PLATE CURRENT switch knob D to the 1st T position. The PLATE CURRENT meter will indicate the first tripler plate current.

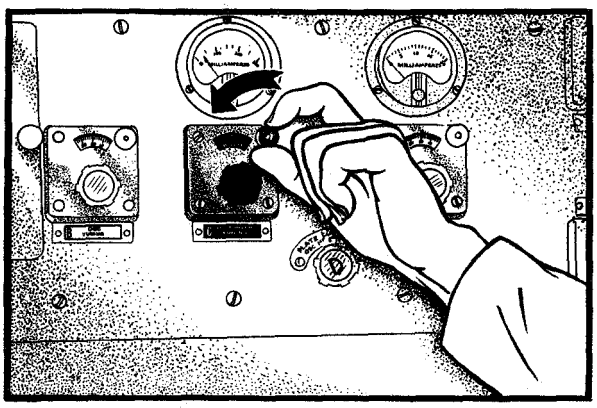


Figure 103

Step 13 (Figure 103)

Unlock the 1st TRIPLER TUNING knob C on the r-f unit panel by turning the locking knob in a counter-clockwise direction.

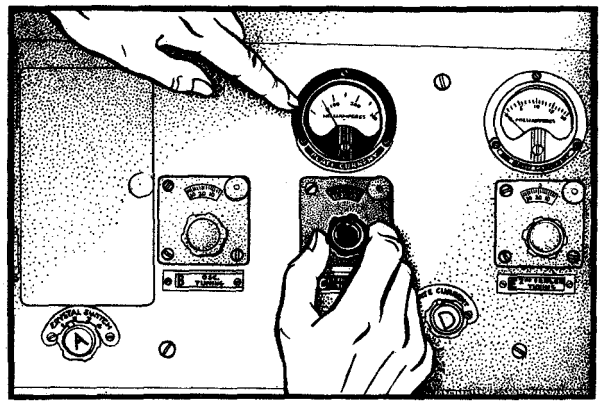


Figure 104

Step 14 (Figure 104)

Tune the 1st TRIPLER TUNING knob C until a minimum reading is indicated on the PLATE CURRENT meter.

NOTE

Check the calibration chart on the modulator unit panel for an approximate dial setting. This applies to all subsequent dial settings.

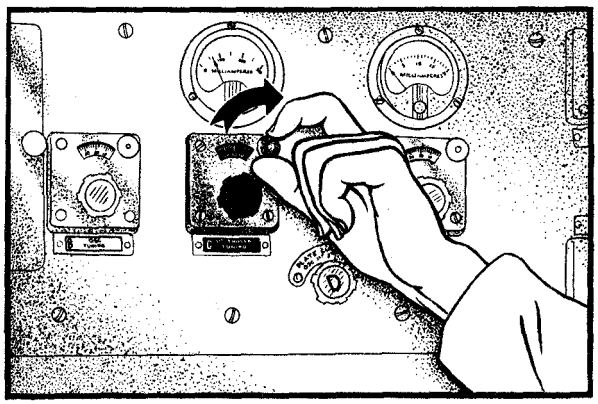


Figure 105

Stop 15 (Figure 105)

Lock the dial on the 1st TRIPLER TUNING knob C by turning the locking knob in a clockwise direction.

Step 16 (Figure 106)

Turn the PLATE CURRENT switch knob D to the 2nd T position. The PLATE CURRENT meter will indicate the second tripler plate current.

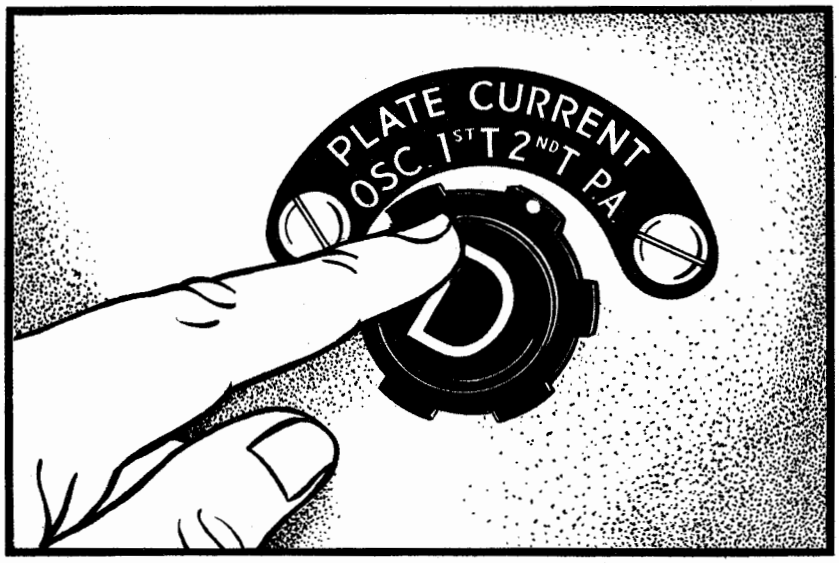


Figure 106

Step 17 (Figure 107)

Unlock the 2nd TRIPLER TUNING knob E on the r-f unit panel by turning the locking knob in a counter-clockwise direction.

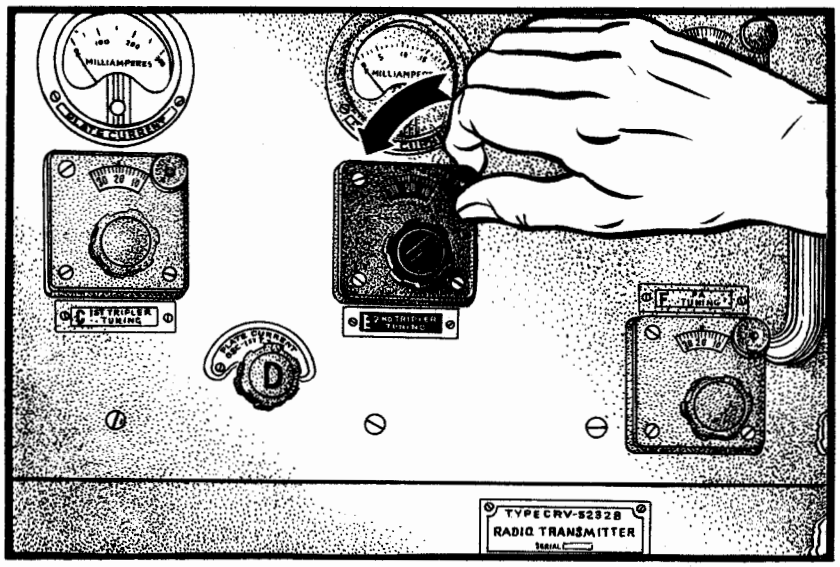


Figure 107

Step 18 (Figure 108)

Tune the 2nd TRIPLER TUNING knob E until a minimum reading is indicated on the PLATE CURRENT meter.

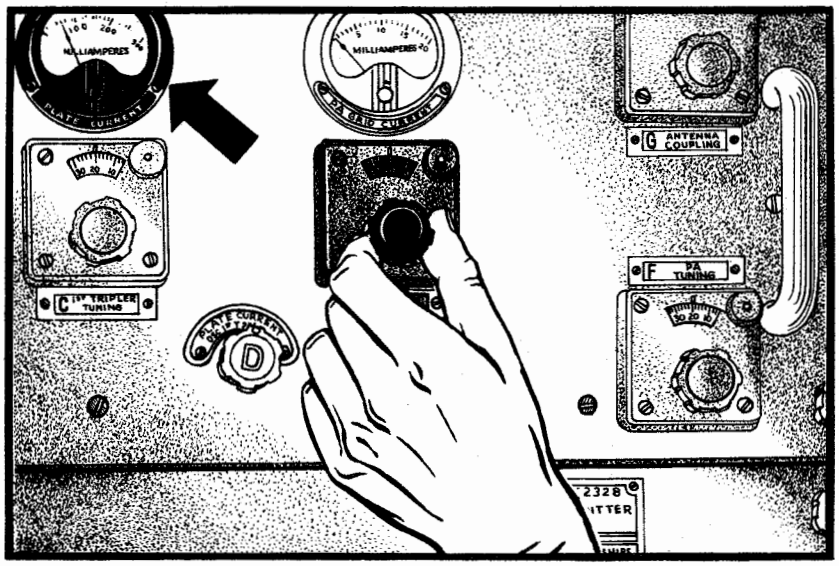


Figure 108

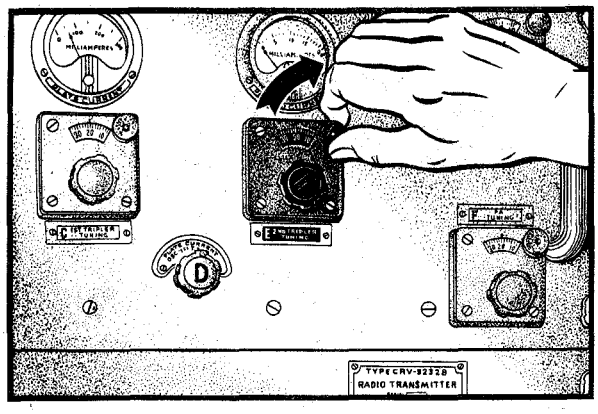


Figure 109

Step 19 (Figure 109)

Lock the 2nd TRIPLER TUNING knob E by turning the locking knob in a clockwise direction.

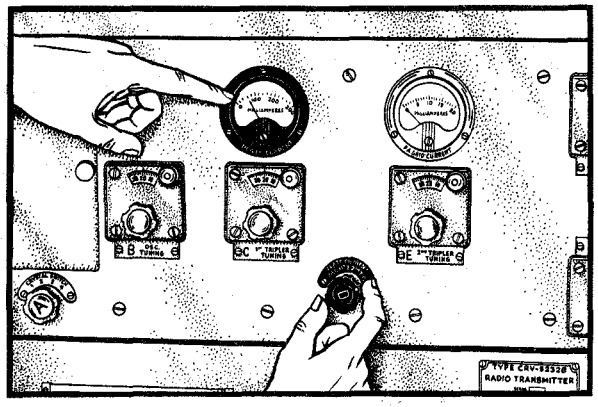


Figure 110

Step 20 (Figure 110)

Turn the PLATE CURRENT switch knob D to the P.A. position. The PLATE CURRENT meter will indicate the P.A. plate current.

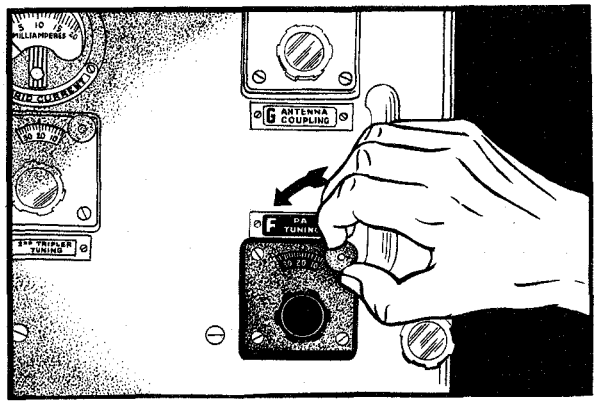


Figure 111

Step 21 (Figure 111)

Unlock the P.A. TUNING knob F by turning the locking knob in a counter-clockwise direction.

Figure 112

Step 22 (Figure 112)

Tune the P.A. TUNING knob F until a minimum reading is indicated on the PLATE CURRENT meter.

NOTE (Figure 113)

For the following steps, use the MOMENTARY position of the TEST KEY. Hold this key in the MOMENTARY position with one hand, and turn the dial with the other hand. When the dial is not being turned, release the TEST KEY to avoid possible damage due to overload of the tubes.

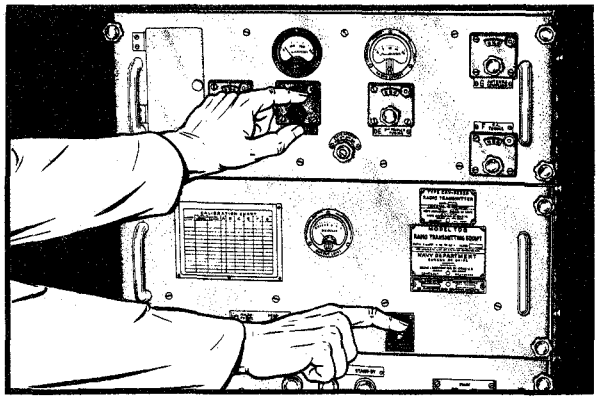


Figure 113

Step 23 (Figure 114)

Turn the PLATE CURRENT switch D to the P.A. position, and lift the TUNE-OPERATE switch on the power unit panel (insert) to the OPERATE position.

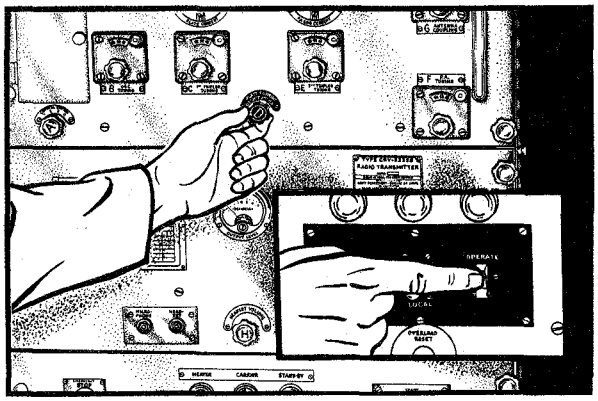


Figure 114

Step 24 (Figure 115)

The P.A. PLATE CURRENT reading will now be low (about 100 milliamperes).

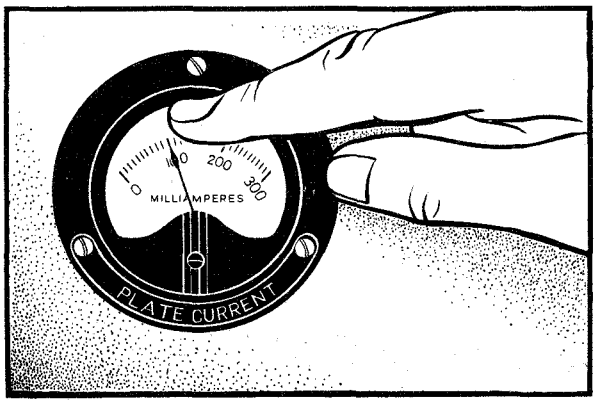


Figure 115

Step 25 (Figure 116)

Unlock the ANTENNA COUPLING knob G on the r-f unit panel by turning the locking knob in a counter-clockwise direction.

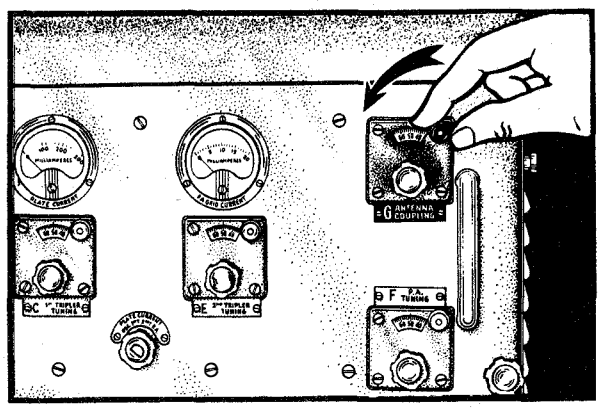


Figure 116

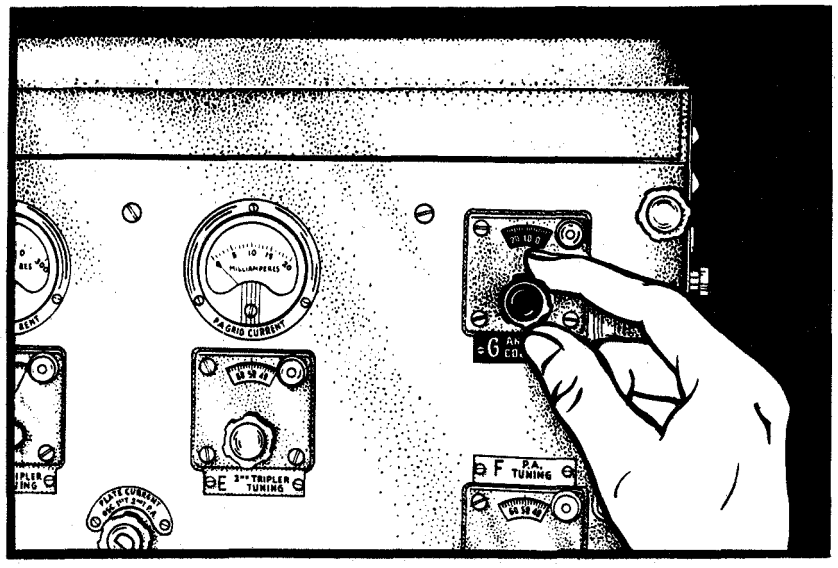


Figure 117

Step 26 (Figure 117)

Slowly turn the ANTENNA COUPLING knob G in a clockwise direction, a few divisions higher.

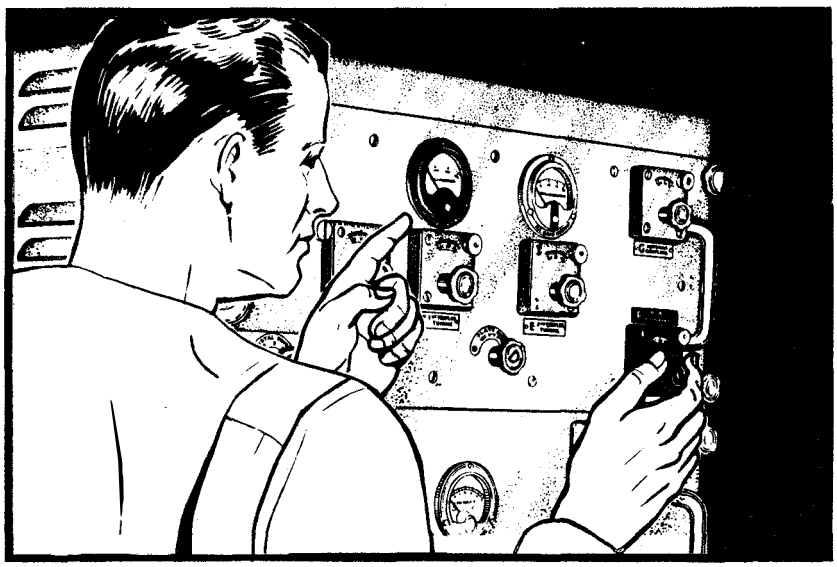


Figure 118

Step 27 (Figure 118)

Turn the P.A. TUNING knob F until a minimum reading is indicated on the PLATE CURRENT meter. (Be certain that knob F is unlocked.)

Figure 119

Step 28 (Figure 119)

When necessary, continue to alternately tune the ANTENNA COUPLING knob G and the P.A. TUNING knob F until the P.A. PLATE CURRENT meter indicates 230 milliamperes.

NOTE

Be certain that tuning knob F is turned for minimum meter reading when the 230 milliampere indication is obtained.

CAUTION

Do not exceed this value of 230 milliamperes.

Step 29 (Figure 120)

When the P.A. PLATE CURRENT meter indicates 230 milliamperes, lock ANTENNA COUPLING knob G, and P.A. TUNING knob F, by turning the locking knobs in a clockwise direction.

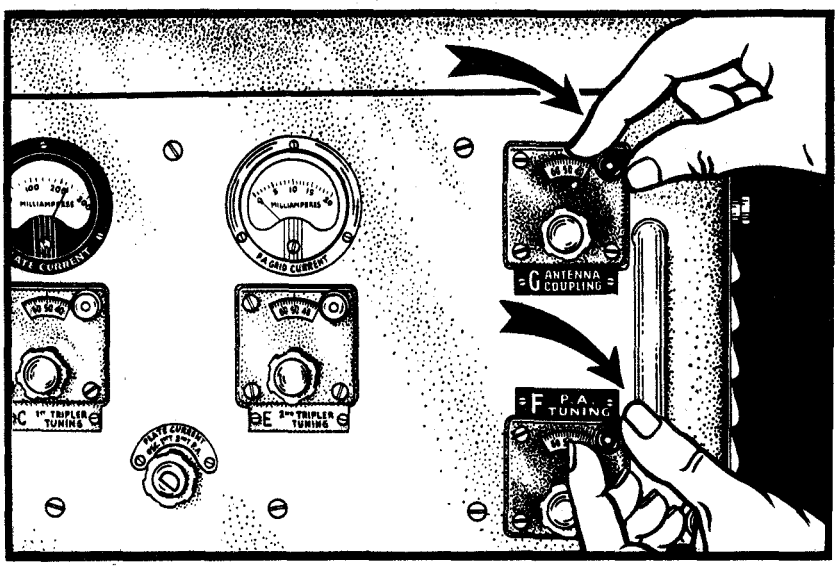


Figure 120

NOTE (Figure 121)

The P.A. GRID CURRENT meter now will indicate approximately 11 to 15 milliamperes.

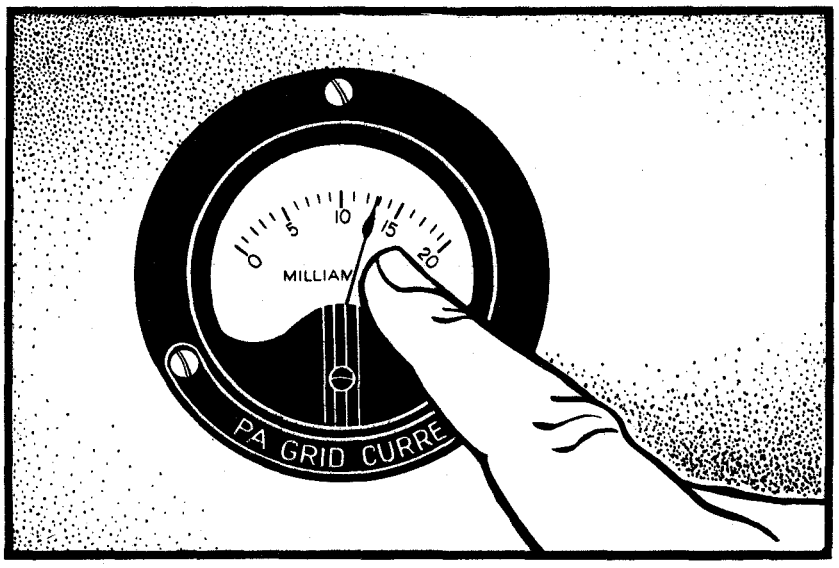


Figure 121

When the preceding adjustments (1 to 29, inclusive) have been completed for each position of the CRYSTAL SWITCH, knob A, the transmitter is ready for operation at the selected frequency.

TYPICAL TUNING DATA

Freq. Mc.	DIAL SETTINGS					Power Output
	Osc.	1st Trip.	2nd Trip.	P.A.	Ant.	
111.6	37	23	14	25	75	
116.1	45	31	22	33	76	
128.7	61	48	44	52	89	
142.74	74	62	62	70	85	(at least 45 watts)
149.4	79	67	70	76	95	
156.0	83	72	78	83	99	
162.0	87	76	85	91	97	
PLATE CURRENT (mc.)	30	60	80	320		

Note 1: Plate Current Meter Readings hold practically constant for all frequencies.

Note 2: P.A. Grid Current Meter (M-102) reads 13 milliamperes (approximately).

SUMMARY OF TUNING PROCEDURE

(1) Close Main Power Supply Switch (if one is used).

(2) Press "ON" button of "EMERGENCY SWITCH" (S-301).

(3) Lift "CRYSTAL HEATER" switch (S-302) to "ON" position.

(4) Press the "ON" button of the "START" switch (S-305, S-306) or lift the "START" toggle switch (S-307) to the "ON" position.

(5) Place "REMOTE-LOCAL" switch (S-303) in "LOCAL" position.

(6) Throw "TUNE OPERATE" switch (S-304) to "TUNE" position.

(7) Place "ANT COUPLING" control (Knob "G") at "0" (zero) dial setting.

(8) Lift "TEST KEY" switch (S-201) to "LOCK" position.

(9) Select proper crystal with "CRYSTAL SELECTOR" switch (Knob "A").

(10) Turn Meter Switch (Knob "D") to "OSC" position.

(11) Resonate Oscillator stage (MINIMUM plate current on "PLATE CURRENT METER" M-101).

(12) Turn Meter Switch to "1ST T" position.

(13) Resonate 1st Tripler stage (MINIMUM plate current).

(14) Turn Meter Switch to "2ND T" position.

(15) Resonate 2nd Tripler stage (MINIMUM plate current).

(16) Turn Meter Switch to "PA" position.

(17) Resonate Power Amplifier stage (MINIMUM plate current).

(18) Throw "TUNE-OPERATE" switch to "OPERATE" position.

(19) Increase setting of "ANT COUPLING" tuning control and re-resonate Power Amplifier stage. Continue this operation until PA plate current is 230 milliamperes at resonance.

(20) To stop the transmitter, press the "OFF" button of the "START" switch, or press the "START" toggle switch down to the "OFF" position.

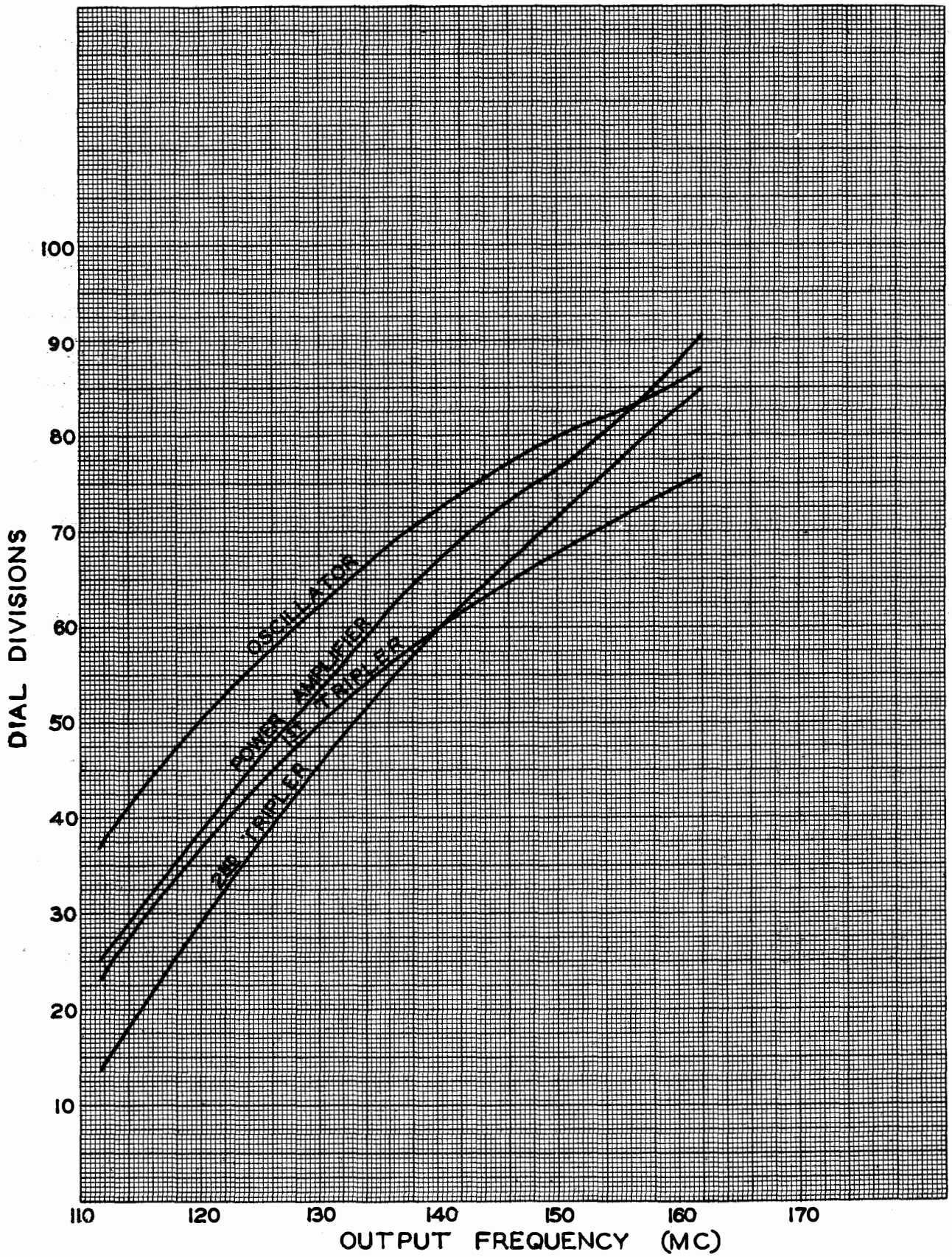


Figure 122 TYPICAL CALIBRATION CURVES

OPERATION

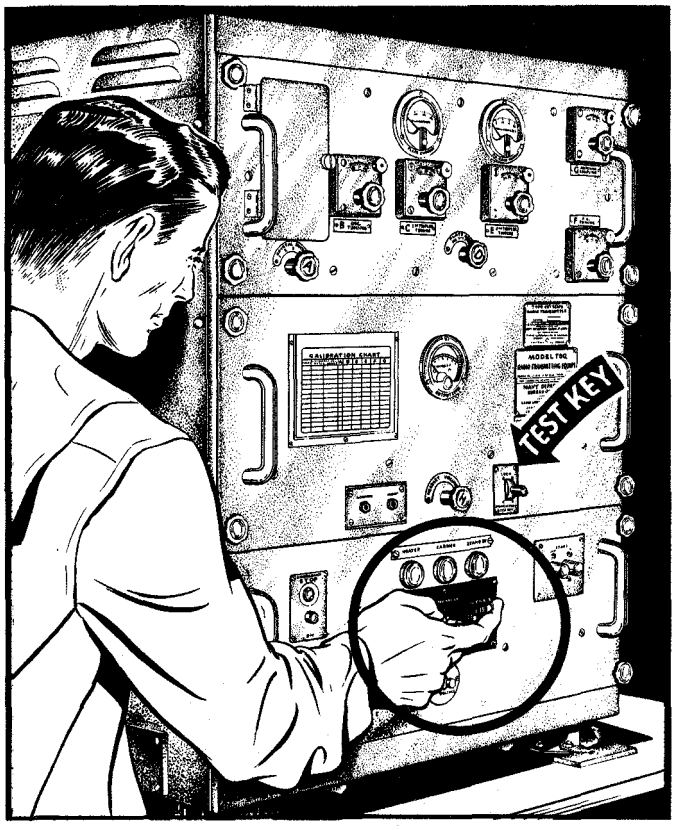


Figure 123

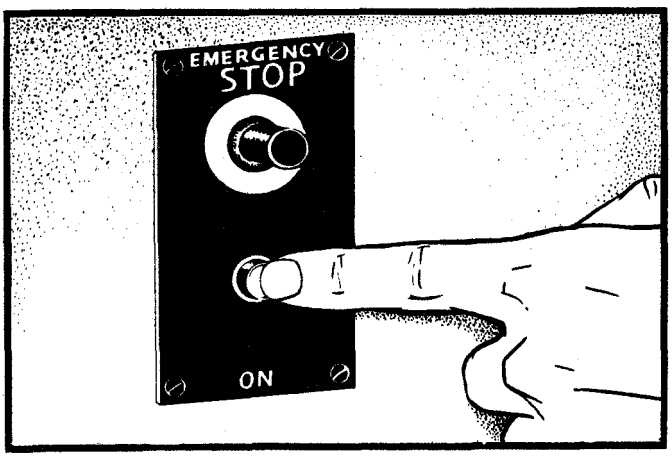


Figure 124

After the transmitter has been properly installed and tuned for a specific frequency, it can be placed in operation by following the procedures outlined below. These procedures include: (a) operation from the transmitter; and (b) operation from a remote control unit.

CAUTION—DO NOT OPERATE THE TRANSMITTER (i.e., operate test key, press telegraph key, or press microphone switch) UNLESS THE ANTENNA IS CONNECTED TO THE TRANSMITTER. IT IS IMPORTANT THAT ALL OUTPUT CIRCUIT COMPONENTS (i.e., the transmission line filter, the transmission line, and the antenna assembly) BE CHECKED FOR CONTINUITY AND SHORT CIRCUITS BEFORE OPERATION OF THE TRANSMITTER IS ATTEMPTED. FAILURE TO OBSERVE THIS PRECAUTION MAY RESULT IN SERIOUS DAMAGE TO THE EQUIPMENT.

OPERATION FROM THE TRANSMITTER

Step 1 (Figure 123)

Lift the TUNE-OPERATE switch on the transmitter power unit panel to the OPERATE position. Place the TEST KEY in the neutral (center) position.

Step 2 (Figure 124)

Press the ON button of the EMERGENCY switch on the left of the power unit panel.

NOTE

The EMERGENCY switch should be in the ON position at all times, except when an emergency shut-down of the transmitter is necessary. If this switch is not in the ON position, the crystal oven will not heat, even though the CRYSTAL HEATER switch is ON.

Step 3 (Figure 125)

Lift the CRYSTAL HEATER switch to the ON position. Normally, the yellow HEATER lamp will light. However, if the oven temperature is above 70 degrees C., this lamp will not light.

NOTE

Leave the CRYSTAL HEATER switch in the ON position at all times, so that the crystals will maintain their proper operating temperature.

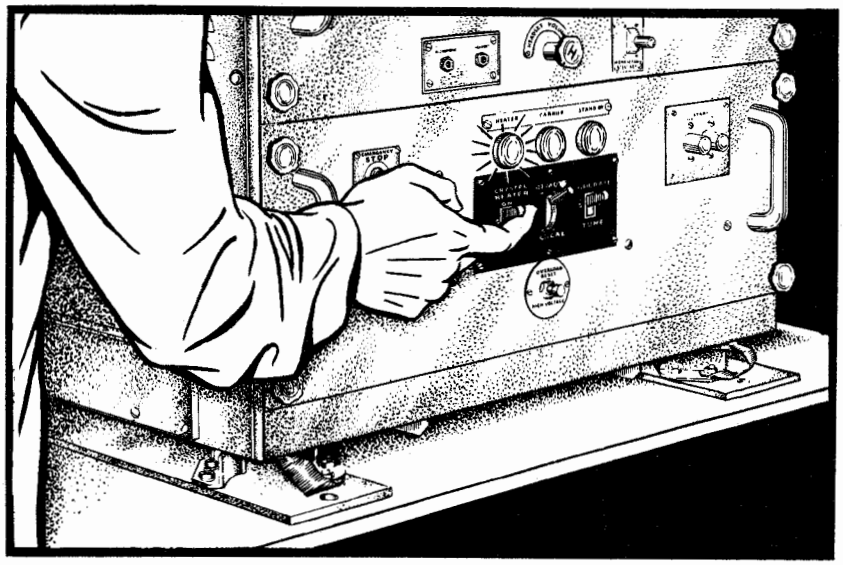


Figure 125

Step 4 (Figure 126)

Insert the microphone plug into the MICROPHONE JACK, and insert the headphone plug into the HEADSET JACK. Both jacks are located on the transmitter front panel. Connect a telegraph key to terminals 5 and 6 on terminal board A.

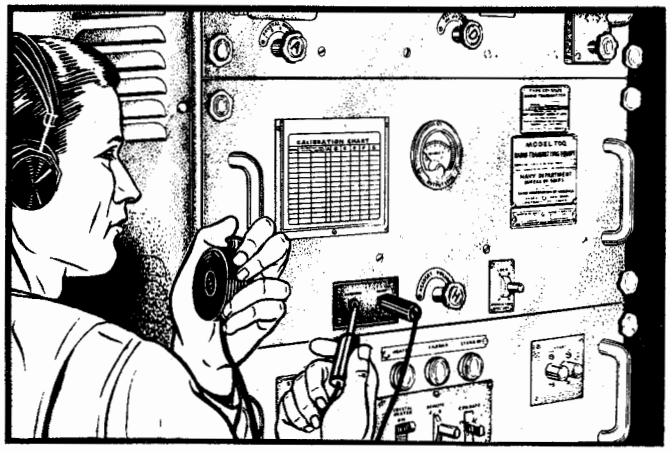


Figure 126

Step 5 (Figure 127)

Depress the REMOTE-LOCAL switch, in the center of the power unit panel, to the LOCAL position.

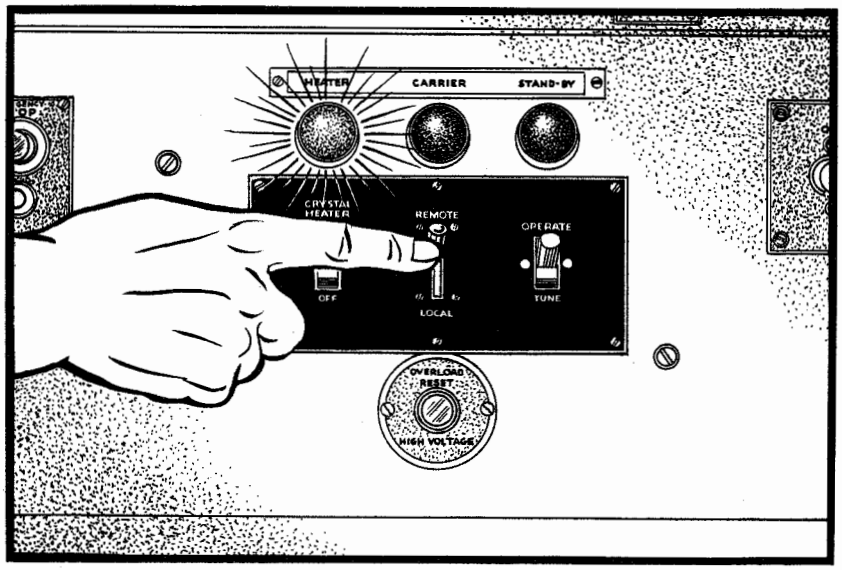


Figure 127

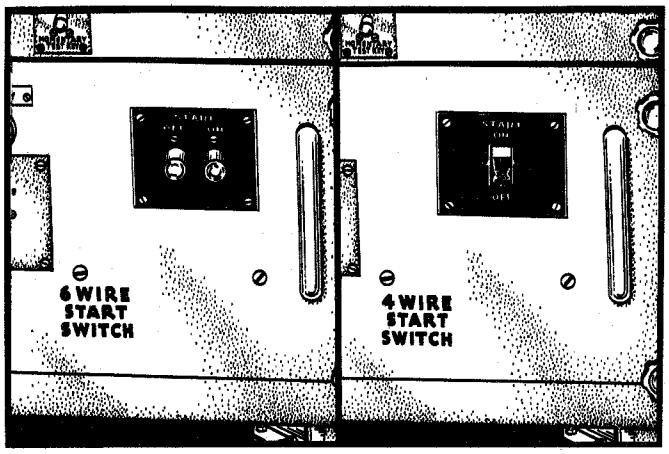


Figure 128

Step 6 (Figure 128)

TO START TRANSMITTER

(a) If a 6-wire control system is used, momentarily press the ON button of the START switch.

(b) If a 4-wire control system is used, lift the START switch to the ON position.

(c) When these switches are turned on, the red STAND-BY pilot light on the transmitter unit panel will go on.

NOTE

If a motor-generator is used to power the equipment, it will start at this time.

CAUTION

Before proceeding with the following steps, allow at least 30 seconds for the transmitter tubes to reach operating temperature. Be sure the antenna is connected.

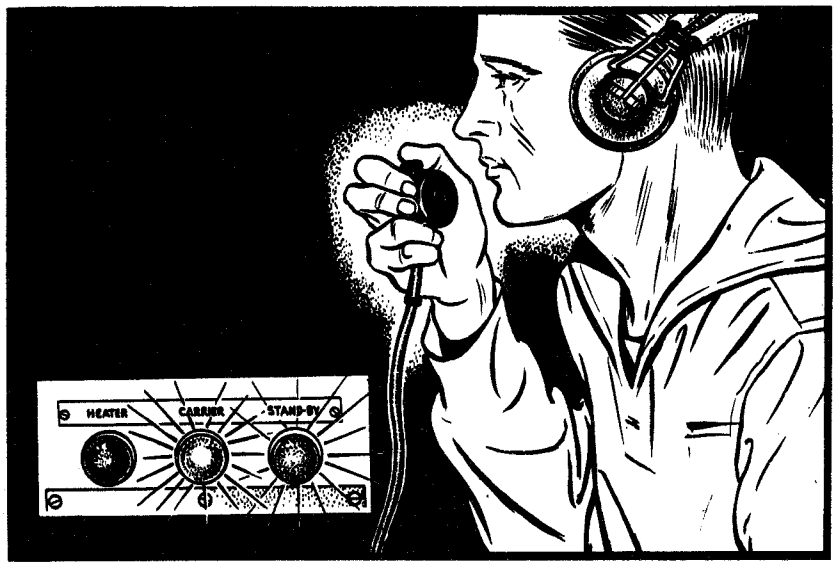


Figure 129

Step 7 (Figure 129)

To transmit voice, hold the press-to-talk push-button (on the microphone) down and speak into the microphone. Transmission can take place only while the press-to-talk push-button is pressed.

To transmit code (MCW telegraph), manipulate the telegraph key.

The CARRIER indicator lamp (green) will light and stay lit while either type of transmission is in use.

Incoming messages may be instantly received by removing the pressure from the press-to-talk push-button. However, when MCW telegraph messages are being transmitted, the telegraph key must be kept open for an interval of approximately one second to enable incoming signals to be heard. When transmission ceases the green CARRIER light goes off.

Step 8 (Figure 130)

To control the volume of the signal (monitoring or incoming) in the headphones, turn the HEADSET VOLUME control H.

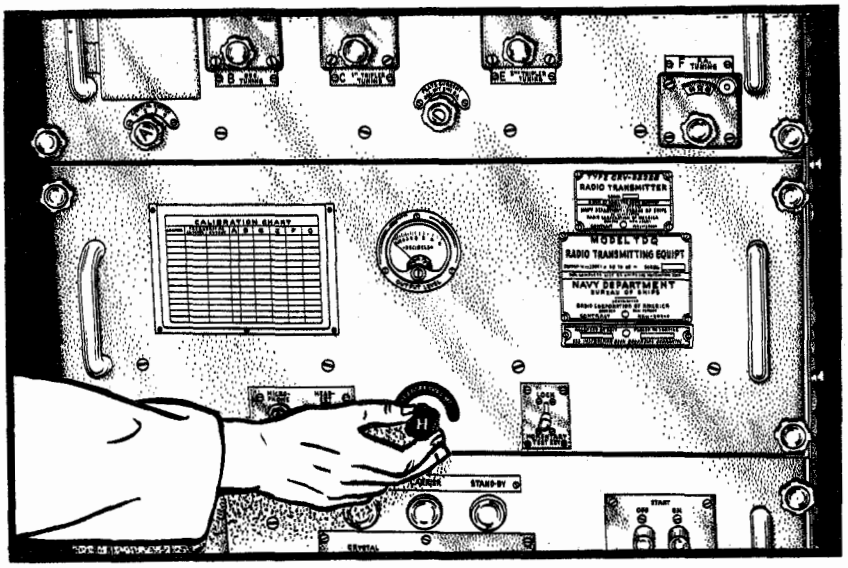


Figure 130

Step 9 (Figure 131)

TO STOP TRANSMITTER

(a) If a 6-wire control system is in use, momentarily push the OFF button of the START switch.

(b) If a 4-wire control system is in use, depress the START switch lever to the OFF position.

NOTE

The STAND - BY indicator lamp (red) will go off.

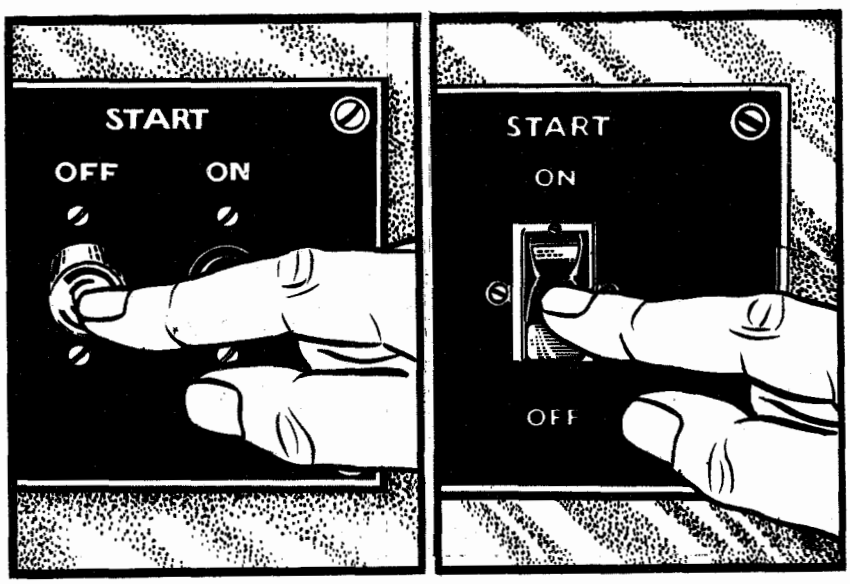


Figure 131

OPERATION FROM THE REMOTE CONTROL UNIT

Before operation from the remote control unit can be accomplished it is necessary to make the following adjustments at the transmitter:

Step 1: Lift TUNE-OPERATE switch to OPERATE position and place the TEST KEY in the neutral position.

Step 2: Press the ON button of the EMERGENCY switch.

Step 3: Lift the CRYSTAL HEATER switch to the ON position.

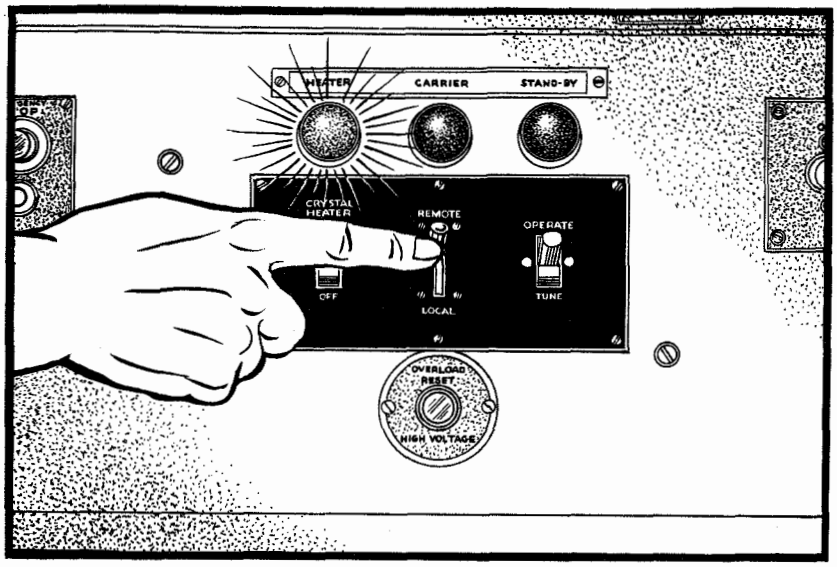


Figure 132

Step 4 (Figure 132)

Lift the REMOTE-LOCAL switch to the REMOTE position.

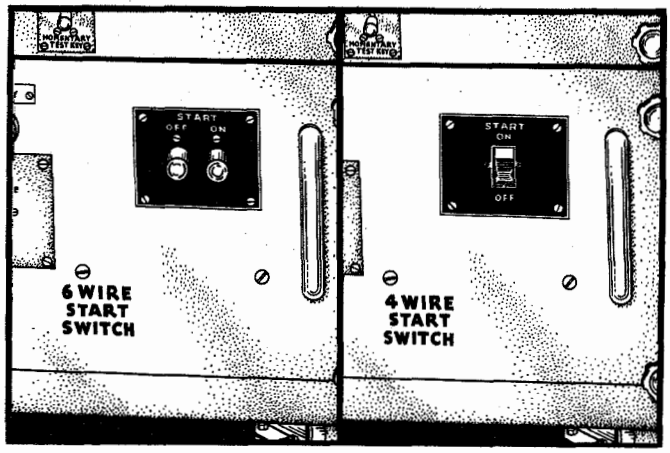


Figure 133

Step 5 (Figure 133)

If a 4-wire control system is used (identified by the single lever-type START switch), place the START switch in the ON position.

Having completed the preceding adjustments, the transmitter may be started, signals transmitted, and the transmitter then stopped by proceeding as described in the following paragraphs.

Be sure the Antenna is connected.

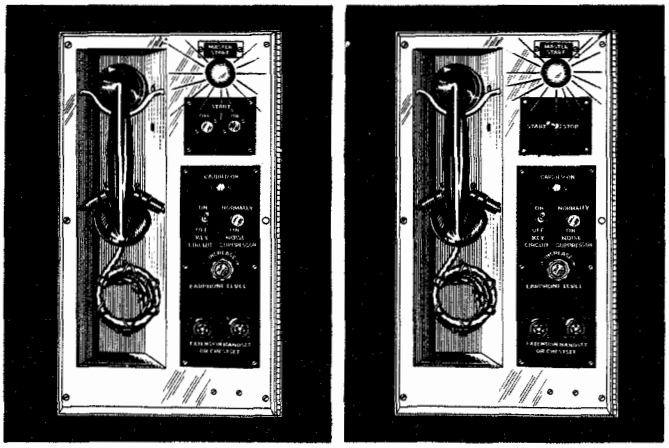


Figure 134

Step 6 (Figure 134)

TO START TRANSMITTER

(a) If a 6-wire control system is used, press the ON button of the START switch.

(b) If a 4-wire control system is used, place the START-STOP switch in the START position.

Step 7 (Figure 135)

TO TRANSMIT VOICE

Move the KEY CIRCUIT switch to the OFF position. Press the button on the handset (or the extension headset or chest set) and speak. During transmission, the green CARRIER ON lamp on the remote control unit will light, indicating that transmission is taking place.

After transmitting the message, release the handset button. The green CARRIER ON lamp on the remote control unit will go out, the receiver will go into operation, and signals received will be heard in the operator's headset.

Figure 135

TO TRANSMIT MCW CODE (Figure 136)

Lift the KEY CIRCUIT switch to the ON position, and operate the telegraph key connected to the remote control unit. During keying, the green CARRIER ON lamp on the remote control unit will light. If the transmitter is not keyed for approximately one second, the transmitter will automatically return to the STAND-BY condition. When this happens, the green CARRIER light will go out.

NOTE

Side tone will be heard in earphones during transmission. When the carrier goes off, after keying, signals picked up by the receiver will be heard.

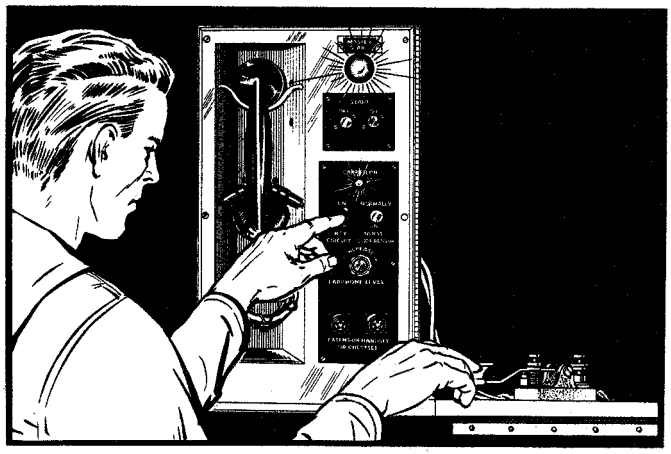


Figure 136

Step 8 (Figure 137)

To regulate the headset (or handset) volume, turn the EARPHONE LEVEL control on the remote control unit.

Figure 137

Figure 138

Step 9 (Figure 138)

If the radio receiver contains noise suppression circuits and it is desired to eliminate this function press and hold the NOISE SUPPRESSOR button on the remote control unit.

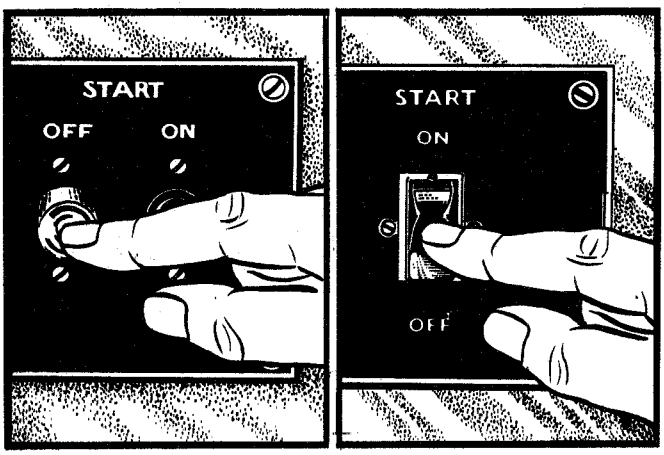


Figure 139

Step 10 (Figure 139)

TO STOP THE TRANSMITTER

(a) If a 6-wire control system is used, momentarily push the OFF button of the START switch.

(b) If a 4-wire control system is used, operate the START-STOP toggle switch to the STOP position.

NOTE

The red MASTER START lamp will go off when the START-STOP switch is in the STOP position.

ADDITIONAL OPERATING PROCEDURES AND CHECKS

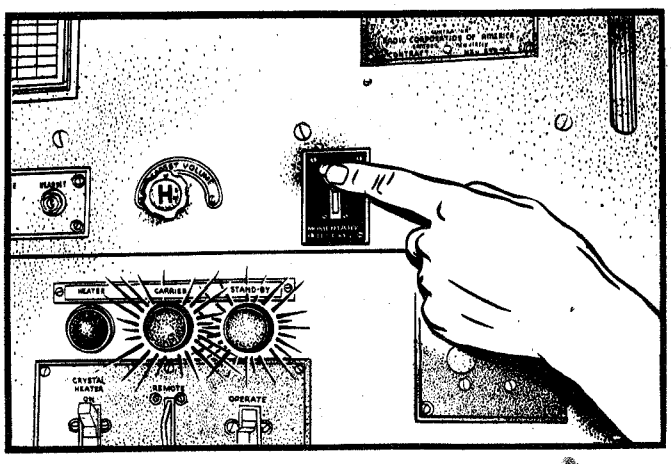


Figure 140

(Figure 140)

TEST KEY CONTROL OF CARRIER

The carrier may be controlled at the transmitter by means of the TEST KEY switch. In either the upper (LOCK) or lower (MOMENTARY) position of this switch, the carrier is turned on and the green CARRIER lamp on the transmitter from panel will light.

WARNING

Operating the TEST KEY does not produce code emission from the transmitter.

(Figure 141)

EVIDENCE OF REMOTE OPERATION

(a) When the transmitter is started from a remote station, the red STAND-BY light on the transmitter front panel will go on. While transmission is taking place (that is, when the carrier is on), the green CARRIER lamp will light.

(b) Transmission from a remote station, and signals from the receiver, may be heard on the headset connected to the HEADSET JACK on the transmitter front panel.

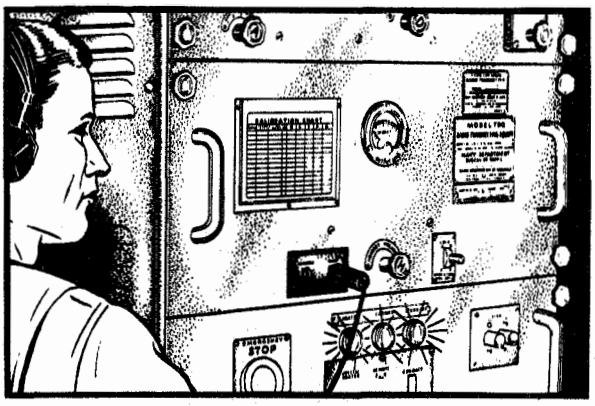


Figure 141

(Figure 142)

MODULATION MONITORING

(a) During either remote or local telephone transmission, the modulation level may be checked on the OUTPUT LEVEL meter. The pointer may vary between −16 and +6 decibels.

NOTE

A reading of +6 decibels indicates 100 per cent modulation.

(b) During code transmission, the pointer of the OUTPUT LEVEL meter should indicate about +4 decibels when the telegraph key is down.

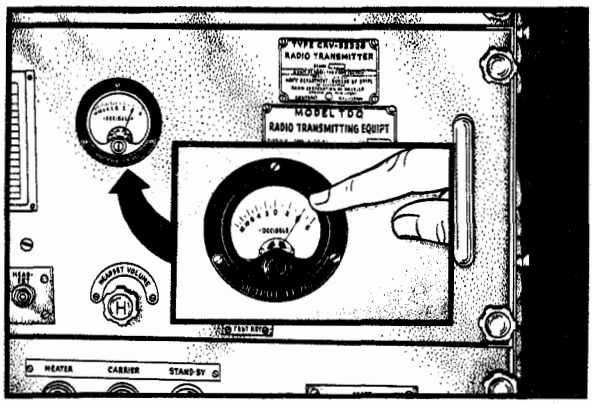


Figure 142

(Figure 143)

If the green CARRIER lamp fails to light when the microphone button, TEST KEY or telegraph key is operated, the overload relay may have thrown out. Press the OVERLOAD RESET push-button. If the relay will not remain engaged, call the technician. Do not attempt to hold the push-button in.

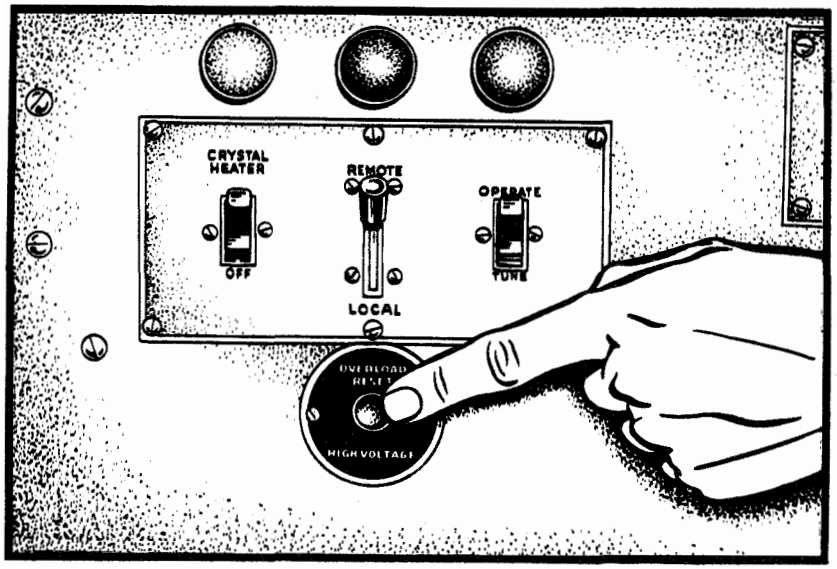


Figure 143

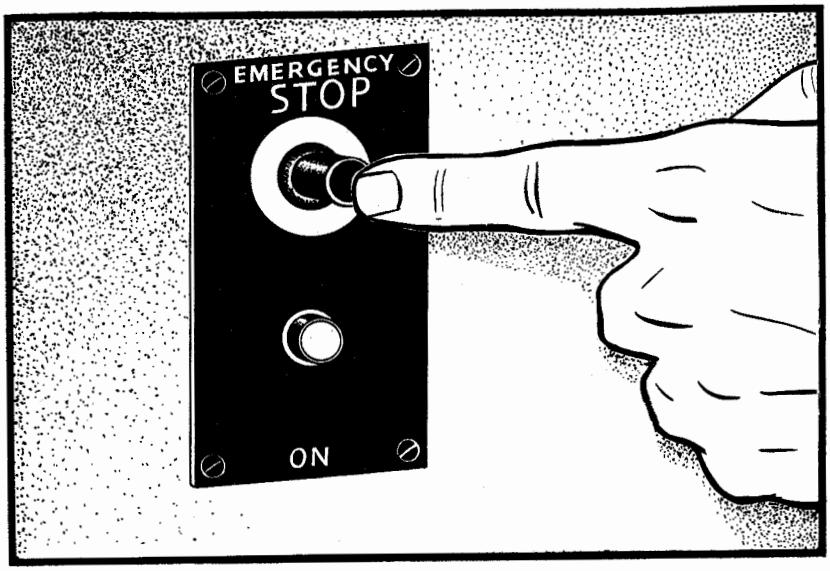


Figure 144

(Figure 144)

EMERGENCY SHUT DOWN

At any time that it becomes necessary to remove all power from the equipment press the STOP button of the EMERGENCY STOP switch.

SECTION IV

SERVICE PROCEDURES AND CIRCUIT THEORY

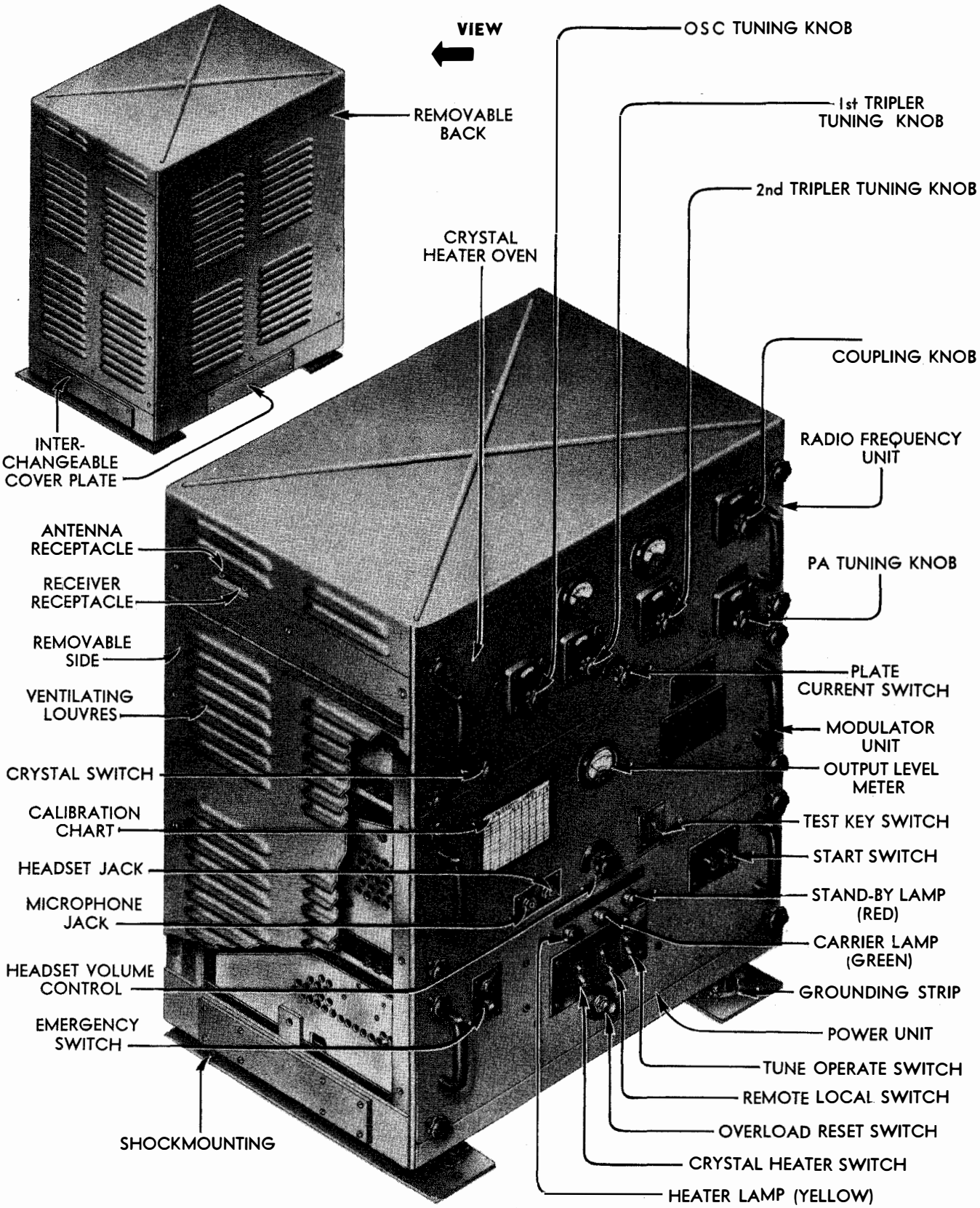


Figure 145—TDQ Radio Transmitter

INTRODUCTION

This section is divided into three parts: (1) a familiarization section, (2) a routine maintenance section, and (3) a trouble shooting section.

The familiarization section begins with a group of illustrations of the Model TDQ equipment showing the location of the panel controls and some of the important parts on the three chassis.

Following these illustrations are breakdown diagrams of four circuits of the transmitter in the following order:

Power Unit, A-C and D-C Connections
Modulator Unit
R-F Unit
Power and Starting Circuits, A-C and D-C

These diagrams contain colored lines to correspond with the coloring scheme in the overall schematic diagram.

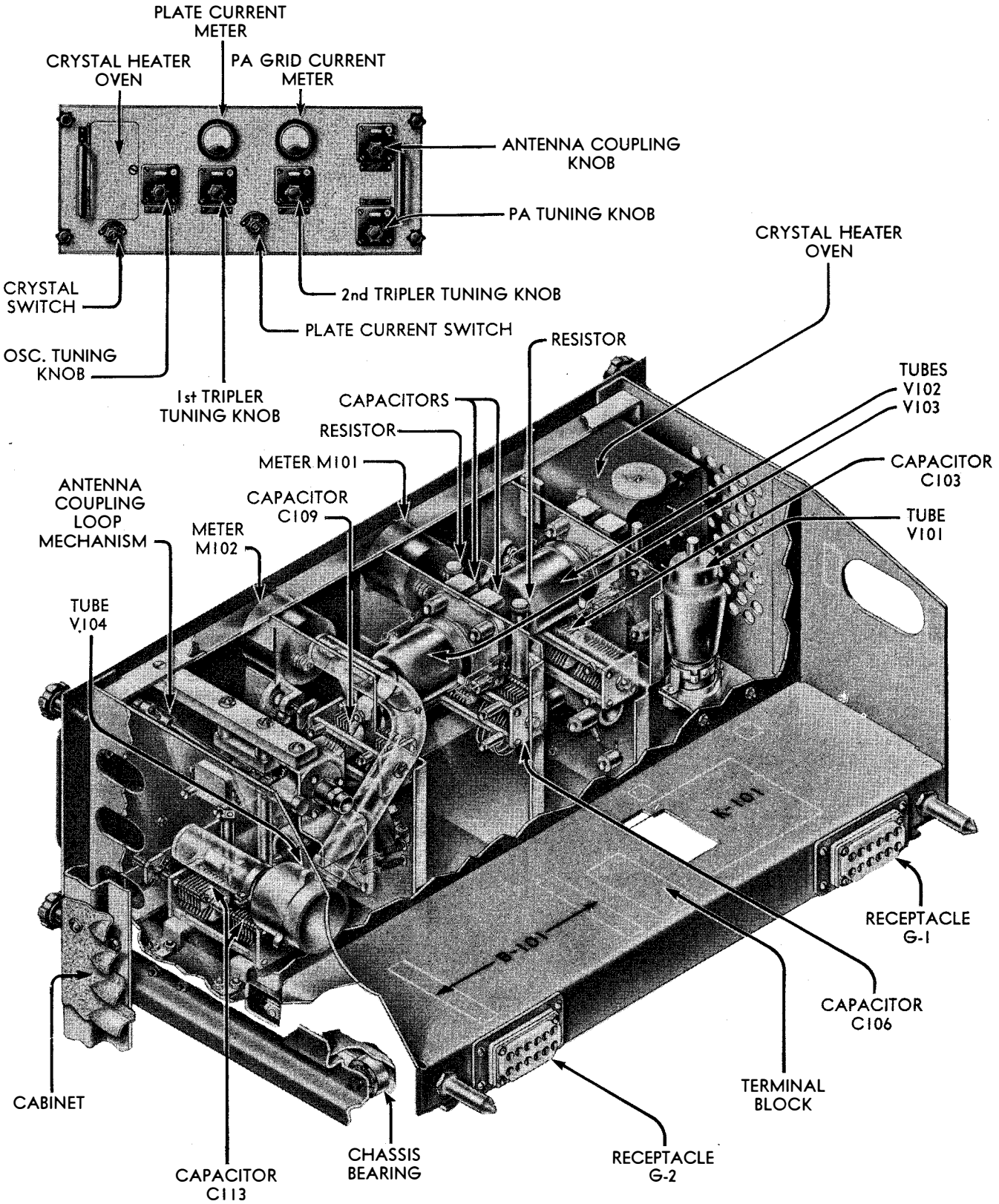
Each breakdown diagram is accompanied by a discussion of circuit theory illustrated with simplified diagrams of certain special circuits involved.

A diagram and discussion of the Radiophone Unit used for remote control operation of Model TDQ Equipment is included in this section.

The breakdown diagrams are followed by an overall schematic diagram of the transmitter with the various circuits colored to facilitate circuit tracing. This overall schematic diagram should be used with the breakdown diagrams in the study of circuit theory.

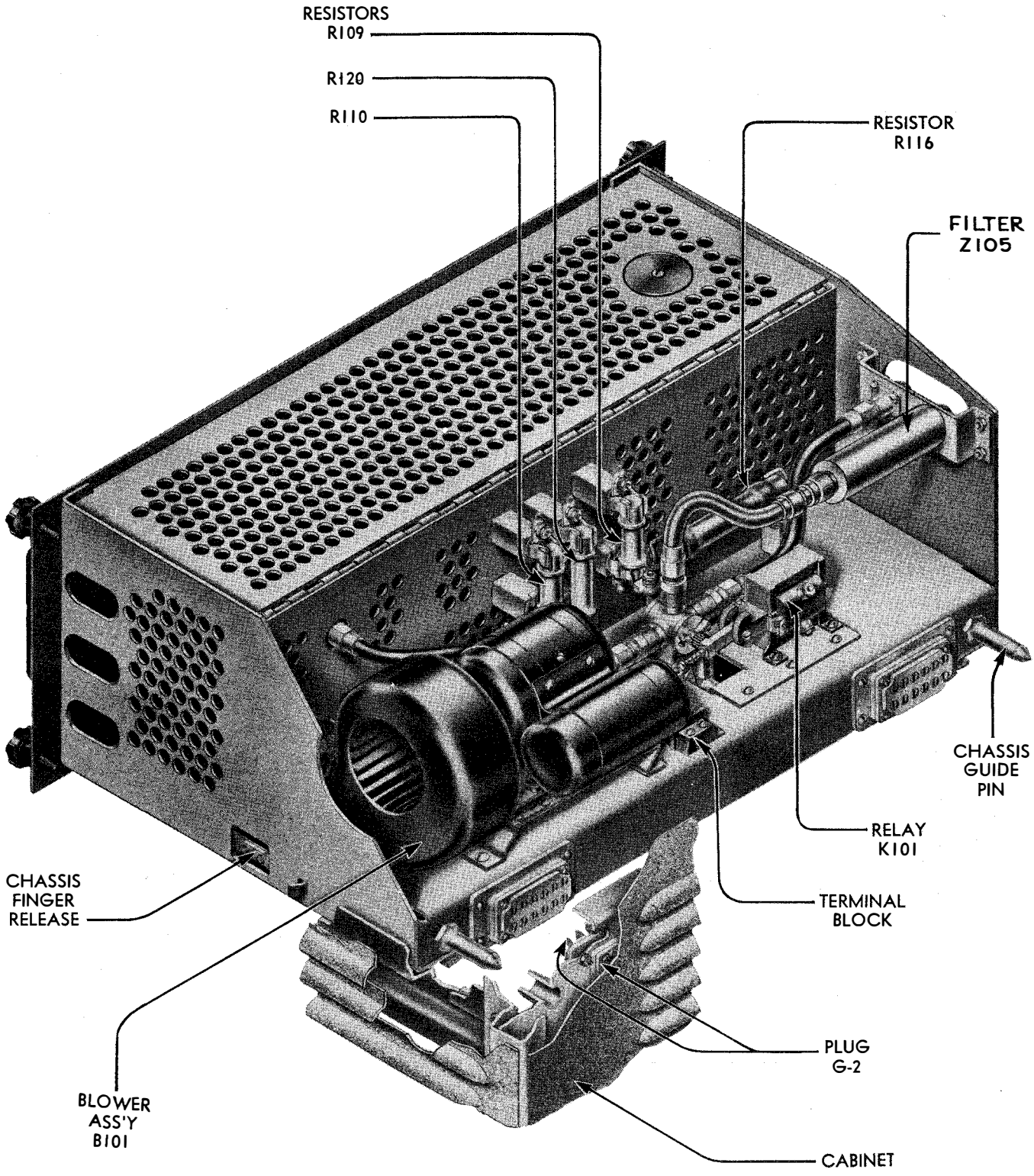
The routine maintenance section covers the various periodic checks and procedures, lubrication instructions, voltage and resistance tables and instructions for setting the internal adjustments of the Modulator Unit.

The trouble shooting section describes typical trouble symptoms, with possible causes, and suggests corrective procedures.



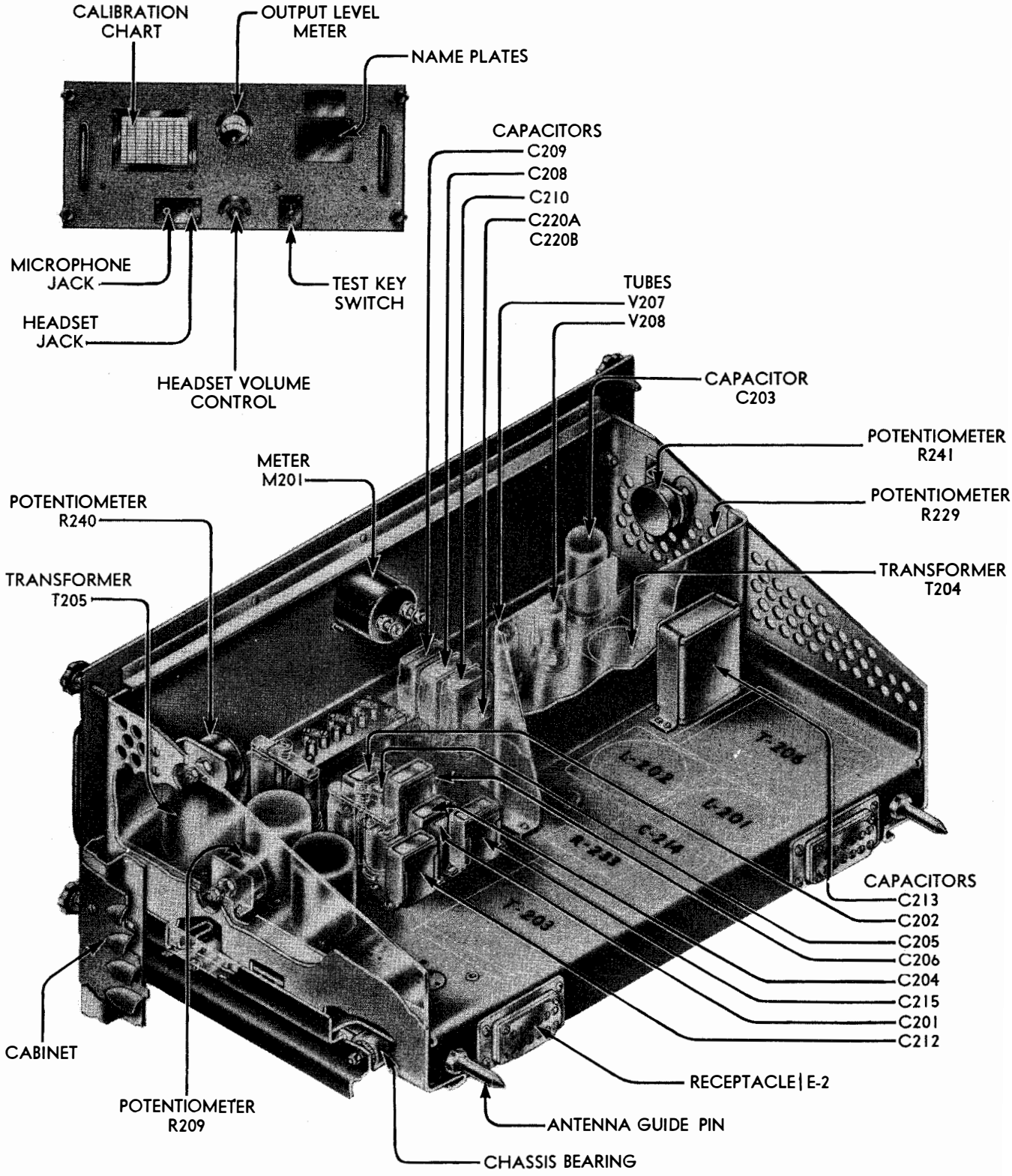
R-F UNIT

Figure 146



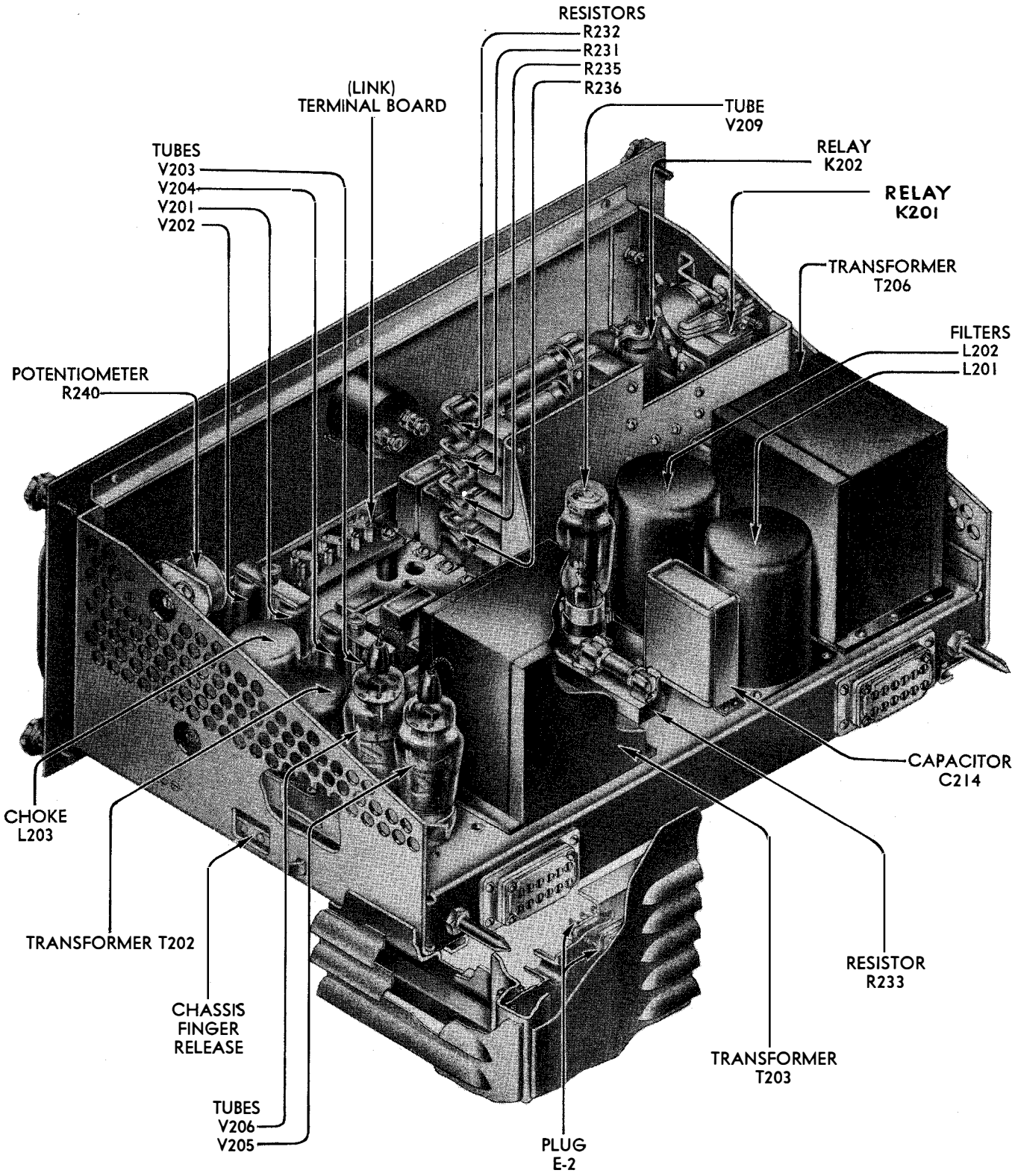
R-F UNIT

Figure 147



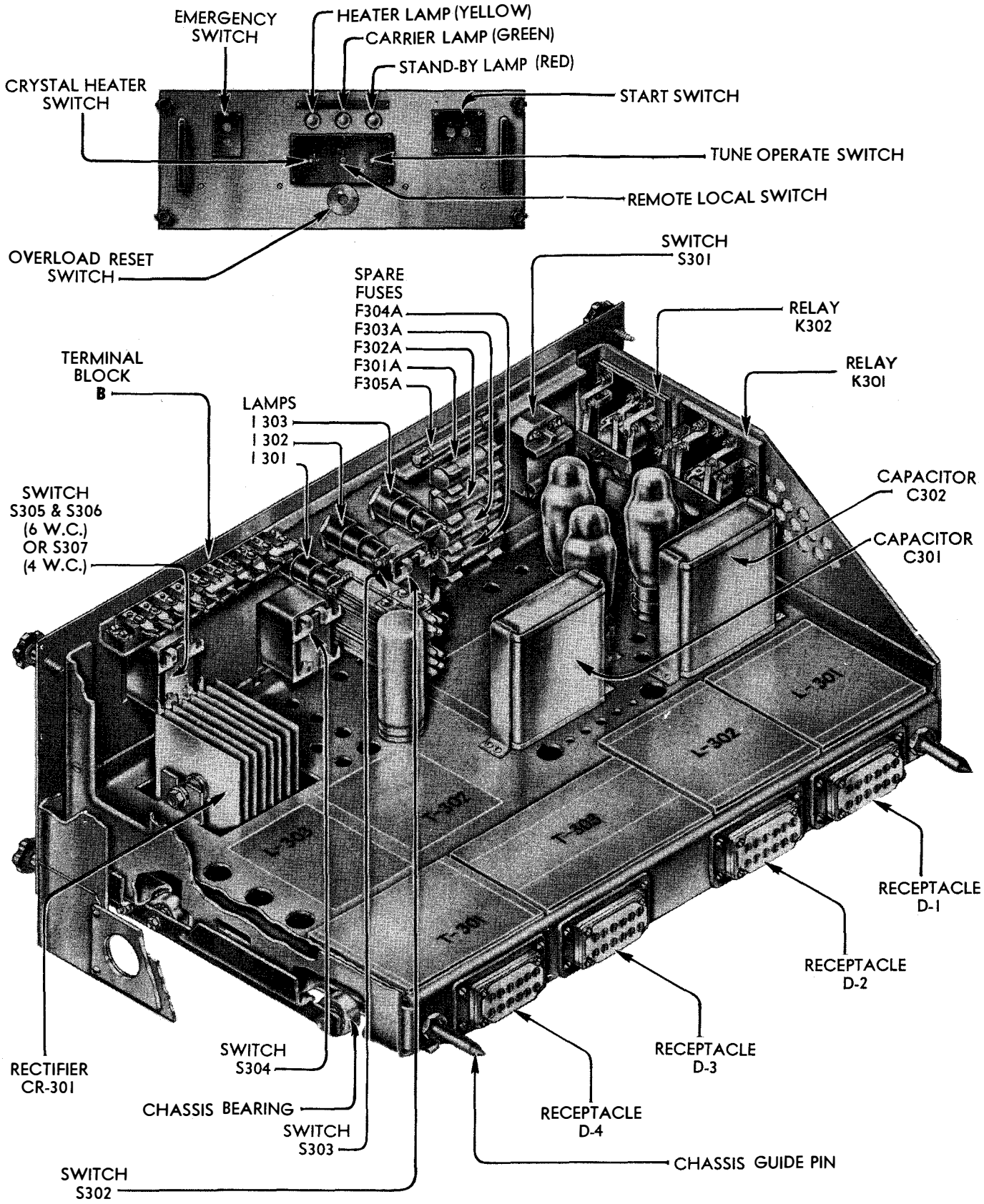
MODULATOR UNIT

Figure 148



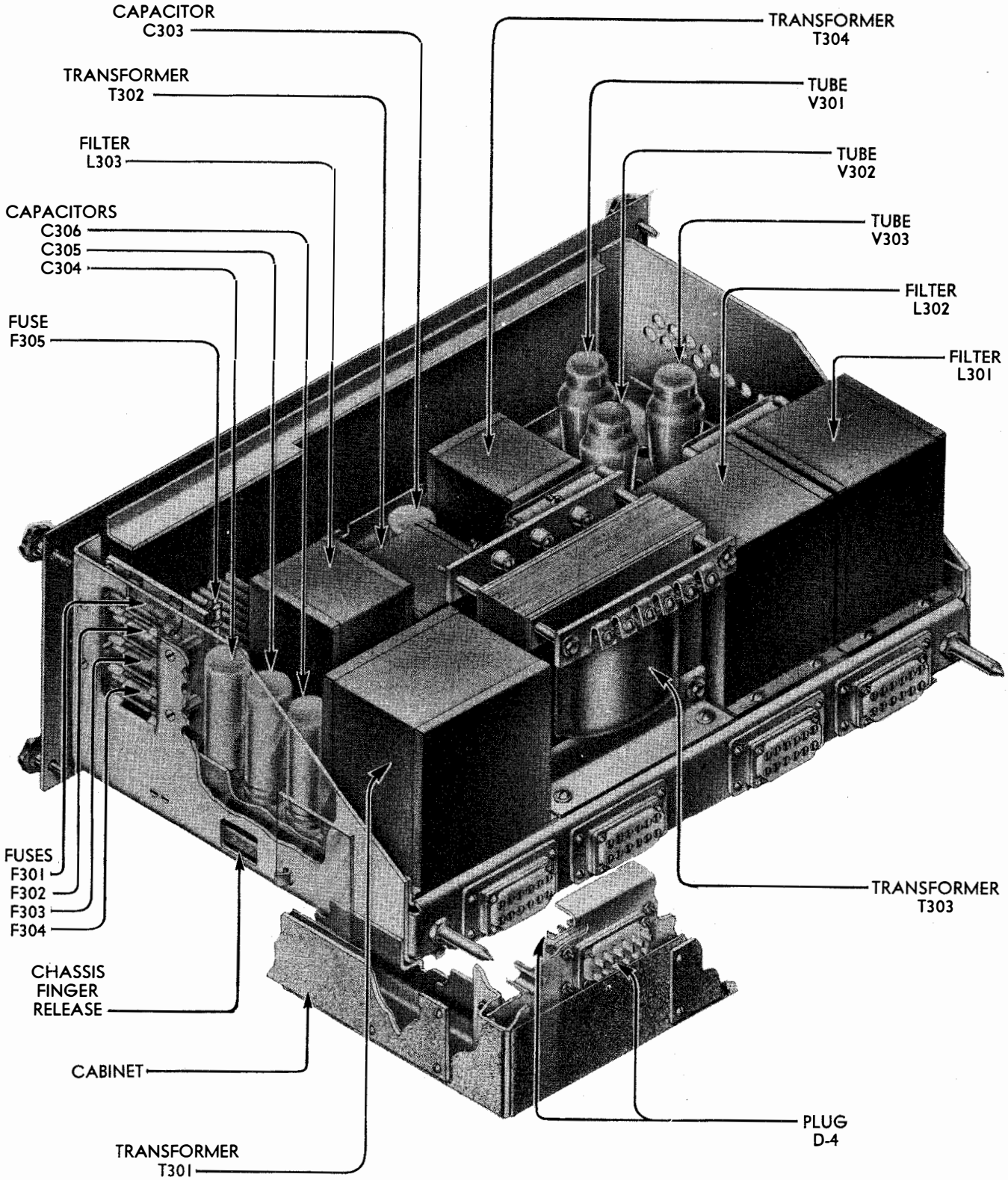
MODULATOR UNIT

Figure 149



POWER UNIT

Figure 150



POWER UNIT

Figure 151

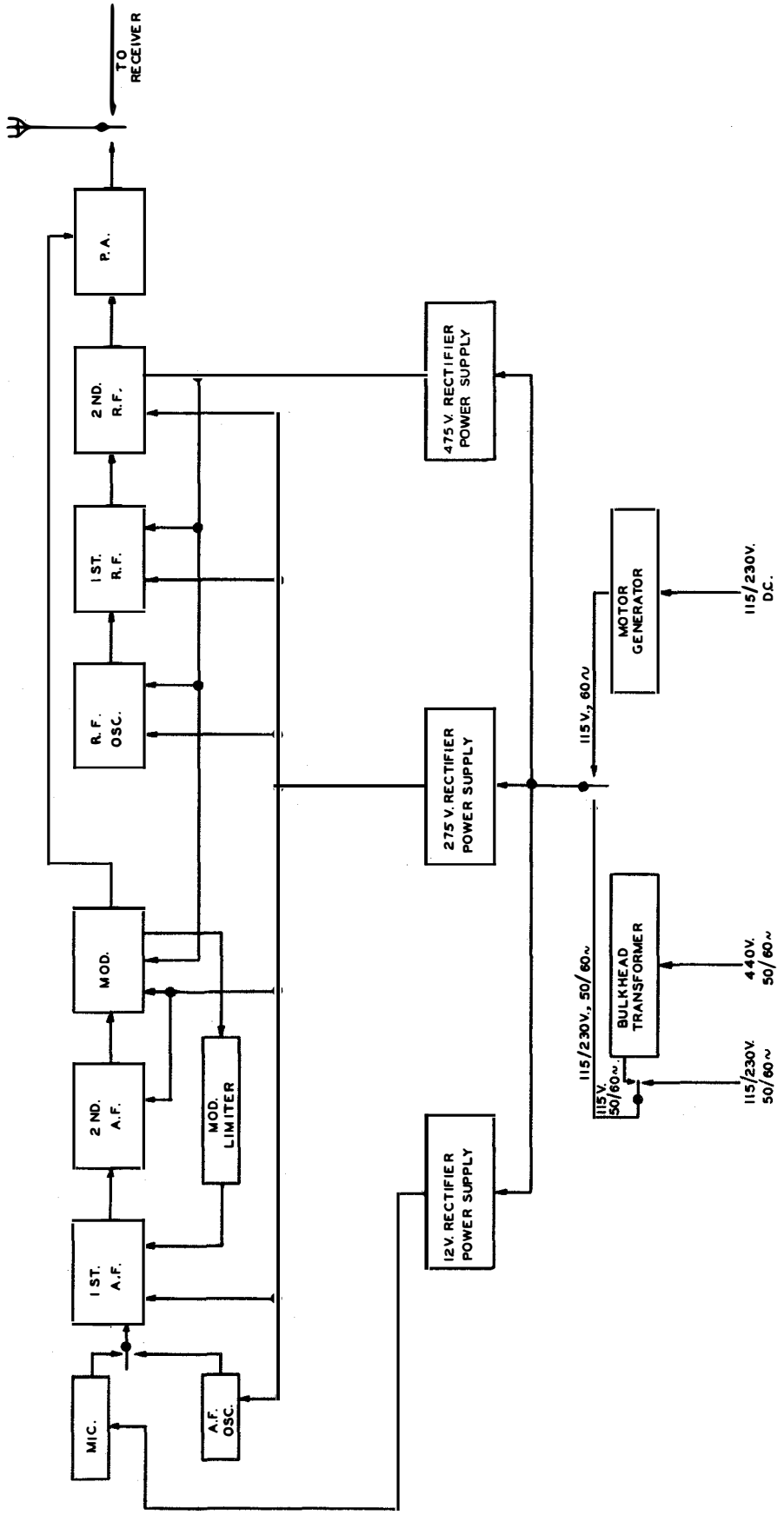


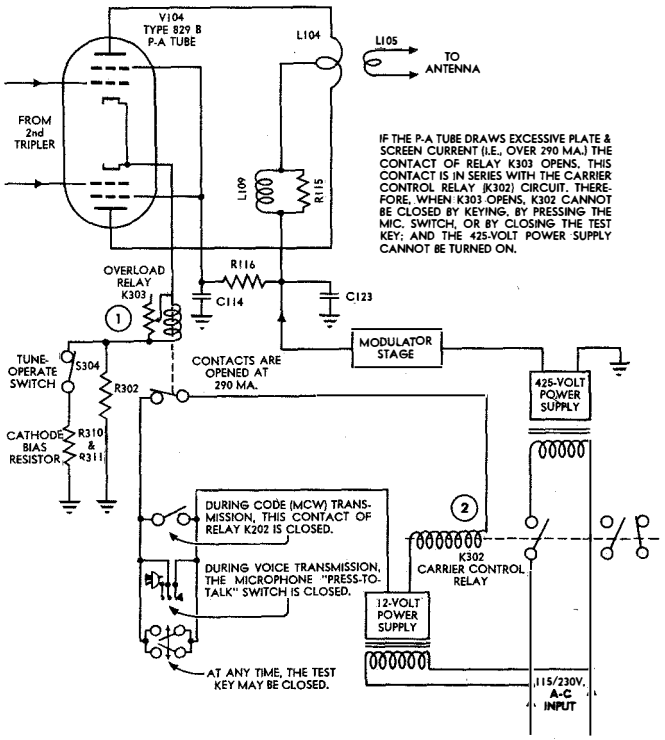
Figure 152—TDQ Transmitting Equipment (Block Diagram)

NOTES AND SKETCHES

Power Unit (See Figure 154)

The power unit contains two of the three rectifier power supply circuits required for operation of the TDQ Radio Transmitter. All switches necessary for starting and stopping the transmitter are mounted on the front panel of this unit.

The 425-volt supply furnishes plate and screen voltage for the power amplifier tube (V104), plate voltage for the other r-f stages and for the modulator stage (V205, V206). Three Type -5R5-GY high-vacuum rectifier tubes (V301, V302, V303) connected in parallel function with Plate Transformer T303 in a full-wave rectifier circuit. A two-section, choke-input filter (L301, L302, C301, C302) is employed. Filament voltage for the rectifier tubes is obtained from Transformer T301, which also provides filament voltages for all other tubes in the transmitter. Carrier Control Relay K302 controls the power input to the plate transformer primary. The functioning of this relay will be described in a later paragraph.



OVERLOAD RELAY & AFFECTED CIRCUITS

Figure 153

The 12-volt supply furnishes excitation voltage to the microphone and energizing power for the coil of the Carrier Control Relay (K302). This power supply consists of a step-down transformer (T302), a bridge-type selenium rectifier unit (CR301) and a two-section, choke-input filter (L303, C304, C305, C306).

The coil of the overload relay (K303) is in the cathode circuit of the P.A. tube (V104). (See Figure 153.) When the cathode current of the P.A. tube reaches approximately 290 milliamperes, the overload relay breaks the energizing circuit of the Carrier Control Relay (K302) thus cutting off power to the plate transformer primary. The overload relay may be reset from the front panel.

The TUNE-OPERATE switch (S304) is also in the cathode circuit of the P.A. tube. In its open, or TUNE position the bias resistance in the cathode circuit is raised from about 45 ohms to 800 ohms. The high bias thus produced reduces the efficiency of the P.A. tube to the point where it is safe to operate the stage in a non-resonant condition while tuning.

Isolation Transformer T304 furnishes voltage for the crystal oven heater unit and energizes the Start relay (K301). During 230-volt operation this transformer is connected to reduce the 230-volt supply to 115 volts.

The start relay (K301) applies power to the filament transformer (T301) the 12-volt power supply transformer (T302) and the 275-volt power supply transformer (T206). The operation of K301 will be discussed further under Power and Starting Circuits. The EMERGENCY STOP switch (S301) provides a convenient method of cutting off power to the entire transmitter under emergency conditions.

Proper link connections for a-c input operation are shown on Terminal Board C. Terminal Board B connections are shown for both 4-wire and 6-wire control.

When a d-c power input source is used (see Figure 155) all circuits in the Power Unit function in the same manner as they did under a-c operation, except for the crystal oven heater and the coil of the start relay (K301) which are now energized directly from the d-c source. Dropping resistors (R307, R309, R306) are provided for 230-volt d-c operation.

Figure 155 shows link connections on Terminal Board C for both 230-volt and 115-volt d-c input. Terminal Board B connections are shown for both 4-wire and 6-wire control.

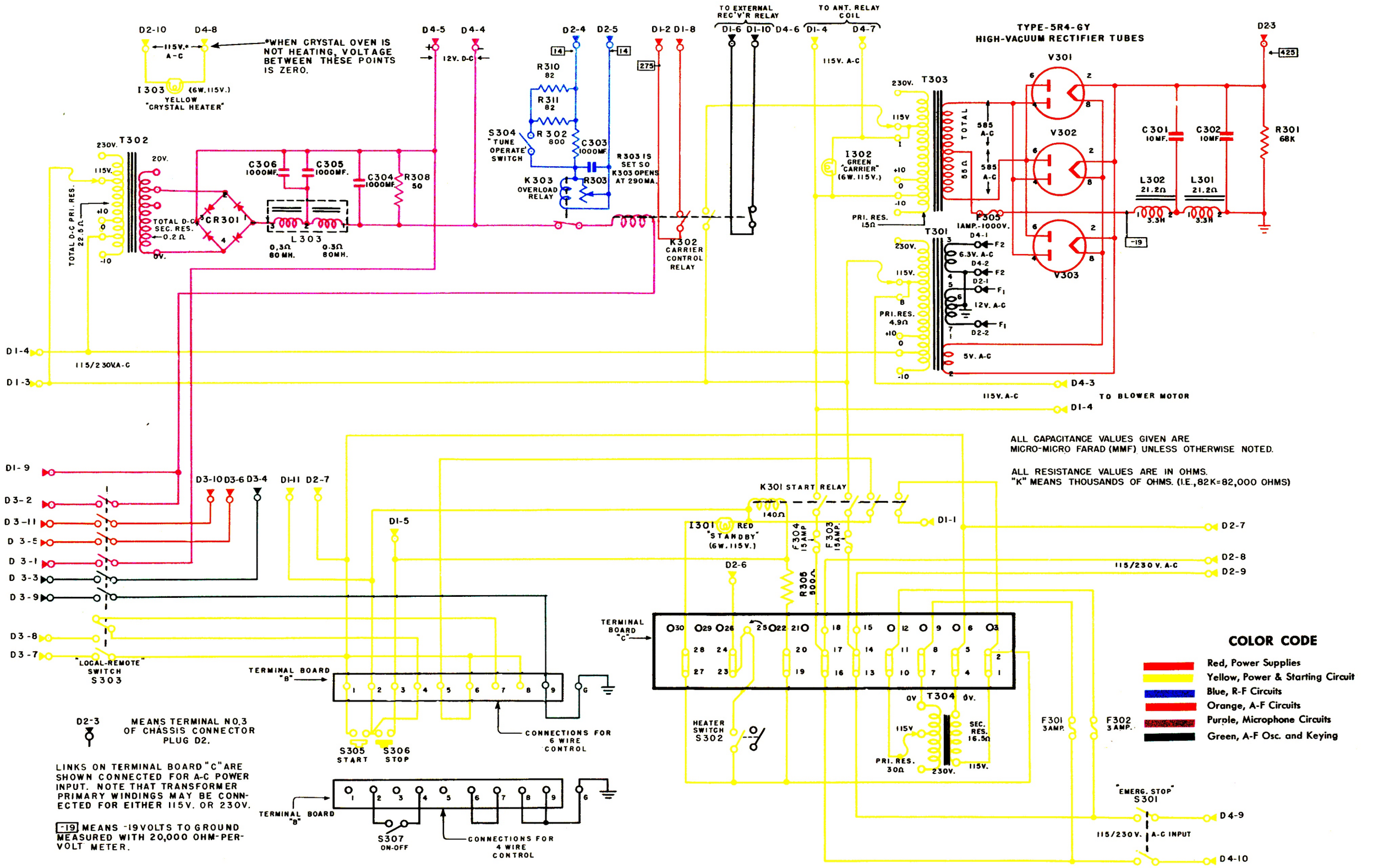


Figure 154—Power Unit, A-C Connections, Schematic Diagram

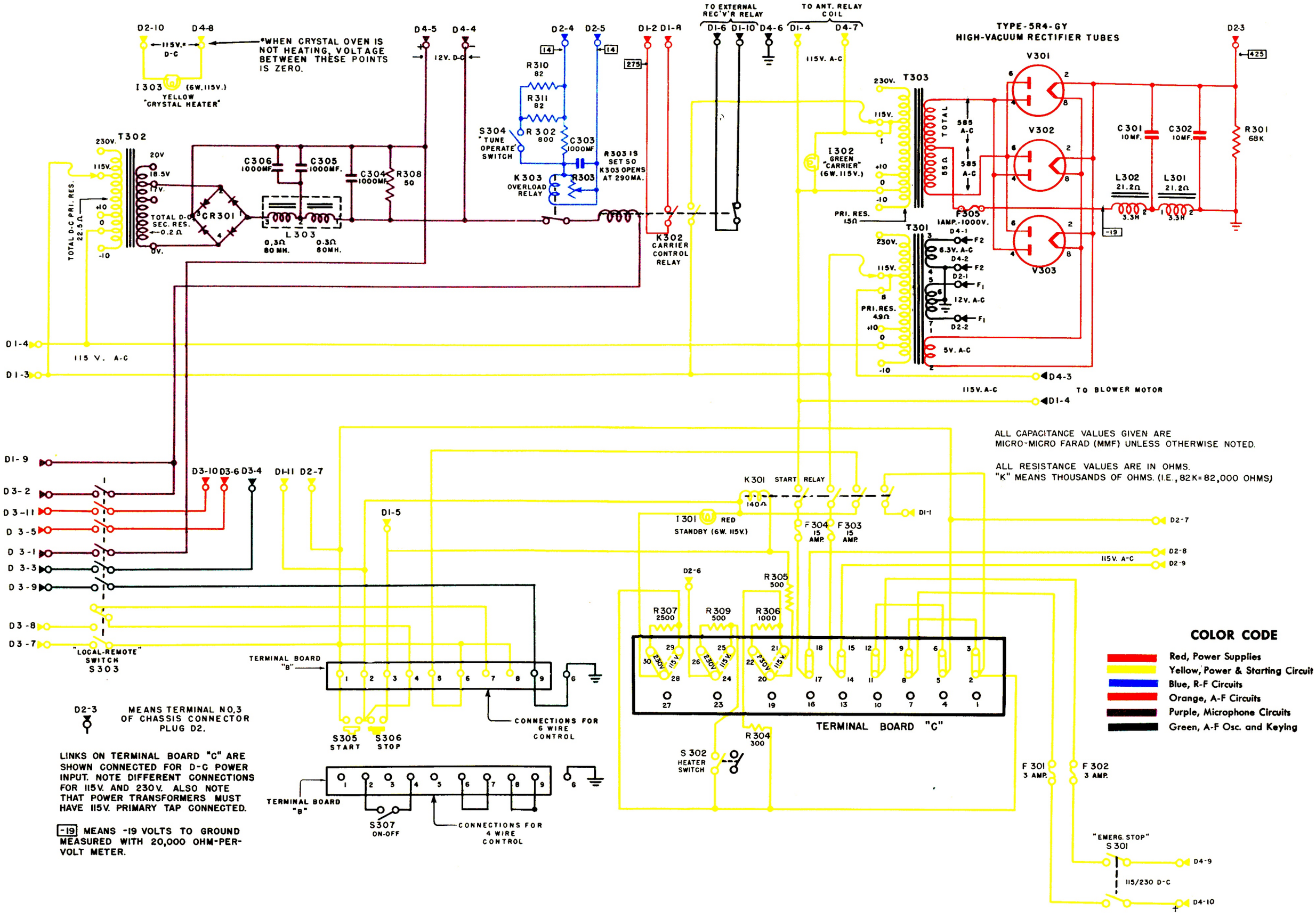


Figure 155—Power Unit, D-C Connections, Schematic Diagram

Modulator Unit (See Figure 159)

The modulator unit is composed of (1) a three-stage audio frequency amplifier and modulator, (2) a 275-volt power supply, (3) a modulation limiter, (4) a microphone circuit, (5) an audio oscillator and, (6) a keying and carrier delay circuit.

The first audio amplifier stage uses two type 6SK7 tubes (V201, V202) in push-pull. Since these are remote-cutoff type tubes, the stage gain may be varied by changing the bias. Cathode bias is obtained from the voltage divider R209, R210, R211, R239-212. The setting of Potentiometer R209 controls the cathode bias. The stage is impedance coupled (L203, C204, C205, R215, R216) to the second audio amplifier stage, which uses two Type 6J5 tubes (V203, V204) in push-pull. The second audio amplifier stage is transformer coupled (T202) to the modulator stage.

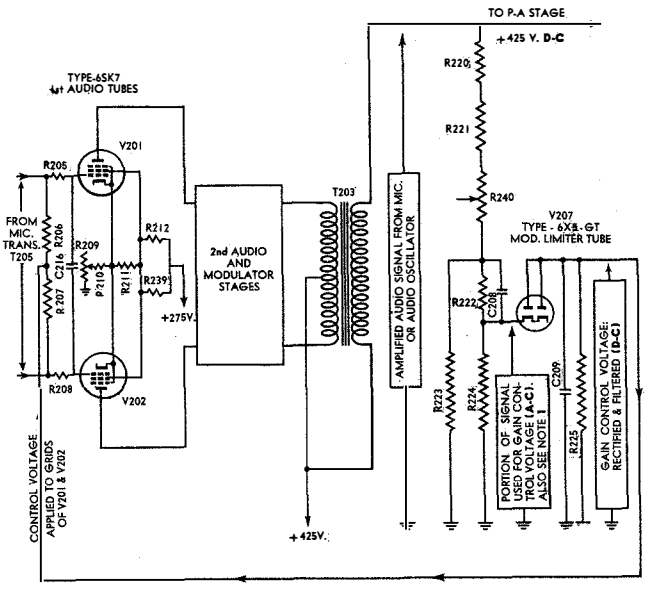
The modulator stage uses two Type 807 tubes (V205, V206) in push-pull. Fixed grid bias (about 25 volts) is obtained from the negative end of the bleeder across the 275-volt power supply. Negative feedback from the modulator to the first audio amplifier plates is obtained through Resistors R213 and R214.

The secondary of the modulation transformer (T203) is connected through terminal E2-10 to the plate and screen circuits of the power amplifier stage, thus enabling the a-f amplifier to vary the r-f output at an audio rate.

The output level meter (M201) measures a portion of the output of the modulator across a section of the voltage divider R220—R224. Potentiometer R240 permits the meter to be preset to read "6 db" at 100 per cent modulation. A monitoring signal is picked up at R241 and coupled to Jack J202. R241 varies the level of the monitoring signal. R234 provides a volume control for radio receiver signals available at Jack J202.

The 275-volt power supply furnishes, (1) screen voltage for all tubes except the P.A. tubes, (2) plate voltage for the first and second audio amplifiers, (3) grid bias for the second audio amplifier and modulator and (4) energizing voltage for Keying Relay K201. The tube is a Type –5R4GY high-vacuum rectifier in a full-wave circuit. A two-section, choke-input filter (L201, L202, C213, C214) is employed. The circuit which supplies plate and screen voltages to the audio frequency amplifiers and the r-f circuits is completed through a contact on the Carrier Control Relay (K302), located in the Power Unit.

The modulation limiter utilizes a Type –6X5GT duo-diode (V207), connected across a portion of the modulator tube output. As indicated in Figure 156 a steady d-c potential of +425 volts is applied across the voltage divider R220—R224. A portion of this d-c potential appears across R224, and, since the plate of V207 is normally at ground potential, this same voltage will appear from cathode to plate. As long as the cathode is positive with respect to the plate, the diode will not conduct, and the modulation limiter will not operate.



NOTE 1

A D-C VOLTAGE IS APPLIED TO THE CATHODE OF V207, IN ORDER TO KEEP SMALL AMOUNTS OF SIGNAL VOLTAGE FROM STARTING AUTOMATIC CONTROL ACTION. NOTE THAT THE VOLTAGE DIVIDING NETWORK FOR D-C IS R220, 221, 240, 222, 223 & 224 BUT FOR A-C, THE SHUNT REACTANCE OF C208 MUST BE TAKEN INTO ACCOUNT.

MODULATION "LIMITER" CIRCUIT

Figure 156

When a strong audio frequency signal appears across the secondary of the transformer and the voltage divider, the negative peaks will momentarily drive R224 negative. This process is assisted by the action of Capacitor C208 which appears as a comparative short across R222 to an a-f signal, thus making the effect of an a-f signal upon R224 proportionally greater.

During negative peaks V107 conducts current from cathode to plate through R225 to ground, creating a voltage across R225 which is negative with respect to ground. The filter combination R225 and C209 smooths out and sustains this voltage, which is then applied as bias to the grids of the first audio amplifier tubes (V201, V202), thereby reducing the gain of the stage.

In this manner the output of the audio frequency amplifier is limited to a predetermined maximum, and overmodulation from an unusually strong signal is prevented.

The microphone circuit (see Figure 157) is energized by the 12-volt power supply, located in the Power Unit. Pressing the "MIC. SWITCH" (see upper left corner of Figure 157) places the microphone and Microphone Transformer T205 in series across the 12-volt power supply.

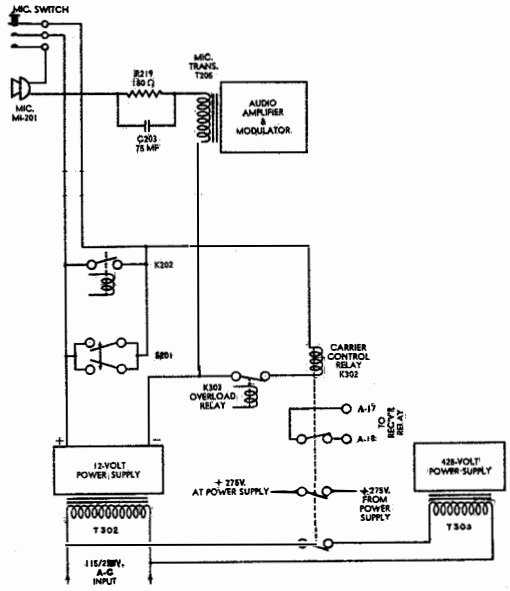
At the same time the two upper contacts of the same switch complete the circuit which energizes the coil of Carrier Control Relay K302. When the contacts of K302 close, the following takes place:

(1) The normally closed set of contacts connected in the radio receiver relay circuit are opened, thus disabling the receiver during transmission.

(2) Power is applied to the primary of the 425-volt plate transformer (T303).

(3) The output of the 275-volt power supply is applied to the plates and screens of the a-f and r-f stages.

The carrier control relay circuit may also be closed by operating the Test Key (S201) or, by the action of a contact on the carrier delay relay (K202), the action of which is discussed in the following paragraphs.



MICROPHONE CIRCUITS

Figure 157

With the transmitter in "STANDBY" condition, pressing the telegraph key will result in the following: (See Figure 158.)

(1) The coil of Keying Relay K201 is energized from the 125-volt tap on the 275-volt power supply.

(2) Two sets of contacts of relay K201 couple the secondary of the Audio Oscillator Transformer (T204) into the audio amplifier input.

(3) One set of contacts of relay K201 places a positive voltage on the grid of the Carrier Delay Tube ("A" section of V208) and across its grid leak and condenser combination (R226-C210).

(4) V208-A conducts current through the coil of Carrier Delay Relay K202 (see (2) in Figure 158) causing its contacts to close, with the following results:

a. One set of contacts of relay K202 energizes the plate circuit of the Audio Oscillator Tube ("B" section of V208) causing a 1000-cycle signal to be generated.

b. Another set of contacts of K202 grounds the modulation limiter circuit thus eliminating its function during MCW operation.

c. The third set of contacts of K202 closes the energizing circuit of the carrier control relay (K302) placing the transmitter in operation and disabling the receiver as previously described.

When the telegraph key is released, the coil of K201 is deenergized, the contacts open and the following takes place:

(1) The audio oscillator output is disconnected from the a-f amplifier input.

(2) The 275-volt power supply is disconnected from the grid circuit of V208-A.

V208-A continues to conduct, however, until the charge across Capacitor C210 leaks off through Resistor R226. This delay period is of one second duration, during which the transmitter and the audio oscillator remain in operation ready to receive the next signal of the telegraph key.

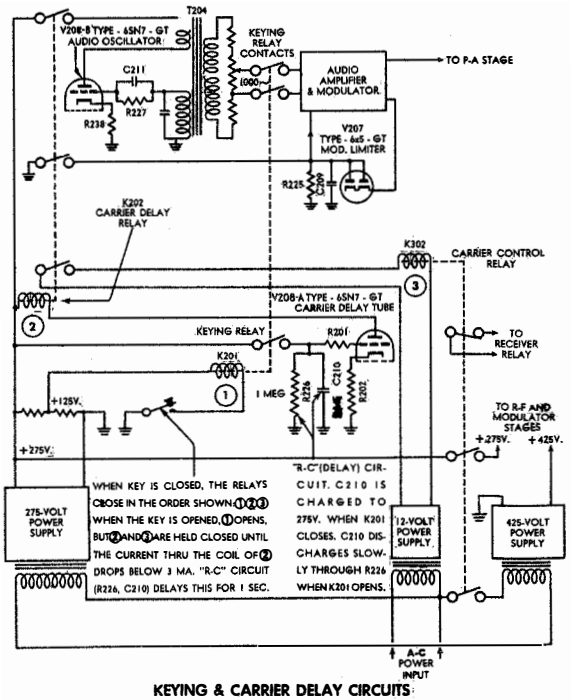
When the telegraph key is released for a period of more than one second the following action takes place:

The charge on Capacitor C210 falls to the point where the current through V208-A is insufficient to maintain the coil of K202 energized and the contacts of K202 open. The result is as follows:

a. The plate circuit of the audio oscillator is deenergized.

b. The plate of the modulation limiter tube is ungrounded.

c. The coil circuit of Carrier Control Relay (K302) is opened, causing the transmitter to return to STANDBY operation and placing the receiver in operation.



KEYING & CARRIER DELAY CIRCUITS

Figure 158

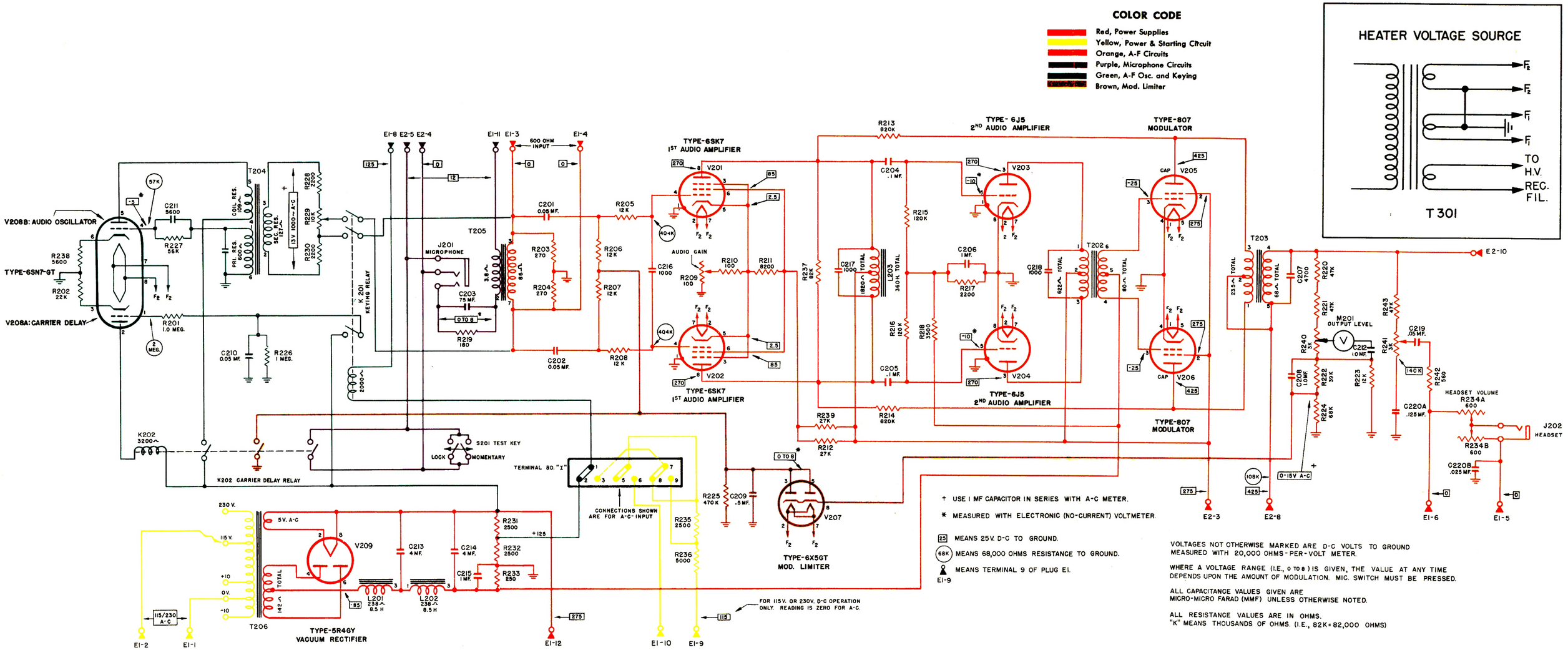


Figure 159—Modulator Unit, Schematic Diagram

RESTRICTED

NOTES AND SKETCHES

R-F UNIT

The R-F Unit (see Figure 160) consists of an oscillator (V101), a first tripler (V102), a second tripler (V103) and a power amplifier (V104).

The oscillator is crystal controlled. Crystal switch "A" (S102) permits switching any one of four installed crystals into the oscillator grid circuit while grounding the remaining three. The crystals are installed in an oven whose temperature is held at 70° F by a thermostatic switch (S101). A similar switch (S104) is set to open at 80° F in case S101 fails to open.

The plate and screen circuits of the P.A. stage are connected to the 425-volt power supply through the secondary winding on the modulation transformer (T203). Plate voltages for the oscillator, first tripler and second tripler are obtained directly from the 425-volt supply. Screen voltages for these tubes are obtained from the 275-volt supply.

Tuned lines (L103 and L104) are employed in the plate tank circuits of the second tripler and power amplifier stages.

The degree of coupling between the P.A. plate tank and the antenna may be controlled from the front panel of the transmitter (Control "G").

Plate Current Switch "D" and Plate Current Meter M101 are arranged to permit measurement of the d-c current in any one of the r-f stages by switching the meter between the tube's cathode and ground. P.A. Grid Current Meter (M102) is in the d-c grid return circuit of the P.A. tubes and indicates the grid current in that stage.

The transmission line filter Z105 is designed to attenuate harmonic frequencies above 171 megacycles.

The coil of K101 is energized simultaneously with the primary of the 425-volt power supply transformer (T303) at which time the antenna switch couples the antenna to the transmitter. Spring action restores the antenna to the receiver when the transmitter is in Standby operation.

ALL CAPACITANCE VALUES GIVEN ARE MICRO-MICRO FARAD (MMF) UNLESS OTHERWISE NOTED.

ALL RESISTANCE VALUES ARE IN OHMS. "K" MEANS THOUSANDS OF OHMS. (I.E., 82K=82,000 OHMS)

COLOR CODE

Yellow, Power & Starting Circuit

Blue, R-F Circuits

"A" "CRYSTAL SWITCH" S102

Y101 1H 2H 3H 4H

Y102 5H

Y103 6H

Y104 7H 8H

R102 47K

S101 OPENS AT 70°C

R101 CRYSTAL OVEN HEATER COIL

S104 OPENS AT 80°C

C101 4700

9H 10H 12H 11H

NOTE 1

NOTE 2

G1-9 G1-10 G1-4 G1-11

TO PILOT LAMP I 303

R103 27K

200

C116 4700

TYPE-807 OSCILLATOR

V101

C122

CAP

R119 100

L106 PAR. SUPPR

C125 4700

R118 100

320

R120 2000

R104 1800

L107 PAR. SUPPRESSOR

C103 "B"

C102 10

C104 22

L101

C129 4700

C105 22

275

G2-3

R117 8200

190

C115 4700

R109 500

45

C117 4700

TYPE-829 (B) 1st TRIPLER

V102

R105 27K

R106 27K

C106 "C"

C124 4700

185

R111 10K

C110 4700

C107 22

L102

C108 22

TYPE-829 (B) 2ND TRIPLER

V103

R107 27K

R108 27K

55

C118 .4700

R110 500

C119 4700

"D"

"PLATE CURRENT" SWITCH

A

"PLATE CURRENT" METER M101

425

G2-8

R112 3300

L108 PARASITIC SUPPRESSOR

C111 10

L103

C109 "E"

C112 10

C120 4700

A

M102 PA GRID CURRENT METER

C128 4700

C123 1000

425

G2-10

R116 10K

R115 100

L109 PARASITIC SUPPRESSOR

230

C114 1000

V104 TYPE-829 (B) POWER-AMPLIFIER

C127 .01 MF

R113 10K

R114 10K

C126 .01 MF

TOP PIN

C113 "F"

L104

L105

Z105

ANT

K101 ANTENNA SWITCHING RELAY

55Ω

14

C121 4700

B101 BLOWER

K-4 K-3 K-2 K-1

0

14

F2 F2 6.3V. A-C G1-1 G1-2

F1 F1 12.6V. A-C G2-1 G2-2

G1-3 G1-5 G1-12 G1-8 G1-6

115V. A-C 115V. A-C†

NOTE 1—THIS VOLTAGE IS 115V. **A-C** FOR **A-C** POWER INPUT, AND IS 115V. **D-C** FOR **D-C** POWER INPUT.

NOTE 2—THIS VOLTAGE IS 115V. **A-C** OR **D-C** AND IS PRESENT ONLY WHEN CRYSTAL OVEN IS HEATING.

G2-3 MEANS TERMINAL 3 OF PLUG G2

25 MEANS 25V. **D-C** MEASURED TO GROUND WITH A 20,000 OHM-PER-VOLT METER.

†NO VOLTAGE EXISTS BETWEEN THESE TWO POINTS UNLESS MIC. SWITCH, TEST KEY, OR EXTERNAL KEY IS CLOSED.

Figure 160—RF Unit, Schematic Diagram

NOTES AND SKETCHES

Power and Starting Circuits—A-C

Figure 161 is a break-down schematic showing the input power distribution (115-230-440-volts a-c) and the operation of the various starting circuits in the transmitter.

Closing the EMERGENCY STOP switch (S301) applies power to the primary of Transformer T304 and to two of the contacts of the starting relay (K301). The crystal heater switch (S302) may then be closed, applying power to the heating resistor (R101) in the crystal oven.

Pressing the START switch (S305) energizes the coil of K301, closing the contacts and applying power to Transformers T302, T206, T301 and Blower B101. One contact of K301 completes a holding circuit for the coil to keep it energized when the start button is released. It is now possible to energize the plate transformer (T303) and the antenna relay (K101) as previously described. The STOP switch (S305) shorts the coil of K301 causing the contacts to open and break the holding circuit.

Transformer connections for 230-volt a-c operation and a breakdown of the 4-wire control circuits are shown in the insets.

Power and Starting Circuits—D-C

Figure 162 is a breakdown schematic showing the input power distribution when the transmitter is operated from a d-c source (115 or 230 volts).

Closing the EMERGENCY STOP switch (S301) and the crystal heater switch (S302) now applies d-c power to the crystal heater.

Pressing the START switch (S305) energizes K301 as before, but with d-c instead of a-c power. In addition, the Motor-Generator is started as follows:

When the START switch is closed, the coil of accelerating contactor 1A is energized closing a cotact which energizes contactors M1 and M2. The other contact of 1A removes a short across the starting resistor (SR), placing it in the Motor-Generator armature circuit. Contactors M1 and M2 close the power circuit to the Motor-Generator. Another contact on M1 serves as a holding circuit for the coils of M1 and M2 when 1A is deenergized. The third contact of M1 breaks the coil circuit of 1A, and after a short time delay the contacts of 1A return to normal position thus shorting Starting Resistor SR.

115-volt a-c power from the Motor-Generator is now available through the contacts of K301 to Transformers T302, T206, T301 and Blower B101. Further steps are identical with those in the preceding section.

For 230-volt d-c operation, link connections are available which plaee dropping resistors in the crystal heater and starting relay circuits. 4-wire control circuits are shown in the inset.

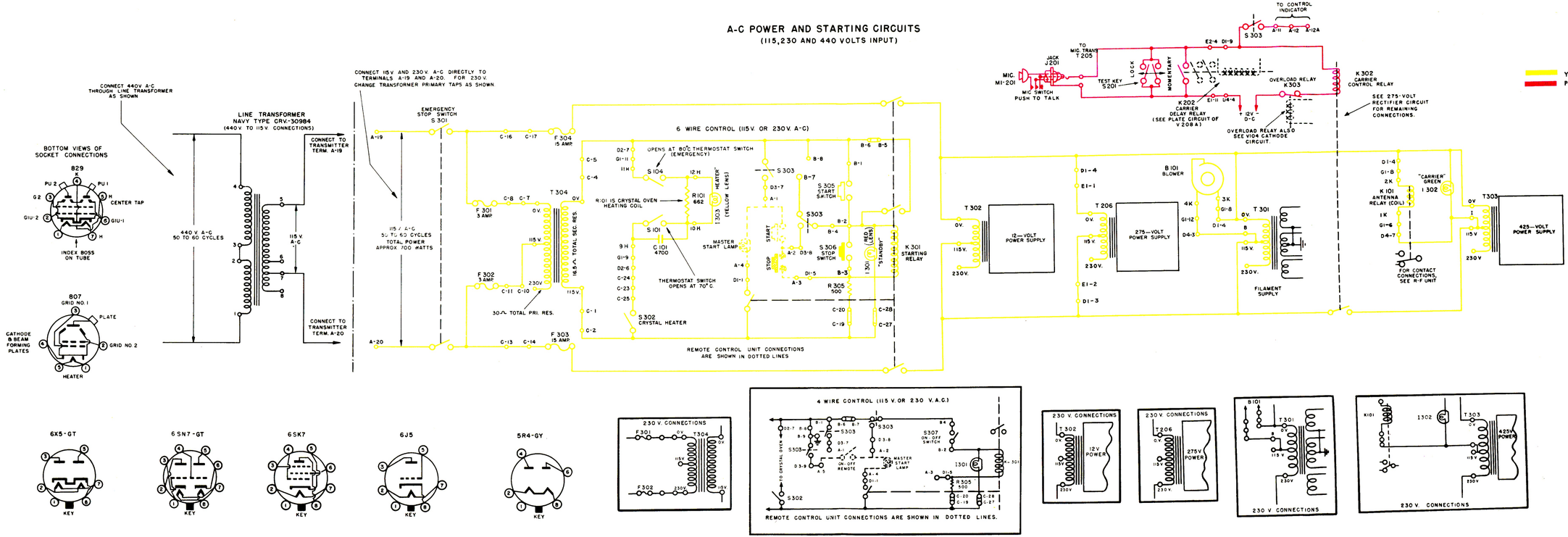


Figure 161—Power and Starting Circuits—A-C, Schematic Diagram

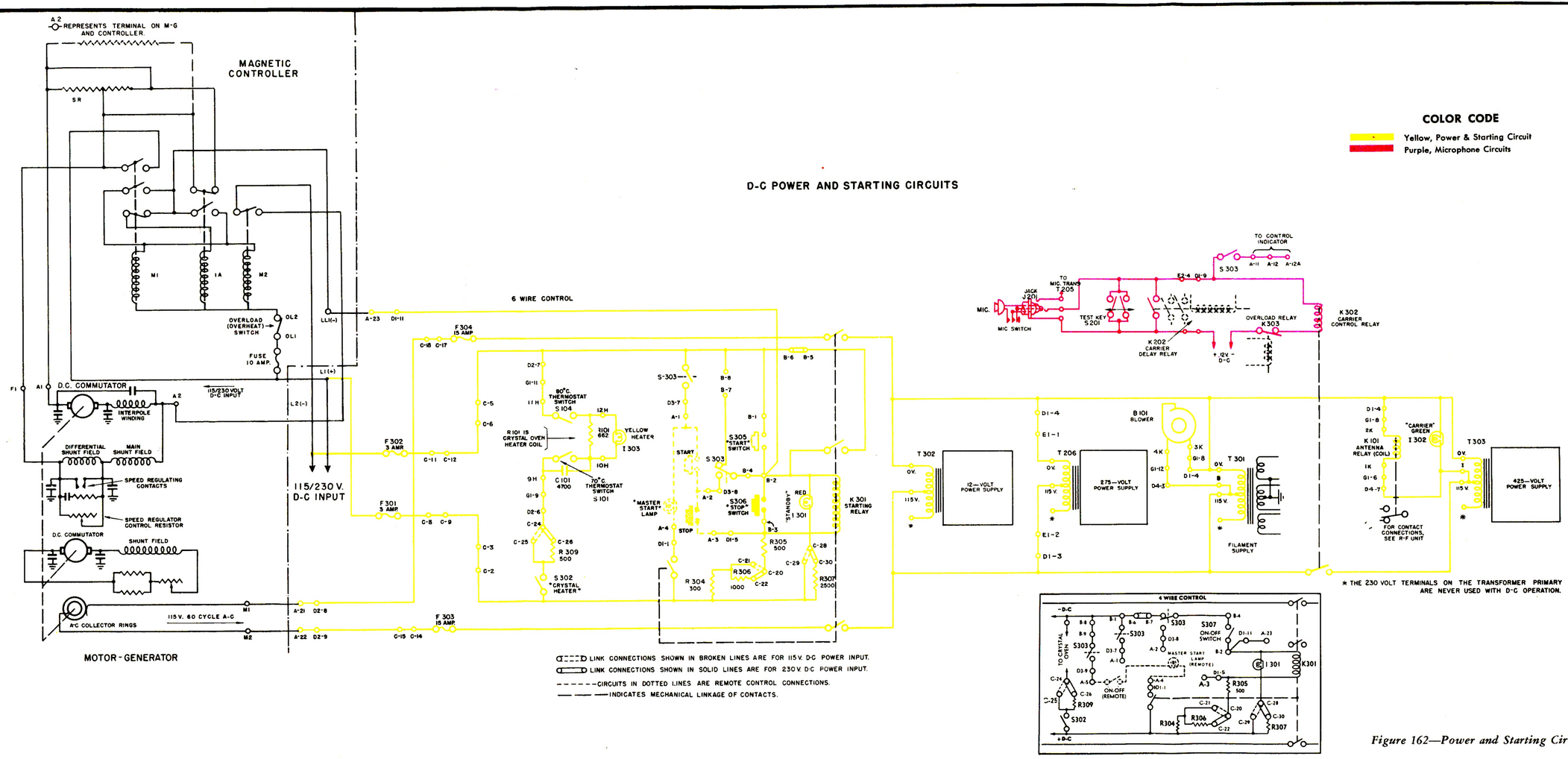


Figure 162—Power and Starting Circuits—D-C, Schematic Diagram

RESTRICTED

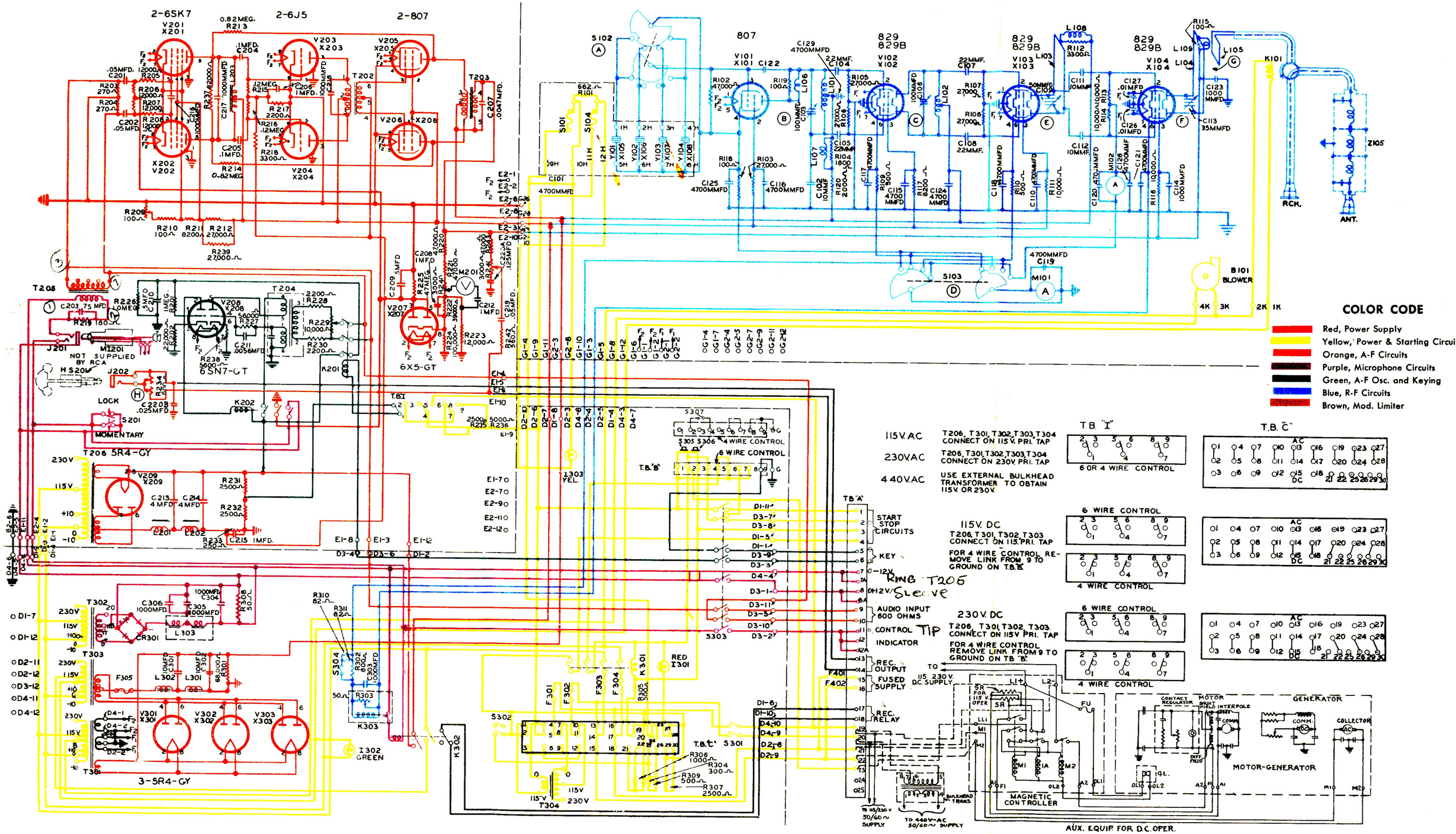


Figure 163—Transmitter, Overall Schematic Diagram

NOTES AND SKETCHES

Radiophone Unit (See Figure 164)

When the REMOTE-LOCAL Switch (S303) in the transmitter is placed in the REMOTE position the circuits of the Radiophone Unit make it possible to start, stop, key and voice-modulate the transmitter from a remote control station.

The START and STOP buttons on switch S201, across terminals 1 to 2, and 2 to 3 respectively, now function in place of switches S305 and S306 at the transmitter. An indicator lamp I201 across terminals 1 and 4 indicates the transmitter is in Standby operation. With a 4-wire control system the START-STOP switch is across terminals 2 and 5, with the light across 2 and 4.

Terminals 5 and 6 connect a telegraph key into the transmitter keying circuits when the key circuit switch (S202) is closed.

The remote control handset output is coupled through Transformer T201 and terminals 9 and 10 to the transmitter a-f amplifier input.

When the remote control unit handset is lifted from its hook, Handset Holder Switch S206 closes. When the handset press-to-talk switch is pressed the coil of K201 is energized from the 12-volt power supply in the transmitter through terminals 7 and 8. When the contacts of K201 close, the circuit is completed from terminal 8 to terminal 11 to the coil of Carrier Control Relay K302 in the transmitter, placing the transmitter in operation. The press-to-talk switch also completes the microphone circuit, placing the microphone unit in series with the primary of Transformer T201 across the 12-volt power supply at terminals 7 and 8.

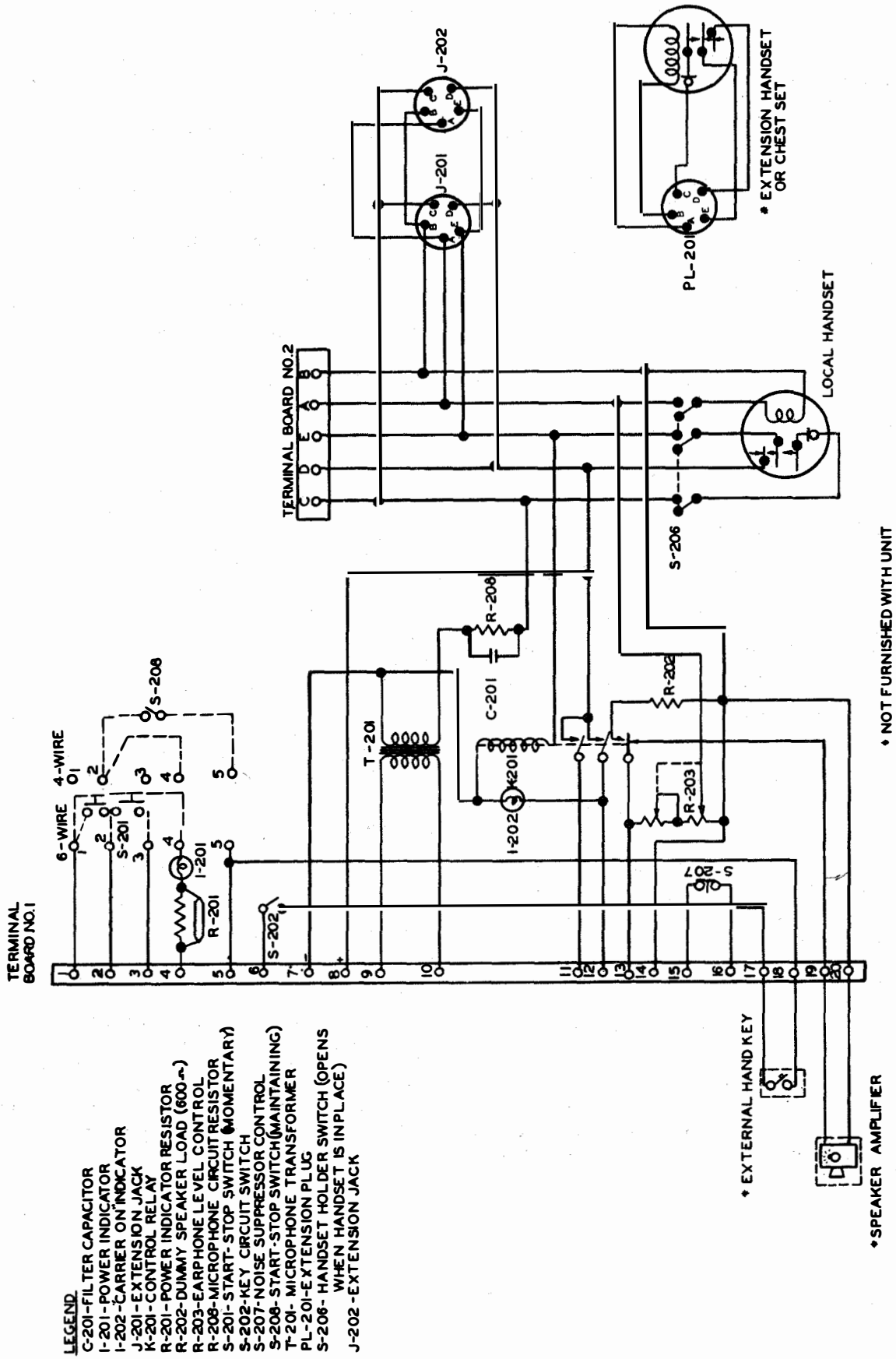


Figure 164—Radiophone Unit, Schematic Diagram

MAINTENANCE OPERATIONS

SCHEDULED PROCEDURES—A schedule for periodic upkeep has been prepared for ease in servicing this equipment. It is reproduced below:

Daily:

(1) Inspect the antenna system, including the transmission line, to detect damage, fouling, excessive sagging, etc.

(2) Dust off exterior surfaces of the equipment.

(3) Check all controls for proper operation.

(4) Check frequency for which transmitter is adjusted.

(5) Check meter readings against those recorded in the Radio Material Log taken when equipment was tuned up.

(6) Inspect the motor generator (if used) once a watch for proper operation, noting any unusual heating or noise.

(7) General inspection after shut-down.

Weekly:

(1) Clean the entire equipment, inside and out.

(2) Check all electrical connections for tightness.

(3) Inspect all relay contacts; clean and adjust if necessary.

(4) Clean and inspect the motor generator brushes, commutators, and collector rings.

(5) Check the speed of rotation of the motor generator.

(6) Check the operation of the speed regulator of the motor generator.

(7) Check both remote and local control circuits for proper operation.

(8) Record in the log the plate and grid currents for all metered circuits.

(9) Check operation of Remote Control apparatus, if installed. Check control lines.

Monthly:

(1) Check all tubes. If a weekly record of meter readings has been taken over a considerable time, need for replacement will be indicated by a substantial decrease in plate current, other conditions being the same.

(2) Lubricate Blower Motor (B-101), and blow dust out of motor case.

(3) Check motor generator bearings for lubrication.

(4) Check Overload Relay for correct current setting and test for normal operation.

(5) Inspect antenna system for looseness of mounting, fittings, joints, and transmission line clamps.

(6) Clean upper dipole insulator on antenna assembly.

Quarterly:

(1) Tighten connections to antenna. Remove any corrosion and dirt.

(2) Check transmitter for frequency stability.

(3) Check operation of all spare microphones and headphones by actual operation with the equipment.

(4) Check operation and electrical and mechanical condition of Blower B101.

(5) Test and condition all spare vacuum tubes in accordance with current instructions issued by the Bureau of Ships.

Semi-Annually:

(1) Grease the bearings of the motor generator.

(2) Clean all tube sockets and switch contacts.

(3) Make inventory of all spare parts.

Annually:

About once every twelve months the bearings of the motor generator and blower motor should be disassembled, the bearing housings thoroughly cleaned, then repacked with new grease. Navy Specification 14L3-Grade C should be used for the motor generator bearings, Grade A-Soft for the blower motor (SEE LUBRICATION, PAGE 109).

R-F UNIT—Very little attention need be given the r-f unit other than keeping the interior free from dust which might absorb moisture. This particularly applies to the coils and variable capacitors, since the formation of a leakage path might lead to flash-over.

MODULATOR UNIT—Periodic cleaning of tube and socket contacts, in addition to keeping them tight, should keep this unit in service over a long span of time.

POWER UNIT—Tight connections and cleanliness are as essential in this unit as in others. If any of the indicator lamps fail to light when the associated switch is closed, the bulb should be checked immediately. If it is found to be defective, replace it at once.

RELAYS—Inspect the various relays, K201, K202, K303, K302 and K301, regularly for rust and condition of contacts. If the contacts are rough, smooth them carefully with a jeweler's file or crocus cloth. If the contacts are badly burned, replace them with spare contacts.

If rust should appear on the armature or pole faces, it should be carefully cleaned away; otherwise, the relay may become noisy. If necessary, a very light coating of petrolatum may be applied to the pole faces.

Since trouble may develop if conditions are otherwise, all relays should be kept in perfect condition. Normally, trouble seldom occurs. However, it should be remedied immediately if it does develop.

The carrier control relay (K302) is adjusted at the factory for proper operation. If an attempt is made to clean the contacts, every precaution should be observed to avoid bending the springs on the backstop, as this will affect the carrier delay time.

MOTOR GENERATOR UNIT—With equipments supplied to operate from a d-c line (115- or 230-volt), a motor generator is provided. This generator should be inspected occasionally to ascertain that the brushes are not sparking excessively, and that the commutators are not burned and grooved. Commutators and collector rings must be kept clean and the brushes must fit these surfaces properly. The carbon dust which settles on the surfaces adjacent to the brushes should be removed periodically by means of the air stream from a bellows or by wiping with a soft, clean, lint-free cloth. If, during operation, the commutator and slip-rings acquire a polish, no attention is required. It is not harmful if the commutators and slip-rings eventually darken from brush friction; they may be occasionally cleaned with a fine (4/0) sandpaper.

In the event that the commutators or slip-rings become excessive grooved or roughened, the armature should be removed from the machine, then the commutator or slip-ring accurately turned down, on a lathe. After the commutator has been turned down, the mica should be undercut slightly. An exploded view of the motor-generator is shown in Figure 165.

If the motor generator has not been used for a long period of time, the brushes and commutator should be examined before starting the equipment, since, in a salt atmosphere, it is possible for the brushes to be stuck in the holders, or for the commutators to be corroded and covered with green spots. Either condition may be corrected by cleaning with fine (4/0) sandpaper. During this operation, lift the brushes from the commutator surface. Do not replace them until all grit has been removed.

CAUTION—NEVER USE EMERY CLOTH OR EMERY PAPER ON THE COMMUTATOR. SINCE THE GENERATOR OUTPUT VOLTAGE IS DANGEROUS TO LIFE NEVER MAKE REPAIRS TO THE COMMUTATOR OR BRUSHES WHILE THE MACHINE IS RUNNING. ALWAYS ROTATE THE ARMATURE BY HAND.

The position of the brush holders is set at the factory to provide the best commutation. Do not alter this position.

When the brushes have worn to such a degree that the spring tension is nearing the limit of its effectiveness, they should be replaced. New brushes should be of the same make and grade as those supplied with the generators. The brushes should have only enough clearance in the brush holder to slide easily. When fitting new brushes to the commutator or slip-ring surface, they may be shaped by wrapping a strip of fine sandpaper (approximately the width of the commutator) around the commutator, with the abrasive surface out, toward the brushes. Apply the normal spring pressure to the brushes, then rotate the armature by hand until a curve forms on the brush. For good commutation, about 70 per cent of the brush surface should be so formed. Contact to the slip-rings is not so critical, therefore the grinding-in process need not be done so carefully. Make certain that all carbon dust and grit is removed before operating the generator.

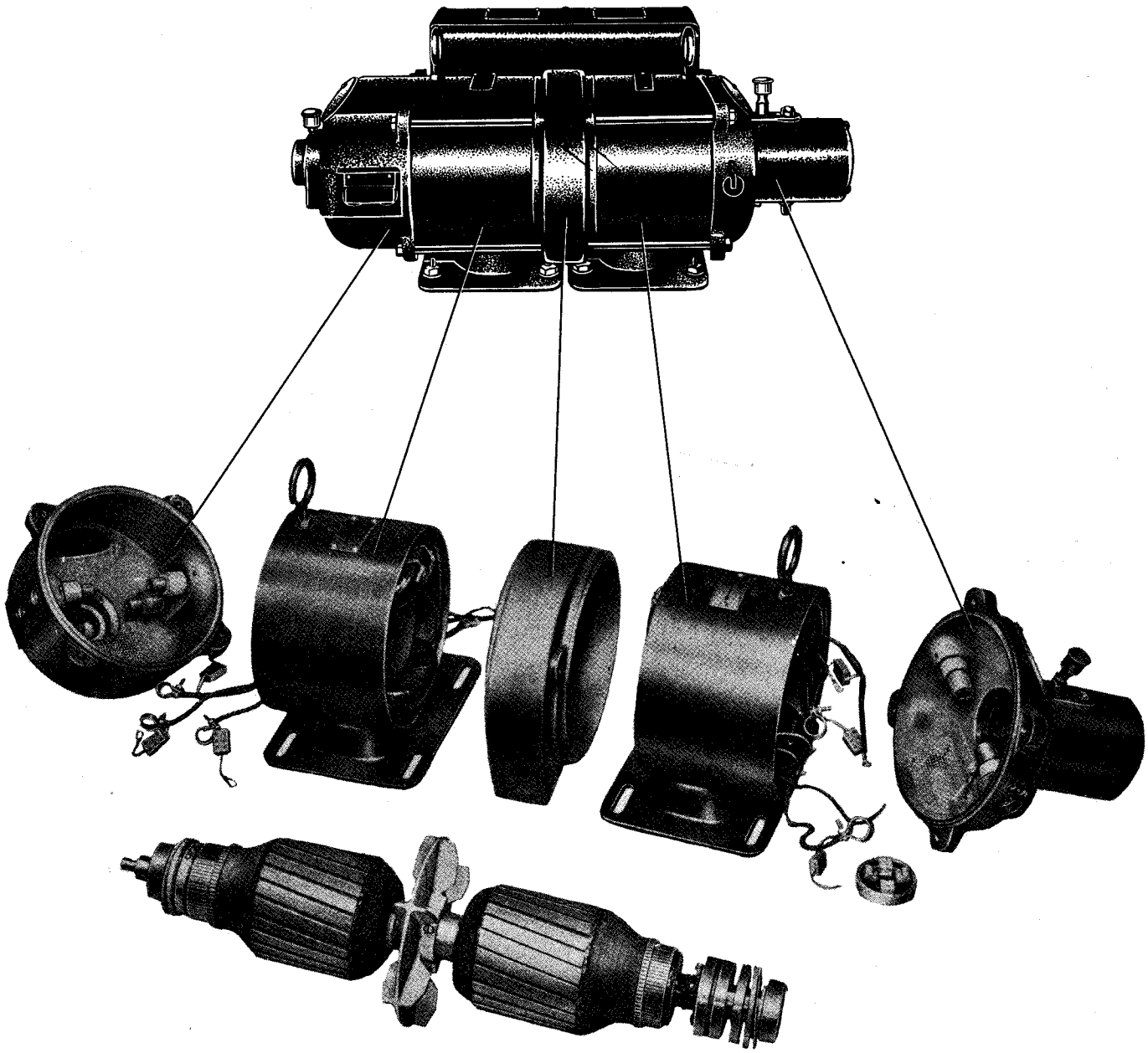


Figure 165—Motor-Generator (Exploded View)

LUBRICATION—The motor generator set is equipped with ball bearings. These bearings are lubricated with medium fiber grease (Navy specification 14L3—Grade C) by means of the grease cup located over each bearing. These cups should be given one turn periodically, depending upon the actual service use.

About once every twelve months, the bearing should be disassembled, the bearing housing thoroughly cleaned, then repacked with new grease (Navy Specification 14L3—Grade C).

If a bearing shows an abnormal temperature rise at any time, disassemble; examine the bearing to be sure that it is in good condition, if so, repack as outlined above. Too much grease may cause excessive bearing temperatures, and in addition may cause grease to leak out of the housing onto the windings and brush rigging. When new bearings are installed, the air gap should be tested to see that it is uniform.

Removal of M-G Armature — To remove the armature from the motor-generator (either Type CRV-211092 or Type CRV-211093) proceed as follows:

(1) Remove all brushes. These are on the motor speed regulator, motor commutator, generator commutator and generator collector.

(2) Loosen the terminal box from the generator frame and disconnect the generator leads from the terminals in the box.

(3) Remove the cover plate for the speed regulator and take out the stationary part of the regulator.

(4) Loosen the screws holding the rotating part of the speed regulator on the shaft and remove this part.

(5) Remove the four screws from each bearing housing which hold the inner housing washers in place.

(6) Loosen the nuts on the clamping bolts on the generator end, and take off the generator end shield.

(7) If the set is fastened to a bed plate, remove the four screws holding the generator to the bed plate.

(8) Remove the generator field frame.

(9) Pull out the complete armature assembly from the generator end. Be careful not to get dirt in the ball bearings.

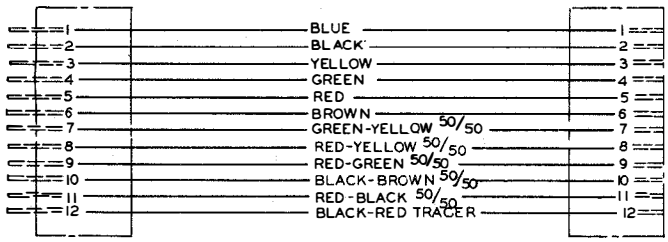
Blower Motor (B-101) — The blower motor should require very little care. The bearings are packed in a grease which should be removed and replaced once a year. Replace with clean, high-grade, sodium-base ball-bearing grease similar to that supplied in the bearings. Navy "Grade A Soft" may be used.

VOLTAGE AND RESISTANCE MEASUREMENTS

The following tube socket diagram (Figure 167) and tables of typical voltage and resistance measurements are for use in detecting faulty parts after other tests have localized the trouble in a particular unit or stage.

When a voltage check is made on a particular unit it must be removed from the cabinet and connected with special test cables, four of which are furnished with each Model TDQ Transmitting Equipment.

A cross-section view and a connection diagram of this special test cable is shown in Figure 166.



CONNECTION DIAGRAM

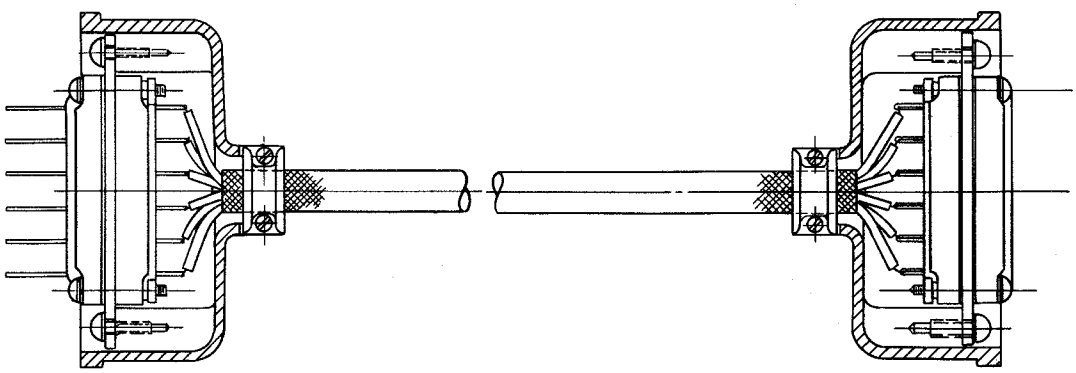
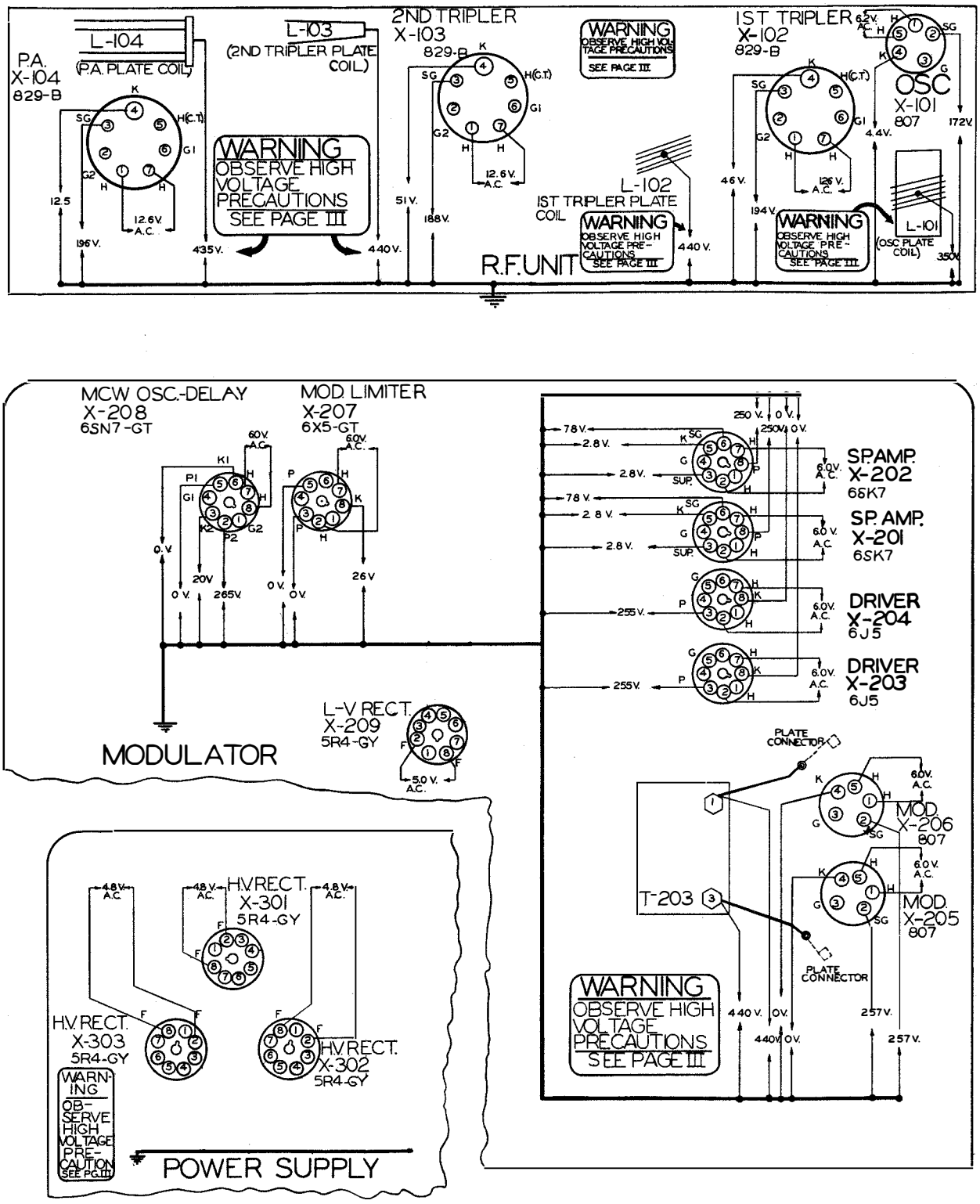


Figure 166—Test Cable



ALL VOLTAGES MEASURED WITH A 1000 OHMS-PER-VOLT VOLTMETER.
ALL VOLTAGES ARE D.C. UNLESS OTHERWISE NOTED.
ALL VOLTAGES MEASURED TO GROUND UNLESS OTHERWISE NOTED.
PLATE VOLTAGES OF RF TUBES MEASURED FROM PLATE COIL CENTER TAP TO GROUND.

WARNING - OPEN MAIN POWER SWITCH BEFORE CONNECTING VOLTMETER.

CONDITIONS:
(1) TRANSMITTER FULLY LOADED, "TUNE-OPERATE" SWITCH IN THE "OPERATE" POSITION.
(2) TRANSMITTER READY FOR TELEPHONE OPERATION, BUT NO MODULATION APPLIED.

Figure 167—Tube Socket Voltage Diagram

TYPICAL TUBE SOCKET VOLTAGES

Socket	From	To	Voltage Measured	
			Name	Amount
OSC. X-101 (807)	Pin No. 1 Pin No. 2 Pin No. 4 L-101 (C.T.)	Pin No. 5 GND. GND. GND.	Heater Screen Cathode Plate	6.2 A.C. 172 4.4 350
1st Trip. X-102 (829-B)	Pin No. 1 Pin No. 3 Pin No. 4 L-102 (C.T.)	Pin No. 7 GND. GND. GND.	Heater Screen Cathode Plate	12.6 A.C. 194 46 440
2nd Trip. X-103 (829-B)	Pin No. 1 Pin No. 3 Pin No. 4 L-103 (C.T.)	Pin No. 7 GND. GND. GND.	Heater Screen Cathode Plate	12.6 A.C. 188 51 440
P.A. X-104 (829-B)	Pin No. 1 Pin No. 3 Pin No. 4 L-104 (C.T.)	Pin No. 7 GND. GND. GND.	Heater Screen Cathode Plate	12.6 A.C. 196 12.5 435
SP. AMP. X-201 (6SK7)	Pin No. 2 Pin Nos. 3 & 5 Pin No. 6 Pin No. 8	Pin No. 7 GND. GND. GND.	Heater Cath. Sup. Screen Plate	6.0 A.C. 2.8 78 250
SP. AMP. X-202 (6SK7)	Pin No. 2 Pin Nos. 3 & 5 Pin No. 6 Pin No. 8	Pin No. 7 GND. GND. GND.	Heater Cath. Sup. Screen Plate	6.0 A.C. 2.8 78 250
DRIVER X-203 (6J5)	Pin No. 2 Pin No. 3 Pin No. 8	Pin No. 7 GND. GND.	Heater Plate Cathode	6.0 A.C. 255 0
DRIVER X-204 (6J5)	Pin No. 2 Pin No. 3 Pin No. 8	Pin No. 7 GND. GND.	Heater Plate Cathode	6.0 A.C. 255 0
MOD. X-205 (807)	Pin No. 1 Pin No. 2 Pin No. 4 T-203-3	Pin No. 5 GND. GND. GND.	Heater Screen Cathode Plate	6.0 A.C. 257 0 440
MOD. X-206 (807)	Pin No. 1 Pin No. 2 Pin No. 4 T-203-1	Pin No. 5 GND. GND. GND.	Heater Screen Cathode Plate	6.0 A.C. 257 0 440
MOD. LIMITER X-207 (6X5-GT)	Pin No. 2 Pin Nos. 3 & 5 Pin No. 8	Pin No. 7 GND. GND.	Heater Limiter Cathode	6.0 A.C. 0 26
MCW OSC. DELAY X-208 (6SN7-GT)	Pin No. 7 Pin No. 2 Pin No. 3 Pin No. 5 Pin No. 6	Pin No. 8 GND. GND. GND. GND.	Heater Plate Cathode Plate Cathode	6.0 A.C. 265 20 0 0
L-V RECT. X-209 (5R4-GY)	Pin No. 2	Pin No. 8	Filament	5.0 A.C.
H-V RECT. X-301 X-302 X-303 (5R4-GY)	Pin No. 2	Pin No. 8	Filament	4.8 A.C.

All voltages measured with 1000 ohms/volt meter.

POINT-TO-POINT RESISTANCE MEASUREMENTS

Procedure:

(1) Disconnect the transmitter from the power supply source then remove chassis from cabinet.

(2) Remove all tubes from chassis.

(3) Use VoltOhmyst, Junior or equivalent ohmmeter.

Before checking Modulator and Power Supply Units connect internal jumpers for 115-volt a-c Operation.

Before checking Power Supply Unit:

(a) Close "EMERGENCY SWITCH" (S-301).

(b) Close "CRYSTAL HEATER" switch (S-302).

(c) Block relays K-301 and K-302 in the closed position.

Unit	From	To	Resistance (Ohms)	Ohmmeter Scale
R.F.	G1-5	GND	INFINITY	R x 1 meg.
	G1-8	G1-12	80	R x 1
	G1-9	G1-11	650	R x 10
	G2-3	X101-2	30,000	R x 1,000
	G2-3	X102-3	7,200	R x 100
	G2-3	X103-3	9,000	R x 100
	G2-6	GND	0	R x 1
	G2-8	L101	2,000	R x 100
	G2-10	X104-3	10,600	R x 1,000
	X101-4	X101-3	47,000	R x 1,000
	X102-6	X102-2	58,000	R x 10,000
	X103-6	X102-2	55,000	R x 1,000
	X104-6	X104-2	21,000	R x 1,000
MOD.	E1-1	E1-2	2.2	R x 1
	E1-3	E1-4	78	R x 1
	E1-5	E1-6	INFINITY*	R x 1 meg.
	E1-8	TB"I"-1	2,100	R x 100
	E1-9	TB"I"-4	7,500	R x 100
	E1-12	GND	5,200	R x 100
	X209-4	GND	840	R x 100
	X208-2	E1-12	3,200	R x 100
	X208-4	T204-1	56,000	R x 1,000
	X208-6	GND	6,000	R x 100
	E2-3	GND	24,000	R x 1,000
	E2-6	GND	0	R x 1
	E2-8	E2-10	22	R x 1
	E2-10	GND	90,000	R x 1,000
	X201-4	X202-4	50,000	R x 1,000
	X203-8	GND	0	R x 1
POWER SUPPLY	D1-1	TB"B"-4	14.5	R x 1
	D1-2	D1-8	0	R x 1
	D1-5	TB"C"-20	95	R x 1
	D1-6	D1-10	0	R x 1
	D1-9	D4-4	58	R x 1
	D1-11	D1-5	92	R x 1
	D2-3	GND	73,000	R x 1,000
	D2-4	D2-5	45	R x 1
	D2-6	TB"C"-26	490	R x 10
	D2-7	TB"B"-4	0	R x 1
	D2-10	D4-8	450	R x 10
	TB"C"-21	TB"C"-22	900	R x 10
	TB"C"-19	TB"C"-21	300	R x 100
	TB"C"-29	TB"C"-30	2,600	R x 100

* R-234 set for maximum volume.

MICROPHONE SWITCH—If the microphone switch contact appears to be intermittent, the contacts may require cleaning or an increase in tension. To get to this switch, remove the screws around the microphone mouthpiece, and pull this piece out of the casing. The switch contacts will be found on the facing sides of both pieces.

DRY DISC RECTIFIER — The rectifier unit (CR301) may be fed from either the 17.0-volt tap or the 18.5-volt tap of transformer T302, depending upon its characteristics at the time the equipment was manufactured. Should the output of the 12-volt power supply drop below 12 volts, and it is determined that the power supply is not overloaded, raise the voltage fed from transformer T302 by changing the tap to either 18.5 volts or 20 volts, whichever is the next higher step from its previous connection.

INTERNAL ADJUSTMENTS — Four slotted-shaft controls are mounted on the modulator unit—two on each side-panel. Their exact location is shown on the illustrations of the modulator unit (Figures 148 and 149), at the front of this section. These controls are set at the factory and, except for control R241, they normally should not require further adjustment. However, for the abnormal cases which inevitably arise, the procedure for adjusting each of these controls will be given here.

The function of each control is listed below:

R241—controls volume of sidetone signal in headset.

R240—controls reading of OUTPUT LEVEL meter (M201).

R229—controls percentage of modulation of carrier during code (MCW) transmission.

R209—controls gain of audio amplifier.

Remove the modulator unit from the transmitter, and place it nearby. Using two of the extension test cables, reconnect the modulator unit to the transmitter.

To adjust control R241, first turn on the receiver associated with the TDQ transmitter, and adjust its volume to the level that will normally be used. Plug a headset into the HEADSET jack (J202) on the modulator unit panel and rotate knob H, HEADSET VOLUME, until a comfortable volume level is obtained. Set up the transmitter for code (MCW) transmission, and hold down the telegraph key. (The key may be connected across terminals 5 and 6 of transmitter terminal board A.) Using a screwdriver, rotate the shaft of control R241 until the volume level in the headset is comparable to that when the key is up and the received signal is heard. This completes the adjustment of control R241.

To adjust the remaining three controls, the following (external) equipment is required: (See Figure 168.)

(1) An oscilloscope designed for high-frequency input (such as Navy Types OBL or 60018); (2) a tank circuit capable of being tuned to the transmitter frequency; (3) a piece of shielded transmission line equipped with a small pick-up loop at one end; and (4) an a-f oscillator capable of being tuned to 1000 c.p.s. (such as Navy Type LO).

Fabricate item (2) as follows: Mount a 1¼ inch diameter loop consisting of one turn of No. 14 bare wire across the terminals of a dual (split-stator) variable capacitor 50 mmf each section. Provide leads to enable connection to the vertical terminals of the oscilloscope, and to ground the center tap of the capacitor to the oscilloscope chassis.

Fabricate item (3) as follows: Mount a similar loop in series with a 10 mmf capacitor across one end of a length of coaxial cable (such as RG-10/U) soldering the loop to the conductor and the shield. From the other end of the cable, cut off 2½ inches of outer insulation, exposing the shield. Cut off all but ¼ inch of exposed shield and fold back. Tape over the exposed end of the conductor.

PROCEDURE: (See Figure 168)

1. Remove power from the transmitter by pressing the OFF push-button (S306) of the START switch (It is assumed that six-wire control is being used).

2. Remove the modulation limiter tube (V207).

3. Operate the REMOTE - LOCAL switch (S303) to the REMOTE position.

4. Connect the output (600 ohm) of the external audio oscillator to terminals 9 and 10 on terminal board "A." Set the dial at 1000 c.p.s.

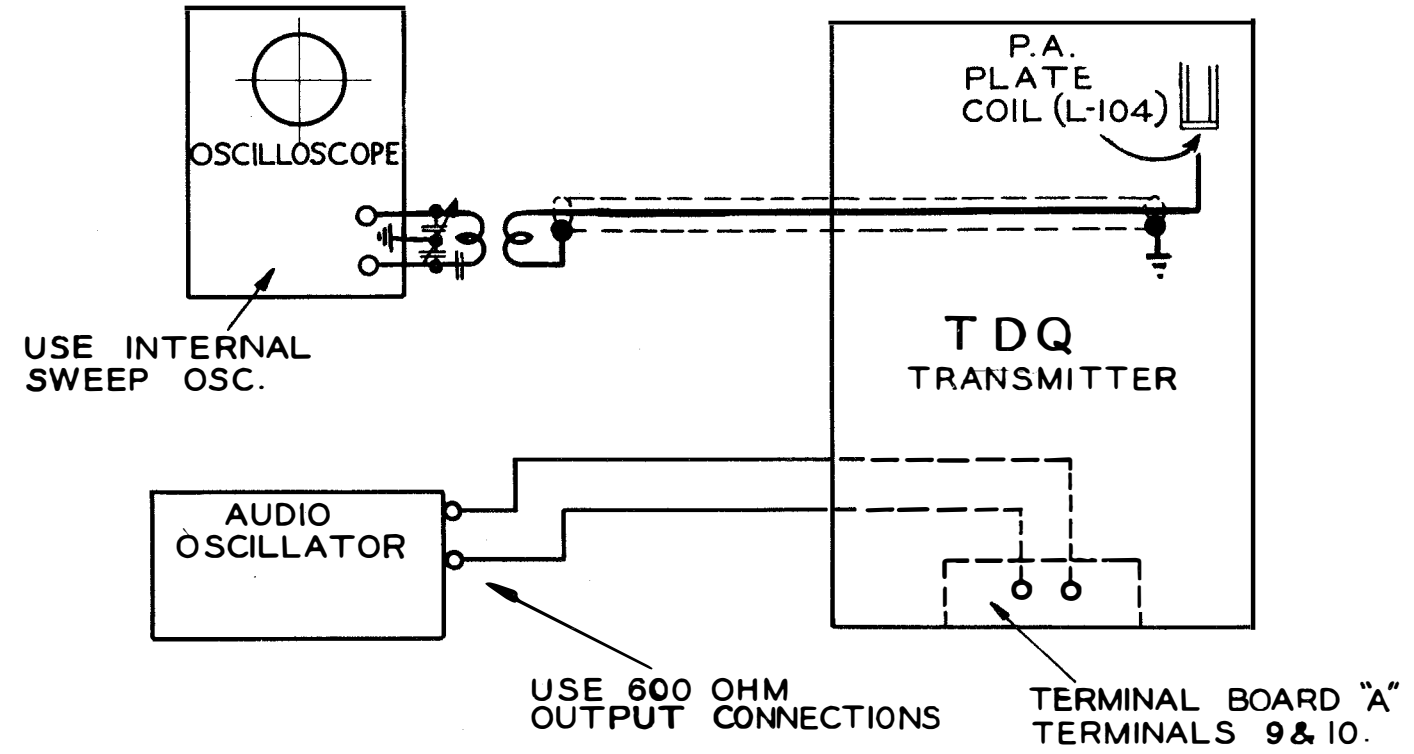
5. Connect the fabricated tank circuit to the vertical terminals of the oscilloscope. Ground the center tap of the variable capacitor. Loosely couple the loop end of the coaxial cable to the tank loop.

Remove the shield from the right-hand side of the transmitter. Place the unshielded end of the coaxial cable so that it is loosely coupled to the P.A. plate coil, and so that the exposed ¼" of shield is grounded to the chassis.

6. Apply power to the transmitter and a-f oscillator and place "TEST KEY" in LOCK position. Adjust tuning of the capacitor and coupling of the loops until a satisfactory modulation pattern appears on the oscilloscope screen. If it is impossible to obtain a pattern, change the transmitter crystal frequency until the coupling device performs satisfactorily.

7. Adjust the output of the audio oscillator to the value required to produce 100 per cent modulation as indicated on the oscilloscope.

8. Using a screwdriver, adjust R240 (located on the right-hand side shield of the modulator unit, near the top) to the position at which the "OUTPUT LEVEL" meter (M201) indicates +6 db (full scale).



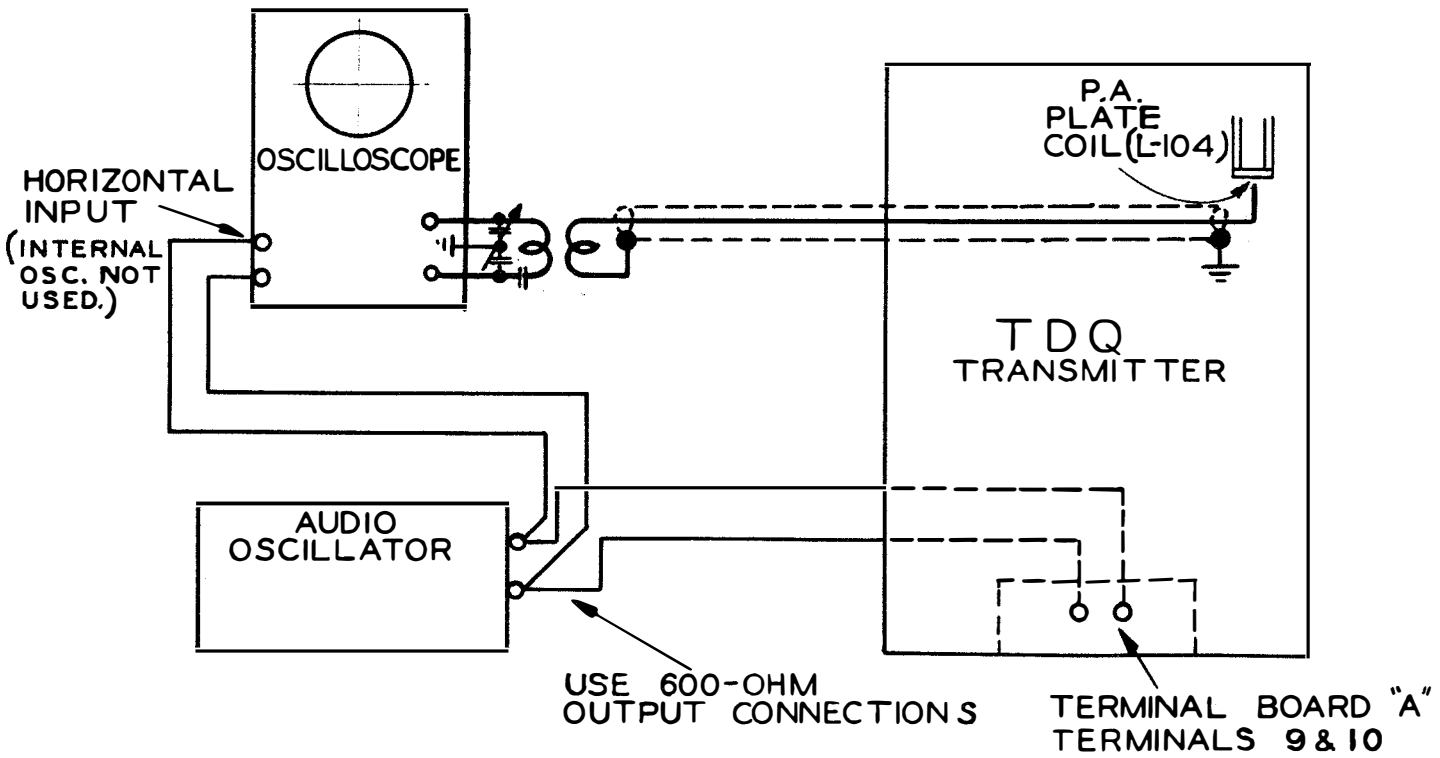


Figure 168—Circuits for Obtaining Modulation Patterns

9. Stop the transmitter, replace the modulation limiter tube (V207), restart the transmitter then adjust the output of the external audio oscillator to a value of 0.6 volt, using a rectifier type a-c voltmeter.

10. Using a screwdriver, rotate the shaft of R209 (located on the right-hand side shield of the modulator unit, near the bottom) until there is an indication of 3.3 db (indicating approximately 75 per cent modulation) on the OUTPUT LEVEL meter (M201).

11. Stop the transmitter, disconnect the external audio oscillator from terminals 9 and 10 on terminal board "A," operate the REMOTE-LOCAL switch (S303) to the LOCAL position, then restart the transmitter.

12. Operate the TEST KEY (201) to the neutral (center) position, close the telegraph key, then, using a screwdriver, rotate the shaft of R229 (located on the left-hand side shield of the modulator unit, near the bottom) until there is an indication of 4.2 db (indicating approximately 85 per cent modulation) on the OUTPUT LEVEL meter (M201).

13. Having completed the preceding adjustments, stop the transmitter, remove the test leads and test equipment, then replace the modulator unit in the transmitter cabinet.

RELAY ADJUSTMENTS

All relays are properly adjusted before equipment is shipped from the factory. No adjustments should be attempted unless it is definitely established that the relay spring tensions are faulty. Contact spacing and pressure is adjusted by bending the springs with a relay adjusting tool.

Procedure for adjusting Relays K201 and K202 is as follows: (See Figure 169.)

(1) Loosen jam nut (A), withdraw screw (B). With armature (C) pushed against pole piece (E) gap at (D) should be .001".

(2) Screw (B) should be turned into armature (C) so that there is a space of .003" when (C) is pushed so that screw (B) seats on pole piece (E).

(3) Contacts are to be adjusted so that they just make with a gap of .006" between screw (B) and pole piece (E).

(4) Moving contacts are to be adjusted so that it requires a pressure of 20 to 35 grams to lift each contact separately.

(5) Back stop is to be adjusted for .20 gap measured between the end of screw (B) and pole piece (E), when the armature is in contact with the back stop.

Contact pressure and spacing of the rest of the relays (K301, K302 and K303) are not critical. If a contact fails to make or break properly, bend the spring.

The variable resistor (R303) across the coil of K303 is adjusted at the factory so that a total current of 290 ma through the combination will trip the relay.

The antenna relay (K101) requires no adjustment.

The following are the d-c resistances for the various coils:

K101	55 ohms	K301	140 ohms
K201	2000 ohms	K302	58 ohms
K202	3000 ohms	K303	46 ohms

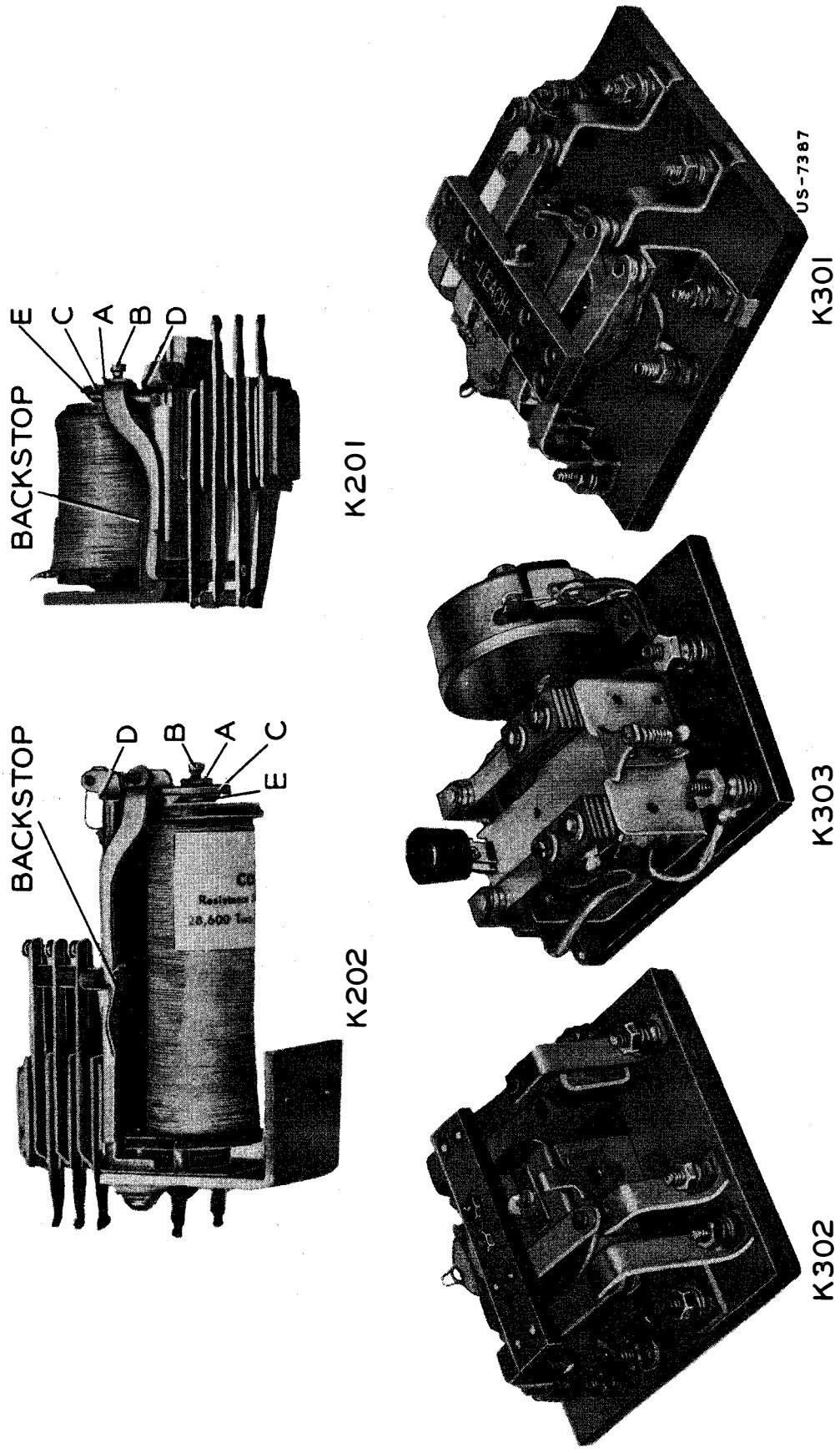


Figure 169—Transmitter Relays

NOTES AND SKETCHES

SYMPTOMS OF TROUBLE AND CORRECTIVE PROCEDURES

"Operation of this equipment involves the use of high voltages which are dangerous to life. Operating personnel must at all times observe all safety regulations. Do not change tubes or make adjustments inside equipment with high voltage supply on. Do not depend upon door switches or interlocks for protection but always shut down motor generators or other power equipment. Under certain conditions dangerous potentials may exist in circuits with power controls in the off position due to charges retained by capacitors, etc. To avoid casualties always remove power, discharge and ground circuits prior to touching them."

The following instructions outline some causes of failure and suggest methods of correcting them.

Step 1 (Figures 170 to 175 incl.)

If the CRYSTAL HEATER, CARRIER, and STAND-BY indicator lamps on the power unit do not light, when the START switch, HEATER switch and TEST KEY are "on," possible sources of trouble are:

(a) No power input to the transmitter.

(b) Faulty fuses (F301, F302) in the primary circuit of transformer T304.

(c) Defective indicator lamps.

(d) Faulty wiring or faulty connector plugs in the transmitter cabinet.

(e) Emergency switch S301 may not be making contact.

To correct the trouble, make the following tests and after each test check to see if the trouble has been corrected:

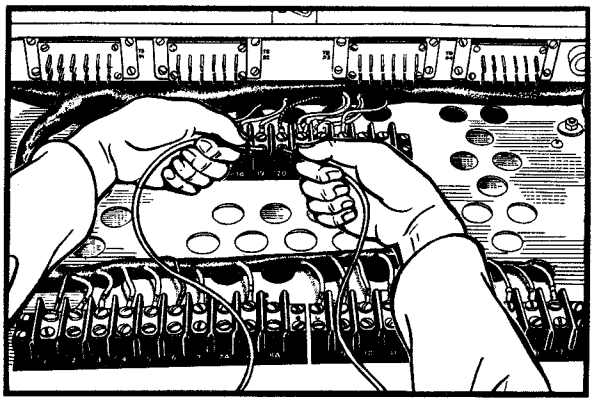


Figure 170

(a) Check the input voltage to the transmitter at terminals A19 and A20 on terminal board A in the transmitter cabinet. The voltage at these points should be 115- or 230-volt a-c. If a motor-generator set is used in conjunction with the equipment, check the voltage at terminals A21 and A22 on terminal board A.

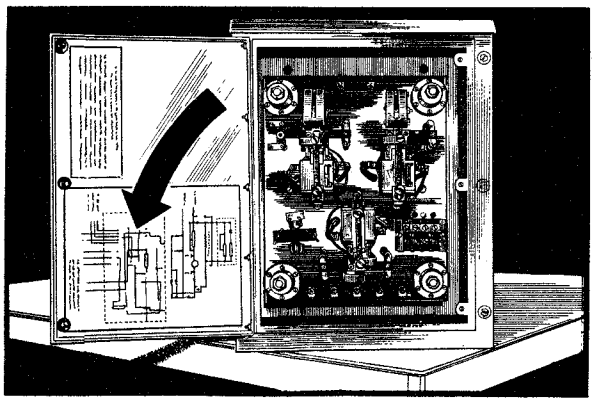


Figure 171

If there is no voltage indication, and a line transformer is being used to supply power to the transmitter, see that the transformer is connected properly, and make sure that all connections are in place and secure.

If a motor-generator set is being used, make certain it is running and that all connections in the junction box are in place and secure.

Check all electrical connections to and from the magnetic controller. Refer to the wiring diagram.

(b) Remove the cover from the right side of the transmitter cabinet, and check the main power fuses (F301, F302) on the end of the power units for continuity with a voltmeter. Fuse is defective if reading is obtained across fuse. If either fuse is bad, replace it with a spare fuse located on the rear of the front panel of the power unit.

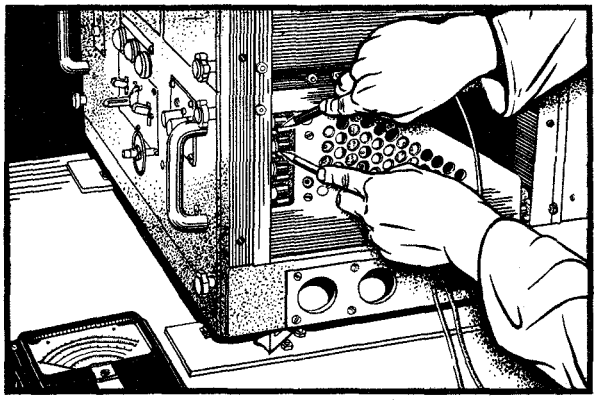


Figure 172

(c) Test the indicator lamps to be certain that they are in good condition. If any lamps are defective, replace them.

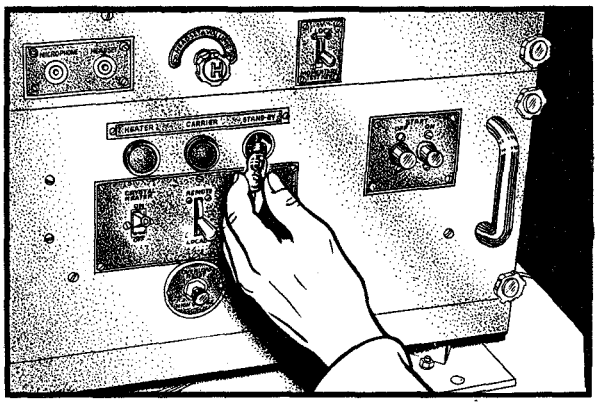


Figure 173

(d) Check the connector plugs and wiring in the transmitter cabinet for loose connections and for continuity. Refer to the transmitter Rear View Connection Diagram (Figure 209) for the cabinet connections.

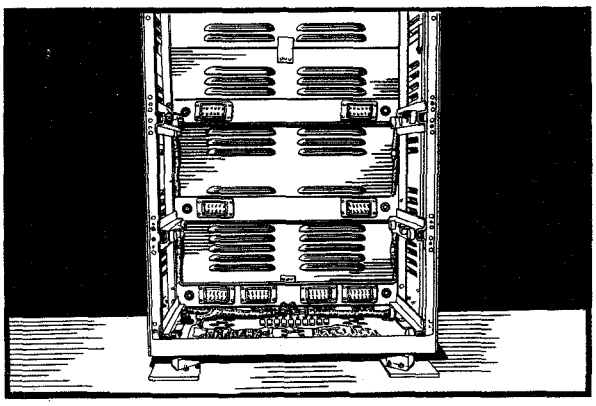


Figure 174

(e) Check the emergency switch on the power unit panel with a voltmeter. Meter should indicate full supply voltage in ON position, zero volts in OFF position. Be certain the switch operates properly.

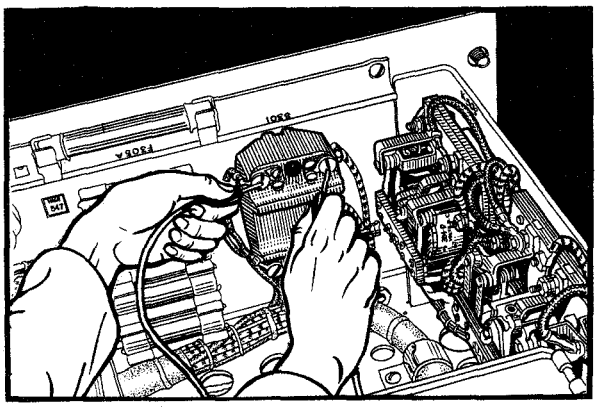


Figure 175

Step 2 (Figures 176 to 180 incl.)

If the red (STAND-BY) lamp lights but the green (CARRIER) lamp does not light when the LOCK-MOMENTARY switch (TEST KEY) on the modulator panel is operated, possible sources of trouble are:

(a) A faulty CARRIER lamp.

(b) Defective fuses (F303 or F304) in the line leading to the primaries of the power supply transformers.

(c) Dirty or faulty contacts on the starting relay (K301).

(d) An open circuit in the overload relay (K303).

(e) Low voltage or no voltage from the 12-volt supply to the carrier control relay (K302).

To correct the trouble, make the following tests and after each test check to see if the trouble has been corrected:

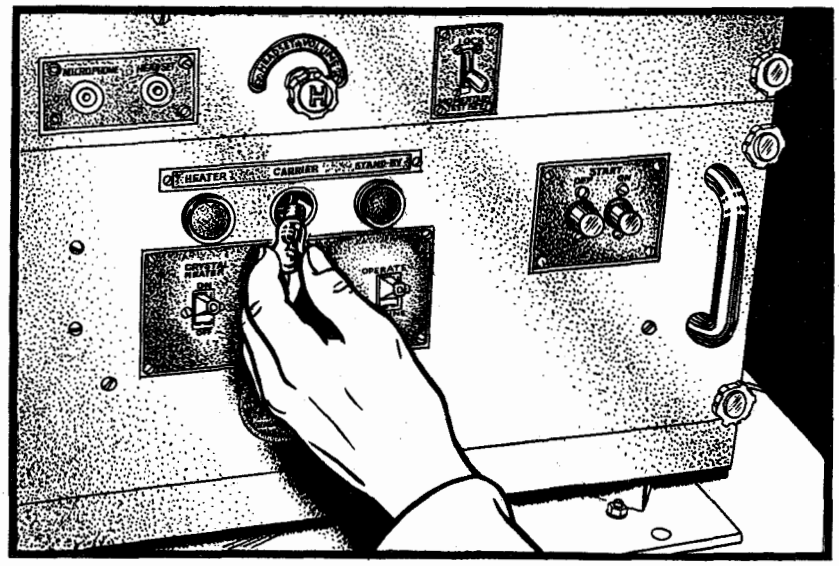


Figure 176

(a) Test the green CARRIER lamp to see if it is in good condition. If it is defective, replace it.

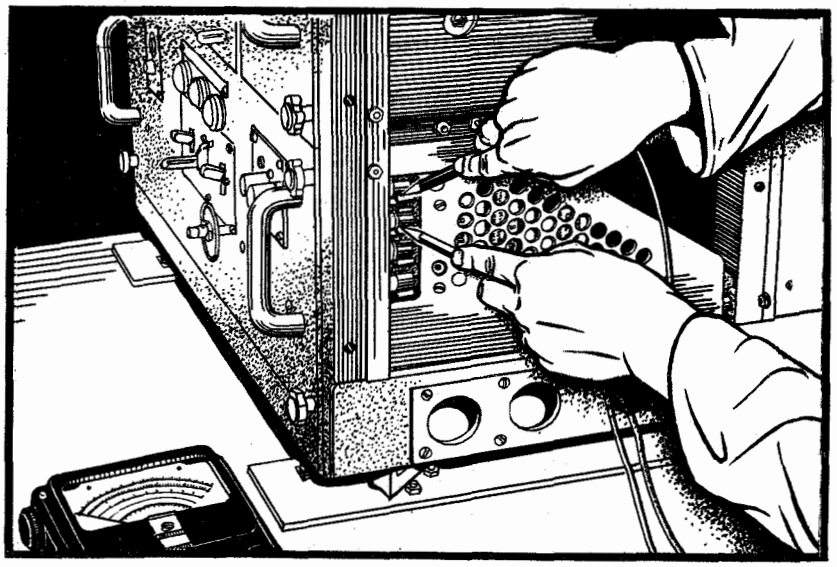


Figure 177

(b) Remove the cover from the right side of the transmitter cabinet and check the two fuses (F303 and F304) on the power unit for continuity with a voltmeter. If either fuse is defective, replace it with one of the spare fuses from the rear of the power unit panel.

(c) Inspect the contacts of the starting relay K301. Be certain that they are clean, and are making and breaking properly.

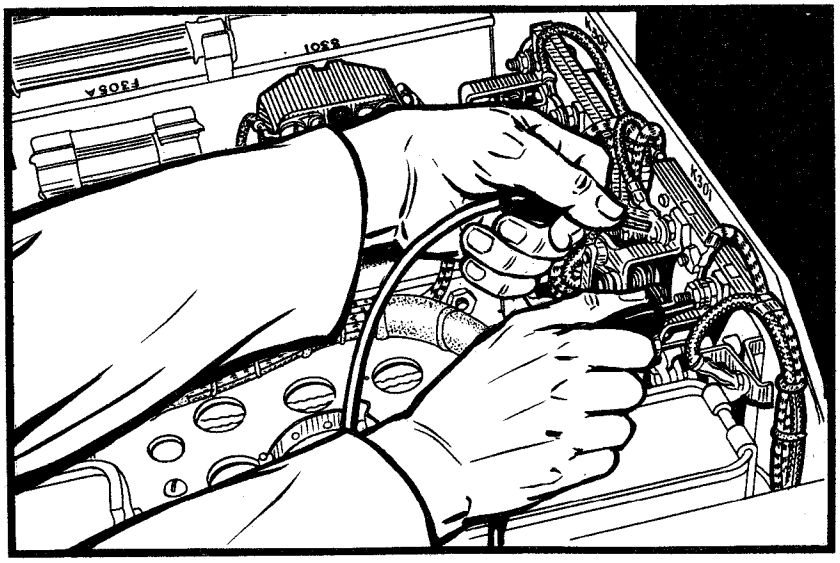


Figure 178

(d) Press the OVERLOAD RESET HIGH VOLTAGE relay pushbutton on the power unit panel. Be certain that the contacts of the overload relay K303 are closed.

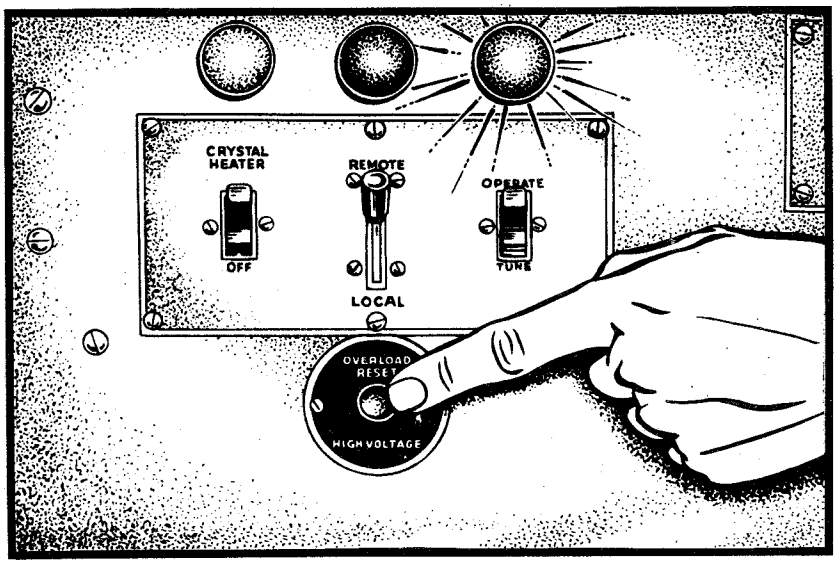


Figure 179

(e) Check the output of the 12-volt dry disc rectifier with a voltmeter. Continue checking from point to point to the carrier control relay K302 in the power unit. If the rectifier output is below normal, move the wire on tap 17 of transformer T302 to tap 18.5 or from 18.5 to tap 20. This will increase the output voltage of the dry disc rectifier.

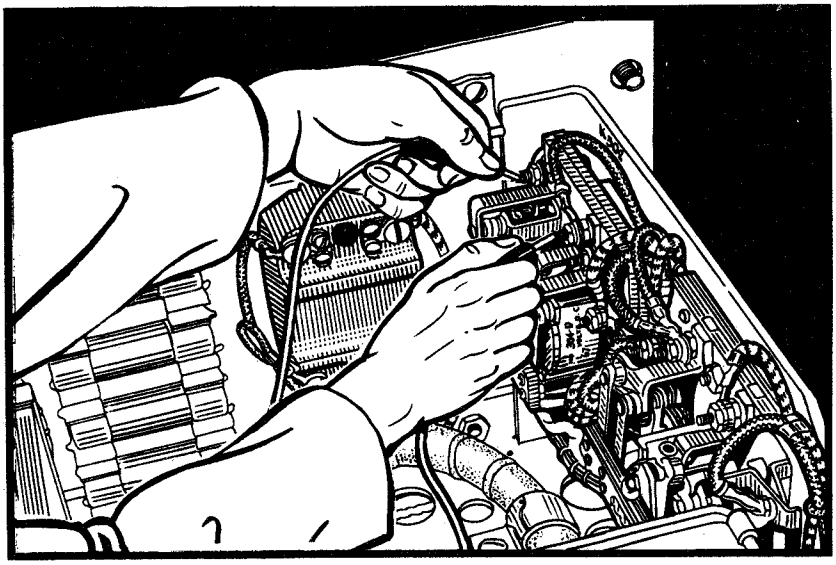


Figure 180

Step 3 (Figures 181 and 182)

If the three indicator lamps on the power unit light, but the oscillator and tripler stages in the r-f unit draw approximately 20 per cent of their normal current, and the power amplifier plate and grid currents are zero, possible sources of trouble are:

WARNING

Discharge filter capacitors with insulated screwdriver before checking components in high voltage circuit.

(a) A defective fuse (F305) in the 425-volt power supply circuit.

(b) Defective components in the 425-volt rectifier circuit.

To correct the trouble, the following tests are suggested:

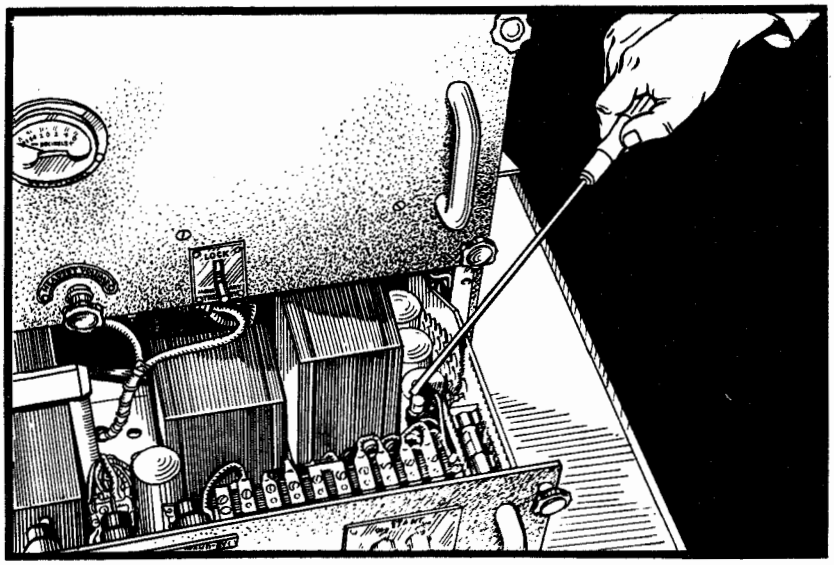


Figure 181

(a) Stop the transmitter, ground terminal D2-3, then remove fuse F305 (in the power unit) and check it for continuity with a volt-ohmmeter. If defective, replace it with a spare fuse (1 amp. 1000 volts) located on the rear of the power unit panel.

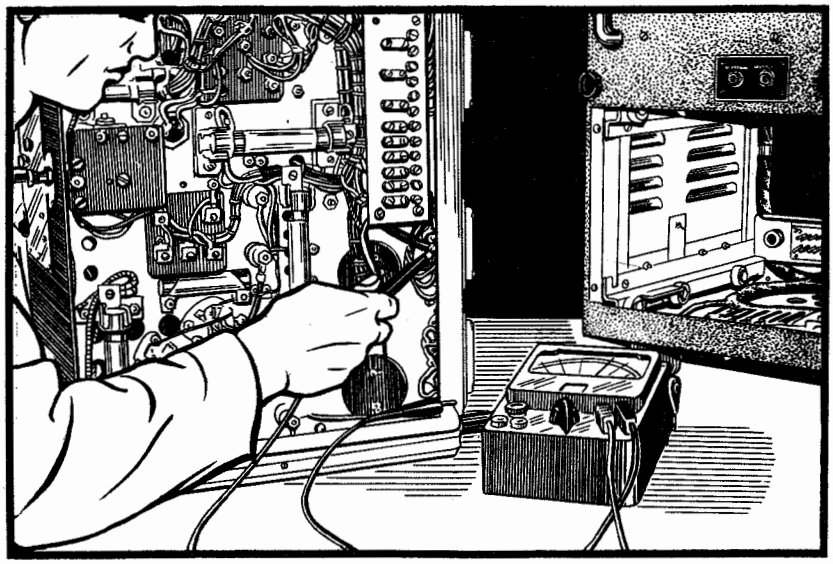


Figure 182

(b) To test the components in the 425-volt rectifier circuit, refer to the schematic drawing of the 425-volt rectifier power unit (Figure 154) and check all the components with a volt-ohmmeter. A defective transformer, rectifier tube, choke coil, or condenser may be found.

Step 4 (Figures 183, 184, 185)

If the three indicator lamps on the power unit panel light and if the oscillator draws a higher than normal current, and if there is no grid current indication on the P.A. GRID CURRENT meter, possible sources of trouble are:

(a) The oscillator (tuning control B) may not be properly tuned.

(b) A crystal may be faulty.

(c) The oscillator tube may be defective.

To correct the trouble, proceed as follows. After each step, check to see if the condition is corrected:

(a) If the oscillator (tuning control B) is not properly tuned, retune the transmitter as outlined in the TUNING section of this manual.

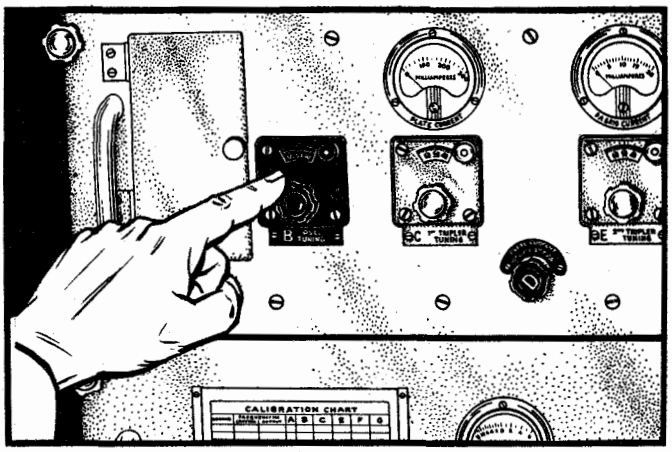


Figure 183

(b) To determine if the crystal in use is defective, turn the crystal switch A to introduce another crystal into the circuit. If the set functions properly with a new crystal, the crystal first used probably is defective and should be replaced.

NOTE

When a new crystal is selected, the transmitter must be retuned.

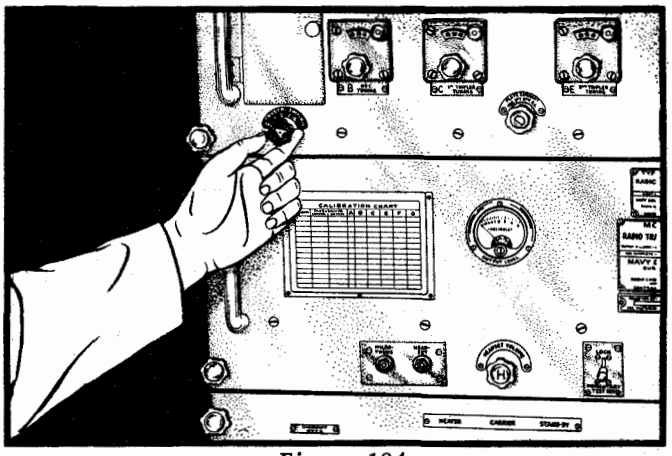


Figure 184

(c) To determine if the oscillator tube is defective, replace oscillator tube V101 type 807 in the r-f unit.

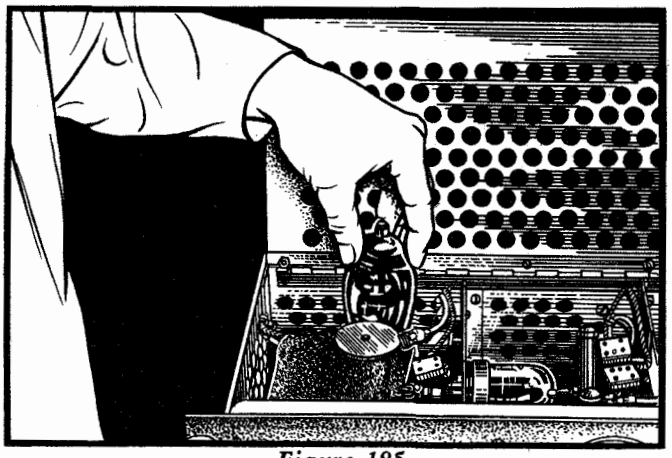


Figure 185

Step 5 (Figures 186 and 187)

If the needle of the OUTPUT LEVEL meter goes off scale with voice modulation, possible sources of trouble are:

(a) A faulty tube (V207) in the modulation limiter circuit.

(b) Other defective components in this circuit.

To correct the trouble, the following operations are suggested; after each step, see if the trouble is corrected:

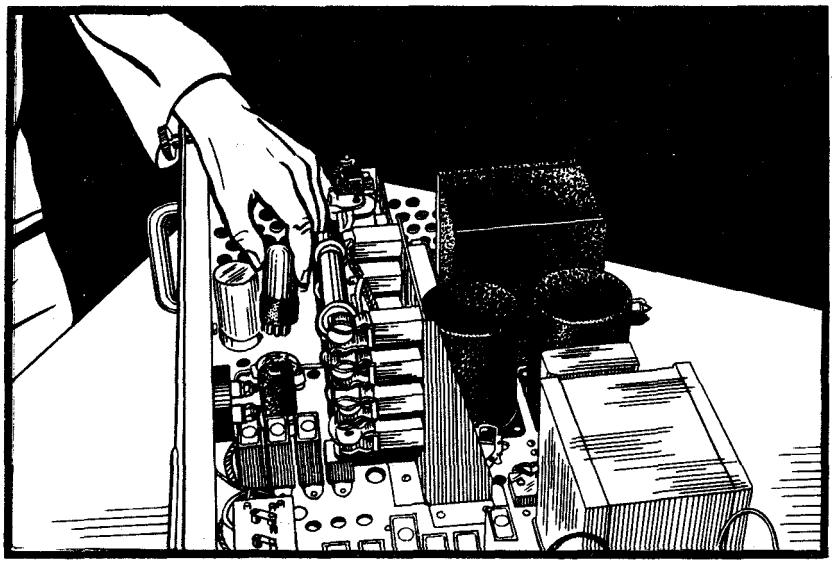


Figure 186

(a) To determine if tube V207 (type 6X5GT) in the modulator unit is defective, replace the tube with a spare.

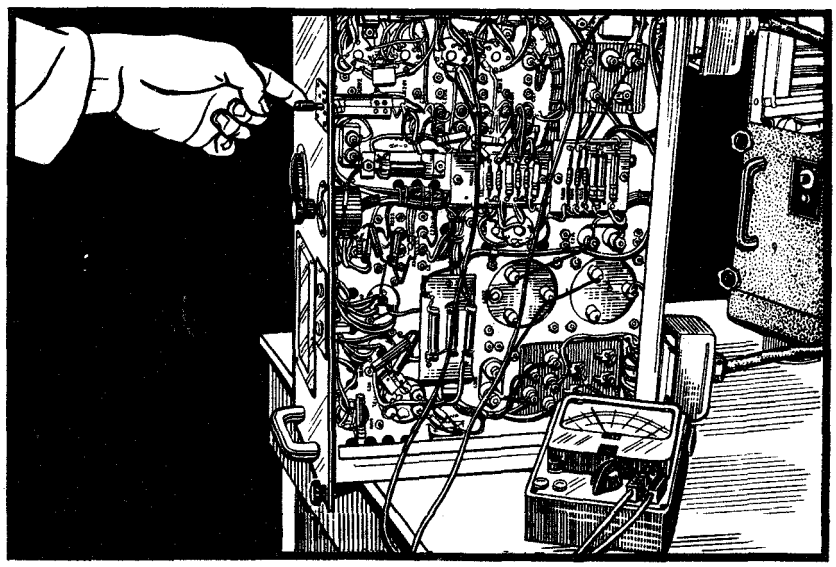


Figure 187

(b) Refer to Figure 159 and check all the components in the modulation limiter circuit with a volt-ohmmeter.

Step 6 (Figures 188 to 190 incl.)

If the quality of the transmitted signal is poor, possible sources of trouble are:

(a) Improper tuning.

(b) Defective modulator tubes.

(c) A defective microphone.

To correct the trouble, proceed as follows; after each step, see if the trouble is corrected.

(a) To determine if the transmitter is properly tuned, retune it as described in the TUNING section of this manual.

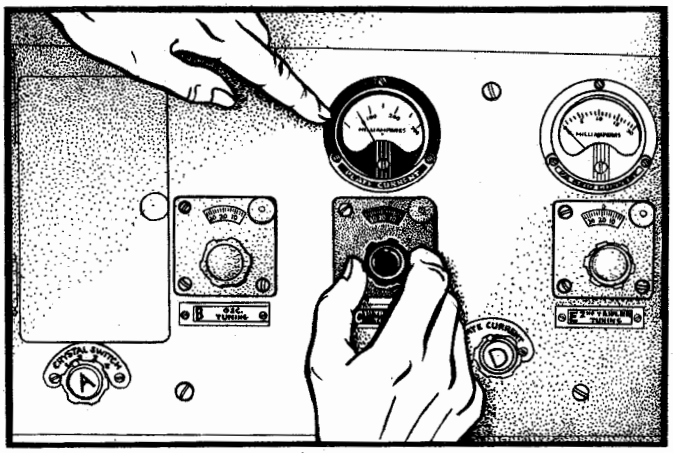


Figure 188

(b) To check the modulator tubes, remove tubes V205 and V206, type 807, in the modulator unit, and replace them with spares.

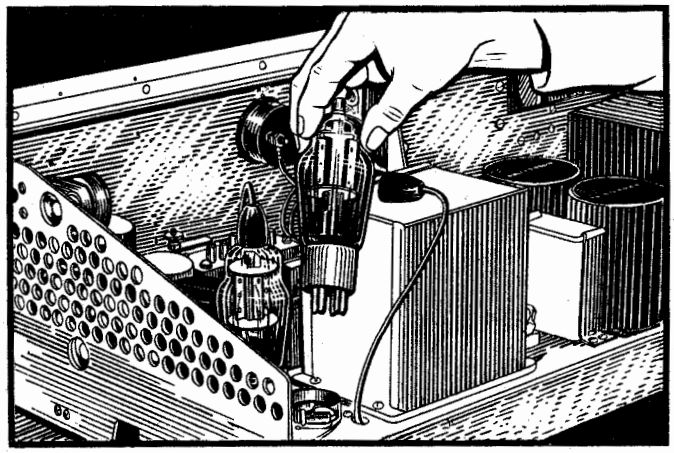


Figure 189

(c) To determine if the microphone is defective, transmit with a spare microphone to see if the quality is improved.

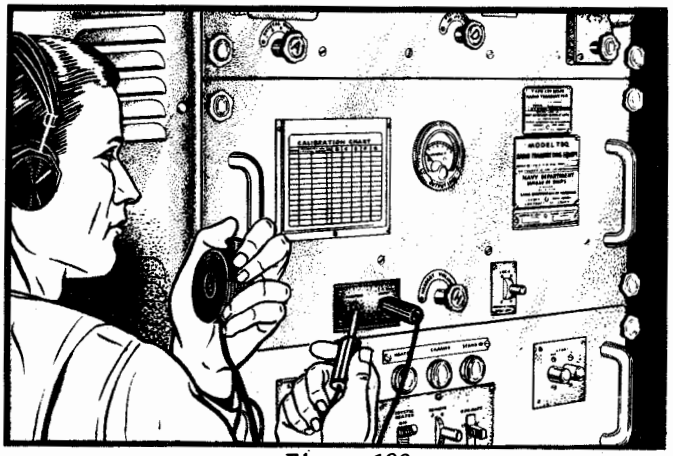


Figure 190

Step 7 (Figures 191 and 192)

If the output of the transmitter is normal on voice transmission, and the carrier tone is heard on MCW transmission but there is no tone when keyed by an external key, possible sources of trouble are:

(a) A faulty audio oscillator section of tube V208.

(b) A defective component in the carrier delay circuit.

To correct this trouble, proceed as follows; after each step, see if the trouble is corrected:

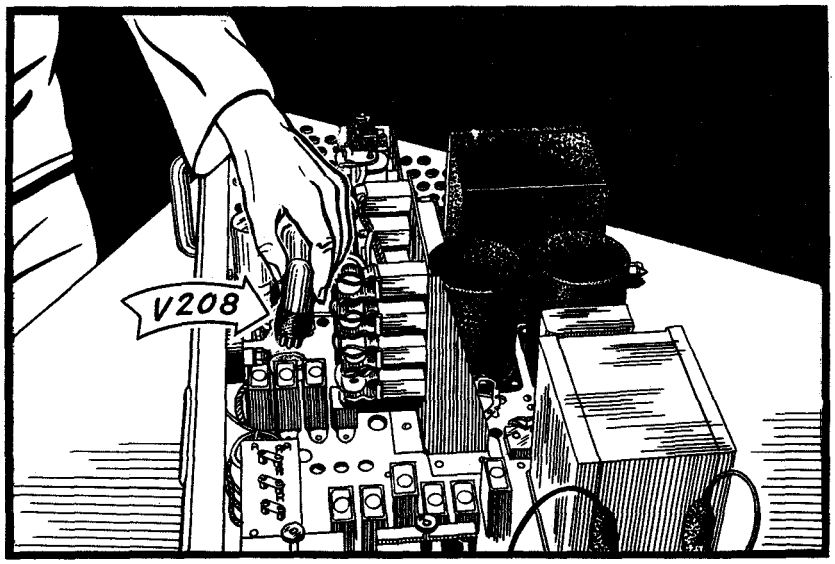


Figure 191

(a) Remove and replace tube V208 type 6SN7GT in the modulator unit with a spare tube.

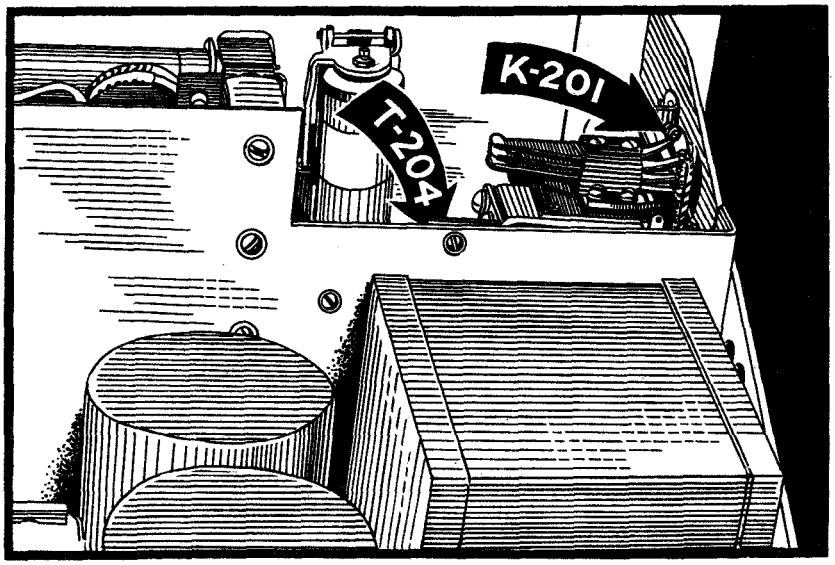


Figure 192

(b) Refer to Figure 159, schematic diagram, showing the modulator unit, and check all the components in the carrier delay circuit with a volt-ohmmeter, paying particular attention to transformer T 204 and the keying relay K201. Be certain the contacts of the keying relay are clean, and are making and breaking properly.

Step 8 (Figures 193 and 194)

If the green CARRIER indicator lamp lights when the LOCK-MOMENTARY switch (TEST KEY) is operated, but does not light when an external telegraph key is closed, possible sources of the trouble are:

(a) A defective carrier delay relay (K202).

(b) A faulty carrier delay section in tube V208.

To correct the trouble, proceed as follows; after each step, check to see if the trouble is corrected:

(a) Inspect the contacts of the carrier delay relay K202, to be sure that they are clean and are making and breaking properly.

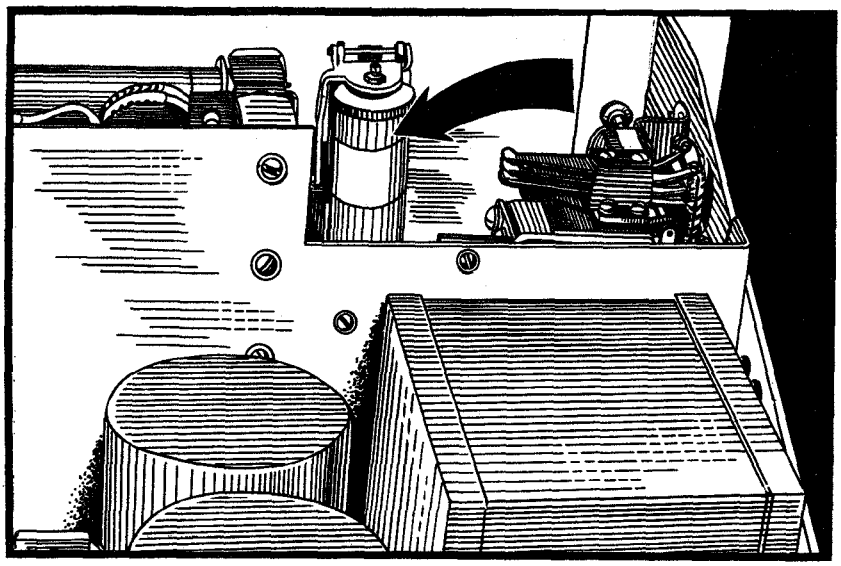


Figure 193

(b) To determine if tube V208 type 6SN7GT is defective, remove and replace it with a spare.

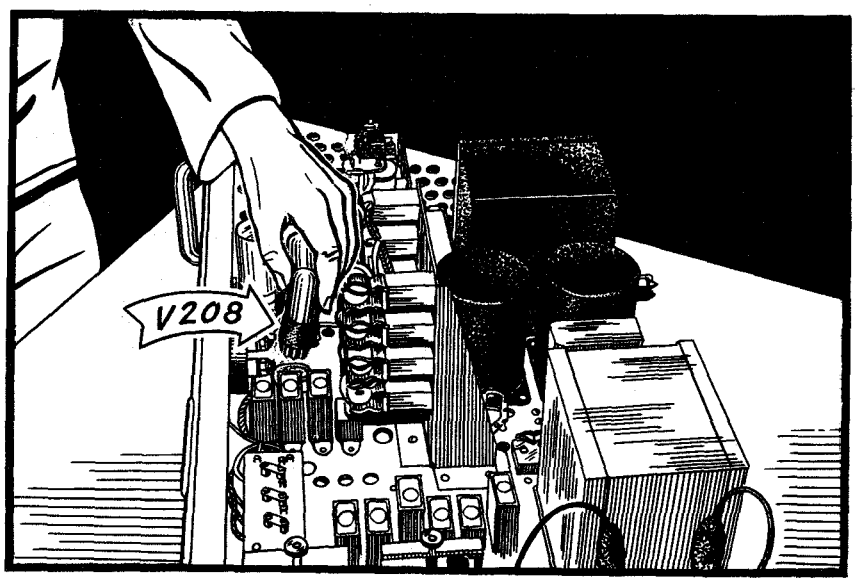


Figure 194

Step 9 (Figures 195 and 196)

If all three indicator lamps on the power unit panel light, and if there are no indications on either the plate current meter or the grid current meter except when measuring the output of the power amplifier (with the panel control "D" in the power-amplifier position), and if the power amplifier plate current meter indicates a normal current, possible sources of trouble are:

(a) A faulty rectifier tube (V209) type 5R4-GY in the modulator unit.

(b) Improperly operating carrier control relay K302.

To correct the trouble, proceed as follows; after each step, see if the trouble is corrected:

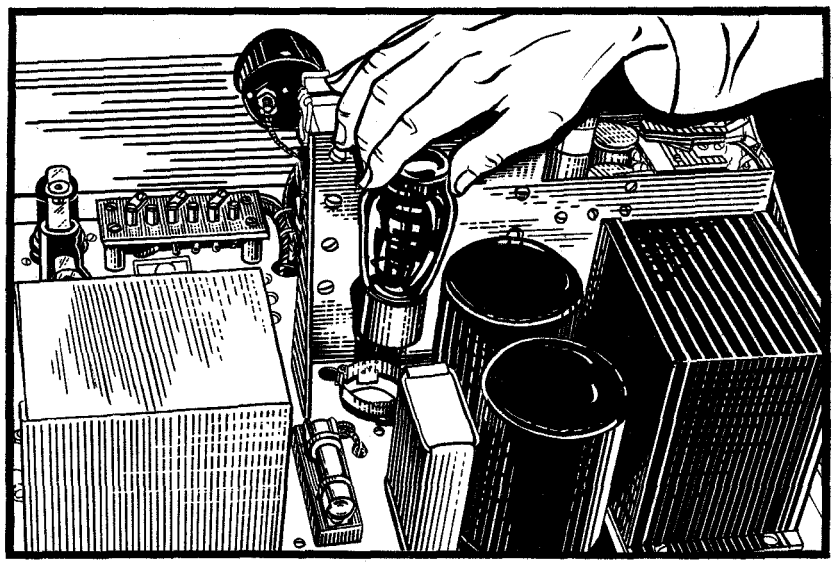


Figure 195

(a) To determine whether or not rectifier tube V209 type 5R4-GY in the modulator unit is defective, replace it with a spare.

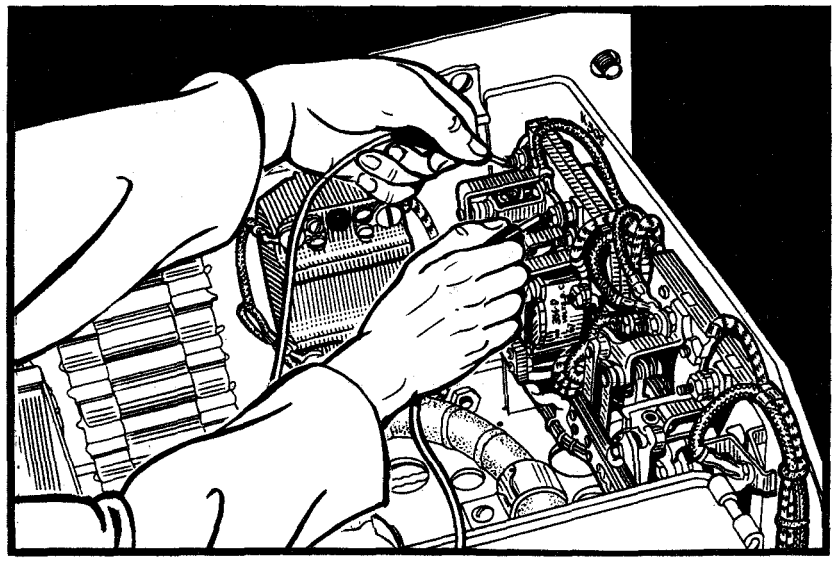


Figure 196

(b) Inspect and check the contacts of the carrier control relay K302 in the power unit to be certain they are clean and are making and breaking properly.

Step 10 (Figures 197 and 198)

If the plate current meter on the r-f unit panel indicates zero at any one position of the plate current switch "D," and indicates approximately normal when the plate current switch "D" is in the other positions, possible sources of trouble are:

(a) A faulty tube in the r-f stage where zero current is indicated.

(b) A faulty contact on the plate current switch "D."

To correct the trouble, proceed as follows; after each step, check and see if the trouble is corrected:

(a) Replace the tube in the stage that does not give an indication of current on the plate current meter. This may be due to a fault in either V102, V103 or V104 tube.

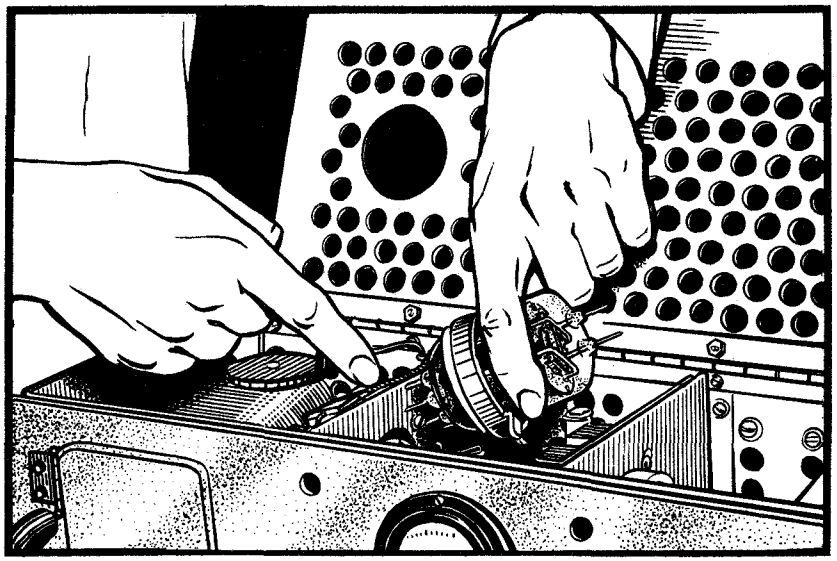


Figure 197

(b) Stop the transmitter, then check each section of the plate current switch "D" for continuity with an ohmmeter. Be certain that there are no loose connections, and that the switch is operating properly.

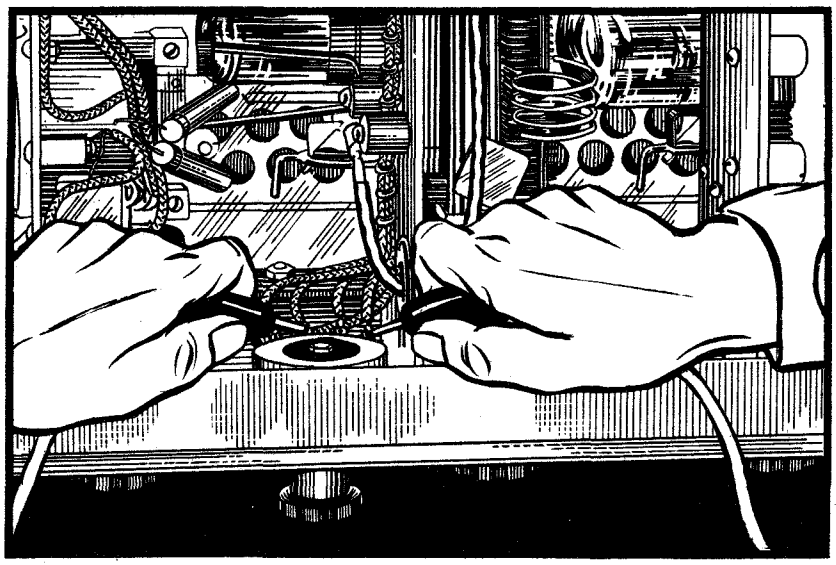


Figure 198

Step 11 (Figures 199 and 200)

If the plate current meter on the r-f unit panel does not indicate 230 milliamperes during the tuning procedure, when the antenna coupling dial reads 100, possible sources of trouble are:

(a) The antenna change-over relay K101 may be defective (defective contacts or open coil).

(b) The power amplifier tube V104 type 829B may not be functioning properly.

To correct the trouble, proceed as follows; after each step, check and see if the trouble is corrected:

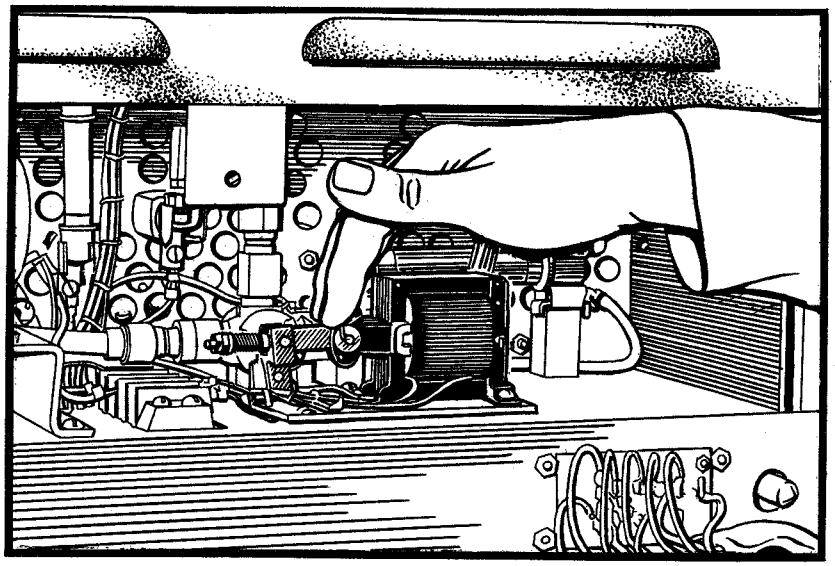


Figure 199

(a) Check and inspect contacts of the antenna relay K101 to be certain that they are clean and in working condition.

Check the mechanical operation of the relay, the continuity of the relay coil with a volt-ohmmeter, and the input voltage to the relay.

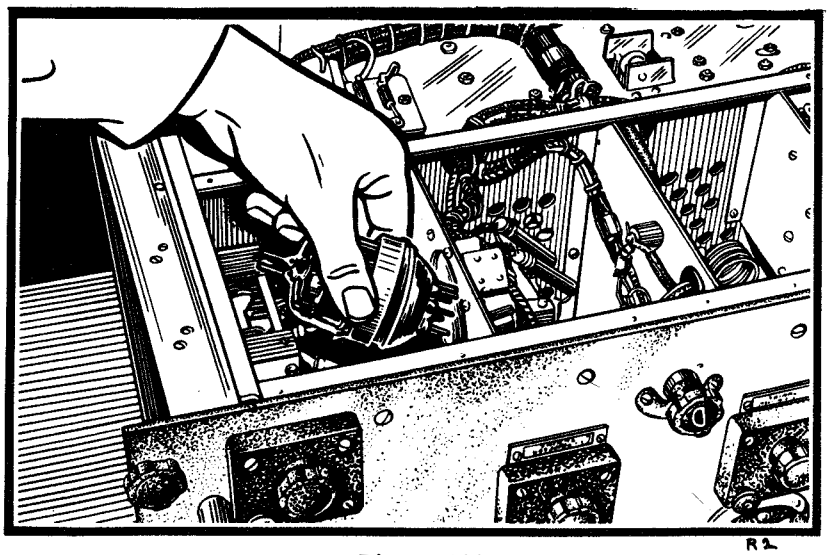


Figure 200

(b) To determine if the power amplifier tube V104 type 829B is defective, remove the tube and replace it with a spare.

Step 12 (Figures 201 to 204 incl.)

To check the components in the circuits of the three units in the transmitter, and to measure voltages at various points in the circuits, remove the units from the transmitter cabinet.

When any one of the three units is removed from the cabinet, it is disconnected electrically from the transmitter. Four test cables are provided with the equipment to operate a unit of the transmitter when it is removed from the cabinet.

The following procedure is recommended for checking voltage values in each of the three units. Voltage between other points may be measured by connecting a voltmeter to those points, connecting the positive (RED) lead to the positive point, and the negative (BLACK) lead to the negative point.

EXAMPLE 1: (Figure 202) To check the screen voltage of tube V102 type 829B in the first tripler stage in the r-f unit, proceed as follows:

Disconnect both antenna cables from the transmitter, and remove the r-f unit. Attach the female connector plugs of two of the test cables to the male plugs in the rear of the transmitter cabinet that make contact with the r-f unit when the unit is in position.

Connect the male plugs of the two test cables to the female sockets on the rear of the r-f unit.

Attach the antenna cables to the r-f unit. Connect the negative (BLACK) lead of the volt-ohmmeter to ground.

Connect the positive (RED) lead to the terminal to which resistor R117 and the YELLOW lead are fastened. Place TUNE-OPERATE switch in TUNE position. Press the ON button of the START switch and wait approximately 30 seconds for the tubes to warm. Depress the LOCK-MOMENTARY switch (TEST KEY) on the modulator unit to the MOMENTARY position. The volt-ohmmeter should indicate 175 volts. Press the OFF button of the START switch. Disconnect the test cables and the antenna cable from the r-f unit.

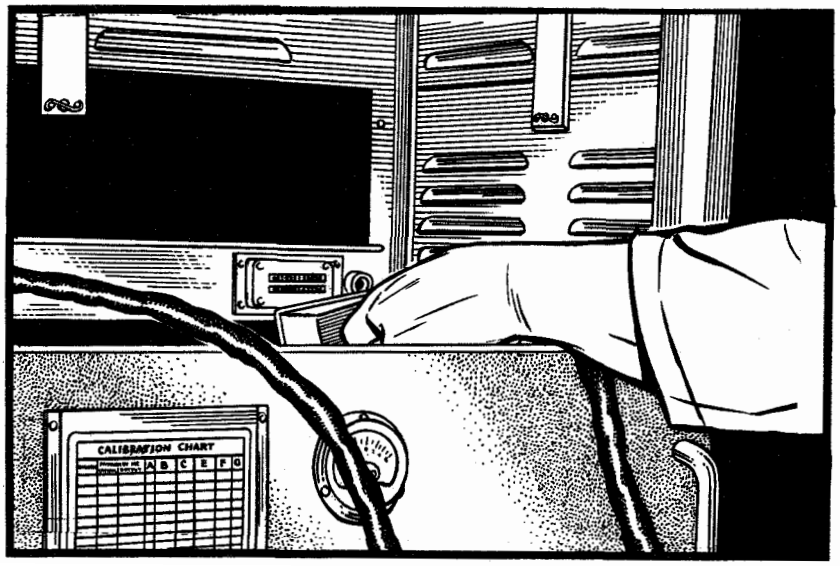


Figure 201

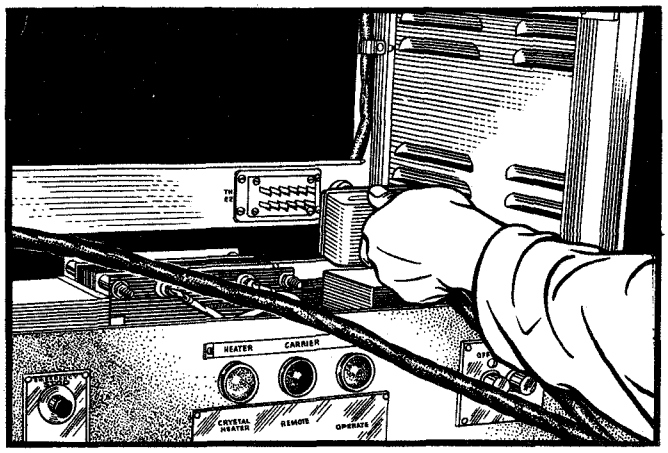


Figure 202

EXAMPLE 2: (Figure 203) To measure the plate voltage of tubes V203 and V204 in the modulator unit, proceed as follows:

Remove the modulator unit from the transmitter cabinet, and connect the test cables between the modulator unit plugs and the sockets in the transmitter cabinet.

Ground the negative (BLACK) lead from the volt-ohmmeter by clipping it to the case of the modulator unit. Connect the positive (RED) lead of the volt-ohmmeter to pin Number 3 on socket V204. Press the ON button of the START switch and wait approximately 30 seconds for the tubes to warm up. Depress the LOCK-MOMENTARY switch (TEST KEY) to the MOMENTARY position. The volt-ohmmeter should indicate 255 volts.

Press the OFF button of the START switch, disconnect the two test cables, and replace the modulator unit in the transmitter cabinet.

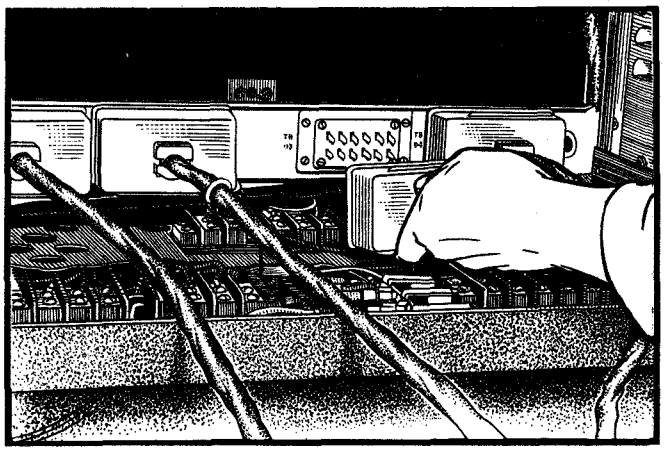


Figure 203

EXAMPLE 3: (Figures 203 and 204) To check a negative voltage value in the power unit from choke coil L302 to ground, proceed as follows:

Remove the power unit from the transmitter cabinet, and install the 4 test cables connecting the power unit to the receptacles in the transmitter cabinet.

NOTE

Be certain to disconnect the transmitter power supply before connecting the test cables.

Ground the positive (RED) lead of the volt-ohmmeter by clipping it to the case of the power unit. Clip the negative (BLACK) lead of the volt-ohmmeter to coil L302. Connect the power supply to the transmitter power unit, and press the ON button of the EMERGENCY switch, and the ON button of the START switch. Place the TUNE-OPERATE switch in the TUNE position.

EXAMPLE 3 continued (Figure 204).

Depress the LOCK-MOMENTARY switch (TEST KEY) to MOMENTARY. The volt-ohmmeter should indicate 19 volts. Press the OFF button of the EMERGENCY switch. Disconnect the transmitter power supply, remove the test cables, and replace the power unit in the transmitter cabinet.

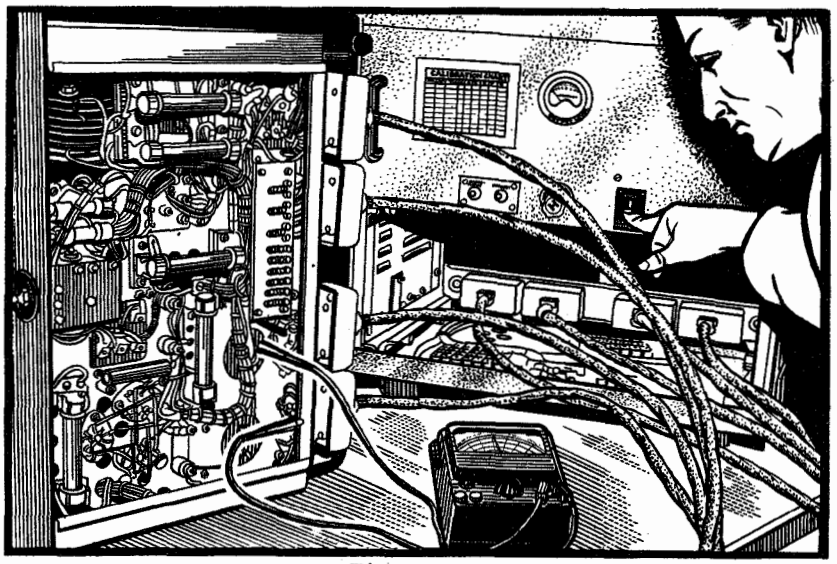


Figure 204

NOTES AND SKETCHES

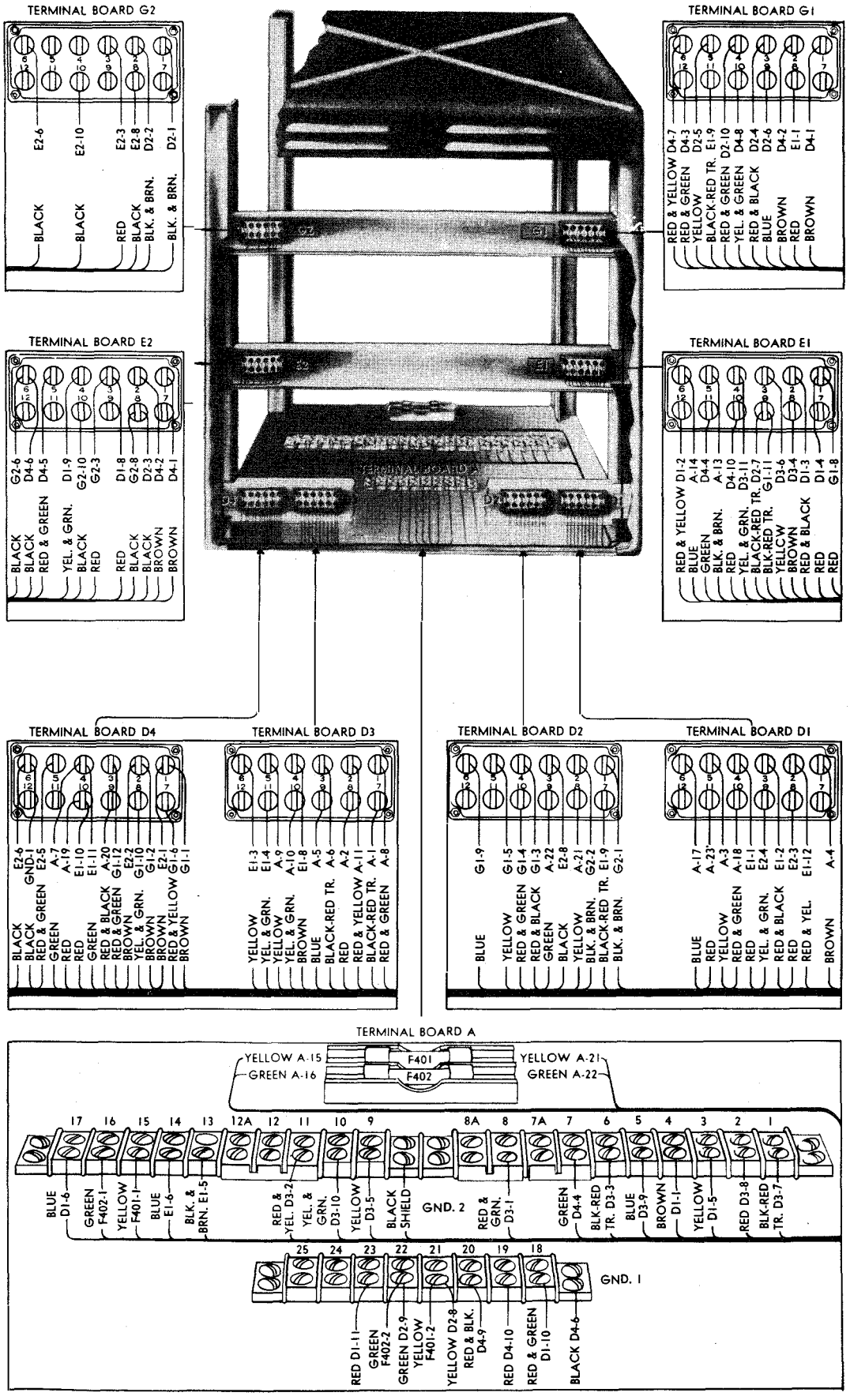
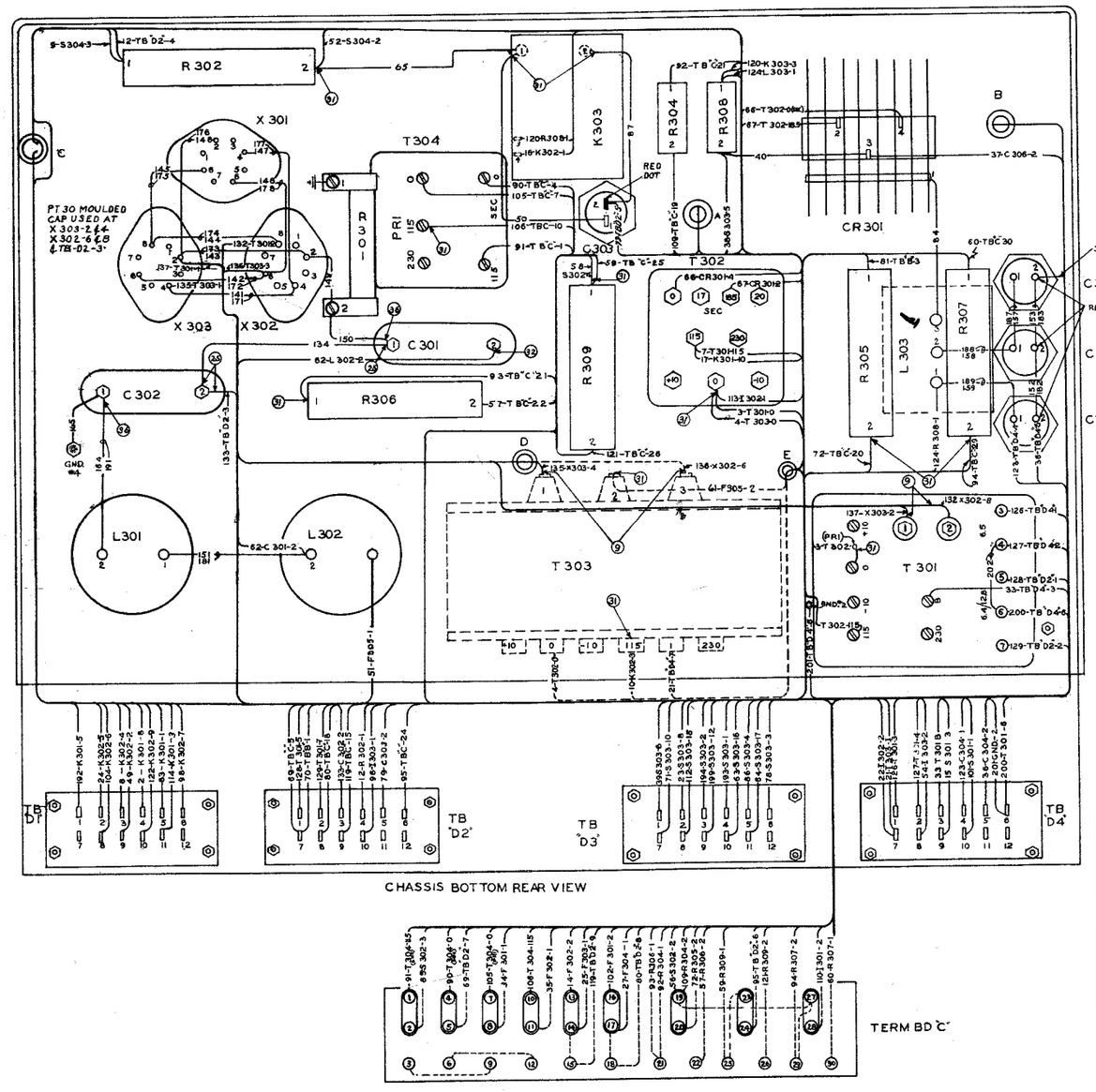
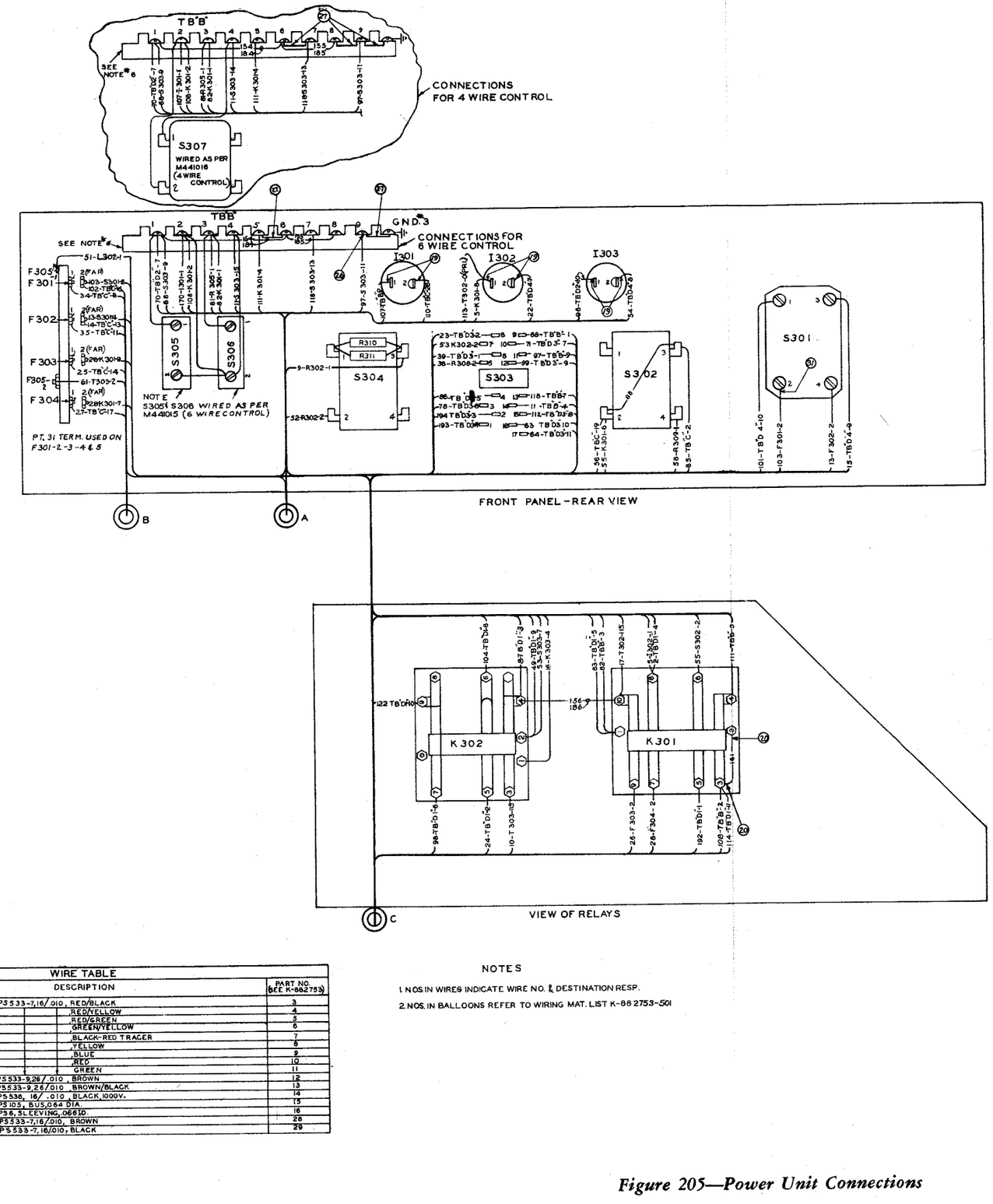


Figure 209—Transmitter Cabinet Connections





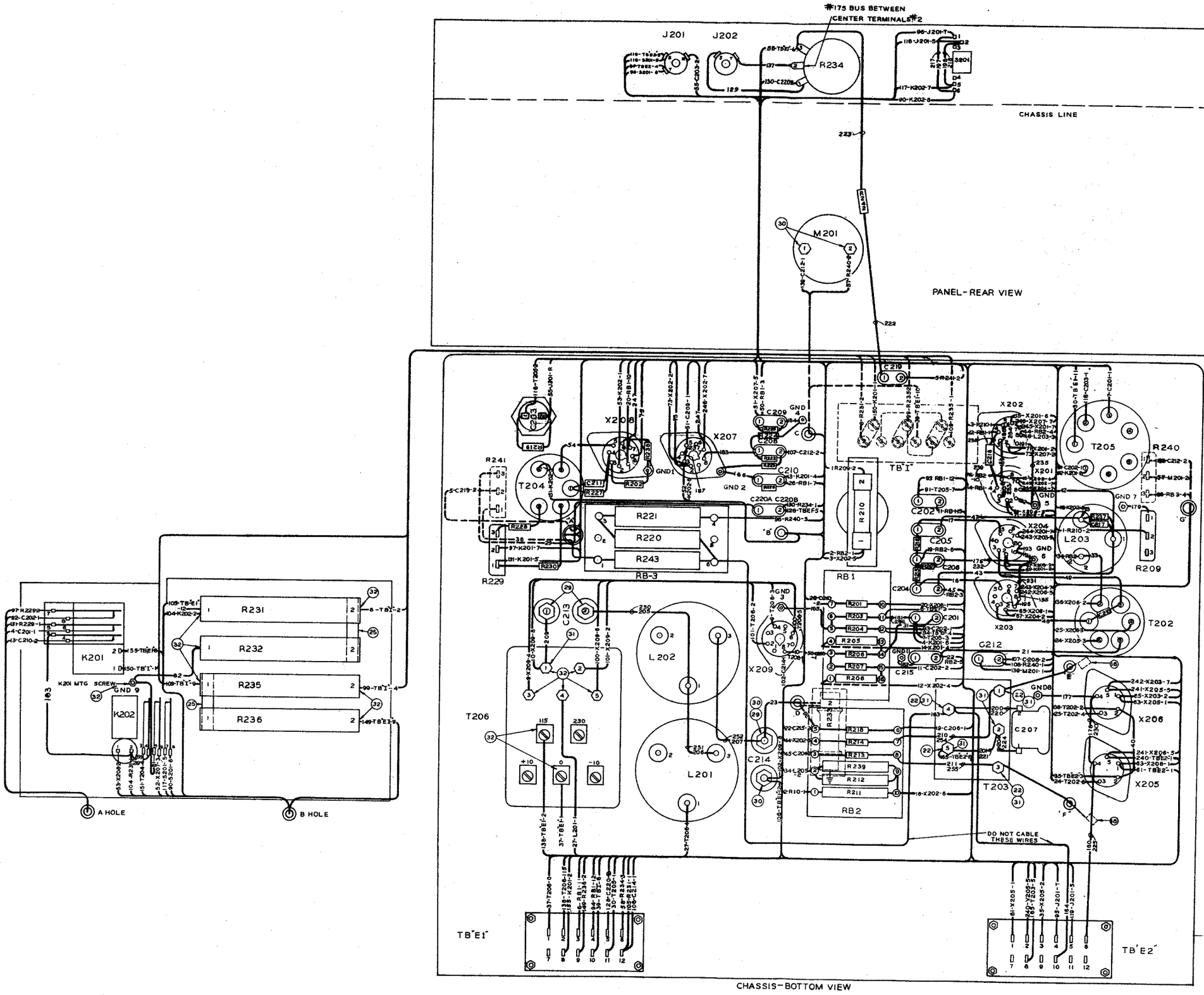
WIRE TABLE		
WIRE NO. (INCLUSIVE)	DESCRIPTION	PART NO. (SEE K-882753)
7-17	P5533-7,16/.010, RED/BLACK	3
21-28	RED/YELLOW	4
33-40	RED/GREEN	5
49-65	GREEN/YELLOW	6
66-72	BLACK-RED TRACER	7
78-86	YELLOW	8
90-99	BLUE	9
2-5, 101-114	RED	10
118-124	GREEN	11
126-127	P5533-9,26/.010 BROWN	12
128-129	P5533-9,26/.010 BROWN/BLACK	13
132-137	P5538, 16/.010 BLACK, 1000V.	14
141-165	P5105, BUS, 064 DIA.	15
171-191	P58, SLEEVING, 06630.	16
192-194	P5533-7,16/.010, BROWN	28
200-203	P5533-7,16/.010, BLACK	29

NOTES

1. NOS. IN WIRES INDICATE WIRE NO. & DESTINATION RESP.
2. NOS. IN BALLOONS REFER TO WIRING MAT. LIST K-88 2753-501

Figure 205—Power Unit Connections

RESTRICTED



CHASSIS–BOTTOM VIEW

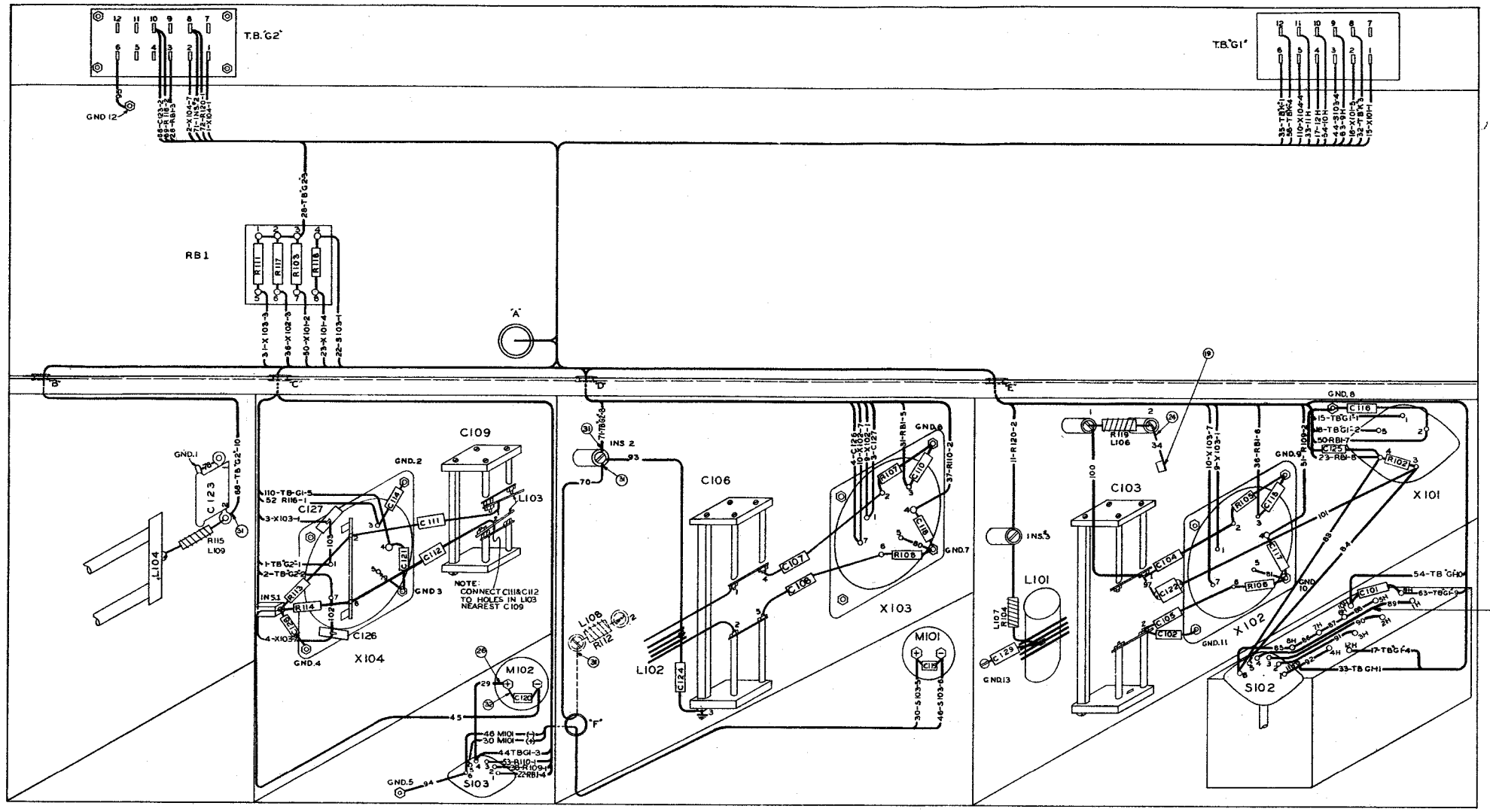
WIRE TABLE

WIRE NO. INCLUSIVE	DESCRIPTION	ITEM NO. SEE K-982686
1–10	PS533-7.16/.010 . YELLOW	3
11–31	. GREEN	4
32–40	. RED	5
42–53,57&58	. BLUE	6
61–75	PS533-9.26/.010 . BROWN	7
81–82	PS533-7.16/.010 BLACK	8
90–99	GREEN/YELLOW	9
100–109	RED/YELLOW	10
116–119	RED/GREEN	11
125–131	BROWN/BLACK	12
137–139	RED/BLACK	13
148–151	BLACK-RED TRACER	14
163–185	PS538 16/.010 BLACK 1000V	15
175–204	PS105.040 DIA. BUS	16
217–238	PS 6 .042 I.D. SLEEVING	17
155	PS533-7 16/.010 BROWN	26
240–247	PS533-9 26/.010 BLACK	27
205–211	PS 105 .064 DIA. BUS	33
250–255	PS 6 .086 I.D. SLEEVING	34

NOTES

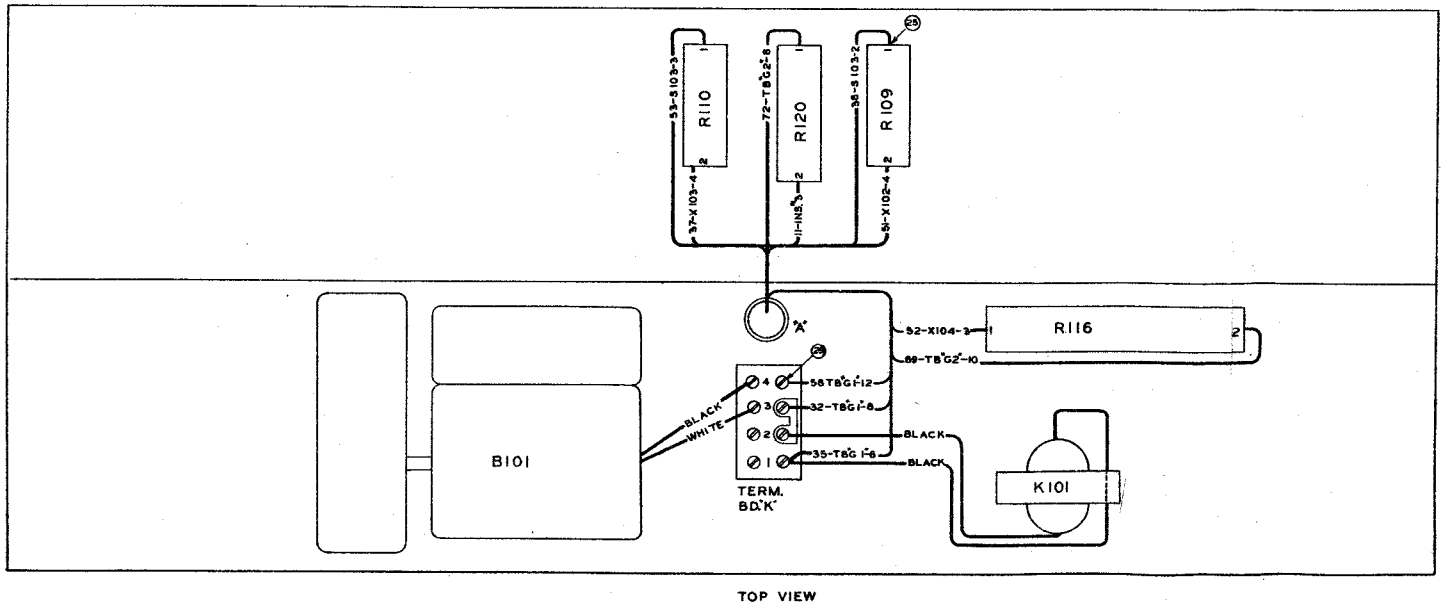
1. NOS. IN WIRES INDICATE WIRE NOS. & DESTINATION RESP.
2. NOS. IN BALLOONS REFER TO WIRING MAT. LIST

Figure 206—Modulator Unit Connections



BOTTOM VIEW

BUS NO.	SLEEVING NO.
85	150
89	151
90	152
91	153
92	154



TOP VIEW

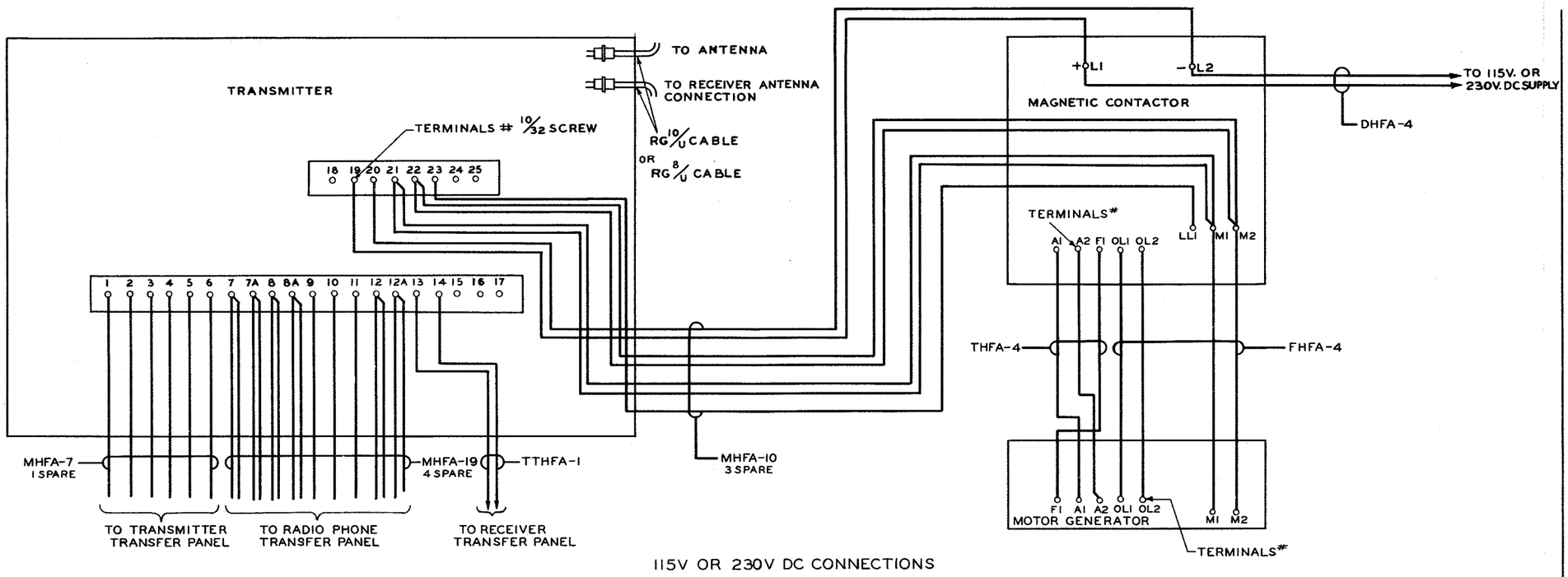
WIRE NO. INCLUSIVE	DESCRIPTION	PART NO. (SEE KN62880)
1-4	PS. 533-9, 26/010, BROWN/BLACK	3
9-11	PS. 533-7, 16/010, BROWN/BLACK	4
15-17	" BROWN	5
22-23	" GREEN	6
28-32	" RED	7
33-34	" BLUE	8
35-38	" RED/YELLOW	9
44-46	" RED/BLACK	10
50-54	" GREEN/YELLOW	11
56	" RED/GREEN	12
63	PS. 533-7, 16/010, BLACK-RED TRACER	13
68-72	PS.538 16/010, 1000V, BLACK	14
78-97	PS.105, BUS .040 DIA.	15
100-103	PS. 105, BUS .064 DIA.	16
110	P.S. 533-7, 12/010, YELLOW	28
150-154	PS8.042 ID. SLEEVING, BLACK	33

NOTES

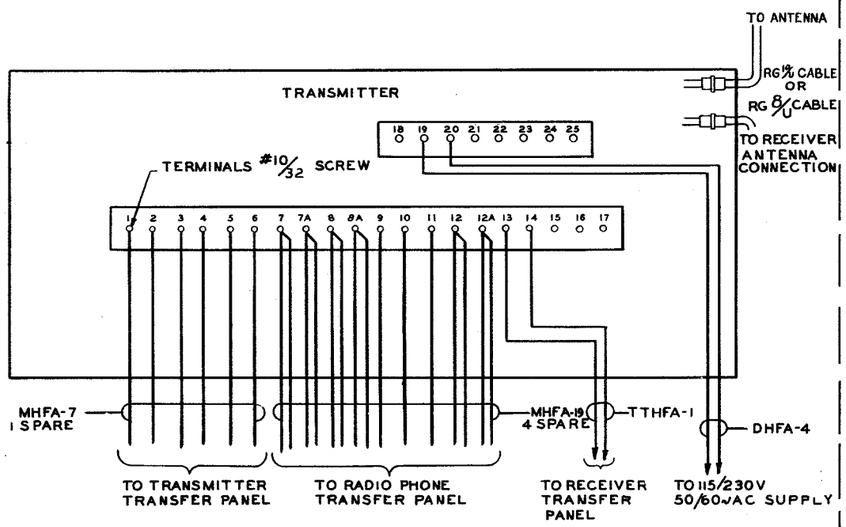
1. NOS. IN WIRES INDICATE WIRE NO. & DESTINATION RESP.
2. NOS. IN BALLOONS REFER TO WIRING MATERIAL LIST

Figure 207—R-F Unit Connections

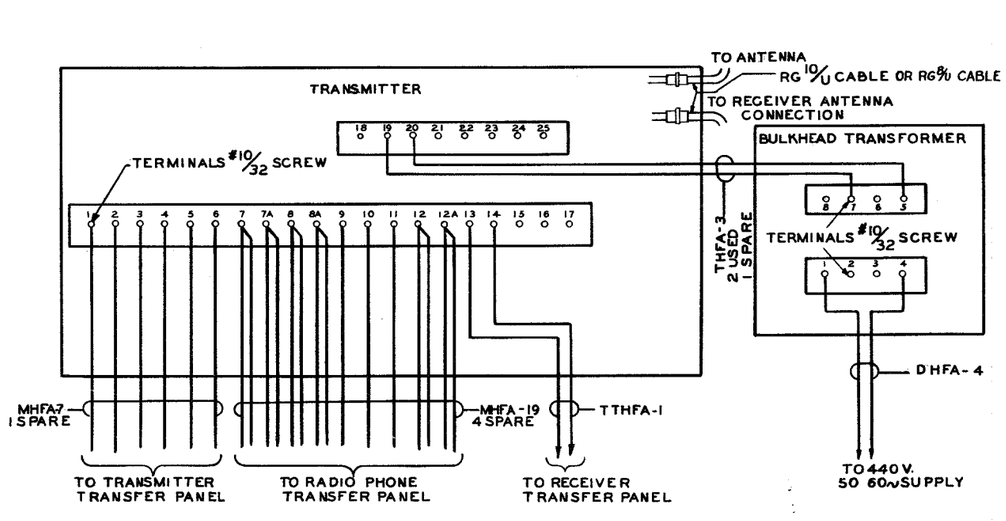
RESTRICTED



115V OR 230V DC CONNECTIONS



115/230V, 50/60~ CONNECTIONS



440V, 50/60~ CONNECTIONS

REFERENCE TABLE FOR CABLE

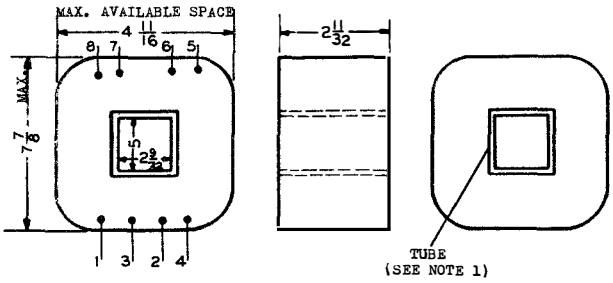
CABLE	SIZE OF CONDUCTORS CIRCULAR MILS	MAX. LINE DROP	CURRENT AND VOLTAGE RATING	TYPE OF INSULATION
MHFA-7	2828		600VOLT 9AMP.	HEAT AND FLAME RESISTANT ARMORED
MHFA-10	2828		600VOLT 9AMP.	
MHFA-19	2828		600VOLT 9AMP.	
DHFA-4	4494		600VOLT 20AMP.	
THFA-4	4494		600VOLT 17AMP.	
FHFA-4	4494		600VOLT-17AMP	
TTHFA-1	642		600VOLT	

NOMINAL SUPPLY	115V.D.C.	230V.DC.	115V.A.C.	230V.A.C.	440V.A.C.
STARTING-LINE AMPERES	50	25	2.6	1.23	.75
" KILOWATTS	5.8	5.6	.27	.24	.3
" KVA			.30	.28	.33
" % POWER FACTOR			.9	.85	.9
STANDBY-LINE AMPERES	8.7	4.4	2.6	1.23	.75
" KILOWATTS	1.0	1.0	.27	.24	.3
" KVA			.30	.28	.33
% POWER FACTOR			.9	.85	.9
85% MODULATION-LINE AMPERES	13	6.5	6.8	3.5	1.8
" KILOWATTS	1.5	1.5	.7	.68	.71
" KVA			.78	.8	.8
" % POWER FACTOR			.9	.85	.9

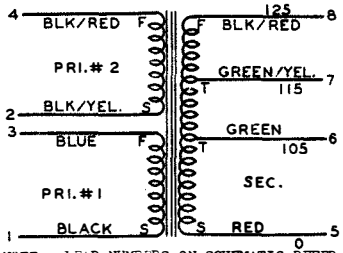
REFERENCE TABLE FOR POWER INPUT

NOTE: SPECIAL ANTENNA IS FURNISHED AS A COMPONENT PART OF THIS EQUIPMENT.

Figure 208—Interconnection Diagram



1.	PRI. #1 START	BLACK
2.	PRI. #2 START	BLACK/YELLOW
3.	PRI. #1 FINISH	BLUE
4.	PRI. #2 FINISH	BLACK/RED
5.	SEC. START	RED
6.	SEC. 74T. TAP	GREEN
7.	SEC. 61T. TAP	GREEN/YELLOW
8.	SEC. FIN.	BLACK/RED



NOTE - LEAD NUMBERS ON SCHEMATIC REFER TO TERMINAL NUMBERS.

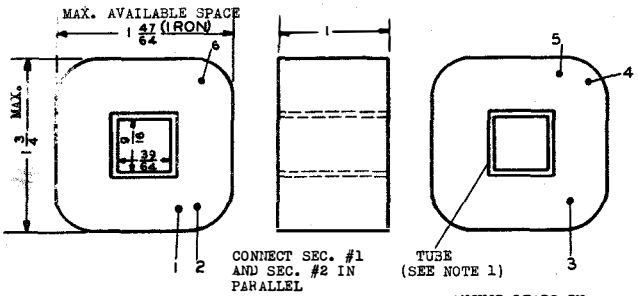
SPACE FACTOR 90%
**IMPREGNATE COILS AND CORE WITH ASPHALT COMPOUND

NAME OF COIL	COIL IS WOUND ON (OR OVER)	WIRE SIZE A.W.G.	WIRE INSULATION	WT. OF WIRE (LBS.)	TOTAL TURNS ON COIL	TAP AT TURN NO.	TURNS PER LAYER	WIRE TRAV.	INSULATION BETWEEN LAYERS	INSULATION OVER COILS
PRI. #1	TUBE	17	E	1.21	154	--	39	2.00	1-.005 K	* 2-10 K1A
PRI. #2	PRI. #1	17	E	1.36	154	--	39	2.00	1-.005 K	2-10 K1A
SEC.	PRI. #2	NOTE 4	D.C.C.	4.5	89	74-81	18	2.00	1-.010 K	3-10 K1A

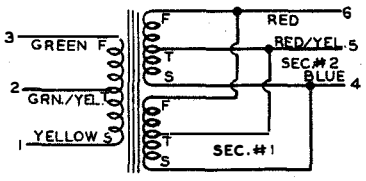
* 2-10 K1A
2 - LAYERS OF
10 - THICKNESS IN MILS (.010) OF
K - KRAFT PAPER
1 - THICKNESS IN MILS (.001) OF
A - CELLULOSE ACETATE

NOTE 1 - TUBE CONSISTING OF .050 INCH THICK FULLERBOARD FORMED AS SHOWN WRAPPED WITH .002 INCH THICK CELLULOSE ACETATE
**NOTE 2 - REFER TO IMPREGNATING DATA FOLLOWING WINDING DATA
NOTE 3 - D.C. RESISTANCE AT 25°C
PRI. #1 - 1.01 OHMS
PRI. #2 - 1.41 OHMS
NOTE 4 - D.C.C. - DOUBLE COTTON COVERED .080 X .100 WIRE
NOTE 5 - POLARITY OF COILS TO BE ADDITIVE WITH 2 AND 3 CONNECTED AND 4 CONNECTED TO '0'.

Figure 210—Line Transformer, Winding Data



1.	SEC. #1 ST. & SEC. #2 ST.	BLUE
2.	SEC. #1 TAP & SEC. #2 TAP	RED/YELLOW
3.	SEC. #1 FIN. SEC. #2 FIN.	RED
4.	PRI. ST.	YELLOW
5.	PRI. TAP	GREEN/YELLOW
6.	PRI. FIN.	GREEN



NOTE - LEAD NUMBERS ON SCHEMATIC REFER TO TERMINAL NUMBERS.

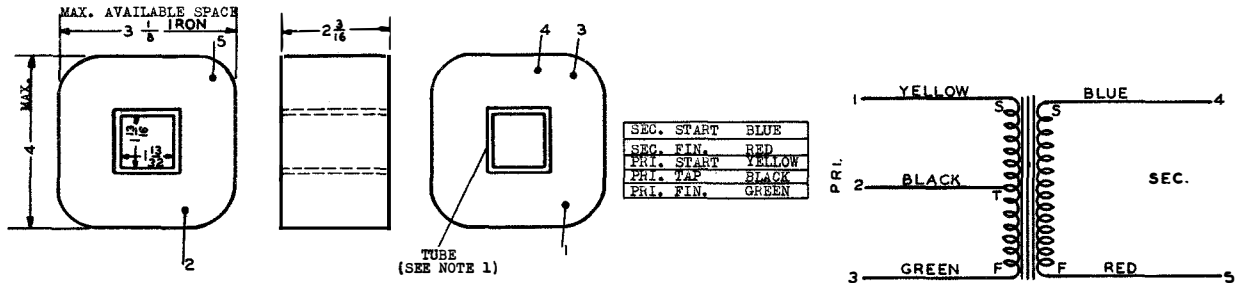
SPACE FACTOR 65%
** IMPREGNATE COILS AND CORE WITH WAX

NAME OF COIL	COIL IS WOUND ON (OR OVER)	WIRE SIZE A.W.G.	WIRE INSULATION	WT. OF WIRE (LBS.)	TOTAL TURNS ON COIL	TAP AT TURN NO.	TURNS PER LAYER	WIRE TRAV.	INSULATION BETWEEN LAYERS	INSULATION OVER COILS
SEC. #1	TUBE	36	E	.0224	1260	630	126	.771	1-.001 THICK KRAFT PAPER	* 2-5 K1A
PRI.	SEC. #1	36	E	.112	4400	2200	126	.771	1-.001 THICK KRAFT PAPER	2-5 K1A
SEC. #2	PRI.	36	E	.0415	1260	630	126	.771	1-.001 THICK KRAFT PAPER	2-5 K1A

*2 - 5 K1A -
2 - LAYERS OF
5 - THICKNESS IN MILS (.005) OF
K - KRAFT PAPER
1 - THICKNESS IN MILS (.001) OF
A - CELLULOSE ACETATE

NOTE 1 - TUBE CONSISTING OF .025 INCH THICK KRAFT PAPER FORMED AS SHOWN WRAPPED WITH .002 INCH THICK CELLULOSE ACETATE
**NOTE 2 - REFER TO IMPREGNATING DATA FOLLOWING WINDING DATA
NOTE 3 - POLARITY TO BE ADDITIVE WITH GREEN CONNECTED TO BLUE
NOTE 4 - D.C. RESISTANCE AT 25°C
SEC. #1 - 124 OHMS
PRI. - 622 OHMS
SEC. #2 - 230 OHMS

Figure 211—Driver Transformer, T-202, Winding Data



SPACE FACTOR 76%
**IMPREGNATE COILS AND CORE WITH ASPHALT COMPOUND

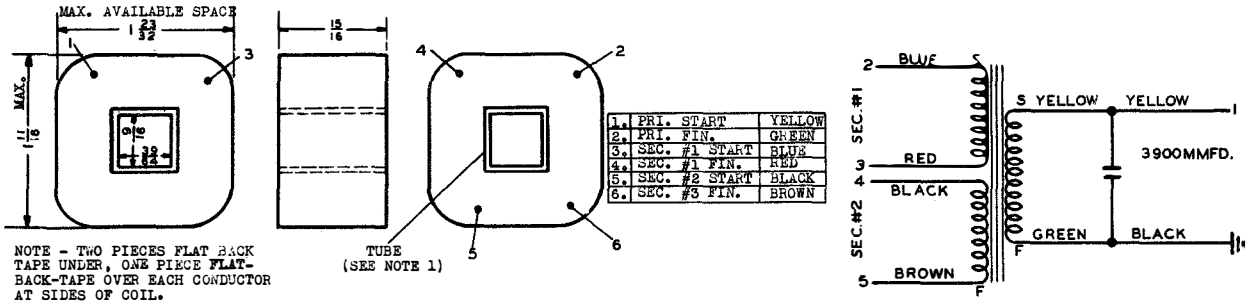
NOTE - LEAD NUMBERS ON SCHEMATIC REFER TO TERMINAL NUMBERS.

NAME OF COIL	COIL IS WOUND ON (OR OVER)	WIRE SIZE A.W.G.	WIRE INSULATION	WT. OF WIRE (LBS.)	TOTAL TURNS ON COIL	TAP AT TURN NO.	TURNS PER LAYER	WIRE TRAV.	INSULATION BETWEEN LAYERS	INSULATION OVER COILS
SEC.	TUBE	25	E	.69	1110	--	91	1.875	1-.003 KRAFT	* 4-5 K1A
PRI.	SEC.	27	E	.79	1610	805	115	1.875	1-.003 KRAFT	4-5 K1A

* 4-5 K1A
4 - LAYERS OF KRAFT PAPER
5 - THICKNESS IN MILS (.005) OF
K - KRAFT PAPER
1 - THICKNESS IN MILS (.001) OF
A - CELLULOSE ACETATE

NOTE 1 - TUBE CONSISTING OF .015 INCH THICK FULLERBOARD FORMED AS SHOWN WRAPPED WITH .002 INCH THICK CELLULOSE ACETATE
**NOTE 2 - REFER TO IMPREGNATING DATA FOLLOWING WINDING DATA
NOTE 3 - D.C. RESISTANCE AT 25°C
SEC. - 23.5 OHMS
PRI. - 68 OHMS
NOTE 4 - POLARITY TO BE ADDITIVE WITH 3 CONNECTED TO 4

Figure 212—Modulation Transformer, T-203, Winding Data



NOTE - TWO PIECES FLAT BACK TAPE UNDER, ONE PIECE FLAT-BACK-TAPE OVER EACH CONDUCTOR AT SIDES OF COIL.

**IMPREGNATE COILS AND CORE WITH WAX

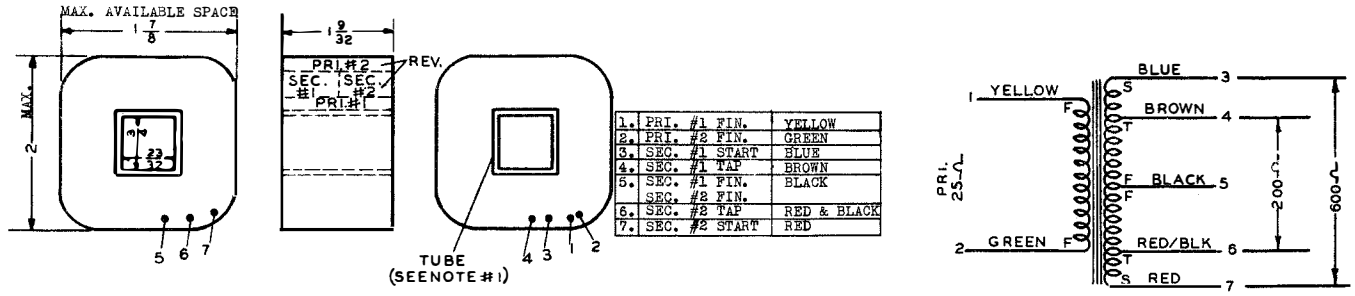
NOTE - LEAD NUMBERS ON SCHEMATIC REFER TO TERMINAL NUMBERS.

NAME OF COIL	COIL IS WOUND ON (OR OVER)	WIRE SIZE A.W.G.	WIRE INSULATION	WT. OF WIRE (LBS.)	TOTAL TURNS ON COIL	TAP AT TURN NO.	TURNS PER LAYER	WIRE TRAV.	INSULATION BETWEEN LAYERS	INSULATION OVER COILS
PRI.	TUBE	36	E	.108	4700-1/2	--	127	.781	1-.0015 KRAFT	* 5-1 K1A
SEC. #1	PRI.	36	E	.023	750	--	127	.781	1-.0015 KRAFT	5-1 K1A
SEC. #2	SEC. #1	36	E	.0195	600	--	127	.781	1-.0015 KRAFT	2-5 K1A

* 5-1 K1A
5 - LAYERS OF
1 - THICKNESS IN MILS (.001) OF
K - KRAFT
1 - THICKNESS IN MILS (.001) OF
A - CELLULOSE ACETATE

NOTE 1-TUBE CONSISTING OF .025 INCH THICK KRAFT PRESS BOARD FORMED AS SHOWN WRAPPED WITH .002 INCH THICK CELLULOSE ACETATE
**NOTE 2-REFER TO IMPREGNATING DATA FOLLOWING WINDING DATA
NOTE 3-POLARITY TO BE ADDITIVE WITH GREEN CONNECTED TO BLUE AND RED CONNECTED TO BLACK
NOTE 4-D.C. RESISTANCE AT 25°C
PRI. - 600 OHMS
SEC. #1 - 127 OHMS
SEC. #2 - 109 OHMS

Figure 213—A-F Oscillator Transformer, T-204, Winding Data



CONNECT PRI. #1 START TO PRI. #2 START - NO TAP REQUIRED

**IMPREGNATE COILS AND CORE WITH WAX

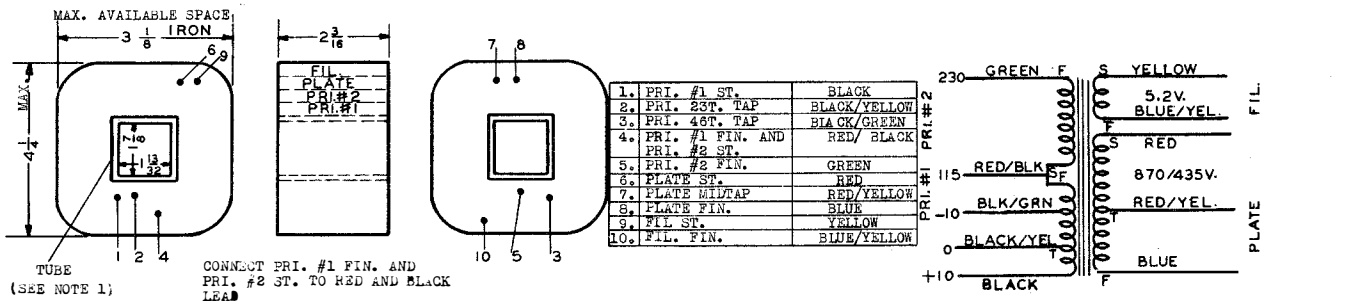
NOTE - LEAD NUMBERS ON SCHEMATIC REFER TO TERMINAL NUMBERS.

NAME OF COIL	COIL IS WOUND ON (OR OVER)	WIRE SIZE A.W.G.	WIRE INSULATION	WT. OF WIRE (LBS.)	TOTAL TURNS ON COIL	TAP AT TURN NO.	TURNS PER LAYER	WIRE TRAV.	INSULATION BETWEEN LAYERS	INSULATION OVER COILS
PRI. #1	TUBE	25	E	.0413	150	--	50	1.032	1-.003 KRAFT	*2-5 K1A
SEC. #1	FALSE SPOOL	31	E	.08	840	330	35	.375	1-.0015 KRAFT	2-5 K1A
SEC. #2	SAME AS SEC. #1 EXCEPT REVERSED									
PRI. #2	FALSE SPOOL	25	E	.071	150	--	50	1.032	1-.003 KRAFT	2-5 K1A

*2-5 K1A
2 - LAYERS OF KRAFT
5 - THICKNESS IN MILS (.005) OF K- KRAFT
1 - THICKNESS IN MILS (.001) OF A - CELLULOSE ACETATE

NOTE 1 - TUBE CONSISTING OF .030 INCH THICK FULLERBOARD FORMED AS SHOWN WRAPPED WITH .002 INCH THICK CELLULOSE ACETATE
**NOTE 2 - REFER TO IMPREGNATING DATA FOLLOWING WINDING DATA
NOTE 3 - POLARITY OF COILS TO BE ADDITIVE WITH 1 CONNECTED TO 3
NOTE 4 - D.C. RESISTANCE AT 25°C
PRI. #1 - 1.41 OHMS PRI. #2 - 2.42 OHMS
SEC. #1 - 43 OHMS SEC. #2 - 43 OHMS

Figure 214—A-F Input Transformer, T-205, Winding Data



SPACE FACTOR 83%

**IMPREGNATE COILS AND CORE WITH ASPHALT COMPOUND

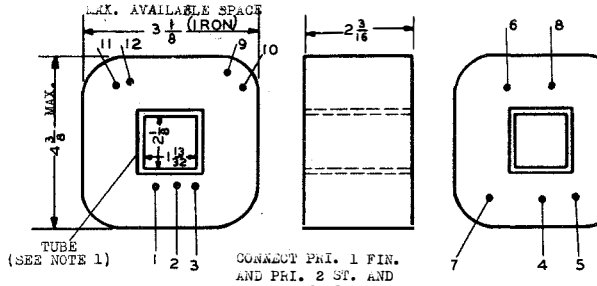
NOTE - LEAD NUMBERS ON SCHEMATIC REFER TO TERMINAL MARKINGS.

NAME OF COIL	COIL IS WOUND ON (OR OVER)	WIRE SIZE A.W.G.	WIRE INSULATION	WT. OF WIRE (LBS.)	TOTAL TURNS ON COIL	TAP AT TURN NO.	TURNS PER LAYER	WIRE TRAV.	INSULATION BETWEEN LAYERS	INSULATION OVER COILS
PRI. #1	TUBE	21	E	.434	268	23,46	56	1.88	1-.005 K	* 2-5 K1A
PRI. #2	PRI. #1	24	E	.229	265	--	67	1.55	1-.003 K	3-5 K1A
PLATE	FALSE SPOOL	29	E	.660	2080	1040	139	1.83	2-.003 K	3-5 K1A
FIL.	PLATE	16	E	.086	12-1/2	--	12-1/2	.675	--	3-5 K1A

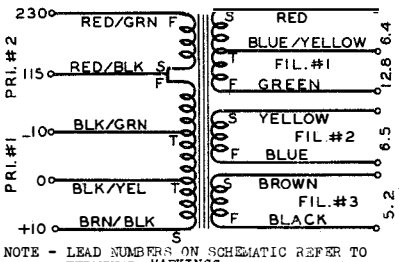
* 2-5 K1A
2 - LAYERS OF
5 - THICKNESS IN MILS (.005) OF
K - KRAFT PAPER
1 - THICKNESS IN MILS (.001) OF
A - CELLULOSE ACETATE

NOTE 1 - TUBE CONSISTING OF .015 INCH THICK FULLERBOARD FORMED AS SHOWN WRAPPED WITH .002 INCH THICK CELLULOSE ACETATE
**NOTE 2 - REFER TO IMPREGNATING DATA FOLLOWING WINDING DATA
NOTE 3 - POLARITY TO BE ADDITIVE
NOTE 4 - D.C. RESISTANCE AT 25°C
PRI. #1 - 2.31 OHMS
PRI. #2 - 4.90 OHMS
PLATE - 142 OHMS

Figure 215—Power Transformer, T-206; Winding Data



1.	PRI. 1 START	BROWN/BLACK
2.	PRI. 2Q TAP	BLACK/YELLOW
3.	PRI. 40 TAP	BLACK/GREEN
4.	PRI. 1 FIN. AND PRI. 2 ST.	RED/BLACK
5.	PRI. #2 FIN.	RED/GREEN
6.	FIL. #1 START	RED
7.	FIL. #1 MIDTAP	BLUE/YELLOW
8.	FIL. #1 FIN.	GREEN
9.	FIL. #2 START	YELLOW
10.	FIL. #2 FIN.	BLUE
11.	FIL. #3 START	BROWN
12.	FIL. #3 FIN.	BLACK



NOTE - LEAD NUMBERS ON SCHEMATIC REFER TO TERMINAL MARKINGS.

SPACE FACTOR 84%

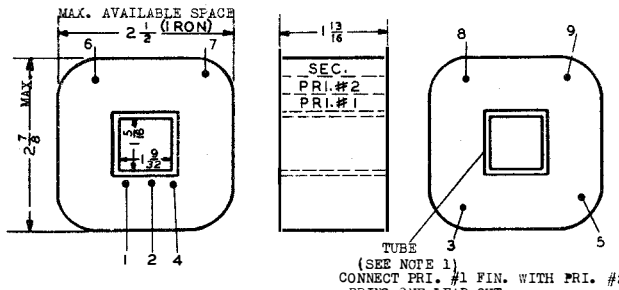
**IMPREGNATE COILS AND CORE WITH ASPHALT COMPOUND

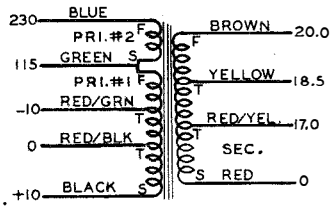
NAME OF COIL	COIL IS WOUND ON (OR OVER)	WIRE SIZE A.W.G.	WIRE INSULATION	WT. OF WIRE (LBS.)	TOTAL TURNS ON COIL	TAP AT TURN NO.	TURNS PER LAYER	WIRE TRAV.	INSULATION BETWEEN LAYERS	INSULATION OVER COILS
PRI. #1	TUBE 0.002 CA.	20	E	.55	254	20,40	51	1.84	1-.005 KRAFT	*2-5 K1A
PRI. #2	PRI. #1	22	E	.36	234	--	59	1.70	1-.005 KRAFT	2-5 K1A
FIL. #1	PRI. #2	14	E	.30	21	13-1/2	14	0.99	1-.010 KRAFT	2-5 K1A
FIL. #2	FIL. #1	13	E	.21	14	--	14	1.11	--	2-5 K1A
FIL. #3	FIL. #2	12	E	.23	11	--	11	.971	--	2-5 K1A

*2-5 K1A
2 - LAYERS OF
5 - THICKNESS IN MILS (.005) OF
K - KRAFT PAPER
1 - THICKNESS IN MILS (.001) OF
A - CELLULOSE ACETATE

NOTE 1 - TUBE CONSISTING OF .015 INCH THICK FULLERBOARD FORMED AS SHOWN WRAPPED WITH .002 INCH THICK CELLULOSE ACETATE
**NOTE 2 - REFER TO IMPREGNATING DATA FOLLOWING WINDING DATA
NOTE 3 - POLARITY OF COILS TO BE ADDITIVE
NOTE 4 - D.C. RESISTANCE AT 25 C
PRI. #1 - 1.82 OHMS
PRI. #2 - 3.08 OHMS

Figure 216—Filament Transformer, T-301, Winding Data





1.	PRI. #1 ST.	BLACK
2.	PRI. 36T. TAP	RED/BLACK
3.	PRI. 73T. TAP	RED/GREEN
4.	PRI. #1 FIN. & PRI. #2 ST.	GREEN
5.	PRI. #2 FIN.	BLUE
6.	SEC. ST.	RED
7.	SEC. 65T. TAP	RED/YELLOW
8.	SEC. 70T. TAP	YELLOW
9.	SEC. FIN.	BROWN

NOTE - LEAD NUMBERS ON SCHEMATIC REFER TO TERMINAL MARKINGS.

SPACE FACTOR 85%

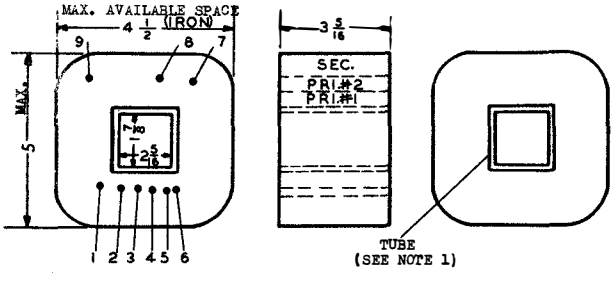
** IMPREGNATE COILS AND CORE WITH ASPHALT COMPOUND

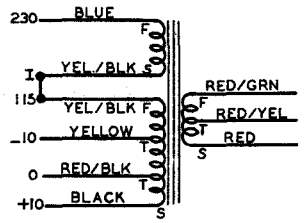
NAME OF COIL	COIL IS WOUND ON (OR OVER)	WIRE SIZE A.W.G.	WIRE INSULATION	WT. OF WIRE (LBS.)	TOTAL TURNS ON COIL	TAP AT TURN NO.	TURNS PER LAYER	WIRE TRAV.	INSULATION BETWEEN LAYERS	INSULATION OVER COILS
PRI. #1	TUBE	25	E	.212	456	36,73	76	1.567	1-.003 K	* 2-5 K1A
PRI. #2	PRI. #1	28	E	.110	420	--	105	1.537	1-.003 K	2-5 K1A
SEC.	PRI. #2	16	E	.364	76	65,70	26	1.460	1-.010 K	2-5 K1A

*
2-5 K1A
2 - LAYERS OF
5 - THICKNESS IN MILS (.005) OF
K - KRAFT PAPER
1 - THICKNESS IN MILS (.001) OF
A - CELLULOSE ACETATE

NOTE 1 - TUBE CONSISTING OF .015 INCH THICK FULLERBOARD FORMED AS SHOWN WRAPPED WITH .002 INCH CELLULOSE ACETATE
**NOTE 2 - REFER TO IMPREGNATING DATA FOLLOWING WINDING DATA
NOTE 3 - POLARITY OF COILS TO BE ADDITIVE
NOTE 4 - D.C. RESISTANCE AT 25°C
PRI. #1 - 7.24 OHMS
PRI. #2 - 15.2 OHMS
SEC. - .192 OHMS

Figure 217—Power Transformer, T-302, Winding Data





1.	PRI. #1 START	BLACK
2.	PRI. 15T. TAP	RED/BLACK
3.	PRI. 31T. TAP	YELLOW
4.	PRI. #1 FIN.	YELLOW/BLACK
5.	PRI. #2 START	YELLOW/BLACK
6.	PRI. #2 FIN.	BLUE
7.	SEC. START	RED
8.	SEC. MIDTAP	RED/YELLOW
9.	SEC. FIN.	RED/GREEN

SPACE FACTOR 85%
**IMPREGNATE COILS AND CORE WITH ASPHALT COMPOUND

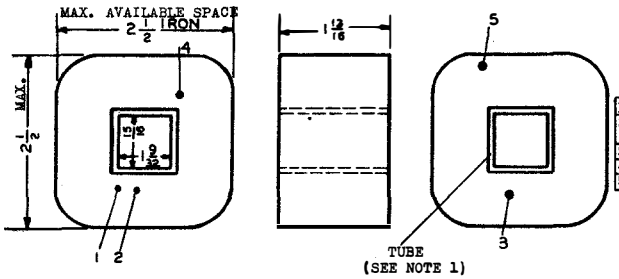
NOTE - LEAD NUMBERS ON SCHEMATIC REFER TO TERMINAL MARKINGS.

NAME OF COIL	COIL IS WOUND ON (OR OVER)	WIRE SIZE A.W.G.	WIRE INSUL-ATION	WT. OF WIRE (LBS.)	TOTAL TURNS ON COIL	TAP AT TURN NO.	TURNS PER LAYER	WIRE TRAV.	INSULATION BETWEEN LAYERS	INSULATION OVER COILS
PRI. #1	TUBE	15	E	1.50	192	15, 31	48	3.03	1-.010 K	1-.010 K
PRI. #2	PRI. #1	18	E	.805	177	--	59	2.64	1-.005 K	*3-5 K1A
SEC.	FALSE SPOOL	24	E	2.56	1880	940	125	2.89	2-.003 K	3-5 K1A

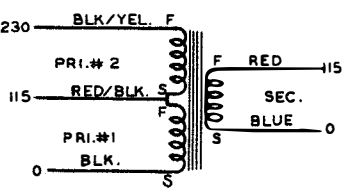
*3-5 K1A -
3 - LAYERS OF
5 - THICKNESS IN MILS (.005) OF
K - KRAFT PAPER
1 - THICKNESS IN MILS (.001) OF
A - CELLULOSE ACETATE

NOTE 1 - TUBE CONSISTING OF .050 INCH THICK KRAFT PAPER FORMED AS SHOWN WRAPPED WITH 0.002 INCH THICK CELLULOSE ACETATE
NOTE 2 - POLARITY OF COILS TO BE ADDITIVE WITH 115 CONNECTED TO I AND TO RED.
**NOTE 3 - REFER TO IMPREGNATING DATA FOLLOWING WINDING DATA
NOTE 4 - D.C. RESISTANCE AT 25°C
PRI. #1 - .499 OHMS
PRI. #2 -1.07? OHMS
SEC. -54.8 OHMS

Figure 218—Plate Transformer, T-303, Winding Data



1.	PRI. #1 START	BLACK
2.	PRI. #1 FIN. & PRI. #2 START	RED/BLACK
3.	PRI. #2 FIN.	BLACK/YELLOW
4.	SEC. START	BLUE
5.	SEC. FIN.	RED



SPACE FACTOR 85%
**IMPREGNATE COILS AND CORE WITH ASPHALT COMPOUND

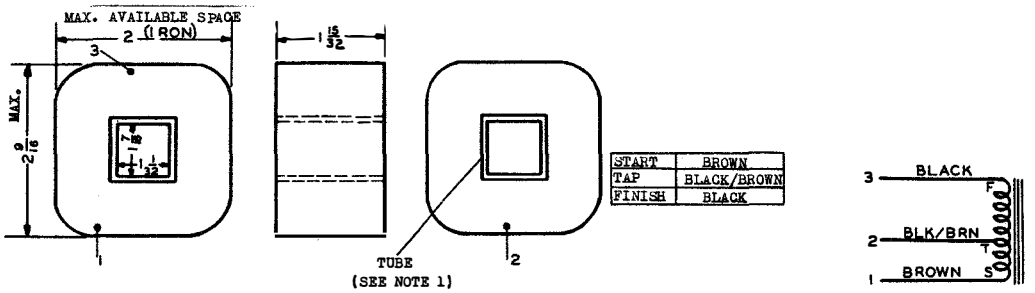
NOTE - LEAD NUMBERS ON SCHEMATIC REFER TO TERMINAL MARKINGS.

NAME OF COIL	COIL IS WOUND ON (OR OVER)	WIRE SIZE A.W.G.	WIRE INSUL-ATION	WT. OF WIRE (LBS.)	TOTAL TURNS ON COIL	TAP AT TURN NO.	TURNS PER LAYER	WIRE TRAV.	INSULATION BETWEEN LAYERS	INSULATION OVER COILS
PRI. #1	TUBE	25	E	.253	600	--	75	1.55	1-0.003	* 2-5 K1A
PRI. #2	PRI. #1	28	E	.152	600	--	100	1.47	1-0.003 KRAFT	2-5 K1A
SEC.	PRI. #2	26	E	.300	646	--	81	1.49	1-0.003 KRAFT	2-5 K1A

*2-5 K1A
2 - LAYERS OF
5 - THICKNESS IN MILS (.005) OF
K - KRAFT PAPER
1 - THICKNESS IN MILS (.001) OF
A - CELLULOSE ACETATE

NOTE 1 - TUBE CONSISTS OF KRAFT PAPER 0.035 INCH THICK, FORMED AS SHOWN WRAPPED WITH 0.002 INCH THICK CELLULOSE ACETATE
**NOTE 2 - REFER TO IMPREGNATING DATA FOLLOWING WINDING DATA
NOTE 3 - POLARITY TO BE ADDITIVE
NOTE 4 - D.C. RESISTANCE AT 25°C
PRI. #1 - 8.75 OHMS
PRI. #2 - 21.1 OHMS
SEC. - 16.5 OHMS

Figure 219—Isolation Transformer, T-304, Winding Data



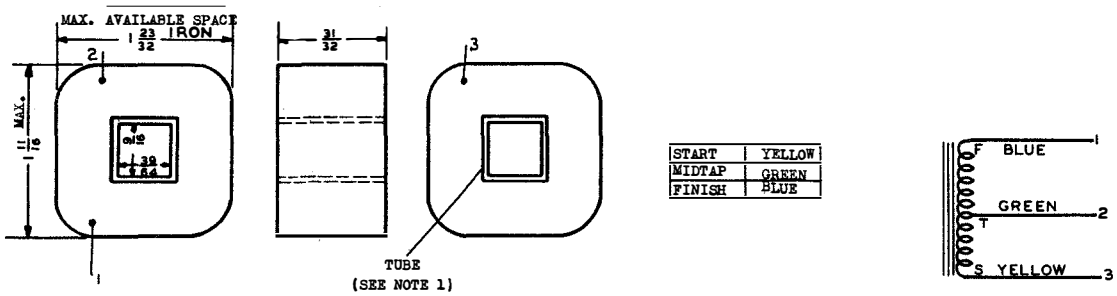
SPACE FACTOR 89.6%
**IMPREGNATE COILS AND CORE WITH WAX

NOTE - LEAD NUMBERS ON SCHEMATIC REFER TO TERMINAL NUMBERS.

NAME OF COIL	COIL IS WOUND ON (OR OVER)	WIRE SIZE A.W.G.	WIRE INSULATION	WT. OF WIRE (LBS.)	TOTAL TURNS ON COIL	TAP AT TURN NO.	TURNS PER LAYER	WIRE TRAV.	INSULATION BETWEEN LAYERS	INSULATION OVER COILS
	TUBE	31	E	.36	3300	330	114	1.218	1-.003 KRAFT	* 2-5 K1A

NOTE 1 - TUBE CONSISTING OF .015 INCH THICK FULLER BOARD FORMED AS SHOWN, WRAPPED WITH .002 INCH THICK CELLULOSE ACETATE
**NOTE 2 - REFER TO IMPREGNATING DATA FOLLOWING WINDING DATA
*NOTE 3 - 2-5 K1A
2 - LAYERS OF KRAFT PAPER
5 - THICKNESS IN MILS (.005) OF
K - KRAFT PAPER
1 - THICKNESS IN MILS (.001) OF
A - CELLULOSE ACETATE
NOTE 4 - D.C. RESISTANCE AT 25°C
COIL - 238 OHMS

Figure 220—Filter Reactors, L-201, L-202, Winding Data



**IMPREGNATE COILS AND CORE WITH WAX

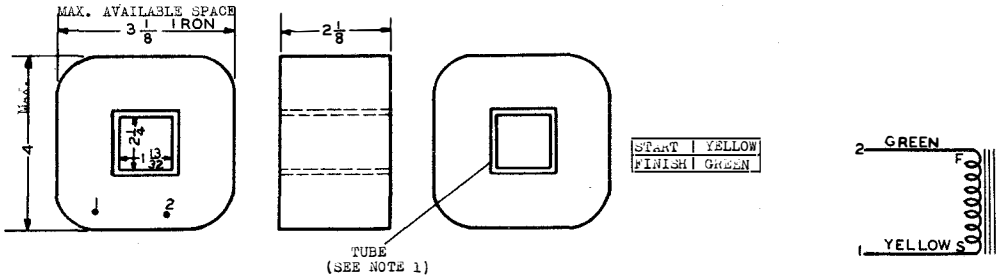
NOTE - LEAD NUMBERS ON SCHEMATIC REFER TO TERMINAL NUMBERS.

NAME OF COIL	COIL IS WOUND ON (OR OVER)	WIRE SIZE A.W.G.	WIRE INSULATION	WT. OF WIRE (LBS.)	TOTAL TURNS ON COIL	TAP AT TURN NO.	TURNS PER LAYER	WIRE TRAV.	INSULATION BETWEEN LAYERS	INSULATION OVER COILS
	TUBE	37	E	.215	10,000	5000	142	.781	1-.001 KRAFT	* 3-5 K1A

*3-5 K1A
3 - LAYERS OF
5 - THICKNESS IN MILS (.005) OF
K - KRAFT PAPER
1 - THICKNESS IN MILS (.001) OF
A - CELLULOSE ACETATE

NOTE 1 - TUBE CONSISTING OF .010 INCH THICK KRAFT PRESS BOARD FORMED AS SHOWN WRAPPED WITH .002 INCH THICK CELLULOSE ACETATE
**NOTE 2 - REFER TO IMPREGNATING DATA FOLLOWING WINDING DATA
NOTE 3 - D.C. RESISTANCE AT 25°C - OHMS

Figure 221—A-F Coupling Reactor, L-203, Winding Data



**SPACE FACTOR 89.5%
**IMPREGNATE COILS AND CORE WITH ASPHALT COMPOUND

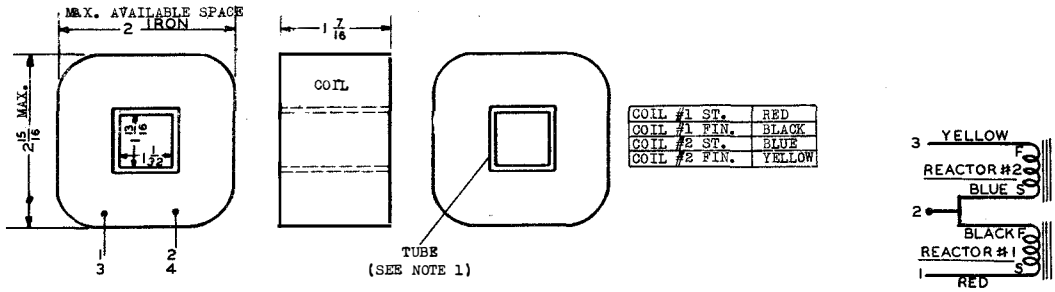
NOTE - LEAD NUMBERS ON SCHEMATIC REFER TO TERMINAL NUMBERS.

NAME OF COIL	COIL IS WOUND ON (OR OVER)	WIRE SIZE A.W.G.	WIRE INSULATION	WT. OF WIRE (LBS.)	TOTAL TURNS ON COIL	TAP AT TURN NO.	TURNS PER LAYER	WIRE TRAV.	INSULATION BETWEEN LAYERS	INSULATION OVER COILS
	TUBE	22	E	2.46	1520	--	66	1.91	1-.005 K	*3-5 K1A

*3-5 K1A
3 - LAYERS OF
5 - THICKNESS IN MILS (.005) OF
K - KRAFT PAPER
1 - THICKNESS IN MILS (.001) OF
A - CELLULOSE ACETATE

NOTE 1 - TUBE CONSISTING OF .015 INCH THICK FULLERBOARD FORMED AS SHOWN WRAPPED WITH .002 INCH THICK CELLULOSE ACETATE
**NOTE 2 - REFER TO IMPREGNATING DATA FOLLOWING WINDING DATA
NOTE 3 - D.C. RESISTANCE AT 25°C - 21.2 OHMS

Figure 222—Filter Reactors, L-301, L-302, Winding Data



SPACE FACTOR 85%
**IMPREGNATE COILS AND CORE WITH ASPHALT COMPOUND

NOTE - LEAD NUMBERS ON SCHEMATIC REFER TO TERMINAL NUMBERS.

NAME OF COIL	COIL IS WOUND ON (OR OVER)	WIRE SIZE A.W.G.	WIRE INSULATION	WT. OF WIRE (LBS.)	TOTAL TURNS ON COIL	TAP AT TURN NO.	TURNS PER LAYER	WIRE TRAV.	INSULATION BETWEEN LAYERS	INSULATION OVER COILS
COIL	TUBE	16	E	.643	125	--	21	1.250	1-.010 KRAFT	*2-5 K1A

*2-5 K1A
2 - LAYERS OF
5 - THICKNESS IN MILS (.005) OF
K - KRAFT PAPER
1 - THICKNESS IN MILS (.001) OF
A - CELLULOSE ACETATE

NOTE 1 - TUBE CONSISTING OF .015 INCH THICK FULLERBOARD FORMED AS SHOWN WRAPPED WITH .002 INCH THICK CELLULOSE ACETATE
**NOTE 2 - REFER TO IMPREGNATING DATA FOLLOWING WINDING DATA
NOTE 3 - D.C. RESISTANCE AT 25°C - .34 OHMS

Figure 223—Filter Reactor, L-303, Winding Data

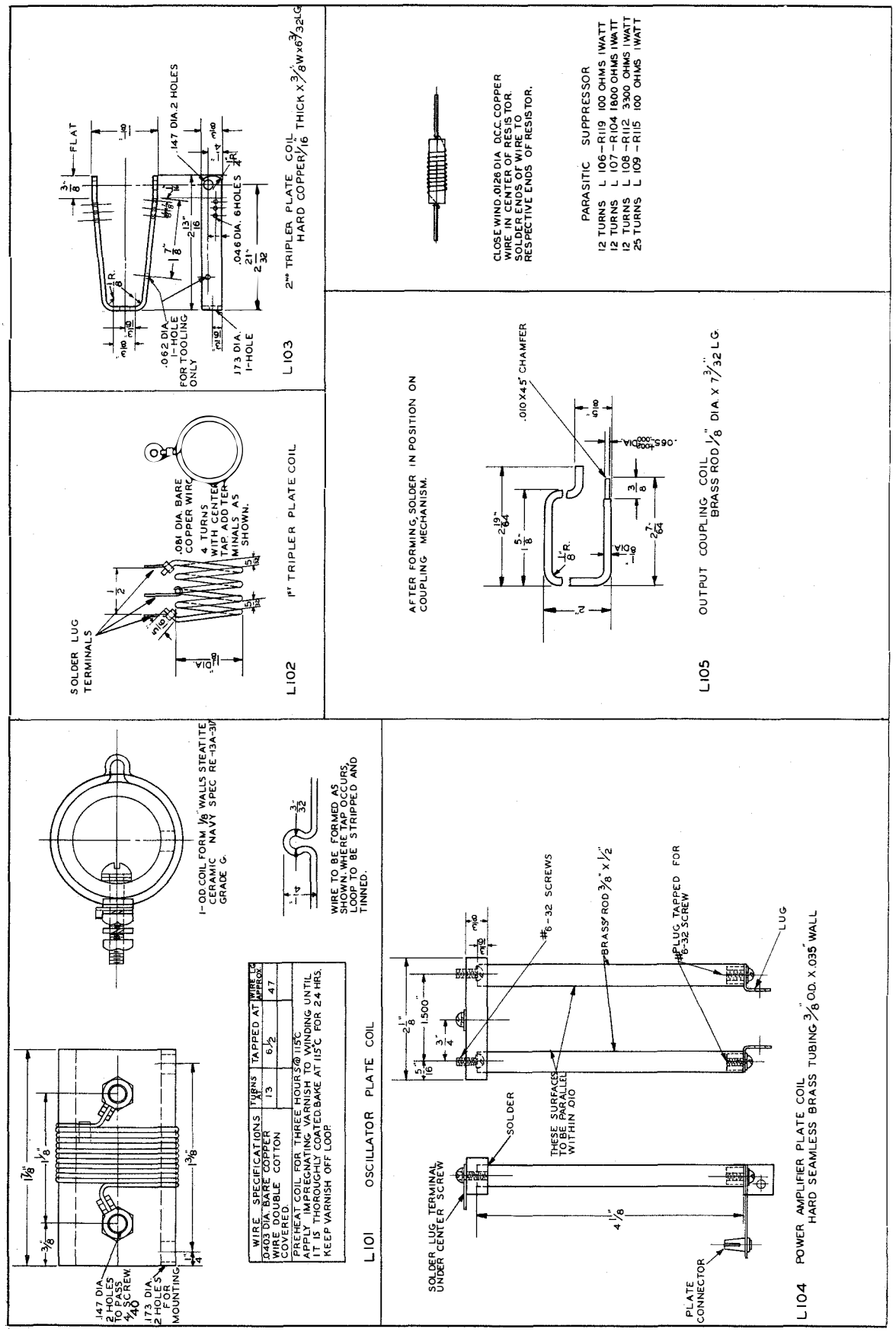


Figure 224—R-F Coil Winding Data

FIELD WINDING				
	GENERATOR	MOTOR		
		SHUNT	DIFF. SHUNT	INTERPOLE
CONDUCTOR	.0253"	.0179"	.0179"	2 - .057"
CONDUCTOR INSULATION	FORMEX	FORMEX	FORMEX	HEAVY FORMEX
TURNS PER COIL	1300	600	1400	60
WEIGHT OF COPPER (LBS.)	6.2	1.35	3.73	1.1
RESISTANCE AT 25° (OHMS)	53 ± 5.3 (2 COILS)	45 ± 4.5 (2 COILS)	125 ± 12.4 (2 COILS)	.074 ± .008 (1 COIL)

TREATMENT OF WINDINGS

1. DIP FOR 30 SECONDS IN #1693 VARNISH (.875 Sp. Gr. AT 21°C.)
2. DRAIN 30 MINUTES.
3. BAKE 3 HOURS AT 135°C.
4. DIP MOMENTARILY IN #1693 VARNISH (.875 Sp. Gr. AT 21°C.)
5. DRAIN 30 MINUTES.
6. BAKE 4 HOURS AT 135°C.

ARMATURE WINDING		
	GENERATOR	MOTOR
NO. OF SLOTS	24	24
NO. OF COMM. SEGMENTS	72	72
NO. OF SINGLE COILS	72	72
CONDUCTOR COPPER	.0508	.057
CONDUCTOR INSULATION	HEAVY FORMEX COTTON BONDED	HEAVY FORMEX COTTON BONDED
TURNS IN SERIES PER COIL	3,4,4	3
WEIGHT OF COPPER (LBS.)	3.2	3.28
RES. AT 25° (OHMS)	.41 ± .04	.26 ± .026

TREATMENT OF WINDING

1. PREHEAT 2 HRS. AT 125°C.
2. DIP IN HARVEL #612C VARNISH FOR 15 MINUTES. (.865 Sp. Gr. AT 21°C.)
3. DRAIN 15 MINUTES SHAFT EXT. UP, THEN REVERSE ARMATURE AND DRAIN 15 MIN. WITH SHAFT EXT. DOWN.
4. BAKE 3 TO 4 HOURS AT 125°C IN A WELL VENTILATED OVEN.
5. DIP FOR 30 SECONDS.
6. REPEAT ITEM #3.
7. BAKE 8 TO 10 HOURS AT 125°C.

Figure 225—CG-211092 Motor Generator, Winding Data

FIELD WINDING				
	GENERATOR	MOTOR		
		SHUNT	SERIES	INTERPOLE
CONDUCTOR	.0253"	.0126"	.0126"	2 - .0403"
CONDUCTOR INSULATION	FORMEX	FORMEX	FORMEX	HEAVY FORMEX
TURNS PER COIL	1300	1200	2800	120
WEIGHT OF COPPER (LBS.)	6.2	1.33	3.73	.77
RESISTANCE AT 25° (OHMS)	53 ± 5.3 (2 COILS)	180 ± 18 (2 COILS)	497 ± 49.7 (2 COILS)	.296 ± .03 (1 COIL)

TREATMENT OF WINDINGS

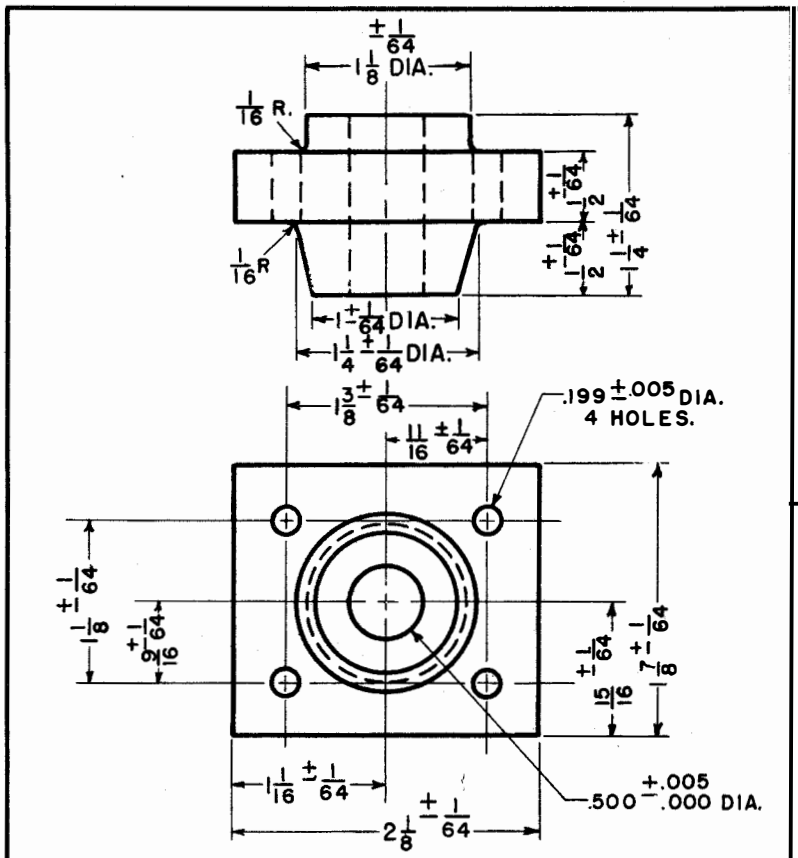
1. DIP FOR 30 SECONDS IN #1693 VARNISH (.875 Sp. Gr. AT 21°C.)
2. DRAIN 30 MINUTES.
3. BAKE 3 HOURS AT 135°C.
4. DIP MOMENTARILY IN #1693 VARNISH (.875 Sp. Gr. AT 21°C.)
5. DRAIN 30 MINUTES.
6. BAKE 4 HOURS AT 135°C.

ARMATURE WINDING		
	GENERATOR	MOTOR
NO. OF SLOTS	24	24
NO. OF COMM. SEGMENTS	72	72
NO. OF SINGLE COILS	72	72
CONDUCTOR COPPER	.0508	.0403"
CONDUCTOR INSULATION	HEAVY FORMEX COTTON BONDED	HEAVY FORMEX COTTON BONDED
TURNS IN SERIES PER COIL	3,4,4	3
WEIGHT OF COPPER (LBS.)	3	2.72
RES. AT 25° (OHMS)	.37 ± .037	1.04 ± .10

TREATMENT OF WINDING

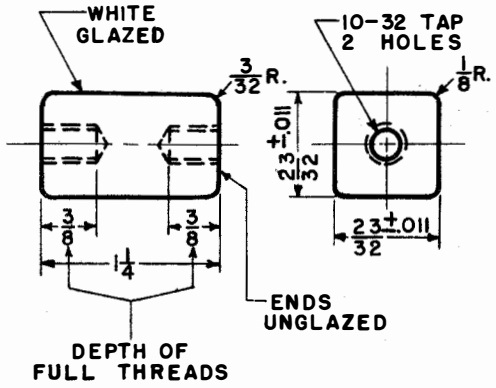
1. PREHEAT 2 HRS. AT 125°C.
2. DIP IN HARVEL #612C VARNISH FOR 15 MINUTES. (.865 Sp. Gr. AT 21°C.)
3. DRAIN 15 MINUTES SHAFT EXT. UP, THEN REVERSE ARMATURE AND DRAIN 15 MIN. WITH SHAFT EXT. DOWN.
4. BAKE 3 TO 4 HOURS AT 125°C IN A WELL VENTILATED OVEN.
5. DIP FOR 30 SECONDS.
6. REPEAT ITEM #3.
7. BAKE 8 TO 10 HOURS AT 125°C.

Figure 226—CG-211093 Motor Generator, Winding Data

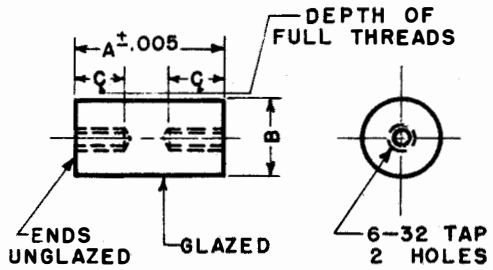


MATERIAL:-MOLDED STYRAMIC.

E-601 K-883942-1

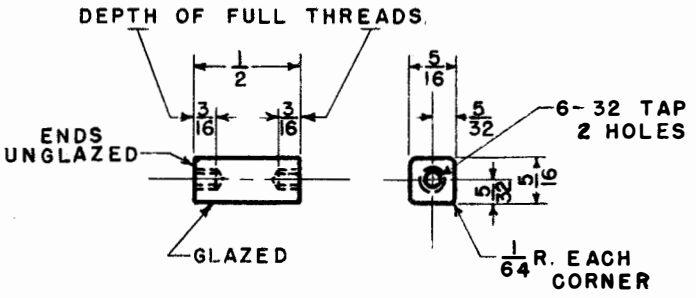


E-106 E-202 NAVY TYPE - 61032. K-823038-2

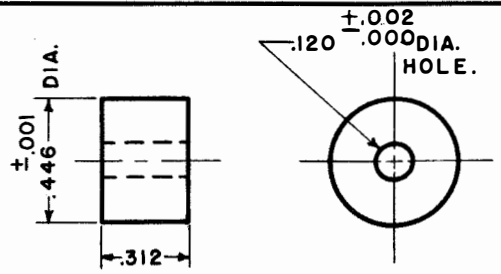


NAVY TYPE	SYMBOL DESIG.	DIMENSIONS A	B	C
61166	E-111	1/2	1/2	3/16
61167	E-107	5/8	1/2	7/32
61168	E-108	3/4	1/2	9/32
61170	E-109	1	1/2	9/32
61172	E-203	11/16	1/2	1/4
—	E-302	3/4	3/8	9/32

K-823568-1,2,3,5,7
K-875335-1



E-110 K-834196-2



MATERIAL:-MOLDED STYRAMIC.

E-116 K-882472-1

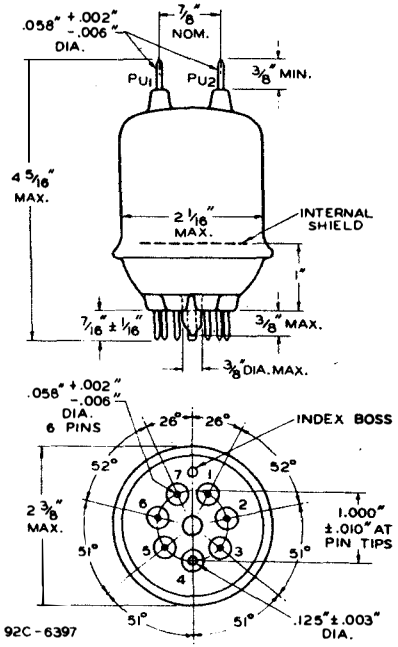
MATERIAL:-ISOLANTITE-UNLESS OTHERWISE NOTED.

Figure 227—Insulator Details

RESTRICTED

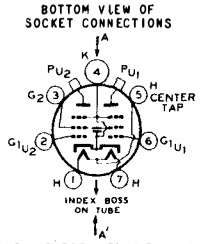
829

PUSH-PULL R-F BEAM POWER AMPLIFIER



BOTTOM VIEW

ANGULAR VARIATIONS BETWEEN PINS ARE HELD TO TOLERANCES SUCH THAT PINS WILL FIT GAUGE HAVING SIX 0.080" HOLES AND ONE 0.145" HOLE ARRANGED AT EXACT ANGLES ON 1.000" CIRCLE



PLANE OF ELECTRODES OF EACH UNIT IS PARALLEL TO PLANE THROUGH AXIS OF TUBE AND AA'

Pin 1 - Heater
Pin 2 - Grid No.1 of Unit No.2
Pin 3 - Screen
Pin 4 - Cathode
Pin 5 - Heater Center Tap
Pin 6 - Grid No.1 of Unit No.1
Pin 7 - Heater
P_{U1} & P_{U2} - Plate Terminals of Units No.1 and No.2, respectively

TUBE MOUNTING POSITION

VERTICAL: Plate terminals up or down.
HORIZONTAL: Plane of each plate vertical (on edge).

CONNECTIONS should never be soldered to the tube terminals.

AUG. 1, 1942

RCA RADIOTRON DIVISION
RCA MANUFACTURING COMPANY, INC.

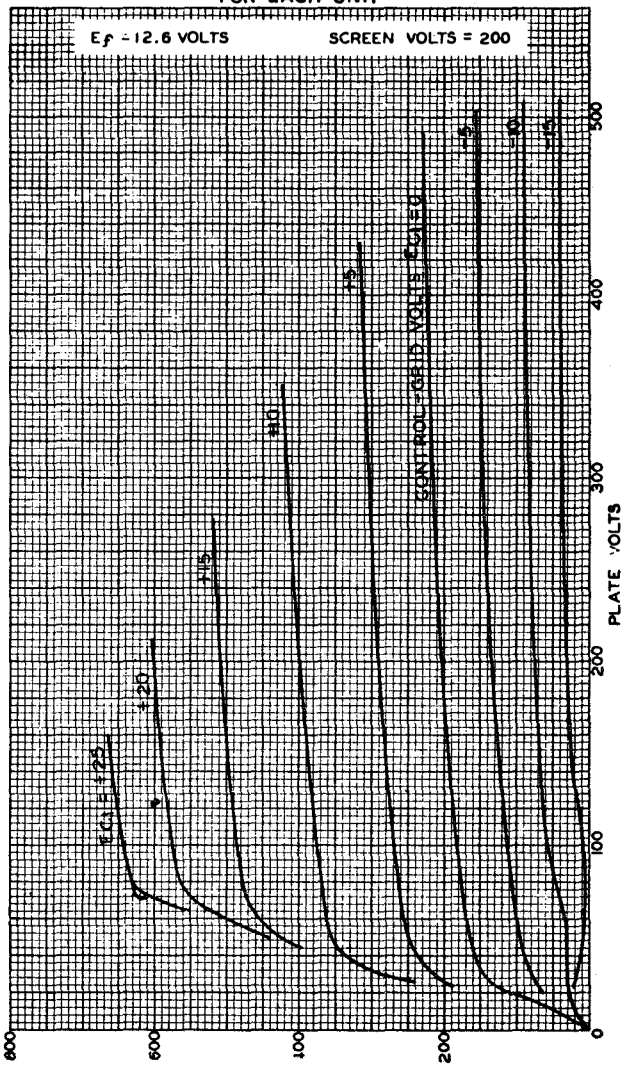
TENTATIVE DATA 2

RESTRICTED

153

829

AVERAGE PLATE CHARACTERISTICS
FOR EACH UNIT



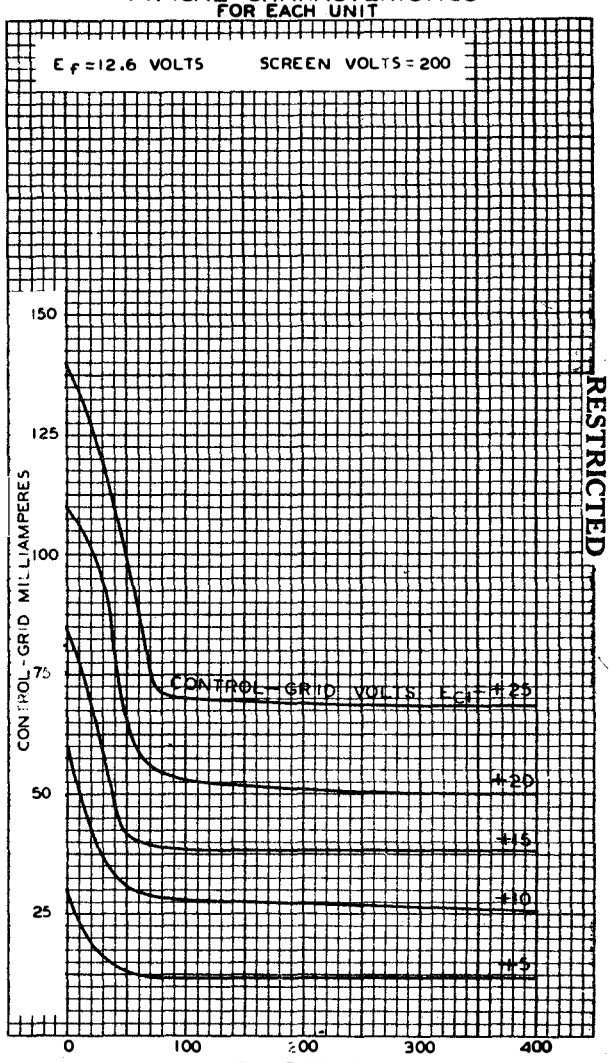
DEC. 27, 1939

RCA RADIOTRON DIVISION
RCA MANUFACTURING COMPANY, INC.

92C-6112

829

TYPICAL CHARACTERISTICS
FOR EACH UNIT



FEB. 29, 1940

RCA RADIOTRON DIVISION
RCA MANUFACTURING COMPANY, INC.

92C-6114

RESTRICTED

829 829 829

RCA 829

NAVY TYPE #38829

PUSH-PULL R-F BEAM POWER AMPLIFIER

Unless otherwise specified, values are for both units

Heater◊	Coated Unipotential Cathodes▽	
Voltage, each unit †	6.3	a-c or d-c volts
Current, each unit	1.125	amp.
Transconductance, for plate current of 60 ma.	8500 approx.	μmhos
Grid-Screen Mu-Factor	7	
Direct Interelectrode Capacitances (each unit):		
Grid-Plate (with external shielding)	0.1 max.	μμf
Input	15.2	μμf
Output	6.5	μμf
Maximum Overall Length		4-5/16"
Maximum Diameter		2-3/8"
Bulb		T-16
Terminal Mounting		RCA Type UT-106
Cooling		Forced Air

† Should not deviate more than ± 10% from rated value.
◊ The heaters of the two units may be operated in series from a 12.6-volt supply or in parallel from a 6.3-volt supply.
▽ In circuits where the cathode is not directly connected to the heater, the potential difference between heater and cathode should not exceed 100 volts.

MAXIMUM CCS RATINGS with TYPICAL OPERATING CONDITIONS

CCS = Continuous Commercial Service

GRID-MODULATED PUSH-PULL R-F POWER AMP. - Class C Telephony

Carrier conditions per tube for use with a max. modulation fact. of 1.0

	CCS	
D-C Plate Voltage	500 max.	volts
D-C Screen Voltage (Grid #2)	225 max.	volts
D-C Grid Voltage (Grid #1)	-175 max.	volts
D-C Plate Current	120 max.	ma.
Plate Input	60 max.	watts
Screen Input	6 max.	watts
Plate Dissipation	40 max.	watts
Typical Operation:		
D-C Plate Voltage	500	volts
D-C Screen Voltage	200	volts
D-C Grid Voltage△	-38	volts
	290	ohms
Peak R-F Grid-to-Grid Voltage	82	volts
Peak A-F Grid Voltage	17	volts
D-C Plate Current	120	ma.
D-C Screen Current	10	ma.
D-C Grid Current	2	approx.ma.
Driving Power*	0.5	approx.watt
Power Output	23	approx.watts

* At crest of a-f cycle with modulation factor of 1.0.
△ Obtained preferably from unby-passed cathode resistor of value shown.

RCA 829

PUSH-PULL R-F BEAM POWER AMPLIFIER

(continued from preceding page)

PLATE-MODULATED PUSH-PULL R-F POWER AMP. - Class C Telephony

Carrier conditions per tube for use with a max. modulation fact. of 1.0

	CCS	
D-C Plate Voltage	425 max.	volts
D-C Screen Voltage (Grid #2)	225 max.	volts
D-C Grid Voltage (Grid #1)	-175 max.	volts
D-C Plate Current	212 max.	ma.
D-C Grid Current	15 max.	ma.
Plate Input	90 max.	watts
Screen Input	7 max.	watts
Plate Dissipation	28 max.	watts
Typical Operation:		
D-C Plate Voltage	425	volts
D-C Screen Voltage □	200	volts
	6400	ohms
D-C Grid Voltage § ○	-60	volts
	5500	ohms
Peak R-F Grid-to-Grid Voltage	154	volts
D-C Plate Current	212	ma.
D-C Screen Current	35	ma.
D-C Grid Current	11	approx.ma.
Driving Power	0.8	approx.watt
Power Output	63	approx.watts

□ Obtained preferably through series resistor of value shown from modulated plate supply, or from modulated fixed supply.
§ Obtained from grid leak of value shown, or by partial self-bias methods.

PUSH-PULL R-F POWER AMPLIFIER & OSCILLATOR-Class C Telegraphy

Key-down conditions per tube without modulation #

	CCS	
D-C Plate Voltage	500 max.	volts
D-C Screen Voltage (Grid #2)	225 max.	volts
D-C Grid Voltage (Grid #1)	-175 max.	volts
D-C Plate Current	240 max.	ma.
D-C Grid Current	15 max.	ma.
Plate Input	120 max.	watts
Screen Input	7 max.	watts
Plate Dissipation	40 max.	watts
Typical Operation:		
D-C Plate Voltage	500	volts
D-C Screen Voltage ▲	200	volts
	9300	ohms
D-C Grid Voltage ■ ○	-45	volts
	160	ohms
	3750	ohms

△ Obtained from a fixed supply or from plate voltage which does not exceed 600 volts under key-up conditions.
■ Obtained by grid leak (3750), cathode resistor (160), or fixed supply.
○ The grid-circuit resistance should never exceed 15000 ohms (total) per tube, or 30000 ohms per unit. Any additional bias required must be supplied by a cathode resistor or a fixed supply.
Modulation essentially negative may be used if the positive peak of the audio-frequency envelope does not exceed 115% of the carrier conditions.

RCA 829

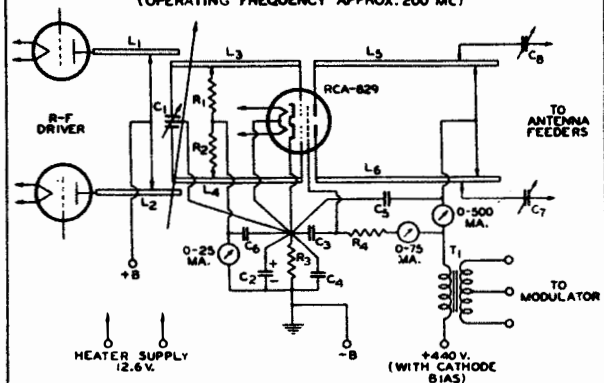
PUSH-PULL R-F BEAM POWER AMPLIFIER

(continued from preceding page)

	CCS	
Peak R-F Grid-to-Grid Voltage	124	volts
D-C Plate Current	240	ma.
D-C Screen Current	32	ma.
D-C Grid Current	12	approx.ma.
Driving Power	0.7	approx.watt
Power Output	83	approx.watts

Data on operating frequencies for the 829 are given on the sheet TRANS. TUBE RATINGS vs FREQUENCY. Special attention should be given to shielding, cooling, and r-f by-passing at the higher frequencies.

ULTRA-HIGH-FREQUENCY PLATE-MODULATED PUSH-PULL R-F POWER AMPLIFIER
(OPERATING FREQUENCY APPROX. 200 MC)



C_1 = 1.2 TO 10 μμf PER SECTION
C_2 = 25 μf, 200 VOLTS
C_3 C_4 C_5 C_6 =500 μμf, MICA
C_7 C_8 = 3 TO 35 μμf
R_1 R_2 = 7500 TO 15000 OHMS, 1 WATT
R_3 = 60 OHMS, 10 WATTS
R_4 = 6800 OHMS, 15 WATTS
T_1 = MODULATION TRANSFORMER

L_1 L_2 = DIMENSIONS DEPENDENT ON TYPE OF DRIVER TUBE; APPROX. SAME AS L_5 L_6
L_3 L_4 = 1/4" DIA. COPPER TUBING, APPROX. 10" LONG AND SPACED APPROX. 7/8" BETWEEN CENTERS
L_5 L_6 = 3/8" DIA. COPPER TUBING, APPROX. 7" LONG AND SPACED APPROX. 7/8" BETWEEN CENTERS

NOTE 1: ADJUST COUPLING OF L_1L_2 AND L_3L_4 FOR OPTIMUM GRID EXCITATION.

NOTE 2: GRID RESISTORS SHOULD BE ADJUSTED ON L_3L_4 AT VOLTAGE NODE

The license extended to the purchaser of tubes appears in the License Notice accompanying them. Information contained herein is furnished without assuming any obligations.

SHIELDING and BY-PASSING

Shielding and by-passing considerations for the 829 are the same as those given under Type 832.

829-B

PUSH-PULL R-F BEAM POWER AMPLIFIER

RCA-829-B is a push-pull, beam-power transmitting tube of the heater-cathode type. It contains two beam power units within one envelope. Total maximum plate dissipation is 40 watts. The exceptional efficiency and high power sensitivity of the 829-B permit full power output with very low driving power. For example, a single tube operated in push-pull class C telegraph service is capable of handling a power input of 120 watts with less than a watt of driving power—at frequencies as high as 200 Mc. The tube may be operated at reduced ratings at frequencies as high as 250 Mc.

The exceptional efficiency of the 829-B at the ultra-high frequencies is made possible by the balanced and compact structure of the beam power units, excellent internal shielding, and close electrode spacing. The internal leads are short and heavy in order to minimize internal lead inductance. The terminal arrangement provides excellent insulation and is designed to facilitate symmetry of circuit layout. Neutralization of the tube is unnecessary in adequately shielded circuits.

The heaters are arranged to allow operation from either a 12.6- or a 6.3-volt supply.

TENTATIVE CHARACTERISTICS and RATINGS

Unless otherwise specified, values are for both units

HEATER VOLTAGE (A.C. or D.C.) per Unit	6.3		Volts
HEATER CURRENT per Unit	1.125		Amperes
TRANSCONDUCTANCE, for Plate Current of 60 ma.	8500	*approx.*	Micromhos
GRID-SCREEN MU-FACTOR	7		
DIRECT INTERELECTRODE CAPACITANCES (Each Unit):			
Grid-Plate (with external shielding)	0.1	max.	μμf
Input	14.5		μμf
Output	7.0		μμf
SCREEN-CATHODE CAPACITANCE (including internal screen by-pass condenser)	65	*approx.*	μμf
BULB	T-16		
TERMINAL MOUNTING	See INSTALLATION		
TYPE OF COOLING	See INSTALLATION (under *Bulb*)		

Maximum Ratings Are Absolute Values

MAXIMUM RATINGS and TYPICAL OPERATING CONDITIONS

Ratings for Continuous Commercial Service

As Grid-Modulated Push-Pull R-F Power Amplifier, Class C Telephony

Carrier conditions per tube for use with a max. modulation factor of 1.0

D-C PLATE VOLTAGE	750 max.	Volts
D-C SCREEN VOLTAGE (Grid No.2)	225 max.	Volts
D-C GRID VOLTAGE (Grid No.1)	-175 max.	Volts
D-C PLATE CURRENT	120 max.	Ma.
PLATE INPUT	60 max.	Watts
SCREEN INPUT	6 max.	Watts
PLATE DISSIPATION	40 max.	Watts

TYPICAL OPERATION:

	With modulation factor of 0.7		
D-C Plate Voltage	500	750	Volts
D-C Screen Voltage	200	200	Volts
D-C Grid Voltage	-38	-55	Volts
Peak R-F Grid-to-Grid Voltage	82	104	Volts
Peak A-F Grid Voltage	17	15	Volts
D-C Plate Current	120	80	Ma.
D-C Screen Current	10	5	Ma.
D-C Grid Current (Approx.*)	2	0	Ma.
Driving Power (Approx.*)	0.5	0.7	Watt
Power Output (Approx.)	23	24	Watts

As Plate-Modulated Push-Pull R-F Power Amplifier, Class C Telephony

Carrier conditions per tube for use with a max. modulation factor of 1.0

D-C PLATE VOLTAGE		600 max.	Volts
D-C SCREEN VOLTAGE (Grid No.2)		225 max.	Volts
D-C GRID VOLTAGE (Grid No.1)		-175 max.	Volts
D-C PLATE CURRENT		212 max.	Ma.
D-C GRID CURRENT		15 max.	Ma.
PLATE INPUT		90 max.	Watts
SCREEN INPUT		7 max.	Watts
PLATE DISSIPATION		28 max.	Watts
TYPICAL OPERATION:			
D-C Plate Voltage	425	600	Volts
D-C Screen Voltage of	200	200	Volts
from a series resistor of #	6400	13300	Ohms
D-C Grid Voltage of	-60	-70	Volts
from a grid resistor of **	5500	5800	Ohms
Peak R-F Grid-to-Grid Voltage	154	172	Volts
D-C Plate Current	212	150	Ma.
D-C Screen Current	35	30	Ma.
D-C Grid Current (Approx.)	11	12	Ma.
Driving Power (Approx.)	0.8	0.9	Watt
Power Output (Approx.)	63	70	Watts

As Push-Pull R-F Power Amplifier and Oscillator, Class C Telegraphy

Key-down conditions per tube without modulation ##

D-C PLATE VOLTAGE		750 max.	Volts
D-C SCREEN VOLTAGE (Grid No.2)		225 max.	Volts
D-C GRID VOLTAGE (Grid No.1)		-175 max.	Volts
D-C PLATE CURRENT		240 max.	Ma.
D-C GRID CURRENT		15 max.	Ma.
PLATE INPUT		120 max.	Watts
SCREEN INPUT		7 max.	Watts
PLATE DISSIPATION		40 max.	Watts
TYPICAL OPERATION:			
D-C Plate Voltage	500	750	Volts
D-C Screen Voltage:			
from a fixed supply of	200	200	Volts
from a series resistor of	9300	18300	Ohms
D-C Grid Voltage:			
from a fixed supply of	-45	-55	Volts
from a cathode resistor of	160	270	Ohms
from a grid resistor of **	3750	4600	Ohms
Peak R-F Grid-to-Grid Voltage	124	140	Volts
D-C Plate Current	240	160	Ma.
D-C Screen Current	32	30	Ma.
D-C Grid Current (Approx.)	12	12	Ma.
Driving Power (Approx.)	0.7	0.8	Watt
Power Output (Approx.)	83	87	Watts

* At crest of audio-frequency cycle with modulation factor of 1.0.

** The grid-circuit resistance should never exceed 15000 ohms (total) per tube, or 30000 ohms per unit. If additional bias is necessary, use a cathode resistor or a fixed supply.

\# Connected to *modulated* plate-voltage supply.

\#\# Modulation essentially negative may be used if the positive peak of the audio-frequency envelope does not exceed 115% of the carrier conditions.

INSTALLATION

The 829-B may be *mounted* by means of a special socket having floating contacts, such as the RCA

stock Nos. 9934 or 9935. No.9934 (UT-106) is made for use at frequencies below 60 Mc; No.9935 has built-in by-pass condensers for the heater and the screen and is designed for use at frequencies above 60Mc. The plate terminals take clips with flexible leads. Flexible leads are necessary so that normal expansion will not place a strain on the glass at the seals. Each lead should be connected to its clip before the clip is placed on the plate terminal. Connections should never be soldered directly to the tube terminals because the heat of soldering may crack the lead seals. The 829-B may be mounted in a vertical position with the plate terminals either up or down. It may also be mounted in a horizontal position provided the plane of each plate is vertical (on edge).

The *bulb* becomes very hot during continuous operation of the tube so that forced-air cooling is recommended. Forced-air cooling is not required for the 829-B in intermittent service where the "on" period of plate power application is ordinarily not more than five minutes, and where the "off" period is not less than the "on" period.

The *heaters* of the 829-B are connected in series within the tube. The center connection is brought out of the bulb to a separate pin terminal to permit either series operation from a 12.6-volt supply or parallel operation from a 6.3-volt supply. Either an a-c or a d-c supply may be used. Under any conditions of operation, the heater voltage should not deviate more than ±10% from the rated value.

The *cathodes* of the 829-B are connected together within the tube. The cathode circuit should be connected to the electrical mid-point of the heater circuit when the heaters are operated from an a-c supply, or to the negative heater-supply lead when the heaters are operated from a d-c source. In circuits where the cathode is not directly connected to the heater, the potential difference between them should not exceed 100 volts. If the use of a large resistor is necessary between heater and cathode in some circuits, it should be by-passed to avoid the possibility of hum.

The *plates* of the 829-B show no color when the tube is operated at its maximum plate-dissipation rating.

The *screens* of the 829-B are connected together within the tube, and they are by-passed by means of a 65 μμf condenser connected inside the tube between the screens and cathodes. Screen voltage may be obtained from a separate source, from the plate supply through a series resistor, or by means of a voltage divider. The choice of method depends on the service in which the tube is used (see APPLICATION). When the screen voltage is obtained from a separate source or from a voltage divider, plate voltage should be applied before or with the screen voltage. Otherwise, with voltage on the screens only, the screen current may rise high enough to cause excessive screen dissipation. When screen-voltage regulation is not an important factor, the series resistance method for obtaining screen voltage is desirable because of its simplicity and because it limits the d-c power input to the screen. A d-c milliammeter should be used in the screen circuit so that the screen current can be measured and the d-c power input to the screen determined. The screens should not be allowed to attain a temperature corresponding to more than a barely perceptible red color. This temperature corresponds to the screen-input values shown under CHARACTERISTICS.

The screen current is a very sensitive indication of the plate-circuit loading and the screen current rises excessively (often to the point of damaging the tube) when the amplifier is operated without load. Therefore, care should be taken when tuning an 829-B under no-load conditions in order to prevent exceeding the screen-input rating of the tube.

A *protective device*, such as a high-voltage fuse, should be used to protect both the screens and plates against overloads. When a bleeder resistor of poor regulation or a series resistor is used for obtaining the screen voltage, this device should be placed in the common high-voltage supply lead. It should remove the high-voltage supply when the d-c plate current reaches a value 50% greater than normal. When the screen voltage is obtained from a separate source or from a voltage divider of good regulation, a protective device should also be placed in the screen-supply lead. It should remove the screen voltage when the d-c screen current reaches a value 50% greater than normal.

Shielding of the r-f amplifier stage employing the 829-B is required for stable operation. A convenient method of shielding is to insert the plate end of the tube through a hole in a metal plate so that the edge of the opening is in close proximity to the internal shield of the tube. An alternative shielding and mounting arrangement is to insert the grid end of the tube through a hole in the shield and then clamp a ring or cup to the chassis so as to complete the shielding and lock the tube in the mounting.

R-f by-passing of the 829-B at its terminals is necessary in order to realize the full capabilities of the tube at the ultra-high frequencies. Conventional by-passing methods and grounding are not adequate. One convenient method of by-passing is to use ribbon heater and screen leads to the tube terminals and to insulate the leads from the external shield by means of mica spacers to form by-pass condensers right at the tube terminals. It is important that the grid-, plate-, and screen-circuit returns are made to the common cathode connection in order to avoid r-f interaction through common return circuits. It may also be advisable in some applications to supplement the action of the by-

pass condensers by r-f chokes placed close to the condensers in the voltage-supply leads.

In order that the maximum ratings given under CHARACTERISTICS are not exceeded, changes in electrode voltages due to battery- or line-voltage fluctuation, load variation, and manufacturing variation of the associated apparatus must be determined. An average value of voltage for each electrode should then be determined so that under the usual voltage variations the maximum rated voltages will not be exceeded.

When a new circuit is tried or when adjustments are made, it is advisable to reduce the plate and screen voltages. This may be done conveniently by means of a protective resistance of about 2000 ohms (total) connected in series with the screen lead and a resistance of about 2000 ohms in series with the high-voltage supply lead.

APPLICATION

In *grid-modulated class C telephone service*, the 829-B is supplied with *unmodulated* r-f grid excitation voltage and with a d-c grid bias which is modulated at audio frequencies. Grid bias should preferably be obtained from a fixed supply. The plates are supplied with unmodulated d-c voltage. The audio power required in this service is very small and need be sufficient only to meet the peak power requirement of the grids of the class C amplifier on the positive crest of the input signal. The actual peak value is generally never more than 0.15 watt. The screen voltage should be obtained from a separate source or from a voltage divider across the plate supply.

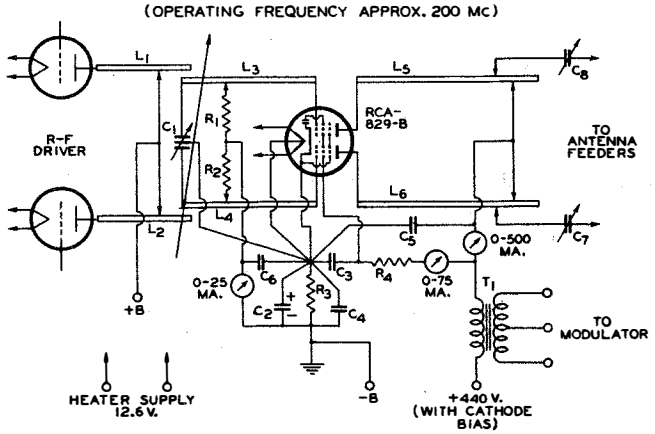
In *plate-modulated class C r-f amplifier service*, RCA-829-B can be modulated 100%. The screen voltage may be obtained from a separate source; a voltage dropping resistor in series with the *modulated* plate supply may also be used. In any case, the screen voltage must be modulated simultaneously with the plate voltage so that the ratio of screen voltage to plate voltage remains constant. Modulation of a fixed screen-voltage supply can be accomplished either by connecting the screen lead to a separate winding on the modulation transformer or by connecting it through a blocking condenser to a tap on the modulation transformer or choke. With the latter method, an a-f choke of suitable impedance for low audio frequencies should be connected in series with the screen-supply lead. Control-grid bias should be obtained from a grid resistor or from a combination of either grid resistor and fixed supply, or grid resistor and cathode bias resistor. The combination method of grid resistor and fixed supply has the advantage of not only protecting the tube from damage through loss of excitation but also of minimizing distortion effects by bias-supply compensation.

In *class C r-f telegraph service*, the 829-B may be supplied with screen voltage by any of the methods shown under INSTALLATION. When a series resistor is used, the regulation of the plate supply should be good enough so that the screen voltage will not exceed 600 volts under key-up conditions. Grid bias may be obtained by any convenient method.

RCA-829-B may be operated at maximum ratings in all classes of service at frequencies as high as 200 Mc. The tube may be operated at higher frequencies provided the maximum values of plate voltage and power input are reduced as the frequency is raised (other maximum ratings are the same as shown under CHARACTERISTICS). The tabulation below shows the highest percentage of maximum plate voltage and plate input that can be used up to 250 Mc for any class of service. Special attention should be given to shielding, cooling and r-f by-passing at these frequencies.

FREQUENCY	200	250	Mc
MAX. PERMISSIBLE PERCENTAGE of MAX. RATED PLATE VOLTAGE and PLATE INPUT:			
class C grid modulation	100	94	Per cent
class C plate modulation	100	89	Per cent
class C telegraphy	100	89	Per cent

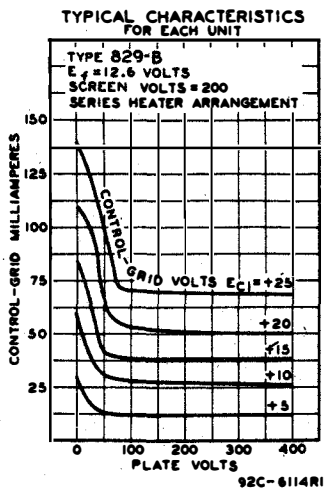
ULTRA-HIGH-FREQUENCY PLATE-MODULATED PUSH-PULL R-F POWER AMPLIFIER
(OPERATING FREQUENCY APPROX. 200 MC)

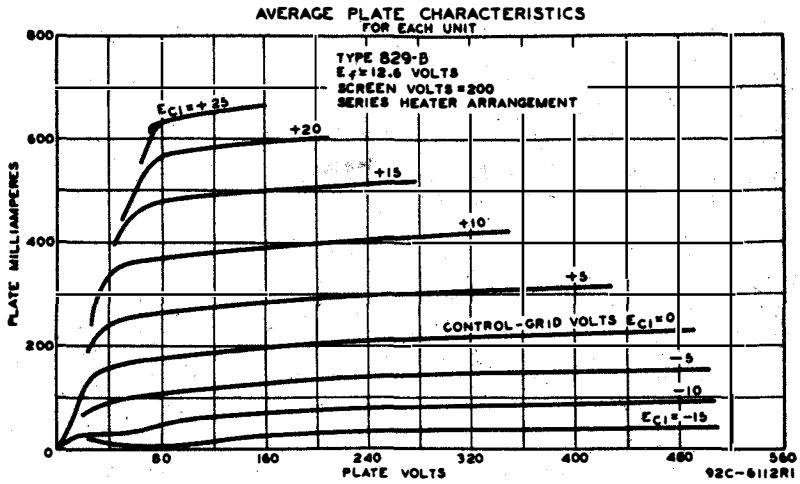


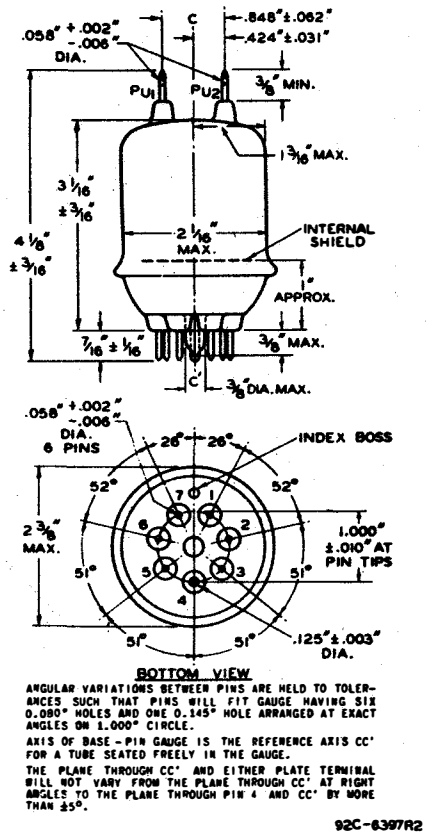
C_1 = 1.2 TO 10 μμf PER SECTION
C_2 = 25 μf, 200 VOLTS
C_3, C_4, C_5, C_6 = 500 μμf, MICA
C_7, C_8 = 3 TO 35 μμf
R_1, R_2 = 7500 TO 15000 OHMS, 1 WATT
R_3 = 60 OHMS, 10 WATTS
R_4 = 6400 OHMS, 15 WATTS
T_1 = MODULATION TRANSFORMER
L_1, L_2 = DIMENSIONS DEPENDENT ON TYPE OF DRIVER TUBE: APPROX. SAME AS L_5, L_6
L_3, L_4 = 1/4" DIA. COPPER TUBING, APPROX. 10" LONG AND SPACED APPROX. 7/8" BETWEEN CENTERS.
L_5, L_6 = 3/8" DIA. COPPER TUBING, APPROX. 7" LONG AND SPACED APPROX. 7/8" BETWEEN CENTERS

NOTE 1: ADJUST COUPLING OF L_1L_2 AND L_3L_4 FOR OPTIMUM GRID EXCITATION.

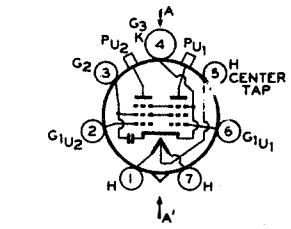
NOTE 2: GRID RESISTORS SHOULD BE ADJUSTED ON L_3L_4 AT VOLTAGE NODE.







Bottom View of Socket Connections



PLANE OF ELECTRODES OF EACH UNIT IS PARALLEL TO PLANE THROUGH AXIS OF TUBE AND AA'

Pin 1 - Heater
Pin 2 - Grid No.1 of Unit No.2
Pin 3 - Screen
Pin 4 - Cathode
Pin 5 - Heater Center Tap
Pin 6 - Grid No.1 of Unit No.1
Pin 7 - Heater
P_{U1} & P_{U2} - Plate Terminals of Units No.1 and No.2, respectively.

SECTION V

PARTS AND SPARE PARTS

TABLE I
LIST OF MAJOR UNITS
FOR MODEL TDQ TRANSMITTING EQUIPMENT

CONTRACT NXss-29644 S.O. 12182 & 12420

QUANTITY	SYMBOL GROUP	NAVY TYPE DESIGNATION	NAME OF MAJOR UNIT	ASSEMBLY DRAWING NUMBER
1	101 - 499	CRV-52328	TRANSMITTER	621296-501
	101 - 199		R-F UNIT	306569-1
	201 - 299		MODULATOR UNIT	306496-501
	301 - 399		POWER SUPPLY	306486-501
	401 - 499		CABINET	306530-501
1	501 - 599	CRV-30984	LINE TRANSFORMER	306151-501
1	601 - 699	CLS-66095	ANTENNA ASSEMBLY	611909-501

IB-38239/38333-U1

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TABLE II
PARTS LIST BY SYMBOL DESIGNATION
FOR MODEL TDQ TRANSMITTING EQUIPMENT

CONTRACT NXss-29644 S.O. 12182 & 12420

SYMBOL DESIG.	FUNCTION	DESCRIPTION	NAVY TYPE NUMBER	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
		STRUCTURAL PARTS					
*†9A-401	Shock Mount for Cabinet	Channel type, 2-1/4" wide x 4-1/2" long x 1-3/8" high			767	Type 10	881870-1
		MOTORS					
*†9B-101	Blower Motor, Tube Cooler (Part of 717770-501)	1/70 h.p., 2850 r.p.m., single phase, 110 v d.c., 60 cycles, counterclockwise rotation, with capacitor mounted on side thrust bearing to permit vertical mounting, shaft 0.3125" dia. x 15/16" long	-211237		724 246 1030		720519-1 720519-15 720519-8
*†9B-101A	Bearing for Blower Motor Assembly	Ball bearing, 0.2756" wide, 0.8661" O.D., bore 0.3150" dia., seven balls for Electrolux motor B-101, RCA Dwg. #720519-8			439	77038	885655-2
*†9B-101A	Bearing for Blower Motor Assembly	Ball bearing, 0.2756" wide, 0.8661" O.D., bore 0.3150" dia. for GE Motor B-101, RCA Dwg. #720519-15			439	7038	885824-1
*†9B-101B	R-F Suppressor Capacitor	Spare, for Motor B-101, RCA Dwg. #720519-15, fixed, oil filled, 3.75 mfd ±10%, 330 v a.c. working			246		891670-1
*†9B-101B	R-F Suppressor Capacitor	Spare, for Motor B-101, RCA Dwg. #720519-8, 3.6/4.0 mfd, 330 v a.c. working			724		891671-1
		CAPACITORS					
*†9C-101	Spark Suppressor Capacitor	Fixed, molded mica, 4700 mmfd ±10%, 500 v d.c. working	♂CM35B472K	♂C75.3-1942	1	CM35	722026-555
*†9C-102	Balancing Capacitor	Fixed, ceramic, 10 mmfd ±5%, 650 v d.c. working, low-loss case			207		97698-1
C-103	Oscillator Tuning Capacitor	Air trimmer, dual section, 100 mmfd, 12 stator and 13 rotor plates per section	-482142		121	Type ER100AD	441039-1
*†9C-103A	End Plate for C-103	Spare, ceramic or mycalex, for capacitors C-103,106, 109,11[illegible] 1-13/32" x 1-25/32" x 5/32"			121		441039-5
*†9C-104	1st Tripler Coupling Capacitor	Fixed, ceramic, 22 mmfd ±5%, 650 v d.c. working, low-loss case			207		97698-2
*†9C-105	1st Tripler Coupling Capacitor	Same as C-104					
C-106	1st Tripler Tuning Capacitor	Air trimmer, dual section, 100 mmfd, 12 stator and 13 rotor plates per section	-482142A		121	Type ER100AD	441039-2

* *EQUIPMENT SPARE PARTS FURNISHED, refer to TABLE IV, EQUIPMENT SPARES, for quantities*
† *TENDER SPARE PARTS FURNISHED, refer to TABLE IV, TENDER SPARES, for quantities*
9 *STOCK SPARE PARTS FURNISHED, refer to TABLE IV, STOCK SPARES, for quantities.*
♂ *American War Standard Type Number.*
♂ *American War Standard Specification.*

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TABLE II (Continued)
PARTS LIST BY SYMBOL DESIGNATION
FOR MODEL TDQ TRANSMITTING EQUIPMENT

SYMBOL DESIG.	FUNCTION	DESCRIPTION	NAVY TYPE NUMBER	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
		CAPACITORS (Continued)					
*†♀C-106A	End Plate(for C-106)	Same as C-103A					
*†♀C-107	2nd Tripler Coupling Capacitor	Same as C-104					
*†♀C-108	2nd Tripler Coupling Capacitor	Same as C-104					
C-109	2nd Tripler Tuning Capacitor	Air trimmer, dual section, 50 mmfd per section max., 6 stator and 7 rotor plates per section	-482143		121	Type ER50AD	441039-3
*†♀C-109A	End Plate for C-109	Same as C-103A					
*†♀C-110	R-F By-pass Capacitor	Same as C-101	♂CM35B472K				
*†♀C-111	P-A Coupling Capacitor	Same as C-102					
*†♀C-112	P-A Coupling Capacitor	Same as C-102					
C-113	P-A Tuning Capacitor	Air Trimmer, dual section, 35 mmfd per section, 7 stator and 8 rotor plates per section	-482144		121	Type EQ35AD	441039-4
*†♀C-113A	End Plate for C-113	Same as C-103A					
*†♀C-114	R-F By-pass Capacitor	Fixed, molded mica, 1000 mmfd ±10%, 500 v d.c. working	♂CM30B102K	♂C75.3-1942	793	Type CM30	722017-559
*†♀C-115	R-F By-pass Capacitor	Same as C-101	♂CM35B472K				
*†♀C-116	R-F By-pass Capacitor	Same as C-101	♂CM35B472K				
*†♀C-117	R-F By-pass Capacitor	Same as C-101	♂CM35B472K				
*†♀C-118	R-F By-pass Capacitor	Same as C-101	♂CM35B472K				
*†♀C-119	R-F By-pass Capacitor	Same as C-101	♂CM35B472K				
*†♀C-120	R-F By-pass Capacitor	Same as C-101	♂CM35B472K				
*†♀C-121	R-F By-pass Capacitor	Same as C-101	♂CM35B472K				
*†♀C-122	Oscillator Feedback Capacitor	Assembly, fixed, ceramic, 1/2" dia. x 1/2" long #6-32 threads tapped at each end, 3/16" deep, complete with two terminals			1		882827-501
*†♀C-123	R-F By-pass Capacitor	Fixed, molded mica, 1000 mmfd ±10%, 2500 v d.c. working	♂CM45A102K	♂C75.3-1942	1	CM45	722043-633
*†♀C-124	R-F By-pass Capacitor	Same as C-101	♂CM35B472K				

** EQUIPMENT SPARE PARTS FURNISHED, refer to TABLE IV, EQUIPMENT SPARES, for quantities*
† TENDER SPARE PARTS FURNISHED, refer to TABLE IV, TENDER SPARES, for quantities
♀ STOCK SPARE PARTS FURNISHED, refer to TABLE IV, STOCK SPARES, for quantities
♂ American War Standard Type Number.
ó American War Standard Specification.

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TABLE II (Continued)
PARTS LIST BY SYMBOL DESIGNATION
FOR MODEL TDQ TRANSMITTING EQUIPMENT

SYMBOL DESIG.	FUNCTION	DESCRIPTION	NAVY TYPE NUMBER	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
		CAPACITORS (Continued)					
*†♀C-125	R-F By-pass Capacitor	Same as C-101	♂CM35B472K				
*†♀C-126	R-F By-pass Capacitor	Fixed, molded mica, 0.01 mfd flash test 700 v, 60 cycles	-48231		1	Model T Special Type	32170-511
*†♀C-127	R-F By-pass Capacitor	Same as C-126	-48231				
*†♀C-128	R-F By-pass Capacitor	Same as C-101	♂CM35B472K				
*†♀C-129	Spark Suppressor Capacitor	Same as C-101	♂CM35B472K				
*†♀C-201	Audio Coupling Capacitor	Fixed, paper, 0.05 mfd ±10%, rated voltage 600 v d.c.	-481349-10	RE 13A 488	1		720555-67
*†♀C-202	Audio Coupling Capacitor	Same as C-201	-481349-10				
*†♀C-203	A-F By-pass Capacitor	Dry, electrolytic, tubular case, 75 mfd, 25 v d.c. working, max. surge voltage 40 v d.c.	-481305	RE 13A 549A	382		90556-1
*†♀C-204	Audio Coupling Capacitor	Fixed, paper, 0.1 mfd ±10%, 400 v d.c. working	-481379-10	RE 13A 488	1		720555-57
*†♀C-205	Audio Coupling Capacitor	Same as C-204	-481379-10				
*†♀C-206	Supply Voltage Filter Capacitor	Fixed, paper, oil filled, 1 mfd ±10%, 400 v d.c. working	-48595-A10	RE 13A 488	1		720555-52
*†♀C-207	A-F By-pass Capacitor	Fixed, molded mica, 4700 mmfd ±10%, 2500 v d.c. working		♂C75.3-1942	1		720567-20
*†♀C-208	Bleeder Compensating Capacitor	Same as C-206	-48595-A10				
*†♀C-209	A-F By-pass Capacitor	Fixed, oil filled, 0.5 mfd ±10%, 600 v d.c. working	-481160-10	RE 13A 488	1		720555-58
*†♀C-210	Time Delay Capacitor for K-202	Same as C-209	-481160-10				
*†♀C-211	A-F By-pass Capacitor	Fixed, molded mica, 5600 mmfd ± 10%,500 v d.c. working	♂CM35B562K	♂C75.3-1942	793	CM35	722026-557
*†♀C-212	D-C Blocking Capacitor	Same as C-206	-48595-A10				
*†♀C-213	L-V Power Supply Filter Capacitor	Fixed, oil filled, 4 mfd, -2-1/2% +10%, 500 v d.c. working	-481166	RE 13A 488	246	Cat.#26F317	856439-2
*†♀C-214	L-V Supply Filter	Same as C-213	-481166				
*†♀C-215	A-F By-pass Capacitor	Same as C-206	-48595-A10				
*†♀C-216	A-F By-pass Capacitor	Same as C-114	♂CM30B102K				
*†♀C-217	A-F By-pass Capacitor	Same as C-114	♂CM30B102K				

** EQUIPMENT SPARE PARTS FURNISHED, refer to TABLE IV, EQUIPMENT SPARES, for quantities*
† TENDER SPARE PARTS FURNISHED, refer to TABLE IV, TENDER SPARES, for quantities
♀ STOCK SPARE PARTS FURNISHED, refer to TABLE IV, STOCK SPARES, for quantities
♂ American War Standard Type Number.
ɗ American War Standard Specification.

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TABLE II (Continued)
PARTS LIST BY SYMBOL DESIGNATION
FOR MODEL TDQ TRANSMITTING EQUIPMENT

SYMBOL DESIG.	FUNCTION	DESCRIPTION	NAVY TYPE NUMBER	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
		CAPACITORS (Continued)					
*†♀C-218	A-F By-pass Capacitor	Same as C-114	♂CM30B102K				
*†♀C-219	D-C Blocking Capacitor	Same as C-201	-481349-10				
*†♀C-220A *†♀C-220B	D-C Blocking Capacitor By-pass Capacitor	Fixed, oil filled, two sections; section A 0.025 mfd, section B 0.125 mfd ±10%, 600 v d.c. working	-482137-10	RE 13A 488	1		720555-54
*†♀C-301	H-V Power Supply Filter Capacitor	Fixed, oil filled, 10 mfd, 600 v d.c. working	-481545	RE 13A 488	246	Cat.#26F547	856439-3
*†♀C-302	H-V Supply Filter	Same as C-301	-481545				
*†♀C-303	Delaying Capacitor for K-303	Fixed, dry electrolytic, 1000 mfd ±10%, 25 v d.c. working, max. surge voltage 50 v d.c., max. equivalent series resistance 1.3 ohms	-481159	RE 13A 549A	710	S8560PE	856047-1
*†♀C-304	Filter H-V Supply	Same as C-303	-481159				
*†♀C-305	Filter H-V Supply	Same as C-303	-481159				
*†♀C-306	Filter H-V Supply	Same as C-303	-481159				
		RECTIFIERS					
*†♀CR-301	Selenium Rectifier, Full Wave for 12 v Power Supply	Input 18.5 v, 60 cycles; output 12.5 v, resistance load of 1.1 amps., 3-5/8" dia. x 4-5/8" long			962	Cat.#19931	440977-1
		MISCELLANEOUS ELECTRICAL PARTS					
♀E-101	1st Tripler Plate Connector	Assembly consisting of: two straps 1/4" wide x 2-3/4" long, tube, cap and washer			1		882612-501
♀E-102	2nd Tripler Plate Connector	Assembly consisting of: two straps 1/4" wide x 1-7/8" long, tube, cap and washer			1		882612-502
♀E-103	Power Amplifier Plate Connector	Assembly consisting of: two straps 1/4" wide x 2" long, tube, cap and washer			1		882612-503
♀E-104	Tube Cap Connector for V-205, 206	Assembly consisting of: small insert AWG #30 black copper 15" long, contact for small 0.360" dia. tube cap, and small shell			787	91RL	838440-502

** EQUIPMENT SPARE PARTS FURNISHED, refer to TABLE IV, EQUIPMENT SPARES, for quantities*
† TENDER SPARE PARTS FURNISHED, refer to TABLE IV, TENDER SPARES, for quantities
♀ STOCK SPARE PARTS FURNISHED, refer to TABLE IV, STOCK SPARES, for quantities.
♂ American War Standard Type Number.

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TABLE II (Continued)
PARTS LIST BY SYMBOL DESIGNATION
FOR MODEL TDQ TRANSMITTING EQUIPMENT

SYMBOL DESIG.	FUNCTION	DESCRIPTION	NAVY TYPE NUMBER	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
		MISCELLANEOUS ELECTRICAL PARTS (Continued)					
♀E-105	Tube Cap Connector	.11/32" I.D., 3/8" wide, 27/32" long			483	#24	801165-1
*†♀E-106	Pillar Insulator	Steatite, ceramic, 1-1/4" long x 23/32" x 23/32" both ends tapped #10-32 threads	-61032	RE 13A 317F Grade G	323		823038-2
*†♀E-107	Stand-off Insulator	Ceramic, 5/8" long, 1/2" O.D., both ends tapped #6-32 threads	-61167	RE 13A 317	323		823568-2
*†♀E-108	Stand-off Insulator	Ceramic, 1/2" dia. x 3/4" long, #6-32 threads tapped hole, each end 9/32" deep	-61168	RE 13A 317	323		823568-3
*†♀E-109	Stand-off Insulator	Isolantite, 1/2" dia. x 1" long, both ends tapped #6-32 threads, 9/32" deep	-61170	RE 13A 317	323		823568-5
*†♀E-110	Stand-off Insulator (for Capacitor C-120)	Isolantite, 5/16" sq. x 1/2" long, both ends tapped #6-32 threads, 3/16" deep			323		834196-2
E-111	Stand-off Insulator	Ceramic, 1/2" dia. x 1/2" long, #6-32 tapped hole each end	-61166	RE 13A 317	323	#397	823568-1
E-112	Stand-off Insulator	Same as E-111	-61166				
E-113	Stand-off Insulator	Same as E-111	-61166				
E-114	Stand-off Insulator	Same as E-111	-61166				
E-115	Stand-off Insulator	Same as E-111	-61166				
E-116	Part of Output Coupling Loop Assembly	Insulator, molded styramic, 0.466" outside dia., 0.312" long, 0.120" dia. hole in center			1195		882472-1
*†♀E-201	Part of Modulator Terminal Board Assembly	Terminal board, mycalex, 4-1/8" long, 1-11/16" wide, 1/4" thick, four holes 0.199" dia., nine holes 0.173" dia. stenciled from #1 to #9, marked TB-I			1		882449-1
*†♀E-202	Pillar Insulator	Same as E-106	-61032				
*†♀E-203	Stand-off Insulator	Ceramic, 1/2" dia. x 11/16" long, #6-32 tapped hole each end, 1/4" deep	-61172	RE 13A 317	323	#397	823568-7
*†♀E-301	Terminal Board "C"	Mycalex, 7-3/16" long, 2-3/16" wide, 1/4" thick, four holes 0.199" dia., 30 holes 0.180" dia. stenciled from #1 to #30, marked TB-C			1		441078-1
*†♀E-302	Stand-off Insulator	Isolantite, 3/4" long, 3/8" dia., both ends tapped #6-32 threads, 9/32" deep		RE 13A 317	323		875335-1
*†♀E-601	Upper Radiator Rod Insulator	Brown molded, steatite, grade L5, center section 1-7/8" x 2-1/8" x 1/2"; upper boss 1-1/8" dia. x 1/4"; lower boss 1-1/4" dia. x 1/2"			1		883942-1

* *EQUIPMENT SPARE PARTS FURNISHED, refer to TABLE IV, EQUIPMENT SPARES, for quantities*
† *TENDER SPARE PARTS FURNISHED, refer to TABLE IV, TENDER SPARES, for quantities*
♀ *STOCK SPARE PARTS FURNISHED, refer to TABLE IV, STOCK SPARES, for quantities*

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TABLE II (Continued)
PARTS LIST BY SYMBOL DESIGNATION
FOR MODEL TDQ TRANSMITTING EQUIPMENT

SYMBOL DESIG.	FUNCTION	DESCRIPTION	NAVY TYPE NUMBER	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
		PROTECTIVE DEVICES					
*†♀F-301	Fuse for Line Power Supply	Ferrule type, non-renewable, 250 v, 3 amps., non-indicating, 9/16" dia. x 2" long			246 743 768	Cat.#GE 1454 Cat.#2001 Cat.#25003	59075-10
F-301A	Replacement Link (for F-301)	Same as F-301			837	Cat.#1103	
*†♀F-302	Fuse for Line Power Supply	Same as F-301					
F-302A	Replacement Link (for F-302)	Same as F-301					
*†♀F-303	Fuse for Line Power Supply	Ferrule type, non-renewable, 250 v, 15 amps., non-indicating, 9/16" dia. x 2" long			246 743 768	Cat.#GE 1463 Cat.#2007 Cat.#25015	59075-3
F-303A	Replacement Link (for F-303)	Same as F-303			837	Cat.#1115	
*†♀F-304	Fuse for Line Power Supply	Same as F-303					
F-304A	Replacement Link (for F-304)	Same as F-303					
*†♀F-305	Fuse (for T-303)	Cartridge type, fibre body, 1 amp., 1000 v, 13/32" dia x 3" long			784	Cat.#2104	98578-6
F-305A	Spare Fuse (for T-303)	Same as F-305					
*†♀F-401	Fuse for Generator Power Supply	Same as F-301					
*†♀F-402	Fuse for Generator Power Supply	Same as F-301					
		INDICATING DEVICES					
*†♀I-301	Indicator Lamp	Assembly, 1-1/8" dia. x 2-31/32" long, consisting of socket and red lens			780	Type LT 9337-SA	882411-501
*†♀I-301A	Indicator Lamp	Candelabra screw base, 115 v, 6 watts, 3/4" dia. x 1-7/8" long	-TS37		670	Stock 17L 3914-100	881393-1
*†♀I-302	Indicator Lamp	Assembly 1-1/8" dia. x 2-31/32" long, consisting of socket and green lens			780	Type LT 9337-SA	882411-502
*†♀I-302A	Indicator Lamp	Same as I-301A	-TS37				
*†♀I-303	Indicator Lamp	Assembly 1-1/8" dia. x 2-31/32" long, consisting of socket and yellow lens			780	Type LT 9337-SA	882411-503
*†♀I-303A	Indicator Lamp	Same as I-301A	-TS37				

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** EQUIPMENT SPARE PARTS FURNISHED, refer to TABLE IV, EQUIPMENT SPARES, for quantities*
† TENDER SPARE PARTS FURNISHED, refer to TABLE IV, TENDER SPARES, for quantities
♀ STOCK SPARE PARTS FURNISHED, refer to TABLE IV, STOCK SPARES, for quantities

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TABLE II (Continued)
PARTS LIST BY SYMBOL DESIGNATION
FOR MODEL TDQ TRANSMITTING EQUIPMENT

SYMBOL DESIG.	FUNCTION	DESCRIPTION	NAVY TYPE NUMBER	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
		JACKS AND RECEPTACLES					
*†♀J-201	Microphone Jack (Part of E-205)	Two spring, three circuit, 15/16" x 3/4" x 1-7/32"	-49039	U.S. Army JK 34A	382 786		868986-1
*†♀J-202	Headphone Jack (Part of E-205)	Single spring, open circuit, 15/16" x 3/4" x 1.28763"	-49025A	U.S. Army JK 34A	382 786		868986-2
		RELAYS & CONTACTS					
K-101	Antenna Relay	Assembly consisting of: rotary switch assembly, gear segment assembly, and solenoid, to operate from 102 to 127 v			1		722241-501
*†♀K-101A	Rotary Antenna Switch	Assembly consisting of: cast aluminum body, two steel ball bearings, three contact assemblies, pinion and stop arm assembly, and a rotor assembly			1		621258-501
♀ K-101B	Coil and Plunger Assembly (Part of K-101)	Solenoid, coil (K-101F) wound for 115 v, 50-60 cycles			246	#4382679AB475 CR-9503-208D	882152-1
*†♀K-101C	Spring for Antenna Switch (Part of K-101)	0.035" dia. music wire approx. eight turns, 15/64" I.D., 3/4" free length, bright nickel finish			1		882961-1
*†♀K-101D	Spring for Antenna Switch	0.051" dia. music wire, 9/16" I.D., approx. 3-1/4 turns, 17/32" free length, bright nickel finish			1		882176-1
*†♀K-101E	Contact Assembly (Part of K-101)	Consisting of: natural molded bakelite BM-262 insulator, 0.446" dia. x 0.312" long, with spring contact thru center			1		881876-501
*†♀K-101F	Coil (For Antenna Switching Relay K-101)	115 v, 50-60 cycles, flexible leads 7" long, 2-13/16" x 2-1/8" x 1-13/16"			246		882152-2
♀ K-201	Keying Relay Coil	2000 ohms, 17,300 turns AWG #38 EC wire, three platinum-iridium contacts, heavy duty bearings, 2-1/2" x 2-3/8" x 1-3/16" overall dim.			713	Type G A11996	881753-1
*†♀K-201A	Coil (for Relay K-201)	2000 ohms, 17,300 turns AWG #38 EC wire			713	Type G A11996	881753-3
*†♀K-201B	Contact (for Relay K-201)	Form A #18 platinum-iridium			713	Type G A11996	881753-2

* *EQUIPMENT SPARE PARTS FURNISHED, refer to TABLE IV, EQUIPMENT SPARES, for quantities*
† *TENDER SPARE PARTS FURNISHED, refer to TABLE IV, TENDER SPARES, for quantities*
♀ *STOCK SPARE PARTS FURNISHED, refer to TABLE IV, STOCK SPARES, for quantities*

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TABLE II (Continued)
PARTS LIST BY SYMBOL DESIGNATION
FOR MODEL TDQ TRANSMITTING EQUIPMENT

SYMBOL DESIG.	FUNCTION	DESCRIPTION	NAVY TYPE NUMBER	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
		RELAYS & CONTACTS (Continued)					
♀ K-202	Code Phone Relay Coil	3000 ohms, 28,600 turns AWG #38 EC wire, three platinum-iridium contacts, close less than 6.5 ma, open between 2.5 and 3.5 ma, 4" x 2-5/8" x 1-1/4" overall dim.			713	Type G A13763	881727-1
*†♀K-202A	Coil (for Relay K-202)	3000 ohms, 28,600 turns AWG #38 EC wire			713	Type G A13763	881727-3
*†♀K-202B	Contact (for Relay (K-202)	Form A #18 platinum-iridium			713	Type G A13763	881727-2
♀K-301	Master Control Relay Coil	6 v/a, 60 v a.c., 1/4" dia., silver contacts, 4P.S.T., normally open, 3-1/8" x 3-1/8" x 1-1/2" overall dim.			355		882741-1
*†♀K-301A	Coil (for Relay K-301)	6 v/a, 60 v a.c.			355	#372	822741-2
*†♀K-301B	Contacts (for Relay K-301)	Fixed and movable, 1/4" dia., pure silver			355		882741-3
♀K-302	Carrier Control Relay	Two single-pole normally open, one S.P.D.T.; S.P.D.T. contact closes before the two S.P. contacts close and opens after the two S.P. contacts open; coil for operation on 12 v d.c., 3-1/4" x 2-3/4" x 1-5/16" overall dim., pure silver contacts			355	Cat.#2023MXF	882676-1
*♀ K-302A	Coil (for Relay K-302)	Operates on 12 v d.c.			355		882676-2
*♀ K-302B	Contacts (for Relay K-302)	Fixed and movable, pure silver			355		882676-3
♀K-303	Overload Relay	Manual reset, D.P.S.T., normally closed, 1/4" dia. silver contacts 250 to 500 ma, coil resistance 46 ohms ±10%, rheostat resistance 50 ohms ±10%, total 4 watts			820	#700A	422579-1
*†♀K-303A	Coil (for Overload Relay K-303)	Resistance 46 ohms ±10%			820		422579-6
*†♀K-303B	Contacts (for Overload Relay K-303)	Fixed and movable, 1/4" dia., silver, 250 to 500 ma			820		422579-7

** EQUIPMENT SPARE PARTS FURNISHED, refer to TABLE IV, EQUIPMENT SPARES, for quantities*
† TENDER SPARE PARTS FURNISHED, refer to TABLE IV, TENDER SPARES, for quantities
♀ STOCK SPARE PARTS FURNISHED, refer to TABLE IV, STOCK SPARES, for quantities

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TABLE II (Continued)
PARTS LIST BY SYMBOL DESIGNATION
FOR MODEL TDQ TRANSMITTING EQUIPMENT

SYMBOL DESIG.	FUNCTION	DESCRIPTION	NAVY TYPE NUMBER	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
		INDUCTANCES					
†♀L-101	Oscillator Tank Inductance Coil	Assembly consisting of: 13 turns AWG #18 DC wire, mid-tapped and wound on steatite ceramic coil form, 1" O.D. x 1/8" wall x 1-7/8" long, complete with two terminals			1		441092-501
†♀L-102	1st Tripler Tank Coil	Assembly consisting of: 4 turns 0.081" dia. copper wire, mid-tapped, 1-1/8" O.D., complete with three terminals			1		882492-501
†♀L-103	2nd Tripler Tank Coil	Loop, 1/16" thick copper, "U" shaped, 1-1/8" wide x 2-13/16" long			1		882613-1
†♀L-104	Power Amplifier Tank Line Inductance	Assembly consisting of: one brass bar 3/8" x 1/2" x 2-1/8", two connector assemblies and two seamless brass tubes 3/8" O.D., x 0.045" wall, 4-1/8" long			1		441089-501
†♀L-105	Antenna Coupling Adjustable Inductance	Assembly consisting of: bronze body, brass gear, molded styramic insulator, brass bushing, copper loop, brass collar, brass shaft and brass pinion			1		427503-501
L-106	Coil (Part of Z-101)	12 turns AWG #28 DC wire wound over R-119			1		882400-3
L-107	Coil (Part of Z-102)	12 turns AWG #28 DC wire wound over R-104			1		882400-3
L-108	Coil (Part of Z-103)	12 turns AWG #28 DC wire wound over R-112			1		882400-3
L-109	Coil (Part of Z-104)	25 turns AWG #28 DC wire wound over R-115			1		882400-9
*†♀L-201	Power Supply Filter Choke	Iron core, 3300 turns AWG #31 E wire, tapped at 330 turns, d-c resistance 238 ohms, hi-pot 1500 v, total impedance at 3 v, 60 cycles a.c. and 0.150 amps. d.c. 3200 ohms min.			1	XT-3098	900904-501
*†♀L-202	Power Supply Filter Choke	Same as L-201					
*†♀L-203	Audio Coupling Interstage Reactor	10,000 turns AWG #37 E wire, mid-tapped, d-c resistance 1800 ohms, hi-pot 2000 v, min. impedance at 3 v, 60 cycles a.c. and 0 amps. 125,000 ohms +25% -10%	-30471		1	XT-2987	900548-501
*†♀L-301	High Voltage Supply Filter Choke	Iron core, 1520 turns AWG #22 E wire, d-c resistance 21.2 ohms, hi-pot 3000 v, impedance at 30 v, 60 cycles d.c. and 0.550 amp. 1210 ohms			1	XT-3984	901361-501
*†♀L-302	High Voltage Supply Filter Choke	Same as L-301					

** EQUIPMENT SPARE PARTS FURNISHED, refer to TABLE IV, EQUIPMENT SPARES, for quantities*
† TENDER SPARE PARTS FURNISHED, refer to TABLE IV, TENDER SPARES, for quantities
♀ STOCK SPARE PARTS FURNISHED, refer to TABLE IV, STOCK SPARES, for quantities

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TABLE II (Continued)
PARTS LIST BY SYMBOL DESIGNATION
FOR MODEL TDQ TRANSMITTING EQUIPMENT

SYMBOL DESIG.	FUNCTION	DESCRIPTION	NAVY TYPE NUMBER	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
		INDUCTANCES (Continued)					
†♀L-303	Filter Choke	12 v supply reactor, pack, iron core, 125 turns AWG #16 E wire, d-c resistance 0.34 ohms, hi-pot voltage 1500 v; impedance at 3 v, 60 cycles a.c., 0.5 amp. d.c. shall be 30 ohms each reactor			1		901691-501
		ELECTRICAL MEASURING INSTRUMENTS					
♀M-101	Plate Current Milliammeter	D-C milliammeter, 0-300 ma d-c scale, flush mounting panel type, 2-1/2" round phenolic case, calibrated for use on non-magnetic panel	♂MR25W300 DCMA	♂C39.2-1943	246		426702-129
♀M-102	P.A. Grid Current Milliammeter	D-C milliammeter, 0-20 ma, d-c scale, flush mounting panel type, 2-1/2" phenolic case, calibrated for use on non-magnetic panel	♂MR25W020 DCMA	♂C39.2-1943	246		426702-94
♀M-201	Power Level Output Meter	Db meter, output scale −10/0/+6 db, 6mw, 600 ohms, medium speed, flush mounting panel type, 2-1/2" round phenolic case, calibrated for non-magnetic panel	♂MR25W123 SPEC	♂C39.2-1943	246		426725-4
		MAGNETIC CONTROLLERS					
†♀MC-701A	Shunt Coil	115 v, 1500 ohms, 17,000 turns AWG #33 E wire			246	Dwg.#22D11G-143	892319-1
†♀MC-701B	Shunt Coil	230 v, 6400 ohms, 34,000 turns AWG #36 E wire			246	Dwg.#22D11G-144	892319-2
†♀MC-701C	Tip	Main stationary contact			246	Dwg.#2840261-G7	892319-3
†♀MC-701D	Tip	Main movable contact			246	Dwg.#2840261-G1	892319-4
†♀MC-701E	Spring	Main contact			246	Dwg.#2412681	892319-5
†♀MC-701F	Internal Tip	Interlock, stationary contact, normally open			246	Dwg.#3614137-G1	892319-6

♂ American War Standard Type Number.
♂ American War Standard Specification.
** EQUIPMENT SPARE PARTS FURNISHED, refer to TABLE IV, EQUIPMENT SPARES, for quantities.*
† TENDER SPARE PARTS FURNISHED, refer to TABLE IV, TENDER SPARES, for quantities.
♀ STOCK SPARE PARTS FURNISHED, refer to TABLE IV, STOCK SPARES, for quantities.

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TABLE II (Continued)
PARTS LIST BY SYMBOL DESIGNATION
FOR MODEL TDQ TRANSMITTING EQUIPMENT

SYMBOL DESIG.	FUNCTION	DESCRIPTION	NAVY TYPE NUMBER	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
		MAGNETIC CONTROLLERS (Continued)					
†♀MC-701G	Internal Tip	Interlock, stationary contact, normally closed			246	Dwg.#3805671-G2	892319-7
†♀MC-701H	Internal Tip	Interlock, movable contact			246	Dwg.#3667572-G1	892319-8
†♀MC-701I	Spring	Interlock			246	Dwg.#2411917	892319-9
†♀MC-701J	Spring	Operating			246	Dwg.#235184	892319-10
†♀MC-701K	Shunt Coil	115 v, 750 ohms, 6890 turns AWG #34 E wire			246	Dwg.#22D13-G4	892319-11
†♀MC-701L	Shunt Coil	230 v, 2800 ohms, 13,140 turns AWG #36 E wire			246	Dwg.#22D13-G2	892319-12
*♀MC-701P	Spring	Main contact			246	Dwg.#2414612	882731-16
†♀MC-701T	Resistor Unit	Starting resistor assembly, total resistance 15.4 ohms, center tap			246	Dwg.#CR9033-A15 4Y16B-1/2	892319-13
†♀MC-701U	Set of Gaskets				246	Dwg.#8627593-P2	892319-14
†♀MC-701V	Control fuse	10 amps. at 250 v			246	Dwg.#GE-3169	892319-15
		MOTOR GENERATORS					
†♀MG-801A	Complete Armature	115 v			246	Dwg.#5870351-AA1	892318-1
†♀MG-801B	Complete Armature	230 v			246	Dwg.#8160994-AA1	892318-2
†♀MG-801C	Set of Generator Field Coils	115 v, 60 cycles			246	Dwg.#5870110-AA1	891949-1
†♀MG-801D	Set of Motor Field Coils	115 v d.c.			246	Dwg.#5870107-AA1	891949-2
†♀MG-801E	Set of Motor Field Coils	230 v d.c.			246	Dwg.#8167501-AA1	891949-3

† *TENDER SPARE PARTS FURNISHED, refer to TABLE IV, TENDER SPARES, for quantities.*
♀ *STOCK SPARE PARTS FURNISHED, refer to TABLE IV, STOCK SPARES, for quantities.*

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TABLE II (Continued)
PARTS LIST BY SYMBOL DESIGNATION
FOR MODEL TDQ TRANSMITTING EQUIPMENT

SYMBOL DESIG.	FUNCTION	DESCRIPTION	NAVY TYPE NUMBER	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
		MOTOR GENERATORS (Continued)					
†♀MG-801F	Part of Motor Generator Assembly	Ball bearings			246	Dwg.#5859520-AB2	892318-6
†♀MG-801G	Part of Generator Commutator Contact Assembly	Brush, spare part and terminal			246	Dwg.#8104791-AA6	892318-7
†♀MG-801H	Part of Collector Contact Assembly	Brush, spare part and terminal			246	Dwg.#5869390-AD4	892318-8
†♀MG-801I	Part of Motor Commutator Contact Assembly	Brush, spare part and terminal			246	Dwg.#8100097-AA13	892318-9
†♀MG-801J	Part of Motor Collector Contact Assembly	Brush, spare part and terminal			246	Dwg.#586334A-AF6	892318-10
†♀MG-801K	Part of Generator Commutator Contact Assembly	Brush, tube and insulation			246	Dwg.#8104789-AC1	892318-11
†♀MG-801L	Part of Generator Collector Brush Assembly	Brush, tube and insulation			246	Dwg.#5869388-AD7	892318-12
†♀MG-801M	Part of Generator Commutator Contact Assembly	Brush, tube and insulation			246	Dwg.#8100089-AA7	892318-13
†♀MG-801N	Part of Motor Mechanical Brush Assembly	Tube, insulation and clip assembly			246	Dwg.#8160071-AA1	892318-14
†♀MG-801O	Part of Generator Commutator Brush Assembly	Insulated screw cap			246	Dwg.#5898031-AA2	892318-15
†♀MG-801P	Part of Motor Mechanical Brush Assembly	Insulated screw cap			246	Dwg.#5863338-AB2	892318-16
†♀MG-801Q	Part of Generator Mechanical Brush Assembly	Insulated screw cap			246	Dwg.#5895854-AA3	892318-17
†♀MG-801R	Part of Motor Regulator Assembly	Pin			246	Dwg.#5863714-AA11	892318-18
†♀MG-801S	Part of Motor Regulator Assembly	Adjusting screw			246	Dwg.#8109770-AA1	892318-19
†♀MG-801T	Part of Motor Regulator Assembly	Contact and screw assembly			246	Dwg.#8128844-AAP1	892318-20

† *TENDER SPARE PARTS FURNISHED, refer to TABLE IV, TENDER SPARES, for quantities.*
♀ *STOCK SPARE PARTS FURNISHED, refer to TABLE IV, STOCK SPARES, for quantities.*

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TABLE II (Continued)
PARTS LIST BY SYMBOL DESIGNATION
FOR MODEL TDQ TRANSMITTING EQUIPMENT

SYMBOL DESIG.	FUNCTION	DESCRIPTION	NAVY TYPE NUMBER	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
		MOTOR GENERATORS (Continued)					
†♀MG-801U	Part of D-C Generator Voltage Control	Resistor assembly, globar, 130 ohms, Type B			246	Dwg.#8127261-AA2	892318-21
†♀MG-801V	Frequency Control, 115 V	Resistor Dividohm, 200 ohms			246	Dwg.#5895465-AB18	892318-22
†♀MG-801W	Frequency Control 230 V	Resistor, Dividohm, 800 ohms			246	Dwg.#5895465-AB17	892318-23
†♀MG-801X	Voltage Control	Resistor, Dividohm, 25 ohms			246	Dwg.#5895465-AB10	892318-24
†♀MG-801Y	Part of Frequency Control Circuit, 115 V	Resistor, special, 7.5 ohms			246	Dwg.#8124682-AA6	892318-25
†♀MG-801Z	Part of Frequency Control Circuit, 230 V	Resistor, special, 7.5 ohms			246	Dwg.#8124682-AA10	892318-26
†♀MG-801AA	Part of Voltage Regulator	Assembly of regulator rotating elements			246	Dwg.#8109968-AC3	892318-27
†♀MG-801AB	By-pass Capacitors	Assembly consisting of Cornell-Dubilier capacitor, Cat.#3WPS, 0.005 mfd, 1000 v			246	Dwg.#8106433-AK1	892318-28
†♀MG-801AC	Part of Frequency Control	Capacitor, 10 mfd			246	Dwg.#8128988-AA1	892318-29
†♀MG-801AD	Part of Frequency Control	Capacitor, 5 mfd			246	Dwg.#8167010-AA1	892318-30
†♀MG-801AE	Motor Commutator Filter	Capacitor, 1 mfd			246	Dwg.#8127047-AA3	892318-31
†♀MG-801AF	Washer	Spring			246	Dwg.#5859260-AA1	892318-32
†♀MG-801AG	Switch	Overload			246	Dwg.#5845495-AA3	892318-33
†♀MG-801AH	Gasket	Rubber cover			246	Dwg.#5895117-AB3	892318-34
†♀MG-801AI	Gasket	Copper, retainer, motor			246	Dwg.#8128089-AA1	892318-35

† *TENDER SPARE PARTS FURNISHED, refer to TABLE IV, TENDER SPARES, for quantities.*
♀ *STOCK SPARE PARTS FURNISHED, refer to TABLE IV, STOCK SPARES, for quantities.*

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TABLE II (Continued)
PARTS LIST BY SYMBOL DESIGNATION
FOR MODEL TDQ TRANSMITTING EQUIPMENT

SYMBOL DESIG.	FUNCTION	DESCRIPTION	NAVY TYPE NUMBER	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
		MOTOR GENERATORS (Continued)					
†♀MG-801AJ	Gasket	Neoprene, terminal box			246	#8132049-AB1	892318-36
*♀MG-801AL	Gasket	Copper, retainer, generator			246	#8128089-AD1	892318-37
		MICROPHONE					
MI-201	Microphone	2-1/8" dia. case, 1-5/16" thick, with flexible 2 conductor cord 48" long and plug			983 1073 1259	Dwg.#20N46 Dwg.#SA1395 RS38A	882704-1
		DIALS					
†♀N-101	Tuning Dial for 1st Tripler, 2nd Tripler Antenna and Power Amplifier	Dial assembly, 2.437" wide x 2 437" long x 2.247" thick, graduated from 0 to 100, complete with cast aluminum cover assembly, base assembly, black molded knob assembly 1-1/8" dia. x 13/32" thick and gear assembly			1		440994-501
†♀N-101A	Gear Assembly (for N-101)	Consisting of: phosphor bronze internal gear, O.D. 2.062", I.D. 1.223", pitch dia. 1.250", diametral pitch 48, 14-1/2° involute, 60 teeth, and dial assembly including dial 2.000" dia. with brass shaft 1-1/2" long			1		440991-501
N-101B	Gear Part of Dial Assembly	Internal, phosphor bronze, O.D. 2.062", I.D. 1.223", pitch dia. 1.250", whole depth 0.038" diametral pitch 48, tooth form 14-1/2° involute, number of teeth 60			1		881764-1
N-101C	Gear Part of Dial Assembly	Stainless steel, O.D. 0.3542", pitch dia. 0.3125", diametral pitch 48, tooth form 14-1/2° involute, number of teeth 15, length including shaft 0.984"			1		881766-1
N-102	Oscillator Tuning Dial	Dial assembly consisting of: cover assembly, base assembly, knob assembly and gear assembly			1		440994-502
N-102A	Gear Assembly (for N-102)	Consisting of: phosphor bronze internal gear, O.D. 2.062", I.D. 1.223", pitch dia. 1.250", diametral pitch 48, 60 teeth and dial assembly including dial 2.000" dia. with brass shaft 1-3/8" long			1		440991-502

† *TENDER SPARE PARTS FURNISHED, refer to TABLE IV, TENDER SPARES, for quantities*
♀ *STOCK SPARE PARTS FURNISHED, refer to TABLE IV. STOCK SPARES, for quantities*

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TABLE II (Continued)
PARTS LIST BY SYMBOL DESIGNATION
FOR MODEL TDQ TRANSMITTING EQUIPMENT

SYMBOL DESIG.	FUNCTION	DESCRIPTION	NAVY TYPE NUMBER	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
		MISCELLANEOUS MECHANICAL PARTS					
†♀O-101	Air Duct for Cooling Tubes	Assembly consisting of: polystyrene air duct and polystyrene cap 1-1/4" O.D. x 1.130" I.D. x 3-11/32" long			1		882665-501
†♀O-102	Air Duct for Cooling Tubes	Right angle air duct assembly consisting of: polystyrene air duct and polystyrene cap, elbow shaped, 1" O.D. x 7/8" I.D. x 9-21/32" long			1		882667-501
*†♀O-103	Blower Boot	Army khaki, 2-9/32" I.D. one end, 2-21/32" I.D. other end, 2-1/8" long		29-1045	789		882683-1
O-104	Not Used						
*†♀O-105	Catch (for X-102,103,104)	0.091" dia. steel wire, "U" shaped, 3/8" wide x 2-1/4" long, light zinc plate			1		881996-2
*†♀O-106	Tube, Clamp Spring (for X-102, 103,104)	Coil spring, 9 turns of 0.032" music wire, 1/4" O.D. x 1-1/4" long			1		861610-2
†♀O-107	Coupling (for C-103,106,109,113)	Slide acting, square, 1-3/64" from corner to corner x 7/8" thick			1146	Cat.#39006	882786-1
†♀O-108	Pinion Gear for Antenna Coupling	Brass, 0.2502" I.D., 0.500" pitch dia., diametral pitch 48, 24 teeth, 1/8" tooth face, 1/4" x 3/8" collar, #4-40 tap in side			1		882642-2
†♀O-109	Pinion Gear for Antenna Coupling	Brass, 0.2502" I.D., 0.500" pitch dia., 48 diametral pitch, 24 teeth, 3/16" tooth face, 1/4" x 1/8" collar, #4-40 tap in side			1		882642-1
*†♀O-110	Tube Clamp (for V-102,103)	Assembly, 2-7/16" O.D. x 2-13/64" I.D. x 23/32" thick, brass ring and asbestos liner, with two 11/16" x 5/16" clips			1		441055-501
*†♀O-110A	Capacitor Mounting	Bushing, brass, 0.281" O.D. x 0.099" I.D. x 5/16" long			1		885826-1
*†♀O-111	Tube Clamp (for V-104)	Assembly, 2-7/16" O.D. x 2-13/64" I.D. x 27/32" thick, brass ring and asbestos liner, with two 11/16" x 5/16" clips			1		441055-502
*†♀O-111A	Capacitor Mounting	Same as O-110A					

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* *EQUIPMENT SPARE PARTS FURNISHED, refer to TABLE IV, EQUIPMENT SPARES, for quantities*
† *TENDER SPARE PARTS FURNISHED, refer to TABLE IV, TENDER SPARES, for quantities*
♀ *STOCK SPARE PARTS FURNISHED, refer to TABLE IV, STOCK SPARES, for quantities*

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TABLE II (Continued)
PARTS LIST BY SYMBOL DESIGNATION
FOR MODEL TDQ TRANSMITTING EQUIPMENT

SYMBOL DESIG.	FUNCTION	DESCRIPTION	NAVY TYPE NUMBER	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
		MISCELLANEOUS MECHANICAL PARTS (Continued)					
*†♀O-112	Tube Mounting Clamp (for V-101)	Lock-non-lock type, stainless steel, 1-3/8" I.D. x 2" O.D., with mounting bracket			961	Type 926C	882941-1
†♀O-113	Part of Variable Capacitor Tuning Assembly	Universal joint, duralumin, 1/2" O.D. x 0.251" I.D. one end, 1/2" O.D. x 0.251" I.D. other end, 1-1/8" long			86	Type T42	868655-3
O-114	Part of Output Coupling Loop Assembly	Pinion, brass, pitch dia. 0.687", number of teeth 22, diametral pitch 32, tooth form 14-1/2° involute, O.D. 0.750", 7/16" wide, 0.2500" I.D. overall			1		882489-1
O-115	Part of Output Coupling Loop Assembly	Gear, brass, pitch dia. 1.375" tooth form 14-1/2° involute, diametral pitch 32, number of teeth 44, length 0.796" 1.437" O.D. overall			1		882474-1
*†♀O-201	Tube Mounting Clamp	Same as O-112					
*†♀O-202	Tube Mounting Clamp (for V-207, 208)	For tube mounting, lock-non-lock type, stainless steel 1-1/4" I.D. x 1-7/8" O.D., with mounting bracket			961		882941-2
*†♀O-301	Tube Mounting Clamp	Same as O-112					
*†♀O-601	Mounting Gasket for Transmission Line Connector Plug P-601	Ankoprene, 1/32" thick, durometer 40-50, 1" square, 5/8" I.D., four 0.147" dia. holes at corners		6850-CI	1		883934-1
*†♀O-602	Mounting Gasket for Antenna Support Tube End Cover	Gasket, neoprene, 1/32" thick, durometer 40-50, 2-15/64" O.D., 1-3/4" I.D.			1		883936-1
*†♀O-603	Upper Radiator Rod Mounting Gasket	Ankoprene 1/32" thick, durometer 40-50, 1" O.D., 17/32" I.D.		6850-CI	1		883937-1
*†♀O-604	Upper Radiator Rod Insulator Mounting Gasket	Neoprene, 1/32" thick, durometer 40-50, 1-7/8" x 2-1/8", 1-1/4" I.D., four 0.203" dia. holes at corners			1		883941-1
		PLUGS					
*†♀P-101	Multiple Receptacle, Terminal Board G-1	Plug connector, 1-7/8" x 3-9/16" x 1-3/8" female assembly, 12 contacts, terminal numbers from 1 to 12 stamped on both sides	-49466	#28589	352	28589	427607-2
*†♀P-102	Multiple Receptacle, Terminal Board G-2	Same as P-101	-49466				

** EQUIPMENT SPARE PARTS FURNISHED, refer to TABLE IV, EQUIPMENT SPARES, for quantities*
† TENDER SPARE PARTS FURNISHED, refer to TABLE IV, TENDER SPARES, for quantities
♀ STOCK SPARE PARTS FURNISHED, refer to TABLE IV, STOCK SPARES, for quantities

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TABLE II (Continued)
PARTS LIST BY SYMBOL DESIGNATION
FOR MODEL TDQ TRANSMITTING EQUIPMENT

SYMBOL DESIG.	FUNCTION	DESCRIPTION	NAVY TYPE NUMBER	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
		PLUGS (Continued)					
*†♀P-201	Multiple Receptacle, Terminal Board E-1	Same as P-101	-49466				
*†♀P-202	Multiple Receptacle, Terminal Board E-2	Same as P-101	-49466				
*†♀P-301	Multiple Receptacle, Terminal Board D-1	Same as P-101	-49466				
*†♀P-302	Multiple Receptacle, Terminal Board D-2	Same as P-101	-49466				
*†♀P-303	Multiple Receptacle, Terminal Board D-3	Same as P-101	-49466				
*†♀P-304	Multiple Receptacle, Terminal Board D-4	Same as P-101	-49466				
*†♀P-401	Multiple Connector, Terminal Board G-1	Plug connector, male assembly, 1-7/8" x 3-9/16" x 2-3/32", 12 contacts, terminal numbers from 1 to 12 stamped on both sides	-49465		352	#28590	427607-1
*†♀P-402	Multiple Connector, Terminal Board G-2	Same as P-401	-49465				
*†♀P-403	Multiple Connector, Terminal Board E-1	Same as P-401	-49465				
*†♀P-404	Multiple Connector, Terminal Board E-2	Same as P-401	-49465				
*†♀P-405	Multiple Connector, Terminal Board D-1	Same as P-401	-49465				
*†♀P-406	Multiple Connector, Terminal Board D-2	Same as P-401	-49465				
*†♀P-407	Multiple Connector, Terminal Board D-3	Same as P-401	-49465				
*†♀P-408	Multiple Connector, Terminal Board D-4	Same as P-401	-49465				
*†♀P-601	Transmission Line Connector Plug	Connector, 5/8" dia. x 1-1/64" long, complete with mounting plate 0.075" thick x 1" square	-49269	RE 49F 188	902		883935-1

** EQUIPMENT SPARE PARTS FURNISHED, refer to TABLE IV, EQUIPMENT SPARES, for quantities*
† TENDER SPARE PARTS FURNISHED, refer to TABLE IV, TENDER SPARES, for quantities
♀ STOCK SPARE PARTS FURNISHED, refer to TABLE IV, STOCK SPARES, for quantities

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TABLE II (Continued)
PARTS LIST BY SYMBOL DESIGNATION
FOR MODEL TDQ TRANSMITTING EQUIPMENT

SYMBOL DESIG.	FUNCTION	DESCRIPTION	NAVY TYPE NUMBER	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
		RESISTORS					
*†♀R-101	Crystal Oven Heater	Assembly consisting of: 85 turns AWG #34 E wire wound on bakelite varnished form 0.010" x 1-1/2" x 13-3/8"; d-c resistance 662 ohms ±2%			1		427541-501
*†♀R-102	Grid Leak Resistor for V-101	Fixed, composition, 47,000 ohms ±10%, 1 watt, insulated, pigtail type terminals	♂RC31BE473K (-63288)	♁C75.7-1943	321	BT-1	722337-82
*†♀R-103	Screen Voltage Dropping Resistor for V-101	Fixed, composition, 27,000 ohms ±10%, 1 watt, insulated, pigtail type terminals	♂RC31BE273K (-63288)	♁C75.7-1943	321	BT-1	722337-79
*†♀R-104	Resistor (Part of Z-102)	Fixed, 1800 ohms ±10%, 1 watt, insulated	♂RC31BE182K		321	BT-1	722337-65
*†♀R-105	Grid Leak Resistor for V-102	Fixed, composition, 27,000 ohms ±10%, 2 watts, insulated, pigtail type terminals	♂RC41BE273K (-63474)	♁C75.7-1943	321	BT-2	722357-79
*†♀R-106	Grid Leak Resistor for V-102	Same as R-105	♂RC41BE273K (-63474)				
*†♀R-107	Grid Leak Resistor for V-103	Fixed, composition, 27,000 ohms ±10%, 4 watts, pigtail type terminals	♂RC65CE273K	♁C75.7-1943	321	BT-4	722365-79
*†♀R-108	Grid Leak Resistor for V-103	Same as R-107	♂RC65CE273K				
*†♀R-109	Cathode Bias Resistor for V-102	Fixed, wire wound, ferrule type, 500 ohms, 10 watts, grade 1, class 1, style F	-63005F	RE 13A 372	590		620340-816
*†♀R-110	Cathode Bias Resistor for V-103	Same as R-109	-63005F				
*†♀R-111	Screen Voltage Dropping Resistor for V-103	Fixed, composition, 10,000 ohms ±10%, 1 watt, insulated, pigtail type terminals	♂RC31BE103K (-63288)	♁C75.7-1943	321	BT-1	722337-74
*†♀R-112	Resistor (Part of Z-103)	Fixed, composition, 3300 ohms ±10%, 1 watt, insulated	♂RC31BE332K		321	BT-1	722337-68
*†♀R-113	Grid Leak Resistor for V-104	Fixed, composition, insulated, 10,000 ohms ±10%, 2 watts, wire leads	♂RC41BE103K (-63474)	♁C75.7-1943	321	BT-2	722357-74
*†♀R-114	Grid Leak Resistor for V-104	Same as R-113	♂RC41BE103K (-63474)				
*†♀R-115	Resistor (Part of Z-104)	Fixed, composition, 100 ohms ±10%, 1 watt, insulated	♂RC31BE101K		207, 321		722337-50
*†♀R-116	Screen Voltage Dropping Resistor for V-104	Fixed, wire wound, ferrule type, 10,000 ohms, grade 1, class 1, style D	-63090F	RE 13A 372	590		620340-567

** EQUIPMENT SPARE PARTS FURNISHED, refer to TABLE IV, EQUIPMENT SPARES, for quantities*
† TENDER SPARE PARTS FURNISHED, refer to TABLE IV, TENDER SPARES, for quantities
♀ STOCK SPARE PARTS FURNISHED, refer to TABLE IV, STOCK SPARES, for quantities.
♂ American War Standard Type Number.
♁ American War Standard Specification.

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TABLE II (Continued)
PARTS LIST BY SYMBOL DESIGNATION
FOR MODEL TOQ TRANSMITTING EQUIPMENT

SYMBOL DESIG.	FUNCTION	DESCRIPTION	NAVY TYPE NUMBER	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
		RESISTORS (Continued)					
*†♀R-117	Screen Voltage Dropping Resistor for V-102	Fixed, composition, 8200 ohms ±10%, 2 watts, insulated pigtail type terminals	♂RC41BE822K (-63474)	♂C75.7-1943	321	BT-2	722357-73
*†♀R-118	Cathode Bias Resistor for V-101	Fixed, composition, 100 ohms ±10%, 1 watt, insulated, pigtail type terminals	♂RC31BE101K (-63288)	♂C75.7-1943	321	BT-1	722337-50
*†♀R-119	Resistor (Part of Z-101)	Fixed, composition, 100 ohms ±10%, 1 watt, insulated	♂RC31BE101K		321	BT-1	722337-50
*†♀R-120	Plate Decoupling Resistor for V-101	Fixed, wire wound, ferrule type, 2000 ohms, grade 1, class 1, style E	-63752F	RE 13A 372	590		620340-694
*†♀R-201	Grid Leak Resistor for V-208	Fixed, composition, 1.0 megohm ±10%, 1 watt, insulated, pigtail type terminals	♂RC31BE105K (-63288)	♂C75.7-1943	321	BT-1	722337-98
*†♀R-202	Cathode Bias Resistor for V-208	Fixed, composition, 22,000 ohms ±10%, 2 watts, insulated, pigtail type terminals	♂RC41BE223K (-63474)	♂C75.7-1943	321	BT-2	722357-78
*†♀R-203	Phase Balancing Resistor	Fixed, composition, 270 ohms ±10%, 1/2 watt, insulated, pigtail type terminals	♂RC21BE271K (-63360)	♂C75.7-1943	321	BT-1/2	722322-55
*†♀R-204	Phase Balancing Resistor	Same as R-203	♂RC21BE271K (-63360)				
*†♀R-205	Grid Isolating Resistor	Fixed, composition, 12,000 ohms ±10%, 1 watt, insulated, pigtail type terminals	♂RC31BE123K (-63288)	♂C75.7-1943	321	BT-1	722337-75
*†♀R-206	Grid Resistor for V-201	Fixed, composition, 12,000 ohms ±10%, 1/2 watt, insulated, pigtail type terminals	♂RC21BE123K (-63360)	♂C75.7-1943	321	BT-1/2	722322-75
*†♀R-207	Grid Resistor for V-202	Same as R-206	♂RC21BE123K (-63360)				
*†♀R-208	Grid Isolating Resistor	Same as R-205	♂RC31BE123K (-63288)				
*†♀R-209	Audio Gain Control Potentiometer	1-5/8" dia., 100 ohms, shaft stainless steel, 25/32" long. 0.248" dia., screwdriver slotted			382	M100P	864708-1
*†♀R-210	Bleeder Resistor for V-201,202	Ceramic, 100 ohms, 3 watts	-631940		711	Type A	881734-1
*†♀R-211	Screen Bleeder Resistor for V-201	Same as R-117	♂RC41BE822K (-63474)				
*†♀R-212	Part of Bleeder Resistor for V-201	Same as R-105	♂RC41BE273K (-63474)				
*†♀R-213	Audio Feedback Resistor for V-201	Fixed, composition, 0.82 megohm ±10%, 1/2 watt, insulated, pigtail type terminals	♂RC21BE824K (-63360)	♂C75.7-1943	321	BT-1/2	722322-97

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† TENDER SPARE PARTS FURNISHED, refer to TABLE IV, TENDER SPARES, for quantities
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♂ American War Standard Type Number.
♂ American War Standard Specification.

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TABLE 11 (Continued)
PARTS LIST BY SYMBOL DESIGNATION
FOR MODEL TDQ TRANSMITTING EQUIPMENT

SYMBOL DESIG.	FUNCTION	DESCRIPTION	NAVY TYPE NUMBER	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
		RESISTORS (Continued)					
*†♀R-214	Audio Feedback Resistor for V-202	Same as R-213	♂RC21BE824K (-63360)				
*†♀R-215	Grid Load Resistor for V-203	Fixed, composition, 0.12 megohm ±10%, 1 watt, insulated, pigtail type terminals	♂RC31BE124K (-63288)	♂C75.7-1943	321	BT-1	722337-87
*†♀R-216	Grid Load Resistor for V-204	Same as R-215	♂RC31BE124K (-63288)				
*†♀R-217	Audio Bias Bleeder Resistor for V-203,204	Fixed, composition, 2200 ohms ±10%, 1/2 watt, insulated, pigtail type terminals	♂RC21BE222K (-63360)	♂C75.7-1943	321	BT-1/2	722322-66
*†♀R-218	Audio Bias Bleeder Resistor for V-203,204	Fixed, composition, 3300 ohms ±10%, 1/2 watt, insulated, pigtail type terminals	♂RC21BE332K (-63360)	♂C75.7-1943	321	BT-1/2	722322-68
*†♀R-219	Voltage Dropping Resistor	Fixed, composition, 180 ohms ±10%, 2 watts, insulated, pigtail type terminals	♂RC41BE181K (-63474)	♂C75.7-1943	321	BT-2	722357-53
*†♀R-220	Voltage Dropping Resistor	Fixed, composition, 47,000 ohms ±10%, 4 watts, pigtail type terminals	♂RC65CE473K	♂C75.7-1943	321	BT-4	722365-82
*†♀R-221	Voltage Dropping Resistor	Same as R-220	♂RC65CE473K				
*†♀R-222	Voltage Dropping Resistor	Fixed, composition, 39,000 ohms ±10%, 1 watt, insulated, pigtail type terminals	♂RC31BE393K (-63288)	♂C75.7-1943	321	BT-1	722337-81
*†♀R-223	Voltage Dropping Resistor	Same as R-205	♂RC31BE123K (-63288)				
*†♀R-224	Cathode Bias Resistor for V-207	Fixed, composition, 0.10 megohm ±10%, 1 watt, insulated, pigtail type terminals	♂RC31BE104K	♂C75.7-1943	321	BT-1	722337-86
*†♀R-224	Cathode Bias Resistor for V-207	Fixed, composition, 68,000 ohms ±10%. 1 watt, insulated	-63288		321	BT-1	844314-84
*†♀R-225	Limiter Load Resistor for V-207	Fixed, composition, insulated, 470,000 ohms ±10%, 1/2 watt, wire leads	♂RC21BE474K (-63360)	♂C75.7-1943	321	BT-1/2	722322-94
*†♀R-226	Time Delay Resistor for K-202	Fixed, composition insulated, 1 megohm ±10%, 1/2 watt, wire leads	♂RC21BE105K (-63360)	♂C75.7-1943	321	BT-1/2	722322-98
*†♀R-227	Grid Leak Bias Resistor for V-208	Fixed, composition, insulated, 56,000 ohms ±10%, 1/2 watt, wire leads	♂RC21BE563K (-63360)	♂C75.7-1943	321	BT-1/2	722322-83
*†♀R-228	Audio Voltage Dropping Resistor for T-204	Same as R-217	♂RC21BE222K (-63360)				
*†♀R-229	MCW Modulation Level Control Potentiometer	1-5/8" dia., 10,000 ohms, shaft stainless steel, 25/32" long, 0.248" dia. screwdriver slotted	-631937		382	Type M10MP	864708-2

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** EQUIPMENT SPARE PARTS FURNISHED, refer to TABLE IV, EQUIPMENT SPARES, for quantities*
† TENDER SPARE PARTS FURNISHED, refer to TABLE IV, TENDER SPARES, for quantities
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♂ American War Standard Type Number.
ó American War Standard Specification.

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TABLE II (Continued)
PARTS LIST BY SYMBOL DESIGNATION
FOR MODEL TDQ TRANSMITTING EQUIPMENT

SYMBOL DESIG.	FUNCTION	DESCRIPTION	NAVY TYPE NUMBER	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
		RESISTORS (Continued)					
*†♀R-230	Audio Voltage Dropping Resistor for T-204	Same as R-217	♂RC21BE222K (-63360)				
*†♀R-231	Power Supply Bleeder Resistor	Fixed, wire wound, ferrule type, 2500 ohms, grade 1, class 1, style D	-63080F	RE 13A 372	590		620340-548
*†♀R-232	Power Supply Bleeder Resistor	Same as R-231	-63080F				
*†♀R-233	Power Supply Bleeder Resistor	Fixed, wire wound, ferrule type, 250 ohms ±5%, grade 1 class 1, style F	-63338F	RE 13A 372	590	Suffix "F"	620340-806
*†♀R-234	Headset, Volume "L" Pad Attenuator	1-19/32" dia., L-ladder pad, 600 ohms, shaft stainless steel, 29/32" long x 1/4" dia.	-631939		382		421058-2
*†♀R-235	Voltage Dropping Resistor	Same as R-231	-63080F				
*†♀R-236	Voltage Dropping Resistor	Fixed, wire wound, ferrule type, 5000 ohms, grade 1, class 1, style D	-63085F	RE 13A 372	590		620340-558
*†♀R-237	Audio Feedback Bleeder Resistor	Fixed, composition, insulated, 82,000 ohms ±10%, 1/2 watt, wire leads	♂RC21BE823K (-63360)	♂C75.7-1943	321	BT-1/2	722322-85
*†♀R-238	Cathode Bias Resistor for V-208	Fixed, composition, 5600 ohms ±10%, 2 watts, insulated, pigtail type terminals	♂RC41BE562K (-63474)	♂C75.7-1943	321	BT-2	722357-71
*†♀R-239	Part of Bleeder Resistor for V-201	Same as R-105	♂RC41BE273K (-63474)				
*†♀R-240	Modified Meter Adjustment Potentiometer	1-5/8" dia., 3000 ohms, shaft stainless steel, 25/32" long, 0.248" dia., screwdriver slotted	-631938		382	Type M3MP	864708-4
*†♀R-241	Modified Meter Adjustment Potentiometer	Same as R-240	-631938				
*†♀R-242	Headphone Circuit Isolating Resistor	Fixed, composition, 560 ohms ±10%, 1/2 watt, insulated, pigtail type terminals	♂RC21BE561K (-63360)	♂C75.7-1943	321	BT-1/2	722322-59
*†♀R-243	Voltage Dropping Resistor	Same as R-220	♂RC65CE473K				

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♀ STOCK SPARE PARTS FURNISHED, refer to TABLE IV, STOCK SPARES, for quantities
♂ American War Standard Type Number.
ó American War Standard Specification.

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TABLE II (Continued)
PARTS LIST BY SYMBOL DESIGNATION
FOR MODEL TDQ TRANSMITTING EQUIPMENT

SYMBOL DESIG.	FUNCTION	DESCRIPTION	NAVY TYPE NUMBER	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
		RESISTORS (Continued)					
*†‡R-301	L-V Power Supply Bleeder Resistor	Composition, non-insulated, 68,000 ohms ±10%, 5 watts	♂RC76CE683K	♂C75.7-1943	321	BT-5	722375-84
*‡R-301	L-V Power Supply Bleeder Resistor	Fixed, 75,000 ohms ±10%, 5 watts			738	D5-ST2A	875231-8
*†‡R-302	Cathode Overbias Resistor, Tune-operate Circuit	Fixed, wire wound, ferrule type, 800 ohms, grade 1, class 1, style D	-63074F	RE 13A 372	590		620340-528
*†‡R-303	Overload Adjusting Rheostat (Part of K-303)	For overload relay, 50 ohms ±10%			820		422579-8
*†‡R-304	Voltage Dropping Resistor, Terminal Board C	Fixed, wire wound, ferrule type, 300 ohms, grade 1, class 1, style F	-63398F	RE 13A 372	590		620340-808
*†‡R-305	Voltage Dropping Resistor (for K-301)	Fixed, wire wound, ferrule type, 500 ohms, grade 1, class 1, style F	-63070F	RE 13A 372	590		620340-516
*†‡R-306	Voltage Dropping Resistor, Terminal Board C	Fixed, wire wound, ferrule type, 1000 ohms ±5%, grade 1, class 1, style D	-63076F	RE 13A 372	590		620340-531
*†‡R-307	Voltage Dropping Resistor, Terminal Board C	Same as R-231	-63080F				
*†‡R-308	Bleeder, 12 V Power Supply	Resistor, fixed, wire wound, ferrule type, 50 ohms, grade 1, class 1, style F	-63371F	RE 13A 372	590		620340-785
*†‡R-309	Voltage Dropping Resistor, Terminal Board C	Same as R-305	-63070F				
*†‡R-310	Cathode Bias (for V-104)	Resistor, fixed, composition, 82 ohms ±10%, 2 watts, insulated, large	♂RC41BE820K	♂C75.7-1943	321	BT-2	722357-49
*†‡R-311	Cathode Bias (for V-104)	Same as R-310	♂RC41BE820K				
		SWITCHES					
*†‡S-101	Normal Temperature Thermostat Switch for Crystal Oven	Thermostat temperature adjustment, 2-3/8" x 0.375" dia., 70° C., rated 110 v, 30 watts, 60 cycles			757	S1-1	884773-4
*†‡S-102	Crystal Selector Switch	Rotary, wafer type, front rotor, insulated from back rotor, contacts to be silver-plated, shaft 0.250" dia. x 15/16" long		RE 13A 317G	717		441076-1
*†‡S-103	Circuit Selector Switch (for Meter M-101)	Same as S-102					
*†‡S-104	Over Temperature Thermostat for Crystal Oven	Temperature adjustment, 2-3/8" x 0.375" dia., 80° C., rated 110 v, 30 watts, 60 cycles			757	S1-1	884773-3

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‡ STOCK SPARE PARTS FURNISHED, refer to TABLE IV, STOCK SPARES, for quantities
♂ American War Standard Type Number.
♂ American War Standard Specification.

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TABLE II (Continued)
PARTS LIST BY SYMBOL DESIGNATION
FOR MODEL TDQ TRANSMITTING EQUIPMENT

SYMBOL DESIG.	FUNCTION	DESCRIPTION	NAVY TYPE NUMBER	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
		SWITCHES (Continued)					
*†♀S-201	Test Key	Switch, cam lever, four sections; section A single pole, make, locking; section B no-contact springs, locking; section C single pole, make, non-locking; section D no-contact springs, non-locking; 5/8" x 1-5/16" x 4-1/16"	-24276		759		420973-6
*†♀S-201A	Contacts (for S-201)	Spare contact assembly, four sections; section A single pole, make, locking; section B no-contact springs, locking; section C single pole, make, non-locking; section D no-contact springs, non-locking			759		420973-26
*†♀S-301	Emergency Stop Switch	Switch, push-button, back connected, 20 amps., 125 v, 1-21/32" x 1-17/32" x 2-11/16"			47	Type 3948	882641-1
*†♀S-302	Crystal Heater Switch	Toggle, 30 amps., 250 v, 1-15/16" x 2-3/8" x 2-11/32", for metal panel mounting			853	Cat. #7475C	818231-2
*†♀S-303	Remote Local Switch	Cam lever, four sections; section A: double pole, break, locking; section B: double pole, break, locking; section C: double pole, break, no-throw; section D: S.P.D.T., single pole break, no-throw; contact rating 2 amps., 110 v, d.c. or 10 amps., 110 v a.c., 1-1/4" x 1-3/4" x 5-7/16"	-24277		753		427520-1
*†♀S-303A	Contacts (for S-303)	Contact assembly, spare, four sections; section A: double pole, break, locking; section B: double pole, break, locking; section C: double pole, break, no-throw; section D: S.P.D.T., single pole, break, no-throw; contact rating 2 amps., 110 v d.c. or 10 amps., 110 v a.c.			753		427520-21
*†♀S-304	Tune-Operate Switch	Same as S-302					
*†♀S-305	Start Switch	Momentary contact, single circuit, contacts normally open, green button, 1-11/16" x 1-3/16" x 2-5/8"			591	Cat. #KB1-G201	842822-2
*†♀S-306	Stop Switch	Momentary contact, single circuit, contacts normally open, red button, 1-11/16" x 1-3/16" x 2-5/8"			591	Type KB1	842822-6
*†♀S-307	Start-Stop Switch	Same as S-302					
		TRANSFORMERS					
T-201	Not Used						
*†♀T-202	Driver Transformer	Iron core, consisting of: mid-tapped primary and two mid-tapped secondaries; primary: 4400 turns AWG #36 E wire, 622 ohms d-c resistance; secondary #1: 1260 turns AWG #36 E wire, 124 ohms d-c resistance; secondary #2: 1260 turns AWG #36 E wire, 230 ohms d-c resistance; hi-pot 1500 v; primary impedance at 30 v, 60 cycles a.c. and 0 amp. d.c. shall be 35,000 ohms min.; additive polarity			1	XT-4355	901652-501

** EQUIPMENT SPARE PARTS FURNISHED, refer to TABLE IV, EQUIPMENT SPARES, for quantities*
† TENDER SPARE PARTS FURNISHED, refer to TABLE IV, TENDER SPARES, for quantities
♀ STOCK SPARE PARTS FURNISHED, refer to TABLE IV, STOCK SPARES, for quantities

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TABLE II (Continued)
PARTS LIST BY SYMBOL DESIGNATION
FOR MODEL TDQ TRANSMITTING EQUIPMENT

SYMBOL DESIG.	FUNCTION	DESCRIPTION	NAVY TYPE NUMBER	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
		TRANSFORMERS (Continued)					
*†‡T-203	Modulation Transformer	Audio, iron core, consisting of: primary and secondary; primary wound over secondary 1610 turns of AWG #27 E wire tapped at 805 turns, d-c resistance 68 ohms; secondary 1110 turns of AWG #25 E wire wound over tube, d-c resistance 23.5 ohms; hi-pot voltage 3500 v a.c. r-m-s; secondary impedance at 30 v 60 cycles a.c. and 0.250 amp. d.c. shall be 1100 ohms min.; additive polarity			1	XT-3098	900716-501
*†‡T-204	Oscillator Transformer	Audio, primary: 4700-1/2 turns AWG #36 E wire, d-c resistance 600 ohms; secondary #1: 750 turns AWG #36 E wire, d-c resistance 127 ohms, wound over primary; secondary #2: 600 turns AWG #36 E wire, d-c resistance 109 ohms; hi-pot 1500 v wound over secondary #1; additive polarity			1	XT-2982	900546-501
*†‡T-205	Microphone Transformer	Audio, iron core, consisting of: two primaries and two secondaries; primary #1: 150 turns AWG #25 E wire, 1.41 ohms d-c resistance; secondary #1: 840 turns AWG #31 E wire tapped at 330 turns, 43 ohms d-c resistance; secondary #2: same as secondary #1 except reverse wound; primary #2: 150 turns AWG #25 E wire 2.42 ohms d-c resistance; hi-pot 1500 v a.c.; primary impedance at 3 v, 60 cycles, and 0.050 amps. d.c. shall be 150 ohms	-30763		1	XT-3370	900816-501
*†‡T-206	Low-Voltage Plate Transformer	Power, iron core, consisting of: two primaries, plate and filament; primary #1: 288 turns AWG #21 E wire tapped at 23 and 46 turns, 2.31 ohms d-c resistance, no-load voltage 115/230 v 50 to 60 cycles, full-load voltage 115/230 v 50 to 60 cycles, rated current 0.75 amps; primary #2: 265 turns AWG #24 E wire, 4.90 ohms resistance, no-load voltage, full-load voltage and rated current same as primary #1; plate: 2080 turns AWG #29 E wire tapped at 1040 turns, 142 ohms d-c resistance, no-load voltage 900 v ±27 v, full-load voltage 870/435 v, rated current 0.135 amps. d.c.; filament 12-1/2 turns AWG #16 E wire, no-load voltage 5.4 v ±0.16 v, full-load voltage 5.2 v; rated current 2.0 amps.; hi-pot voltage all sections 1500 v; additive polarity			1	XT-4358	901642-501

* *EQUIPMENT SPARE PARTS FURNISHED, refer to TABLE IV, EQUIPMENT SPARES, for quantities*
† *TENDER SPARE PARTS FURNISHED, refer to TABLE IV, TENDER SPARES, for quantities*
‡ *STOCK SPARE PARTS FURNISHED, refer to TABLE IV, STOCK SPARES, for quantities*

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TABLE II (Continued)
PARTS LIST BY SYMBOL DESIGNATION
FOR MODEL TDQ TRANSMITTING EQUIPMENT

SYMBOL DESIG.	FUNCTION	DESCRIPTION	NAVY TYPE NUMBER	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
		TRANSFORMERS (Continued)					
*†‡T-301	Filament Transformer	Iron core, consisting of: two primaries and three filaments; primary #1: 254 turns AWG #20 E wire tapped at 20 and 40 turns, 1.82 ohms d-c resistance, no-load voltage 115/230 v, 50 to 60 cycles, full-load voltage 115/230 v, 50 to 60 cycles, rated current 0.97 amps., hi-pot 1500 v; primary #2: 234 turns AWG #22 E wire, 3.08 ohms d-c resistance, no-load voltage, full-load voltage, rated current, hi-pot, same as primary #1; filament #1: 27 turns AWG #14 E wire tapped at 13-1/2 turns, no-load voltage 13.3 v ±0.4 v, full-load voltage 12.8/6.4 v, rated current 3.38 amps., hi-pot 2500 v; filament #2: 14 turns AWG #13 E wire, no-load voltage 6.90 v ±0.2 v, full-load voltage 6.5 v, rated current 5.1 amps., hi-pot 2500 v; filament #3: 11 turns AWG #12 E wire, no-load voltage 5.40 v ±0.16 v, full-load voltage 5.2 v, rated current 6 amps., hi-pot 2500 v			1	XT-4359	901648-501
*†‡T-302	12 Volts Power Supply Transformer	Iron core, consisting of: two primaries and one secondary; primary #1: 456 turns AWG #25 E wire tapped at 36 and 73 turns, 7.24 ohms d-c resistance, no-load voltage 115 v, 50 to 60 cycles, full-load voltage 115 v, 50 to 60 cycles, rated amps. 0.362 amps., hi-pot 2500 v; primary #2: 420 turns AWG #28 E wire, 15.2 ohms d-c resistance; no-load voltage, full-load voltage, rated current and hi-pot same as primary #1; secondary: 76 turns AWG #16 E wire tapped at 65 and 70 turns, 0.192 ohms d-c resistance, no-load voltage 20.8 v ±0.62 v, full-load voltage 20.0 v, rated amps. 1.75 amps., hi-pot 2500 v, additive polarity			1	XT-4356	901647-501
†‡T-303	High-Voltage Plate Transformer	Iron core, consisting of: two primaries and one secondary winding; primary #1: 192 turns AWG #15 E wire tapped at 15 and 31 turns 0.499 ohms d-c resistance, no-load voltage 115 v, 50 to 60 cycles, full-load voltage 115 v, 50 to 60 cycles, rated amps. 3.6 amps., hi-pot 1500 v; primary #2: 177 turns AWG #18 E wire, 1.073 ohms resistance; no-load voltage, full-load voltage, rated amps., hi-pot same as primary #1; secondary: 1880 turns AWG #24 E wire tapped at 940 turns, 54.8 ohms d-c resistance, no-load voltage 1220 v ±0.37 v, full-load voltage 1170/585 v, rated amps. 0.60 d.c., hi-pot 3500 v, additive polarity			1	XT-4357	901645-501

* *EQUIPMENT SPARE PARTS FURNISHED, refer to TABLE IV, EQUIPMENT SPARES, for quantities*
† *TENDER SPARE PARTS FURNISHED, refer to TABLE IV, TENDER SPARES, for quantities*
‡ *STOCK SPARE PARTS FURNISHED, refer to TABLE IV, STOCK SPARES, for quantities*

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TABLE II (Continued)
PARTS LIST BY SYMBOL DESIGNATION
FOR MODEL TDQ TRANSMITTING EQUIPMENT

SYMBOL DESIG.	FUNCTION	DESCRIPTION	NAVY TYPE NUMBER	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
		TRANSFORMERS (Continued)					
*†♀T-304	Isolation Transformer	Iron core, consisting of: two primaries and one secondary; primary #1: 600 turns AWG #25 E wire, 8.75 ohms d-c resistance, no-load voltage 115/230 v, 50 to 60 cycles, full-load voltage 115/230 v, 50 to 60 cycles, rated amps. 0.39 amps., hi-pot 2500 v; primary #2: 600 turns 0.0126" dia. E wire, 21.1 ohms d-c resistance; no-load voltage, full-load voltage, rated amps., hi-pot same as primary #1; secondary: 646 turns AWG #26 E wire, 16.5 ohms d-c resistance, no-load voltage 124 v ±3.7 v, full-load voltage 115 v, rated amps. 0.304 amps., hi-pot 2500 v, additive polarity			1	XT-4365	901651-501
†♀T-501	Line Power Transformer 220/440 v A.C. Operation Only	Iron core, two primaries and one secondary; primary #1: 154 turns AWG #17 E wire, 1.01 ohms d-c resistance, hi-pot 3000 v; primary #2: 154 turns AWG #17 E wire, 1.14 ohms d-c resistance, hi-pot 3000 v; secondary: 89 turns 0.080 x 1.00 DCC wire tapped at 74 and 81 turns, hi-pot 4000 v; additive polarity			1	XT-4270	901571-502
		VACUUM TUBES					
* V-101	R-F Oscillator	Vacuum tube, transmitting beam power amplifier, micanol, medium 5 pin base, small metal cap, heater 0.9 amp. at 6.3 v a.c. or d.c.	JAN-807		1	807	
* V-102	Power Amplifier	Vacuum tube, push-pull, r-f beam power, heater 1.125 amps. at 2.6 v a.c. or d.c.	JAN-829/829I		1	829	
* V-103	Power Amplifier	Same as V-102	JAN-829/829I				
* V-104	Power Amplifier	Same as V-102	JAN-829/829I				
* V-201	Input Audio Amplifier	Vacuum tube, triple grid, super control, small wafer, octal 8 pin base, heater 0.3 amp. at 6.3 v a.c. or d.c.	JAN-6SK7		1	6SK7	
* V-202	Input Audio Amplifier	Same as V-201	JAN-6SK7				
* V-203	Audio Amplifier	Vacuum tube detector amplifier, triode single-ended metal type, small wafer, octal 6 pin base, heater 6.3 v a.c. or d.c. at 0.3 amp.	JAN-6J5		516	6J5	
* V-204	Audio Amplifier	Same as V-203	JAN-6J5				

** EQUIPMENT SPARE PARTS FURNISHED, refer to TABLE IV, EQUIPMENT SPARES, for quantities*
† TENDER SPARE PARTS FURNISHED, refer to TABLE IV, TENDER SPARES, for quantities
♀ STOCK SPARE PARTS FURNISHED, refer to TABLE IV, STOCK SPARES, for quantities

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TABLE II (Continued)
PARTS LIST BY SYMBOL DESIGNATION
FOR MODEL TDQ TRANSMITTING EQUIPMENT

SYMBOL DESIG.	FUNCTION	DESCRIPTION	NAVY TYPE NUMBER	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
		VACUUM TUBES (Continued)					
*V-205	Modulator	Same as V-101	JAN-807				
*V-206	Modulator	Same as V-101	JAN-807				
*V-207	Volume Limiter	Vacuum tube, full-wave rectifier, intermediate shell, octal 6 pin, heater 6.3 v a.c. or d.c. at 0.6 amp.	JAN-6X5-GT/G		516	6X5-GT	
*V-208	Audio Oscillator and Carrier Control Unit	Vacuum tube, twin triode amplifier, intermediate shell, octal 8 pin base, heater 6.3 v a.c. or d.c. at 0.6 amp.	JAN-6SN7-GT		516	6SN7-GT	
*V-209	L-V Supply Rectifier	Vacuum tube, full-wave high-vacuum rectifier, medium shell, octal 5 pin, micanol base, heater 2.0 amps. at 5.0 v a.c. or d.c.	JAN-5R4-GY		1	5R4-GY	
*V-301	H-V Supply Rectifier	Same as V-209	JAN-5R4-GY				
*V-302	H-V Supply Rectifier	Same as V-209	JAN-5R4-GY				
*V-303	H-V Supply Rectifier	Same as V-209	JAN-5R4-GY				
		CABLES					
*†♀W-101	R-F Conductor from K-101 to Receiver	Cable assembly consisting of: 9-1/2" long coaxial cable, complete with plug assembly and jack assembly	-RG-8/U	JAN-C-17	1		722281-501
W-101A	Coaxial Transmission Line Connector Assembly	Jack assembly 1" sq. x 1-31/32" long, complete with mounting plate, AN type UG-22/U	-49269	RE 49F 188	114		427555-1
W-101B	Plug for Transmission Cable	Plug assembly, brass, silver plated, consisting of: body adapter, two nuts and sleeve 3/4" dia. x 1-13/16" long, complete with insulator and gasket	-UG-21/U	RE 49F 188A	114		438109-501
*†♀W-102	R-F Conductor from K-101 to L-105	Cable assembly consisting of: 13-1/2" coaxial cable complete with two plug assemblies	-RG-8/U	JAN-C-17	1		722281-502
W-102A	Plug for Transmission Cable	Same as W-101B					
W-102B	Plug for Transmission Cable	Same as W-101B					
*♀W-103	R-F Conductor	Cable assembly consisting of: 9-7/8" long coaxial cable, complete with two plug assemblies	-RG-8/U	JAN-C-17	1		722281-504
*†♀W-104	Interconnection Test Cable	Cable assembly consisting of: 12 conductor cable 98" long, 12 connector male plug one end, 12 connector female plug other end, complete with two plug holders 4" x 2-11/32" x 2-3/8"			1		717781-501

** EQUIPMENT SPARE PARTS FURNISHED, refer to TABLE IV, EQUIPMENT SPARES, for quantities*
† TENDER SPARE PARTS FURNISHED, refer to TABLE IV, TENDER SPARES, for quantities
♀ STOCK SPARE PARTS FURNISHED, refer to TABLE IV, STOCK SPARES, for quantities

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TABLE II (Continued)
PARTS LIST BY SYMBOL DESIGNATION
FOR MODEL TDQ TRANSMITTING EQUIPMENT

SYMBOL DESIG.	FUNCTION	DESCRIPTION	NAVY TYPE NUMBER	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
		SOCKETS					
*†‡X-101	Socket for V-101	Tube, 5 contacts, steatite ceramic, 2-5/16" x 1-11/16" x 9/16" base, contacts phosphor bronze, silver plated	-49363	RE 13A 524 Grade G	331		856997-2
*†‡X-102	Socket for V-102	2-5/8" x 2-5/8" x 9/16", steatite ceramic, 7 phosphor bronze contacts, silver plated	-49389	RE 13A 524 Grade G	331		418355-1
*†‡X-103	Socket for V-103	Same as X-102	-49389				
*†‡X-104	Socket for V-104	Tube 2-3/4" x 2-3/4" x 2-3/16", 5 contacts, contacts to be beryllium copper, silver plated	-49385	Special UT-107	1		882738-1
*†‡X-105	Socket for Control Crystal	Socket, 5/16" x 13/16" x 11/16" crystal, 2 contacts			11	9816	882708-1
*†‡X-106	Socket for Control Crystal	Same as X-105					
*†‡X-107	Socket for Control Crystal	Same as X-105					
*†‡X-108	Socket for Control Crystal	Same as X-105					
*†‡X-201	Socket for V-201	Socket tube assembly 1-3/8" x 2-5/32" x 7/8" consisting of: aluminum adapter plate socket, octal, and steel retaining ring, amphenol #4	-49373	RE 13A 317F	30	RSS-8M	856868-505
*†‡X-202	Socket for V-202	Same as X-201	-49373				
*†‡X-203	Socket for V-203	Same as X-201	-49373				
*†‡X-204	Socket for V-204	Same as X-201	-49373				
*†‡X-205	Socket for V-205	Same as X-101	-49363				
*†‡X-206	Socket for V-206	Same as X-101	-49363				
*†‡X-207	Socket for V-207	Same as X-201	-49373				
*†‡X-208	Socket for V-208	Same as X-201	-49373				
X-209	Socket for V-209	Tube assembly consisting of: octal socket with steatite base, aluminum adapter plate and retaining ring	-49373	RE 13A 317F	30	RSS-8M	856868-506
*†‡X-301	Socket for V-301	Tube, 2-5/16" x 1-11/16" x 9/16", steatite ceramic base, 8 contacts, phosphor bronze, silver plated	-49367	RE 13A 524 Grade G	331		856997-6
*†‡X-302	Socket for V-302	Same as X-301	-49367				
*†‡X-303	Socket for V-303	Same as X-301	-49367				

* *EQUIPMENT SPARE PARTS FURNISHED, refer to TABLE IV, EQUIPMENT SPARES, for quantities*
† *TENDER SPARE PARTS FURNISHED, refer to TABLE IV, TENDER SPARES, for quantities*
‡ *STOCK SPARE PARTS FURNISHED, refer to TABLE IV, STOCK SPARES, for quantities*

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TABLE II (Continued)
PARTS LIST BY SYMBOL DESIGNATION
FOR MODEL TDQ TRANSMITTING EQUIPMENT

SYMBOL DESIG.	FUNCTION	DESCRIPTION	NAVY TYPE NUMBER	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
		FILTERS					
*♀Z-101	Parasitic Suppressor	Assembly consisting of: 12 turns AWG #28 DC wire (L-106) wound over R-119			1		882400-501
*♀Z-102	Parasitic Suppressor	Assembly consisting of: 12 turns AWG #28 DC wire (L-107) wound over R-104			1		882400-502
*♀Z-103	Parasitic Suppressor	Assembly consisting of: 12 turns AWG #28 DC wire (L-108) wound over R-112			1		882400-503
*♀Z-104	Parasitic Suppressor	Assembly consisting of: 25 turns AWG #28 DC wire (L-109) wound over R-115			1		882400-504
*†♀Z-105	Transmission Line Filter	Cut-off, frequency 171 mc, impedance 50 ohms at 135 mc	-53232		1		433105-1
		MISCELLANEOUS					
*†♀	Tool	Allen wrench, short series steel, for 3/8" setscrew and 1/4" capscrew			731		828505-4
*†♀	Tool	Allen wrench, short series steel, for #6 setscrew			731		828505-13
*†♀	Tool	Allen wrench for #4 setscrew			731	Special	828505-14
*†♀	Spanner Wrench for K-101	Cold rolled steel, 0.430" dia. for 25/32", 3/16" dia. for 1-11/32", 7/16" dia. for 3/8" with 1/8" dia. x 1-1/4" groove pin at end, with 0.050" x 1/16" boss on base			1		881918-501
♀	Antenna Assembly						611909-501

** EQUIPMENT SPARE PARTS FURNISHED, refer to TABLE IV, EQUIPMENT SPARES, for quantities*
† TENDER SPARE PARTS FURNISHED, refer to TABLE IV, TENDER SPARES, for quantities
♀ STOCK SPARE PARTS FURNISHED, refer to TABLE IV, STOCK SPARES, for quantities
♂ American War Standard Type Number.
♂ American War Standard Specification.

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TABLE III
PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT

CONTRACT NXss-29644

S.O. 12182 & 12420

QUANTITY	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED
MISCELLANEOUS (CLASS 10)		
3	TS-37	I-301A,302A,303A
4		A-401
2		E-101
2		E-102
2		E-103
2		E-104
1		E-105
1		E-201
1		E-301
1		I-301
1		I-302
1		I-303
4		N-101
4		N-101A
5		N-101B
5		N-101C
1		N-102
1		N-102A
1		O-101
1		O-102
1		O-103
6		O-105
12		O-106
4		O-107
2		O-108
2		O-109
MISCELLANEOUS (CLASS 10) (Continued)		
2		O-110
12		O-110A,111A
1		O-111
7		O-112,201,301
4		O-113
1		O-114
1		O-115
2		O-202
1		O-601
2		O-602
1		O-603
1		O-604
RECTIFIERS (CLASS 20)		
1		CR-301
MOTORS (CLASS 21)		
1		B-101
1		B-101A
1		B-101B
MOTOR CONTROLLERS (CLASS 21)		
1	-211090 or -211091	MC-701
MOTOR GENERATORS (CLASS 21)		
1	-211092 or -211093	MG-801
ELECTRICAL MEASURING INSTRUMENTS (CLASS 22)		
1	♂MR25W020 DCMA	M-102
1	♂MR25W123 SPEC	M-201
1	♂MR25W300 DCMA	M-101
SWITCHES (CLASS 24)		
1	-24276	S-201
1	-24277	S-303
2		S-102,103
1		S-201A
1		S-301
3		S-302,304,307
1		S-303A
1		S-305
1		S-306
PROTECTIVE DEVICES (CLASS 28)		
4		F-301,302,401,402
2		F-303,304
1		F-305

♂ *American War Standard Type Number.*

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TABLE III (Continued)
PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT

QUANTITY	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED
RELAYS, COILS & CONTACTS (CLASS 29)		
1		K-101
1		K-101A
1		K-101B
1		K-101C
1		K-101D
1		K-101E
1		K-101F
1		K-201
1		K-201A
1		K-201B
1		K-202
1		K-202A
1		K-202B
1		K-301
1		K-301A
1		K-301B
1		K-302
1		K-302A
1		K-302B
1		K-303
1		K-303A
1		K-303B

QUANTITY	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED
TRANSFORMERS & REACTORS (CLASS 30)		
1	-30471	L-203
1	-30763	T-205
2		L-201,202
2		L-301,302
1		L-303
1		T-202
1		T-203
1		T-204
1		T-206
1		T-301
1		T-302
1		T-303
1		T-304
1		T-501
VACUUM TUBES (CLASS 38)		
4	JAN-5R4GY	V-209,301,302,303
2	JAN-6J5	V-203,204
2	JAN-6SK7	V-201,202
1	JAN-6SN7GT	V-208
1	JAN-6X5GT/G	V-207
3	JAN-807	V-101,205,206
3	JAN-829/829B	V-102,103,104

QUANTITY	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED
THERMOSTATS (CLASS 40)		
1		S-101
1		S-104
INDUCTANCES (CLASS 47)		
1		L-101
1		L-102
1		L-103
1		L-104
1		L-105
1		L-106
1		L-107
1		L-108
1		L-109
CAPACITORS (CLASS 48)		
2	-48231	C-126,127
4	-48595-A10	C-206,208,212,215
4	-481159	C-303,304,305,306
2	-481160-10	C-209,210
2	-481166	C-213,214
1	-481305	C-203
3	-481349-10	C-201,202,219
2	-481379-10	C-204,205
2	-481545	C-301,302
1	-482137-10	C-220A & B

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TABLE III (Continued)
PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT

QUANTITY	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED
CAPACITORS (CLASS 48) (Continued)		
1	-482142	C-103
1	-482142A	C-106
1	-482143	C-109
1	-482144	C-113
4	δCM30B102K	C-114,216,217,218
13	δCM35B472K	C-101,110,115,116,117,118, 119,120,121,124,125,128, 129
1	δCM35B562K	C-211
1	δCM45A102K	C-123
3		C-102,111,112
4		C-103A,106A,109A,113A
4		C-104,105,107,108
1		C-122
1		C-207
JACKS, PLUGS & RECEPTACLES (CLASS 49)		
1	-49025A	J-202
1	-49039	J-201
1	-49269	P-601
1	-49269	W-101A
1	-49363	X-101
3	-49367	X-301,302,303
8	-49373	X-201,202,203,204,205,206, 207,208
1	-49373	X-209
JACKS, PLUGS & RECEPTACLES (CLASS 49) (Continued)		
1	-49385	X-104
2	-49389	X-102,103
8	-49465	P-401,402,403,404,405,406, 407,408
8	-49466	P-101,102,201,202,301,302, 303,304
4		X-105,106,107,108
FILTERS (CLASS 53)		
1		Z-101
1		Z-102
1		Z-103
1		Z-104
1		Z-105
INSULATORS (CLASS 61)		
16	-61032	E-106,202
5	-61166	E-111,112,113,114,115
2	-61167	E-107
2	-61168	E-108
1	-61170	E-109
2	-61172	E-203
1		E-110
1		E-302
1		E-116
1		E-601
WIRES & CABLES (CLASS 62)		
1	-RG-8/U	W-101
1	-RG-8/U	W-102
1	-RG-8/U	W-103
3	-UG-21/U	W-101B,102A,102B
1		W-104
RESISTORS (CLASS 63)		
2	-63005F	R-109,110
2	-63070F	R-305,309
1	-63074F	R-302
1	-63076F	R-306
4	-63080F	R-231,232,235,307
1	-63085F	R-236
1	-63090F	R-116
1	-63338F	R-233
1	-63371F	R-308
1	-63398F	R-304
1	-63752F	R-120
1	-631937	R-229
2	-631938	R-240,241
1	-631939	R-234
1	-631940	R-210
1	δRC21BE105K or -63360	R-226
2	δRC21BE123K or -63360	R-206,207

δ American War Standard Type Number.

TABLE III (Continued)
PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT

QUANTITY	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED
RESISTORS (CLASS 63) (Continued)		
3	♂RC21BE222K or -63360	R-217,228,230
2	♂RC21BE271K or -63360	R-203,204
1	♂RC21BE332K or -63360	R-218
1	♂RC21BE474K or -63360	R-225
1	♂RC21BE561K or -63360	R-242
1	♂RC21BE563K or -63360	R-227
1	♂RC21BE823K or -63360	R-237
2	♂RC21BE824K or -63360	R-213,214
1	♂RC31BE101K or -63360	R-118
1	♂RC31BE103K or -63288	R-111
1	♂RC31BE104K or -63288	R-224
1	♂RC31BE105K or -63288	R-201
3	♂RC31BE123K or -63288	R-205,208,223
2	♂RC31BE124K or -63288	R-215,216
1	♂RC31BE273K or -63288	R-103
1	♂RC31BE393K or -63288	R-222
1	♂RC31BE473K or -63288	R-102
2	♂RC41BE103K or -63474	R-113,114
1	♂RC41BE181K or -63474	R-219
1	♂RC41BE223K or -63474	R-202
4	♂RC41BE273K or -63474	R-105,106,212,239
1	♂RC41BE562K or -63474	R-238
2	♂RC41BE820K	R-310,311
2	♂RC41BE822K or -63474	R-117,211
2	♂RC65CE273K	R-107,108 or R-107,108
3	♂RC65CE473K	R-220,221,243 or R-220,221,243
1	♂RC76CE683K	R-301 or R-301
1		R-101
1		R-104
1		R-112
1		R-115
1		R-119
1		R-209
1		R-303

♂ *American War Standard Type Number.*

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TABLE IV
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
EQUIPMENT SPARES

CONTRACT NXss-29644 S.O. 12182 & 12420

BOX NO.	QUANTITY 115/230/440 V A.C.	QUANTITY 115 V D.C.	QUANTITY 230 V D.C.	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
						MISCELLANEOUS (CLASS 10)					
1	1	1	1		A-401	Shock mount, 2-1/4" wide, 4-1/2" long, 1-3/8" high		452	#10	Modified by RCA	K-881870+1
1	1	1	1		E-201	Terminal board assembly consisting of: Mycalex board, 4-1/8" long, 1-11/16" wide, 1/4" thick, 13 holes		1			K-882449-1
1	1	1	1		E-301	Terminal board assembly consisting of: Mycalex board, 7-3/16" long, 2-3/16" wide, 1/4" thick, 34 holes		1			M-441078-1
1	1	1	1		I-301	Indicator lamp assembly consisting of socket and red lens		208	LT 9337-SA		K-882411-501
1	5	5	5		I-301A,302A,303A	Indicator lamp, candelabra screw base, 115 v, 5 watts		18	#17L 3914-100		K-881393-1
1	1	1	1		I-302	Lamp assembly consisting of socket and green lens		208	LT 9337-SA		K-882411-502
1	1	1	1		I-303	Lamp assembly consisting of socket and yellow lens		208	LT 9337-SA		K-882411-503
1	1	1	1		O-103	Blower boot, army khaki, 2-9/16" I.D. one end, 2-3/16" I.D. other end, 1-5/8" long		191			K-882583-1
1	2	2	2		O-105	Catch, steel wire, "U" shaped		1			K-881995-2
1	12	12	12		O-106	Coil spring for tube clamps, 0.032" music wire, 1/4" O.D., 1-1/4" long, 12 turns		1			K-881510-2
1	1	1	1		O-110	Tube clamp assembly consisting of ring and liner		1			M-441055-501

IB-38239/38333-X7

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
EQUIPMENT SPARES

BOX NO.	QUANTITY 115/230/440 V A.C.	QUANTITY 115 V D.C.	QUANTITY 230 V D.C.	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
						MISCELLANEOUS (CLASS 10) (Continued)					
1	3	3	3		O-110A,111A	Bushing, brass, 0.281" O.D. x 0.099" I.D. x 5/16" long		1			K-885826-1
1	1	1	1		O-111	Tube clamp assembly consisting of ring and liner		1			M-441055-502
1	2	2	2		O-112,201,301	Clamp for tube mounting, stainless steel		126	926C		K-882941-1
1	1	1	1		O-202	Clamp for tube mounting, stainless steel		126	926B		K-882941-2
1	1	1	1		O-601	Gasket, neoprene, 1/32" thick, durometer 40-50, 1" square, 5/8" I.D., part of antenna assembly		1			K-883934-1
1	2	2	2		O-602	Gasket, neoprene, 1/32" thick, durometer 40-50, 2-15/64" O.D., 1-3/4" I.D., part of antenna assembly		1			K-883936-1
1	1	1	1		O-603	Gasket, neoprene, 1/32" thick, durometer 40-50, 1" O.D., 17/32" I.D., part of antenna assembly		1			K-883937-1
1	1	1	1		O-604	Gasket, neoprene, 1/32" thick, durometer 40-50, 1-7/8" x 2-1/8", 1-1/4" I.D., part of antenna assembly		1			K-883941-1
	1	1	1			Spare parts box #1		1			P-717717-1
1	1	1	1			Spanner wrench assembly consisting of stem and groove pin		1			K-881918-501
1	1	1	1			Wrench, Allen, for 3/8" setscrew and 1/4" capscrew		5			K-828505-4
1	1	1	1			Wrench, Allen, for #6 setscrew		5			K-828505-13
1	1	1	1			Wrench, Allen, special for #4 setscrew		5			K-828505-14
						COPPER OXIDE RECTIFIER (CLASS 20)					
1	1	1	1		CR-301	Selenium rectifier, energized with 17.0 v, r-m-s, 60 cycles, supplies 12.5 v d.c. into resistance load of 1.1 amps.		127	Cat. #199S1		M-440977-1

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
EQUIPMENT SPARES

BOX NO.	QUANTITY: 115/230/440 V A.C.	QUANTITY: 115 V D.C.	QUANTITY: 230 V D.C.	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
						MOTORS (CLASS 21)					
1	1	1	1		†B-101	Motor, blower, 1/70 h.p., single phase, 110-115 v d.c., 60 cycles, 2850 r.p.m., ccw rotation, thrust bearing to permit vertical mounting		18 258			P-720519-8 P-720519-15
1	1	1	1		⊕B-101A	Ball bearing, 0.2756" wide, 0.8661" O.D., bore 0.3150" dia., seven balls for Electrolux Motor B-101, RCA dwg. #720519-8		439	77038		K-885655-2
1	1	1	1		⊕B-101A	Ball bearing, 0.2756" wide, 0.8661" O D., bore 0.3150" dia. for GE Motor B-101, RCA dwg. #720519-15		439	7038		K-885824-1
1	1	1	1		B-101B	Spare for Motor B-101, RCA dwg. #720519-8, 3.6/4.0 mfd, 330 v a.c. working		258			K-891671-1
1	1	1	1		B-101B	Spare for Motor B-101, RCA dwg. #720519-15, fixed, oil filled, 3.75 mfd ±10%, 330 v a.c. working		18			K-891670-1
2		2			MC-701A	Coil, 115 v, 1500 ohms, 17,000 turns AWG #33 E wire		18	22D11G143		K-882731-1
2			2		MC-701B	Coil, 230 v, 6400 ohms, 34,000 turns AWG #36 E wire		18	22D11G144		K-882731-2
2		3	3		MC-701C	Main stationary contact tip		18	2840261G7		K-882731-3
2		3	3		MC-701D	Main movable contact tip		18	2840261G1		K-882731-4
2		2	2		MC-701E	Main contact spring		18	2412681		K-882731-5
2		6	6		MC-701F	Int. stationary contact tip (normally open)		18	3614137G1		K-882731-6
2		2	2		MC-701G	Int. stationary contact tip (normally closed)		18	3805671G2		K-882731-7
2		4	4		MC-701H	Int. movable contact tip		18	3667572G1		K-882731-8
2		4	4		MC-701I	Interlock spring		18	2411917		K-882731-9

⊕ *By Bu Ships direction spare bearings are not supplied with all equipments. Check the Spare Parts List in the Equipment Spare Parts Box to determine whether or not bearings are supplied with your equipment.*

† *Either motor may be supplied.*

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
EQUIPMENT SPARES

BOX NO.	QUANTITY 115/230/440 V A.C.	QUANTITY 115 V D.C.	QUANTITY 230 V D.C.	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
					MOTORS (CLASS 21) (Continued)						
2		3	3		MC-701J	Operating spring		18	235184		K-882731-10
2		1			MC-701K	Coil, 115 v, 750 ohms, 6890 turns AWG #33 E wire		18	22D13G4		K-882731-11
2			1		MC-701L	Coil, 230 v, 2800 ohms, 13,140 turns AWG #36 E wire		18	22D13G2		K-882731-12
2		1	1		MC-701P	Main contact spring		18	#2414612		K-882731-16
2		1	1		MC-701T	Resistor unit, starting resistor assembly, total resis. 15.4 ohms center tap		18	#CR9033-A15.4 Y16B-1/2		K-882731-20
2		1	1		MC-701U	Set of gaskets (1 per set)		18	#8627593P2		K-882731-21
2		10	10		MC-701V	Fuses, 10 amps., 250 v		18	#3169		K-882731-22
2		1	1			Spare parts box #2		18			K-882730-1
2		1			MG-801A	Spare armature, 115 v		18	#5870351AA1		K-882730-2
2			1		MG-801B	Spare armature, 230 v		18	#8160994AA1		K-882730-3
2		1	1		MG-801C	Field coils (generator) (2 per set)		18	#5870110AA1		K-882730-4
2		1			MG-801D	Field coils (motor) 115 v (3 per set)		18	#5870107AA1		K-882730-5
2			1		MG-801E	Field coils (motor) 230 v (3 per set)		18	#8167501AA1		K-882730-6
2		1	1		MG-801F	Ball bearings New Departure type 3205 or type 7505		18	#5859520AB2		K-882730-7
2		10	10		MG-801G	Brush assembly, SP.PT. & terminal		18	#8104791AA6		K-882730-8
2		10	10		MG-801H	Brush assembly, SP.PT. & terminal		18	#5869390AD4		K-882730-9
2		10	10		MG-801I	Brush assembly, SP.PT. & terminal		18	#8100097AA13		K-882730-10
2		5	5		MG-801J	Brush assembly, SP.PT. & terminal		18	#5863334AF6		K-882730-11
2		2	2		MG-801K	Brush assembly, tube & insulation		18	#8104789AC1		K-882730-12
2		2	2		MG-801L	Brush assembly, tube & insulation		18	#5869388AD7		K-882730-13
2		2	2		MG-801M	Brush assembly, tube & insulation		18	#8100089AA7		K-882730-14
2		1	1		MG-801N	Tube, insulation & clip assembly		18	#8160071AA1		K-882730-15
2		8	8		MG-801O	Insulated screw cap		18	#5898031AA2		K-882730-16
2		2	2		MG-801P	Insulated screw cap		18	#5863338AB2		K-882730-17

TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
EQUIPMENT SPARES

BOX NO.	QUANTITY 115/230/440 V A.C.	QUANTITY 115 V D.C.	QUANTITY 230 V D.C.	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
						MOTORS (CLASS 21) (Continued)					
2		4	4		MG-801Q	Insulated screw cap		18	#5895854AA3		K-882730-18
2		1	1		MG-801R	Pin		18	#5863714AA11		K-882730-19
2		1	1		MG-801S	Adjusting screw		18	#8109770AA1		K-882730-20
2		1	1		MG-801T	Contact & screw assembly		18	#8128844AAP1		K-882730-21
2		2	2		MG-801U	Resistor assembly, Globar type B, 130 ohms		18	#8127261AA2		K-882730-22
2		1			MG-801V	Resistor, Dividohm, 200 ohms		18	#5895465AB18		K-882730-23
2			1		MG-801W	Resistor, Dividohm, 800 ohms		18	#5895465AB17		K-882730-24
2		1	1		MG-801X	Resistor, Dividohm, 25 ohms		18	#5895465AB10		K-882730-25
2		1			MG-801Y	Resistor, Special, 7.5 ohms		18	#8124682AA6		K-882730-26
2			1		MG-801Z	Resistor, Special, 30.0 ohms		18	#8124682AA10		K-882730-27
2		1	1		MG-801AA	Assembly of regulator rotating elements		18	#8109968AC3		K-882730-28
2		2	2		MG-801AB	Capacitor assembly consisting of 3 WPS 0.005 mfd, 1000 v		18	#8106433AK1		K-882730-29
2		1			MG-801AC	Capacitor, 10 mfd		18	#8128988AA1		K-882730-30
2			1		MG-801AD	Capacitor, 5 mfd		18	#8167010AA1		K-882730-31
2		1	1		MG-801AE	Capacitor, 1 mfd		18	#8127047AA3		K-882730-32
2		4	4		MG-801AF	Spring washer		18	#5859260AA1		K-882730-33
2		1	1		MG-801AG	Overload switch		18	#5845495AA 3		K-882730-34
2		1	1		MG-801AH	Gasket, rubber, (cover)		18	#5895117AB3		K-882730-35
2		1	1		MG-801AI	Gasket, copper, (retainer)		18	#8128089AA1		K-882730-36
2		1	1		MG-801AJ	Gasket, neoprene, (terminal box)		18	#8132049AB1		K-882730-37
2		1	1		MG-801AL	Gasket, copper, (retainer)		18	#8128089AD1		K-882730-39

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
EQUIPMENT SPARES

BOX NO.	QUANTITY 115/230/440 V A.C.	QUANTITY 115 V D.C.	QUANTITY 230 V D.C.	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
						SWITCHES (CLASS 24)					
1	1	1	1	-24276	S-201	Switch, test key, cam lever, lock in upper position, non-lock in normal position, S.P.D.T.		637			M-420973-6
1	1	1	1	-24277	S-303	Switch, remote-local, cam lever, containing the equivalent of 7 single pole breaks and one single pole, double throw break in lower position, contact rating 2 amps., 110 v d.c. or 10 amps., 110 v a.c.		468			M-427520-1
1	1	1	1		S-102,103	Switch, rotary type, steatite ceramic wafer, 4 position		10			M-441076-1
1	1	1	1		S-201A	Spare contacts for S-201,		637			M-420973-26
1	1	1	1		S-301	Switch, push-button type, emergency, D.P.S.T., back connected, 20 amps., 125 v		7	#3948		K-882641-1
1	1	1	1		S-302,304,307	Switch, D.P.S.T., rated 30 amps., 250 v		675	Cat. #7475-C		K-818231-2
1	1	1	1		S-303A	Spare contacts for S-303		468			M-427520-21

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
EQUIPMENT SPARES

BOX NO.	QUANTITY 115/230/440 V A.C.	QUANTITY 115 V D.C.	QUANTITY 230 V D.C.	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
						SWITCHES (CLASS 24) (Continued)					
1	1	1	1		S-305	Switch, start, momentary contact type, normally open, single circuit, green button		35	Cat. #KB1-G201 Type KB1		K-842822-2
1	1	1	1		S-306	Switch, stop, momentary contact type, normally open, single circuit, red button		35	Cat. #KB1 Type KB1		K-842822-6
						PROTECTIVE DEVICES (CLASS 28)					
1	40	40	40		F-301,302,401,402	Fuse, cartridge type, non-renewable, ferrule, 250 v, 3 amps., non-indicating		18 147 254 768	Cat. #GE1454 Cat. #25003 Cat. #2001 Cat. #1103		K-59075-10
1	20	20	20		F-303,304	Fuse, cartridge type, non-renewable, ferrule, 250 v, 15 amps.		18 147 254 768	Cat. #GE1453 Cat. #25015 Cat. #2007 Cat. #1115		K-59075-3
1	20	20	20		F-305	Fuse, cartridge type, 1 amp., 1000 v		26			K-98578-6
						RELAYS, COILS & CONTACTS (CLASS 29)					
1	1	1	1		K-101A	Rotary switch assembly consisting of: aluminum body, 2 steel ball bearings, 2 threaded brass nuts, 3 contact assemblies, 3 pins, pinion and stop arm assembly, rotor assembly and 2 brass rod retainers, part of K-101, antenna switch		1			T-621258-501
1	1	1	1		K-101C	Spring for antenna switch, 0.035" dia. music wire, approx. 8 turns, 15/64" I.D., part of K-101		1			K-882961-1
1	1	1	1		K-101D	Spring for antenna switch, 0.051" dia. music wire, 9/16" I.D., approx. 3-1/4 turns, part of K-101		1			K-882176-1

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
EQUIPMENT SPARES

BOX NO.	QUANTITY 115/230/440 V A.C.	QUANTITY 115 V D.C.	QUANTITY 230 V D.C.	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
						RELAYS, COILS & CONTACTS (CLASS 29) (Continued)					
1	2	2	2		K-101E	Contact assembly consisting of: molded styramic insulator and spring contact, part of K-101		1			K-881876-501
1	1	1	1		K-101F	Coil for K-101, rotary antenna relay unit		18			K-882152-2
1	1	1	1		K-201A	Coil for K-201, keying relay		12			K-881753-3
1	1	1	1		K-201B	Contacts for K-201		12			K-881753-2
1	1	1	1		K-202A	Coil for K-202, oscillator switching relay		12			K-881727-3
1	1	1	1		K-202B	Contacts for K-202		12			K-881727-2
1	1	1	1		K-301A	Coil for K-301, master control relay		25			K-882741-2
1	1	1	1		K-301B	Contacts for K-301, fixed and movable		25			K-882741-3
1	1	1	1		K-302A	Coil for K-302, carrier control relay		25			K-882676-2
1	1	1	1		K-302B	Contacts for K-302, fixed and movable		25			K-882676-3
1	1	1	1		K-303A	Coil for K-303, overload relay		44			K-422579-6
1	1	1	1		K-303B	Contacts for K-303		44			M-422579-7
						TRANSFORMERS & REACTORS (CLASS 30)					
1	1	1	1	-30471	L-203	Reactor, interstage, iron core, 10,000 turns, AWG #37 E wire, tapped at 5000 turns, d-c resistance 1820 ohms Hi-pot voltage: 2000 v Min. impedance at 3 v, 60 cycles a.c. and 0 amp. d.c. shall be 125,000 ohms +25% -10% Mid-tap to be within 1% of neutral Resistance 1800 ohms ±10%		1			K-900548-501

TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
EQUIPMENT SPARES

BOX NO.	QUANTITY 115/230/440 V A.C.	QUANTITY 115 V D.C.	QUANTITY 230 V D.C.	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
						TRANSFORMERS & REACTORS (CLASS 30) (Continued)					
1	1	1	1	-30763	T-205	Transformer, microphone, audio, iron core, consisting of: 2 primaries, one tapped secondary and one untapped secondary, connect primary #1 start to primary #2 start Winding / No. Turns / Wire Size / Taps / D-C Resistance (Ohms) Pri. #1 150 #25E 1.41 Sec. #1 840 #31E 330 43.0 Sec. #2 840 #31E 330 43.0 Pri. #2 150 #25E 2.42 Hi-pot voltage: 1500 v a.c., r-m-s Primary impedance: 150 ohms min. at 3 v, 60 cycles a.c. and 0.050 amp. d.c. Additive polarity		1			K-900816-501
1	2	2	2		L-201,202	Reactor, filter, iron core, 3300 turns AWG #31 wire, tapped at 330 turns, d-c resistance 238 ohms Hi-pot voltage: 1500 v Total impedance: 3200 ohms min. at 3 v, 60 cycles a.c. & 0.150 amps d.c.		1			K-900904-501
1	2	2	2		L-301,302	Reactor, high voltage supply, iron core, 1520 turns, AWG #22 E wire, d-c resistance 21.2 ohms Hi-pot voltage: 3000 v Impedance: 1210 ohms min. at 30 v, 60 cycles, 0.550 amp. d.c.		1			K-901361-501
1	1	1	1		T-202	Transformer, driver, iron core, consisting of: mid-tapped primary and two mid-tapped secondaries		1	XT-4355		K-901652-501

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
EQUIPMENT SPARES

BOX NO.	QUANTITY 115/230/440 V A.C.	QUANTITY 115 V D.C.	QUANTITY 230 V D.C.	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
					TRANSFORMERS & REACTORS (CLASS 30) (Continued)						
					T-202 (Continued)	Winding / No. Turns / Wire Size / Taps / D-C Resistance (Ohms) Sec. #1 1260 #36E 630 124 Primary 4400 #36E 2200 622 Sec. #2 1260 #36E 630 230 Hi-pot voltage: 1500 v Primary impedance: 35,000 ohms min. at 30 v, 60 cycles a.c. and 0 amp. d.c.					
1	1	1	1		T-203	Transformer, modulation, audio, iron core, consisting of: tapped primary and a secondary Primary: 1610 turns, AWG #27 E wire, tapped at 805 turns, wound over secondary, d-c resistance 68 ohms Secondary: 1110 turns, AWG #25 E wire, wound over tube, d-c resistance 23.5 ohms Hi-pot: 3500 v a.c., r-m-s Secondary impedance: 1100 ohms min. at 30 v, 60 cycles a.c. and 0.250 amp. d.c. Additive polarity		1	XT-3098		K-900716-501
1	1	1	1		T-204	Transformer, audio oscillator, iron core, consisting of: primary and two secondaries Winding / No. Turns / Wire Size / D-C Resistance (Ohms) Primary 4700-1/2 #36E 600 Sec. #1 750 #36E 127 Sec. #2 600 #36E 109 Hi-pot voltage: 1500 v		1			K-900546-501

TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
EQUIPMENT SPARES

BOX NO.	QUANTITY 115/230/440 V A.C.	QUANTITY 115 V D.C.	QUANTITY 230 V D.C.	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
						TRANSFORMERS & REACTORS (CLASS 30) (Continued)					
1	1	1	1		T-206	Transformer, power, low voltage plate iron core, consisting of: tapped primary, untapped primary, mid-tapped plate and untapped filament Winding / No. Turns / AWG Wire Size / Taps / D-C Resistance (Ohms) Pri. #1 — 288 — #21E — 23,46 — 2.31 Pri. #2 — 265 — #24E — 4.90 Plate — 2080 — #29E — 1040 — 142 Fil. — 12-1/2 — #16E Hi-pot voltage: 1500 v		1			K-901642-501
1	1	1	1		T-301	Transformer, filament, iron core, consisting of: tapped primary, untapped primary, mid-tapped filament and two untapped filaments Winding / No. Turns / AWG Wire Size / Taps / D-C Resistance (Ohms) Pri. #1 — 254 — #20E — 20,40 — 1.82 Pri. #2 — 234 — #22E — 3.08 Fil. #1 — 27 — #14E — 13-1/2 Fil. #2 — 14 — #13E Fil. #3 — 11 — #12E		1			K-901648-501

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
EQUIPMENT SPARES

BOX NO.	QUANTITY 115/230/440 V A.C.	QUANTITY 115 V D.C.	QUANTITY 230 V D.C.	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
					TRANSFORMERS & REACTORS (CLASS 30) (Continued)						
1	1	1	1		T-302	Transformer, power, 12 v supply, iron core, consisting of: tapped primary, untapped primary and tapped secondary Winding / No. Turns / AWG Wire Size / Taps / D-C Resistance (Ohms) Pri. #1 / 456 / #25E / 36,73 / 7.24 Pri. #2 / 420 / #28E / / 15.2 Sec. / 76 / #16E / 65,70 / 0.192 Hi-pot voltage: 2500 v		1			K-901647-501
1	1	1	1		T-304	Transformer, isolation, iron core, consisting of: two untapped primaries and one untapped secondary Winding / No. Turns / AWG Wire Size / D-C Resistance (Ohms) Pri. #1 / 600 / #25E / 8.75 Pri. #2 / 600 / #28E / 21.1 Sec. / 646 / #26E / 16.5 Hi-pot voltage: 2500 v Rated current: primary, 0.39 amp.; secondary, 0.304 amp.		1			K-901651-501

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
EQUIPMENT SPARES

BOX NO.	QUANTITY 115/230/440 V A.C.	QUANTITY 115 V D.C.	QUANTITY 230 V D.C.	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
				*VACUUM TUBES (CLASS 38)							
	2	2	2	-6J5	V-203,204	Vacuum tube, detector amplifier triode, small wafer octal 6 pin base, heater: 0.3 amp. at 6.3 v a.c. or d.c.		1a	-6J5		
	1	1	1	-6SN7-GT	V-208	Vacuum tube, twin triode amplifier, metal shell, octal, 8 pin base, heater, 6.3 v a.c. or d.c. at 0.6 amp., ruggedized version of 6SN7GT		623	-6SN7-GT		
	4	4	4	-5R4-GY	V-209,301,302,303	Vacuum tube, full wave, high vacuum rectifier, medium shell octal 5 pin micanol base, heater: 2.0 amps. at 5.0 v a.c. or d.c.		1a	-5R4-GY		
	2	2	2	-6SK7	V-201,202	Vacuum tube, triple-grid, super control amplifier, small wafer octal 8 pin base, heater: .0.3 amp. at 6.3 v a.c. or d.c.		1a	-6SK7		
	1	1	1	-6X5-GT	V-207	Vacuum tube, full wave, high vacuum rectifier, small shell, octal, 6 pin base, heater: 0.6 amp. at 6.3 v a.c. or d.c.		1a	-6X5-GT		
	3	3	3	-807	V-101,205,206	Vacuum tube, transmitting beam power amplifier, micanol, medium, 5 pin base, small metal cap, heater: 0.9 amp. at 6.3 v a.c. or d.c.		1a	-807		
	3	3	3	-829 B	V-102,103,104	Vacuum tube, push pull, r-f beam power amplifier, heater: 1.125 amps. at 2.6 v a.c. or d.c.		1a	-829B		
				CRYSTALS & THERMOSTATS (CLASS 40)							
1	1	1	1		S-101	Thermostat, temperature adjustment 70°, rated 110 v, 15 watts, 60 cycles		232	Cat. #S1-1		K-884773-4

* *To be packed separately.*

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
EQUIPMENT SPARES

BOX NO.	QUANTITY 115/230/440 V A.C.	QUANTITY 115 V D.C.	QUANTITY 230 V D.C.	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
						THERMOSTATS (CLASS 40) (Continued)					
1	1	1	1		S-104	Thermostat, temperature adjustment 80°C, rated 110 v, 15 watts, 60 cycles		232	Cat. #S1-1		K-884773-3
						INDUCTANCES (CLASS 47)					
	x	x	x		L-106	Coil, 12 turns AWG #28 DCC wire wound over R-119 (Part of Z-101)		1			K-882400-3
	x	x	x		L-107	Coil, 12 turns AWG #28 DCC wire wound over R-104 (Part of Z-102)		1			K-882400-3
	x	x	x		L-108	Coil, 12 turns AWG #28 DCC wire wound over R-112 (Part of Z-103)		1			K-882400-3
	x	x	x		L-109	Coil, 25 turns AWG #28 DCC wire wound over R-115 (Part of Z-104)		1			K-882400-9
						CAPACITORS (CLASS 48)					
1	1	1	1	-48231	C-126,127	Capacitor, fixed, mica, molded, 0.01 mfd ±20%		1	Model T Special Type		P-32170-511
1	2	2	2	-48595-A10	C-206,208,212,215	Capacitor, fixed, paper, oil filled, 1.0 mfd ±10%, 400 v d.c. working	RE 13A 488	1			P-720555-52
1	1	1	1	-481545	C-301,302	Capacitor, fixed, paper, oil filled, 10.0 mfd, 600 v d.c. working	RE 13A 486	18	Cat.#26-F-547		K-856439-3
1	4	4	4	-481159	C-303,304,305,306	Capacitor, fixed, dry electrolytic, 1000 mfd, 25 v d.c. working	RE 13A 549A	34	S-8560-PE		K-856047-1
1	1	1	1	-481160-10	C-209,210	Capacitor, fixed, paper, oil filled, 0.5 mfd ±10%, 600 v d.c. working	RE 13A 488	1			P-720555-58
1	1	1	1	-481166	C-213,214	Capacitor, fixed, paper, oil filled, 4.0 mfd, 600 v d.c. working	RE 13A 488	18	Cat. #26 F 317		K-856439-2
1	1	1	1	-481305	C-203	Capacitor, fixed, dry electrolytic, 75 mfd, 25 v d.c. working	RE 13A 549A	28			K-90556-1
1	2	2	2	-481349-10	C-201,202,219	Capacitor, fixed, paper, oil filled, 0.05 mfd ±10%, 600 v d.c. working	RE 13A 488	1			P-720555-67

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
EQUIPMENT SPARES

BOX NO.	QUANTITY 115/230/440 V A.C.	QUANTITY 115 V D.C.	QUANTITY 230 V D.C.	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
					CAPACITORS (CLASS 48) (Continued)						
1	1	1	1	-481379-10	C-204,205	Capacitor, fixed, paper, oil filled, 0.1 mfd ±10%, 400 v d.c. working	RE 13A 488	1			P-720555-57
1	1	1	1	-482137-10	C-220A&B	Capacitor, fixed, paper, oil filled, two sections, 0.125/0.025 mfd ±10%, 600 v d.c. working	RE 13A 488	1			P-720555-54
1	2	2	2	δCM30B102K	C-114,216,217,218	Capacitor, fixed, mica, molded, 1000 mmfd ±10%, 500 v d.c. working	†C75-3-1942	1			P-722017-559
1	4	4	4	δCM35B472K	C-101,110,115,116, 117,118,119,120, 121,124,125,128, 129	Capacitor, fixed, mica, molded, 4700 mmfd ±10%, 500 v d.c. working	†C75-3-1942	1			P-722026-555
1	1	1	1	δCM35B562K	C-211	Capacitor, fixed, mica, molded, 0.0056 mfd ±10%, 500 v d.c. working	†C75-3-1942	1			P-722026-557
1	1	1	1	δCM45A102K	C-123	Capacitor, fixed, mica, molded, 1000 mmfd ±10%, 2500 v d.c. working	†C75-3-1942	1			P-722043-633
1	1	1	1		C-102,111,112	Capacitor, fixed, ceramic, 10 mmfd ±5%, 650 v d.c. working		1			K-97698-1
1	1	1	1		C-104,105,107,108	Capacitor, fixed, ceramic, 22 mmfd ±5%, 650 v d.c. working		1			K-97698-2
1	2	2	2		C-103A,106A,109A,113A	Spare ceramic end plate for C-103,106, 109,113		9			M-441039-5
1	1	1	1		C-122	Capacitor, assembly consisting of insulator & hardware, feed-back, adjustable		1			K-882827-501
1	1	1	1		C-207	Capacitor, fixed, mica, 4700 mmfd ±10%, 2500 v d.c. working, low loss case	†C75-3-1942	1			P-720567-20

δ American War Standard Type Number.
† American War Standard Specification.

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
EQUIPMENT SPARES

BOX NO.	QUANTITY 115/230/440 V A.C.	QUANTITY 115 V D.C.	QUANTITY 230 V D.C.	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
						PLUGS, RECEPTACLES & SOCKETS (CLASS 49)					
1	2	2	2	-49363	X-101,205,206	Socket, tube, 5 contacts, steatite ceramic base	RE 13A 524	23			K-856997-2
1	2	2	2	-49367	X-301,302,303	Socket, tube, octal, steatite ceramic base	RE 13A 524	23			K-856997-6
1	4	4	4	-49373	X-201,202,203,204, 207,208	Socket, tube, assembly consisting of: aluminum adapter plate; socket; octal and steel retaining ring, amphenol #4	RE 13A 317F	6	Cat. #RSS-8M Type RSS		K-856868-505
1	1	1	1	-49389	X-102,103	Socket, tube, 7 contacts, steatite ceramic base, contacts mounted with laminated insulation	RE 13A 524	23			M-418355-1
1	2	2	2	-49465	P-401,402,403,404, 405,406,407,408	Plug connector, male assembly		410			M-427607-1
1	2	2	2	-49466	P-101,102,201,202 301,302,303,304	Plug connector, female assembly		410			M-427607-2
1	1	1	1	-49039	J-201	Microphone jack, three circuit	‡JK-33A	28 149			K-868986-1
1	1	1	1	-49025A	J-202	Head telephone jack, two circuit	‡JK-34A	28 149			K-868986-2
1	1	1	1		P-601	Connector, 1-1/64" long, 1 end threaded mounting plate 1" square, 5/8" body O.D., part of antenna assembly		477			K-883935-1
1	1	1	1		X-104	Socket, tube, 5 contacts		1	Special		K-882738-1
1	2	2	2		X-105,106,107,108	Socket, crystal, 2 contacts		11	#9816		K-882708-1
						FILTERS (CLASS 53)					
1	1	1	1		Z-101	Parasitic suppressor assembly consisting of: L-106 and R-119		1			K-882400-501

‡ *U.S. Army Specification.*

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
EQUIPMENT SPARES

BOX NO.	QUANTITY 115/230/440 V A.C.	QUANTITY 115 V D.C.	QUANTITY 230 V D.C.	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
						FILTERS (CLASS 53) (Continued)					
1	1	1	1		Z-102	Parasitic suppressor assembly consisting of: L-107 and R-104		1			K-882400-502
1	1	1	1		Z-103	Parasitic suppressor assembly consisting of: L-108 and R-112		1			K-882400-503
1	1	1	1		Z-104	Parasitic suppressor assembly consisting of: L-109 and R-115		1			K-882400-504
1	1	1	1	-53232	Z-105	Filter assembly (transmission line) consisting of: 2 capacitors, .30 mmfd ±10%; 2 capacitors, 60 mmfd ±10%; 3 coils, 0.0574 mh and 2-50 ohm connectors, impedance 50 ohms at 135 mc	RA 53F 216A	19			M-433105-1
						INSULATORS (CLASS 61)					
1	8	8	8	-61032	E-106,202	Insulator, pillar, steatite ceramic, 23/32" x 23/32" x 1-1/4" long, both ends tapped #10-32 threads, 3/8" deep	RE 13A 317F Grade G	22			K-823038-2
1	1	1	1	-61167	E-107	Insulator, stand-off, isolantite, 5/8" long, 1/2" dia., both ends tapped #6-32 threads, 7/32" deep	RE 13A 317	22			K-823568-2
1	1	1	1	-61168	E-108	Insulator, stand-off, isolantite, 3/4" long, 1/2" dia., both ends tapped #6-32 threads, 9/32" deep	RE 13A 317	22			K-823568-3
1	1	1	1	-61170	E-109	Insulator, stand-off, isolantite, 1" long, 1/2" dia., both ends tapped #6-32 threads, 9/32" deep	RE 13A 317	22			K-823568-5
1	1	1	1	-61172	E-203	Insulator, stand-off, isolantite, 11/16" long, 1/2" dia., both ends tapped #6-32 threads, 1/4" deep	RE 13A 317	22			K-823568-7
1	1	1	1		E-110	Insulator, stand-off, isolantite, 1/2" long, 5/16" dia., both ends tapped #6-32 threads, 3/16" deep		22			K-834196-2
1	1	1	1		E-302	Insulator, stand-off, isolantite, 3/4" long, 3/8" dia., both ends tapped #6-32 threads, 9/32" deep	RE 13A 317	22			K-875335-1

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
EQUIPMENT SPARES

BOX NO.	QUANTITY 115/230/440 V A.C.	QUANTITY 115 V D.C.	QUANTITY 230 V D.C.	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
						INSULATORS (CLASS 61) (Continued)					
1	1	1	1		E-601	Insulator, molded, styramic, 1-7/8" x 2-1/8", 1-1/4" high overall, 1/2" I.D., part of antenna assembly		1			K-883942-1
						INTERCONNECTING CABLES (CLASS 62)					
1	1	1	1		W-101	Cable assembly consisting of: 9-1/2" long cable, plug assembly and jack assembly		1			P-722281-501
1	1	1	1		W-102	Cable assembly consisting of: 13-1/2" long cable and 2 plug assemblies		1			P-722281-502
1	4	4	4		W-104	Cable assembly consisting of: 12 conductor cable, male plug one end, female connector other end		1			P-717781-501
						RESISTORS (CLASS 63)					
1	1	1	1	-63005F	R-109,110	Resistor, fixed, wire wound, 500 ohms, 10 watts, ferrule type, Grade 1, Class 1, Style F	RE 13A 372	590			T-620340-816
1	1	1	1	-63070F	R-305,309	Resistor, fixed, wire wound, 500 ohms, 60 watts, ferrule type, Grade 1, Class 1, Style D	RE 13A 372	590			T-620340-516
1	1	1	1	-63074F	R-302	Resistor, fixed, wire wound, 800 ohms, 60 watts, ferrule type, Grade 1, Class 1, Style D	RE 13A 372	590			T-620340-528
1	1	1	1	-63076F	R-306	Resistor, fixed, wire wound, 1000 ohms, 60 watts, ferrule type, Grade 1, Class 1, Style D	RE 13A 372	590			T-620340-531

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
EQUIPMENT SPARES

BOX NO.	QUANTITY 115/230/440 V A.C.	QUANTITY 115 V D.C.	QUANTITY 230 V D.C.	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
				RESISTORS (CLASS 63) (Continued)							
1	2	2	2	-63080F	R-231,232,235,307	Resistor, fixed, wire wound, ferrule type, 2500 ohms, grade 1 class 1, style D	RE 13A 372	590			620340-548
1	1	1	1	-63085F	R-236	Resistor, fixed, wire wound, ferrule type, 5000 ohms, grade 1 class 1, style D	RE 13A 372	590			620340-558
1	1	1	1	-63090F	R-116	Resistor, fixed, wire wound, ferrule type, 10,000 ohms, grade 1 class 1, style D	RE 13A 372	590			620340-567
1	1	1	1	-63338F	R-233	Resistor, fixed, wire wound, ferrule type, 250 ohms ±5%, grade 1, class 1, style F	RE 13A 372	590	Suffix F		620340-806
1	1	1	1	-63371F	R-308	Resistor, fixed, wire wound, ferrule type, 50 ohms, grade 1, class 1, style F	RE 13A 372	590			620340-785
1	1	1	1	-63398F	R-304	Resistor, fixed, wire wound, ferrule type, 300 ohms, grade 1 class 1, style F	RE 13A 372	590			620340-808
1	1	1	1	-63752F	R-120	Resistor, fixed, wire wound, ferrule type, 2000 ohms, grade 1, class 1, style E	RE 13A 372	590			620340-694
1	1	1	1	-631937	R-229	Potentiometer, 1-5/8" dia., 10,000 ohms, shaft, stainless steel, 25/32" long, 0.248" dia., screwdriver slotted		382	Type M10MP		864708-2
1	1	1	1	-631938	R-240,241	Potentiometer, 1-5/8" dia., 3000 ohms, shaft, stainless steel, 25/32" long, 0.248' dia., screwdriver slotted		382	Type M3MP		864708-4
1	1	1	1	-631939	R-234	Attenuator, 1-19/32" dia., "L" ladder pad, 600 ohms, shaft, stainless steel, 29/32" long x 1/4" dia.		382			421058-2

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
EQUIPMENT SPARES

BOX NO.	QUANTITY 115/230V 440 V A.C	QUANTITY 115 V D.C	QUANTITY 230 V D.C	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
				RESISTORS (CLASS 63) (Continued)							
1	1	1	1	-631940	R-210	Resistor, ceramic, 100 ohms ±10%, 3 watts		711	Type A		881734-1
1	1	1	1	♂RC21BE105K (-63360)	R-226	Resistor, fixed, composition, insulated, 1 megohm ±10%, 1/2 watt, wire leads	♂C75.7-1943	321	BT-1/2		722322-98
1	1	1	1	♂RC21BE123K (-63360)	R-206,207	Resistor, fixed, composition, 12,000 ohms ±10%, 1/2 watt, insulated, pigtail type terminals	♂C75.7-1943	321	BT-1/2		722322-75
1	2	2	2	♂RC21BE222K (-63360)	R-217,228,230	Resistor, fixed, composition, 2200 ohms ±10%, 1/2 watt, insulated, pigtail type terminals	♂C75.7-1943	321	BT-1/2		722322-66
1	1	1	1	♂RC21BE271K (-63360)	R-203,204	Resistor, fixed, composition, 270 ohms ±10%, 1/2 watt, insulated, pigtail type terminals	♂C75.7-1943	321	BT-1/2		722322-55
1	1	1	1	♂RC21BE332K (-63360)	R-218	Resistor, fixed, composition, 3300 ohms ±10%, 1/2 watt, insulated, pigtail type terminals	♂C75.7-1943	321	BT-1/2		722322-68
1	1	1	1	♂RC21BE474K (-63360)	R-225	Resistor, fixed, composition, insulated, 470,000 ohms ±10%, 1/2 watt, wire leads	♂C75.7-1943	321	BT-1/2		722322-94
1	1	1	1	♂RC21BE561K (-63360)	R-242	Resistor, fixed, composition, 560 ohms ±10%, 1/2 watt, insulated, pigtail type terminals	♂C75.7-1943	321	BT-1/2		722322-59
1	1	1	1	♂RC21BE563K (-63360)	R-227	Resistor, fixed, composition, insulated, 56,000 ohms ±10%, 1/2 watt, wire leads	♂C75.7-1943	321	BT-1/2		722322-83
1	1	1	1	♂RC21BE823K (-63360)	R-237	Resistor, fixed, composition, insulated, 82,000 ohms ±10%, 1/2 watt, wire leads	♂C75.7-1943	321	BT-1/2		722322-85
1	1	1	1	♂RC21BE824K (-63360)	R-213,214	Resistor, fixed, composition, 0.82 megohm ±10%, 1/2 watt, insulated, pigtail type terminals	♂C75.7-1943	321	BT-1/2		722322-97

♂ American War Standard Type Number.
♂ American War Standard Specification.

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
EQUIPMENT SPARES

BOX NO.	QUANTITY 115/230V 440 V A.C.	QUANTITY 115 V D.C.	QUANTITY 230 V D.C.	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
				RESISTORS (CLASS 63) (Continued)							
1	1	1	1	♂RC31BE101K (-63288)	R-118	Resistor, fixed, composition, 100 ohms ±10%, 1 watt, insulated, pigtail type terminals	♁C75.7-1943	321	BT-1		722337-50
	x	x	x	♂RC31BE101K (-63288)	R-115	Resistor, fixed, composition, 100 ohms ±10%, 1 watt, insulated (Part of Z-104)	♁C75.7-1943	321	BT-1		722337-50
	x	x	x	♂RC31BE101K (-63288)	R-119	Resistor, fixed, composition, 100 ohms ±10%, 1 watt, insulated (Part of Z-101)	♁C75.7-1943	321	BT-1		722337-50
1	1	1	1	♂RC31BE103K (-63288)	R-111	Resistor, fixed, composition, 10,000 ohms ±10%, 1 watt, insulated, pigtail type terminals	♁C75.7-1943	321	BT-1		722337-74
1	1	1	1	♂RC31BE105K (-63288)	R-201	Resistor, fixed, composition, 1.0 megohm ±10%, 1 watt, insulated, pigtail type terminals	♁C75.7-1943	321	BT-1		722337-98
1	2	2	2	♂RC31BE123K (-63288)	R-205,208,223	Resistor, fixed, composition, 12,000 ohms ±10%, 1 watt, insulated, pigtail type terminals	♁C75.7-1943	321	BT-1		722337-75
1	1	1	1	♂RC31BE124K (-63288)	R-215,216	Resistor, fixed, composition, 0.12 megohm ±10%, 1 watt, insulated, pigtail type terminals	♁C75.7-1943	321	BT-1		722337-87
	x	x	x	♂RC31BE182K	R-104	Resistor, fixed, 1800 ohms ±10%, 1 watt, insulated (Part of Z-102)	♁C75.7-1943	321	BT-1		722337-65
1	1	1	1	♂RC31BE273K (-63288)	R-103	Resistor, fixed, composition, 27,000 ohms ±10%, 1 watt, insulated, pigtail type terminals	♁C75.7-1943	321	BT-1		722337-79
1	1	1	1	♂RC31BE393K (-63288)	R-222	Resistor, fixed, composition, 39,000 ohms ±10%, 1 watt, insulated, pigtail type terminals	♁C75.7-1943	321	BT-1		722337-81
1	1	1	1	♂RC31BE473K (-63288)	R-102	Resistor, fixed, composition, 47,000 ohms ±10%, 1 watt, insulated, pigtail type terminals	♁C75.7-1943	321	BT-1		722337-82

♂ *American War Standard Type Number.*
♁ *American War Standard Specification.*

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
EQUIPMENT SPARES

BOX NO.	QUANTITY 115/230/440 V A.C.	QUANTITY 115 V D.C.	QUANTITY 230 V D.C.	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
				RESISTORS (CLASS 63) (Continued)							
1	1	1	1	♂RC31BE104K	R-224	Resistor, fixed, composition, 0.10 megohm ±10%, 1 watt, insulated, pigtail type terminals	♁C75.7-1943	321	BT-1		722337-86
				-63288	R-224	Resistor, fixed, composition, 68,000 ohms ±10%, 1 watt, insulated		321	BT-1		844314-84
	x	x	x	♂RC31BE332K	R-112	Resistor, fixed, composition, 3300 ohms ±10%, 1 watt, insulated (Part of Z-103)	♁C75.7-1943	321	BT-1		722337-68
1	1	1	1	♂RC41BE103K (-63474)	R-113,114	Resistor, fixed, composition, insulated, 10,000 ohms ±10%, 2 watts, wire leads	♁C75.7-1943	321	BT-2		722357-74
1	1	1	1	♂RC41BE181K (-63474)	R-219	Resistor, fixed, composition, 180 ohms ±10%, 2 watts, insulated, pigtail type terminals	♁C75.7-1943	321	BT-2		722357-53
1	1	1	1	♂RC41BE223K (-63474)	R-202	Resistor, fixed, composition, 22,000 ohms ±10%, 2 watts, insulated, pigtail type terminals	♁C75.7-1943	321	BT-2		722357-78
1	2	2	2	♂RC41BE273K (-63474)	R-105,106,212,239	Resistor, fixed, composition, 27,000 ohms ±10%, 2 watts, insulated, pigtail type terminals	♁C75.7-1943	321	BT-2		722357-79
1	1	1	1	♂RC41BE562K (-63474)	R-238	Resistor, fixed, composition, 5600 ohms ±10%, 2 watts, insulated, pigtail type terminals	♁C75.7-1943	321	BT-2		722357-71
1	1	1	1	♂RC41BE820K	R-310,311	Resistor, fixed, composition, 82 ohms ±10%, 2 watts, insulated, large	♁C75.7-1943	321	BT-2		722357-49
1	1	1	1	♂RC41BE822K (-63474)	R-117,211	Resistor, fixed, composition, 8200 ohms ±10%, 2 watts, insulated, pigtail type terminals	♁C75.7-1943	321	BT-2		722357-73
1	1	1	1	♂RC65CE273K	R-107,108	Resistor, fixed, composition, 27,000 ohms ±10%, 4 watts, non-insulated pigtail type terminals	♁C75.7-1943	321	BT-4		722365-79

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♂ *American War Standard Type Number.*
♁ *American War Standard Specification.*

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TABLE IV (Continued)

SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
EQUIPMENT SPARES

BOX NO.	QUANTITY 115/230/440 V A.C.	QUANTITY 115 V D.C.	QUANTITY 230 V D.C.	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
						RESISTORS (CLASS 63) (Continued)					
1	2	2	2	♂RC65CE473K	R-220,221,243	Resistor, fixed, composition, 47,000 ohms ±10%, 4 watts, non-insulated, pigtail type terminals	♁C75.7-1943	321	BT-4		722365-82
1	1	1	1	♂RC76CE683K	R-301	Resistor, fixed, composition, non-insulated, 68,000 ohms ±10%, 5 watts	♁C75.7-1943	321	BT-5		722375-84
					R-301	Resistor, fixed, 75,000 ohms ±10%, 5 watts		171	D5-ST2A		875231-8
1	1	1	1		R-101	Heater unit assembly consisting of: 85 turns AWG #34 E wire, wound on bakelite varnished form, 0.010" x 1-1/2" x 13-3/8", d-c resistance 662 ohms ±2%		1			427541-501
1	1	1	1		R-209	Potentiometer, 1-5/8" dia., 100 ohms, shaft stainless steel, 25/32" long, 0.248" dia., screwdriver slotted		382	M100P		864708-1
1	1	1	1		R-303	Rheostat, spare for overload relay, 50 ohms ±10%		820			422579-8

♂ *American War Standard Type Number.*
♁ *American War Standard Specification.*

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TABLE IV
SPARE PARTS LIST BY NAVY TYPE NUMBERS FOR MODEL TDQ TRANSMITTING EQUIPMENT

CONTRACT NXss-29644 — STOCK SPARES — S.O. 12420 S.O. 12182

QUANTITY A: 115/230/440 V A.C.	QUANTITY A: 115 V D.C.	QUANTITY A: 230 V D.C.	QUANTITY B: 115/230/440 V A.C.	QUANTITY B: 115 V D.C.	QUANTITY B: 230 V D.C.	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
								MISCELLANEOUS (CLASS 10)					
8			4				A-401	Shock mount, 2-1/4" wide, 4-1/2" long, 1-3/8" high		462	#10	Modified by RCA	K-881870-1
1							E-101	1st tripler plate connector assembly consisting of: 2 straps, tube cap and washer		1			K-882612-501
1							E-102	2nd tripler plate connector assembly consisting of: 2 straps, tube cap and washer		1			K-882612-502
1							E-103	Power amplifier plate connector assembly consisting of: 2 straps, tube cap and washer		1			K-882612-503
1							E-104	Tube cap connector assembly consisting of: small insert; wire 15" long; contact for 0.360" dia. tube cap and small shell		3	#91 RL (Small)		K-838440-502
1							E-105	Tube cap connector, formed, 11/32" I.D., 3/8" wide, 27/32" long		483	#24		K-801165-1
2			1				E-201	Terminal board assembly consisting of: mycalex board, 4-1/8" long, 1-11/16" wide, 1/4" thick, 13 holes		1			K-882449-1
2			1				E-301	Terminal board assembly consisting of: mycalex board, 7-3/16" long, 2-3/16" wide. 1/4" thick, 34 holes		1			M-441078-1
1			1				I-301	Indicator lamp assembly consisting of socket and red lens		208	LT 9337-SA		K-882411-501
18			12				I-301A,302A,303A	Indicator lamp, candelabra screw base, 115 v, 6 watts		18	#17L 3914-100		K-881393-1

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
STOCK SPARES

QUANTITY A: 115/230/440 V A.C.	QUANTITY A: 115 V D.C.	QUANTITY A: 230 V D.C.	QUANTITY B: 115/230/440 V A.C.	QUANTITY B: 115 V D.C.	QUANTITY B: 230 V D.C.	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
								MISCELLANEOUS (CLASS 10) (Continued)					
1			1				I-302	Indicator lamp assembly consisting of socket and green lens		208	LT 9337-SA		K-882411-502
1			1				I-303	Indicator lamp assembly consisting of socket and yellow lens		208	LT 9337-SA		K-882411-503
5			3				N-101	Dial assembly consisting of: cover assembly, base assembly, knob assembly and gear assembly		1			M-440994-501
1			1				O-101	Air duct assembly consisting of polystyrene air duct and polystyrene cap		1			K-882665-501
1			1				O-102	Right angle air duct assembly consisting of polystyrene air duct and polystyrene cap		1			K-882667-501
2			2				O-103	Blower boot, army khaki, 2-9/16" I.D. one end, 2-3/16" I.D. other end, 1-5/8" long		191			K-882683-1
3			2				O-105	Catch, steel, wire, "U" shaped		1			K-881996-2
60			24				O-106	Coil spring for tube clamps, 0.032" music wire, 1/4" O.D., 1-1/4" long, 12 turns		1			K-861610-2
4			2				O-107	Coupling, slide acting, 1-3/64" square		459	Cat. #39006		K-882786-1
2			1				O-108	Gear, brass, 0.250" I.D., 0.500" pitch dia., 48 diametral pitch, 24 teeth, 1/8" tooth face		1			K-882642-2
2			1				O-109	Gear, brass, 0.250" I.D., 0.500" pitch dia., 48 diametral pitch, 24 teeth, 1/4" tooth face		1			K-882642-1
1			1				O-110	Tube clamp assembly consisting of ring and liner		1			M-441055-501

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
STOCK SPARES

QUANTITY A			QUANTITY B			NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
115/230/440 V A.C.	115 V D.C.	230 V D.C.	115/230/440 V A.C.	115 V D.C.	230 V D.C.								
								MISCELLANEOUS (CLASS 10) (Continued)					
6			3				O-110A, 111A	Bushing, brass, 0.281" O.D. x 0.099" I.D. x 5/16" long		1			K-885826-1
1			1				O-111	Tube clamp assembly consisting of ring and liner		1			M-441055-502
4			2				O-112,201,301	Clamp for tube mounting, stainless steel		126	926C		K-882941-1
4			2				O-113	Universal joint, duralumin, 1/2" O.D., 0.251" I.D. one end, 0.251" I.D. other end, 1-1/8" long		106	T-42		K-868655-3
1			1				O-202	Clamp for tube mounting, stainless steel		126	926B		K-882941-2
4			2				O-601	Gasket, neoprene, 1/32" thick, durometer 40-50, 1" square, 5/8" I.D., part of antenna assembly		1			K-883934-1
8			4				O-602	Gasket, neoprene, 1/32" thick, durometer 40-50, 2-15/64" O.D., 1-3/4" I.D., part of antenna assembly		1			K-883936-1
4			2				O-603	Gasket, neoprene, 1/32" thick, durometer 40-50, 1" O.D., 17/32" I.D., part of antenna assembly		1			K-883937-1
4			2				O-604	Gasket, neoprene, 1/32" thick, durometer 40-50, 1-7/8" x 2-1/8", 1-1/4" I.D., part of antenna assembly		1			K-883941-1
2			1					Spanner wrench assembly consisting of stem and groove pin		1			K-881918-501
2			1					Wrench, Allen, for 3/8" setscrew, 1/4" capscrew		5			K-828505-4
2			1					Wrench, Allen, for #6 setscrew		5			K-828505-13
2			1					Wrench, Allen, special for #4 setscrew		5			K-828505-14
								COPPER OXIDE RECTIFIERS (CLASS 20)					
2			1				CR-301	Selenium rectifier, energized with 17.0 v, r-m-s, 60 cycles and supplies 12.5 v d.c. into resistance load of 1.1 amps.		127	Cat. #199S1		M-440977-1

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
STOCK SPARES

QUANTITY A			QUANTITY B			NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
115/230/440 v a.c.	115 v d.c.	230 v d.c.	115/230/440 v a.c.	115 v d.c.	230 v d.c.								
								MOTORS (CLASS 21)					
3	3	3	2	2	2		†B-101	Motor, blower, 1/70 h.p., single phase, 110 v d.c., 60 cycles, 2850 r.p.m., ccw rotation, thrust bearing to permit vertical mounting		18 258			P-720519-15 P-720519-8
2	2	2	2	2	2		B-101A	Ball bearing, 0.2756" wide, 0.8661" O.D., bore 0.3150" dia. for GE Motor B-101, RCA dwg. #720519-15		439	7038		K-885824-1
2	2	2	2	2	2		B-101A	Ball bearing, 0.2756" wide, 0.8661" O.D., bore 0.3150" dia., 7 balls, for Electrolux Motor B-101, RCA dwg. #720519-8		439	77038		K-885655-2
3	3	3	2	2	2		B-101B	Spare for Motor B-101, RCA dwg. #720519-8, 3.6/4.0 mfd, 330 v a.c. working		258			K-891671-1
3	3	3	2	2	2		B-101B	Spare for Motor B-101, RCA dwg. #720519-15, fixed, oil filled, 3.75 mfd ±10%, 330 v a.c. working		18			K-891670-1
	6			6			MC-701A	Coil, 115 v, 1500 ohms, 17,000 turns AWG #33 E wire		18	#22D11G143		K-882731-1
		6			6		MC-701B	Coil, 230 v, 6400 ohms, 34,000 turns AWG #36 E wire		18	#22D11G144		K-882731-2
	6	6		6	6		MC-701C	Main stationary contact tip		18	#2840261G7		K-882731-3
	6	6		6	6		MC-701D	Main movable contact tip		18	#2840261G1		K-882731-4
	2	2		2	2		MC-701E	Main contact spring		18	#2412681		K-882731-5
	12	12		12	12		MC-701F	Interlock stationary contact tip (normally open)		18	#3614137G1		K-882731-6
	4	4		4	4		MC-701G	Interlock stationary contact tip (normally closed)		18	#3805671G2		K-882731-7
	8	8		8	8		MC-701H	Interlock movable contact tip		18	#3667572G1		K-882731-8

† *Either motor may be supplied.*

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
STOCK SPARES

QUANTITY A 115/230/440 V A.C.	QUANTITY A 115 V D.C.	QUANTITY A 230 V D.C.	QUANTITY B 115/230/440 V A.C.	QUANTITY B 115 V D.C.	QUANTITY B 230 V D.C.	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
								MOTORS (CLASS 21) (Continued)					
	4	4		4	4		MC-701I	Interlock spring		18	#2411917		K-882731-9
	3	3		3	3		MC-701J	Operating spring		18	#235184		K-882731-10
	3			3			MC-701K	Coil, 115 v, 750 ohms, 6890 turns AWG #34 E wire		18	#22D13G4		K-882731-11
		3			3		MC-701L	Coil, 230 v, 2800 ohms, 13,140 turns AWG #36 E wire		18	#22D13G2		K-882731-12
	1	1					MC-701P	Main contact spring		18	#2414612		K-882731-16
	3	3		3	3		MC-701T	Resistor unit, starting resistor assembly, total resistance 15.4 ohms, center tap		18	CR9033-A15.4Y16B-1/2		K-882731-20
	4	4		2	2		MC-701U	Set of gaskets		18	8627593P2		K-882731-21
	50	50		20	20		MC-701V	Fuses, 10 amps., 250 v		18	GE 3169		K-882731-22
	2			1			MG-801A	Spare armature, 115 v		18	#5870351AA1		K-882730-2
		2			1		MG-801B	Spare armature, 230 v		18	#8160994AA1		K-882730-3
	4	4		2	2		MG-801C	Generator field coils, (115 v, 60 cycles) (2 per set)		18	#5870110AA1		K-891949-1
	4			2			MG-801D	Motor field coils, (115 v d.c.) (2 per set)		18	#5870107AA1		K-891949-2
		4			2		MG-801E	Motor field coils, (230 v d.c.) (3 per set)		18	#8167501AA1		K-891949-3
	2	2		2	2		MG-801F	Set of ball bearings New Departure type 3205 or type 7505		18	#5859520AB2		K-882730-7
	40	40		20	20		MG-801G	Assembly, brush, SP.PT. & terminal		18	#8104791AA6		K-882730-8
	40	40		20	20		MG-801H	Assembly, brush, SP.PT. & terminal		18	#5869390AD4		K-882730-9
	40	40		20	20		MG-801I	Assembly, brush, SP.PT. & terminal		18	#8100097AA13		K-882730-10
	20	20		10	10		MG-801J	Assembly, brush, SP.PT. & terminal		18	#5863334AF6		K-882730-11
	12	12		8	8		MG-801K	Assembly, brush, tube and insulation		18	#8104789AC1		K-882730-12
	12	12		8	8		MG-801L	Assembly, brush, tube and insulation		18	#5869388AD7		K-882730-13

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
STOCK SPARES

QUANTITY A 115/230/440 V A.C.	QUANTITY A 115 V D.C.	QUANTITY A 230 V D.C.	QUANTITY B 115/230/440 V A.C.	QUANTITY B 115 V D.C.	QUANTITY B 230 V D.C.	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
								MOTORS (CLASS 21) (Continued)					
	12	12		8	8		MG-801M	Assembly, brush, tube and insulation		18	#8100089AA7		K-882730-14
	6	6		4	4		MG-801N	Tube, insulation and clip assembly		18	#8160071AA1		K-882730-15
	24	24		16	16		MG-801O	Insulated screw cap		18	#5898031AA2		K-882730-16
	6	6		4	4		MG-801P	Insulated screw cap		18	#5863338AB2		K-882730-17
	12	12		8	8		MG-801Q	Insulated screw cap		18	#5895854AA3		K-882730-18
	1	1		1	1		MG-801R	Pin		18	#5863714AA11		K-882730-19
	1	1		1	1		MG-801S	Adjusting screw		18	#8109770AA1		K-882730-20
	1	1		1	1		MG-801T	Contact and screw assembly		18	#8128844AAP1		K-882730-21
	10	10		6	6		MG-801U	Resistor assembly, Globar, Type B, 130 ohms		18	#8127261AA2		K-882730-22
	5			3			MG-801V	Resistor, Dividohm, 200 ohms		18	#5895465AB18		K-882730-23
		5			3		MG-801W	Resistor, Dividohom, 800 ohms		18	#5895465AB17		K-882730-24
	5	5		3	3		MG-801X	Resistor, Dividohm, 25 ohms		18	#5895465AB10		K-882730-25
	5			3			MG-801Y	Resistor, Special, 7.5 ohms		18	#8124682AA6		K-882730-26
		5			3		MG-801Z	Resistor, Special, 30.0 ohms		18	#8124682AA10		K-882730-27
	1	1		1	1		MG-801AA	Assembly of regulator rotating elements		18	#8109968AC3		K-882730-28
	8	8		4	4		MG-801AB	Capacitor assembly, consisting of 3WPS, 0.005 mfd, 1000 v		18	#8106433AK1		K-882730-29
	3			2			MG-801AC	Capacitor, 10 mfd		18	#8128988AA1		K-882730-30
		3			2		MG-801AD	Capacitor, 5 mfd		18	#8167010AA1		K-882730-31
	3	3		2	2		MG-801AE	Capacitor, 1 mfd		18	#8127047AA3		K-882730-32
	4	4		4	4		MG-801AF	Spring washer		18	#5859260AA1		K-882730-33
	4	4		2	2		MG-801AG	Overload switch		18	#5845495AA3		K-882730-34

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
STOCK SPARES

QUANTITY A: 115/230/440 V A.C.	QUANTITY A: 115 V D.C.	QUANTITY A: 230 V D.C.	QUANTITY B: 115/230/440 V A.C.	QUANTITY B: 115 V D.C.	QUANTITY B: 230 V D.C.	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
								MOTORS (CLASS 21) (Continued)					
	4	4		4	4		MG-801AH	Gasket, rubber, (cover)		18	#5895117AB3		K-882730-35
	2	2		2	2		MG-801AI	Gasket, copper, (retainer)		18	#8128089AA1		K-882730-36
	4	4		2	2		MG-801AJ	Gasket, neoprene, (terminal box)		18	#8132049AB1		K-882730-37
	2	2		2	2		MG-801AL	Gasket, copper, (retainer		18	#8128089AD1		K-882730-39
								ELECTRICAL MEASURING INSTRUMENTS (CLASS 22)					
1						ϕMR25W020 DCMA	M-102	D-C milliammeter, 0-20 ma d.c. scale, flush mounting panel type, 2-1/2" round phenolic case, calibrated for use on non-magnetic panel	†ASA C39.2-1943	18 38			M-426702-94
1						ϕMR25W300 DCMA	M-101	D-C milliammeter, 0-300 ma d.c. scale, flush mounting panel type, 2-1/2" round phenolic case, calibrated for use on non-magnetic panel	†ASA C39.2-1943	18 38			M-426702-129
1						ϕMR25W123 Spec.	M-201	DB meter, output, scale -10/0/+6 db, 6 mw, 600 ohms, medium speed, flush mounting panel type, 2-1/2" round phenolic case, calibrated for non-magnetic panel	†ASA C39.2-1943	18 38			M-426725-4
								SWITCHES (CLASS 24)					
1		1				-24276	S-201	Switch, test key, cam lever, lock in upper position, non-lock in normal position, S.P.D.T.		637			M-420973-6
1		1				-24277	S-303	Switch, remote-local, cam lever, containing the equivalent of 7 single pole breaks and 1 S.P.D.T., break in lower lock position, contact rating 2 amps., 110 v d.c. or 10 amps., 110 v a.c.		468			M-427520-1
2		1					S-102,103	Switch, rotary type, steatite ceramic wafer, 4 position		10			M-441076-1
1		1					S-201A	Spare contacts for S-201,		637			M-420973-26
1		1					S-301	Switch, push button type, emergency, D.P.S.T., back connected, 20 amps., 125 v		7	#3948		K-882641-1
3		2					S-302,304,307	Switch, rated 30 amps., 250 v		675	Cat. #7475-C		K-818231-2

ϕ American War Standard Type Number.
† American War Standard Specification.

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
STOCK SPARES

QUANTITY A: 115/230/440 V A.C.	QUANTITY A: 115 V D.C.	QUANTITY A: 230 V D.C.	QUANTITY B: 115/230/440 V A.C.	QUANTITY B: 115 V D.C.	QUANTITY B: 230 V D.C.	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
SWITCHES (CLASS 24) (Continued)													
1			1				S-303A	Spare contacts for S-303		468			M-427520-21
1			1				S-305	Switch, start, momentary contact type, normally open, single circuit, green button		35	Cat. #KB1-G201 Type KB1		K-842822-2
1			1				S-306	Switch, stop, momentary contact type, normally open, single circuit, red button		35	Cat. #KB1 Type KB1		K-842822-6
PROTECTIVE DEVICES (CLASS 28)													
200			100				F-301,302,401,402	Fuse, cartridge type, non-renewable, ferrule, 250 v, 3 amps., non-indicating		18 147 254 768	Cat. #GE1454 Cat. #25003 Cat. #2001 Cat. #1103		K-59075-10
100			40				F-303,304	Fuse, cartridge type, non-renewable, ferrule, 250 v, 15 amps.		18 147 254 768	Cat. #GE1463 Cat. #25015 Cat. #2007 Cat. #1115		K-59075-3
100			40				F-305	Fuse, cartridge type, 1 amp., 1000 v					K-98578-6
RELAYS, COILS & CONTACTS (CLASS 29)													
3			2				K-101A	Rotary switch assembly consisting of: aluminum body, 2 steel ball bearings, 2 threaded brass nuts, 3 contact assemblies, 3 pins, pinion and stop arm assembly rotor assembly and 2 brass rod retainers, part of K-101, antenna relay switch		1			T-621258-501
2							K-101B	Coil and plunger assembly, coil wound for 115 v, 50-60 cycles, part of K-101		18	Cat. #4382679AB475 CR-9503-208D		K-882152-1

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
STOCK SPARES

QUANTITY A			QUANTITY B			NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
115/230/440 V A.C.	115 V D.C.	230 V D.C.	115/230/440 V A.C.	115 V D.C.	230 V D.C.								
								RELAYS, COILS & CONTACTS (CLASS 29) (Continued)					
5			2				K-101C	Spring for antenna switch, 0.035" dia. music wire, approx. 8 turns, part of K-101, 15/64" I.D.		1			K-882961-1
5			2				K-101D	Spring for antenna switch, 0.051" dia. music wire, 9/16" I.D., approx. 3-1/4" turns, part of K-101		1			K-882176-1
8			4				K-101E	Contact assembly consisting of: molded styramic insulator and spring contact, part of K-101		1			K-881876-501
3			2				K-101F	Coil for K-101, rotary antenna relay unit		18			K-882152-2
2							K-201	Relay, type G #A11996; coil, 2000 ohms, 17,300 turns #38 EC, 3 platinum-iridium contacts, heavy duty bearings		12			K-881753-1
3			2				K-201A	Coil for K-201, keying relay		12			K-881753-3
3			2				K-201B	Contacts for K-201		12			K-881753-2
2							K-202	Relay, type G #A13763; coil, 3000 ohms, 28,600 turns, #38 EC; 3 platinum-iridium contacts		12			K-881727-1
3			2				K-202A	Coil for K-202, oscillator switching relay		12			K-881727-3
3			2				K-202B	Contacts for K-202		12			K-881727-2
2							K-301	Relay; coil 6 va, 60 v a.c., 1/4" dia., silver contacts, 60 cycles and 4 P.S.T.N.O.		25			K-882741-1
3			2				K-301A	Coil for K-301, master control relay		25			K-882741-2
3			2				K-301B	Contacts for K-301, fixed and movable		25			K-882741-3
2							K-302	Relay, coil to operate on 12 v d.c., S.P.S.T. - N.O./S.P.D.T.		25	Cat. #2023 MXF		K-882676-1
3			2				K-302A	Coil for K-302, carrier control relay		25			K-882676-2

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
STOCK SPARES

QUANTITY A: 115/230/440 V A.C.	QUANTITY A: 115 V D.C.	QUANTITY A: 230 V D.C.	QUANTITY B: 115/230/440 V A.C.	QUANTITY B: 115 V D.C.	QUANTITY B: 230 V D.C.	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
RELAYS, COILS & CONTACTS (CLASS 29) (Continued)													
3			2				K-302B	Contacts for K-302, fixed and movable		25			K-882676-3
2							K-303	**Relay, overload, 250-500 ma, normally closed, 1/4" dia., silver contacts**		44	700A		M-422579-1
3			2				K-303A	Coil for K-303		44			M-422579-6
3			2				K-303B	Contacts for K-303		44			M-422579-7
TRANSFORMERS & REACTORS (CLASS 30)													
3			2			-30471	L-203	Reactor, interstage, iron core, 10,000 turns, AWG #37 E wire, tapped at 5000 turns, d-c resistance 1820 ohms Hi-pot voltage: 2000 v Min. impedance at 3 v, 60 cycles a.c. and 0 amp. d.c. shall be 125,000 ohms +25% -10%, midtap to be within 1% of neutral Resistance 1800 ohms ±10%		1			K-900548-501
3			2			-30763	T-205	Transformer, microphone, audio, iron core, consisting of: 2 primaries, 1 tapped secondary and 1 untapped secondary Winding — No. of Turns — Wire Size — Taps — D-C Res. (Ohms) Pri. #1 — 150 — AWG #25 E — — 1.41 Sec. #1 — 840 — AWG #31 E — 330 — 43 Sec. #2 (Same as Sec. #1, except reverse wound) Pri. #2 — 150 — AWG #25 E — — 2.42 Connect Pri. #1 st rt to Pri. #2 start		1			K-900816-501

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
STOCK SPARES

QUANTITY A			QUANTITY B			NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
115/230/440 V A.C.	115 V D.C.	230 V D.C.	115/230/440 V A.C.	115 V D.C.	230 V D.C.								
								TRANSFORMERS & REACTORS (CLASS 30) (Continued)					
							T-205 (Continued)	Hi-pot voltage: 1500 v a.c., r-m-s Impedance: primary impedance at 3 v, 60 cycles a.c. and 0.050 amp. d.c. shall be 150 ohms min. Additive polarity					
6			4				L-201,202	Reactor, filter, iron core, 3300 turns AWG #31 wire, tapped at 330 turns, d-c resistance 238 ohms Hi-pot voltage: 1500 v Total impedance at 3 v, 60 cycles a.c. & 0.150 amps. d.c. shall be 3200 ohms min.		1			K-900904-501
6			4				L-301,302	Reactor, high voltage supply, iron core, 1520 turns, AWG #22 E wire, d-c resistance 21.2 ohms Hi-pot voltage: 3000 v Impedance measured at 30 v, 60 cycles, 0.550 amp. d.c. shall be 1210 ohms min., d-c resistance 21.2 ohms ±10%		1			K-901361-501
1			1				L-303	Reactor, pack, iron core, 125 turns AWG #16E wire, d-c resistance 0.34 ohms Hi-pot voltage: 1500 v Impedance at 3 v, 60 cycles a.c., 0.5 amp. d.c. shall be 30 ohms		1			K-901691-501
3			2				T-202	Transformer, driver, iron core, consisting of: midtapped primary and 2 midtapped secondaries Wind-ing / No. of Turns / Wire Size / Taps / D-C Res. (Ohms) Pri. 4400 AWG #36 E 2200 622 Sec. #1 1260 AWG #36 E 630 124 Sec. #2 1260 AWG #36 E 630 230 Hi-pot voltage: 1500 v Impedance: primary impedance at 30 v, 60 cycles a.c. and 0 amp. d.c. shall be 35,000 ohms min. Additive polarity		1			K-901652-501

TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
STOCK SPARES

QUANTITY A		QUANTITY B		NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
115/230/440 V A.C.	115 V D.C. 230 V D.C.	115/230/440 V A.C.	115 V D.C. 115 V D.C.								
						TRANSFORMERS, REACTORS (CLASS 30) (Continued)					
3		2			T-203	Transformer, modulation, audio, iron core, consisting of: tapped primary and a secondary Primary: 1610 turns of AWG #27 E wire, tapped at 805 turns, wound over secondary; d-c resistance 68 ohms Secondary: 1110 turns of AWG #25 E wire, wound over tube, d-c resistance 23.5 ohms Hi-pot voltage: 3500 v a.c., r-m-s Impedance: secondary impedance at 30 v, 60 cycles a.c. and 0.250 amp. d.c. shall be 1100 ohms min. Additive polarity		1			K-900716-501
3		2			T-204	Transformer, audio oscillator, iron core, consisting of: primary and 2 secondaries Wind-ing / No. of Turns / Wire Size / D-C Res. (Ohms) Pri. 4700-1/2 AWG #36 E 600 Sec. #1 750 AWG #36 E 127 Sec. #2 600 AWG #36 E 109 Hi-pot voltage: 1500 v Additive polarity		1			K-900546-501
3		2			T-206	Transformer, power, low voltage plate, iron core, consisting of: tapped primary, untapped primary, mid-tapped plate and untapped filament Wind-ing / No. of Turns / Wire Size / Taps / D-C Res. (Ohms) Pri. #1 288 AWG #21 E 23,46 2.31 Pri. #2 265 AWG #24 E 4.90 Plate 2080 AWG #29 E 1040 142 Fil 12-1/2 AWG #16 E Hi-pot voltage: 1500 v Additive polarity		1			K-901642-501

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
STOCK SPARES

QUANTITY A: 115/230/440 V A.C.	QUANTITY A: 115 V D.C.	QUANTITY A: 230 V D.C.	QUANTITY B: 115/230/440 V A.C.	QUANTITY B: 115 V D.C.	QUANTITY B: 230 V D.C.	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
								TRANSFORMERS & REACTORS (CLASS 30) (Continued)					
3			2				T-301	Transformer, filament, iron core, consisting of: two primary windings and three filament windings Wind-ing / No. of Turns / Wire Size / Taps / D-C Res. (Ohms) Pri. #1 — 254 — AWG #20 E — 20,40 — 1.82 Pri. #2 — 234 — AWG #22 E — — 3.08 Fil. #1 — 27 — AWG #14 E — 13-1/2 — Fil. #2 — 14 — AWG #13 E — — Fil. #3 — 11 — AWG #12 E — — Hi-pot voltage: primaries #1 & 2, 1500 v; filaments #1,2 & 3, 2500 v		1			K-901648-501
3			2				T-302	Transformer, power, 12 v supply, iron core, consisting of: tapped primary, untapped primary, and tapped secondary Wind-ing / No. of Turns / Wire Size / Taps / D-C Res. (Ohms) Pri. #1 — 456 — AWG #25 E — 36,73 — 7.24 Pri. #2 — 420 — AWG #28 E — — 15.2 Sec. — 76 — AWG #16 E — 65,70 — 0.192 Hi-pot voltage: 2500 v Additive polarity		1			K-901647-501
1			1				T-303	Transformer, plate, iron core, consisting of: two primary windings, one tapped and one midtapped secondary winding Wind-ing / No. of Turns / Wire Size / Taps / D-C Res. (Ohms) Pri. #1 — 192 — AWG #15 E — 15,31 — 0.499 Pri. #2 — 177 — AWG #18 E — — 1.073 Sec. — 1880 — AWG #24 E — 940 — 54.8		1			K-901645-501

TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
STOCK SPARES

QUANTITY A: 115/230/440 V A.C.	QUANTITY A: 115 V D.C.	QUANTITY A: 230 V D.C.	QUANTITY B: 115/230/440 V A.C.	QUANTITY B: 115 V D.C.	QUANTITY B: 230 V D.C.	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
TRANSFORMERS & REACTORS (CLASS 30) (Continued)													
							T-303 (Continued)	No Load Full Load Rated Current Winding Voltage Voltage (Amps.) Primary 115 3.6 Sec. 1220 1170/585 0.60 D.C. Hi-pot voltage: primaries #1 and #2, 1500 v; secondary - 3500 v Additive polarity					
3			2				T-304	Transformer, isolation, iron core, consisting of 2 untapped primaries and 1 untapped secondary Winding / No. Turns / AWG Wire Size / D-C Resistance (Ohms) Primary #1 600 #25E 8.75 Primary #2 600 #28E 21.1 Secondary 646 #26E 16.5 Hi-pot voltage: 2500 v Additive polarity Rated current: primary - 0.39 amp., secondary - 0.304 amp.		1			K-901651-501
1			1				T-501	Transformer, power, iron core, two pri. and one sec.; pri. #1: 154 turns AWG #17 E wire, 1.01 ohm d-c resistance, hi-pot 3000 v; pri. #2: 154 turns AWG #17 E wire, 1.14 ohm d-c resistance, hi-pot 3000 v; sec.: 89 turns 0.080 x 1.00 DC wire tapped at 74 and 81 turns, hi-pot 4000 v, additive polarity		1			K-901571-502
THERMOSTATS (CLASS 40)													
4			2				S-101	Thermostat, temperature adjustment 70°C., rated 110 v, 15 watts, 60 cycles		232	Cat. #S1-1		K-884773-4
4			2				S-104	Thermostat, temperature adjustment 80°C., rated 110 v, 15 watts, 60 cycles		232	Cat. #S1-1		K-884773-3

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
STOCK SPARES

QUANTITY A: 115/230/440 V A.C.	QUANTITY A: 115 V D.C.	QUANTITY A: 230 V D.C.	QUANTITY B: 115/230/440 V A.C.	QUANTITY B: 115 V D.C.	QUANTITY B: 230 V D.C.	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
								INDUCTANCES (CLASS 47)					
1			1				L-101	Coil assembly consisting of: 13 turns AWG #18 DC copper wire, right hand wound, tapped at 6-1/2", 47" long, wound over steatite ceramic coil form, 1" O.D.		1			M-441092-501
1			1				L-102	Coil assembly consisting of: 3 terminals and coil, 1-1/8" O.D., AWG #12 copper wire, 4 turns with center tap		1			K-882492-501
1			1				L-103	Loop, copper, 1/16" thick, 3/8" wide, 6-3/32" long		1			K-882613-1
2			1				L-104	Line assembly consisting of: 1 brass bar, 2 connector assemblies, 2 seamless brass tubes and 2 brass straps		1			M-441089-501
2			1				L-105	Loop assembly consisting of: bronze body, brass gear, molded styramic insulator, brass bushing, copper loop, brass collar, brass shaft and brass pinion		1			M-427503-501
x			x				L-106	Coil, 12 turns AWG #28 DCC wire wound over R-119 (part of Z-101)		1			K-882400-3
x			x				L-107	Coil, 12 turns AWG #28 DCC wire wound over R-104 (part of Z-102)		1			K-882400-3
x			x				L-108	Coil, 12 turns AWG #28 DCC wire wound over R-112 (part of Z-103)		1			K-882400-3
x			x				L-109	Coil, 25 turns AWG #28 DCC wire wound over R-115 (part of Z-104)		1			K-882400-9

TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
STOCK SPARES

QUANTITY A: 115/230/440 V A.C.	QUANTITY A: 115 V D.C.	QUANTITY A: 230 V D.C.	QUANTITY B: 115/230/440 V A.C.	QUANTITY B: 115 V D.C.	QUANTITY B: 230 V D.C.	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
								CAPACITORS (CLASS 48)					
2			2			-48231	C-126,127	Capacitor, fixed, molded, mica, 0.01 mfd ±20%		1	Model T Special Type		P-32170-511
10			6			-48595-A10	C-206,208,212,215	Capacitor, fixed, paper, oil filled, 1.0 mfd ±10%, 400 v d.c. working	RE 13A 488	1			P-720555-52
12			12			-481159	C-303,304,305,306	Capacitor, dry, electrolytic, 1000 mfd, 25 v d.c. working	RE 13A 549A	34	S-8560-PE		K-856047-1
5			3			-481160-10	C-209,210	Capacitor, fixed, paper, oil filled, 0.5 mfd ±10%, 600 v d.c. working	RE 13A 488	1			P-720555-58
5			3			-481166	C-213,214	Capacitor, fixed, paper, oil filled, 4.0 mfd, 600 v d.c. working	RE 13A 488	18	Cat. #26 F 317		K-856439-2
3			3			-481305	C-203	Capacitor, fixed, dry, electrolytic, 75 mfd, 25 v d.c. working	RE 13A 549A	28			K-90556-1
8			5			-481349-10	C-201,202,219	Capacitor, fixed, paper, oil filled, 0.05 mfd ±10%, 600 v d.c. working	RE 13A 488	1			P-720555-67
5			3			-481379-10	C-204,205	Capacitor, fixed, paper, oil filled, 0.1 mfd ±10%, 400 v d.c. working	RE 13A 488	1			P-720555-57
5			3			-481545	C-301,302	Capacitor, fixed, paper, oil filled, 10.0 mfd, 600 v d.c. working	RE 13A 488	18	Cat. #26 F 547		K-856439-3
4			3			ϕCM30B102K	C-114,216,217,218	Capacitor, fixed, molded, mica, 1000 mmfd ±10%, 500 v d.c. working	†C75-3-1942	1			P-722017-559
13			8			ϕCM35B472K	C-101,110,115,116, 117,118,119,120, 121,124,125,128, 129	Capacitor, fixed, molded, mica, 4700 mmfd ±10%, 500 v d.c. working	†C75-3-1942	1			P-722026-555
1			1			ϕCM35B562K	C-211	Capacitor, fixed, molded, mica, 0.0056 mfd ±10%, 500 v d.c. working	†C75-3-1942	1			P-722026-557
1			1			ϕCM45A102K	C-123	Capacitor, fixed, molded, mica, 1000 mmfd ±10%, 2500 v d.c. working	†C75-3-1942	1			P-722043-633

ϕ American War Standard Type Number.
† American War Standard Specification.

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
STOCK SPARES

QUANTITY A: 115/230/440 V A.C.	QUANTITY A: 115 V D.C.	QUANTITY A: 230 V D.C.	QUANTITY B: 115/230/440 V A.C.	QUANTITY B: 115 V D.C.	QUANTITY B: 230 V D.C.	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
CAPACITORS (CLASS 48) (Continued)													
3			2				C-102,111,112	Capacitor, fixed, ceramic, 10 mmfd ±5%, 650 v d.c. working		16			K-97698-1
8			8				C-103A,106A,109A,113A	Spare ceramic end plate for C-103,106, 109,113		9			M-441039-5
4			3				C-104,105,107,108	Capacitor, fixed, ceramic, 22 mmfd ±5%, 650 v d.c. working		16			K-97698-2
1			1				C-122	Capacitor assembly consisting of insulator & hardware, feedback, adjustable		1			K-882827-501
1			1				C-207	Capacitor, fixed, mica, 4700 mmfd ±10%, 2500 v d.c. working, low loss case	†C75-3-1942	1			P-720567-20
3			2			-482137	C-220A&B	Capacitor, fixed, paper, oil filled, 2 sections, 0.025/0.125 mfd ±10%, 600 v d.c. working	RE 13A 488	1			P-720555-54
PLUGS, RECEPTACLES & SOCKETS (CLASS 49)													
3			2			-49363	X-101,205,206	Socket, tube, 5 contacts, steatite ceramic base	RE 13A 524	23			K-856997-2
3			2			-49367	X-301,302,303	Socket, tube, octal, steatite ceramic base	RE 13A 524	23			K-856997-6
7			4			-49373	X-201,202,203,204, 207,208	Socket, tube, assembly consisting of: aluminum adapter plate; socket, octal; and steel retaining ring, amphenol #4	RE 13A 317F	6	Cat. #RSS-8M Type "RSS"		K-856868-505
2			1			-49389	X-102,103	Socket, tube, 7 contacts, steatite ceramic base, contacts mounted with laminated insulation	RE 13A 524	23			M-418355-1
10			6			-49465	P-401,402,403,404, 405,406,407,408	Plug connector, male assembly		410			M-427607-1
10			6			-49466	P-101,102,201,202, 301,302,303,304	Plug connector, female assembly		410			M-427607-2
2			1				P-601	Connector, 1-1/64" long, 1 end threaded mounting plate 1" square, 5/8" body O.D., part of antenna assembly		477			K-883935-1

† *American War Standard Specification.*

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
STOCK SPARES

QUANTITY A: 115/230/440 V A.C.	QUANTITY A: 115 V D.C.	QUANTITY A: 230 V D.C.	QUANTITY B: 115/230/440 V A.C.	QUANTITY B: 115 V D.C.	QUANTITY B: 230 V D.C.	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
PLUGS, RECEPTACLES & SOCKETS (CLASS 49) (Continued)													
2			1			-49039	J-201	Microphone jack, three circuit	‡JK-33A	28 149			K-868986-1
2			1				J-202	Head telephone jack, two circuit	‡JK-34A	28 149			K-868986-2
1			1				X-104	Socket, tube, 5 contacts		1	Special		K-882738-1
4			2				X-105,106,107,108	Socket, crystal, 2 contacts		11	#9816		K-882708-1
FILTERS (CLASS 53)													
5			2				Z-101	Parasitic suppressor assembly consisting of: L-106 and R-119		1			K-882400-501
3			2				Z-102	Parasitic suppressor assembly consisting of: L-107 and R-104		1			K-882400-502
3			2				Z-103	Parasitic suppressor assembly consisting of: L-108 and R-112		1			K-882400-503
5			2				Z-104	Parasitic suppressor assembly consisting of: L-109 and R-115		1			K-882400-504
2			2			-53232	Z-105	Filter assembly (transmission line) consisting of: 2 capacitors, 30 mmfd ±10%, 2 capacitors, 60 mmfd ±10%; 3 coils, 0.0574 mh; 2-50 ohm connectors, impedance 50 ohms at 135 mc	RA 53F 216A	19			M-433105-1
INSULATORS (CLASS 61)													
32			16			-61032	E-106,202	Insulator, pillar, steatite ceramic, 23/32" x 23/32" x 1-1/4" long, both ends tapped #10-32 threads, 3/8" deep	RE 13A 317F Grade G	22			K-823038-2
4			2			-61167	E-107	Insulator, stand-off, isolantite, 5/8" long, 1/2" dia., both ends tapped #6-32 threads, 7/32" deep	RE 13A 317	22			K-823568-2

‡ *U.S. Army Specification.*

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
STOCK SPARES

QUANTITY A			QUANTITY B			NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
115/230/440 V A.C.	115 V D.C.	230 V D.C.	115/230/440 V A.C.	115 V D.C.	230 V D.C.								
								INSULATORS (CLASS 61)					
4			2			-61168	E-108	Insulator, stand-off, isolantite, 3/4" long, 1/2" dia., both ends tapped #6-32 threads, 9/32" deep	RE 13A 317	22			K-823568-3
1			1			-61170	E-109	Insulator, stand-off, isolantite, 1" long, 1/2" dia., both ends tapped #6-32 threads, 9/32" deep	RE 13A 317	22			K-823568-5
4			2			-61172	E-203	Insulator, stand-off, isolantite, 11/16" long, 1/2" dia., both ends tapped #6-32 threads, 1/4" deep	RE 13A 317	22			K-823568-7
1			1				E-110	Insulator, stand-off, isolantite, 1/2" long, 5/16" dia., both ends tapped #6-32 threads, 3/16" deep		22			K-834196-2
4			2				E-302	Insulator, stand-off, isolantite, 3/4" long, 3/8" dia., both ends tapped #6-32 threads, 9/32" deep	RE 13A 317	22			K-875335-1
2			1				E-601	Insulator, molded, steatite, 1-7/8" x 2-1/8", 1-1/4" high overall, 1/2" I.D., part of antenna assembly		1			K-883942-1
								R-F CABLES (CLASS 62)					
2			1				W-101	Cable assembly consisting of: 9-1/2" long cable, plug assembly, and jack assembly		1			P-722281-501
2			1				W-102	Cable assembly consisting of: 13-1/2" long cable and 2 plug assemblies		1			P-722281-502
4			4				W-104	Cable assembly consisting of: 12 conductor cable, male plug one end, female connector other end		1			P-717781-501

TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
STOCK SPARES

QUANTITY A			QUANTITY B			NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
115/230/440 V A.C.	115 V D.C.	230 V D.C.	115/230/440 V A.C.	115 V D.C.	230 V D.C.								
								RESISTORS (CLASS 63)					
5			3			-63005F	R-109,110	Resistor, fixed, wire wound, ferrule type, 500 ohms, 10 watts, grade 1, class 1 style F	RE 13A 372	590			T-620340-816
5			3			-63070F	R-305,309	Resistor, fixed, wire wound, ferrule type, 500 ohms, grade 1, class 1, style F	RE 13A 372	590			T-620340-516
3			2			-63074F	R-302	Resistor, fixed, wire wound, ferrule type, 800 ohms, grade 1, class 1, style D	RE 13A 372	590			T-620340-528
3			2			-63076F	R-306	Resistor, fixed, wire wound, ferrule type, 1000 ohms ±5%, grade 1, class 1, style D	RE 13A 372	590			T-620340-531
10			6			-63080F	R-231,232,235,307	Resistor, fixed, wire wound, ferrule type, 2500 ohms, grade 1, class 1, style D	RE 13A 372	590			T-620340-548
3			2			-63085F	R-236	Resistor, fixed, wire wound, ferrule type, 5000 ohms, grade 1, class 1, style D	RE 13A 372	590			T-620340-558
3			2			-63090F	R-116	Resistor, fixed, wire wound, ferrule type, 10,000 ohms, grade 1, class 1, style D	RE 13A 372	590			T-620340-567
3			2			-63338F	R-233	Resistor, fixed, wire wound, ferrule type, 250 ohms ±5%, grade 1, class 1 style F	RE 13A 372	590	Suffix F		T-620340-806
3			2			-63371F	R-308	Resistor, fixed, wire wound, ferrule type, 50 ohms, grade 1, class 1, style F	RE 13A 372	590			T-620340-785
3			2			-63398F	R-304	Resistor, fixed, wire wound, ferrule type, 300 ohms, grade 1, class 1, style F	RE 13A 372	590			T-620340-808

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
STOCK SPARES

QUANTITY A 115/230/440 V A.C.	QUANTITY A 115 V D.C.	QUANTITY A 230 V D.C.	QUANTITY B 115/230/440 V A.C.	QUANTITY B 115 V D.C.	QUANTITY B 230 V D.C.	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
								RESISTORS (CLASS 63) (Continued)					
3			2			-63752F	R-120	Resistor, fixed, wire wound, ferrule type, 2000 ohms, grade 1, class 1, style E	RE 13A 372	590			T-620340-694
5			3			-631937	R-229	Potentiometer, 1-5/8" dia., 10,000 ohms, shaft stainless steel, 25/32" long, 0.248" dia., screwdriver slotted		382	Type M10MP		K-864708-2
10			6			-631938	R-240,241	Potentiometer, 1-5/8" dia., 3000 ohms, shaft stainless steel, 25/32" long, 0.248" dia., screwdriver slotted		382	Type M3MP		K-864708-4
5			3			-631939	R-234	Attenuator, 1-19/32" dia., "L" ladder pad, 600 ohms, shaft stainless steel, 29/32" long x 1/4" dia.		382			M-421058-2
3			2			-631940	R-210	Resistor, ceramic, 100 ohms ±10%, 3 watts		711	Type A		K-881734-1
3			2			♂RC21BE105K (-63360)	R-226	Resistor, fixed, composition, insulated 1 megohm ±10%, 1/2 watt, wire leads	♂C75.2 1943	321	BT-1/2		P-722322-98
5			3			♂RC21BE123K (-63360)	R-206,207	Resistor, fixed, composition, 12,000 ohms ±10%, 1/2 watt, insulated, pigtail type terminals	♂C75.2 1943	321	BT-1/2		P-722322-75
8			5			♂RC21BE222K (-63360)	R-217,228,230	Resistor, fixed, composition, 2200 ohms ±10%, 1/2 watt, insulated, pigtail type terminals	♂C75.7 1943	321	BT-1/2		P-722322-66
5			3			♂RC21BE271K (-63360)	R-203,204	Resistor, fixed, composition, 270 ohms ±10%, 1/2 watt, insulated, pigtail type terminals	♂C75.7 1943	321	BT-1/2		P-722322-55
3			2			♂RC21BE332K (-63360)	R-218	Resistor, fixed, composition, 3300 ohms ±10%, 1/2 watt, insulated, pigtail type terminals	♂C75.7 1943	321	BT-1/2		P-722322-68
3			2			♂RC21BE474K (-63360)	R-225	Resistor, fixed, composition, insulated 470,000 ohms ±10%, 1/2 watt, wire leads	♂C75.7 1943	321	BT-1/2		P-722322-94

TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
STOCK SPARES

QUANTITY A 115/230/440 V A.C.	QUANTITY A 115 V D.C.	QUANTITY A 230 V D.C.	QUANTITY B 115/230/440 V A.C.	QUANTITY B 115 V D.C.	QUANTITY B 230 V D.C.	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
								RESISTORS (CLASS 63) (Continued)					
3			2			♂RC21BE561K (-63360)	R-242	Resistor, fixed, composition, 560 ohms ±10%, 1/2 watt, insulated, pigtail type terminals	♂C75.7 1943	321	BT-1/2		P-722322-59
3			2			♂RC21BE563K (-63360)	R-227	Resistor, fixed, composition, insulated 56,000 ohms ±10%, 1/2 watt, wire leads	♂C75.7 1943	321	BT-1/2		P-722322-83
3			2			♂RC21BE823K (-63360)	R-237	Resistor, fixed, composition, insulated 82,000 ohms ±10%, 1/2 watt, wire leads	♂C75.7 1943	321	BT-1/2		P-722322-85
5			3			♂RC21BE824K (-63360)	R-213,214	Resistor, fixed, composition, 0.82 megohm ±10%, 1/2 watt, insulated, pigtail type terminals	♂C75.7 1943	321	BT-1/2		P-722322-97
3			2			♂RC31BE101K (-63288)	R-118	Resistor, fixed, composition, 100 ohms ±10%, 1 watt, insulated, pigtail type terminals	♂C75.7 1943	321	BT-1		P-722337-50
x			x			♂RC31BE101K	R-119	Resistor, fixed, 100 ohms ±10%, 1 watt insulated (Part of Z-101)	♂C75.7 1943	321	BT-1		P-722337-50
x			x			♂RC31BE101K	R-115	Resistor, fixed, composition, 100 ohms ±10%, 1 watt, insulated (Part of Z-104)	♂C75.7 1943	321	BT-1		P-722337-50
3			2			♂RC31BE103K (-63288)	R-111	Resistor, fixed, composition, 10,000 ohms ±10%, 1 watt, insulated, pigtail type terminals	♂C75.7 1943	321	BT-1		P-722337-74
3			2			♂RC31BE105K (-63288)	R-201	Resistor, fixed, composition, 1.0 megohm ±10%, 1 watt, insulated, pigtail type terminals	♂C75.7 1943	321	BT-1		P-722337-98
8			5			♂RC31BE123K (-63288)	R-205,208,223	Resistor, fixed, composition, 12,000 ohms ±10%, 1 watt, insulated, pigtail type terminals	♂C75.7 1943	321	BT-1		P-722337-75

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
STOCK SPARES

QUANTITY A			QUANTITY B			NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
115/230/440 V A.C.	115 V D.C.	230 V D.C.	115/230/440 V A.C.	115 V D.C.	230 V D.C.								
								RESISTORS (CLASS 63) (Continued)					
5			3			♂RC31BE124K (-63288)	R-215,216	Resistor, fixed, composition, 0.12 megohm ±10%, 1 watt, insulated, pigtail type terminals	6C75.7 1943	321	BT-1		P-722337-87
x			x			♂RC31BE182K	R-104	Resistor, fixed, 1800 ohms ±10%, 1 watt, insulated (Part of Z-102)	6C75.7 1943	321	BT-1		P-722337-65
3			2			♂RC31BE273K	R-103	Resistor, fixed, composition, 27,000 ohms ±10%, 1 watt, insulated, pigtail type terminals	6C75.7 1943	321	BT-1		P-722337-79
x			x			♂RC31BE332K	R-112	Resistor, fixed, composition 3300 ohms ±10%, 1 watt, insulated (Part of Z-103)	6C75.7 1943	321	BT-1		P-722337-68
3			2			♂RC31BE393K (-63288)	R-222	Resistor, fixed, composition, 39,000 ohms ±10%, 1 watt, insulated, pigtail type terminals	6C75.7 1943	321	BT-1		P-722337-81
3			2			♂RC31BE473K (-63288)	R-102	Resistor, fixed, composition, 47,000 ohms ±10%, 1 watt, insulated, pigtail type terminals	6C75.7 1943	321	BT-1		P-722337-82
			2			♂RC31BE104K	R-224	Resistor, fixed, composition, 0.10 megohm ±10%, 1 watt, insulated, pigtail type terminals	6C75.7 1943	321	BT-1		P-722337-86
3						-63288	R-224	Resistor, fixed, composition, 68,000 ohms ±10%, 1 watt, insulated		321	BT-1		K-8443?4-84
5			3			♂RC41BE103K (-63474)	R-113,114	Resistor, fixed, composition, insulated 10,000 ohms ±10%, 2 watts, wire leads	6C75.7 1943	321	BT-2		P-722357-74
3			2			♂RC41BE181K (-63474)	R-219	Resistor, fixed, composition, 180 ohms ±10%, 2 watts, insulated, pigtail type terminals	6C75.7 1943	321	BT-2		P-722357-53
5			2			♂RC41BE223K (-63474)	R-202	Resistor, fixed, composition, 22,000 ohms ±10%, 2 watts, insulated, pigtail type terminals	6C75.7 1943	321	BT-2		P-722357-78
10			6			♂RC41BE273K (-63474)	R-105,106,212,239	Resistor, fixed, composition, 27,000 ohms ±10%, 2 watts, insulated, pigtail type terminals	6C75.7 1943	321	BT-2		P-722357-79

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
STOCK SPARES

QUANTITY A: 115/230/440 V A.C.	QUANTITY A: 115 V D.C.	QUANTITY A: 230 V D.C.	QUANTITY B: 115/230/440 V A.C.	QUANTITY B: 115 V D.C.	QUANTITY B: 230 V D.C.	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	SPECIAL TOLERANCE, RATING OR MODIFICATION	RCA DRAWING NUMBER
								RESISTORS (CLASS 63) (Continued)					
5			2			♂RC41BE562K (-63474)	R-238	Resister, fixed, composition, 5600 ohms ±10%, 2 watts, insulated, pigtail type terminals	♂C75.7 1943	321	BT-2		P-722357-71
5			3			♂RC41BE820K	R-310,311	Resistor, fixed, composition, 82 ohms ±10%, 2 watts, insulated, large	♂C75.7 1943	321	BT-2		P-722357-49
5			3			♂RC41BE822K (-63474)	R-117,211	Resistor, fixed, composition, 8200 ohms ±10%, 2 watts, insulated, pigtail type terminals	♂C75.7 1943	321	BT-2		P-722357-73
5			3			♂RC65CE273K	R-107,108	Resistor, fixed, composition, 27,000 ohms ±10%, 4 watts, non-insulated, pigtail type terminals	♂C75.7 1943	321	BT-4		P-722365-79
8			9			♂RC65CE473K	R-220,221,243	Resistor, fixed, composition, 47,000 ohms ±10%, 4 watts, non-insulated, pigtail type terminals	♂C75.7 1943	321	BT-4		P-722365-82
			3			♂RC76CE683K	R-301	Resistor, composition, non-insulated, 68,000 ohms ±10%, 5 watts	♂C75.7 1943	321	BT-5		P-722375-84
5							R-301	Resistor, fixed, 75,000 ohms ±10%, 5 watts		171	D5-ST2A		K-875231-8
5			3				R-101	Heater unit assembly consisting of: 85 turns AWG #34 E wire, wound on bakelite varnished form, 0.010" x 1-1/2" x 13-3/8", d-c resistance 662 ohms ±2%		1			M-427541-501
5			3				R-209	Potentiometer, 1-5/8" dia., 100 ohms, shaft stainless steel, 25/32" long, 0.248" dia., screwdriver slotted		382	M100P		K-864708-1
5			3				R-303	Rheostat, spare for overload relay, 50 ohms ±10%		820			M-422579-8

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TABLE IV

SPARE PARTS LIST BY NAVY TYPE NUMBERS

FOR MODEL TDQ TRANSMITTING EQUIPMENT

CONTRACT NXss-29644 TENDER SPARES S.O. 12420

BOX NO.	QUAN-TITY	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
				MISCELLANEOUS (CLASS 10)				
2	12	-TS37	I-301A,302A,303A	Lamp, candelabra screw base, 115 v, 6 watts, 3/4" dia. x 1-7/8" long		670	Stock 17L 3914-100	881393-1
2	4		A-401	Shock mount, channel type, 2-1/4" wide, 4-1/2" long, 1-3/8" high		767	Type 10	881870-1
2	1		E-201	Terminal board, mycalex, 4-1/8" long, 1-11/16" wide, 1/4" thick, four holes 0.199" dia., nine 0.173" dia., stenciled from #1 to #9, marked TB-I		1		882449-1
2	1		E-301	Terminal board, myclaex, 7-3/16" long, 2-3/16" wide, 1/4" thick,.four holes 0.199" dia., 30 holes 0.180" dia., stenciled from #1 to #30 marked TB-C		1		441078-1
2	1		I-301	Indicator lamp assembly, 1-1/8" dia. x 2-31/32" long, consisting of socket and red lens		780	Type LT 9337 SA	882411-501
2	1		I-302	Indicator lamp assembly, 1-1/8" dia. x 2-31/32" long, consisting of socket and green lens		780	Type LT 9337 SA	882411-502
2	1		I-303	Indicator lamp assembly, 1-1/8" dia. x 2-31/32" long, consisting of socket and yellow lens		780	Type LT 9337 SA	882411-503
2	3		N-101	Dial assembly, 2.437" wide x 2.437" long, x 2.247" thick, graduated from 0 to 100, complete with cast aluminum, cover assembly, base assembly, black molded, knob assembly, 1-1/8" dia. x 13/32" thick and gear assembly		1		440994-501
2	1		O-101	Air duct assembly consisting of polystyrene air duct and polystyrene cap, 1-1/4" O.D. x 1.130" I.D. x 3-11/32" long		1		882665-501
2	1		O-102	Right angle air duct assembly consisting of: polystyrene air duct and polystyrene cap, elbow-shaped, 1" O.D. x 7/8" I.D. x 9-21/32" long		1		882667-501
1	2		O-103	Blower boot, army khaki, 2-9/32" I.D. one end, 2-21/32" I.D. other end, 2-1/8" long	29-1045	789		882683-1
2	2		O-105	Catch, 0.091" dia., steel wire, "U" shaped, 3/8" wide x 2-1/4" long		1		881996-2
2	24		O-106	Coil spring, 9 turns of 0.032" music wire, 1/4" O.D. x 1-1/4" long		1		861610-2
2	2		O-107	Coupling, slide acting square, 1-3/64" from corner to corner x 7/8" thick		900	Cat. #39006	882786-1
2	1		O-108	Gear, brass, 0.2502" I.D., 0.500" pitch dia., 48 diametral pitch, 24 teeth, 1/8" tooth face, 1/4" x 3/8" collar, #4-40 tap in side		1		882642-2

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT

TENDER SPARES

BOX NO.	QUAN-TITY	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
				MISCELLANEOUS (CLASS 10) (Continued)				
2	1		O-109	Gear, brass, 0.2502" I.D., 0.500" pitch dia., 48 diametral pitch, 24 teeth, 3/16" tooth face, 1/4" x 1/8" collar, #4-40 tap in side		1		882642-1
2	1		O-110	Tube clamp assembly, 2-7/16" O.D. x 2-13/64" I.D. x 23/32" thick, brass ring and asbestos liner with two 11/16" x 5/16" clips		1		441055-501
2	3		O-110A,111A	Bushing, brass, 0.281" O.D. x 0.099" I.D., x 5/16" long		1		885826-1
2	1		O-111	Tube clamp assembly, O.D. x 2-13/64" I.D. x 27/32" thick, brass ring and asbestos liner with two 11/16" x 5/16" clips		1		441055-502
2	2		O-112	Clamp for tube mounting, lock, non-lock type, stainless steel, 1-3/8" I.D. x 2" O.D. with mounting bracket		961	Type 926C	882941-1
2	2		O-113	Universal joint, duralumin, 1/2" O.D., 0.251" I.D. one end, 1/2" O.D. x 0.251" I.D. other end, 1-1/8" long		86	Type T42	868655-3
2	1		O-202	Clamp for tube mounting, lock, non-lock type, stainless steel, 1-1/4" I.D. x 1-7/8" O.D., with mounting bracket		961	Type 926B	882941-2
1	2		O-601	Gasket, ankoprene, 1/32" thick, durometer 40-50, 1" sq., 5/8" I.D., four 0.147" dia. holes at corners	-6850-C1	1		883934-1
1	4		O-602	Gasket, neoprene, 1/32" thick, durometer 40-50, 2-15/64" O.D., 1-3/4" I.D.		1		883936-1
1	2		O-603	Gasket, 1/32" thick, ankoprene, durometer 40-50, 1" O.D. 17/32" I.D.	-6850-C1	1		883937-1
1	2		O-604	Gasket, neoprene, 1/32" thick, durometer 40-50, 1-7/8" x 2-1/8", 1-1/4" I.D., four 0.203" dia. holes at corners		1		883941-1
1	1			Wrench, Allen short series, steel, for 3/8" setscrew and 1/4" capscrew		731		828505-4
1	1			Wrench, Allen short series steel, for #6 setscrew		731		828505-13
1	1			Wrench, Allen, for #4 setscrew		731	Special	828505-14
1	1			Spanner, wrench assembly, C.R. steel, 0.430" dia. for 25/32", 3/16" dia. for 1-11/32", 7/16" dia. for 3/8" with a 1/8" dia. x 1-1/4" groove pin at end with 0.050" x 1/16" boss on base		1		881918-501
	1			Spare parts box #1		1		717717-2
	1			Spare parts box #2		1		717717-3

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
TENDER SPARES

BOX NO.	QUAN-TITY	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
				RECTIFIERS & VOLTAGE REGULATORS (CLASS 20)				
2	1		CR-301	Selenium rectifier input, 18.5 v, 60 cycles, output 12.5 v, resistance load of 1.1 amps., 3-5/8" dia. x 4-5/8" long		962	Cat.#199S1	440977-1
				MOTORS (CLASS 21)				
2	2	-211237	*B-101	Motor, 1/70 h.p., 2850 r-p-m, single phase, 110 v d.c., 60 cycles, counter-clockwise rotation with capacitor mounted on side, thrust bearing to permit vertical mounting, shaft 0.3125" dia. x 15/16" long		246 1030		720519-8 720519-15
2	2		B-101A	Ball bearing, 0.2756" wide, 0.8661" O.D., bore 0.3150" dia., seven balls for Electrolux motor B-101, RCA Dwg. #720519-8		439	#77038	885655-2
2	2		B-101A	Ball bearing, 0.2756" wide, 0.8661" O.D., bore 0.3150" dia. for GE motor B-101, RCA Dwg. #720519-15		439	#7038	885824-1
2	2		B-101B	Capacitor, spare for motor B-101, RCA Dwg. #720519-15 fixed, oil filled, 3.75 mfd ±10%, 330 v a.c. working		246		891670-1
2	2		B-101B	Capacitor, spare for motor B-101, RCA Dwg. 720519-8, 3.6/4.0 mfd, 330 v a.c. working		724		891671-1

** Either motor may be shipped.*

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT

TENDER SPARES

BOX NO.	QUANTITY	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
				MOTOR CONTROLLERS (CLASS 21)				
3	6		MC-701A	Coil, 115 v, 1500 ohms, 17,000 turns AWG #33 E wire		246	Dwg.#22D11G-143	892319-1
3	6		MC-701B	Coil, 250 v, 6400 ohms, 34,000 turns AWG #36 E wire		246	Dwg.#22D11G-144	892319-2
3	6		MC-701C	Main stationary contact tip		246	Dwg.#2840261-G7	892319-3
3	6		MC-701D	Main movable contact tip		246	Dwg.#2840261-G1	892319-4
3	2		MC-701E	Main contact spring		246	Dwg.#2412681	892319-5
3	12		MC-701F	Interlock stationary contact tip, normally open		246	Dwg.#3614137-G1	892319-6
3	4		MC-701G	Interlock stationary contact tip, normally closed		246	Dwg.#3805671-G2	892319-7
3	8		MC-701H	Interlock movable contact tip		246	Dwg.#3667572-G1	892319-8
3	4		MC-701I	Interlock spring		246	Dwg.#2411917	892319-9
3	3		MC-701J	Operating spring		246	Dwg.#235184	892319-10
3	3		MC-701K	Coil, 115 v, 750 ohms, 6890 turns AWG #34 E wire		246	Dwg.#22D13G4	892319-11
3	3		MC-701L	Coil, 230 v, 2800 ohms, 13,140 turns AWG #36 E wire		246	Dwg.#22D13G2	892319-12
3	3		MC-701T	Resistor unit, starting resistor assembly, total resistance 15.4 ohms, center tap		246	Dwg.#CR9033-A15 4Y16B-1/2	892319-13
3	2		MC-701U	Set of gaskets		246	Dwg.#8627593-P2	892319-14
3	20		MC-701V	Fuses		246	Dwg.#GE3169	892319-15

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
TENDER SPARES

BOX NO.	QUAN-TITY	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
				MOTOR GENERATORS (CLASS 21)				
3	1		MG-801A	Spare armature, 115 v		246	Dwg.#5870351-AA1	892318-1
3	1		MG-801B	Spare armature, 230 v		246	Dwg.#8160994-AA1	892318-2
3	2		MG-801C	Set of field coils, generator, 115 v, 60 cycles		246	Dwg.#5870110-AA1	891949-1
3	2		MG-801D	Set of field coils, motor, 115 v d.c.		246	Dwg.#5870107-AA1	891949-2
3	2		MG-801E	Set of field coils, motor, 230 v d.c.		246	Dwg.#8167501-AA1	891949-3
3	2		MG-801F	Ball bearings		246	Dwg.#5859520-AB2	892318-6
3	20		MG-801G	Assembly, brush, sp. pt. and terminal		246	Dwg.#8104791-AA6	892318-7
3	20		MG-801H	Assembly, brush, sp. pt. and terminal		246	Dwg.#5869390-AD4	892318-8
3	20		MG-801I	Assembly, brush, sp. pt. and terminal		246	Dwg.#8100097-AA13	892318-9
3	10		MG-801J	Assembly, brush, sp. pt. and terminal		246	Dwg.#586334A-AF6	892318-10
3	8		MG-801K	Assembly, brush, tube and insulation		246	Dwg.#8104789-AC1	892318-11
3	8		MG-801L	Assembly, brush, tube and insulation		246	Dwg.#5869388-AD7	892318-12
3	8		MG-801M	Assembly, brush, tube and insulation		246	Dwg.#8100089-AA7	892318-13
3	4		MG-801N	Tube, insulation and clip assembly		246	Dwg.#8160071-AA1	892318-14
3	16		MG-801O	Insulated screw cap		246	Dwg.#5898031-AA2	892318-15

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
TENDER SPARES

BOX NO.	QUAN-TITY	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
				MOTOR GENERATORS (CLASS 21) (Continued)				
3	4		MG-801P	Insulated screw cap		246	Dwg.#5863338-AB2	892318-16
3	8		MG-801Q	Insulated screw cap		246	Dwg.#5895854-AA3	892318-17
3	1		MG-801R	Pin		246	Dwg.#5863714-AA11	892318-18
3	1		MG-801S	Adjusting screw		246	Dwg.#8109770-AA1	892318-19
3	1		MG-801T	Contact and screw assembly		246	Dwg.#8128844-AAP1	892318-20
3	6		MG-801U	Resistor assembly, Globar, type B, 130 ohms		246	Dwg.#8127261-AA2	892318-21
3	3		MG-801V	Resistor, Dividohm, 200 ohms		246	Dwg.#5895465-AB18	892318-22
3	3		MG-801W	Resistor, Dividohm, 800 ohms		246	Dwg.#5895465-AB17	892318-23
3	3		MG-801X	Resistor, Dividohm, 25 ohms		246	Dwg.#5895465-AB10	892318-24
3	3		MG-801Y	Resistor, special, 7.5 ohms		246	Dwg.#8124682-AA6	892318-25
3	3		MG-801Z	Resistor, special, 7.5 ohms		246	Dwg.#8124682-AA10	892318-26
3	1		MG-801AA	Assembly of regulator rotating elements		246	Dwg.#8109968-AC-3	892318-27
3	4		MG-801AB	Capacitor assembly consisting of: Cornell-Dubilier capacitor, Cat. #3WPS 0.005 mfd, 1000 v		246	Dwg.#8106433-AK1	892318-28

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
TENDER SPARES

BOX NO.	QUAN-TITY	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
				MOTOR GENERATORS (CLASS 21) (Continued)				
3	2		MG-801AC	Capacitor, 10 mfd		246	Dwg.#8128988-AA1	892318-29
3	2		MG-801AD	Capacitor, 5 mfd		246	Dwg.#8167010-AA1	892318-30
3	2		MG-801AE	Capacitor, 1 mfd		246	Dwg.#8127047-AA3	892318-31
3	4		MG-801AF	Spring washer		246	Dwg.#5859260-AA1	892318-32
3	2		MG-801AG	Overload switch			Dwg.#5845495-AA3	892318-33
3	4		MG-801AH	Gasket, rubber cover		246	Dwg.#5895117-AB3	892318-34
3	2		MG-801AI	Gasket, copper retainer		246	Dwg.#8128089-AA1	892318-35
3	2		MG-801AJ	Gasket, neoprene terminal box		246	Dwg.#8132049-AB1	892318-36
3	2		MG-801AL	Gasket, copper retainer		246	Dwg.#8128089-AD1	892318-37
	1			Spare parts box #3		246		892318-38

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT

TENDER SPARES

BOX NO.	QUAN-TITY	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
				SWITCHES (CLASS 24)				
2	1	-24276	S-201	Switch, cam lever, four sections; section A: single pole make, locking; section B: no contact springs, locking; section C: single pole make, non-locking; section D: no contact springs, non-locking, 5/8" x 1-5/16" x 4-1/16"		759		420973-6
2	1	-24276	S-201A	Spare contact assembly, four sections; section A: single pole make, locking; section B: no contact springs, locking; section C: single pole make, non-locking; section D: no contact springs, non-locking		759		420973-26
2	1	-24277	S-303	Switch, cam lever, four sections; section A: double pole break, locking; section B: double pole break, locking; section C: double pole break, no throw; section D: S.P.D.T., single pole break, no throw, contact rating 2 amps. 110 v d.c. or 10 amps. 110 v a.c., 1-1/4" x 1-3/4" x 5-7/16"		753		427520-1
2	1	-24277	S-303A	Contact assembly, spare, four sections; section A: double pole break, locking; section B: double pole break, locking; section C: double pole break, no throw; section D: S.P.D.T., single pole break, no throw, contact rating 2 amps. 110 v d.c. or 10 amps. 110 v a.c.		753		427520-21
2	1		S-102,103	Switch, rotary, wafer type, front rotor insulated from back rotor, contacts to be silver plated, shaft 0.250" dia. x 15/16" long	RE 13A 317G	717		441076-1
2	1		S-301	Switch, push button, back-connected, 20 amps., 125 v, 1-21/32" x 1-17/32" x 2-11/16"		47	Type 3948	882641-1
2	2		S-302,304,307	Switch, toggle, 30 amps., 250 v, 1-15/16" x 2-3/8" x 2-11/32" for metal panel mounting		853	Cat.#7475C	818231-2
2	1		S-305	Switch, momentary contact, single circuit, contacts normally open, green button, 1-11/16" x 1-3/16" x 2-5/8"		591	Cat.#KB1-G201	842822-2
2	1		S-306	Switch, momentary contact, single circuit, contacts normally open, red button, 1-11/16" x 1-3/16" x 2-5/8"		591	Type KBI	842822-6

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
TENDER SPARES

BOX NO.	QUAN-TITY	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
				PROTECTIVE DEVICES (CLASS 28)				
2	100		F-301,302,401,402	Fuse, ferrule type, non-renewable, 250 v, 3 amps., non-indicating, 9/16" dia. x 2" long		246 743 768 837	Cat.#GE1454 Cat.#2001 Cat.#25003 Cat.#1103	59075-10
2	40		F-303,304	Fuse, ferrule type, non-renewable, 250 v, 15 amps., non-indicating, 9/16" dia. x 2" long		246 743 768 837	Cat.#GE1463 Cat.#2007 Cat.#25015 Cat.#1115	59075-3
2	40		F-305	Fuse, cartridge type, fiber body, 1 amp., 1000 v, 13/32" dia. x 3" long		784	Cat.#2104	98578-6
				RELAYS (CLASS 29)				
2	2		K-101A	Rotary switch assembly consisting of: cast aluminum body, two steel ball bearings, three contact assemblies, pinion and stop arm assembly and a rotor assembly		1		621258-501
2	2		K-101C	Spring, 0.035" dia. music wire, approx. 8 turns, 15/64" I.D., 3/4" free length		1		882961-1
2	2		K-101D	Spring, 0.051" dia. music wire, 9/16" I.D., approx. 3-1/4" turns, 17/32" free length		1		882176-1
2	4		K-101E	Contact assembly consisting of: natural molded bakelite insulator, 0.446" dia. x 0.312" long with spring contact thru center		1		881876-501
2	2		K-101F	Coil spare for antenna switching relay K-101, 115 v, 50-60 cycles, flexible leads, 7" long, 2-13/16" x 2-1/8" x 1-13/16"		246	Cat.#4382679 AB475CR-9503 208D	882152-2
2	2		K-201A	Coil spare for relay K-201, 2000 ohms, 17,300 turns AWG #38 E wire		713	Type G-A11996	881753-3
2	2		K-201B	Contacts spare for relay K-201, form A, #18 platinum iridium		713	Type G-A11996	881753-2
2	2		K-202A	Coil spare for relay K-202, 3000 ohms, 28,600 turns of AWG #38 E wire		713	Type G-A13763	881727-3
2	2		K-202B	Contacts spare for relay K-202, form A, #18 platinum iridium		713	Type G-A13763	881727-2

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
TENDER SPARES

BOX NO.	QUAN-TITY	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
				RELAYS (CLASS 29) (Continued)				
2	2		K-301A	Coil spare for relay K-301, 6 V.A., 60 v a.c.		355	#372	882741-2
2	2		K-301B	Contacts spare for relay K-301, fixed and movable, 1/4" dia., pure silver		355		882741-3
2	2		K-302A	Coil spare for relay K-302, operates on 12 v d.c.		355		882676-2
2	2		K-302B	Contacts spare for relay K-302, fixed and movable		355		882676-3
2	2		K-303A	Coil spare for overload relay K-303, resistance 46 ohms ±10%		820		422579-6
2	2		K-303B	Contacts, spare, fixed and movable, for overload relay K-303, 1/4" dia., silver, 250 to 500 ma		820		422579-7
				TRANSFORMERS & REACTORS (CLASS 30)				
2	2	-30471	L-203	Reactor, interstage, 125,000 ohms +25% -10%, min. impedance at 3 v, 60 cycles a.c. and 0 amps., d-c resistance 1800 ohms ±10%, 10,000 turns AWG #37 E wire, center tapped, hi-pot 2000 v	XT-2987	1		900548-501
2	2	-30763	T-205	Transformer, microphone, audio, iron core, consisting of: two pri., two sec.; pri. #1: 150 turns AWG #25 E wire, 1.41 ohms d-c resistance; sec. #1: 840 turns AWG #31 E wire tapped at 330 turns, 43 ohms d-c resistance; sec. #2: same as sec. #1 except reverse wound; pri. #2: 150 turns AWG #25 E wire, 2.42 ohms d-c resistance, hi-pot 1500 v a.c. pri. impedance at 3 v, 60 cycles and 0.050 amp. d.c. shall be 150 ohms		1	XT-3370	900816-501
2	4		L-201,202	Reactor, filter, iron core, 3300 turns AWG #31 E wire tapped at 330 turns, d-c resistance 238 ohms, hi-pot voltage 1500 v, total impedance at 3 v, 60 cycles a.c. and 0.150 amps. d.c., shall be 3200 ohms min.	XT-3098	1		900904-501
1	4		L-301,302	Reactor, iron core, 1520 turns AWG #22 E wire, d-c resistance 21.2 ohms, hi-pot voltage 3000 v, impedance measured at 30 v, 60 cycles, 0.550 amp. d.c. shall be 1210 ohms min., d-c resistance 21.2 ±10%	XT-3984	1		901361-501
1	1		L-303	Reactor,pack, iron core, 125 turns AWG #16 E wire, d-c resistance 0.34 ohms, hi-pot voltage 1500 v, impedance at 3 v, 60 cycles a.c., 0.5 amp. d.c. shall be 30 ohms each reactor	XT-3433	1		901691-501

Ψ *For complete winding data see drawing listed in Table of Contents.*

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
TENDER SPARES

BOX NO.	QUAN-TITY	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
				Ψ TRANSFORMERS & REACTORS (CLASS 30) (Continued)				
2	2		T-202	Transformer, driver, iron core, consisting of: mid-tapped pri. and 2 mid-tapped sec.; pri.: 4400 turns AWG #36 E wire, 622 ohms d-c resistance; sec. no. 1: 1260 turns AWG #36 E wire, 124 ohms d-c resistance; sec. #2: 1260 turns AWG #36 E wire, 230 ohms d-c resistance, hi-pot 1500 v, pri. impedance at 30 v, 60 cycles a.c. and 0 amp. d.c. shall be 35,000 ohms min., additive polarity	XT-4355	1		901652-501
1	2		T-203	Transformer, modulation, audio, iron core, consisting of: pri. and sec.; pri: wound over sec. 1610 turns of AWG #27 E wire tapped at 805 turns, d-c resistance 68 ohms; sec.: 1110 turns of AWG #25 E wire wound over tube, d-c resistance 23.5 ohms, hi-pot voltage 3500 v a.c., r-m-s sec. impedance at 30 v, 60 cycles a.c. and 0.250 amp. d.c. shall be 1100 ohms min., additive polarity		1	XT-3098	900716-501
2	2		T-204	Transformer, audio, pri. winding, 4700-1/2 turns AWG #36 E wire, d-c resistance, 600 ohms; sec. #1: 750 turns AWG #36 E wire, d-c resistance 127 ohms, wound over pri.: sec. #2: 600 turns AWG #36 E wire, d-c resistance 109 ohms, hi-pot 1500 v wound over sec. #1, additive polarity		1	XT-2982	900546-501
1	2		T-206	Transformer, power, iron core, consisting of: two pri., plate and filament; pri. #1: 288 turns AWG #21 E wire tapped at 23 and 46 turns, 2.31 ohms d-c resistance, no-load voltage, 115/230 v, 50 to 60 cycles, full-load voltage 115/230 v, 50 to 60 cycles, rated current 0.75 amp.; pri. #2: 265 turns AWG #24 E wire, 4.90 resistance, no-load voltage, full-load voltage and rated current same as pri. #1, plate 2080 turns AWG #29 E wire tapped at 1040 turns, 142 ohms d-c resistance, no-load voltage 900 v ±27 v, full-load voltage 870/435 v, rated current 0.135 d.c. amps.; fil.: 12-1/2 turns AWG #16 E wire, no-load voltage 5.4 v ±0.16 v, full-load voltage 5.2 v, rated current 2.0 amps., hi-pot voltage, all sections 1500 v, additive polarity		1	XT-4358	901642-501
1	2		T-301	Transformer, filament, iron core, consisting of: two pri. and three fil.; pri. #1: 254 turns AWG #20 E wire tapped at 20 and 40 turns, 1.82 ohms d-c resistance, no-load voltage 115/230 v, 50/60 cycles, full-load voltage 115/230 v, 50 to 60		1	XT-4359	901648-501

Ψ *For complete winding data see drawings listed in Table of Contents.*

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
TENDER SPARES

BOX NO.	QUAN-TITY	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
				Ψ TRANSFORMERS & REACTORS (CLASS 30) (Continued)				
			T-301 (Continued)	cycles, rated current 0.97 amp., hi-pot 1500 v; pri. #2: 234 turns AWG #22 E wire, 3.08 ohms d-c resistance, no-load voltage, full-load voltage, rated current, hi-pot same as pri. #1; fil. #1: 27 turns AWG #14 E wire tapped at 13-1/2 turns, no-load voltage 13.3 v ±0.4 v, full-load voltage 12.8, 6.4 v rated current 3.38 amps., hi-pot 2500 v; fil. #2: 14 turns AWG #13 E wire, no-load voltage 6.90 v ±0.2 v, full-load voltage 6.5 v, rated current 5.1 amps., hi-pot 2500 v; fil. #3: 11 turns AWG #12 E wire, no-load voltage 5.40 v ±0.16 v, full-load voltage 5.2 v, rated current 6 amps., hi-pot 2500 v				
2	2		T-302	Transformer, power, iron core, consisting of: two pri. and one sec.; pri #1: 456 turns AWG #25 E wire tapped at 36 and 73 turns, 7.24 ohms, d-c resistance, no-load voltage 115 v, 50/60 cycles; full-load voltage 115 v, 50/60 cycles, rated amps. 0.362 amp., hi-pot 2500 v; pri. #2: 420 turns AWG #28 E wire, 15.2 ohms d-c resistance, no-load voltage, full-load voltage, rated current and hi-pot same as pri. #1: sec.: 76 turns AWG #16 E wire tapped at 65 and 70 turns, 0.192 ohms d-c resistance, no-load voltage 20.8 v ±0.62 v, full-load voltage 20.0 v, rated 1.75 amps., hi-pot 2500 v, additive ~~polarity~~		1	XT-4356 (2670-A)	901647-501
1	1		T-303	Transformer, plate, iron core, consisting of: two pri. and one sec., pri. #1: 192 turns AWG #15 E wire tapped at 15 and 31 turns, 0.499 ohms d-c resistance, no-load voltage 115 v, 50/60 cycles, full-load voltage 115 v, 50/60 cycles, rated amps 3.6 amps, hi-pot 1500 v; pri. #1: 177 turns AWG #18 E wire, 1.073 ohms resistance, no-load voltage, full-load voltage, rated amps., hi-pot same as pri. #1; sec.: 1880 turns AWG #24 E wire tapped at 940 turns, 54.8 ohms d-c resistance, no-load volts 1220 v ±0.37 v, full-load voltage 1170-585 v, rated amps. 0.60 d.c., hi-pot 3500 v, additive polarity		1	XT-4357	901645-501
2	2		T-304	Transformer, isolation, iron core, consisting of: two pri. and one sec. winding; pri. #1: 600 turns AWG #25 E wire, 8.75 ohms d-c resistance, no-load voltage 115/230 v, 50/60 cycles, full-load voltage 115/230 v, 50/60 cycles, rated 0.39 amp., hi-pot 2500 v, pri. #2: 600 turns 0.0126" dia. E wire,		1	XT-4365	901651-501

Ψ *For complete winding data see drawings listed in Table of Contents.*

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
TENDER SPARES

BOX NO.	QUAN-TITY	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR.-DESIG.	RCA DRAWING NUMBER
				Ψ TRANSFORMERS & REACTORS (CLASS 30) (Continued)				
			T-304 (Continued)	21.1 ohms d-c resistance, no-load voltage, full-load voltage, rated amps., hi-pot same as pri. #1; sec.: 646 turns AWG #26 E wire, 16.5 ohms d-c resistance, no-load voltage, 124 v ±3.7 v, full load voltage 115 v, rated 0.304 amp., hi-pot 2500 v, additive polarity				
9	1		T-501	Transformer, power, iron core, two pri. and one sec.; pri. #1: 154 turns AWG #17 E wire, 1.01 ohms d-c resistance, hi-pot 3000 v; pri. #2: 154 turns AWG #17 E wire, 1.14 ohms, d-c resistance, hi-pot 3000 v; sec.: 89 turns 0.080 x 1.00, DC wire tapped at 74 and 81 turns, hi-pot 4000 v, additive polarity		1	T-4270	901571-502
				THERMOSTATS & CRYSTALS (CLASS 40)				
2	2		S-101	Thermostat, temp. adjustment, 2-3/8" x 0.375" dia., 70° C., rated 110 v, 30 watts, 60 cycles		757	S1-1	884773-4
2	2		S-104	Thermostat, temp. adjustment, 2-3/8" x 0.375" dia., 80° C., rated 110 v, 30 watts, 60 cycles		756	S1-1	884773-3
				INDUCTANCES (CLASS 47)				
2	1		L-101	Coil assembly consisting of: 13 turns 0.0403" dia. braided copper wire, DC, tapped at 6-1/2 turns and wound on a steatite ceramic coil form 1" O.D. x 1/8 wall x 1-7/8" long, complete with two terminals		1		441092-501
2	1		L-102	Coil assembly 1-1/8" O.D., 0.081" dia. copper wire, four turns with center tap, complete with three terminals		1		882492-501
2	1		L-103	Loop 1/16" thick copper, "U" shaped, 1-1/8" wide x 2-13/16" long		1		882613-1
2	1		L-104	Line assembly consisting of: one brass bar, 3/8" x 1/2" x 2-1/8", two connector assemblies and two seamless brass tubes, 3/8" O.D. x 0.045" wall, 4-1/8" long		1		441089-501

Ψ *For complete winding data see drawings listed in Table of Contents.*

9 *To be packed separately*

TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
TENDER SPARES

BOX NO.	QUANTITY	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
				INDUCTANCES (CLASS 47) (Continued)				
2	1		L-105	Loop assembly consisting of: bronze body, brass gear, molded styramic insulator brass bushing, copper loop, brass collar, brass shaft and brass pinion		1		427503-501
				CAPACITORS (CLASS 48)				
1	2	-48231	C-126,127	Capacitor, fixed, molded mica, 0.01 mfd, flash test, 700 v, 60 cycles		1	Model T Special type	32170-511
2	6	-48595-A10	C-206,208,212,215	Capacitor, fixed, paper, oil filled, 1 mfd ±10%, 400 v d.c. working	RE 13A 488	1		720555-52
2	12	-481159	C-303,304,305,306	Capacitor, fixed, dry electrolytic, 1000 mfd ±10%, 25 v d.c. working, max. surge voltage 50 v d.c., max. equivalent, series resistance 1.3 ohms	RE 13A 549A	710	S-8560-PE	856047-1
2	3	-481160-10	C-209,210	Capacitor, fixed, oil filled, 0.5 mfd ±10%, 600 v d.c. working	RE 13A 488	1		720555-58
2	3	-481166	C-213,214	Capacitor, fixed, oil filled, 4 mfd, 600 v d.c. working	RE 13A 488	246	Cat.#26F317	856439-2
2	3	-481305	C-203	Capacitor, dry electrolytic, tubular case, 75 mfd, 25 v d.c. working, max. surge voltage 40 v d.c.	RE 13A 549A	382		90556-1
2	5	-481439-10	C-201,202,219	Capacitor, fixed, paper, 0.05 mfd ±10%, rated voltage 600 v d.c.	RE 13A 488	1		720555-67
2	3	-481379-10	C-204,205	Capacitor, fixed, paper, 0.1 mfd ±10%, 400 v d.c. working	RE 13A 488	1		720555-57
2	3	-481545	C-301,302	Capacitor, fixed, oil filled, 10 mfd, 600 v d.c. working	RE 13A 488	246	Cat. #26F547	856439-3
2	2	-482137-10	C-220A,220B	Capacitor, fixed, oil filled, two sections; section A: 0.025 mfd; section B: 0.125 mfd ±10%, 600 v d.c. working	RE 13A 488	1		720555-54
1	3	♂CM30B102K	C-114,216,217,218	Capacitor, fixed, molded mica, 1000 mmfd ±10%, 500 v d.c. working	♂C75.3 1942	793	Type CM30	722017-559
1	8	♂CM35B472K	C-101,110,115,116, 117,118,119,120, 121,124,125,128, 129	Capacitor, fixed, molded mica, 4700 mmfd ±10%, 500 v d.c. working	♂C75.3 1942	1	CM35	722026-555

♂ *American War Standard Type Number.*
♂ *American War Standard Specification.*

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
TENDER SPARES

BOX NO.	QUANTITY	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
				CAPACITORS (CLASS 48) (Continued)				
1	1	*CM35B562K	C-211	Capacitor, fixed, molded mica, 5600 mmfd ±10%, 500 v d.c. working	*C75.3 1942	793	CM35 CM45	722026-557
1	1	*CM45A102K	C-123	Capacitor, fixed, molded mica, 1000 mmfd ±10%, 2500 v d.c. working	*C75.3 1942	1		722043-633
1	2		C-102,111,112	Capacitor, fixed, ceramic, 10 mmfd ±5%, 650 v d.c. working, low-loss case		207		97698-1
2	8		C-103A,106A,109A, 113A	Spare ceramic or mycalex end plates for capacitors C-103,106,109,113		121		441039-5
1	3		C-104,105,107,108	Capacitor, fixed, ceramic, 22 mmfd ±5%, 650 v d.c. working, low-loss case		207		97698-2
2	1		C-122	Capacitor, assembly, fixed, ceramic, 1/2" dia. x 1/2" long, 6-32 tap at each end, 3/16" deep, complete with two terminals		1		882827-501
1	1		C-207	Capacitor, fixed, molded mica, 4700 mmfd ±10%, 2500 v d.c. working	*C75.3 1942	1		720567-20
				JACKS, PLUGS & RECEPTACLES (CLASS 49)				
2	1	-49025A	J-202	Jack, single spring, open circuit, 15/16" x 3/4" x 1.28763"	U.S. Army JK34A	382 786		868986-2
2	1	-49039	J-201	Jack, two spring, three circuit, 15/16" x 3/4" x 1-7/32"	U.S. Army JK33A	382 786		868986-1
2	1	-49269	P-601	Connector, 5/8" dia. x 1-1/64" long, complete with mounting plate 0.075" thick x 1" sq.	RE 49F 188	902		883935-1
2	2	-49363	X-101,205,206	Socket, tube, 5 contacts, steatite ceramic, 2-5/16" x 1-11/16" x 9/16" base, contacts phosphor bronze, silver plated	RE 13A 524 Grade G	331		856997-2
2	2	-49367	X-301,302,303	Socket, tube, 2-5/16" x 1-11/16" x 9/16", steatite ceramic base, eight contacts phosphor bronze, silver plated	RE 13A 524 Grade G	331		856997-6
2	4	-49373	X-201,202,203,204, 207,208	Socket tube assembly, 1-3/8" x 2-5/32" x 7/8" consisting of: aluminum adapter plate, socket, octal and steel retaining ring, amphenol #4	RE 13A 317F	30	RSS-8M	856868-505
2	1	-49385	X-104	Socket, tube, 2-3/4" 7-2-3-4-953852, 7-2-3-16-953852, 5-36531332 contacts to be beryllium copper, silver plated		1	Special UT-107	882738-1

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
TENDER SPARES

BOX NO.	QUAN-TITY	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
				JACKS, PLUGS & RECEPTACLES (CLASS 49) (Continued)				
2	1	-49389	X-102,103	Socket, 2-5/8" x 2-5/8" x 9/16", steatite ceramic, seven phosphor bronze contacts, silver plated	RE 13A 524 Grade G	331		418355-1
*1	6	-49465	P-401,402,403,404, 405,406,407,408	Plug connector, male assembly, 1-7/8" x 3-9/16" x 2-3/32", 12 contacts, terminal numbers from 1 to 12 stamped on both sides		352	28590	427607-1
*1	6	-49466	P-101,102,201,202, 301,302,303,304	Plug connector, 1-7/8" x 3-9/16" x 1-3/8", female assembly, 12 contacts, terminal numbers from 1 to 12 stamped on both sides		352	28589	427607-2
2	2		X-105,106,107,108	Socket, 5/16" x 13/16" x 11/16", crystal, two contacts		11	9816	882708-1
				FILTER UNITS (CLASS 53)				
2	1	-53232	Z-105	Filter, cut off frequency, 171 mc impedance, 50 ohms at 135 mc		1		433105-1
				INSULATORS (CLASS 61)				
2	16	-61032	E-106,202	Pillar, insulator, steatite ceramic, 1-1/4" long, 23/32" x 23/32", both ends tapped #10-32 threads	RE 13A 317F Grade G	323		823038-2
2	2	-61167	E-107	Stand-off insulator, ceramic, 5/8" long, 1/2" O.D., both ends tapped #6-32 threads	RE 13A 317	323		823568-2
2	2	-61168	E-108	Insulator, stand-off, ceramic, 1/2" dia. x 3/4" long, #6-32 tapped hole, each end, 9/32" deep	RE 13A 317	323		823568-3
2	1	-61170	E-109	Insulator, stand-off, isolantite, 1/2" dia. x 1" long, both ends tapped #6-32 threads, 9/32" deep	RE 13A 317	323		823568-5
2	2	-61172	E-203	Insulator, stand-off, ceramic, 1/2" dia. x 11/16" long, #6-32 tapped hole each end, 1/4" deep	RE 13A 317	323	397	823568-7
2	1		E-110	Insulator, stand-off, isolantite, 5/16" sq. x 1/2" long, both ends tapped #6-32 threads, 3/16" deep		323		834196-2
2	2		E-302	Insulator, stand-off, isolantite, 3/4" long, 3/8" dia., both ends tapped #6-32 threads, 9/32" deep	RE 13A 317	323		875335-1
2	1		E-601	Insulator, brown molded, steatite, grade L5, center section 1-7/8" x 2-1/8" x 1/2"; upper boss 1-1/8" dia. x 1/4", lower boss 1-1/4" dia. x 1/2"		1		883942-1

** To be packed together.*

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TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
TENDER SPARES

BOX NO.	QUAN-TITY	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
				WIRES & CONDUCTORS (CLASS 62)				
2	1	RG-8/U	W-101	Cable assembly consisting of: 9-1/2" long coaxial cable complete with plug assembly and jack assembly	JAN-C-17	1		722281-501
2	1	RG-8/U	W-102	Cable assembly consisting of: 13-1/2" coaxial cable complete with two plug assemblies	JAN-C-17	1		722281-502
1	4		W-104	Cable assembly consisting of: 12 conductor cable 98" long, 12 connector male plug one end, 12 connector female plug other end, complete with two plug holders 4" x 2-11/32" x 2-3/8"		1		717781-501
				RESISTORS (CLASS 63)				
2	3	-63005F	R-109,110	Resistor, fixed, wire wound, ferrule type, 500 ohms, 10 watts, grade 1, class 1, style F	RE 13A 372	590		620340-816
2	3	-63070F	R-305,309	Resistor, fixed, wire wound, ferrule type, 500 ohms, grade 1, class 1, style F	RE 13A 372	590		620340-516
2	2	-63074F	R-302	Resistor, fixed, wire wound, ferrule type, 800 ohms, grade 1, class 1, style D	RE 13A 372	590		620340-528
2	2	-63076F	R-306	Resistor, fixed, wire wound, ferrule type, 1000 ohms ±5%, grade 1, class 1, style D	RE 13A 372	590		620340-531
2	6	-63080F	R-231,232,235, 307	Resistor, fixed, wire wound, ferrule type, 2500 ohms, grade 1, class 1, style D	RE 13A 372	590		620340-548
2	2	-63085F	R-236	Resistor, fixed, wire wound, ferrule type, 5000 ohms, grade 1, class 1, style D	RE 13A 372	590		620340-558
2	2	-63090F	R-116	Resistor, fixed, wire wound, ferrule type, 10,000 ohms, grade 1, class 1, style D	RE 13A 372	590		620340-567
2	2	-63338F	R-233	Resistor, fixed, wire wound, ferrule type, 250 ohms ±5%, grade 1,class 1, style F	RE 13A 372	590	Suffix F	620340-806
2	2	-63371F	R-308	Resistor, fixed, wire wound, ferrule type, 50 ohms, grade 1, class 1, style F	RE 13A 372	590		620340-785
2	2	-63398F	R-304	Resistor, fixed, wire wound, ferrule type, 300 ohms, grade 1, class 1, style F	RE 13A 372	590		620340-808
2	2	-63752F	R-120	Resistor, fixed, wire wound, ferrule type, 2000 ohms, grade 1, class 1, style E	RE 13A 372	590		620340-694

TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
TENDER SPARES

BOX NO.	QUAN-TITY	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
				RESISTORS (CLASS 63) (Continued)				
2	3	-631937	R-229	Potentiometer, 1-5/8" dia., 10,000 ohms, shaft, stainless steel, 25/32" long, 0.248" dia., screwdriver slotted		382	Type M10MP	864708-2
2	6	-631938	R-240,241	Potentiometer, 1-5/8" dia., 3000 ohms, shaft, stainless steel, 25/32" long, 0.248" dia., screwdriver slotted		382	Type M3MP	864708-4
2	3	-631939	R-234	Attenuator, 1-19/32" dia., "L" ladder pad, 600 ohms, shaft, stainless steel, 29/32" long x 1/4" dia.		382		421058-2
2	2	-631940	R-210	Resistor, ceramic, 100 ohms ±10%, 3 watts		711	Type A	881734-1
1	2	♂RC21BE105K	R-226	Resistor, fixed, composition, insulated, 1 megohm ±10%, 1/2 watt, wire leads	♂C75.7 1943	321	BT-1/2	722322-98
1	3	♂RC21BE123K	R-206,207	Resistor, fixed, composition, 12,000 ohms ±10%, 1/2 watt, insulated, pigtail type terminals	♂C75.7 1943	321	BT-1/2	722322-75
1	5	♂RC21BE222K	R-217,228,230	Resistor, fixed, composition, 2200 ohms ±10%, 1/2 watt, insulated, pigtail type terminals	♂C75.7 1943	321	BT-1/2	722322-66
1	3	♂RC21BE271K	R-203,204	Resistor, fixed, composition, 270 ohms ±10%, 1/2 watt, insulated, pigtail type terminals	♂C75.7 1943	321	BT-1/2	722322-55
1	2	♂RC21BE332K	R-218	Resistor, fixed, composition, 3300 ohms ±10%, 1/2 watt, insulated, pigtail type terminals	♂C75.7 1943	321	BT-1/2	722322-68
1	2	♂RC21BE474K	R-225	Resistor, fixed, composition, insulated, 470,000 ohms ±10%, 1/2 watt, wire leads	♂C75.7 1943	321	BT-1/2	722322-94
1	2	♂RC21BE561K	R-242	Resistor, fixed, composition, 560 ohms ±10%, 1/2 watt insulated, pigtail type terminals	♂C75.7 1943	321	BT-1/2	722322-59
1	2	♂RC21BE563K	R-227	Resistor, fixed, composition, insulated, 56,000 ohms ±10%, 1/2 watt, wire leads	♂C75.7 1943	321	BT-1/2	722322-83
1	2	♂RC21BE823K	R-237	Resistor, fixed, composition, insulated, 82,000 ohms ±10%, 1/2 watt, wire leads	♂C75.7 1943	321	BT-1/2	722322-85
1	3	♂RC21BE824K	R-213,214	Resistor, fixed, composition, 0.82 megohms ±10%, 1/2 watt, insulated, pigtail type terminals	♂C75.7 1943	321	BT-1/2	722322-97
1	2	♂RC31BE101K	R-118	Resistor, fixed, composition, 100 ohms ±10%, 1 watt, insulated, pigtail type terminals	♂C75.7 1943	321	BT-1	722337-50
1	2	♂RC31BE103K	R-111	Resistor, fixed, composition, 10,000 ohms ±10%, 1 watt, insulated, pigtail type terminals	♂C75.7 1943	321	BT-1	722337-74

♂ *American War Standard Type Number.*
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TENDER SPARES

BOX NO.	QUANTITY	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWI NUMBER
				RESISTORS (CLASS 63) (Continued)				
1	2	♂RC31BE105K	R-201	Resistor, fixed, composition, 1.0 meg. ±10%, 1 watt, insulated, pigtail type terminals	♁C75.7 1943	321	BT-1	722337-98
1	5	♂RC31BE123K	R-205,208,223	Resistor, fixed, composition, 12,000 ohms ±10%, 1 watt, insulated, pigtail type terminal	♁C75.7 1943	321	BT-1	722337-75
1	3	♂RC31BE124K	R-215,216	Resistor, fixed, composition, 0.12 meg. ±10%, 1 watt, insulated, pigtail type terminals	♁C75.7 1943	321	BT-1	722337-87
1	2	♂RC31BE273K	R-103	Resistor, fixed, composition, 27,000 ohms ±10%, 1 watt, insulated, pigtail type terminals	♁C75.7 1943	321	BT-1	722337-79
1	2	♂RC31BE393K	R-222	Resistor, fixed, composition, 39,000 ohms ±10%, 1 watt, insulated, pigtail type terminals	♁C75.7 1943	321	BT-1	722337-81
1	2	♂RC31BE473K	R-102	Resistor, fixed, composition, 47,000 ohms ±10%, 1 watt, insulated, pigtail type terminals	♁C75.7 1943	321	BT-1	722337-82
1	2	♂RC31BE104K	R-224	Resistor, fixed, composition, 0.10 megohm ±10%, 1 watt, insulated, pigtail type terminals	♁C75.7 1943	321	BT-1	722337-86
1	3	♂RC41BE103K	R-113,114	Resistor, fixed, composition, insulated, 10,000 ohms ±10%, 2 watts, wire leads	♁C75.7 1943	321	BT-2	722357-74
1	2	♂RC41BE181K	R-219	Resistor, fixed, composition, 180 ohms ±10%, 2 watts, insulated, pigtail type terminals	♁C75.7 1943	321	BT-2	722357-53
1	2	♂RC41BE223K	R-202	Resistor, fixed, composition, 22,000 ohms ±10%, 2 watts, insulated, pigtail type terminals	♁C75.7 1943	321	BT-2	722357-78
1	6	♂RC41BE273K	R-105,106,212,239	Resistor, fixed, composition, 27,000 ohms ±10%, 2 watts, insulated, pigtail type terminals	♁C75.7 1943	321	BT-2	722357-79
1	2	♂RC41BE562K	R-238	Resistor, fixed, composition, 5600 ohms ±10%, 2 watts, insulated, pigtail type terminals	♁C75.7 1943	321	BT-2	722357-71
1	3	♂RC41BE820K	R310,311	Resistor, fixed, composition, 82 ohms ±10%, 2 watts, insulated, large	♁C75.7 1943	321	BT-2	722357-49
1	3	♂RC41BE822K	R-117,211	Resistor, fixed, composition, 8200 ohms ±10%, 2 watts, insulated, pigtail type terminals	♁C75.7 1943	321	BT-2	722357-73
2	3	♂RC65CE273K	R-107,108	Resistor, fixed, composition, 27,000 ohms ±10%, 4 watts, non-insulated, pigtail type terminals	♁C75.7 1943	321	BT-4	722365-79
2	9	♂RC65CE473K	R-220,221,243	Resistor, fixed, composition, 47,000 ohms ±10%, 4 watts, non-insulated, pigtail type terminals	♁C75.7 1943	321	BT-4	722365-82

♂ *American War Standard Type Number.*
♁ *American War Standard Specification.*

RESTRICTED

TABLE IV (Continued)
SPARE PARTS LIST BY NAVY TYPE NUMBERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT
TENDER SPARES

BOX NO.	QUANTITY	NAVY TYPE NUMBER	ALL SYMBOL DESIGNATIONS INVOLVED	DESCRIPTION	NAVY DRAWING OR SPEC.	MFR.	MFR. DESIG.	RCA DRAWING NUMBER
				RESISTORS (CLASS 63) (Continued)				
2	3	♂RC76CE683K	R-301	Resistor, fixed, composition, non-insulated, 68,000 ohms ±10%, 5 watts	♁C75.7 1943	321	BT-5	722375-84
2	2		R-112	Suppressor assembly consisting of: 12 turns of 0.0126" dia. DC wire wound over a fixed resistor, composition 3300 ohms ±10%, 1 watt, insulated		1		882400-503
2	2		R-104	Suppressor assembly consisting of: 12 turns of 0.0126" dia. DC wire wound over a fixed resistor, 1800 ohms ±10%, 1 watt, insulated		1		882400-502
2	3		R-101	Heater unit assembly consisting of: 85 turns of 0.0063" dia. E wire wound on bakelite varnished form, 0.010" x 1-1/2" x 13-3/8", d-c resistance 662 ohms ±2%		1		427541-501
2	2		R-115	Suppressor assembly consisting of: 25 close wound turns of 0.0126" dia. DC wire wound over a resistor, fixed, composition, 100 ohms ±10%, 1 watt, insulated		1		882400-504
2	2		R-119	Suppressor assembly consisting of: 12 close wound turns of 0.0126" dia. DC wire wound over a fixed resistor, 100 ohms ±10%, 1 watt, insulated		1		882400-501
2	3		R-209	Potentiometer, 1-5/8" dia., 100 ohms, shaft, stainless steel, 25/32" long, 0.248" dia., screwdriver slotted		382	M100P	864708-1
2	3		R-303	Rheostat, spare for overload relay, 50 ohms ±10%		820		422579-8

♂ *American War Standard Type Number.*
♁ *American War Standard Specification.*

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TABLE V - APPLICABLE COLOR CODES

RESISTOR AND CAPACITOR CODES

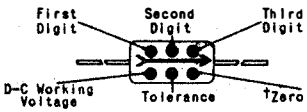
MICA CAPACITOR CODING

Values of capacitance and tolerance are coded identically on both R.M.A. 6 dot and A.W.S. coded capacitors. Only the coding of the sixth (lower left) dot differs between the two.

R. M. A. CODE

R.M.A. coded capacitors have 3 or 6 dots located as shown below.

6 DOT COLOR CODE



On capacitors bearing 6 dots, the upper 3 dots become the first 3 figures. When the number of zeros determined by the "Zero Add" (lower right) dot is added, the capacitance in micromicrofarads (mmfd) is obtained. The other two dots show the percentage tolerance and the voltage rating.

EXAMPLE:

Brown, Red, Green / Green, Silver, Brown
- 125 + 0 = 1250 mmfd capacitance
- 10% tolerance
- 500 v d-c working voltage

3 DOT COLOR CODE

On capacitors bearing 3 dots, the first 2 dots become the first two figures. When the number of zeros determined by the "Zero Add" (third) dot is added, the capacitance in micromicrofarads (mmfd) is obtained. All 3 dot capacitors are rated at 500 v d-c working voltage.

EXAMPLE:

Red, Green, Brown
- 25 + 0 - 250 mmfd capacitance
- (inferred tolerance) 500 v d-c working voltage

A. W. S. CODE

A.W.S. coded capacitors may have a coded "Type Designation" or 6 colored dots as shown below.

TYPE DESIGNATION

CM 20 A 050 M

Component | Case | Characteristic | Capacitance | Tolerance

COMPONENT: All mica capacitors are identified by "CM".

*CASE: Identifies external shape and dimensions.

*CHARACTERISTIC: Identifies temperature coefficient and "Q".

CAPACITANCE: The first 2 digits are the first 2 figures of the capacitance, in mmfd. The third determines the number of zeros to add. If more than 3 digits are used, all except the last are figures of capacitance. The last determines the number of zeros to add.

TOLERANCE:

Designation	Tolerance
G	±2%
J	±5%
K	±10%
M	±20%

EXAMPLE: The above type designation identifies the capacitance as 5 mmfd and the tolerance as 20 per cent.

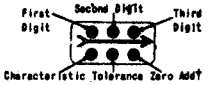
*For specific information see publication C75.3 - 1942 of the American Standards Association.

6 DOT COLOR CODE

EXAMPLE:

Black Orange Orange
Black Silver Red

033 + 00 = 3300 mmfd capacitance
10% tolerance
"A" characteristic



R. C. A. CODE

for mica capacitors of the shape shown below

The capacitance in micromicrofarads (mmfd) is stamped on the case. The color of the numbers shows the tolerance, as follows:

Green . . . 2.5% Blue 1C%
Black . . . 5% Yellow . . . 2C%
Red . . . 30%

capacitance in micromicrofarads

† *When the "ZERO ADD" color is GOLD, multiply the preceeding digits by 0.1 for capacitance in mmfd; when the "ZERO ADD" color is SILVER, multiply by 0.01*

COLOR IDENTIFICATION FOR MICA CAPACITORS

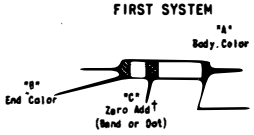
COLOR	DIGITS and ZERO ADD	TOLERANCE R.M.A.	TOLERANCE A.W.S.	TOLERANCE R.C.A. mica	D-C VOLTAGE (R.M.A.)	CHARACTERISTIC (A.W.S.)
BLACK	0			5%		A
BROWN	1	1%			100	B
RED	2	2%	2% (G)		200	C
ORANGE	3	3%			300	D
YELLOW	4	4%		20%	400	E
GREEN	5	5%		2½%	500	F
BLUE	6	6%		10%	600	G
VIOLET	7	7%			700	
GRAY	8	8%			800	
WHITE	9	9%			900	
GOLD	†	5%	5% (J)		1000	
SILVER	†	10%	10% (K)		2000	
NO COLOR		20%	20% (M)		500	

†When the "ZERO ADD" color is GOLD, multiply the number obtained from "A" and "B" by 0.1 to get capacitance in mmfd; when it is SILVER; multiply the number by 0.01.

RESISTOR CODING

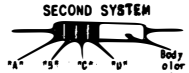
(Composition and Low Power Wire Wound Resistors)
THE R.M.A. CODING AND A.W.S. CODING FOR THESE RESISTORS ARE IDENTICAL

FIRST SYSTEM



Tolerance may not be given: in which case there will be no "D" band.

SECOND SYSTEM



The body color indicates the type of resistor, and is coded as follows:

BODY COLOR	TYPE
Black	Composition, non-insulated
Any Color but Black Chocolate Brown	Composition, insulated Wire wound, insulated

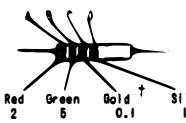
TO FIND RESISTANCE IN OHMS FROM COLOR CODING:

Obtain the digits identified by the colors of "A", "B", and "C" from the following table:

COLOR	Digit or Zero Add	COLOR	Digit or Zero Add	Tolerance
Black	0	Violet	7	
Brown	1	Gray	8	
Red	2	White	9	
Orange	3	Gold	†	5%
Yellow	4	Silver	†	10%
Green	5	No Color		20%
Blue	6			

† When the "ZERO ADD" color is GOLD, multiply the number obtained from "A" and "B" by 0.1 to get resistance in ohms; when it is SILVER; multiply the number by 0.01.

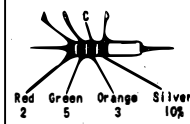
EXAMPLE



A B x C = 25 x 0.1 = 2.5
Resistance is 2.5 ohms
Tolerance: 10 per cent

EXAMPLE

The first two digits "A" and "B" become the first two numbers of the resistance. The ZERO ADD digit, "C", gives the number of zeros to add after the first two numbers. (If the ZERO ADD color is GOLD or SILVER, it becomes a multiplier. See note †)



A B + C zeros =
25 + 3 zeros = 25,000
Resistance is 25,000 ohms
Tolerance: 10 per cent

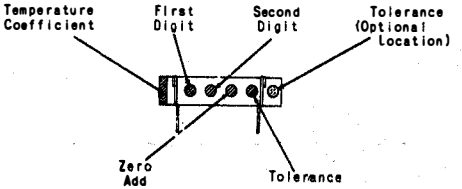
RCA CERAMIC CAPACITOR CODING

COLOR IDENTIFICATION

COLOR	DIGIT	ZERO ADD	TOLERANCE Note 1	TOLERANCE Note 2	TEMP. COEFFICIENT [MMFD/MMFD/°C.]
BLACK	0	0			0
BROWN	1	1	5%	0.5 mmfd	-0.30 x 10^{-4}
RED	2	2			-0.80 x 10^{-4}
ORANGE	3	3	2½%		-1.6 x 10^{-4}
YELLOW	4	4			-2.2 x 10^{-4}
GREEN	5	5	5%	0.5 mmfd	-3.3 x 10^{-4}
BLUE	6	6			-4.7 x 10^{-4}
VIOLET	7	7			-7.5 x 10^{-4}
GRAY	8		2½%	0.25 mmfd	
WHITE	9		10%	1.0 mmfd	

Note 1 - This column applies to capacitances GREATER than 10 mmfd.
Note 2 - This column applies to capacitances LESS than 10 mmfd.

COLOR CODING



The d-c working voltage of this type is 500 volts.

EXAMPLE:

4 Brown Dots, Red End Color
- 11 + 0 = 110 mmfd capacitance
- ±5% tolerance
- -0.80 x 10^{-4} mmfd/mmfd/°C. temperature coefficient
- inferred: 500 volt rating

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TABLE VI

LIST OF MANUFACTURERS

CONTRACT NXss-29644 FOR MODEL TDQ TRANSMITTING EQUIPMENT S.O. 12182,12420

CODE NUMBER	MFR. PREFIX	NAME	ADDRESS
1	CRV	Radio Corporation of America	Camden, N.J.
1a	CRC	Radio Corporation of America	Harrison, N.J.
3		Alden Products Co.	715 Center St., Brockton, Mass.
4	CBZ	Allen-Bradley Co.	1326 S. 2nd Street. Milwaukee, Wis.
5		Allen Mfg. Co.	Hartford, Conn.
6	CPH	American Phenolic Corp.	1830 S. 54th St., Cicero, Ill.
7	CHH	Arrow-Hart & Hegeman Electric Co.	102 Hawthorne St., Hartford, Conn.
9	CBK	Allen D. Cardwell Mfg. Co.	81 Prospect St., Brooklyn, N.Y.
10	CBN	Central Radio La. (Centralab)	900 E. Keefe Ave., Milwaukee, Wis.
11	CMG	Cinch Mfg. Co.	2339 W. Van Buren St., Chicago, Ill.
12	CRY	C.P. Clare & Co.	Sunnyside & Keating Ave., Chicago, Ill.
16	CER	Erie Resistor Corp.	644 W. 12th St., Erie, Pa.
18	CG	General Electric Co.	Schenectady, N.Y.
19	CHC	Hammarlund Mfg. Co.	460 W. 34th St., New York, N.Y.
21	CIR	International Resistance Corp.	401 N. Broad St., Philadelphia, Pa.
22	CBU	Isolantite, Inc.	343 Courtland St., Belleville, N.J.
23	CEJ	E.F. Johnson Co.	Waseca, Minn.
25	CLR	Leach Relay Co.	5912 Avalon Blvd., Low Angeles, Calif.
26	CLF	Littelfuse Lab.	4757 N. Ravenswood Ave., Chicago, Ill.
28	CMA	P.R. Mallory & Co. (Yaxley Division)	3029 E. Washington St., Indianapolis, Ind.
30	CPH	Same as #6	
34	CSL	Solar Mfg. Co.	588 Avenue A, Bayonne, N.J.
35	CSZ	Square D Company	6060 Rivard St., Detroit, Mich.
36	CSA	Stackpole Carbon Co.	1942 Tannery St., St. Marys, Pa.
38	CAY	Westinghouse Electric & Mfg. Co.	3001 Walnut St., Philadelphia, Pa.
44		Advance Electric Co.	Los Angeles, Calif.
47	CHH	Same as #7	
86	CBH	Boston Gear Works, Inc.	Terminal Commerce Bldg., Philadelphia, Pa.
99	CBX	Bodine Electric Co.	2254 W. Ohio St., Chicago, Ill.
114	CED	Cannon Electric Development Co.	3201 Humboldt St., Los Angeles, Calif.
121	CBK	Allen D. Cardwell Mfg. Co.	81 Prospect St., Brooklyn, N.Y.
126		Birtcher Corp.	Los Angeles, Calif.
127		Linze Benwood Co.	St. Louis, Mo.
133	CCD	Carborundum Co. (Globar Division)	Cepknupfer Building, Niagara Falls, N.Y.
147		Chase-Shawmut Co.	Box No. 390, Newburyport, Mass.
149	CTC	Chicago Telephone & Supply Co.	Elkhart, Ind.

RESTRICTED

TABLE VI (Continued)
LIST OF MANUFACTURERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT

CODE NUMBER	MFR. PREFIX	NAME	ADDRESS
171	CCC	Continental Carbon Co.	295 Madison Ave., New York, N.Y.
191		Camden Window Shade Co.	815 Broadway, Camden, N.J.
207	CER	Same as #16	
208		Dial Light Co. of America, Inc.	90 West St., New York, N.Y.
232	CEE	Edison Electric Controls, Inc. Division of Thomas A. Edison, Inc.	W. Orange, N.J.
246	CG	Same as #18	
254		Economy Fuse and Mfg. Co.	Greenview Avenue at Division Pkwy. Chicago, Ill.
258		Electrolux Corp.	Old Greenwich, Conn.
321	CIR	Same as #21	
323	CBU	Same as #22	
331	CEJ	Same as #23	
352	CBO	Lapp Insulator Co.	LeRoy, N.Y.
355	CLR	Same as #25	
382	CMA	Same as #28	
410	CBO	Same as #352	
439		New Departure Div. of General Motors	Bristol, Conn.
459	CJA	Millen Mfg. Co.	150 Exchange St., Malden, Mass.
462	CMO	Miller Rubber Co., Inc.	1234 Stanton Ave., Akron, Ohio
468	CDM	Donald P. Mossman, Inc.	6021 N. Northwest Hy., Chicago, Ill.
477		Mendelson Speed Gun Co.	Bloomfield, N.J.
483	CNA	National Radio Co., Inc.	61 Sherman St., Malden, Mass.
516	CRC	Same as #1a	
590	CSF	Sprague Specialties Co.	N. Adams, Mass.
591	CSZ	Same as #35	
617	CPQ	Speer Resistor Corp.	Theresia St., St. Marys, Pa.
623	CHS	Sylvania Electric Products, Inc.	Emporium, Pa.
637	CCT	Stromberg-Carlson Telephone Mfg.Co.	100 Carlson Road, Rochester, N.Y.
670	CAY	Same as #38	
675	CGT	Trumbull Electric Mfg. Co.	Plainsville, Conn.
710	CSL	Same as #34	
711	CSA	Same as #36	
713	CRY	Same as #12	
717	CAX	Aerial Machine & Tool Corp.	260 West St., New York, N.Y.
722	CBZ	Same as #4	
724	CBX	Same as #99	
731		Allen Mfg. Co.	Hartford, Conn.
743		Same as #147	
753	CDM	Same as #468	
757	CEE	Same as #232	
759	CCT	Same as #637	
767	CMO	Same as #462	

RESTRICTED

TABLE VI (Continued)
LIST OF MANUFACTURERS
FOR MODEL TDQ TRANSMITTING EQUIPMENT

CODE NUMBER	MFR. PREFIX	NAME	ADDRESS	CODE NUMBER	MFR. PREFIX	NAME	ADDRESS
768	CFA	Bussman Mfg. Co.	2538 W. University St., St. Louis, Mo.				
780		Same as #208					
784	CLF	Same as #26					
786	CTC	Same as #149					
787		Same as #3					
789		Same as #191					
793	CO	Cornell-Dubilier Electric Corp.	1000 Hamilton Blvd., S. Plainfield, N.J.				
795	CPQ	Same as #617					
820		Same as #44					
837		Same as #254					
853	CGT	Same as #675					
900	CJA	Same as #459					
902		Same as #477					
961		Same as #126					
962		Same as #127					
983	COL	Collins Radio Co., Inc.	Cedar Rapids, Iowa				
1030		Same as #258					
1073	CHZ	Hazeltine Service Corp.	1775 Broadway, New York, N.Y.				
1140	CJA	Same as #459					
1146		Metalcraft Products Co.	306 Cherry St., Philadelphia, Pa.				
1195		Plax Corp.	Hartford, Conn.				
1259	CTE	Telephonics Corp	350 W. 31st St., New York, N.Y.				

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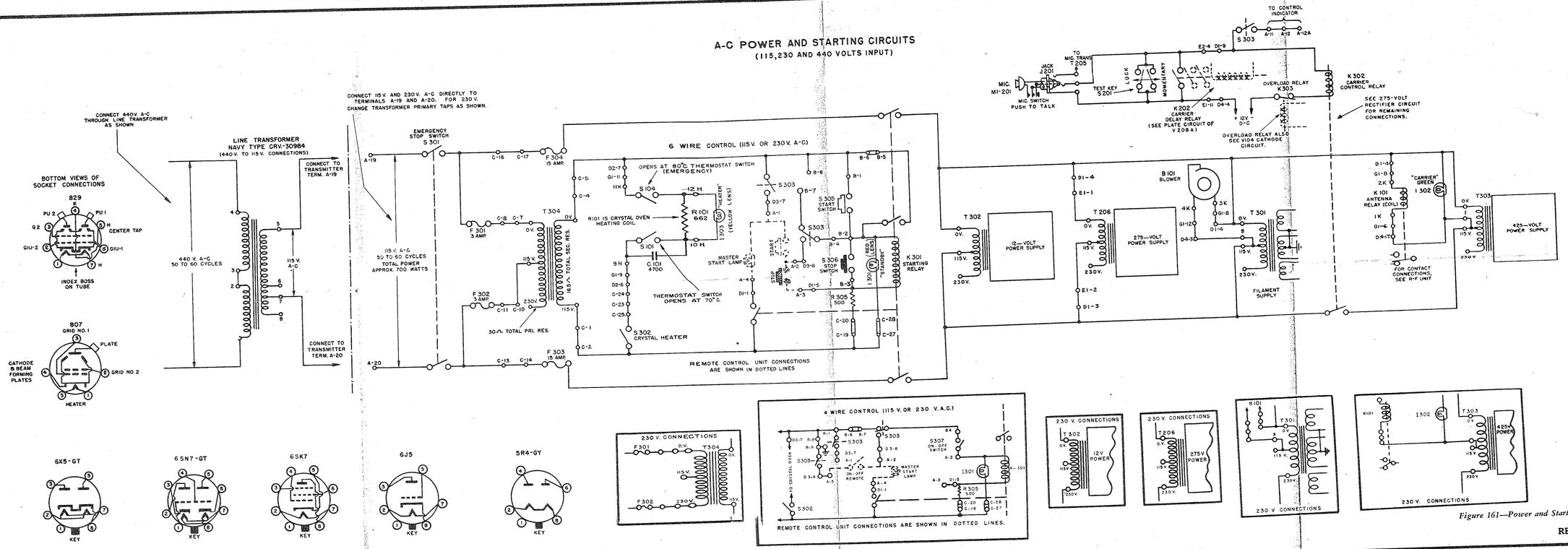


Figure 161—Power and Starting Circuits—A-C, Schematic Diagram

RESTRICTED

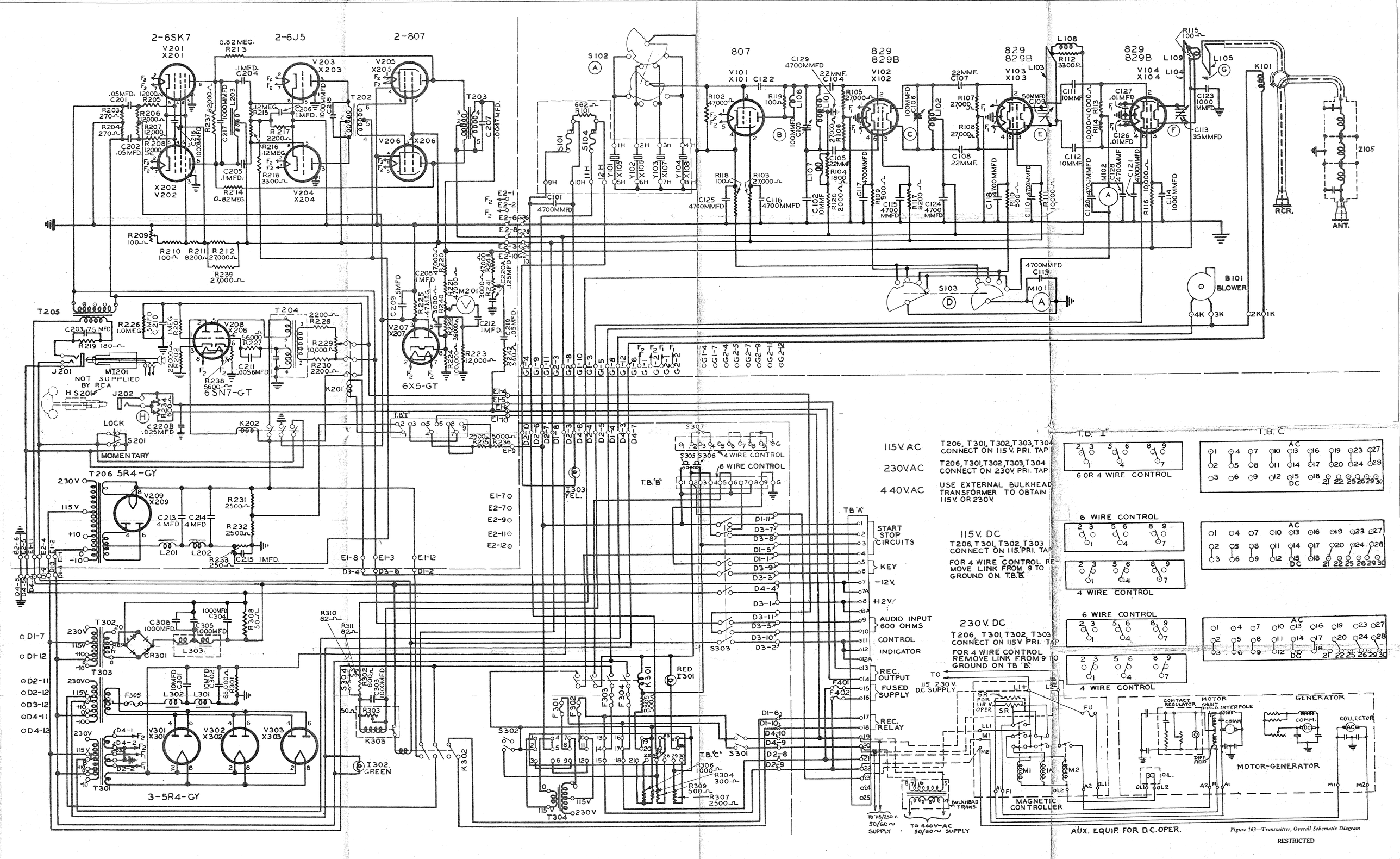


Figure 163—Transmitter, Overall Schematic Diagram

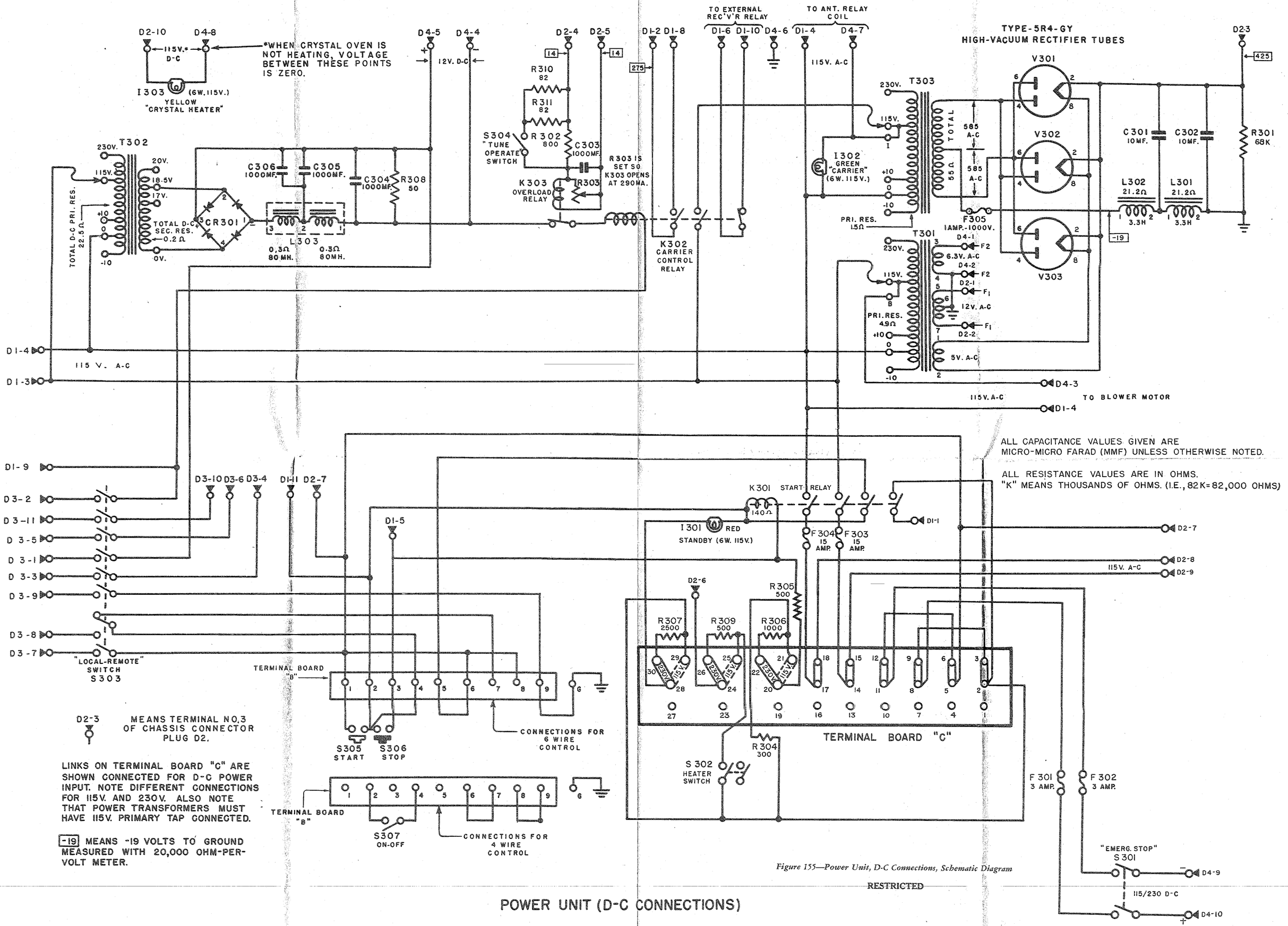
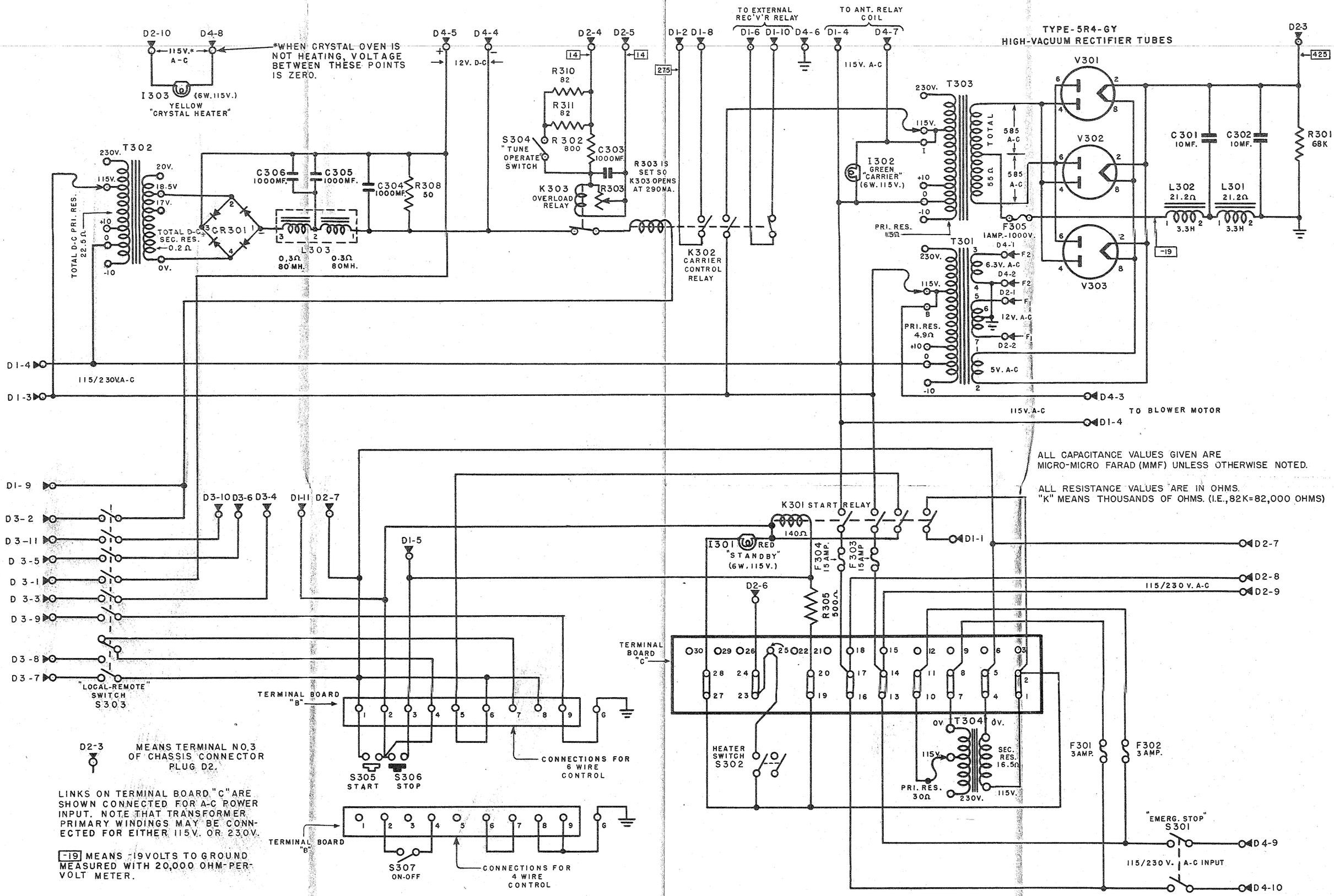


Figure 155—Power Unit, D-C Connections, Schematic Diagram

RESTRICTED

POWER UNIT (D-C CONNECTIONS)



D2-3 MEANS TERMINAL NO.3 OF CHASSIS CONNECTOR PLUG D2.

LINKS ON TERMINAL BOARD "C" ARE SHOWN CONNECTED FOR A-C POWER INPUT. NOTE THAT TRANSFORMER PRIMARY WINDINGS MAY BE CONNECTED FOR EITHER 115V. OR 230V.

-19 MEANS -19 VOLTS TO GROUND MEASURED WITH 20,000 OHM-PER-VOLT METER.

ALL CAPACITANCE VALUES GIVEN ARE MICRO-MICRO FARAD (MMF) UNLESS OTHERWISE NOTED.

ALL RESISTANCE VALUES ARE IN OHMS. "K" MEANS THOUSANDS OF OHMS. (I.E., 82K=82,000 OHMS)

Figure 154—Power Unit, A-C Connections, Schematic Diagram

RESTRICTED

POWER UNIT (A-C CONNECTIONS)

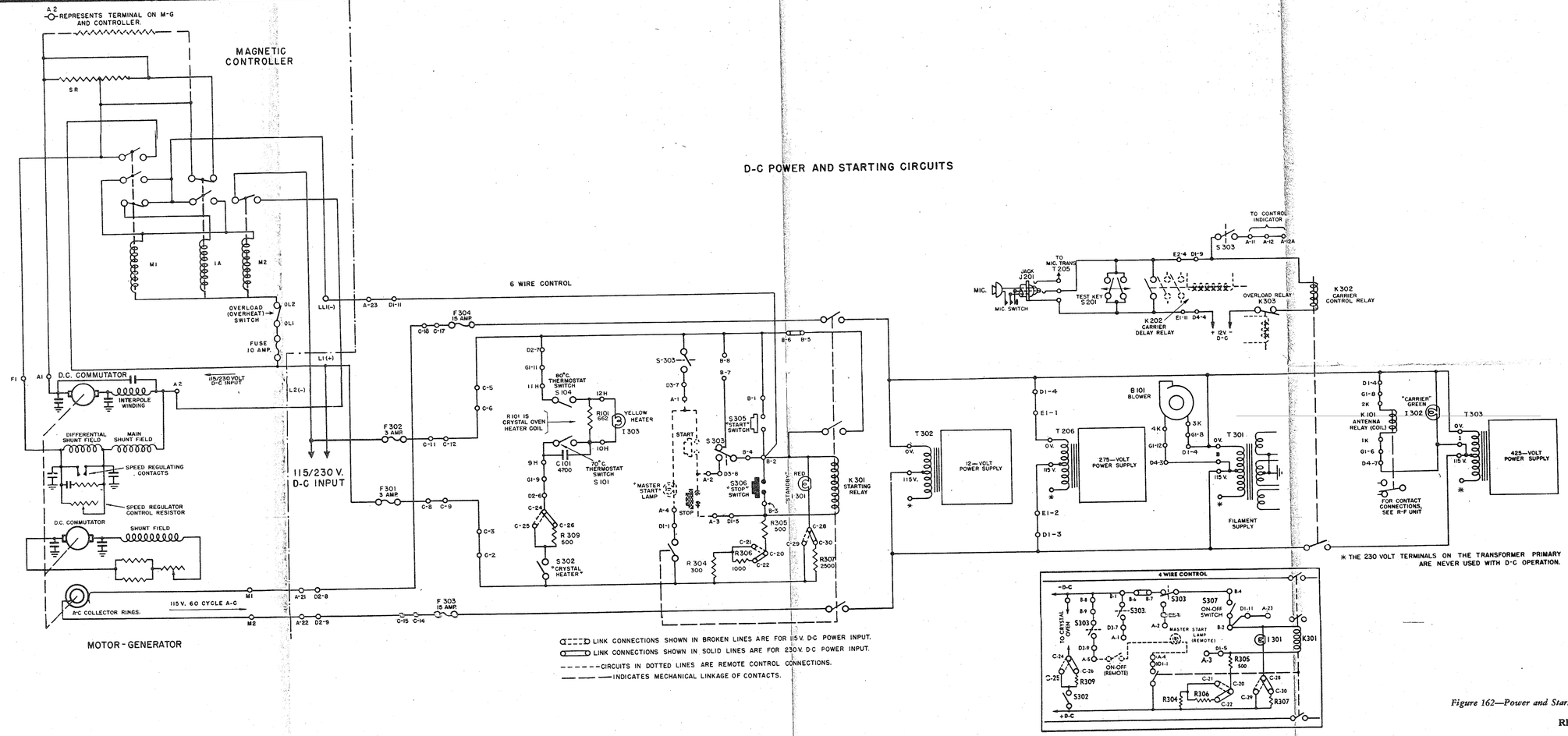
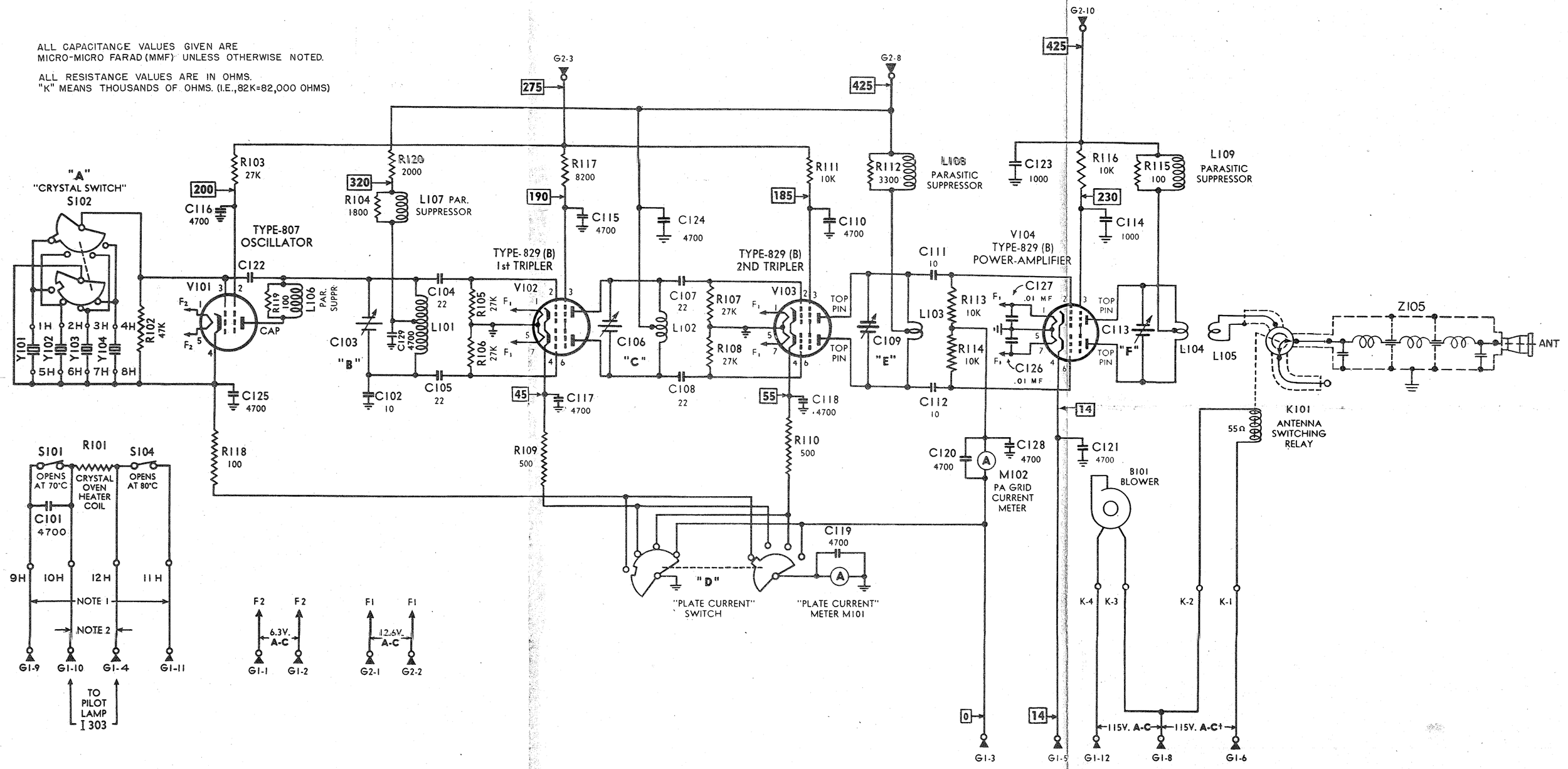


Figure 162—Power and Starting Circuits—D-C, Schematic Diagram

RESTRICTED

ALL CAPACITANCE VALUES GIVEN ARE MICRO-MICRO FARAD (MMF) UNLESS OTHERWISE NOTED.

ALL RESISTANCE VALUES ARE IN OHMS. "K" MEANS THOUSANDS OF OHMS. (I.E., 82K=82,000 OHMS)



NOTE 1—THIS VOLTAGE IS 115V. **A-C** FOR **A-C** POWER INPUT, AND IS 115V. **D-C** FOR **D-C** POWER INPUT.

NOTE 2—THIS VOLTAGE IS 115V. **A-C** OR **D-C** AND IS PRESENT ONLY WHEN CRYSTAL OVEN IS HEATING.

G2-3 MEANS TERMINAL 3 OF PLUG G2

25 MEANS 25V. **D-C** MEASURED TO GROUND WITH A 20,000 OHM-PER-VOLT METER.

†NO VOLTAGE EXISTS BETWEEN THESE TWO POINTS UNLESS MIC. SWITCH, TEST KEY, OR EXTERNAL KEY IS CLOSED.

R. F. UNIT

Figure 160—RF Unit, Schematic Diagram