RESTRICTED

NAVSHIPS 900,292--IB

INSTRUCTION BOOK

FOR

NAVY MODELS RBL-3 AND RBL-4 RADIO RECEIVING EQUIPMENT

FREQUENCY RANGE **15-600 KILOCYCLES**

MANUFACTURED FOR

U. S. NAVY DEPARTMENT BUREAU OF SHIPS

BY

WELLS-GARDNER & CO.

CHICAGO, ILLINOIS

RBL-3 CONTRACT NXss 21446 DATE OF CONTRACT, JANUARY 11, 1943

RBL-4 CONTRACT NXsr 38492 DATE OF CONTRACT, SEPTEMBER 24, 1943

CAUTION

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

The attention of officers and operating personnel is directed to Bureau of Ships Manual of Engineering instructions, Chapter 31 (mimeographed form) or subsequent revisions thereof on the subject of 'Radio—Safety Precautions to Be Observed.'

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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 the aforementioned period and the Contractor is notified thereof in writing within a reasonable time and the defect is not the result of normal expected shelf life 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 suitably 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.

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 31 (mimeographed form) of the Manual of Engineering Instructions, or Bureau of Ships Radio and Sound Bulletin Number 7, dated July 1, 1942, or superseding instructions.

PERTINENT DATES

Contract NXss 21446. Date of Contract, January 11, 1943.

Serial number of equipment.....

Date of acceptance by the Navy.....

Date of delivery to contract destination.....

Date of completion of installation.....

Date placed in service.....

Blank spaces in this book shall be filled in at time of installation. Operating personnel shall also mark the "date placed in service" on the date plate located below the model nameplate on the equipment, using suitable methods and care to avoid damaging the equipment.

REQUESTS 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. **Navy Type number (if assigned) including prefix and suffix as applicable.**
3. **Model designation (including suffix) of equipment in which used.**
4. **Navy Type designation (including prefix and suffix where applicable) of major unit in which part is used.**
5. **Symbol designation of part.**
6. **(a) Navy Drawing Number.**
   (b) Manufacturer's Drawing Number
7. **Rating or other descriptive data.**
8. **Commercial designation.**

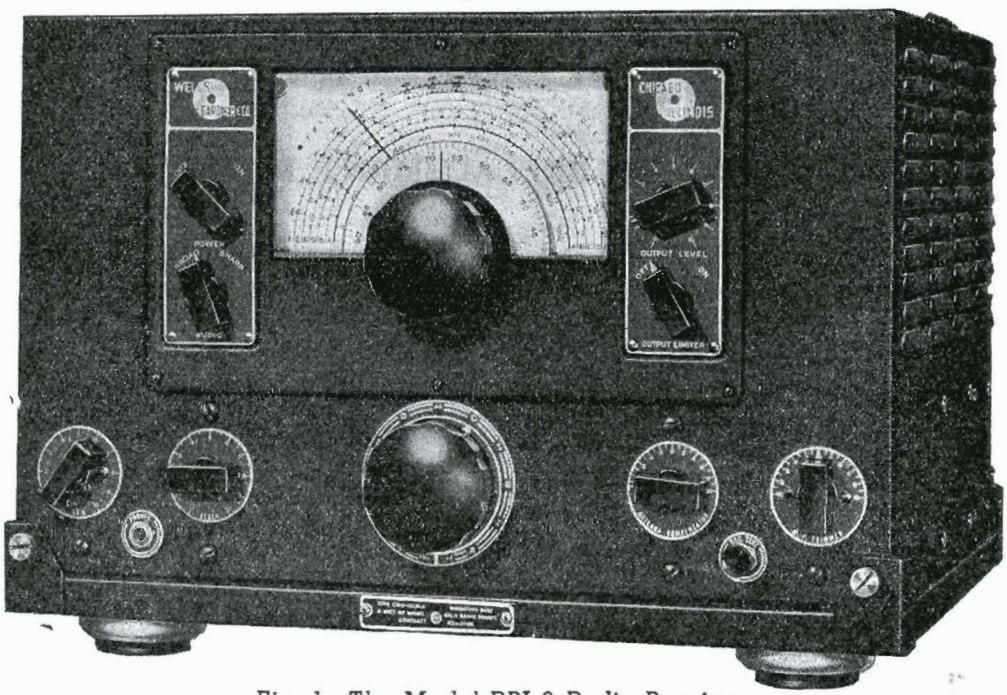


Fig. 1. The Model RBL-3 Radio Receiver

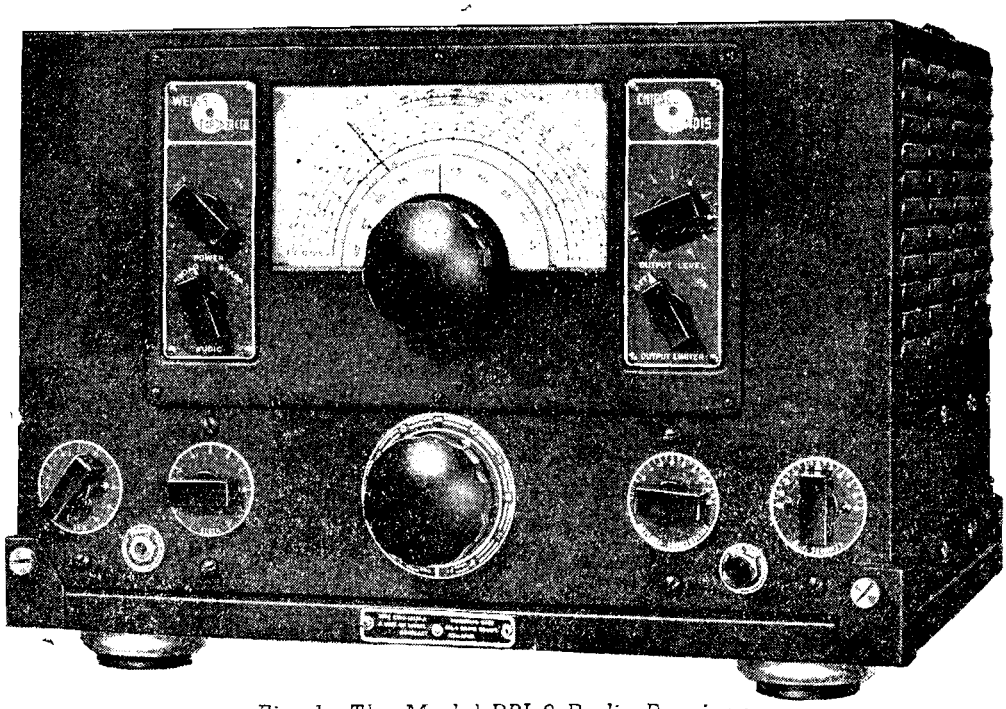


Fig. 1. The Model RBL-3 Radio Receiver

SECTION I
DESCRIPTION

SPECIAL NOTICE

The Models RBL-3 and RBL-4 Radio Receiving Equipments are essentially alike except for the required AC power supply voltages. The Model RBL-3 Radio Receiving Equipment is intended for operation on a 115 volt, 50-60 cycle power supply and the Model RBL-4 Radio Receiving Equipment is intended for operation on either a 115 or 230 volt, 50-60 cycle power supply.

IMPORTANT

Do Not Attempt to Operate the Models RBL-3 and RBL-4 Radio Receiving Equipments Without First Reading the Following Instructions

Power Supply Voltage and Frequency	105-125 Volts, 50-60 Cycles, See Par. 1 General (Page 1)
Connections to Power Supply	See Par. 10a Connections for AC Operation (Page 6) and Par. 10b Connections for Battery Operation (Page 6)
Antenna and Ground Connections	See Par. 12a (2) Antenna and Ground Connections (Page 9)
Antenna Connector Plug Installation	See Par. 12a (2) Antenna and Ground Connections (Page 9)

1 GENERAL

The Model ‡RBL-3 Radio Receiver employs seven tubes in a tuned radio frequency circuit with a regenerative type detector and covers in six bands the frequency range of 15-600 kc.

The receiver is suitable for the reception of either radio telephone (MCW) or radio telegraph (C-W or ICW) signals, and may be used either at Naval Shore Stations or aboard Naval Vessels.

The receiver is designed to operate on either a †105-125 volt 50-60 cycle power supply, or a battery power supply. The approximate power consumption of the receiver is 45 watts when operating on a 115 volt supply and the B battery drain is approximately 27 milliamperes when operating on a 135 volt B battery power supply.

2 SHIPPING INFORMATION

The complete RBL-3 Radio Receiving Equipment is packed and shipped in a single wooden crate as follows:

Size_____28½" x 21½" x 17½" High
Cubic Volume_____6.8 Cu. Ft.
Weight of Receiver with Mounting Base_84 lbs.
Shipping Weight_____172 lbs.

Marking

Contract NXss 21446
Model RBL-3
Radio Receiving Equipment
with
Equipment Spare Parts
Serial No._____

Lot. No._____ Item_____ Pty_____
Equip. No._____ of Quan._____
Wt. 172 lbs. Cu. Ft. 6.8

The complete RBL-4 Radio Receiving Equipment is packed and shipped in a single wooden crate as follows:

Size_____35" x 21¾" x 17¼" High
Cubic Volume_____7.6 Cu. Ft.
Weight of Receiver with Mounting Base_84 lbs.
Shipping Weight_____201 Lbs.

Marking

Contract NXsr 38492
Model RBL-4
Radio Receiving Equipment
with
Equipment Spare Parts
Serial No._____

Lot No._____ Item_____ Pty._____
Equip No._____ of Quan._____
Wt. 201 Lbs. Cu. Ft. 7.6

3 CIRCUIT DESCRIPTION

a General

The *Type CWQ-46161-A Radio Receiver uses two stages of R-F amplification, a regenerative detector, a stage of audio amplification, an audio limiter stage and an audio output stage. A self contained power supply provides the necessary DC voltages when the receiver is operated from a †115 AC power line.

‡The Model RBL-4 Radio Receiving Equipment is essentially the same as the Model RBL-3, except where otherwise noted.

†This operating voltage applies only to the Type CWQ-46161-A Radio Receiver.

The Type CWQ-46230 Radio Receiver is designed to operate on a power supply of either 115 or 230 volts, 50 to 60 Cycles AC.

*Information concerning the Type CWQ-46161-A Radio Receiver is applicable also to the Type CWQ-46230 Radio Receiver except where otherwise stated.

All controls, as well as an audio output jack for headphones, are located on the front panel. Power, antenna, ground and output connections are made at the rear of the receiver.

b Frequency Ranges

The receiver covers the frequency range of 15-600 kc in six bands as follows:

Band	Frequency Range
A	15-25 kc
B	25-45 kc
C	45-80 kc
D	80-155 kc
E	155-310 kc
F	310-600 kc

c Antenna Circuit

The antenna circuit is suitable for use with either a single wire or a relatively high impedance unbalanced feed-line antenna. A terminal board and jumper strip, located inside the cabinet near the right rear corner of the receiver, is provided for connecting the antenna input circuit for either a short or a long antenna. An antenna compensating control on the front panel permits adjusting the receiver very accurately to the length of antenna used. Static drain resistors, incorporated within the receiver, protect the antenna series capacitors from overloads.

d Power Supply

Although primarily intended for operation on either a †105 to 125 volt 50-60 cycle power supply, provisions have been made for battery operation. For battery operation it is necessary to have a six volt A battery and a 135 volt B battery.

Connections for battery operation are given in Par. 10b, Connections for Battery Operation.

†This operating voltage applies only to the Type CWQ-46161-A Radio Receiver.

The Type CWQ-46230 Radio Receiver is designed to operate on a power supply of either 115 or 230 volts, 50 to 60 Cycles AC.

e Tube Complement

The tubes used in the *Type CWQ-46161-A Radio Receiver and the circuit in which each is used are as follows:

CIRCUIT	TUBE TYPES
R-F Amplifier	6SK7
Second R-F Amplifier	6SK7
Regenerative Detector	6SK7
First Audio Amplifier	6SG7
Audio Limiter	6H6
Audio Output	6K6GT/G
Rectifier	5U4G

4 CABINET

A steel cabinet with a black wrinkle finish is used to house the *Type CWQ-46161-A Radio Receiver. The cabinet is $17\frac{3}{16}$ inches wide, $10\frac{7}{16}$ inches high, and $15\frac{1}{4}$ inches deep. The top of the cabinet is hinged to give access to the tubes for servicing. A removable bottom plate enables the service man to reach the under side of the chassis.

5 DIAL

The main tuning dial is of the fixed scale moving pointer type, calibrated in six frequency bands. At the bottom of the main tuning dial is an additional small rotating dial that is divided into 100 divisions. This dial is of value when tuning in a station accurately. The drive ratio is such that the small dial revolves ten times while the tuning capacitor travels through the tuning range.

*Information concerning the Type CWQ-46161-A Radio Receiver is applicable also to the Type CWQ-46230 Radio Receiver except where otherwise stated.

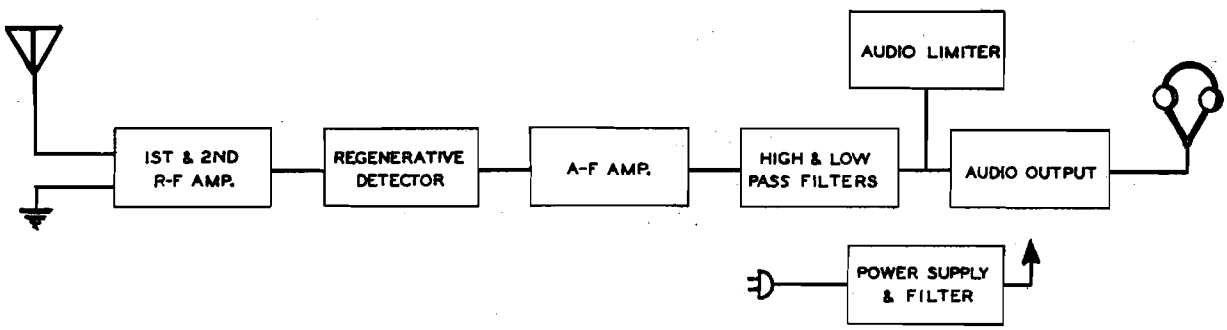


Fig. 2. Block Diagram of Type CWQ-46161-A Radio Receiver

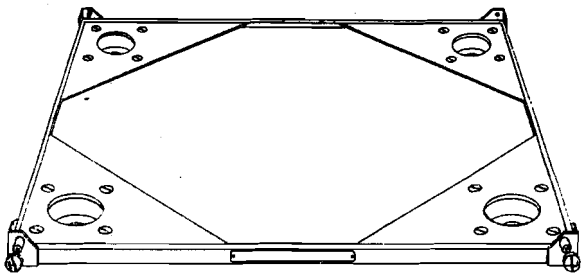


Fig. 3. Type CWQ-10124-A Mounting Base

6 MOUNTING BASE

The Type CWQ-10124-A Mounting Base is a metal framework with four shock absorber feet. Holes in the shock absorbers allow the Mounting Base to be bolted securely to a table or bench.

At each corner of the Mounting Base are upright corner pieces. These corner pieces position the receiver and hold slotted, knurled thumb screws that are used to fasten the receiver to the base.

Fig. 33, Drilling Plan for Mounting Base Installation (Page 76) shows the dimensions for a drilling template that may be made and used whenever a permanent receiver installation is to be made.

CAUTION

The paragraphs that appear on the following pages give instructions for connecting the seven prong connector plug for use with either an AC or a battery power supply. Operation and service information will also be found.

It is possible while performing these operations, to contact points in the equipment or associated power supplies that are above ground potential.

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

The attention of officers and operating personnel is directed to Bureau of Ships Manual of Engineering Instructions, Chapter 31 (mimeographed form) or subsequent revisions thereof on the subject of "Radio—Safety Precautions to Be Observed."

SECTION II
UNPACKING AND OPERATING TEST

7 EQUIPMENT

The Model RBL-3 Radio Receiving Equipment consists of the following:

1 Type CWQ-46161-A Radio Receiver
1 Type CWQ-10124-A Mounting Base
1 Set of Spare Parts and Tools
2 Preliminary Instruction Manuals

The Model RBL-4 Radio Receiving Equipment consists of the following:

1 Type CWQ-46230 Radio Receiver
1 Type CWQ-10124-A Mounting Base
1 Set of Spare Parts and Tools
2 Preliminary Instruction Manuals

8 UNPACKING THE EQUIPMENT

The *Model RBL-3 Radio Receiving Equipment is packed in a wooden box with the mounting base, spare parts and instruction manuals.

To unpack the equipment preparatory to installation, proceed as follows:

1. Clip the two metal bands binding the box.
2. Pull out the nails from the top of the box and remove the cover.
3. Remove the two cardboard fillers in the top of the packing box.
4. Tear open heavy waterproof paper.
5. Open the large cardboard box.
6. Remove the two fillers that will be seen in the top of the cardboard box.
7. Remove the one large cardboard filler.
8. Take out the two preliminary instruction manuals.
9. Pull up the handles on the top of the cabinet near each end and lift the receiver from the carton.
10. Remove the strip holding the spare parts box in place.
11. Remove the spare parts box from the packing case.

9 INSPECTION

After the *Type CWQ-46161-A Radio Receiver and spare parts have been uncrated and accounted for, check the receiver for broken dial glass, loose knobs, and other physical damage. Fig. 5, Tube Positions, shows the positions of each tube as well as the dial lights. A check should be made to ascertain that each tube and fuse is in the proper position and that the dial lights are correctly inserted. The tubes and dial lights are accessible after opening the hinged lid on the top of the cabinet.

*Information concerning the Type CWQ-46161-A Radio Receiver is applicable also to the Type CWQ-46230 Radio Receiver except where otherwise stated.

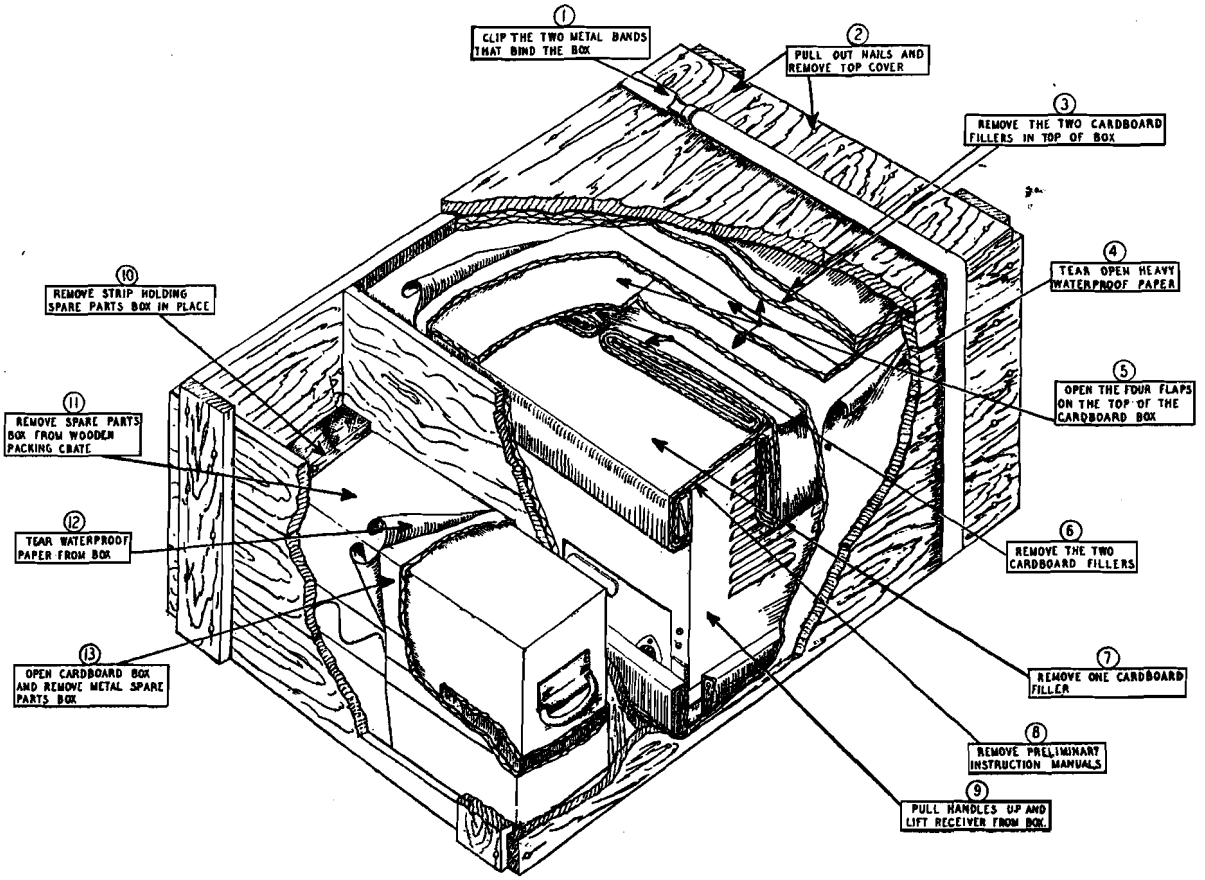


Fig. 4. Unpacking Procedure

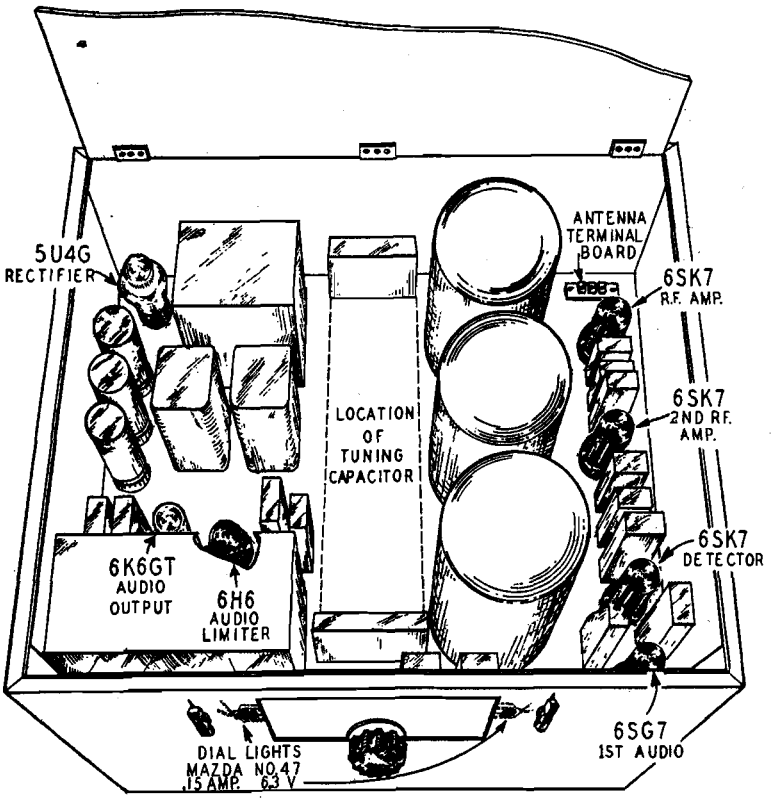


Fig. 5. Tube Positions

10 CONNECTIONS TO POWER SUPPLY

a Connections for AC Operation

The Type CWQ-46161-A Radio Receiver is intended primarily for operation on an AC power supply of 105-125 volts, 50 to 60 cycles. Before plugging the receiver into a power supply outlet, make certain that both the voltage and frequency available at the outlet are correct for the receiver.

The Type CWQ-46230 Radio Receiver may be operated on either a 115 or 230 volt power supply. Whenever it is desired to change over the receiver from 115 to 230 volt operation, it will be necessary to remove the receiver from the mounting base and the bottom cover from the receiver cabinet. Reconnect the power transformer terminal strip as shown in Fig. 28, Bottom Socket View of Type CWQ-46230 Radio Receiver.

An AC Connector Plug is supplied with the equipment. This plug is to be connected to a two-conductor cable as shown in Fig. 6, AC Connector Plug Connections. Each conductor in the cable should be of a size not smaller than #18 wire.

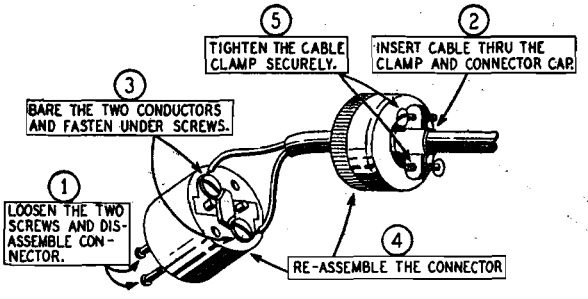


Fig. 6. AC Connector Plug Connections

For AC operation plug the AC Cord Connector Plug into the AC Power Socket, P-101, at the rear of the receiver. Make certain that the AC Jumper Plug is inserted in the Battery Cable and Jumper Plug Receptacle, J-105.

The AC jumper plug is a seven prong connector plug with jumpers between terminals 1 and 2 and between terminals 3 and 7 as shown in Fig. 9.

Insert the two prong plug on the AC Cord into the AC power supply outlet.

b Connections for Battery Operation

Connect a seven-prong Connector Plug to a six volt battery and a 135 volt B battery supply as follows:

Terminal No. 4, B —
Terminal No. 5, A +
Terminal No. 6, B +
Terminal No. 7, A —

Terminals, 1, 2 and 3 are to be left open. See Fig. 8, Battery Cable Plug Connections, for a view of the Battery Cable Connector Plug showing the above connections.

To operate the receiver from a battery power supply, remove the AC Jumper Plug from the Battery Cable and Jumper Plug Receptacle, J-105, and insert the Battery Cable Connector Plug.

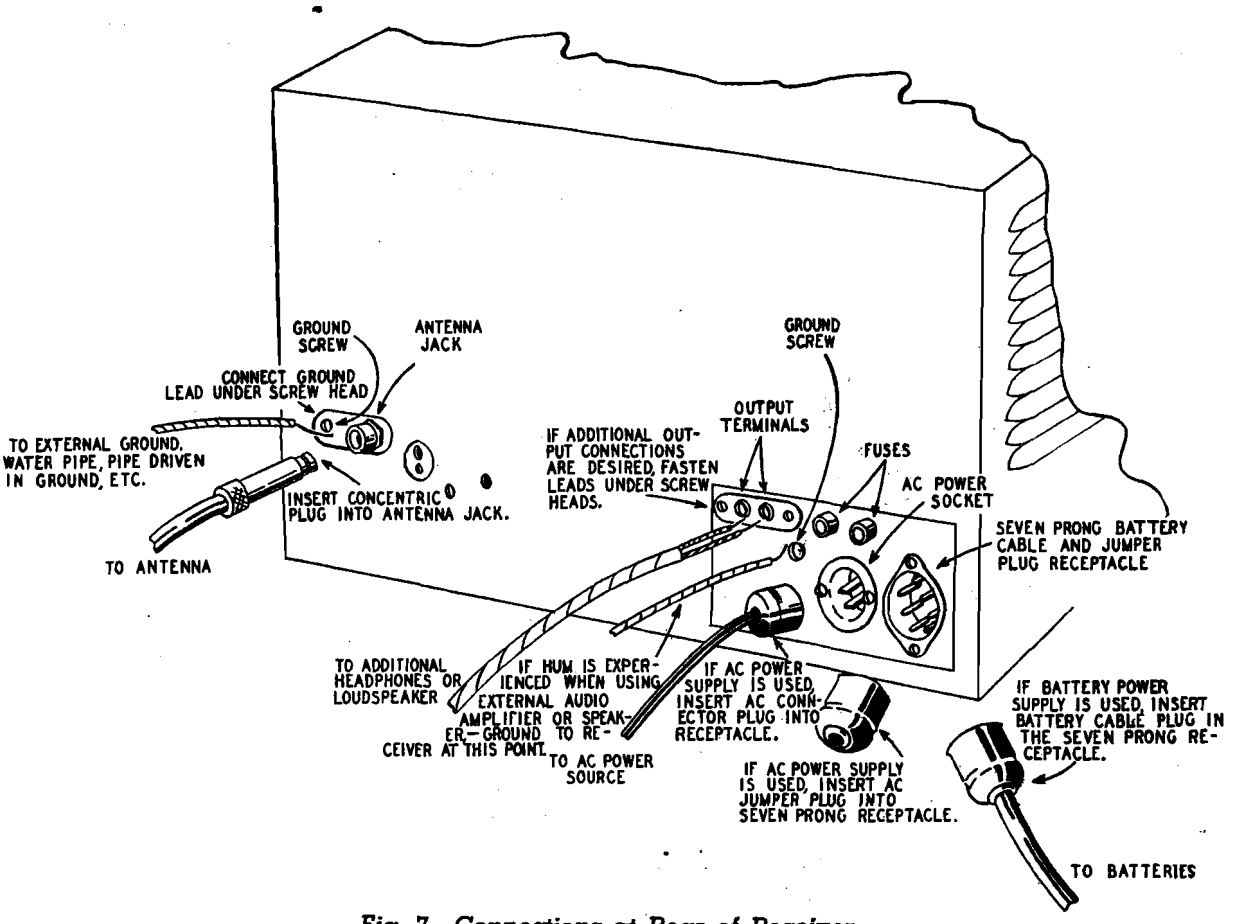


Fig. 7. Connections at Rear of Receiver

If no seven-prong plug is available for the battery cable connection, remove the AC Jumper Plug; pry off the top, remove the jumper leads and rewire as instructed above.

For AC operation it will be necessary to disconnect the Jumper Plug from the battery cable and make the original connections as shown in Fig. 9, AC Jumper Plug Connections.

11 CONTROLS

After the equipment has been inspected, the operator should become familiar with the receiver controls. This step should be followed by a preliminary operating test.

a Power

The Power ON-OFF control is located near the upper left corner of the front panel. This control operates two, two-position switches that turn the receiver on or off. Although the receiver is primarily intended for operation on an AC supply, the function of the power switch will be the same when the receiver is operated from a battery power supply.

b Audio

This control selects the audio band width passed by the audio filters in the receiver. When the control is in the BROAD position, the audio band width will be approximately 3000 cycles at 20 db down with peak response at 1000 cycles. A band width of 600 cycles at 20 db down may be obtained when the control is turned to the SHARP position. In this position, peak response occurs at approximately 750 cycles per second.

c Output Limiter

When this control is turned to the ON position, all peak audio voltages may be limited to a desired level by means of the Output Level control.

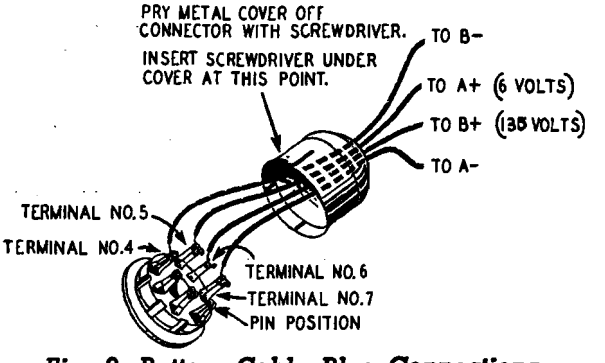


Fig. 8. Battery Cable Plug Connections

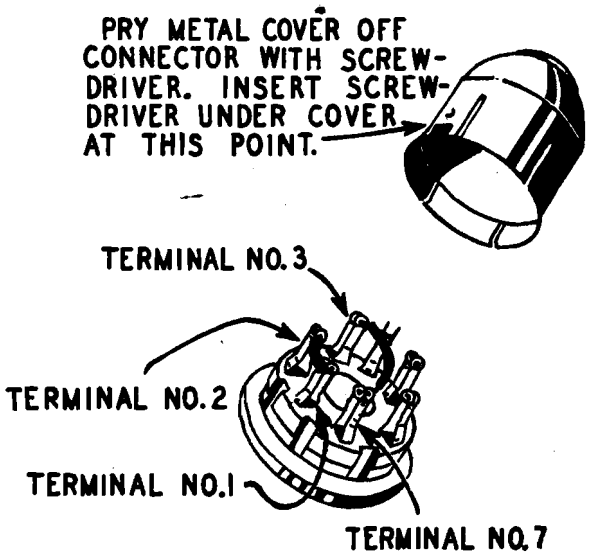


Fig. 9. AC Jumper Plug Connections

d Output Level

When the Output Limiter control is turned to ON, the Output Level control may be adjusted to limit the peak voltages and noise pulses to a level that will facilitate reception of the desired signals.

Turning the control counter-clockwise increases the limiter action. For C-W reception an automatic volume control action may be obtained by advancing the Gain control and turning the Output Level control to a position that will cause the peaks of the desired signals to be cut off slightly when the signal has faded to the lowest usable level.

e Gain

The setting of the Gain control determines the amplification of the first and second R-F stages and the sensitivity of the receiver.

Advancing the control clockwise increases the R-F amplification.

f Regen

The amount of regeneration present in the detector stage is controlled with this knob.

Advancing the control clockwise increases the regeneration. When the control is advanced approximately ⅓ of its total rotation, the detector stage will oscillate and produce a heterodyne signal suitable for the reception of C-W signals.

g Antenna Compensator

This control is a manually operated trimmer capacitor used to adjust the first R-F stage to maximum signal strength after the desired signal is tuned in.

h R-F Trimmer

This control is a manually operated trimmer capacitor used to adjust the second R-F stage to maximum signal strength after the station has been tuned in.

i Osc. Test

The Osc. Test button is for use at times when no signal is being received, in order to deter-

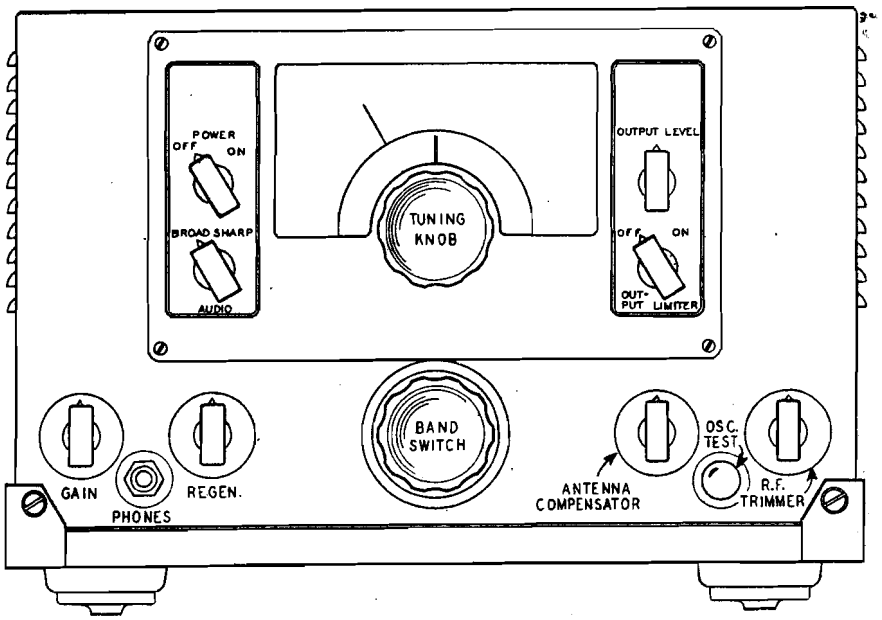


Fig. 10. Front Panel View

mine whether or not the detector is oscillating.

The detector is oscillating if a click is heard in the headphones when the button is depressed and a second click heard as the button is released.

j Tuning Knob

The tuning knob is located at the center of the front panel directly below the dial. Reception is accomplished by turning this knob until the receiver is tuned to the desired signal.

k Band Switch

The Band Switch control is in the center of the lower portion of the front panel. The receiver may be adjusted for reception in any of the six frequency bands by turning this knob until the detent mechanism is felt to click into position as the pointer on the control indicates the letter identifying the desired frequency band.

12 PRELIMINARY OPERATING TEST

A preliminary operating test may be made at the time the equipment is inspected in order to determine if the receiver is in good operating condition.

a Electrical Connections

(1) POWER CONNECTIONS

Connections for AC or battery operation are to be made as instructed in Par. 10, Connections To Power Supply.

(2) ANTENNA AND GROUND CONNECTIONS

At the rear of the receiver is the antenna jack for the antenna connection and a flat head screw for the ground connection.

A ground wire need not be connected under the screw head if a concentric cable with grounded shield is used.

A Concentric Plug connector is supplied with the receiving equipment. This Connector is to be attached to the Antenna Lead-in Cable as shown in Fig. 11, Concentric Plug Connections.

Inside the cabinet near the right rear corner of the chassis (as viewed from the front of the receiver) is a terminal board and jumper strip. The jumper strip is to be connected between the center and right terminal when the receiver is to be used with a long antenna and between the center and left terminal when a short antenna is used.

(3) OUTPUT CONNECTIONS

If headphones are to be used for the preliminary operating test, they may be inserted into the phone jack on the front panel. An amplifier or additional sets of headphones may be connected to the output terminals at the rear of the receiver.

The correct inpedance for the total output load is 600 ohms.

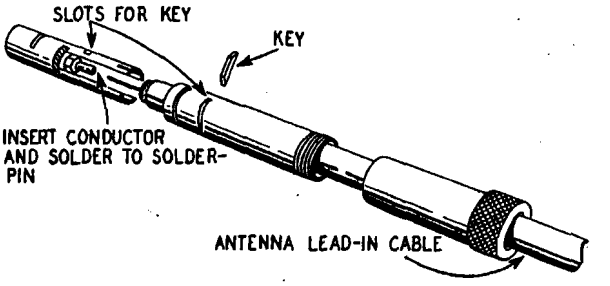


Fig. 11. Concentric Plug Connections

b Test Frequencies

An operating test should be made on each of the six frequency ranges. For this purpose both unmodulated and modulated signals should be used. Test signals may be derived from a signal generator or some station signal may be used.

c Test Procedure

Use an unmodulated test signal for the operating test as follows:

(1) Turn the receiver on by turning the Power control to the ON position.

(2) Turn the Band Switch to the band in which the test signals are transmitted.

(3) Advance the Gain control to a fairly high level (in the absence of the signal this may be judged by the loudness of the background noise).

(4) Turn the Audio control to the BROAD position.

(5) Turn the Output Limiter control to the OFF position.

(6) Advance the Regen control to a position where oscillation takes place (about No. 4 on the Regen dial or slightly beyond).

If the receiver is tuned near the test signal frequency, a beat note will be heard if the detector is oscillating.

If the receiver is not tuned to the test signal frequency, use the Osc. Test button to determine if the detector is oscillating. (A click will be heard as the Osc. Test button is depressed if the detector stage is oscillating.)

(7) Tune receiver accurately to the test frequency. As the receiver is tuned across a station, a beat note will be heard. This beat note will first be heard as a high pitched note and will gradually drop to zero beat as the receiver is tuned closer to the station.

When the receiver is tuned exactly to the station frequency, a zero beat condition will exist. As the receiver is tuned away

from the station, either above or below the signal frequency, the beat note will start at a low pitch and gradually increase to a higher frequency.

(8) Tune the receiver to the high frequency side of the zero beat point. (A beat note will be heard if the receiver *is not* tuned too far from the station frequency.)

(9) Adjust the Antenna Compensator and R-F Trimmer for maximum output.

(10) If the frequency of the beat note is changed when the Antenna Compensator and R-F Trimmer are adjusted, re-tune the receiver with the tuning knob in order to obtain the original beat frequency.

(11) Turn the Audio control to the SHARP position. The receiver will now tune more critically and the beat note will cut off at 900 cycles per second.

A slight retuning of the receiver may be necessary when the Audio control is turned to the SHARP position.

(12) Turn the Output Limiter control to ON.

(13) Adjust the Output Level control. As the Output Level control is turned in a clockwise direction, the level of the signal peaks will be increased in proportion to the setting of the control. (This action will be best seen if the receiver is detuned from the test frequency and the Output Level control used to control the level of noise peaks.)

(14) Turn signal generator modulation on or select a station transmitting a modulated carrier wave.

(15) Turn the Audio control to the BROAD position.

(16) Advance the Regen control to a position just short of the point where oscillation takes place.

(17) Use the Osc. Test button to determine if the detector stage is oscillating, (if oscillating, a click will be heard in the headphones as the button is depressed and again as the button is released). If the detector stage is oscillating, retard the Regen control to a point just short of where oscillation takes place.

(18) Tune the receiver with the tuning knob to the approximate frequency (as indicated on the dial) of the test signal. Rotate the Tuning control slowly back and forth until the position is found at which the signal comes in with maximum volume.

(19) Adjust the Gain control to a suitable level.

(20) Adjust the Antenna Compensator for maximum volume.

(21) Adjust the R-F Trimmer for maximum volume. (Note: When the Antenna Capacitor and R-F Trimmer are adjusted for maximum volume, it may be necessary to decrease the setting of the Gain control.)

(22) Repeat steps one through ten on each frequency band.

SECTION III
INSTALLATION AND OPERATION

13 RECEIVER LOCATION

The *Type CWQ-46161-A Radio Receiver is to be fastened to the type CWQ-10124-A Mounting Base at the time of installation. The Mounting Base may be mounted on any flat surface that is near the antenna lead-in and power supply outlet. If a permanent or secure mounting is desired, the Mounting Base may be bolted to the table or bench with four 3/8" dia. bolts. The Mounting Base may be installed from the dimensions given in Fig. 33. Drilling Plan for Mounting Base Installation.

Sufficient clearance must be allowed between the rear of the receiver and the wall to allow for the Concentric Plug and the curvature of the Antenna Lead-in Cable. The amount of space to be allowed will depend upon the type of Antenna Lead-in Cable used.

The receiver is to be placed on the Mounting Base and then fastened securely by means of the four slotted thumbscrews near the corners of the Mounting Base.

*Information concerning the Type CWQ-46161-A Radio Receiver is applicable also to the Type CWQ-46230 Radio Receiver except where otherwise stated.

†This operating voltage applies only to the Type CWQ-46161-A Radio Receiver.

The Type CWQ-46230 Radio Receiver is designed to operate on a power supply of either 115 or 230 volts, 50 to 60 Cycles AC.

14 Electrical Connections

a Antenna and Ground

Connect the antenna lead-in to the antenna jack and connect the jumper on the antenna terminal board to the proper terminal.

In order to determine the correct terminal to use with a particular antenna, proceed as follows: Connect the antenna to the antenna jack and connect the jumper on the antenna terminal board to either terminal. Tune in a station as instructed in Par. 12c, Test Procedure. Adjust the Antenna Compensator for maximum signal strength.

A point should be found where a definite increase in signal strength will be noted. Repeat this procedure on each frequency band. Should it be impossible to find a point of maximum signal strength on all bands, connect the Jumper on the antenna terminal board to the other terminal and repeat the check. Use the terminal on the antenna terminal board that allows the Antenna Compensator to tune the 1st R-F stage to resonance on all bands.

Connect the receiver to a good ground such as a cold water pipe or a pipe driven into the ground.

b Power Connections

The receiver may be operated from either a 105-125† volt 50-60 cycle AC supply, or

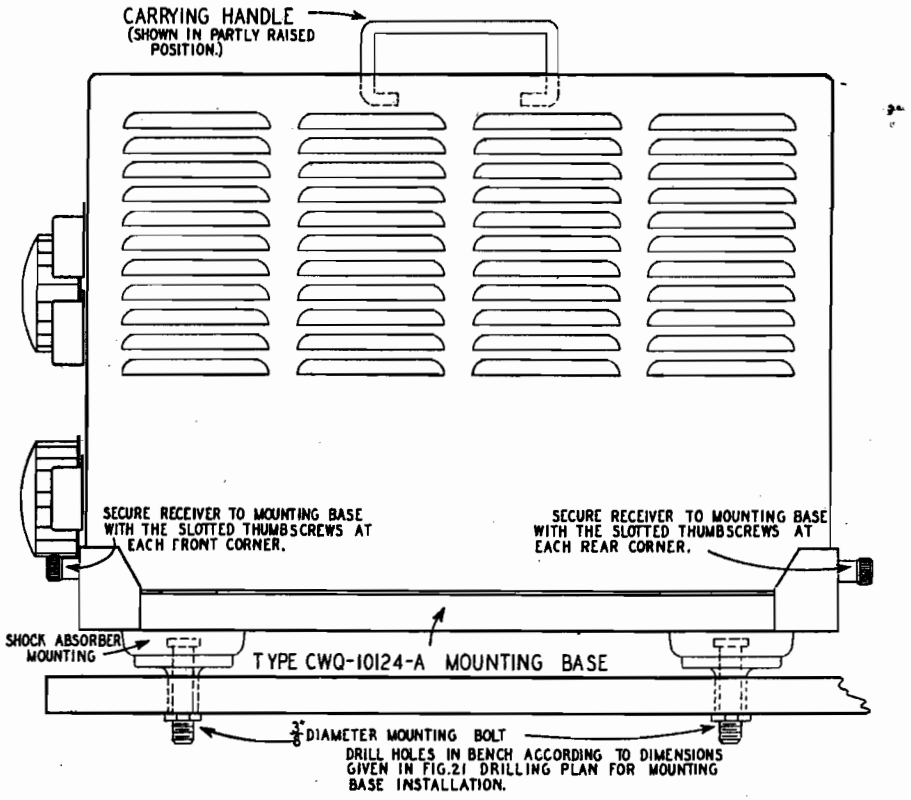


Fig. 12. Mounting the Radio Receiver

from a battery power supply. Information concerning the proper connections at the receiver for either type power supply is given in Par. 10, Connections To Power Supply.

Do not connect the receiver to a power supply outlet unless certain that the voltage and frequency available are correct for the operation of the receiver.

15 INSTALLATION INSPECTION

After the completion of the receiver and antenna installation, a thorough check of the installation should be made in order to insure the proper and secure fastening of the receiver and electrical connections.

16 OPERATION

a C-W Reception

The procedure for operating the *Type CWQ-46161-A Radio Receiver is similar to that described for the operating test in Par. 12, Preliminary Operating Test.

To receive C-W signals turn the Power control to ON. Turn the Audio switch to the BROAD position. Turn the Band Switch to the proper frequency range. Advance the Gain control to a suitable level. This may be determined by the loudness of the background noise. Set the Regen control to a point where the detector will oscillate. (In the absence of a signal, the Osc. Test button may be used to determine if the detector stage is oscillating. A click will be heard in the headphones when the Osc. Test button is depressed and released if the detector is oscillating.)

Set the Antenna Compensator and R-F Trimmer for maximum background noise. Tune the desired station in by means of the tuning knob.

As the receiver is tuned across a station with the detector stage oscillating, a beat note will be heard both above and below the station frequency. This beat note will first be heard as a high pitched note and will gradually drop to zero beat as the receiver is tuned closer to the station.

Tune the receiver to the point of maximum signal strength at the high frequency side of the station frequency. Adjust the Antenna Compensator and R-F Trimmer for maximum signal strength. Readjust the Tuning, Antenna Compensator and R-F Trimmer controls.

If sharp tuning is necessary to cut thru interference, the Audio control may be turned to the SHARP position. The receiver will now tune more sharply and may have to be retuned to the signal.

The Antenna Compensator and R-F Trimmer controls should be readjusted whenever the position of the Tuning control is changed.

If objectionable noise interference is encountered while attempting to receive transmissions, the Output Limiter control may be turned to the ON position and the level of the noise peaks may be lowered by turning the Output Level control counter-clockwise until the interfering noise is lowered to a level that will permit reception.

An automatic volume control action may be obtained by advancing the Gain control and adjusting the Output Level control until the peaks of the Audio Signals are cut off slightly when the signal has faded to its lowest useable level. This will result in a slight decrease in the quality of the received signal.

b MCW Reception

To receive MCW Signals set the controls as follows: Turn the Audio control to the BROAD position and turn the Band Switch to the frequency range in which the signals are transmitted. Advance the Gain control to a suitable position as determined by the background noise. Set the Regen control to a point just short of where oscillation starts (this point may be determined by the use of the Osc. Test button; see Par. 11-i). Adjust both the Antenna Compensator and the R-F Trimmer for maximum background noise. The receiver may now be tuned to the frequency of the transmitting station with the tuning knob. Adjust the Antenna Compensator and R-F Trimmer for maximum signal strength.

Normally, the Output Limiter control will be left in the OFF position; however, if undesirable noise interference is encountered, this control may be turned on and the Output Level control used to suppress the noise peaks.

The Output Limiter control cannot be used to provide an AVC action for voice reception, as excessive distortion will result.

*Information concerning the Type CWQ-46161-A Radio Receiver is applicable also to the Type CWQ-46230 Radio Receiver except where otherwise stated.

SECTION IV
CIRCUIT DESCRIPTION

17 RECEIVER CIRCUITS

The circuits incorporated in the Type *CWQ-46161-A Radio Receiver are as follows: R-F Amplifier, Regenerative Detector, 1st Audio Frequency Amplifier, Audio Limiter, Audio Output Stage.

18 R-F AMPLIFIER

Two R-F amplifier stages incorporating 6SK7 tubes are used to provide amplification of R-F signals in the frequency range of 15 to 600 kc. The amplification of the R-F stages and the consequent gain of the receiver is manually controlled from the front panel by varying the grid bias of the two stages simultaneously. A potentiometer in the cathode circuit of these two tubes provides this action.

The sensitivity of the receiver is maintained fairly constant across each band by means of a second potentiometer that is ganged to the variable tuning capacitor.

19 REGENERATIVE DETECTOR

The detector circuit is of the regenerative type and incorporates a 6SK7 tube. Control of the regeneration in this circuit is obtained by varying the screen voltage. A push button switch is connected between the cathode and ground.

*Information concerning the Type CWQ-46161-A Radio Receiver is applicable also to the Type CWQ-46230 Radio Receiver except where otherwise stated.

This switch is provided as a means of determining whether or not the circuit is oscillating at times when no signal is being received. If the detector circuit is oscillating, a click will be heard in the headphones as the OSC. Test button is depressed and released.

20 1ST A-F AMPLIFIER

The 1st audio amplifier stage uses a 6SG7 tube in a resistance coupled circuit. This tube is self-biased by means of a 500 ohm resistor connected between the cathode and chassis ground. A 1 mf. capacitor is used to bypass the bias resistor.

21 AUDIO FILTER

Following the first stage of audio amplification are two audio filters. These filters allow a choice of two band widths, 600 or 3000 cycles at 20 db down with peak response occurring at 750 and 1000 cycles per second respectively. The effect of these filters may be seen in Fig. 14, Audio Response Characteristics.

22 AUDIO OUTPUT STAGE

A single 6K6GT power output tube is used in the output stage. This tube is self-biased by means of a 500 ohm resistor connected between the cathode and the ground.

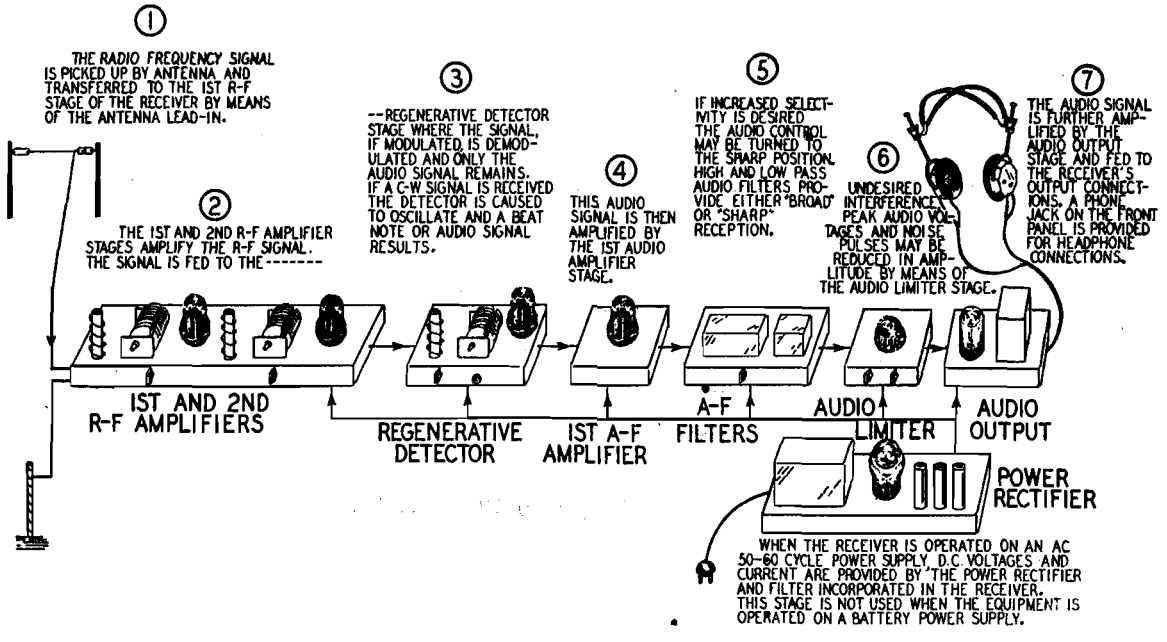


Fig. 13. Stage-by-Stage Functional Diagram

A phone jack is provided on the front panel for connecting headphones to the receiver's output stage. A terminal strip at the rear of the receiver provides an additional output connection in parallel with the jack on the front panel. The correct total output load impedance is 600 ohms.

23 AUDIO LIMITER STAGE

A 6H6 is used as a dual diode audio frequency limiter. This stage follows the audio filters and precedes the audio output stage.

When the Output Limiter switch S-103, is turned to the OFF position, the positive potential applied to the diode plates is high enough to permit the passage of Audio frequency signals through the stage without a reduction of amplitude. When the output limiter switch is turned to the ON position, the diode plates are connected to the movable arm of the Output Level control R-147. This control provides a means of varying the diode plate voltages.

When the voltage applied to the diode plates is reduced by means of the Output Level control to a certain potential, an audio frequency signal of a certain amplitude or greater will be reduced in the diode circuit. That is, a maximum audio signal level is established and signals of a high amplitude are reduced to this level. Noise peaks which would ordinarily be reproduced as interference in the form of pops or crackles, will be greatly reduced in amplitude. The amount of reduction is, of course, dependent upon the setting of the level control.

In addition to the reduction of interference, this stage may also be used to provide an automatic volume control action when C-W signals are received.

24 POWER RECTIFIER

A 5U4G full wave rectifier tube is used in the AC power supply to provide DC voltages for the operation of the receiver circuits. The Power Transformer T-101 in the Type CWQ-46161-A Radio Receiver is designed for operation on only a 105-125 volt, 50-60 cycle power supply.

In the Type CWQ-46230 Radio Receiver a power transformer of the universal type is used. Jumper strips are provided on the transformer terminal board for changing the receiver to operate on either a 115 or 230 volt supply.

Whenever it is desired to change over the receiver from 115 to 230 volt operation, it will be necessary to remove the receiver from the mounting base and the bottom cover from the receiver cabinet. Reconnect the power transformer jumper strips as shown in Fig. 28, Bottom Socket View of Type CWQ-46230 Receiver.

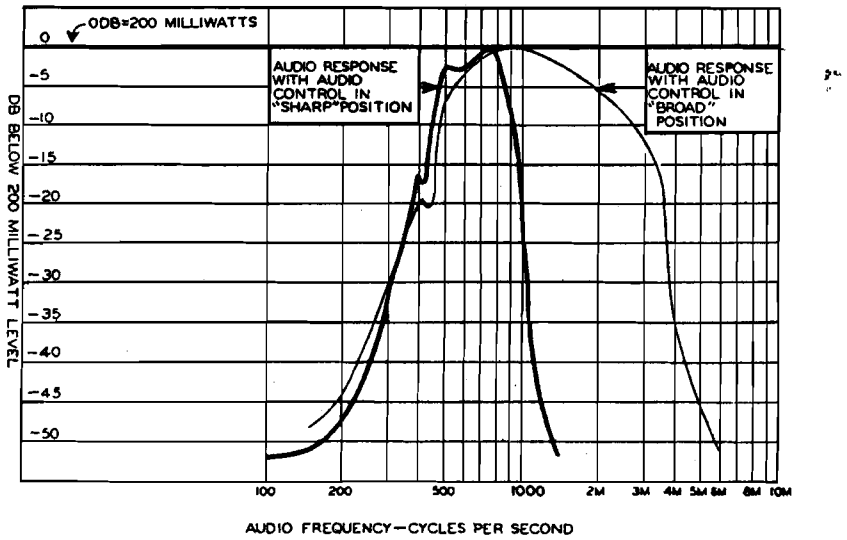


Fig. 14. Audio Response Characteristics

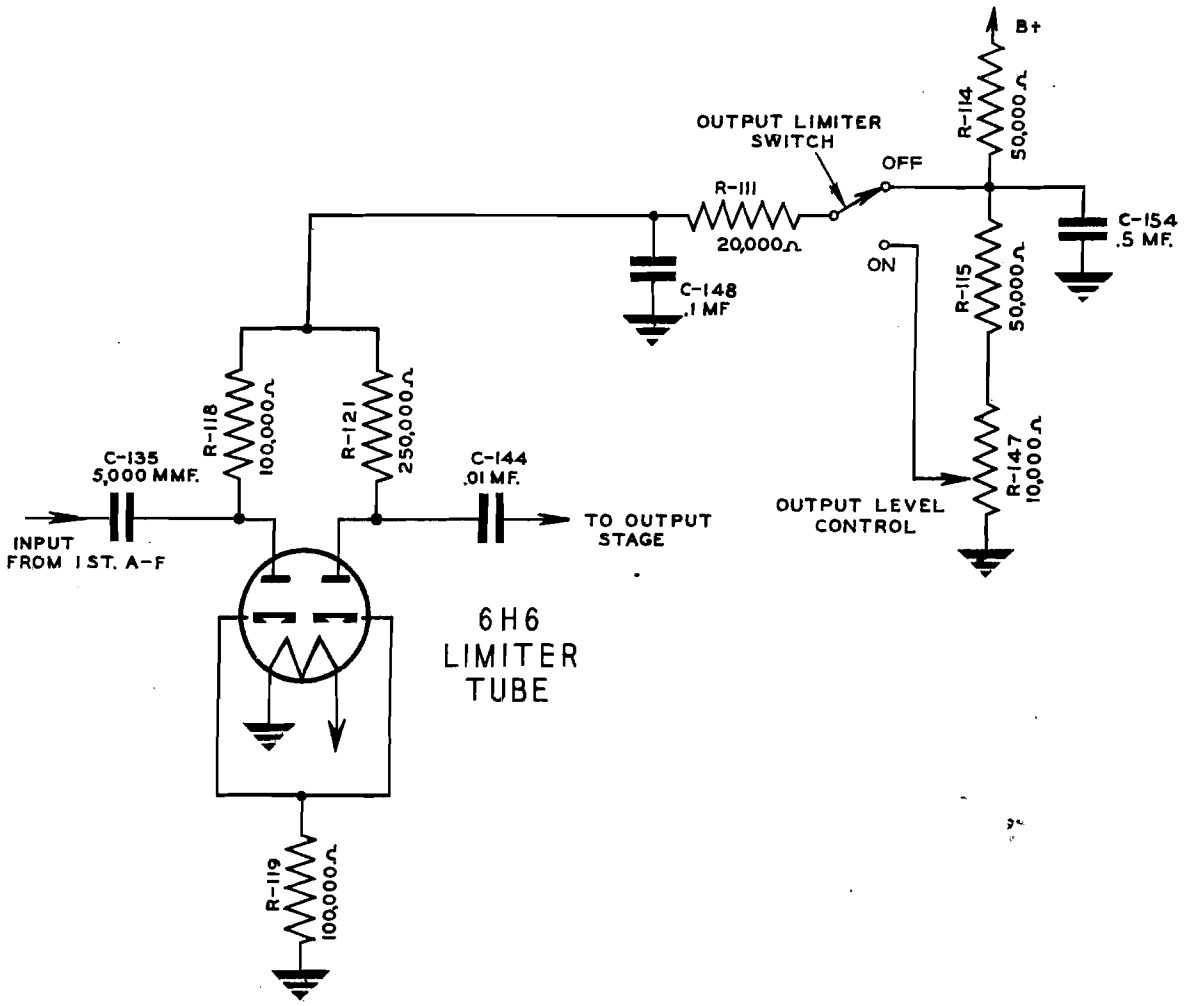
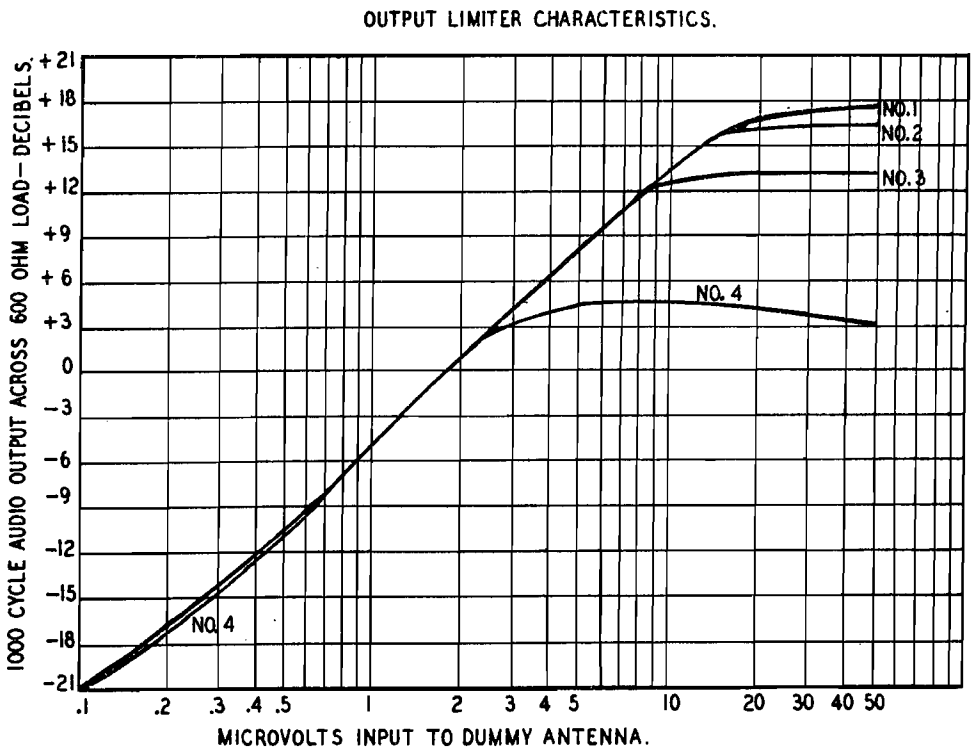


Fig. 15. Audio Limiter Circuit

LIST OF TERMS

These terms are referred to in Figures 16, 17 and 18

TERMS	DESCRIPTION OF TERMS
Standard Output Level	The Standard Output Level is 6 milliwatts with respect to a standard output impedance of 600 ohms.
Standard Noise Level	The Standard Noise Level is 60 microwatts with respect to a standard output impedance of 600 ohms measured with the Regen control set for standard oscillations.
Optimum Oscillation	The condition of detector circuit oscillation, with a C-W input, obtained by rotating the Regen control to the point of maximum sensitivity.
Standard Oscillation	The condition of detector circuit oscillation, with a C-W input, obtained by turning the Regen control clockwise past the point of optimum oscillation until an attenuaton of 3 db in sensitivity is obtained.
Optimum Regeneration	The condition of regeneration with a modulated signal input obtained by advancing the Regen control **below** the point of oscillation until maximum sensitivity at standard output is obtained.
Standard Regeneration	The condition of regeneration with a modulated signal input, obtained by retarding the Regen control counterclockwise until the output is down 3 db with respect to the output obtained for optimum regeneration.
Standard Gain (C-W)	The condition resulting from the following adjustments made with a standard RMA Dummy Antenna connected between the Receiver antenna terminal and chassis ground after the Regen control is set for standard oscillation. Output Limiter Control—OFF Gain Control—Adjust for standard noise level
Standard Gain — (Modulated Input)	The condition resulting from the following adjustments made with a standard RMA Dummy Antenna connected between the Receiver antenna terminal and chassis ground after the Regen control is set for standard regeneration. Output Limiter Control—OFF Gain Control—Adjust for standard noise level



Output Limiter Characteristics measured under the following conditions:

Connect Signal Generator to Receiver through Standard RMA Dummy Antenna. Use 600 Ohm output load.

Input Signal—35 Kc.

Output Reference Level—6 Milliwatts.

Band Switch—Band B.
Tuning Knob—35 Kc.

Audio—Broad.
Power—ON.

Antenna Compensator—Adjust for maximum signal strength.

R-F Trimmer—Adjust for maximum signal strength.

Gain—Set for Standard Gain (C-W).

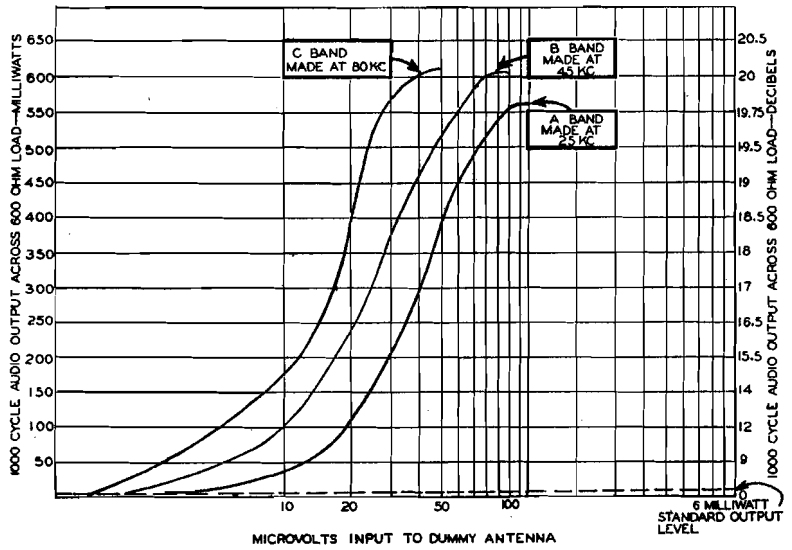
Regen—Set for Standard Oscillation.

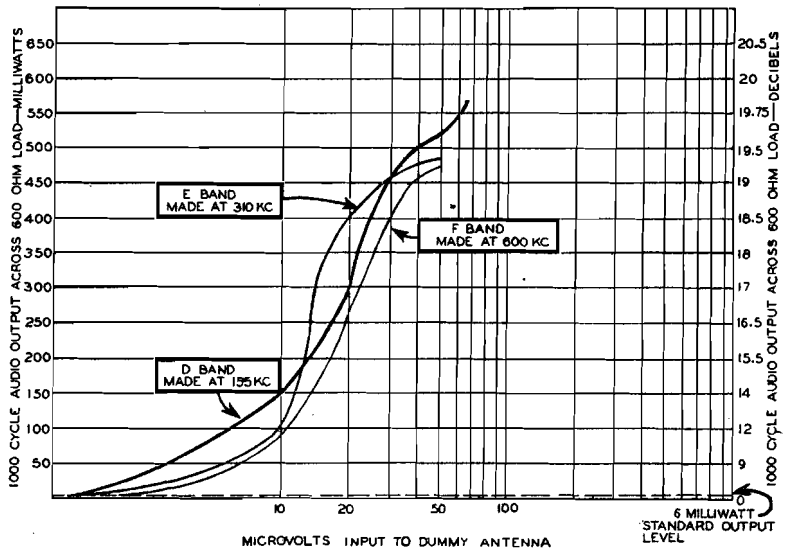
Output Limiter—ON.

Output Level—Set as follows:

Curve No.	Level Control Setting
1	10
2	5
3	3
4	1

Fig. 16. Output Limiter Curves

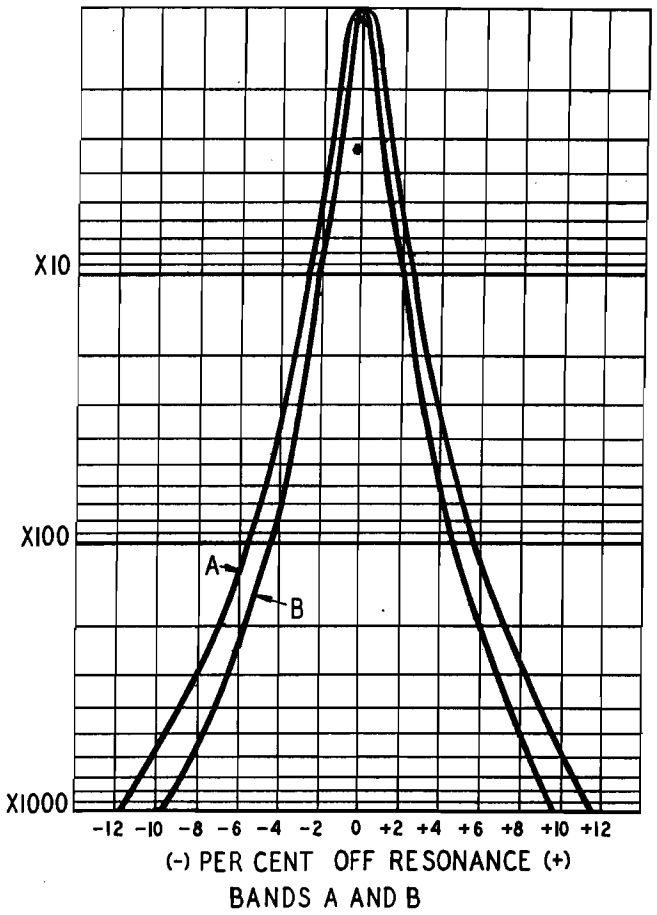


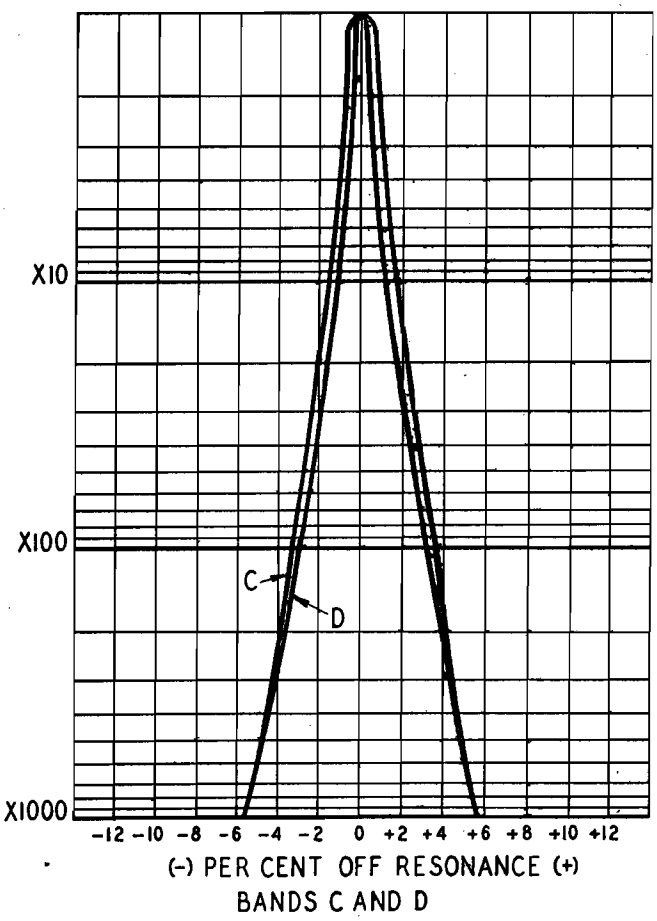


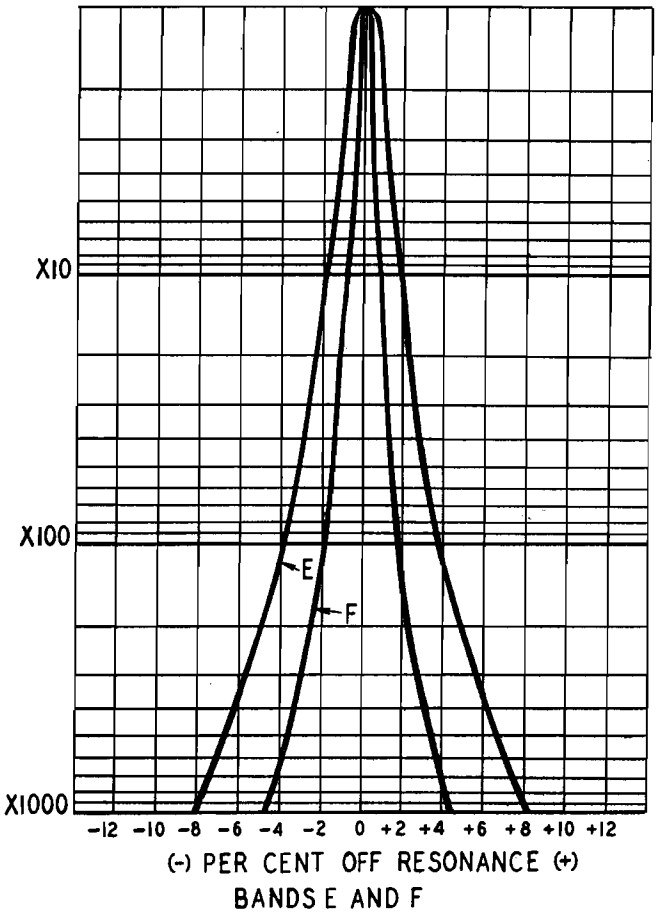
Resonance Overload Measured Under Following Conditions:

Signal Generator connected to Receiver through Standard RMA Dummy Antenna. 600 Ohm output load.
Signal Input—C-W at frequencies shown in charts.
Band Switch—Turn to band of measurement.
Tuning Knob— Adjust to frequency shown in charts.
Audio—Broad.
Power—ON.
Antenna Compensator—Adjust for maximum signal strength on each band.
R-F Trimmer—Adjust for maximum signal strength on each band.
Gain—Set for Standard Gain (C-W).
Regen—Set for Standard Oscillation.
Output Limiter—OFF.
Output Level—Any position.

Fig. 17. Resonance Overload







Selectivity Measured Under Following Conditions:

Signal Generator connected to Receiver through Standard RMA Dummy Antenna. 600 Ohms output load.
Signal Input—See table shown below.
Band Switch—Turn to band of measurement.
Tuning Knob—Adjust to frequency shown below.
Audio—Broad.
Power—ON.
Gain—Set for Standard Gain (Modulated Input).
Regen—Set for Standard Regeneration.
Output Limiter—OFF.
Output Level—Any position.

Band	Measurement Frequency	Modulation Frequency	Special Conditions for Measurement
A	19 kc	100 cps	None
B	34 kc	100 cps	Jumper across high pass filter
C	60 kc	100 cps	Jumper across high pass filter
D	111 kc	100 cps	Jumper across high pass filter
E	219 kc	750 cps	None
F	435 kc	750 cps	None

Fig. 18. Selectivity Characteristics

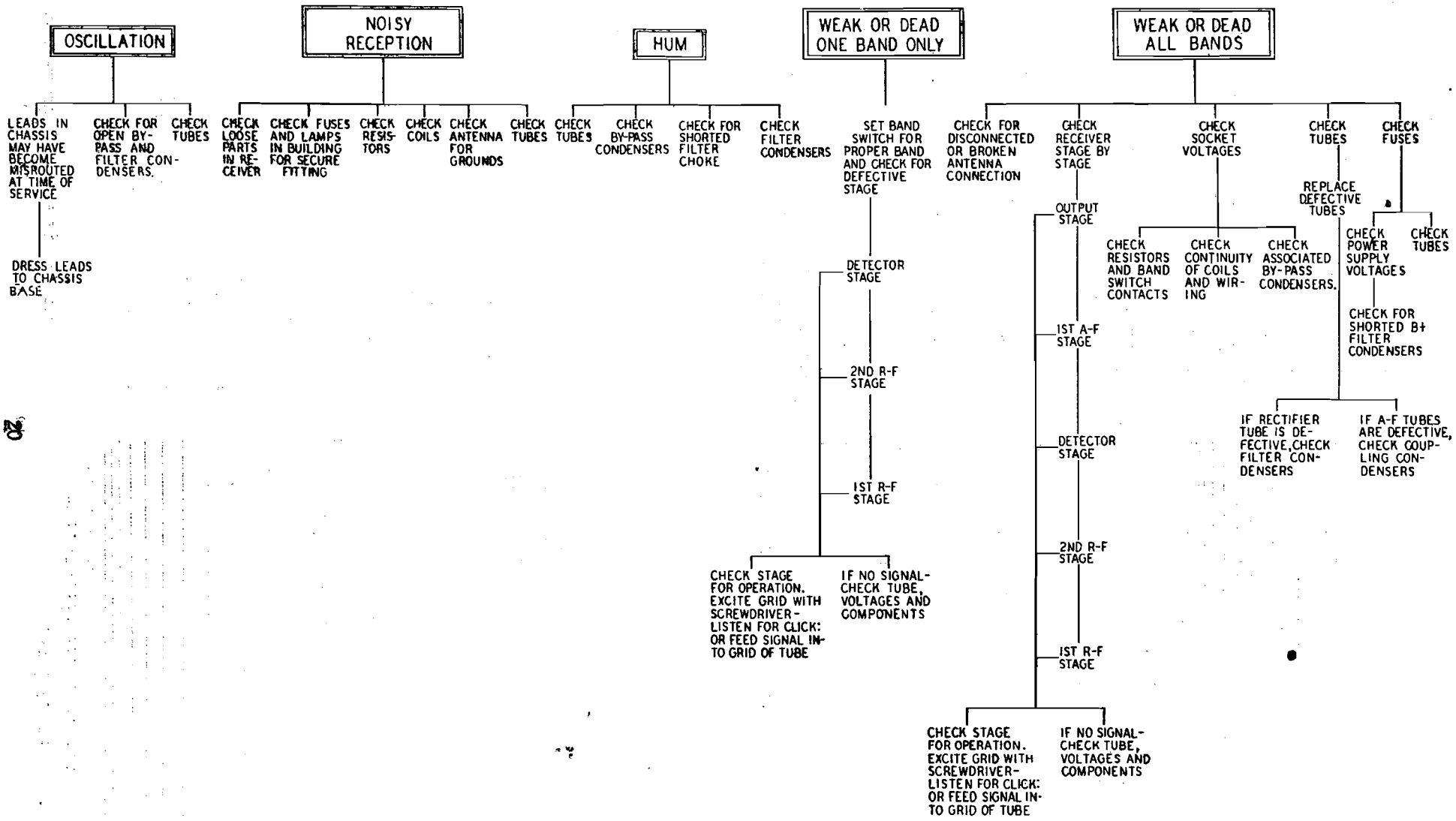


Fig. 19. Trouble Location Chart

SECTION V

MAINTENANCE

NOTE: Service, either electrical or mechanical, should be attempted only by qualified personnel authorized for such work.

Operation of this equipment involves the use of high voltages. Operating personnel must at all times observe all safety regulations.

Always disconnect equipment from power supply before changing tubes or attempting service.

25 PERIODIC INSPECTIONS

To insure the proper operation of the equipment, periodic inspections should be made as follows:

Daily; Check operation. Turn on the receiver and tune in a station on each frequency band.

Weekly; Repeat above. Check the antenna and power connections.

Tube Testing: The tubes should be removed for checking only when the operation of the receiver causes doubt concerning their condition. When replacing a tube that has been removed, be certain that it is reinserted in the socket in which it was originally. This will prevent possible mis-alignment and poor operation of the receiver.

26 FIELD TROUBLE SHOOTING

Trouble-free reception resulting from the proper installation and operation of the *Type CWQ-46161-A Radio Receiver will usually be insured by the periodic inspections detailed in Par. 25, Periodic Inspections. Troubles developing suddenly during operation are usually of a minor nature that may be corrected as follows:

a Set Dead—Dial and Panel Lights Out

(1) Check the power cord connections at the receiver and outlet box.

(2) Check the fuses located at the rear of the receiver cabinet.

b Set Dead—Dial Lights On

(1) Check for burned out tubes.
Live glass tubes will glow faintly and live metal tubes will be warm when touched. If in doubt concerning the condition of a tube, replace it with a known good tube and note any change in the receiver's operation.

(2) Check headphone connections. Make certain that the headphone plug is properly inserted and that the leads in the flexible cord are unbroken.
The headphone leads may be checked for continuity by momentarily touching the cord tips across a 1½ volt flashlight battery while listening for a click in the headphones.

*Information concerning the Type CWQ-46161-A Radio Receiver is applicable also to the Type CWQ-46230 Radio Receiver except where otherwise stated.

27 GENERAL TROUBLE LOCATION

When servicing a receiver, as a rule the first step should be a careful check for defective tubes. To do this, turn on the receiver and replace the tubes one at a time with known good tubes. Be certain that all good tubes are returned to the sockets that they originally occupied.

If no defective tubes are found, visual inspection of the parts and connections should follow.

Resistors or other parts with charred or discolored surfaces indicate a part that has been overheated due to excessive current passing through it.
This condition is often caused by shorted bypass or filter capacitors. All associated capacitors should be checked for shorts or low resistance.

Open filter or bypass capacitors will often cause oscillation, a loss of sensitivity or other troubles. Suspected capacitors may be quickly checked by shunting them temporarily with a known good capacitor of the same size.

Unsoldered terminals, loose wires or grounds caused by hidden solder may also be found and quickly corrected.

Should such an inspection disclose no faults, the next step should be to tap the various parts, pull the wires at the connections, jar the chassis, etc. This procedure will often result in crackles, squeals, fading or distortion that will show in which circuit or part the trouble lies. If nothing is found by this procedure, voltage and current measurements followed by resistance and continuity measurements should be made as described in the following paragraphs:

28 STAGE GAIN MEASUREMENTS

The approximate gain of each stage is shown in Table A, Stage Gain Measurements. To make measurements of this type, it will be necessary to have a signal generator and output meter. The signal generator must be accurately calibrated and must have an attenuator network capable of providing a signal of the order of one microvolt.

29 VOLTAGE MEASUREMENTS

a General

Table B, Socket Voltages, shows voltage measurements made from the chassis ground to the more important tube socket terminals. These measurements are made with a 1000 ohm per volt meter and are readings that will be obtained when using a similar meter on receivers in good condition.

b Procedure

(1) Remove the bottom plate from the cabinet. Supply power to the Radio Receiver and turn the Radio Receiver on. Place the controls in the positions indicated in Table B, Socket Voltages.

(2) Use the voltmeter ranges indicated in the table and make the desired readings between the terminals shown on the voltage table and ground.

30 RESISTANCE AND CONTINUITY MEASUREMENTS

a General

In Table C, Coil Resistances, are shown the resistance readings of the coils and transformers. These measurements are to be made with test prods at the coil terminals or other points shown in the table. Whenever possible, use an ohmmeter range that will allow the readings to be made on the 0 to 50 portion of the ohmmeter scale.

b Procedure

(1) Remove the bottom plate from the cabinet and disconnect the power cord from the power supply.

(2) Use the proper ohmmeter scale and adjust the meter to zero ohms. Proceed to make the desired readings.

31 REPLACEMENT OF A BAND SWITCH SECTION

A defective section of the band switch may be changed without changing the entire band switch assembly. Fig. 20, Removal of Band Switch Section, shows the procedure to follow for such a replacement. Care must be taken, when rewiring the replaced switch section, that the wires are correctly connected to the terminal lugs.

When replacing the switch section, do not tighten the mounting screws securely until after the switch shaft has been reconnected and the band switch operated several times. This action will position the switch correctly and prevent binding during operation.

32 REPLACEMENT OF SENSITIVITY CONTROL

The Sensitivity Control, R-145, is ganged to the tuning capacitor. Should it be necessary to replace this part, follow the procedure shown in Fig. 21, Replacement of Sensitivity Control.

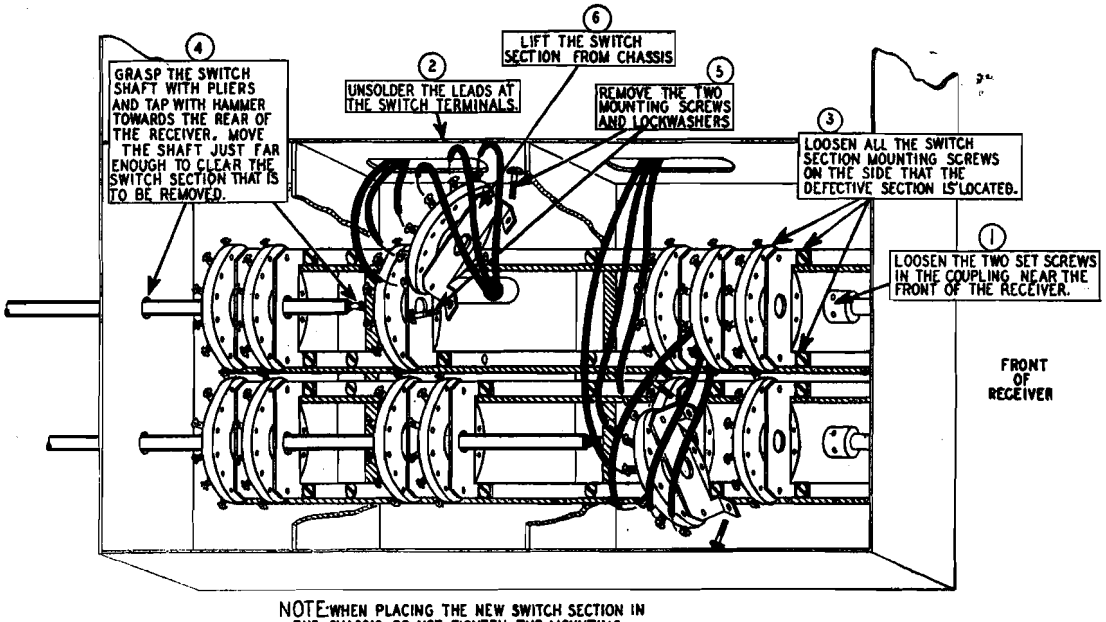


Fig. 20. Removal of Band Switch Section

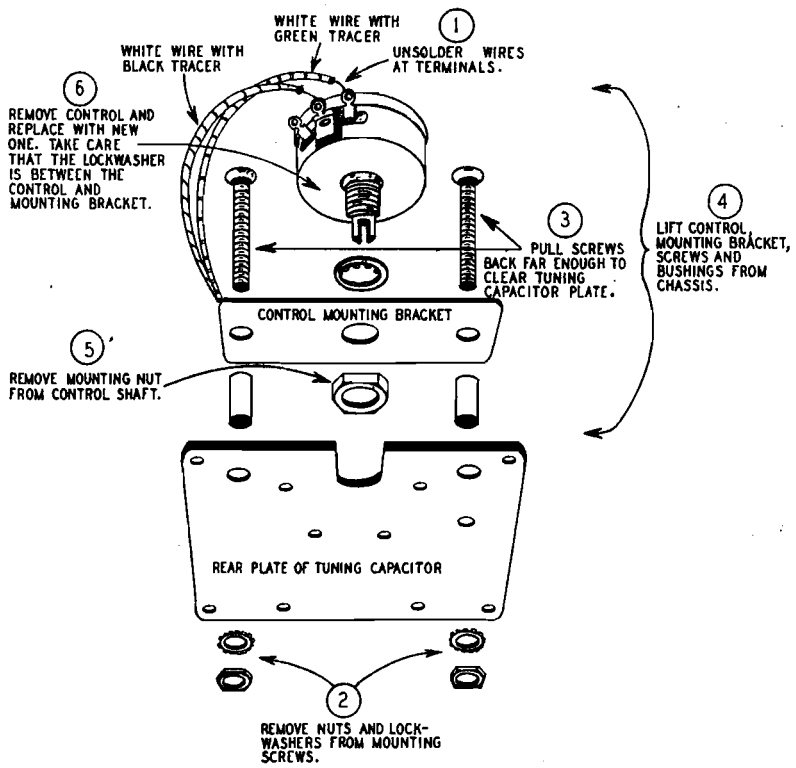


Fig. 21. Replacement of Sensitivity Control

33 ALIGNMENT

a General

Correct alignment is extremely important for the proper operation of the receiver. However, re-alignment should not be attempted unless it is certain that the receiver is misaligned and then, only after all other possible causes of faulty operation have been fully investigated.

The correct step-by-step alignment procedure is given here and should be followed whenever aligning the receiver. Fig. 26, Trimmer Positions, shows the position of each Trimmer Capacitor. Also see Fig. 24.

b Preliminary Adjustments

Before beginning the alignment of the *Type CWQ-46161-A Radio Receiver, the position of the dial pointer should be checked with reference to the tuning capacitor.

The dial pointer should indicate zero on the 0-1000 scale of the main dial when the corners of the stator and rotor plates of the tuning capacitor (the corners farthest from the shaft) line up, with the plates in the meshed position.

If the pointer is incorrectly positioned, the knobs, cover plate and dial glass may be removed and the pointer bent slightly in order to correct the calibration.

First remove the Audio, Output Level, Output Limiter and power supply knobs by loosening the two set screws in each of the knobs with a No. 6 Allen Head Wrench. Insert the wrench in each of the tapped holes, and turn until the set screw is loosened. Pull the knob off the shaft. Follow the same procedure for removing the tuning knob, only use the No. 8 wrench. There are six screws and lockwashers on the dial opening plate that secure it to the front panel of the receiver. Unscrew these screws and pull the dial plate away from the receiver.

c Equipment Necessary for Alignment

A standard 600 ohm output meter and a signal generator capable of providing unmodulated signals between 15 and 600 kc is necessary when aligning the receiver. This equipment is to be connected to the receiver as shown in Fig. 24, Alignment Connections.

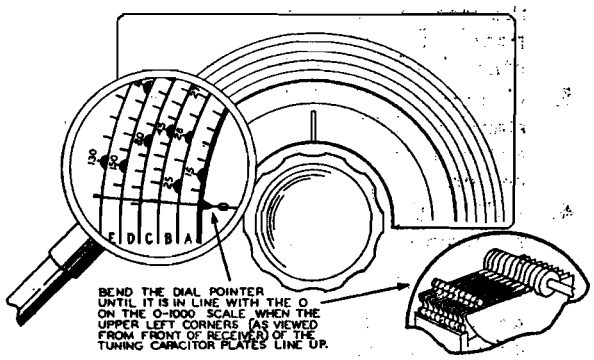


Fig. 22. Dial Pointer Adjustment

*Information concerning the Type CWQ-46161-A Radio Receiver is applicable also to the Type CWQ-46230 Radio Receiver except where otherwise stated.

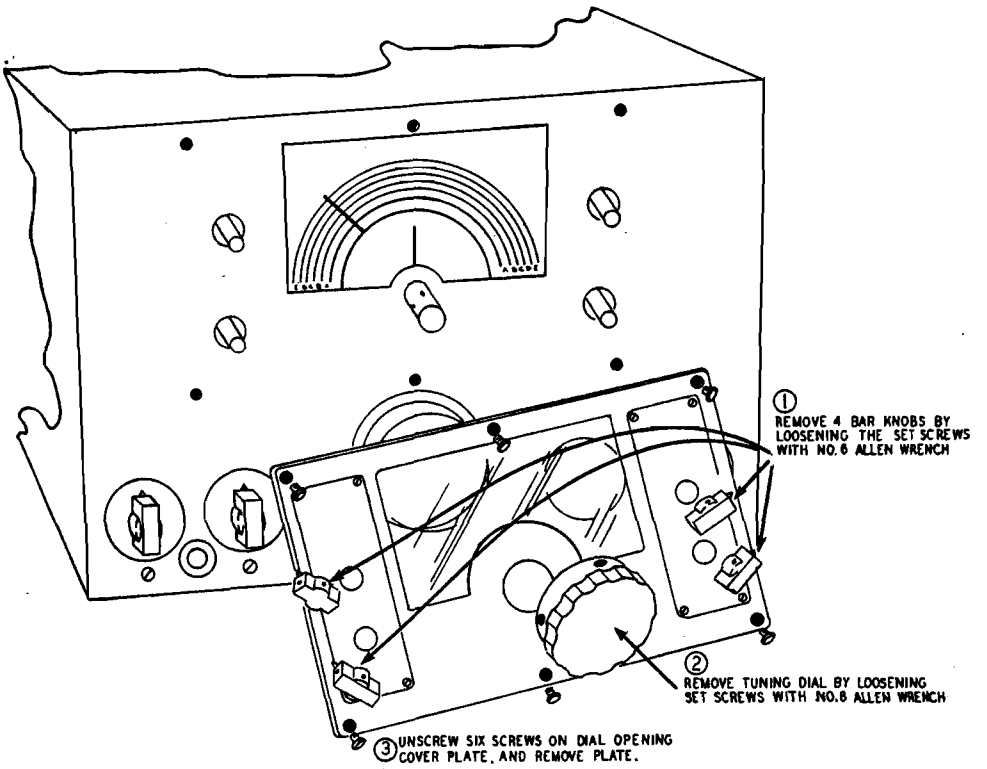


Fig. 23. Removal of Dial Cover Plate

***d* Control Positions**

When aligning the receiver, the controls on the front panel should be positioned as follows:

CONTROLS	POSITION
Power	On
Audio	Broad
Output Limiter	Off
Gain	See Step-by-Step Procedure Below
Regen	
Antenna Compensator	
R-F Trimmer	
Band Switch	
Tuning Knob	

***e* Alignment for D, E and F Bands**

1. Turn the receiver's band switch to the F band.
2. Connect a 600 ohm output meter to the receiver output terminals at the rear of the receiver or the phone jack on the front panel. Do not have headphones or any other loads connected across the output.
3. Connect the R-F signal generator thru a standard RMA dummy antenna to the antenna and ground terminals on the receiver.
4. Adjust the receiver Gain control to approximately 8 or 9. Turn the Regen control to a point where the detector stage will oscillate. Use the OSC Test button on the front panel to determine if the detector stage is oscillating. (See Par. 11i, OSC Test.)
5. Set the signal generator for an **unmodulated** output at 600 kc. IMPORTANT: The level of the signal fed into the receiver should be, at all times, the lowest that will give a usable indication on the output meter.
6. Tune the receiver until the dial pointer indicates 600 kc on the receiver's dial. Set both the Antenna Compensator and R-F Trimmer controls to zero.
7. By means of the detector stage trimmer capacitor, C-106, tune the receiver thru the signal. Note that there are 2 points of peak response with a point of zero response in the center. Leave the trimmer capacitor, C-106, set so that the receiver is tuned to the point of zero response.
8. Detune the receiver slightly by means of the tuning knob, towards the high frequency end of the dial. Locate the point of maximum response.
9. Adjust the 2nd R-F trimmer capacitor, C-102, for maximum indication on the output meter.
10. Set the Antenna Compensator for maximum output. Adjust the signal generator output for approximately 6 milliwatts on the output meter. The D, E and F bands will be correctly aligned when this output reading is obtained with an R-F input of less than 10 microvolts.

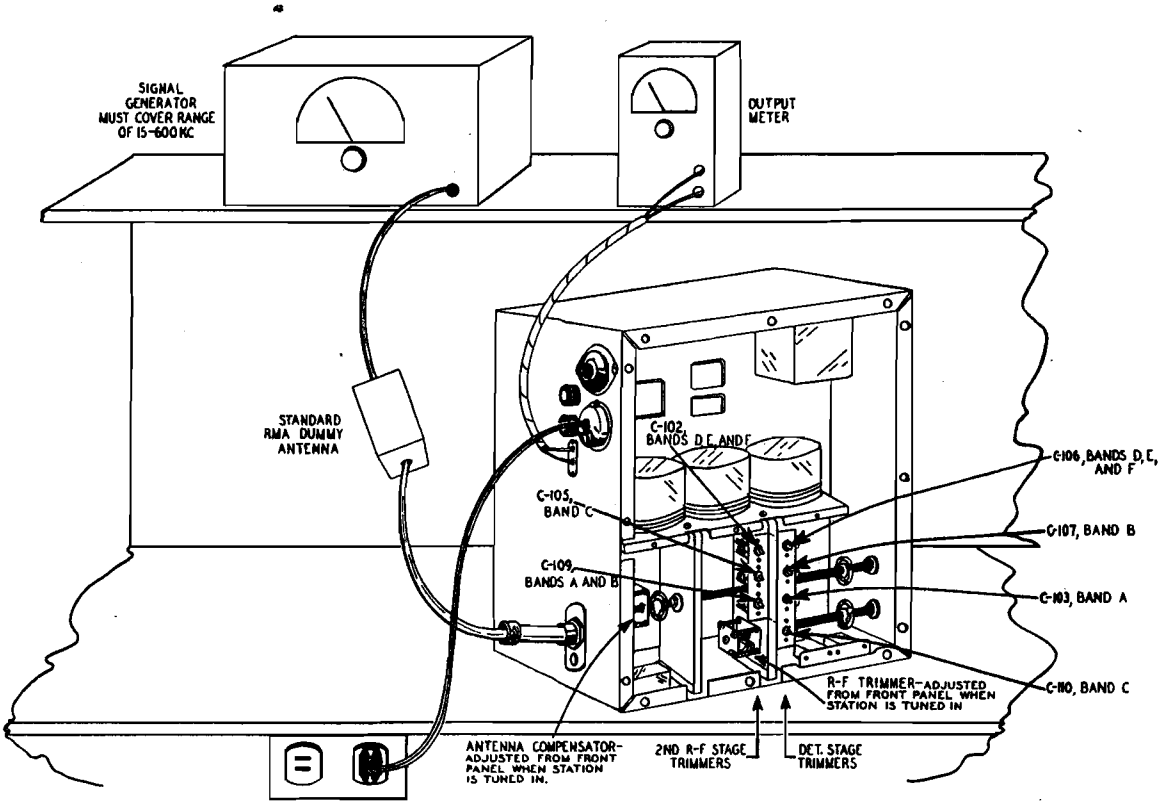


Fig. 24. Alignment Connections

f Alignment for C Band

1. Turn the receiver's band switch to the C band.
2. Adjust the receiver Gain control to approximately 8 or 9. Turn the Regen control to a point where the detector stage will oscillate. Use the OSC Test button on the front panel to determine if the detector stage is oscillating. (See Par. Ili, OSC. Test.)
3. Set the signal generator for an unmodulated output at 80 kc. IMPORTANT: The level of the signal fed into the receiver should be, at all times, the lowest that will give a usable indication on the output meter.
4. Tune the receiver until the dial pointer indicates 80 kc on the receiver's dial. Set both the Antenna Compensator and R-F Trimmer controls to zero.
5. By means of the detector stage trimmer capacitor, C-110, tune the receiver thru the signal. Note that there are 2 points of peak response with a point of zero response in the center. Leave the trimmer capacitor, C-110, set so that the receiver is tuned to the point of zero response.
6. Detune the receiver slightly by means of the tuning knob, towards the high frequency end of the dial. Locate the point of maximum response.
7. Adjust the 2nd R-F trimmer capacitor, C-105, for maximum indication on the output meter.
8. Set the Antenna Compensator for maximum output. Adjust the signal generator output for approximately 6 milliwatts on the output meter. The C band will be correctly aligned when this output reading is obtained with an R F input of less than 10 microvolts.

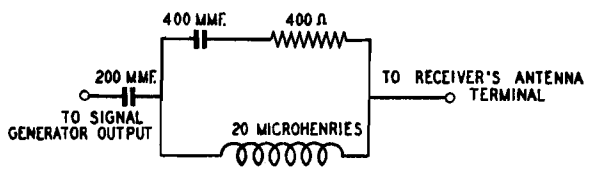


Fig. 25. Schematic Diagram, Standard RMA Dummy Antenna

g Alignment for B Band

1. Turn the receiver's band switch to the B band.

2. Adjust the receiver Gain control to approximately 8 or 9. Turn the Regen control to a point where the detector stage will oscillate. Use the OSC Test button on the front panel to determine if the detector stage is oscillating. See Par. Ili, OSC. Test.)

3. Set the signal generator for an unmodulated output at 43 kc. IMPORTANT: The level of the signal fed into the receiver should be, at all times, the lowest that will give a usable indication on the output meter.

4. Tune the receiver until the dial pointer indicates 43 kc on the receiver's dial. Set both the Antenna Compensator and R-F Trimmer controls to zero.

5. By means of the detector stage trimmer capacitor, C-107, tune the receiver thru the signal. Note that there are 2 points of peak response with a point of zero response in the center. Leave the trimmer capacitor, C-107, set so that the receiver is tuned to the point of zero response.

6. Detune the receiver slightly by means of the tuning knob, towards the high frequency end of the dial. Locate the point of maximum response.

7. Adjust the 2nd R-F trimmer capacitor, C-109, for maximum indication on the output meter.

8. Set the Antenna Compensator for maximum output. Adjust the signal generator output for approximately 6 milliwatts on the output meter. The B band will be correctly aligned when this output reading is obtained with an R-F input of less than 10 microvolts.

Alignment for A Band

1. Turn the receiver's band switch to the A band.

2. Adjust the receiver Gain control to approximately 8 or 9. Turn the Regen control to a point where the detector stage will oscillate. Use the OSC Test button on the front panel to determine if the detector stage is oscillating. See Par. Ili, OSC. Test.)

3. Set the signal generator for an unmodulated output at 25 kc. IMPORTANT: The level of the signal fed into the receiver should be, at all times, the lowest that will give a usable indication on the output meter.

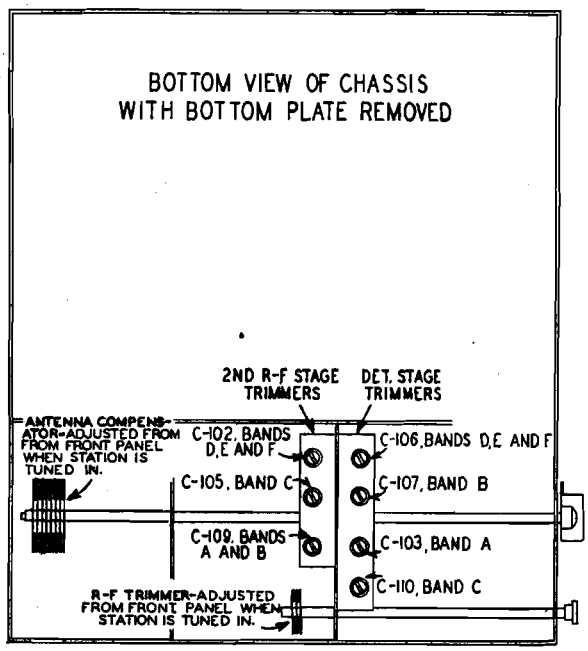


Fig. 26. Trimmer Positions

4. Tune the receiver until the dial pointer indicates 25 kc on the receiver's dial. Set both the Antenna Compensator and R-F Trimmer controls to zero.

5. By means of the detector stage trimmer capacitor, C-103, tune the receiver thru the signal. Note that there are 2 points of peak response with a point of zero response in the center. Leave the trimmer capacitor, C-103, set so that the receiver is tuned to the point of zero response.

6. Detune the receiver slightly by means of the tuning knob, towards the high frequency end of the dial. Locate the point of maximum response.

7. Adjust the R-F Trimmer control on the front panel for maximum indication on the output meter.

8. Set the Antenna Compensator for maximum indication on the output meter. Adjust the signal generator output for approximately 6 milliwatts on the output meter. The A band will be correctly aligned when this output reading is obtained with an R-F input of less than 10 microvolts.

2. Adjust the receiver Gain control to approximately 8 or 9. Turn the Regen control to a point where the detector stage will oscillate. Use the OSC Test button on the front panel to determine if the detector stage is oscillating. See Par. Iii, OSC. Test.)

3. Set the signal generator for an unmodulated output at 43 kc. IMPORTANT: The level of the signal fed into the receiver should be, at all times, the lowest that will give a usable indication on the output meter.

4. Tune the receiver until the dial pointer indicates 43 kc on the receiver's dial. Set both the Antenna Compensator and R-F Trimmer controls to zero.

5. By means of the detector stage trimmer capacitor, C-107, tune the receiver thru the signal. Note that there are 2 points of peak response with a point of zero response in the center. Leave the trimmer capacitor, C-107, set so that the receiver is tuned to the point of zero response.

6. Detune the receiver slightly by means of the tuning knob, towards the high frequency end of the dial. Locate the point of maximum response.

7. Adjust the 2nd R-F trimmer capacitor, C-109, for maximum indication on the output meter.

8. Set the Antenna Compensator for maximum output. Adjust the signal generator output for approximately 6 milliwatts on the output meter. The B band will be correctly aligned when this output reading is obtained with an R-F input of less than 10 microvolts.

Alignment for A Band

1. Turn the receiver's band switch to the A band.

2. Adjust the receiver Gain control to approximately 8 or 9. Turn the Regen control to a point where the detector stage will oscillate. Use the OSC Test button on the front panel to determine if the detector stage is oscillating. See Par. Iii, OSC. Test.)

3. Set the signal generator for an unmodulated output at 25 kc. IMPORTANT: The level of the signal fed into the receiver should be, at all times, the lowest that will give a usable indication on the output meter.

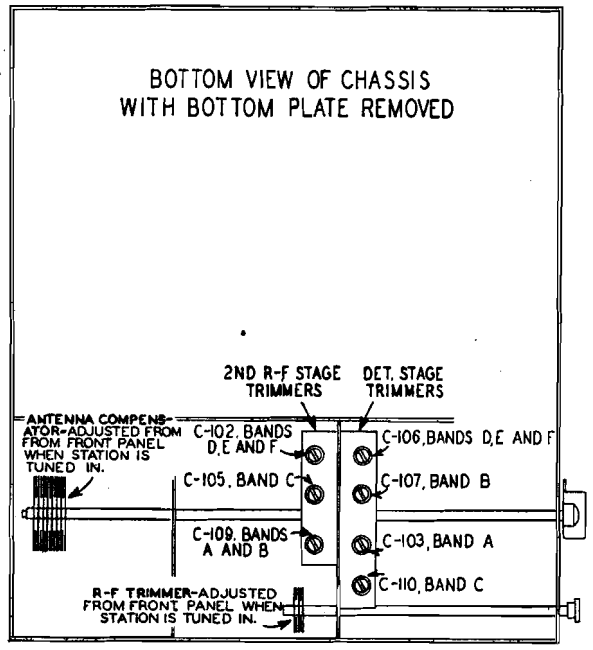


Fig. 26. Trimmer Positions

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6. Detune the receiver slightly by means of the tuning knob, towards the high frequency end of the dial. Locate the point of maximum response.

7. Adjust the R-F Trimmer control on the front panel for maximum indication on the output meter.

8. Set the Antenna Compensator for maximum indication on the output meter. Adjust the signal generator output for approximately 6 milliwatts on the output meter. The A band will be correctly aligned when this output reading is obtained with an R-F input of less than 10 microvolts.

2. Adjust the receiver Gain control to approximately 8 or 9. Turn the Regen control to a point where the detector stage will oscillate. Use the OSC Test button on the front panel to determine if the detector stage is oscillating. See Par. Ili, OSC. Test.)

3. Set the signal generator for an unmodulated output at 43 kc. IMPORTANT: The level of the signal fed into the receiver should be, at all times, the lowest that will give a usable indication on the output meter.

4. Tune the receiver until the dial pointer indicates 43 kc on the receiver's dial. Set both the Antenna Compensator and R-F Trimmer controls to zero.

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6. Detune the receiver slightly by means of the tuning knob, towards the high frequency end of the dial. Locate the point of maximum response.

7. Adjust the 2nd R-F trimmer capacitor, C-109, for maximum indication on the output meter.

8. Set the Antenna Compensator for maximum output. Adjust the signal generator output for approximately 6 milliwatts on the output meter. The B band will be correctly aligned when this output reading is obtained with an R-F input of less than 10 microvolts.

Alignment for A Band

1. Turn the receiver's band switch to the A band.

2. Adjust the receiver Gain control to approximately 8 or 9. Turn the Regen control to a point where the detector stage will oscillate. Use the OSC Test button on the front panel to determine if the detector stage is oscillating. See Par. Ili, OSC. Test.)

3. Set the signal generator for an unmodulated output at 25 kc. IMPORTANT: The level of the signal fed into the receiver should be, at all times, the lowest that will give a usable indication on the output meter.

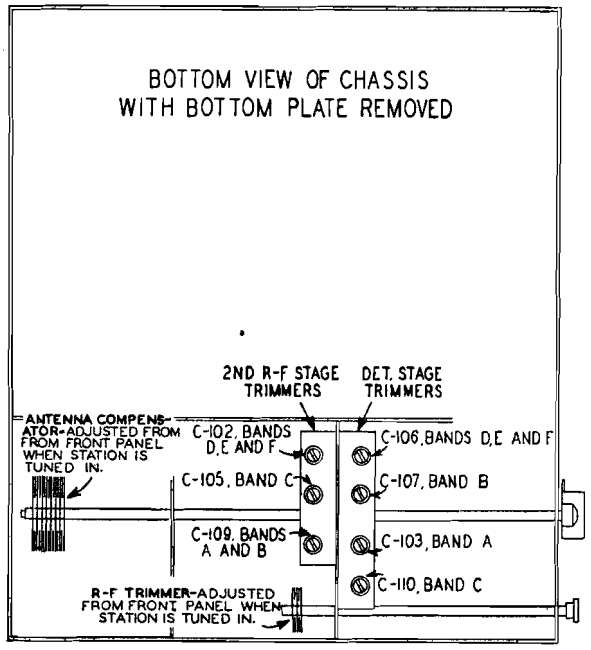


Fig. 26. Trimmer Positions

4. Tune the receiver until the dial pointer indicates 25 kc on the receiver's dial. Set both the Antenna Compensator and R-F Trimmer controls to zero.

5. By means of the detector stage trimmer capacitor, C-103, tune the receiver thru the signal. Note that there are 2 points of peak response with a point of zero response in the center. Leave the trimmer capacitor, C-103, set so that the receiver is tuned to the point of zero response.

6. Detune the receiver slightly by means of the tuning knob, towards the high frequency end of the dial. Locate the point of maximum response.

7. Adjust the R-F Trimmer control on the front panel for maximum indication on the output meter.

8. Set the Antenna Compensator for maximum indication on the output meter. Adjust the signal generator output for approximately 6 milliwatts on the output meter. The A band will be correctly aligned when this output reading is obtained with an R-F input of less than 10 microvolts.

TABLE A—STAGE GAIN MEASUREMENTS

A-F GAIN MEASUREMENTS

Audio Oscillator—Frequency 750 Cycles

Control Positions

Power_____ON
Gain_____10
Regen_____Feed signal into Detector grid (see columns below for connections during test). Turn control clockwise until 200 Milliwatt output is obtained.

Audio _____Broad
Output Limiter _____OFF
Band Switch_____Any position
Tuning Knob_____Any position
R-F Trimmer_____Any position
Antenna Compensator _____Any position

Connection between Audio Oscillator and Receiver	Audio Oscillator Connection to Receiver	Volts Input	Output Milliwatts
.1 mf.	Detector Grid	.01	200
.1 mf.	1st A-F Grid	.2	200
.1 mf.	Output Grid	2.7	200

R-F GAIN MEASUREMENTS

Signal Generator—Frequency 450 KC.
Signal Generator Modulation—750 Cycles, 30%

Control Positions

Power _____ON
Gain _____10
Regen _____0
Audio _____Broad
Output Limiter _____OFF

Band Switch_____F
Tuning Knob_____Adjust dial to 450 KC.
R-F Trimmer _____Adjust for max. signal
Antenna Compensator _____Adjust for max. signal

Connection Between Signal Generator and Receiver	Signal Generator Connection to Receiver	Microvolts Input	Output Milliwatts
Standard RMA Dummy Antenna	Antenna Terminal	14	6
.1 mf.	1st R-F Grid	200	6
.1 mf.	2nd R-F Grid	6,200	6
.1 mf.	Detector Grid	120,000	6

TABLE B—SOCKET VOLTAGES

All voltages are approximate and are read between the socket terminals and ground with a 1,000 ohm-per-volt meter under the following conditions:

Line Voltage 115 Volts

Plate and Screen Voltages Read on 250 Volt Scale

Cathode Voltage Read on Highest Scale That Permits Value to Be Read Easily

Power Control—ON

Tuning Knob—Dial Pointer at Extreme Left of Dial

Gain Control—See Column Heading

Regen Control—See Column Heading

Audio Control—BROAD

Output Limiter—OFF

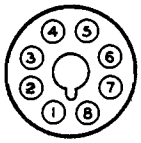
Band Switch—F Band

R-F Trimmer Control—0

Antenna Compensator Control—0

	Voltages Read With Gain Control Set at 10 Regen Control at 0.			Voltages Read With Gain Control Set at 0, Regen Control at 10.		
Tube & Function	Plate Volts & Term. No.	Screen Volts & Term. No.	Cathode Volts & Term. No.	Plate Volts & Term. No.	Screen Volts & Term. No.	Cathode Volts & Term. No.
6SK7 1st R-F	155 No. 8	77.5 No. 6	5.5 No. 5	187 No. 8	93 No. 6	46.0 No. 5
6SK7 2nd R-F	118 No. 8	78 No. 6	4.75 No. 5	170 No. 8	92 No. 6	47.5 No. 5
6SK7 Det.	110 No. 8	0 No. 6	0 No. 5	*50 No. 8	*25 No. 6	0 No. 5
6SG7 1st A-F	62 No. 8	22 No. 6	0.4 Nos. 3 & 5			
6H6 Limiter	37.5 Nos. 3 & 5		37.5 Nos. 4 & 8			
6K6GT Output	180 No. 3	190 No. 4	12.2 No. 8			
5U4G Rect.	Filament — 203 Volts Nos. 2 & 8					

*Voltages read with tube in oscillating condition. Readings may be found to vary with tube age.



OCTAL SOCKET
BOTTOM TERMINAL NUMBERING

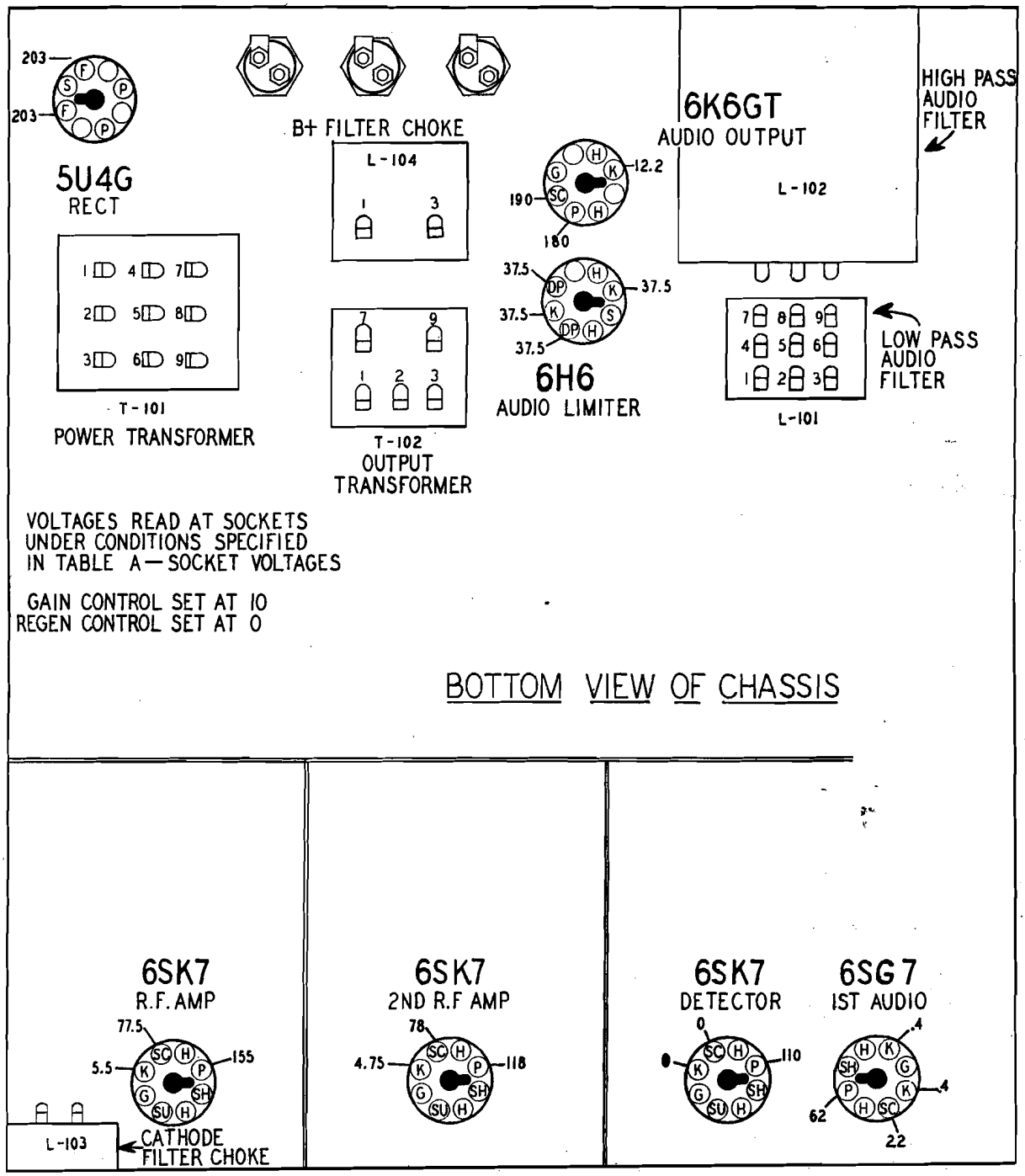
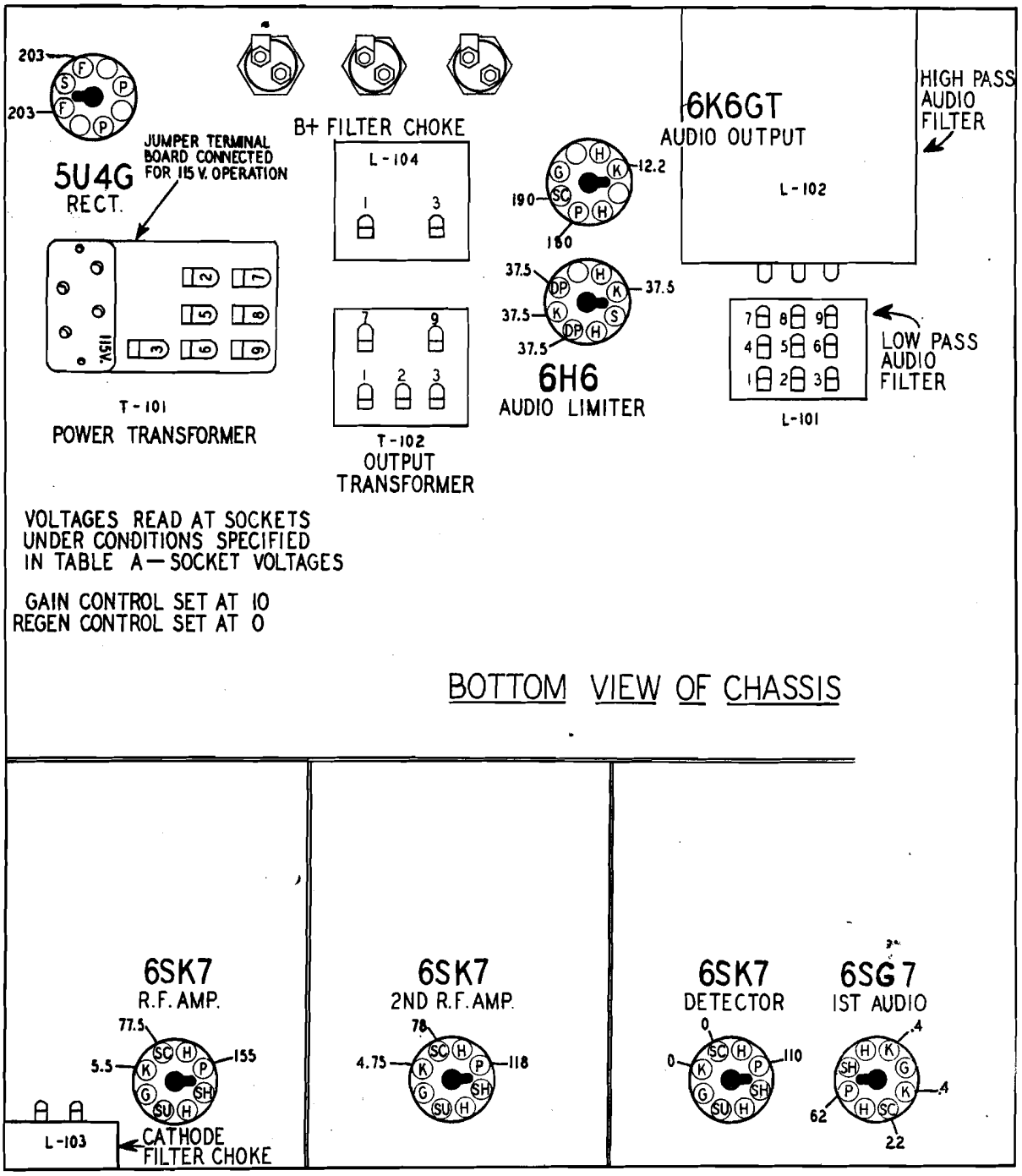
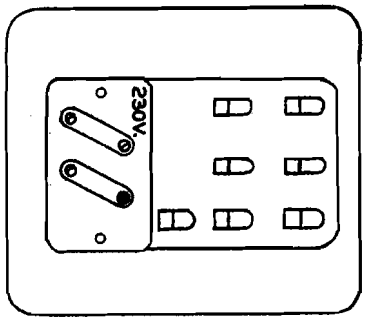


Fig. 27. Bottom Socket View of Type CWQ-46161-A Radio Receiver





JUMPER TERMINAL BOARD CONNECTED FOR 230 V. OPERATION

For 115 Volt operation, the jumper terminal board must be mounted so that the 115 Volt marking is visible.

For 230 Volt operation, the jumper terminal board must be mounted so that the 230 Volt marking is visible.

Fig. 28. Bottom Socket View of Type CWQ-46230 Radio Receiver

TABLE C—COIL RESISTANCES

Resistances shown are approximate resistance value of coils and transformers.
Colors shown in the column "Terminals Resistance is Measured Across" are colors appearing on the coil lugs.

Symbol Desig.	Name of Part	Winding	Terminals Resistance Is Measured Across	DC Resistance In Ohms
L-101	Low Pass Filter Assembly	Three Chokes in Series	1—3	800.
L-102	High Pass Filter Assembly	Resistance Not Measurable at External Terminals		
L-103	Cathode Filter Choke			500.
L-104	B+ Filter Choke			300.
*T-101	Power Transformer RBL-3	Primary	1—4	9.05
		H.V. Secondary	7—9	439.
		6.3 V. Secondary	3—6	.075
		5 V. Secondary	2—5	.101
*T-101	Power Transformer RBL-4	Primary	1—11	15.
		Primary	4—10	15.
T-102	Output Transformer	Primary	7—9	438.
		Secondary	1—3	18.
Z-101	1st R-F Coil, Low Frequency	No. 1	Black—Red	110.
		No. 2	Red—Yellow	62.
		No. 3	Yellow—Blue	50.
Z-102	2nd R-F Coil, Low Frequency	No. 1	Black—Red	110.
		No. 2	Red—Yellow	62.
		No. 3	Yellow—Blue	50.
Z-103	Detector Coil, Low Frequency	No. 1	Red, Blue—Slate	5.
		No. 2	Black—Red	102.
		No. 3	Red—Yellow	62.
		No. 4	Yellow—Blue	50.
		No. 5	Red, Blue—Red, Black	1.4
Z-104	1st R-F Coil, High Frequency	No. 1 & No. 2	Black—Red	17.
		No. 3	Red—Yellow	8.
		No. 4	Yellow—Blue	6.
Z-105	2nd R-F Coil, High Frequency	No. 1 & No. 2	Black—Red	17.
		No. 3	Red—Yellow	8.
		No. 4	Yellow—Blue	6.
Z-106	Detector Coil, High Frequency	No. 1 & No. 2	Black—Red	17.0
		No. 3	Red—Yellow	8.0
		No. 4	Yellow—Blue	6.0
		No. 5	Red, Blue—Slate	.7

*The information given on the secondary windings of the Power Transformer T-101 used in the RBL-3, also applies to the secondaries of the Transformer T-101 used in the RBL-4.

TABLE D—CATHODE CURRENTS

CONDITIONS OF MEASUREMENT

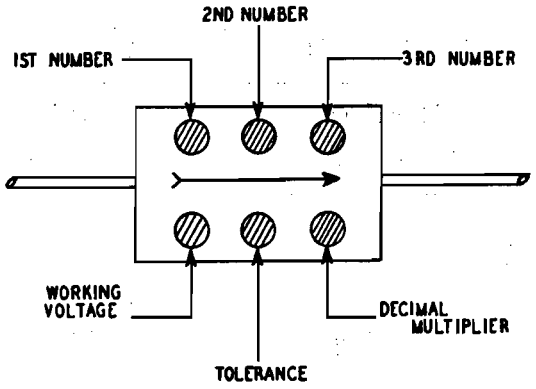
Line Voltage	115 Volts	Audio Control	Broad
Power Control	ON	Output Limiter	OFF
Gain Control	"MAX"	Band Switch	Band F
Regen Control	5	R-F Trimmer	O
Tuning Knob	Dial Pointer at Extreme Left of Dial	Antenna Compensator	O

Tube and Function	Cathode Current
6SK7 — 1st R-F	3. Ma
6SK7 — 2nd R-F	3. Ma
6SK7 — Det.	.5 Ma
6SK7 — 1st A-F	1.2 Ma
6H6 — Limiter	.5 Ma
6K6GT —Output	26. Ma
5U4G — Rectifier	45. Ma

TABLE E—COLOR CODING

COLOR CODE FOR CAPACITORS

Color	Numerals	Multiplier	Volts	Tolerance
Black	0	1		
Brown	1	10	100	1%
Red	2	100	200	2%
Orange	3	1,000	300	3%
Yellow	4	10,000	400	4%
Green	5	100,000	500	5%
Blue	6	1,000,000	600	6%
Violet	7	10,000,000	700	7%
Gray	8	100,000,000	800	8%
White	9	1,000,000,000	900	9%
Gold		0.1	1000	5%
Silver		0.01	2000	10%
No Color			500	20%

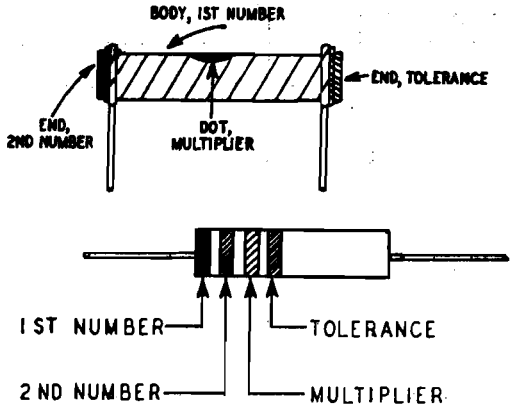


COLOR CODE FOR RESISTORS

Color	1st Number	2nd Number	Multiplier
Black		0	1
Brown	1	1	10
Red	2	2	100
Orange	3	3	1,000
Yellow	4	4	10,000
Green	5	5	100,000
Blue	6	6	1,000,000
Violet	7	7	
Gray	8	8	
White	9	9	

Tolerance Color Code Values

Gold 5% Silver 10% No Color 20%



AMERICAN WAR STANDARDS
COLOR CODE FOR FIXED MICA CAPACITORS
VALUES READ IN MMF

Color	1st, 2nd, 3rd No.	Decimal Multiplier	Tolerance	Characteristic
Black	0	1		A
Brown	1	10		B
Red	2	100	2%	C
Orange	3	1,000		D
Yellow	4			E
Green	5			F
Blue	6			G
Violet	7			
Gray	8			
White	9			
Gold		0.1	5%	
Silver		0.01	10%	
Black			20%	

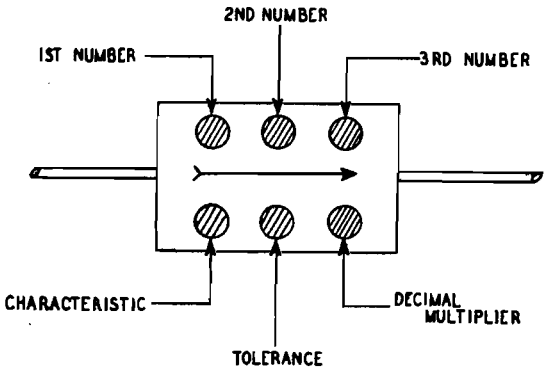


TABLE F—LIST OF MAJOR UNITS

MODEL RBL-3

NAVY TYPE DESIGNATION	NAME OF MAJOR UNIT	SYMBOL GROUP	MFR'S. ASSEMBLY DRAWING NUMBER
CWQ-46161-A	Radio Receiver	101 and up	25A543
CWQ-10124-A	Mounting Base	301 and up	25A558

MODEL RBL-4

CWQ-46230	Radio Receiver	101 and up	25A717
CWQ-10124-A	Mounting Base	301 and up	25A719

TABLE G—PARTS LIST BY SYMBOL DESIGNATION

*One asterisk in the Symbol Designation column identifies parts NOT included in the Stock Spare Parts for the Model RBL-3.

**Two asterisks in the Symbol Designation column identifies parts NOT included in the Stock Spare Parts for the Model RBL-4. (The Stock Spare Parts are those supplied as spare parts but not shipped to the same destination as the receiving equipment.)

‡One Double Dagger in the Contractor's Drwg. & Part No. column indicates a part that is applicable to the Model RBL-3 only.

‡‡Two Double Daggers in the Contractor's Drwg. & Part No. column indicates a part that is applicable to the Model RBL-4 only.

Where there is no Double Dagger symbol, the part is directly interchangeable in both Models.

The alphabetical portion of the symbol designations included in the parts list are assigned to cover certain classes of parts. The letter and the parts group to which each is assigned is as follows:

(A) Structural parts, panels, frames, castings, etc.
(C) Capacitors of all types.
(E) Miscellaneous electrical parts: Insulators, knobs, brushes, etc.
(F) Fuses.
(H) Hardware, screws, bolts, studs, pins, etc. (Also see "O" group.)
(I) Indicating devices (except meters and thermometers, pilot lamps, etc.
(J) Jacks and receptacles (Stationary).
(L) Inductors, R-F and A-F.
(N) Nameplates, dials, charts, etc.
(O) Mechanical parts and larger hardware.
(P) Plugs.
(R) Resistors, fixed and variable, potentiometers, etc.
(S) Switches.
(T) Transformers, A-F and power.
(V) Vacuum tubes.
(X) Sockets.
(Z) Filters, I-F transformers, compound tuned circuit assemblies, etc., in a common container.

TABLE G—PARTS LIST BY SYMBOL DESIGNATION

Symbol Desig.	FUNCTION	DESCRIPTION	Navy Type Number	Navy Specification or Drawing Number	Mfr.	Mfr. Desig.	Special Tolerance Rating or Modification	Contractor's Drawing and Part No.
		STRUCTURAL PARTS						
** *A-101	Chassis Mounting and Protection	CABINET, C.R. Steel. Overall, 17.527" x 15.045" x 10.468", Front and Side Panels. Black Wrinkle Finish.			21			34X386
** *A-102	Cabinet Back Cover Plate	BACK COVER, C.R. Steel. 17.109" x 10.468" x .045" Thick, with Cutouts. Black Wrinkle Finish			21			34X387
** *A-103	Cabinet Top Cover Plate	TOP COVER, C.R. Steel, 15.781" x 13.672" x .045" Thick, with 3 Hinges Spotwelded to Rear of Plate. Black Wrinkle Finish			47			34X403 [a]
** *A-104	Dial Opening Cover Plate	ESCUTCHEON, .032" C.R. Steel. 11.750" x 6.687". Dial Opening 6.625" x 3.500". 1.312" R. Arc at Bottom Center, with 1.250" Dia. Drive Shaft Opening at Center. Two, .500" Dia., Control Openings Each Side. Black Wrinkle Finish			16			4X769
** *A-105	Dial Window	DIAL WINDOW, Cellulose Acetate, Water Clear. 7.000" x 4.000" x .093". 1.000" R. Arc Cutout, Bottom Center			8			17X79
** *A-106	Dial Scale, N-101, Mounting	DIAL BRACKET, .031" ¼ Hard C.R. Steel. Z Type Angle. Cadmium Plated and Clear Lacquer Finish			39			25X1274
** *A-108	Capacitor, C-108, Mounting	BRACKET, .078" C.R. Steel. 2.265" x 1.500" Width at Base, .625" Top Width. 2 Openings .500" Dia. Centered 1.140" and 1.890" from Base. Base Flange .515". 2 Extruding 6-32 Tap Mtg. Holes in Base, Each .500" from Center. Cadmium Plated			39			25X1191
** *A-109	Same as A-110 and A-111	BOTTOM PLATE ASSEMBLY, Includes A-110 and A-111 thru A-114			47			25A674
** *A-110	Receiver Bottom Cover	BOTTOM PLATE, C.R. Steel. 17.000" x 14.875" x .062". Cadmium Plated and Clear Lacquer Finish			1			34X390
** *A-111 thru A-114	Receiver Foot	GLIDER, Stainless Steel. Overall .312" x .750" Dia.; .562" R. Base. .109" x .375" Dia. Mtg. Stud			43			20X1013
** *A-115 thru A-128	Band Switch Wafer Mounting	ROTARY SWITCH BRACKET, Half Hard Brass, Overal 1.812" x .875" x .0641" Thick. .375" Dia. Center Hole, One 4-40 Tap Hole Near Each End. 45° Angle Cutoff Two Corners. Two .312" x .250" Mtg. Flanges with No. 31 D.S. Hole. Dull White Nickel Finish			39			25X1204
A-129	Rectifier Tube Clamping Ring	TUBE CLAMP, .015" High Carbon Tempered Steel. Overall 2.156" x 1.562" x .437" High. Cadmium Plated and Clear Lacquer Finish			12	8527		30X424
** *A-301 thru A-304	Cradle Mounting	LORD MOUNT, C.R. Steel Frame, 3.000" Square, Cadmium Plated. Rubber Floating Mount with Metal Insert. Mtg. Opening .391" Dia.			30	200PH-20		8X145
** *A-305	Receiver Mounting	CRADLE ASSEMBLY, Includes Symbol Designations A-301 thru A-304. A-306, H-301 thru H-304 and Hardware.			47			‡25A558 ‡‡25A719

TABLE G—PARTS LIST BY SYMBOL DESIGNATION

Symbol Desig.	FUNCTION	DESCRIPTION	Navy Type Number	Navy Specification or Drawing Number	Mfr.	Mfr. Desig.	Special Tolerance Rating or Modification	Contractor's Drawing and Part No.
** *A-306	Same as A-305	CRADLE, C.R. Steel. Overall, 17.686" x 16.186". Reinforced Corners with 4 Mtg. Hubs .093" Thick. Black Wrinkle Finish			47			22X404
		CAPACITORS						
** *C-101A C-101B C-101C	Ant. Tuning R-F Tuning Det. Tuning	CAPACITOR, Variable. 3 Section, Range Each Section, 0.0 mmf. to 444.3 mmf.			38	819-6-31		14A165
** *C-102	2nd R-F Trimmer, D, E and F Band	CAPACITOR, Air Trimmer, Range 5.0 to 55.0 mmf., 500 VDC Working. Screw Driver Adjustment Slot. All Parts to Withstand 200 Hr. Salt Spray Test	481556		51			17A212
C-103	Det. Trimmer, A Band	CAPACITOR, Same as C-102						
** * C-104	R-F Compensator	CAPACITOR, Variable Compensator, Range 6.0 to 37.0 mmf., Breakdown Test of 1000 Volts R.M.S. 60-600 Cycles. .937" x .249" Dia. Knob Adjustment Shaft. All Metal Parts to Withstand 200 Hr. Salt Spray Test	481554		38	757-AT		17A216
** *C-105	2nd R-F Trimmer, C Band	CAPACITOR, Air Trimmer, Range 6.0 to 75.0 mmf., 500 VDC Working. Screw Driver Adjustment Slot. All Parts to Withstand 200 Hr. Salt Spray Test.	481557		38	749-AT		17A213
** *C-106	Det. Trimmer, D, E and F Bands	CAPACITOR, Same as C-105						
** *C-107	Det. Trimmer, B Band	CAPACITOR, Same as C-105						
** *C-108	Ant. Compensator	CAPACITOR, Variable Compensator, Range 8.0 to 95.0 mmf. Breakdown Test of 1000 Volts R.M.S. 60-600 Cycles. .937" x .249" Dia. Knob Adjustment Shaft. All Metal Parts to Withstand 200 Hr. Salt Spray Test	481555		47			17A215
** *C-109	2nd R-F Trimmer, A and B Bands	CAPACITOR, Air Trimmer, Range 8.0 to 100 mmf., 500 VDC Working. Screw Driver Adjustment Shaft. All Parts to Withstand 200 Hr. Salt Spray Test	481558		38	748-AT		17A214
** *C-110	Det. Trimmer, C, D, E and F Bands	CAPACITOR, Same as C-109						
C-111	Ant. Coupling, D, E and F Bands	CAPACITOR, Molded Mica, 45.0 mmf. ±5%, 500 VDC Working. Low Loss Case	481559		40	K-1445		47X358
C-112	Det. Padder, B Band	CAPACITOR, Molded Mica, 50.0 mmf. ±10%, 500 VDC Working. Low Loss Case	481279		40	K-1450		47X331
C-113	Ant. Coupling, C Band	CAPACITOR, Molded Mica, 60.0 mmf. ±5%, 500 VDC Working. Low Loss Case	481065		40	K-1460		47X337
C-114	Ant. Compensator Padder	CAPACITOR, Molded Mica, 100 mmf. ±10%, 500 VDC Working Low Loss Case	48843		40	K-1310		47X359
C-115	Det. Padder, A Band	CAPACITOR, Same as C-114						

TABLE G—PARTS LIST BY SYMBOL DESIGNATION

Symbol Desig.	FUNCTION	DESCRIPTION	Navy Type Number	Navy Specification or Drawing Number	Mfr.	Mfr. Desig.	Special Tolerance Rating or Modification	Contractor's Drawing and Part No.
C-116	Short Ant. Circuit	CAPACITOR, Molded Mica, 300 mmf. ±10%, 500 VDC Working. Low Loss Case	48854		40	K-1330		47X334
C-117 and C-118	Low Pass Filter Circuit	CAPACITOR, Molded Mica, 350 mmf. ±10%, 500 VDC Working. Low Loss Case. Part of L-101	48676		40	K-1335		47X336
C-119	R-F Grid Coupling	CAPACITOR, Molded Mica, 500 mmf. ±10%, 500 VDC Working. Low Loss Case	48691		40	K-1350		47X335
C-120	Det. Grid Coupling	CAPACITOR, Same as C-119						
C-121	Ant. Coupling, A Band	CAPACITOR, Molded Mica, 800 mmf. ±10%, 500 VDC Working. Low Loss Case	481428		40	C-1380		47X339
C-122	Det. Compensating Capacitor, E Band	CAPACITOR, Molded Mica, 900 mmf. ±10%, 500 VDC Working. Low Loss Case	481098		40	C-1390		47X344
C-123 and C-124	Same as C-117	CAPACITOR, Same as C-122. Part of L-101						
C-125	Ant. Coupling, B Band	CAPACITOR, Molded Mica, 1000 mmf. ±10%, 500 VDC Working. Low Loss Case	48983		40	C-1210		47X340
C-126	2nd R-F Filament Filter	CAPACITOR, Same as C-125						
C-127 and C-128	Det. Plate Filter Circuit	CAPACITOR, Same as C-125						
C-129	Output Transformer Filter	CAPACITOR, Molded Mica, 2500 mmf. ±10%, 500 VDC. Working Low Loss Case	481089		40	C-1225		47X347
C-130 and C-131	Same as C-117	CAPACITOR, Molded Mica, 4000 mmf. ±10%, 300 VDC Working. Low Loss Case. Part of L-101	48929		40	C-1240		47X342
C-132 and C-133	Same as C-117	CAPACITOR, Molded Mica, 5000 mmf. ±10%, 300 VDC Working. Low Loss Case. Part of L-101	481037		40	C-1250		47X343
C-134 and C-135	High Pass Filter Circuit	CAPACITOR, Same as C-132, Except Part of L-102						
C-136 and C-137	Same as C-134	CAPACITOR, Molded Mica, 6000 mmf. ±10%, 300 VDC Working. Low Loss Case. Part of L-102	48847		40	C-1260		47X345
C-138 and C-139	Same as C-134	CAPACITOR, Molded Mica, 8000 mmf. ±10%, 300 VDC Working. Low Loss Case. Part of L-102	481560		40	C-06280		47X346

TABLE G—PARTS LIST BY SYMBOL DESIGNATION

Symbol Desig.	FUNCTION	DESCRIPTION	Navy Type Number	Navy Specification or Drawing Number	Mfr.	Mfr. Desig.	Special Tolerance Rating or Modification	Contractor's Drawing and Part No.
*C-143	1st Audio Grid Coupling	CAPACITOR, Tubular, Foil Paper Dielectric. .01 mf. ±10%, 400 VDC Working. .937" x .437" Dia. Metal Case, Covered with Transparent Vinylite Tubing. Two 2.000" Pigtail Type Leads		RE-13A-488	19	7707		46X366
*C-144	Audio Output Grid Coupling	CAPACITOR, Same as C-143						
*C-145 and C-146	Same as C-117	CAPACITOR, Same as C-143, Except .013 mf.		RE-13A-488	19	7708		46X365
*C-147	Cathode Filter, R-F Stage	CAPACITOR, Tubular, Foil Paper Dielectric. 0.1 mf. ±10%, 400 VDC Working. 1.687" x .703" Dia. Metal Case Covered with Impregnated Kraft Tubing. Two 2.375" Pigtail Type Leads	481073	RE-13A-488	19	7653		46X364
*C-148	Output Limiter Filter	CAPACITOR, Same as C-147						
*C-149	1st R-F Cathode Resistor Bypass	CAPACITOR, Paper Dielectric, Oil Filled. Metal Case, 1.187" x .687" x 2.062" High. 0.5 mf. ±10%, 600 VDC Working. Two Lug Terminals. Mtg. Flanges Same End as Terminals	481549	RE-13A-488	19	7667		48X250
*C-150	1st R-F Screen Resistor Bypass	CAPACITOR, Same as C-149						
*C-151	2nd R-F Cathode Resistor Bypass	CAPACITOR, Same as C-149						
*C-152	2nd R-F Screen Resistor Bypass	CAPACITOR, Same as C-149						
*C-153	Filter Coupling	CAPACITOR, Same as C-149						
C-154	Output Limiter Filter	CAPACITOR, Same as C-149						
*C-155 and C-156	AC Line Filter	CAPACITOR, Same as C-149						
*C-157	2nd R-F Plate Bypass	CAPACITOR, Same as C-149, Except 0.8 mf. and Mtg. Flanges on Opposite End from Terminals		RE-13A-488	19	7669		48X252
*C-158	1st Audio Plate Filter	CAPACITOR, Same as C-157						
*C-159	R-F Plate Bypass	CAPACITOR, Same as C-149, Except 1.0 mf. and Case, 2.625" High	481550	RE-13A-488	19	7668		48X251
*C-160	2nd R-F Plate Bypass	CAPACITOR, Same as C-159						
*C-161 and C-162	Det. Screen Bypass	CAPACITOR, Same as C-159						
*C-163	Det. Plate Hum Filter Circuit	CAPACITOR, Same as C-159						
*C-164	1st Audio Cathode Bypass	CAPACITOR, Same as C-159						

TABLE G—PARTS LIST BY SYMBOL DESIGNATION

Symbol Desig.	FUNCTION	DESCRIPTION	Navy Type Number	Navy Specification or Drawing Number	Mfr.	Mfr. Desig.	Special Tolerance Rating or Modification	Contractor's Drawing and Part No.
*C-165	1st Audio Screen Bypass	CAPACITOR, Same as C-159						
*C-166	Audio Output Cathode Bypass	CAPACITOR, Same as C-159						
*C-167 thru C-169	Power Supply Filter	CAPACITOR, Paper Dielectric, Oil Filled. Metal Case, 4.500" x 1.500" Dia., 4.0 mf. ±10%, 600 VDC Working. Two Terminal Lugs and One Grounding Lug. Includes Mtg. Hardware	481080	RE-13A-488	19 or 52	7670 or A-1004		48X249
		MISCELLANEOUS ELECTRICAL PARTS						
*E-101 thru E-103	Connections Insulator	TERMINAL BOARD ASSEMBLY, Bakelite. Two Terminals. .750" x .375" x .062". Right Lug Mtg. Extension. Wax Impregnated. All Parts to Withstand 200 Hr. Salt Spray Test			12	6464W1		4A277
*E-104	Same as E-101	TERMINAL BOARD ASSEMBLY, Same as E-101, Except Left Lug Mtg. Extension			12	6465W1		4A278
*E-105	Resistor, R-136, Mounting	TERMINAL BOARD ASSEMBLY, Same as E-104						
*E-106 and E-107	Same as E-101	TERMINAL BOARD ASSEMBLY, Same as E-104						
*E-108	Resistor, R-115, Mounting	TERMINAL BOARD ASSEMBLY, Bakelite. Three Terminals. 1.125" x .375" x .062". Center Lug Mtg. Extension. Wax Impregnated. All Parts to Withstand 200 Hr. Salt Spray Test			12	6468W1		4A276
*E-109 and E-110	Same as E-101	TERMINAL BOARD ASSEMBLY, Same as E-108						
*E-111 and E-112	Same as E-101	TERMINAL BOARD ASSEMBLY, Same as E-108, Except Right Lug Mtg. Extension			12			4A281
*E-114 thru E-117	Same as E-101	TERMINAL BOARD ASSEMBLY, Same as E-108, Except Left Lug Mtg. Extension			12			4A282
*E-146	Speaker Connections	TERMINAL PANEL, Bakelite. Two Screw and Lug Type Terminals. 2.000" x .687" x .062". Two .140" Dia. Mtg. Holes. Rounded Ends. Lettering Above Screws to be OUTPUT. All Parts to Withstand 200 Hr. Salt Spray Test			12	1720	Marked OUTPUT	4A273
*E-147 thru E-150	Tuning Capacitor, C-101 and Selectivity Control, R-145, Leads Protection	INSULATING PANEL, L.E. Bakelite, Overall 1.374" x .562" x .062". .562" Dia. Cutout in Center. Two .144" Dia. Mtg. Holes. Syncera or Cerese Mineral Wax Finish			47			1X239

TABLE G—PARTS LIST BY SYMBOL DESIGNATION

Symbol Desig.	FUNCTION	DESCRIPTION	Navy Type Number	Navy Specification or Drawing Number	Mfr.	Mfr. Desig.	Special Tolerance Rating or Modification	Contractor's Drawing and Part No.
*E-151 and E-152	Capacitor, C-108, Mounting Insulator	INSULATING PANEL, L.E. Bakelite, 1.500" x .750" x .062". Two .149" Dia. Mtg. Holes with Cutout at Side of Hole. Syncera or Cerese Mineral Wax Finish			47			1X236
*E-153 thru E-158	Coil Leads Insulation	INSULATING PANEL, L.E. Bakelite, Overall 2.125" x .750" x .062". Two .375" Dia. Openings and Two .144" Dia. Mtg. Holes. Syncera or Cerese Mineral Wax Finish			47			1X240
*E-159	Tuning Capacitor Rear Mounting Insulator	GROMMET, Rubber, .312" Thick, .625" O.D., .265" I.D. Groove .062" x .468" Dia.			7	1240		6X41
**								
*E-160 thru E-162	High Frequency Coil Mounting Insulator	SPACER, Hard Maple, .312" High, .375" O.D., .180" I.D. Impregnated with Light Oil			36			2X399
**								
*E-163 thru E-165	Low Frequency Coil Mounting Insulator	SPACER. Same as E-160, Except .375" High			36			2X420
**								
*E-166 thru E-193	Band Switch Leafs Mounting Insulator	SPACER, Fibre, .062" Thick, .250" O.D., .125" I.D.			45			2X396
**								
*E-194	Phone Jack Mounting Insulator	SHOULDER WASHER, Hard Black Fibre. Shoulder .051" Thick, .875" O.D., Washer .042" Thick, .495" O.D., .380" I.D.			27			2X394
*E-195 and E-196	Panels, E-151 and E-152, Spacer	LOCATING WASHER, L.E. Bakelite, .046" Thick, .468" O.D., .144" I.D. Syncera or Cerese Mineral Wax Finish			45			2X398
*E-197	Phone Jack Mounting Insulator	WASHER, Hard Black Fibre, .032" Thick, .625" O.D., .380" I.D.			27			2X395
**								
*E-198	Ant. Lead-In Connector	TERMINAL STRIP ASSEMBLY, L.E. Bakelite, 3 Screw and Lug Type Terminals, 2.500" x .750" x .093". Movable Connector on Center Lug. Wax Impregnated. All Parts to Withstand 200 Hr. Salt Spray Test			47			4A296
**								
*E-199 thru E-201	H-F Coils Z-104, Z-105 and Z-106, Shield	SHIELD CAN, .019" Copper, 3.000" x 4.000" O.D. Closed End with Four .187" Dia. Vents Equidistant 1.250" from Center. Other End with 3 Full Mtg. Thds., 10 Thds. per Inch, Cadmium Plated			4	W-04431		32X314
**								
*E-202 thru E-204	L-F Coils, Z-101, Z-102 and Z-103, Shield	SHIELD CAN, Same as E-199, Except 5.250" Long and Clear Lacquer Finish			4	W-04429		32X312
**								
*E-205 thru E-210	Cover and Mtg. for Shields, E-199 thru E-204	SHIELD CAN COVER, .018" Copper, .750" x 4.125" O.D. 3 Complete Thds., 10 Thds. per Inch. Clear Lacquer Finish			4	W-04430		32X313
**								
*E-211	Power OFF-ON Control	BAR KNOB AND POINTER, Black Bakelite, 1.250" x .500" x .625" High, with .375" R. at Long Side Centers. Pointer Plate Attached to Bottom. Two 6-32 Tap Mtg. Holes			47			10A487
**								
*E-212	Audio Band Width Control	BAR KNOB, Same as E-211						
**								
*E-213	R-F Gain Control	BAR KNOB, Same as E-211						

TABLE G—PARTS LIST BY SYMBOL DESIGNATION

Symbol Desig.	FUNCTION	DESCRIPTION	Navy Type Number	Navy Specification or Drawing Number	Mfr.	Mfr. Desig.	Special Tolerance Rating or Modification	Contractor's Drawing and Part No.
** *E-214	Regeneration Control	BAR KNOB, Same as E-211						
** *E-215	Output Level Control	BAR KNOB, Same as E-211						
** *E-216	Output Limiter Control	BAR KNOB, Same as E-211						
** *E-217	Ant. Compensator Control	BAR KNOB, Same as E-211						
** *E-218	Ant. Trimmer Control	BAR KNOB, Same as E-211						
** *E-219	Tuning Control	KNOB, Black Bakelite, Fluted Edge, Rounded Front. Overall Dia. 2.375"x.187" Thick. Two 8-32 Tap, Mounting Holes			10			10A485
** *E-220	Band Switch Control	KNOB ASSEMBLY, Same as E-219, Except with Pointer Plate Attached			47			10A491
*E-221	Voltage Changeover Strip for Power Transformer, T-101. Model RBL-4 Only	VOLTAGE CHANGEOVER BOARD, Bakelite, 2.125" x 1.375" x .062" Thick. 4 Terminals; Two Each Connected by .031" Thick Brass Strips. Wax Impregnated. Used With Model RBL-4 Only			47			‡‡4A300
*E-222	Protects Sensitivity Control, R-145, Contacts from Grounding	SHIELD, Fibre, Overall, 3.000" x 2.250" x .010" Thick. One Side 1.500" Long, One End 1.500" Wide			49			11X113
*E-223	Ant. Lead-in Connector	TERMINAL STRIP, Same as E-198, Except Less Movable Connector.			25	3-6		4A295
		FUSES						
*F-101 and F-102	Receiver Protection, One Each Side of AC Line	FUSE, 2 Amps. 250 V., Type 3 AG, 1.187" x .250" Dia. All Parts to Withstand 200 Hr. Salt Spray Test			29	1042		16X87
		HARDWARE						
** *H-101	Phone Jack Mounting	HEX NUT, Brass, .375"-32, .500" across Flats. Dull White Nickel Finish			9			20X520
** *H-102	Osc. Test Switch Mounting	HEX NUT, Same as H-101						
** *H-103	Potentiometer, R-145, Mounting	HEX NUT, Same as H-101						
** *H-105	Manual Gain Control, R-146, Mounting	HEX NUT, Same as H-101						
** *H-106	Output Level Control, R-147, Mounting	HEX NUT, Same as H-101						

TABLE G—PARTS LIST BY SYMBOL DESIGNATION

Symbol Desig.	FUNCTION	DESCRIPTION	Navy Type Number	Navy Specification or Drawing Number	Mfr.	Mfr. Desig.	Special Tolerance Rating or Modification	Contractor's Drawing and Part No.
** *H-107	Regeneration Control, R-148, Mounting	HEX NUT, Same as H-101						
** *H-108	Audio Band Width Control, S-107, Mounting	HEX NUT, Same as H-101						
** *H-109	Same as H-103	LOCKWASHER, Steel, .375", Int. Teeth, Cadmium Plated			42			20X556
** *H-110	Same as H-105	LOCKWASHER, Same as H-109						
** *H-111	Same as H-106	LOCKWASHER, Same as H-109						
** *H-112	Same as H-107	LOCKWASHER, Same as H-109						
** *H-113	Same as H-108	LOCKWASHER, Same as H-109						
** *H-114 and H-115	Detent Mechanism, O-102, to Shaft, O-109, Mtg.	SET SCREW, Allen Hd., Cup Point. Steel, 6-32 x .187" (.062" across Flats of Hex)			41			20X903
** *H-116 and H-117	Detent Mechanism, O-102, to Shaft, O-109, Mtg.	SET SCREW, Same as H-114						
** *H-118 and H-119	Collar, O-120, Mtg.	SET SCREW, Same as H-114						
** *H-120 thru H-127	Bar Knobs Mtg. (Side)	SET SCREW, Same as H-114						
** *H-128 and H-129	Drive Gear, O-105, Mtg.	SET SCREW, Allen Hd., Cup Point. Steel, 8-32 x .250" (.078" across Flats of Hex)			41			20X933
** *H-130 and H-131	Drive Gear, O-106, Mtg.	SET SCREW, Same as H-128						
** *H-132 and H-133	Drive Gear, O-103, Mtg.	SET SCREW, Same as H-128						
** *H-134 thru H-141	Bar Knobs Mtg., at End	SET SCREW, Same as H-114, Except .500" Length			41			20X1002
** *H-142 and H-143	Tuning Knob Mtg.	SET SCREW, Same as H-128, Except .500" Length			41			20X1003
** *H-144 and H-145	Band Switch Knob Mtg.	SET SCREW, Same as H-142						

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Symbol Desig.	FUNCTION	DESCRIPTION	Navy Type Number	Navy Specification or Drawing Number	Mfr.	Mfr. Desig.	Special Tolerance Rating or Modification	Contractor's Drawing and Part No.
** *H-146 and H-147	Ant. Compensator, C-108, Mtg.	MACHINE SCREW, Binding Head, Brass, 6-32 x .312". Dull White Nickel Finish			32			20X545
** *H-148 and H-149	Same as H-146	LOCKWASHER, Steel, Ext. Teeth, #6, Cadmium Plated			42			20X550
** *H-301 thru H-304	Receiver to Cradle Mounting	SPECIAL SCREW, Stainless Steel, Overall Length 1.062". .312" x #12-24 Thd. at End. Remainder Stem .500" x .162" Dia. Head: .250" x .500" Dia., Slotted Knurled Edge			23			20X851
		INDICATING DEVICES						
I-101 and I-102	Dial Illumination	DIAL LAMP, 6.3 V, .15 Amp.			48	Mazda 47		7A103
** *I-103	Frequency Indicator	POINTER, .025" C.R. Steel. Overall Length, 3.125"; Mtg. Section, .280" Dia., with .116" Dia. Mtg. Hole; .078" Width to 1.110" from Mtg. Section. Remainder 90° Twist, Tapering to .046" Width at Tip. Smooth Black Finish			24			15X210
** *I-104	Vernier Dial Indicator	POINTER, .015" C.R. Steel. Overall Length 1.218". Pointer .562" x .062", 90° Twist from Mtg. Section, .625" x .375", with One .098" and One .126" Dia. Mtg. Hole. Smooth Black Finish			24			15X209
		JACKS AND RECEPTACLES						
*J-101	Headphone Connector	TELEPHONE JACK, Single Circuit. All Parts to Withstand 200 Hr. Salt Spray Test			46	IJ-101		3A365
*J-102 and J-103	Fuse Receptacle	FUSE EXTRACTOR POST, Screwdriver Operated Plug Knob. All Parts to Withstand 200 Hr. Salt Spray Test			29	1075		16X84
*J-104	Ant. Connector	CONCENTRIC JACK, Single Male Pin. .812" x .750"-20 Thd., .500" x .875" Dia. Int. Locking Teeth. Includes Mtg. Hex Nut	49120	RA-49F-215	37			3A375
*J-105	Power Supply Connector	SOCKET, 7 Prong, Ceramic. Two Large Prongs. 1.187" Deep. All Parts to Withstand 200 Hr. Salt Spray Test	49201		5	61CP75		3A363
*J-106	AC Power Cord Connector	CORD CONNECTOR, Bakelite, 1.187" x .968" Dia. with Steel Clamp Cord Grip			22	7464 Twist-lock Midget with Cord Grip		3A374

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Symbol Desig.	FUNCTION	DESCRIPTION	Navy Type Number	Navy Specification or Drawing Number	Mfr.	Mfr. Desig.	Special Tolerance Rating or Modification	Contractor's Drawing and Part No.
		INDUCTORS						
L-101	Low Pass Filter, 1st Audio Tube to L-102 Coupling. Capacitor Network Switched In, Sharp Tuning; Out, Broad Tuning	LOW PASS FILTER, Three Coil Windings Connected in Series. 9 Terminals. Inductance of Coils Terminating at Terminals 3-5 and 1-8, 4.7 Henries Each; at 5-8, 7.7 Henries; Measured with 1.5 Volts R.M.S., 1000 Cycles Applied across Each Coil. Includes Sym. Desigs. C-117, C-118, C-123, C-124, C-130, C-131, C-132, C-133, C-145, C-146 and R-113.	53108		33	C1953		52X65
L-102	High Pass Filter, L-101 to Limiter and Audio Output Tubes Coupling	HIGH PASS FILTER, Three Coil Windings Connected in Series. Three Terminals. Inductance of Input-Output Windings 18 Henries, +15% —5%; Intermediate 10.8 Henries ±10%; with 1.5 Volts R.M.S. 1000 Cycles Applied across Each Winding. Includes Sym. Desigs. C-134, C-135, C-136, C-137, C-138 and C-139	53109		33	C1952		52X64
*L-103	Cathode Filter, R-F Stage	FILTER CHOKE, Single Winding, Two Terminals. Inductance to Exceed 17 Henries at an Impressed Potential of 1.5 Volts R.M.S., 1000 Cycles, with No DC Through Winding. Must Withstand Breakdown Test of 2000 Volts R.M.S. 60-500 Cycles from Winding to Core and between Winding Terminals	47252		33	C1958		52X63
L-104	B+ Filter	FILTER CHOKE, Single Winding, Two Terminals. Inductance to Exceed 17 Henries at an Impressed Potential of 3.0 Volts R.M.S., 60 Cycles, with 55 MA DC Through Winding. Must Withstand Breakdown Test of 2000 Volts R.M.S. 60-500 Cycles from Winding to Core and between Winding Terminals	30931		33	C1955		52X62
		NAMEPLATES						
** *N-101	Frequency Reading	TUNING DIAL, Brass, 7.243" x 4.618" x .028". Six Bands, Complete Range 15 to 600 KC. Band A, 15 to 25 KC; Band B, 25 to 45 KC; Band C, 45 to 80 KC; Band D, 80 to 155 KC; Band E, 155 to 310 KC; Band F, 310 to 600 KC. Calibrations and Characters Dull Black, Cream Colored Etched Background			16			58X579
** *N-102	Split Frequency Reading	VERNIER DIAL ASSEMBLY, Brass, 4.000" Dia., with Centered .500" Mtg. Opening. 100 Calibrations to 360°. Dull Black Calibrations and Numerals on Cream Colored Background			16			25A607
** *N-104	Stamping Plate for Date of Naval Acceptance and Installation	NAMEPLATE, Graphic Laminated Bakelite, 3.062" x .625" x .045". Black Background with White Letters. Lettering as Specified Laminated into Material.			34			4X799

TABLE G—PARTS LIST BY SYMBOL DESIGNATION

Symbol Desig.	FUNCTION	DESCRIPTION	Navy Type Number	Navy Specification or Drawing Number	Mfr.	Mfr. Desig.	Special Tolerance Rating or Modification	Contractor's Drawing and Part No.
** *N-105	Radio Receiver Identification	NAME PLATE, Same as N-104, Except for Size, 3.062" x 2.062" x .040", and Printing			34			‡4X798 ‡‡4X827
** *N-106	Complete Unit Identification	NAME PLATE, Same as N-104, Except for Size, 4.062" x 3.312" x .040", and Printing			34			‡4X797 ‡‡4X826
** *N-107	R-F Gain Control Identification	CONTROL PLATE, Zinc, 1.750" Dia., .030" Thick. Center Opening .500" Dia. Calibrated 300° 0 to 10. Lettering to be GAIN. Clear Lacquer Finish			18	17533	Lettered GAIN	4X755
** *N-108	Regeneration Control Identification	CONTROL PLATE, Same as N-107, Except Lettering to be REGEN.			18	17533	Lettered REGEN.	4X776
** *N-109	R-F Trimmer Control Identification	CONTROL PLATE, Same as N-107, Except Calibrations to be 180° 10-0-10 and Lettering to be R-F TRIMMER			18	17532	Lettered R-F TRIMMER	4X778
** *N-110	Ant. Compensator Identification	CONTROL PLATE, Same as N-109, Except Lettering to be ANTENNA COMPENSATOR			18	17532	Lettered ANTENNA COMPEN-SATOR	4X777
** *N-111	Osc. Test Button Identification	OSC. TEST PLATE, Zinc, .875" Dia., .030" Thick. Center Opening .380" Dia., Lettering at Top to be OSC. TEST. Clear Lacquer Finish			18	17531	Lettered OSC. TEST	4X781
** *N-112	Head Phone Jack Indicator	PHONE PLATE, Same as N-111, Except Lettering to be PHONES			18	17531	Lettered PHONES	4X782
** *N-113	Band and Range Indicator	RANGE INDICATOR PLATE, Zinc, 3.000" Dia., .030" Thick. Center Opening .750". Clear Lacquer Finish			18	17536		4X780
** *N-114	Power Switch and Audio Control Identification	CONTROL PLATE, Zinc, 5.125" x 1.843" x .023" Thick. Two .500" Dia. Openings Centered .921" and 2.671" from Bottom. Lettering Below Top Opening, POWER, Above, OFF. on Lower Opening, Above, BROAD SHARP, Below, AUDIO. Clear Lacquer Finish.			20			4X771
** *N-115	Output Level and Limiter Control Identification	CONTROL PLATE, Same as N-114, Except Lettering Below Top Opening, OUTPUT LEVEL, Below Lower Opening, OUTPUT LIMITER			20			4X772
** *N-301	Mounting Base Identification	NAME PLATE, Same as N-104, Except .562" Width and Lettering			34			‡4X800 ‡‡4X828
		MECHANICAL PARTS						
** *O-101 and O-102	Band Switch Setting	DETENT MECHANISM, 6 Positions, .437" x .250" Dia. Shaft. Must Withstand 200 Hr. Salt Spray Test			38			25A555
O-103	Band Change Gear Drive	DRIVE GEAR, Doler Zinc #3, 1.083" O.D. 24 Teeth, 24 Pitch, Pitch Dia. 1.000", 14½° Pressure Angle, Involute Tooth Form. Hub .500" O.D., .251" I.D. with Two 8-32 Tap Holes. Chromate Dip Finish			17			24X525

TABLE G—PARTS LIST BY SYMBOL DESIGNATION

Symbol Desig.	FUNCTION	DESCRIPTION	Navy Type Number	Navy Specification or Drawing Number	Mfr.	Mfr. Desig.	Special Tolerance Rating or Modification	Contractor's Drawing and Part No.
* O-104	Drive Gear and Stop	SPUR GEAR, Doler Zinc #3, 2.083" O.D. 48 Teeth, 24 Pitch, Pitch Dia. 2.000", 14½° Pressure Angle, Involute Tooth Form. Hub .687" O.D., .251" I.D. Chromate Dip Finish			17			24X528
*O-105 and O-106	Band Switch Shaft Drive	SPUR GEAR, Same as O-104, Except Two 8-32 Tap Mtg. Holes In Hub			17			24X524
** *O-107	Band Change Knob Mtg.	BAND CHANGE SHAFT, 18-8 Stainless Steel Bar, 3.000" x .250". Dia., Two Flat Milled Surfaces .312" x .032" Deep, .187" and 2.062" from End			28			26X437
** *O-108 and O-109	Band Switch Drive	ROTARY SWITCH SHAFT, Brass, 9.875" x .250" Dia., Two Opposite Surfaces Flat Milled to .184" Dia. Undercut One End, .173" x .156" Dia., .046" from End			38			26X434
** *O-110	Ant. Compensator Drive Shaft and Knob Mtg.	SHAFT, Brass, 1.687" x .249". Dia., .187" x .012" Deep Undercut .046" from One End. .204" x .012" Deep Undercut .187" from Other End. Dull White Nickel Finish			23	17280		26X422
** *O-111	R-F Trimmer Capacitor Drive Shaft and Knob Mtg.	SHAFT, Same as O-110						
** *O-112	R-F Trimmer Drive Shaft	SHAFT, Brass, 4.062" x .249" Dia., .187" x .012" Deep Undercut .046" from Each End. Dull White Nickel Finish			35			26X424
** *O-113	Ant. Compensator Drive Shaft	SHAFT, Same as O-112 Except 8.812" Length			35			26X423
*O-114	Same as O-113	SHAFT, Fabric Base Bakelite, 1.375" x .249" Dia. .187" x .012" Deep Undercut .046" from Each End. Wax Impregnated Finish			35			26X421
*O-115	Shafts, O-110 and O-113, Connector	SHAFT COUPLING, Two, .4375" O.D., .252" I.D. Brass Hubs Assembled to 1.093" O.D. x .718" I.D. x .008" Spring Brass Ring. Two 8-32 x .187" Allen Hd. Cup Point Set Screws in Each Hub. Dull White Nickel or Cadmium Plated			38	6422-008-21		25A546
*O-116	Shafts, O-113 and O-114, Connector	SHAFT COUPLING, Same as O-115						
*O-117	Shaft, O-114 and Control Shaft of Capacitor, C-108, Connector	SHAFT COUPLING, Same as O-115, Except Connecting Ring to be .016" Phosphor Bronze			38			25A681
*O-118	Shafts, O-111 and O-112, Connector	SHAFT COUPLING, Same as O-117						
*O-119	Shaft, O-112, and Control Shaft of Capacitor, C-104, Connector	SHAFT COUPLING, Brass, .625" x .457" O.D., .251" I.D. Four, 6-32 Tap Mtg. Holes. Dull White Nickel Finish			23	16243		29X354
** *O-120	Shaft, O-107, Coupling	COUPLING COLLAR, Brass, .250" x .500" O.D., .251" I.D., Two 6-32 Tap Mtg. Holes. Dull White Nickel Finish			28			29X376

TABLE G—PARTS LIST BY SYMBOL DESIGNATION

Symbol Desig.	FUNCTION	DESCRIPTION	Navy Type Number	Navy Specification or Drawing Number	Mfr.	Mfr. Desig.	Special Tolerance Rating or Modification	Contractor's Drawing and Part No.
		PLUGS						
*P-101	AC Power Connector	FLUSH MOTOR PLUG, Twist Lock Type, Male Base. Length Under Panel .875". Mtg. Flange, 1.625" O.D. with Two .156" Dia. Mtg. Holes			22	7466		6A266
*P-102	AC Jumper Plug	PLUG WITH CAP, 7 Contact, Female Type, Overall 1.093" x 1.187" O.D. Wired by W-G & Co. as Follows: Terms. 1 to 2 and 3 to 7 with #18 Bare Copper Wire. All Parts to Withstand 200 Hr. Salt Spray Test	49202		5	PF7S		3A369
*P-103	Ant. Connector	CONCENTRIC PLUG, Female Contact, Single Pin, Overall 2.875" x .812" O.D.	49121	RA-49F-216	37			6A267
		RESISTORS						
*R-101	1st R-F Cathode Bias Resistor	RESISTOR, Carbon, 350 Ohms ±10%, 0.5 W., Pigtail Type Terminals	63360		3	Type E Type EB		‡B94351 ‡‡B84351
*R-102	2nd R-F Cathode Bias Resistor	RESISTOR, Same as R-101						
*R-103	1st Audio Cathode Resistor	RESISTOR, Carbon, 500 Ohms ±10%, 0.5 W., Pigtail Type Terminals	63360		3	Type E Type EB		‡B94501 ‡‡B84501
*R-104	1st R-F Screen Limiting Resistor	RESISTOR, Carbon, 10,000 Ohms ±10%, 0.5 W., Pigtail Type Terminals	63360		3	Type E Type EB		‡B94103 ‡‡B84103
*R-105	1st R-F Plate Limiting Resistor	RESISTOR, Same as R-104						
*R-106	2nd R-F Screen Resistor	RESISTOR, Same as R-104						
*R-107	2nd R-F Plate Limiting Resistor	RESISTOR, Same as R-104						
*R-108	Det. Screen Resistor	RESISTOR, Same as R-104						
*R-109	Det. Plate Filter Circuit	RESISTOR, Same as R-104						
*R-110	1st Audio Plate Filter	RESISTOR, Carbon, 20,000 Ohms ±10%, 0.5 W., Pigtail Type Terminals	63360		3	Type E Type EB		‡B94203 ‡‡B84203
*R-111	Output-Limiter Filter	RESISTOR, Same as R-110						
*R-112	Det. Plate Filter Circuit	RESISTOR, Carbon, 25,000 Ohms ±10%, 0.5 W., Pigtail Type Terminals	63360		3	Type E Type EB		‡B94253 ‡‡B84253
*R-113	Low Pass Filter Circuit	RESISTOR, Same as R-112, Part of L-101						
R-114 and R-115	Output Limiter Circuit	RESISTOR, Carbon, 50,000 Ohms ±10%, 0.5 W., Pigtail Type Terminals	63360		3	Type E Type EB		‡B94503 ‡‡B84503

TABLE G—PARTS LIST BY SYMBOL DESIGNATION

Symbol Desig.	FUNCTION	DESCRIPTION	Navy Type Number	Navy Specification or Drawing Number	Mfr.	Mfr. Desig.	Special Tolerance Rating or Modification	Contractor's Drawing and Part No.
*R-116	Det. Plate Hum Filter Circuit	RESISTOR, Carbon, 70,000 Ohms ±10%, 0.5 W., Pigtail Type Terminals	63360		3	Type E Type EB		‡B94703 ‡‡B84703
*R-117	1st Audio Plate	RESISTOR, Carbon, 100,000 Ohms ±10%, 0.5 W., Pigtail Type Terminals	63360		3	Type E Type EB		‡B94104 ‡‡B84104
*R-118	Limiter Plate Resistor	RESISTOR, Same as R-117						
*R-119	Limiter Cathode Resistor	RESISTOR, Same as R-117						
*R-120	Short Ant. Circuit	RESISTOR, Carbon, 250,000 Ohms ±10%, 0.5 W., Pigtail Type Terminals	63360		3	Type E Type EB		‡B94254 ‡‡B84254
*R-121	Limiter Plate Resistor	RESISTOR, Same as R-120						
*R-122	Short Ant. Circuit	RESISTOR, Carbon, 500,000 Ohms ±10%, 0.5 W., Pigtail Type Terminals	63360		3	Type E Type EB		*B94504 ‡‡B84504
*R-123	1st Audio Screen	RESISTOR, Same as R-122						
*R-124	1st Audio Grid	RESISTOR, Same as R-122						
*R-125	Audio Output Grid	RESISTOR, Same as R-122						
*R-126	Grid Resistor, Det. Stage	RESISTOR, Carbon, 2.5 Megohms ±10%, 0.5 W., Pigtail Type Terminals	63360		3	Type E Type EB		‡B94255 ‡‡B84255
*R-127	2nd R-F Grid	RESISTOR, Carbon, 5.0 Megohms ±10%, 0.5 W., Pigtail Type Terminals	63360		3	Type E Type EB		‡B94505 ‡‡B84505
*R-135	Audio Output Cathode	RESISTOR, Carbon, 500 Ohms ±10%, 2 W., Pigtail Type Terminals	63474		3	Type F		D94501
*R-136	Bleeder Resistor	RESISTOR, Carbon, 5000 Ohms ±10%, 2 W., Pigtail Type Terminals	63474		3	Type F		D94502
*R-137	Plate Limiting Resistor	RESISTOR, Carbon, 10,000 Ohms ±10%, 2 W., Pigtail Type Terminals	63474		3	Type F		D94103
*R-138	Regeneration Control Limiting	RESISTOR, Carbon, 100,000 Ohms ±10%, 2 W., Pigtail Type Terminals	63474		3	Type F		D94104
*R-140	Bleeder Resistor	RESISTOR, Carbon, 10,000 Ohms ±10%, 3 W., Pigtail Type Terminals	63289		3			E94103
*R-145	Sensitivity Control	POTENTIOMETER, Wire Wound, Total Resistance 750 Ohms ±10%. Linear Taper. Screw Driver Adjustment. All Parts to Withstand 200 Hr. Salt Spray Test	631284	RE-13A-492	11	25, Wire Wound		43X154
*R-146	Manual Gain Control	RESISTOR, Variable, Wire Wound. Resistance 5000 Ohms ±10%, 4 W., Linear Taper. Knob Shaft .500" x .250" Dia., All Parts to Withstand 200 Hr. Salt Spray Test	631285	RE-13A-492	11	25, Wire Wound		43X155

TABLE G—PARTS LIST BY SYMBOL DESIGNATION

Symbol Desig.	FUNCTION	DESCRIPTION	Navy Type Number	Navy Specification or Drawing Number	Mfr.	Mfr. Desig.	Special Tolerance Rating or Modification	Contractor's Drawing and Part No.
*R-147	Output Level Control	RESISTOR, Variable, Wire Wound. 10,000 Ohms ±10%, Split Winding Element. Resistance, First 50% Clockwise Rotation, 7800 Ohms ±10%, Rating 4 W. Approx. Linear Taper. .500" x .250" Dia. Shaft. All Parts to Withstand 200 Hr. Salt Spray Test	631286	RE-13A-492	11	25, Wire Wound		43X157
*R-148	Regeneration Control	RESISTOR, Variable, Wire Wound, Resistance 25,000 Ohms ±10%, 4 W., Linear Taper. Knob Shaft. .500" .250" Dia. All Parts to Withstand 200 Hr. Salt Spray Test	631287	RE-13A-492	13			43X156
		SWITCHES						
*S-101	AC Power Control	TOGGLE SWITCH, S.P.S.T., One Break Per Circuit. 3 Amps., 125 V. All Parts to Withstand 200 Hr. Salt Spray Test	24146		6	80993	E	2A279
*S-102	DC Power Control	TOGGLE SWITCH, D.P.S.T., 3 Amps., 125 V. All Parts to Withstand 200 Hr. Salt Spray Test	24147		6	81009	AB	2A280
*S-103	Output Audio Limiter Control	TOGGLE SWITCH, S.P.D.T., 3 Amps., 125 V. All Parts to Withstand 200 Hr. Salt Spray Test	24148		6	81021	AE	2A281
** *S-104	AC and DC Power Control	POWER SUPPLY SWITCH ASSEMBLY, Includes S-101 and S-102, Both Simultaneously Thrown by Operation of Rotary Shaft. All Parts to Withstand 200 Hr. Salt Spray Test			6	1570	NP	2A278
** *S-105	Same as S-103	LIMITER SWITCH ASSEMBLY, Includes S-103 Thrown by Operation of Rotary Shaft. All Parts to Withstand 200 Hr. Salt Spray Test			6	81021	VA	2A275
*S-106	Osc. Test	PUSH BUTTON SWITCH, S.P., Make Contact. Contacts Normally Open. All Parts to Withstand 200 Hr. Salt Spray Test	24047		31	B-116291 Special 2001	Steel Parts Cadmium Plated	2A277
*S-107	Audio Band Width Switch	SWITCH, Rotary, Ceramic, Wafer Type. One Section, Two Position, 4 Pole. All Parts to Withstand 200 Hr. Salt Spray Test			38			2A276
*S-108 thru S-121	Band Change Switch	SWITCH, Rotary, S.P., Six Position. Wiping Contacts. Rolled Silver, Spring Brass Contacts			38	22511-H7C		2A274
		TRANSFORMERS						
T-101 (Model RBL-3 Only)	Power Transformer	TRANSFORMER, 9 Terminals, 4 Windings. Exciting Current, .075' Amp., Exciting Power, 3 Watts. Primary: (Terms. 1-4), 115 V. 50-60 Cycles, 600 T. #25 E. Wire, DC Resistance, 9.05 Ohms, S. Shield 1 T. .002' Cop. Secondary #1: (Terms. 7-9), 424 V. Total AC Voltage, .045 Amp., 225 VDC with 5U4G Rectifier Tube, 2,350 T. #35 E. Wire, DC Resistance, 439 Ohms, Center Tapped (Term. 8). Secondary #2: (Terms. 3-6), 6.3 V., 2.2 Amps., 28 T. #16 E Wire, DC Resistance, .075 Ohms. Secondary #3: (Terms. 2-5), 5.0 V., 3 Amps., 35 T. #16 E. Wire, DC Resistance, .101 Ohms. Primary Rated 48 Watts	30930		33	P-1954		‡53X270

TABLE G—PARTS LIST BY SYMBOL DESIGNATION

Symbol Desig.	FUNCTION	DESCRIPTION	Navy Type Number	Navy Specification or Drawing Number	Mfr.	Mfr. Desig.	Special Tolerance Rating or Modification	Contractor's Drawing and Part No.
T-101 (Model RBL-4 Only)	Power Transformer	POWER TRANSFORMER, 11 Terminals, 5 Windings. 2 Primary Windings: Jumper Terminals for 115 V. (Terms. 1-10 and 11-4) or 230 V. (Terms. 10-11), 50-60 Cycle Operation; Each Winding, 115 V. 50-60 Cycle; 525 T. #28 E. Wire; DC Resistance: Primary #1 (Terms. 1-11), 15.9 Ohms; Primary #2 (Terms. 4-10), 17.9 Ohms. St. Shield, One T., .002 Cop. Secondary #1 (7-9), 1960 T. #35 E. Wire, Center Tapped (Term. 8), 404 Volts AC at .045 Amp. (225 Volts DC with Rectifier Tube and 4 mf. Capacitor). DC Resistance, 382 Ohms. Secondary #2 (Terms. 3-6) 6.3 V. at 2.2 Amps.; 31 T., #17 E. Wire; DC Resistance, .107 Ohms. Secondary #3 (Terms. 2-5), 5 V. at 3 Amps.; 25 T., #17 E. Wire; DC Resistance, .094 Ohms. Exciting Current, .090 Amp.; Exciting Power, 4 W. Rating: Primary, 49W.; Secondary, 43 V.A.			33	P-2093		‡‡53X276
*T-102	Audio Output Transformer	TRANSFORMER, 2 Windings, 5 Terminals. Secondary Center Tapped. Source Imp., 36,000 Ohms. Load Imp., 600 Ohms. Turns Ratio, Full Primary to Secondary, 7.2 to 1. Primary: 3,280 T. #36 E. Wire; DC Resistance, 438 Ohms. Shield, 1 Layer #36 E. Wire. Secondary: 414 T. #30 E. Wire; DC Resistance, 18 Ohms. Pri. Imp. at 10 Volts 60 Cycles 28 MA. DC, 5500 Ohms Min.	30392		33	A-1957		51X110
		VACUUM TUBES						
** *V-101	1st R-F Amplifier	VACUUM TUBE, Octal Base, Receiving Type, Metal, R-F Amplifier. Heater 6.3 Volts, 0.30 Amps.	6SK7	RE-13A-600E	26	6SK7		6SK7
** *V-102	2nd R-F Amplifier	VACUUM TUBE, Same as V-101						
** *V-103	Regenerative Det.	VACUUM TUBE, Same as V-101						
** *V-104	First Audio Amplifier	VACUUM TUBE, Octal Base, Receiving Type, Metal, R-F Amplifier Pentode, Heater 6.3 Volts, 0.30 Amps.	6SG7	RE-13A-600E	26	6SG7		6SG7
** *V-105	Audio Limiter	VACUUM TUBE, Octal Base, Receiving Type, Metal, Duo Diode. Heater 6.3 Volts, 0.30 Amps.	6H6	RE-13A-600E	26	6H6		6H6
** *V-106	Power Audio Amplifier	VACUUM TUBE, Octal Base, Receiving Type, Glass, Power Amplifier Pentode. Heater 6.3 Volts, 0.40 Amps.	6K6GT	RE-13A-600E	26	6K6GT		6K6GT
** *V-107	Power Rectifier	VACUUM TUBE, Octal Base, Receiving Type, Glass, Full Wave Rectifier. Heater 5.0 Volts, 0.30 Amps.	5U4G	RE-13A-600E	26	5U4G		5U4G

TABLE G—PARTS LIST BY SYMBOL DESIGNATION

Symbol Desig.	FUNCTION	DESCRIPTION	Navy Type Number	Navy Specification or Drawing Number	Mfr.	Mfr. Desig.	Special Tolerance Rating or Modification	Contractor's Drawing and Part No.
		SOCKETS						
*X-101 thru X-107	Tube Mounting	VACUUM TUBE SOCKET, Receiving Type, Octal, Ceramic. Assembled with Mounting Plate and Retaining Ring. All Parts to Withstand 200 Hr. Salt Spray Test	49373	RE-49A-300B	5			3A364
*X-108	Dial Lamp Sockets and Leads	PILOT LAMP LEAD ASSEMBLY. Miniature Bayonet Type Socket with External Fibre Insulation and Spring Mtg. Clamp. Leads; #22 Stranded, Insulated Wire. 12.750" Black Lead to Center Contact; 12.250" Yellow Lead to Socket Shell. All Parts to Withstand 200 Hr. Salt Spray Test			2	85UL		7A171
*X-109	Same as X-108	PILOT LAMP LEAD ASSEMBLY, Same as X-108, Except Black Lead 6.500", Yellow Lead 12.250"			2	85UL		7A172
		R-F TRANSFORMERS						
Z-101	Ant. to 1st R-F Tube Coupling	1ST R-F COIL, Low Frequency. 3 Windings, Connected in Series, .250" Apart, Wound in Same Direction. Winding #1, (Black to Red) 1,565 T., Winding #2 (Red to Yellow) 915 T., Winding #3 (Yellow to Blue), 782 T., 10-41 D. S. E. Litz Wire on 4.750" x 1.250" O.D., 1.000" I.D. Bakelite Form. Inductance Measured at Terminals Black and Blue, Shorting Black and Yellow, 25.33 MH. Shorting Black and Red, 81.27 MH, No Lugs Shorted, 256.7 MH. All Measurements at 1000 Cycles. DC Resistance Measured at Black and Red, 110.0 Ohms; Red and Yellow, 62.0 Ohms; Yellow and Blue, 50.0 Ohms. Resistance Tolerance ±10%. Wax Coating	47250		44			9A1672
Z-102	1st R-F to 2nd R-F Tube Coupling	2ND R-F COIL, Low Frequency, 3 Windings, Connected in Series, .250" Apart, Wound in Same Direction. Winding #1 (Black to Red 1515 T., Tapped at 425 T. (Brown); Winding #2 (Red to Yellow) 900 T., Tapped at 250 T. (Orange); Winding #3 (Yellow to Blue) 777 T., Tapped at 160 T. (Green), 10-41 D. S. E. Litz Wire, on 4.750" x 1.250" O. D., 1.000" I.D. Bakelite Form. Inductance Measured at Terminals Black and Blue, Shorting Black and Yellow, 25.08 MH; Shorting Black and Red, 79.3 MH; No Lugs Shorted, 245.3 MH. All Measurements at 1000 Cycles, DC Resistance Measured at Black and Red, 110.0 Ohms; Red and Yellow, 62.0 Ohms; Yellow and Blue, 50.0 Ohms; Black and Brown, 23.0 Ohms; Red and Orange, 13.0 Ohms; Yellow and Green, 8.0 Ohms. DC Resistance Tolerance ±10%. Wax Coating	47251		44			9A1674

TABLE G—PARTS LIST BY SYMBOL DESIGNATION

Symbol Desig.	FUNCTION	DESCRIPTION	Navy Type Number	Navy Specification or Drawing Number	Mfr.	Mfr. Desig.	Special Tolerance Rating or Modification	Contractor's Drawing and Part No.
Z-103	2nd R-F Tube to Det. Tube Coupling	DETECTOR COIL, Low Frequency. 5 Windings, Connected In Series, Wound in Same Direction. Windings #1 (Red-Blue to Slate) 120 T., Winding #5 (Red-Blue to Red-Black) 35 T., Tapped at 17 T. (Red-Yellow), #30 S. S. E. Wire. Winding #2 (Black to Red) 1355 T., Tapped at 525 T. (Brown), Winding #3 (Red to Yellow) 847 T., Tapped at 325 T. (Orange), Winding #4 (Yellow to Blue) 756 T., Tapped at 200 T. (Green) 10-41 D. S. E. Litz Wire. Inductance Measured at Terminals Black and Blue, Shorting Black and Yellow, 24.0 MH, Shorting Black and Red, 72.37 MH, No Lugs Shorted, 204.2 MH. Measured at Slate and Red-Blue, Shorting White and Red-Yellow, 0.182 MH, Shorting White and Red-Black, 0.591 MH, No Lugs Shorted .773 MH. All Measurements at 1000 Cycles, DC Resistance, Measured at Black and Brown, 27.0 Ohms, Black and Red, 102.0 Ohms, Red and Orange, 18.0 Ohms, Red and Yellow, 60.0 Ohms, Yellow and Green, 11.0 Ohms, Yellow and Blue, 50.0 Ohms, Slate and Red-Blue, 5.0 Ohms, Red-Black and Red-Blue, 1.4 Ohms, Red-Yellow and Red-Blue, 0.7 Ohms, DC Resistance Tolerance ±10%. Wax Coating.	47249		44			9A1676
Z-104	Same as Z-101	1ST R-F COIL, High Frequency. 4 Windings, Connected in Series, .125" Apart. Wound in Same Direction. Windings #1 and #2 (Black to Red), Each 174 T., Winding #3 (Red to Yellow), 187 T., Winding #4 (Yellow to Blue), 118 T., 10-41 D.S.E. Litz Wire, on 2.625" x 1.000" O.D., .750" I.D. Bakelite Coil Form. Inductance, Measured at Black and Blue, Shorting Black and Yellow, .550 MH, Shorting Black and Red, 2.36 MH, No Lugs Shorted, 8.58 MH. All Measurements at 1000 Cycles. DC Resistance, Measured at Black and Red, 17.0 Ohms, Red and Yellow, 8.0 Ohms, Yellow and Blue, 6.0 Ohms. DC Resistance Tolerance ±10%. Wax Coating	47247		44			9A1666
Z-105	Same as Z-102	2ND R-F COIL, High Frequency. 4 Windings, Connected in Series, .125" Apart, Wound in Same Direction. Windings #1 and #2, (Black to Red), Each 177 T., Winding #3 (Red to Yellow), 165 T., Winding #4 (Yellow to Blue), 119 T., Tapped at 50 T. (Green), 10-41 D.S.E. Litz Wire, on 2.625" x 1.000" O.D., .750" I.D. Bakelite Coil Form. Inductance, Measured at Black and Blue, Shorting Black and Yellow, .548 MH, Shorting Black and Red, 2.32 MH, No Lugs Shorted, 8.57 MH. All Measurements at 1000 Cycles. DC Resistance, Measured at Terminals Black and Red, 17.0 Ohms, Red and Yellow, 8.0 Ohms, Yellow and Blue, 6.0 Ohms, Green and Yellow, 2.2 Ohms. DC Resistance, Tolerance ±10%. Wax Coating	47248		44			9A1668

TABLE G—PARTS LIST BY SYMBOL DESIGNATION

Symbol Desig.	FUNCTION	DESCRIPTION	Navy Type Number	Navy Specification or Drawing Number	Mfr.	Mfr. Desig.	Special Tolerance Rating or Modification	Contractor's Drawing and Part No.
Z-106	Same as Z-103	DETECTOR COIL, High Frequency. 5 Windings, Connected in Series, .125" Apart, Wound in Same Direction. Windings #1 and #2 (Black to Red), Each 171 T., Winding #1, Tapped at 54 T. (Brown), Winding #3 (Red to Yellow), 166 T., Tapped at 54 T. (Orange), Winding #4 (Yellow to Blue), 119 T., Tapped at 54 T. (Green), 10-41 D.S.E. Litz Wire. Winding #5 (Red-Blue to Slate), 20 T., Tapped at 10 T. (Red-Yellow) and 15 T. (Red-Black), #30 S.S.E. Wire, All Windings on 2.625" x 1.000" O.D., .750" I.D. Bakelite Coil Form. Inductance, Measured at Black and Blue, Shorting Black and Yellow, .543 MH, Shorting Black and Red, 2.28 MH, No Lugs Shorted, 8.24 MH, Measured at Slate and Red-Blue, Shorting Slate and Red-Yellow, 0.0060 MH, Shorting Slate and Red-Black, 0.0120 MH, No Lugs Shorted, 0.0194 MH. All Measurements at 1000 Cycles, Tolerance ±0.5%. DC Resistance, Measured at Black and Red, 17.0 Ohms, Red and Yellow, 8.0 Ohms, Yellow and Blue, 6.0 Ohms, Black and Brown, 2.0 Ohms, Red and Orange, 2.0 Ohms, Yellow and Green, 2.0 Ohms, Slate and Red-Blue, 0.7 Ohms, Red-Black and Red-Blue, 0.53 Ohms, Red-Yellow and Red-Blue, 0.35 Ohms. DC Resistance Tolerance ±10%. Wax Coating	47246		44			9A1670
		MISCELLANEOUS						
* **	Replacement Contacts for Tube Sockets	CONTACT, LUG, Phosphor Bronze. Overall Length, .750" Silver Plated to Withstand 200 Hr. Salt Spray Test			5	9-17F		30X378
*	Maintenance Tool	WRENCH, Allen Type. Steel. 1.750" x .562" x .062" Across Flats, to Fit Allen Hd. Set Screw #6. Cadmium Plated			41			67X8
*	Maintenance Tool	WRENCH, Allen Type. Steel. 2.125" x .750" x .078" across Flats, to Fit Allen Hd. Set Screw #8. Cadmium Plated			41			67X9
*	Maintenance Tool	WRENCH, Coil Can, .250" Dia. C.R. Steel. U-Shaped. 2.500" Spread U Ends. Length 2.062" with .652" x .156" Dia. Ends			15			67X6
** *	Equipment Spare Parts Packing Container. Also Stock Spare Parts	SPARE PARTS BOX, .062" C.R. Steel. Overall Size of Box, 18.374" x .9374" x 6.124" High. Hinged Top Lid and Metal Hasp Lid Retainer. One Handle Each End. Gray Enamel Finish		42B9 (Int)	50			‡34X402
** *	Equipment Spare Parts Packing Container	SPARE PARTS BOX, .062" C.R. Steel. Overall Size of Box, 18.124" x 12.374" x 9.124" High. Hinged Top Lid and Metal Hasp Lid Retainer. One Handle Each End. Gray Enamel Finish		42B9 (Int)	50			‡‡34X433
**	Equipment Spare Parts Listing Covering. Also Used in Stock Spares Container	WINDOW. Cellulose Acetate, Water Clear, 6.000" x 4.625" x .031" Thick			8			‡17X81
** *	Equipment Spare Parts Listing Covering	WINDOW. Cellulose Acetate, Water Clear, 10.625" x 8.125" x .031" Thick			8			‡‡17X84

TABLE H—EQUIPMENT SPARE PARTS BY NAVY TYPE NUMBER FOR RBL-3

Box No.	Qty.	Navy Type Number	All Symbol Desigs. Involved	DESCRIPTION	Navy Drawing or Specification	Mfr.	Mfr. Desig.	Special Tolerance or Modification	Contractor's Drawing and Part Number
				STRUCTURAL PARTS					
1	1		A-108	BRACKET, .078" C.R. Steel. 2.265" x 1.500" Width at Base, .625" Top Width, 2 Openings, .500" Dia., Centered 1.140" and 1.890" from Base. Base Flange. .515". 2 Extruding 6-32 Tap Mtg. Holes in Base, Each .500" from Center. Cadmium Plated		39			25X1191
				CAPACITORS (Class 48)					
1	1	481073	C-147, C-148	CAPACITOR, Tubular. 0.1 mf. ±10%, 400 VDC Working, 1.687" x .703" Dia. Metal Case, Covered with Impregnated Kraft Tubing. 2.375" Leads	RE-13A-488	19	7653		46X364
1	2	481080	C-167, C-168, C-169	CAPACITOR, Paper, Oil Filled. 4.0 mf. ±10%, 600 VDC Working		19	7670		48X249
1	4	481549	C-149 thru C-156	CAPACITOR, Paper, Oil Filled. .05 mf. ±10%, 600 VDC Working	RE-13A-488	19	7667		48X250
1	4	481550	C-159 thru C-166	CAPACITOR, Paper, Oil Filled. 1.0 mf. ±10%, 600 VDC Working	RE-13A-488	19	7668		48X251
1	1	481554	C-104	CAPACITOR, Variable Compensator. Range, 6 to 37 mmf., Knob Adjustment Shaft		38	757-AT		17A216
1	1	481555	C-108	CAPACITOR, Variable Compensator. Range 8 to 95 mmf., Breakdown Test of 1000 Volts R.M.S. 60-600 Cycles. Knob Adjustment Shaft		47			17A215
1	1	481556	C-102, C-103	CAPACITOR, Air Trimmer. Range, 5 to 55 mmf., 500 VDC Working, Screw Driver Adjustment		38	747-AT		17A212
1	2	481557	C-105, C-106, C-107	CAPACITOR, Air Trimmer. Range, 6 to 75 mmf., 500 VDC Working, Screw Driver Adjustment		38	749-AT		17A213
1	1	481558	C-109, C-110	CAPACITOR, Air Trimmer. Range, 8 to 100 mmf., 500 VDC Working, Screw Driver Adjustment		38	748-AT		17A214
1	1		C-143, C-144	CAPACITOR, Tubular, .01 mf. ±10%, 400 VDC Working, .937" x .437" Dia. Metal Case, Covered with Transparent Vinylite Tubing. 2.000" Leads	RE-13A-488	19	7707		46X366
1	1		C-145, C-146	CAPACITOR, Same as C-143, Except .013 mf.	RE-13A-488	19	7708		46X365
1	1		C-157, C-158	CAPACITOR, Paper, Oil Filled. 0.8 mf. ±10%, 600 VDC Working	RE-13A-488	19	7669		48X252

TABLE H—EQUIPMENT SPARE PARTS BY NAVY TYPE NUMBER FOR RBL-3

Box No.	Qty.	Navy Type Number	All Symbol Desigs. Involved	DESCRIPTION	Navy Drawing or Specification	Mfr.	Mfr. Desig.	Special Tolerance or Modification	Contractor's Drawing and Part Number
				MISCELLANEOUS ELECTRICAL					
1	2		E-101, E-102, E-103	TERMINAL BOARD ASSEMBLY, Bakelite. Two Terminals. .750" x .375" x .062". Right Lug Mtg. Extension. Wax Impregnated		12	6464 W1		4A277
1	2		E-104, E-105, E-106, E-107	TERMINAL BOARD ASSEMBLY, Same as E-101, Except Left Lug Mtg. Extension		12	6465 W1		4A278
1	2		E-108, E-109, E-110	TERMINAL BOARD ASSEMBLY. Bakelite. Three Terminals. 1.125" x .375" x .062". Center Lug Mtg. Extension. Wax Impregnated		12	6468 W1		4A276
1	2		E-111, E-112	TERMINAL BOARD ASSEMBLY, Same as E-108, Except Right Lug Mtg. Extension		12	6466 W1		4A281
1	2		E-114, E-115, E-116, E-117	TERMINAL BOARD ASSEMBLY, Same as E-108, Except Left Lug Mtg. Extension		12	6469 W1		4A282
1	2		E-151, E-152	INSULATING PANEL, L.E. Bakelite, 1.500" x .750" x .062". Two .149" Dia. Holes with Cutout at Side of Each Hole. Syncera or Cerese Mineral Wax Finish		47			1X236
1	2		E-195, E-196	LOCATING WASHER, L.E. Bakelite, .046" Thick, .468" O.D., .144" I.D.; Syncera or Cerese Mineral Wax Finish		45			2X398
				FUSES					
1	2		F-101, F-102	FUSE, 2 Amps., 250 V., Type 3 AG, 1.187" x .250" Dia.		29	1042		16X87
				HARDWARE					
1	2		H-146, H-147	MACHINE SCREW, Binding Head, Brass, 6-32 x .312". Dull White Nickel Finish		32			20X545
1	2		H-148, H-149	LOCKWASHER, Steel, Ext. Teeth, #6, Cadmium Plated		42			20X550
				INDICATING DEVICES					
1	2		I-101, I-102	DIAL LAMP, 6.3 V., .15 Amp.		48	Mazda #47		7A103
				INDUCTORS					
1	1	47252	L-103	FILTER CHOKE, Single Winding, Two Terminals. Inductance to Exceed 17 Henries, at an Impressed Potential of 1.5 Volts R.M.S. 1000 Cycles, with no DC Through Winding. Must Withstand Breakdown Test of 2000 Volts R.M.S., 60-500 Cycles from Windings to Core and Between Winding Terminals		35	C-1958		52X63

TABLE H—EQUIPMENT SPARE PARTS BY NAVY TYPE NUMBER FOR RBL-3

Box No.	Qty.	Navy Type Number	All Symbol Desigs. Involved	DESCRIPTION	Navy Drawing or Specification	Mfr.	Mfr. Desig.	Special Tolerance or Modification	Contractor's Drawing and Part Number
				RESISTORS (Class 63)					
1	1	63289	R-140	RESISTOR, Carbon, 10,000 Ohms ±10%, 3 W., Pigtail Type Terminals		3			E94103
1	1	63360	R-101, R-102	RESISTOR, Carbon, 350 Ohms ±10%, 0.5 W. Pigtail Type Terminals		3	Type E		B94351
1	1	63360	R-103	RESISTOR, Carbon, 500 Ohms ±10%, 0.5 W., Pigtail Type Terminals		3	Type E		B94501
1	3	63360	R-104 thru R-109	RESISTOR, Carbon, 10,000 Ohms ±10%, 0.5 W., Pigtail Type Terminals		3	Type E		B94103
1	1	63360	R-110, R-111	RESISTOR, Carbon, 20,000 Ohms ±10%, 0.5 W., Pigtail Type Terminals		3	Type E		B94203
1	1	63360	R-112, R-113	RESISTOR, Carbon, 25,000 Ohms ±10%, 0.5 W., Pigtail Type Terminals		3	Type E		B94253
1	1	63360	R-114, R-115	RESISTOR, Carbon, 50,000 Ohms ±10%, 0.5 W., Pigtail Type Terminals		3	Type E		B94503
1	1	63360	R-116	RESISTOR, Carbon, 70,000 Ohms ±10%, 0.5 W., Pigtail Type Termin		3	Type E		B94703
1	2	63360	R-117, R-118, R-119	RESISTOR, Carbon, 100,000 Ohms ±10%, 0.5 W., Pigtail Type Terminals		3	Type E		B94104
1	1	63360	R-120, R-121	RESISTOR, Carbon, 250,000 Ohms ±10%, 0.5 W., Pigtail Type Terminals		3	Type E		B94254
1	2	63360	R-122 thru R-125	RESISTOR, Carbon, 500,000 Ohms ±10%, 0.5 W., Pigtail Type Terminals		3	Type E		B94504
1	1	63360	R-126	RESISTOR, Carbon, 2.5 Megohms ±10%, 0.5 W., Pigtail Type Terminals		3	Type E		B94255
1	1	63360	R-127	RESISTOR, Carbon, 5.0 Megohms ±10%, 0.5 W., Pigtail Type Terminals		3	Type E		B94505
1	1	63474	R-135	RESISTOR, Carbon, 500 Ohms ±10%, 2 W., Pigtail Type Terminals		3	Type F		D94501
1	1	63474	R-136	RESISTOR, Carbon, 5,000 Ohms ±10%, 2 W., Pigtail Type Terminals		3	Type F		D94502
1	1	63474	R-137	RESISTOR, Carbon, 10,000 Ohms ±10%, 2 W., Pigtail Type Terminals		3	Type F		D94103
1	1	63474	R-138	RESISTOR, Carbon, 100,000 Ohms ±10%, 2 W., Pigtail Type Terminals		3	Type F		D94104
1	1	631284	R-145	POTENTIOMETER, Wire Wound. Total Resistance, 750 Ohms ±10%. Linear Taper. Screw Driver Operation	RE-13A-492	11	25, Wire Wound		43X154

TABLE H—EQUIPMENT SPARE PARTS BY NAVY TYPE NUMBER FOR RBL-3

Box No.	Qty.	Navy Type Number	All Symbol Desigs. Involved	DESCRIPTION	Navy Drawing or Specification	Mfr.	Mfs. Desig.	Special Tolerance or Modification	Contractor's Drawing and Part Number
1	1	631285	R-146	RESISTOR, Variable, Wire Wound. Resistance 5,000 Ohms ±10%, 4 W., Linear Taper. .500" x .250" Dia. Knob Shaft	RE-13A-492	11	25, Wire Wound		43X155
1	1	631286	R-147	RESISTOR, Variable, Wire Wound. 10,000 Ohms ±10%, Split Winding Element. Resistance First 50% Clockwise Rotation 7,800 Ohms ±10%, Rating 4 W. Approx., Linear Taper. .500" x .250" Dia. Knob Shaft	RE-13A-492	11	25, Wire Wound		43X157
1	1	631287	R-148	RESISTOR, Variable, Wire Wound, Resistance 25,000 Ohms ±10%, 4 W., Linear Taper. .500" x .250" Dia. Knob Shaft	RE-13A-492	13			43X156
				SWITCHES (Class 24)					
1	1	24146	S-101	TOGGLE SWITCH, S.P.S.T. One Break Per Circuit. 3 Amps., 125 V.		6	80993	E	2A279
1	1	24147	S-102	TOGGLE SWITCH, D.P.S.T. 3 Amps., 125 V.		6	81009	AB	2A280
1	1	24148	S-103	TOGGLE SWITCH, S.P.D.T. 3 Amps., 125 V.		6	81021	AE	2A281
				TRANSFORMERS (Class 30)					
1	1	30392	T-102	TRANSFORMER, 2 Windings, 5 Terminals, Secondary Center Tapped. Source Imp. 36,000 Ohms. Load Imp. 600 Ohms. Turns Ratio Full Primary to Secondary 7.2 to 1. Primary; 3280 T. #36 E. Wire, DC Resistance 438 Ohms. Shield, 1 Layer #36 E. Wire. Secondary: 414 T. #30 E. Wire; DC Resistance, 18 Ohms. Pri. Imp. at 10 Volts 60 Cycles 28 MA. DC, 5500 Ohms Min.		33	A-1957		51X110
				VACUUM TUBES					
1	3	6SK7	V-101, V-102, V-103	VACUUM TUBE, Receiving Type, Metal. R-F Amplifier. Heater, 6.3 Volts, 0.30 Amps.	RE-13A-600E	26	6SK7		6SK7
1	1	6SG7	V-104	VACUUM TUBE, Receiving Type, Metal. R-F Amplifier Pentode. Heater, 6.3 Volts, 0.30 Amps.	RE-13A-600E	26	6SG7		6SG7
1	1	6H6	V-105	VACUUM TUBE, Receiving Type, Metal. Duo Diode. Heater, 6.3 Volts, 0.30 Amps.	RE-13A-600E	26	6H6		6H6
1	1	6K6GT	V-106	VACUUM TUBE, Receiving Type, Glass. Power Amplifier Pentode. Heater, 6.3 Volts, 0.40 Amps.	RE-13A-600E	26	6K6GT		6K6GT
1	1	5U4G	V-107	VACUUM TUBE, Receiving Type, Glass. Full Wave Rectifier. Heater, 5.0 Volts, 3.0 Amps.	RE-13A-600E	26	5U4G		5U4G
				SOCKETS (Class 49)					
1	2	49373	X-101 thru X-107	VACUUM TUBE SOCKET, Receiving Type, Octal, Ceramic. Assembled with Mounting Plate and Retaining Ring	RE-49A-300B	5			3A364

TABLE H—EQUIPMENT SPARE PARTS BY NAVY TYPE NUMBER FOR RBL-3

Box No.	Qty.	Navy Type Number	All Symbol Desigs. Involved	DESCRIPTION	Navy Drawing or Specification	Mfr.	Mfr. Desig.	Special Tolerance or Modification	Contractor's Drawing and Part Number
				MISCELLANEOUS					
1	28			SOCKET CONTACTS		5			30X378
1	1			COIL CAN WRENCH		15			67X6
1	1			ALLEN WRENCH FOR #6 SCREW		41			67X8
1	1			ALLEN WRENCH FOR #8 SCREW		41			67X9
1	1			SPARE PARTS BOX	42B9 (Int.)	50			34X402
1	1			WINDOW		8			17X81

TABLE I—EQUIPMENT SPARE PARTS BY NAVY TYPE NUMBER FOR NAVY MODEL RBL-4

Qty.	Navy Type Number	All Symbol Desigs. Involved	DESCRIPTION	Navy Drawing or Specification	Mfr.	Mfr. Desig.	Special Tolerance or Modification	Contractor's Drawing and Part Number
			STRUCTURAL PARTS					
1		A-129	TUBE CLAMP		12	8527		30X424
1		A-301 thru A-304	LORD MOUNT		30	200PH-20		8X145
			CAPACITORS (Class 48)					
1	48676	C-117, C-118	CAPACITOR, Molded Mica. 350 mmf. ±10%, 500 VDC Working		40	K-1335		47X336
1	48691	C-119, C-120	CAPACITOR, Molded Mica. 500 mmf. ±10%, 500 VDC Working		40	K-1350		47X335
1	48843	C-114, C-115	CAPACITOR, Molded Mica. 100 mmf. ±10%, 500 VDC Working		40	K-1310		47X359
1	48847	C-136, C-137	CAPACITOR, Molded Mica. 6000 mmf. ±10%, 300 VDC Working		40	C-1260		47X345
1	48854	C-116	CAPACITOR, Molded Mica. 300 mmf. ±10%, 500 VDC Working		40	K-1330		47X334
1	48929	C-130, C-131	CAPACITOR, Molded Mica. 4000 mmf. ±10%, 300 VDC Working		40	C-1240		47X342
1	48983	C-125 thru C-128	CAPACITOR, Molded Mica. 1000 mmf. ±10%, 500 VDC Working		40	C-1210		47X340
1	481037	C-132 thru C-135	CAPACITOR, Molded Mica. 5000 mmf. ±10%, 300 VDC Working		40	C-1250		47X343
1	481065	C-113	CAPACITOR, Molded Mica. 60 mmf. ±5%, 500 VDC Working		40	K-1460		47X337
1	481073	C-147, C-148	CAPACITOR, Tubular, 0.1 mf. ±10%, 400 VDC Working with Impregnated Kraft Tubing	RE-13A-488	19	7653		46X364
2	481080	C-167 thru C-169	CAPACITOR, Paper, Oil Filled. 4.0 mf. ±10%, 600 VDC Working	RE-13A-488	19 or 52	7670 or A-1004		48X249
1	481089	C-129	CAPACITOR, Molded Mica. 2500 mmf. ±10%, 500 VDC Working		40	C-1225		47X347
2	481098	C-122 thru C-124	CAPACITOR, Molded Mica. 900 mmf. ±10%, 500 VDC Working		40	C-1390		47X344
1	481279	C-112	CAPACITOR, Molded Mica, 50 mmf. ±10%, 500 VDC Working		40	K-1450		47X331
1	481428	C-121	CAPACITOR, Molded Mica. 800 mmf. ±10%, 500 VDC Working		40	C-1380		47X339

TABLE I—EQUIPMENT SPARE PARTS BY NAVY TYPE NUMBER FOR NAVY MODEL RBL-4

Qty.	Navy Type Number	All Symbol Desigs. Involved	DESCRIPTION	Navy Drawing or Specification	Mfr.	Mfr. Desig.	Special Tolerance or Modification	Contractor's Drawing and Part Number
			CAPACITORS (Class 48—Continued)					
4	481549	C-149 thru C-156	CAPACITOR, Paper, Oil Filled. 0.5 mf. ±10%, 600 VDC Working	RE-13A-488	19	7667		48X250
4	481550	C-159 thru C-166	CAPACITOR, Paper, Oil Filled. 1.0 mf. ±10%, 600 VDC Working	RE-13A-488	19	7668		48X251
1	481559	C-111	CAPACITOR, Molded Mica. 45 mmf. ±5%, 500 VDC Working		40	K-1445		47X358 [a]
1	481560	C-138, C-139	CAPACITOR, Molded Mica. 8000 mmf. ±10%, 300 VDC Working		40	C-06280		47X346
1		C-143, C-144	CAPACITOR, Tubular. .01 mf. ±10%, 400 VDC Working with Transparent Vinylite Tubing	RE-13A-488	19	7707		46X366
1		C-145, C-146	Same as C-143, Except .013 mf.	RE-13A-488	19	7708		46X365
1		C-157, C-158	CAPACITOR, Paper, Oil Filled. 0.8 mf. ±10%, 600 VDC Working	RE-13A-488	19	7669		48X252
			MISCELLANEOUS ELECTRICAL PARTS					
2		E-101 thru E-103	TERMINAL BOARD ASSEMBLY, Bakelite, Two Terminals. Right Lug Mtg. Extension		12	6464W1		4A277
2		E-104 thru E-107	Same as E-101, Except Left Lug Mtg. Extension		12	6465W1		4A278
2		E-108 thru E-110	TERMINAL BOARD ASSEMBLY, Bakelite, Three Terminals. Center Lug Mtg. Extension		12	6468W1		4A276
1		E-111, E-112	Same as E-108, Except Right Lug Mtg. Extension		12			4A281
2		E-114 thru E-117	Same as E-108, Except Left Lug Mtg. Extension		12			4A282
1		E-146	TERMINAL PANEL, Bakelite. Two Screw and Lug Type Terminals		12	1720	Marked Output	4A273
2		E-147 thru E-150	INSULATING PANEL, L. E. Bakelite		47			1X239
1		E-151, E-152	INSULATING PANEL, L. E. Bakelite		47			1X236
3		E-153 thru E-158	INSULATING PANEL, L. E. Bakelite		47			1X240
1		E-159	GROMMET, Rubber		7	1240		6X41
1		E-194	SHOULDER WASHER, Hard Black Fibre		27			2X394

TABLE I—EQUIPMENT SPARE PARTS BY NAVY TYPE NUMBER FOR NAVY MODEL RBL-4

Qty.	Navy Type Number	All Symbol Desigs. Involved	DESCRIPTION	Navy Drawing or Specification	Mfr.	Mfr. Desig.	Special Tolerance or Modification	Contractor's Drawing and Part Number
			MISCELLANEOUS ELECTRICAL PARTS—(Continued)					
1		E-195, E-196	LOCATING WASHER, L. E. Bakelite		45			2X398
1		E-197	WASHER, Hard Black Fibre		27			2X395
1		E-221	VOLTAGE CHANGEOVER BOARD, Bakelite		47			4A300
1		E-222	SHIELD, Fibre		49			11X113 [a]
1		E-223	TERMINAL STRIP ASSEMBLY, L. E. Bakelite, 3 Screws and Lug Type Terminals, 2.500 x .750" x .093". Wax Impregnated.		25	3-6		4A295
			FUSES					
20		F-101, F-102	FUSE, 2 Amps., 250 V., Type 3 AG		29	1042		16X87
			INDICATING DEVICES					
4		I-101, I-102	DIAL LAMP, 6.3 V., .15 Amp.		48	Mazda 47		7A103
			JACKS AND RECEPTACLES					
1	49120	J-104	CONCENTRIC JACK	RA-49F-215	37			3A375
1	49201	J-105	SOCKET, 7 Prong		5	61CP75		3A363
1		J-101	TELEPHONE JACK, Single Circuit		46	1J-101		3A365
1		J-102, J-103	FUSE EXTRACTOR POST, Screwdriver Operated Plug Knob		29	1075		16X84
1		J-106	CORD CONNECTOR, Bakelite		22	7464 Twist-lock Midget with Cord Grip		3A374
			INDUCTORS					
1	30931	L-104	FILTER CHOKE, B+ Filter		33	C1955		52X62
1	47252	L-103	FILTER CHOKE, R-F Cathode Filter		33	C1958		52X63
1	53108	L-101	LOW PASS FILTER		33	C1953		52X65
1	53109	L-102	HIGH PASS FILTER		33	C1952		52X64

TABLE I—EQUIPMENT SPARE PARTS BY NAVY TYPE NUMBER FOR NAVY MODEL RBL-4

Qty.	Navy Type Number	All Symbol Desigs. Involved	DESCRIPTION	Navy Drawing or Specification	Mfr.	Mfr. Desig.	Special Tolerance or Modification	Contractor's Drawing and Part Number
			MECHANICAL PARTS					
1		O-114	SHAFT, Fabric Base Bakelite		35			26X421
			PLUGS					
1	49121	P-103	CONCENTRIC PLUG	RA-49F-216	37			6A267
1	49202	P-102	PLUG WITH CAP, 7 Contact Female Type		5	PF7S		3A369
1		P-101	FLUSH MOTOR PLUG		22	7466		6A266
			RESISTORS					
1	63289	R-140	RESISTOR, Carbon, 10,000 Ohms ±10%, 3 W.		3			E94103
2	63360	R-101, R-102	RESISTOR, Carbon, 350 Ohms ±10%, 0.5 W.		3	Type EB		B84351
1	63360	R-103	RESISTOR, Carbon, 500 Ohms ±10%, 0.5 W.		3	Type EB		B84501
6	63360	R-104 thru R-109	RESISTOR, Carbon, 10,000 Ohms ±10%, 0.5 W.		3	Type EB		B84103
2	63360	R-110, R-111	RESISTOR, Carbon, 20,000 Ohms ±10%, 0.5 W.		3	Type EB		B84203
2	63360	R-112, R-113	RESISTOR, Carbon, 25,000 Ohms ±10%, 0.5 W.		3	Type EB		B84253
2	63360	R-114, R-115	RESISTOR, Carbon, 50,000 Ohms ±10%, 0.5 W.		3	Type EB		B84503
1	63360	R-116	RESISTOR, Carbon, 70,000 Ohms ±10%, 0.5 W.		3	Type EB		B84703
3	63360	R-117 thru R-119	RESISTOR, Carbon, 100,000 Ohms ±10%, 0.5 W.		3	Type EB		B84104
2	63360	R-120, R-121	RESISTOR, Carbon, 250,000 Ohms ±10%, 0.5 W.		3	Type EB		B84254
4	63360	R-122 thru R-125	RESISTOR, Carbon, 500,000 Ohms ±10%, 0.5 W.		3	Type EB		B84504
1	63360	R-126	RESISTOR, Carbon, 2.5 Megohm ±10%, 0.5 W.		3	Type EB		B84255
1	63360	R-127	RESISTOR, Carbon, 5.0 Megohm ±10%, 0.5 W.		3	Type EB		B84505
1	63474	R-135	RESISTOR, Carbon, 500 Ohms ±10%, 2 W.		3	Type F		D94501
1	63474	R-136	RESISTOR, Carbon, 5000 Ohms ±10%, 2W.		3	Type F		D94502
1	63474	R-137	RESISTOR, Carbon, 10,000 Ohms ±10%, 2 W.		3	Type F		D94103
1	63474	R-138	RESISTOR, Carbon, 100,000 Ohms ±10%, 2 W.		3	Type F		D94104
1	631284	R-145	POTENTIOMETER, Wire Wound. Total Resistance, 750 Ohms ±10%	RE-13A-492	11	25 Wire Wound		43X154

TABLE I—EQUIPMENT SPARE PARTS BY NAVY TYPE NUMBER FOR NAVY MODEL RBL-4

Qty.	Navy Type Number	All Symbol Desigs. Involved	DESCRIPTION	Navy Drawing or Specification	Mfr.	Mfr. Desig.	Special Tolerance or Modification	Contractor's Drawing and Part Number
			RESISTORS—(Continued)					
1	631285	R-146	RESISTOR, Variable, Wire Wound. Resistance, 5000 Ohms ±10%	RE-13A-492	11	25, Wire Wound		43X155
1	631286	R-147	RESISTOR, Variable, Wire Wound. 10,000 Ohms ±10%, Resistance, First 50% Clockwise Rotation, 7800 Ohms ±10%, Rating 4 W. Approx.	RE-13A-492	11	25, Wire Wound		43X157
1	631287	R-148	RESISTOR, Variable, Wire Wound. Resistance 25,000 Ohms ±10%, 4 W.	RE-13A-492	13			43X156
			SWITCHES (Class 24)					
1	24047	S-106	PUSH BUTTON SWITCH, S. P., Make Contact		31	B-116291 Special 2001	Steel Parts Cadmium Plated	2A277
1	24146	S-101	TOGGLE SWITCH, S.P.S.T., 3 Amps., 125 V.		6	80993	E	2A279
1	24147	S-102	TOGGLE SWITCH, D.P.S.T., 3 Amps., 125 V.		6	81009	AB	2A280
1	24148	S-103	TOGGLE SWITCH, S.P.D.T., 3 Amps., 125 V.		6	81021	AE	2A281
1		S-107	SWITCH, Rotary, One Section Two Position, 4 Pole		38			2A276
4		S-108 thru S-121	SWITCH, Rotary Type, S.P., Six Position		38	22511-H7C		2A274
			TRANSFORMERS					
1	30392	T-102	TRANSFORMER, Source Imp., 36,000 Ohms. Load Imp., 600 Ohms		33	A-1957		51X110
1		T-101	POWER TRANSFORMER, 11 Termnals, 5 Windings. Primary Windings, Jumper Terminals for 115 V. (Term. 1 to 10 and 11 to 14) or 230 V. (Term. 10-11), 50-60 Cycle Operation. Secondary #1 (Term. 7-9) Center Tapped (Term. 8) 225 VDC, .045 Amp. DC, Secondary #2 (3-6) 6.3 V., 2.2 Amp., Secondary #3 (2-5) 5.0 V., 3.0 Amps.		33	P2093		53X276
			VACUUM TUBES					
6	6SK7	V-101 thru V-103	VACUUM TUBE, Metal. Heater 6.3 Volts, 0.30 Amp.	RE-13A-600E	26	6SK7		6SK7
2	6SG7	V-104	VACUUM TUBE, Metal. Heater 6.3 Volts, 0.30 Amp.	RE-13A-600E	26	6SG7		6SG7
2	6H6	V-105	VACUUM TUBE, Metal. Heater 6.3 Volts, 0.30 Amp.	RE-13A-600E	26	6H6		6H6
2	6K6GT	V-106	VACUUM TUBE, Glass. Heater 6.3 Volts, 0.40 Amp.	RE-13A-600E	26	6K6GT		6K6GT
2	5U4G	V-107	VACUUM TUBE, Glass. Heater ,5.0 Volts, 0.30 Amp.	RE-13A-600E	26	5U4G		5U4G

TABLE I—EQUIPMENT SPARE PARTS BY NAVY TYPE NUMBER FOR NAVY MODEL RBL-4

Qty.	Navy Type Number	All Symbol Desigs. Involved	DESCRIPTION	Navy Drawing or Specification	Mfr.	Mfr. Desig.	Special Tolerance or Modification	Contractor's Drawing and Part Number
			SOCKETS (Class 49)					
4	49373	X-101 thru X-107	VACUUM TUBE SOCKETS, Octal, Ceramic	RE-49A-300B	5			3A364
1		X-108	PILOT LAMP LEAD ASSEMBLY, with Socket		2	85UL		7A171
1		X-109	PILOT LAMP LEAD ASSEMBLY, Same as X-108, Except Lead Lengths		2	85UL		7A172
			R-F TRANSFORMERS					
1	47246	Z-106	DETECTOR COIL, High Frequency		44			9A1670
1	47247	Z-104	1ST R-F COIL, High Frequency		44			9A1666
1	47248	Z-105	2ND R-F COIL, High Frequency		44			9A1668
1	47249	Z-103	DETECTOR COIL, Low Frequency		44			9A1676
1	47250	Z-101	1ST R-F COIL, Low Frequency		44			9A1672
1	47251	Z-102	2ND R-F COIL, Low Frequency		44			9A1674
			MISCELLANEOUS					
1			WRENCH, Coil Can		15			67X6
1			WRENCH, Allen Type. For #6 Set Screw		41			67X8
1			WRENCH, Allen Type. For #8 Set Screw		41			67X9
1			SPARE PARTS BOX	42B9 (INT.)	50			34X433
1			WINDOW, Cellulose Acetate		8			17X84

TABLE J—PARTS LIST BY NAVY TYPE NUMBER

Quantity	Navy Type Number	All Symbol Designations Involved
STRUCTURAL PARTS		
1		A-101
1		A-102
1		A-103
1		A-104
1		A-105
1		A-106
1		A-108
1		A-109
1		A-110
4		A-111 thru A-114
14		A-115 thru A-128
1		A-129
4		A-301 thru A-304
1		A-305
1		A-306
CAPACITORS		
2	48676	C-117, C-118
2	48691	C-119, C-120
2	48843	C-114, C-115
2	48847	C-136, C-137
1	48854	C-116
2	48929	C-130, C-131
4	48983	C-125, C-126, C-127, C-128
4	481037	C-132, C-133, C-134, C-135
1	481065	C-113,
2	481073	C-147, C-148
3	481080	C-167, C-168, C-169
1	481089	C-129
3	481098	C-122, C-123, C-124
1	481279	C-112
1	481428	C-121
8	481549	C-149 thru C-156
8	481550	C-159 thru C-166
1	481554	C-104
1	481555	C-108
2	481556	C-102, C-103
3	481557	C-105, C-106, C-107
2	481558	C-109, C-110
1	481559	C-111
2	481560	C-138, C-139
1		C-101
2		C-143, C-144
2		C-145, C-146
2		C-157, C-158

Quantity	Navy Type Number	All Symbol Designations Involved
MISCELLANEOUS ELECTRICAL PARTS		
3		E-101, E-102, E-103
4		E-104, E-105, E-106, E-107
3		E-108, E-109, E-110
2		E-111, E-112
4		E-114, E-115, E-116, E-117
1		E-146
4		E-147 thru E-150
2		E-151, E-152
6		E-153 thru E-158
1		E-159
3		E-160 thru E-162
3		E-163 thru E-165
28		E-166 thru E-193
1		E-194
2		E-195, E-196
1		E-197
1		E-198
3		E-199 thru E-201
3		E-202 thru E-204
6		E-205 thru E-210
8		E-211 thru E-218
1		E-219
1		E-220
1		E-221
1		E-222
1		E-223
FUSES		
2		F-101, F-102
HARDWARE		
7		H-101, H-102, H-103, H-105, H-106, H-107, H-108
5		H-109 thru H-113
14		H-114 thru H-127
6		H-128 thru H-133
8		H-134 thru H-141
4		H-142 thru H-145
2		H-146, H-147
2		H-148, H-149
4		H-301 thru H-304

Quantity	Navy Type Number	All Symbol Designations Involved
INDICATING DEVICES		
2		I-102, I-102
1		I-103
1		I-104
JACKS AND RECEPTACLES		
1	49120	J-104
1	49201	J-105
1		J-101
2		J-102, J-103
1		J-106
INDUCTORS		
1	30931	L-104
1	47252	L-103
1	53108	L-101
1	53109	L-102
NAMEPLATES		
1		N-101
1		N-102
1		N-104
1		N-105
1		N-106
1		N-107
1		N-108
1		N-109
1		N-110
1		N-111
1		N-112
1		N-113
1		N-114
1		N-115
1		N-301

TYPE J—PARTS LIST BY NAVY TYPE NUMBER

MECHANICAL PARTS

Quantity	Navy Type Number	All Symbol Designations Involved
2		O-101, O-102
1		O-103
3		O-104, O-105, O-106
1		O-107
2		O-108, O-109
2		O-110, O-111
1		O-112
1		O-113
1		O-114
2		O-115, O-116
2		O-117, O-118
1		O-119
1		O-120

PLUGS

Quantity	Navy Type Number	All Symbol Designations Involved
1	49121	P-103
1	49202	P-102
1		P-101

RESISTORS

Quantity	Navy Type Number	All Symbol Designations Involved
1	63289	R-140
27	63360	R-101 thru R-127
4	63474	R-135 thru R-138
1	631284	R-145
1	631285	R-146
1	631286	R-147
1	631287	R-148

SWITCHES

Quantity	Navy Type Number	All Symbol Designations Involved
1	24047	S-106
1	24146	S-101
1	24147	S-102
1	24148	S-103
1		S-104
1		S-105
1		S-107
14		S-108 thru S-121

TRANSFORMERS

Quantity	Navy Type Number	All Symbol Designations Involved
1	30392	T-102
1	30930	T-101 (RBL-3 Only)
1		T-101 (RBL-4 Only)

VACUUM TUBES

Quantity	Navy Type Number	All Symbol Designations Involved
1	5U4G	V-107
1	6H6	V-105
1	6K6GT	V-106
1	6SG7	V-104
3	6SK7	V-101, V-102, V-103

SOCKETS

Quantity	Navy Type Number	All Symbol Designations Involved
7	49373	X-101 thru X-107
1		X-108
1		X-109

R-F TRANSFORMERS

Quantity	Navy Type Number	All Symbol Designations Involved
1	47246	Z-106
1	47247	Z-104
1	47248	Z-105
1	47249	Z-103
1	47250	Z-101
1	47252	Z-102

MISCELLANEOUS

Quantity	Navy Type Number	All Symbol Designations Involved
1		17X81
1		17X84
56		30X378
1		34X402
1		34X433
1		67X6
1		67X8
1		67X9

TABLE K—LIST OF MANUFACTURERS

Code No.	Mfr. Prefix	Name	Address
1		Acme Metal Products Corp.	1845 W. 74th, Chicago, Ill.
2		Alden Products Co.	Brockton, Mass.
3	CBZ	Allen-Bradley Co.	Milwaukee, Wisc.
4		Aluminum Goods Mfg. Co.	Manitowoc, Wisc.
5	CPH	American Phenolic Corporation	1830 S. 54th Ave. (Cicero P.O.) Chicago, Ill.
6		Arrow Electric Division, The Arrow-Hart & Hegeman Electric Co.	103 Hawthorn St., Hartford, Conn.
7		Atlantic India Rubber Works, Inc.	1453 W. Van Buren St., Chicago, Ill.
8		J. B. Carroll Co.	Carroll & Albany Aves., Chicago, Ill.
9		Central Screw Company	3501 Shields Ave., Chicago, Ill.
10		Chicago Die Mold Mfg. Co.	4001 W. Wrightwood Ave., Chicago, Ill.
11	CTC	Chicago Telephone Supply Co.	Elkhart, Ind.
12		Cinch Manufacturing Corporation	2335-47 W. Van Buren St., Chicago, Ill.
13	CMC	Clarostat Manufacturing Company, Inc.	285 N. Sixth St., Brooklyn, N. Y.
14		Crescent Tool & Die Co.	4140-50 Belmont Ave., Chicago, Ill.
15		C. Cretors & Co.	Cermak Road & Jefferson St., Chicago, Ill.
16		Crowe Name Plate & Manufacturing Co.	3701 Ravenswood Ave., Chicago, Ill.
17		Doehler Die Casting Co.	386 Fourth Ave., New York 16, N. Y.
18		Etching Company of America	1520 Montana St., Chicago, Ill.
19	CBV	John E. Fast & Co.	3123 N. Crawford Ave., Chicago, Ill.
20		General Etching & Mfg. Co.	3070-82 W. Grand Ave., Chicago, Ill.
21		Grand Sheet Metal Works	2501 W. 24th St., Chicago, Ill.
22		Harvey Hubbell, Inc.	1930 Thomas St., Bridgeport, Conn.
23		Hudson Screw Machine Products Co.	4500 W. Augusta Blvd., Chicago, Ill.
24		International Spring Company	222 N. Washtenaw Ave., Chicago, Ill.
25		Howard B. Jones	2300 Wabansia Ave., Chicago, Ill.
26	CKR	Ken-Rad Tube & Lamp Corporation	Owensboro, Kentucky
27		Lamicoid Fabricators, Inc.	3600-10 Potomac Ave., Chicago, Ill.
28		Lemke Screw Products Company	1913 N. LeClaire Ave., Chicago, Ill.
29	CLF	Littlefuse Incorporated	4757 Ravenswood Ave., Chicago, Ill.
30		Lord Manufacturing Company	Erie, Pa.
31	CMA	P. R. Mallory & Co., Inc.	3029 E. Washington St., Indianapolis, Ind.
32		Manufacturers Screw Products	216-222 W. Hubbard St., Chicago, Ill.
33		Merit Coil & Transformer Corp.	311 N. DesPlaines Ave., Chicago, Ill.
34		Metal Decorating & Mfg. Co.	4633 Gladys Ave., Chicago, Ill.
35		Metal & Glass Products Company	165 N. Morgan St., Chicago, Ill.
36		Harry Meyer's Wood Products	1652 W. Hubbard St., Chicago, Ill.
37	CN	National Electrical Machine Shops, Inc.	2014 Fifth St., N.E., Washington, D.C.
38	COC	Oak Manufacturing Company	1260 Clybourn Ave., Chicago, Ill.
39		Olson Manufacturing Co.	1820-22 W. Grand Ave., Chicago, Ill.
40	CAN	Sangamo Electric Company	Springfield, Ill.
41		Set Screw & Mfg. Company	Bensenville, Ill.
42		Shakeproof, Inc.	2501 N. Keeler Ave., Chicago, Ill.
43		Slingerland Banjo & Drum Co.	1325 Belden Ave., Chicago, Ill.
44		Sonora Radio & Television Corporation	325 N. Hoyne Ave., Chicago, Ill.
45		Spaulding Fibre Company, Inc.	4757 Ravenswood Ave., Chicago, Ill.
46	CRA	Utah Radio Products Co.	812-20 Orleans St., Chicago, Ill.
47	CWQ	Wells-Gardner & Co.	2701 N. Kildare Ave., Chicago, Ill.
48	CAY	Westinghouse Electric Mfg. Co., Lamp Division	20 N. Wacker Drive, Chicago, Ill.
49		Rhopac, Inc.	168-172 N. Clinton St., Chicago, Ill.
50		Invincible Metal Furniture Co.	Manitowoc, Wis.
51		American Steel Package Co.	Defiance, Ohio
52		Capacitrons, Inc.	318 W. Schiller Ave., Chicago, Ill.

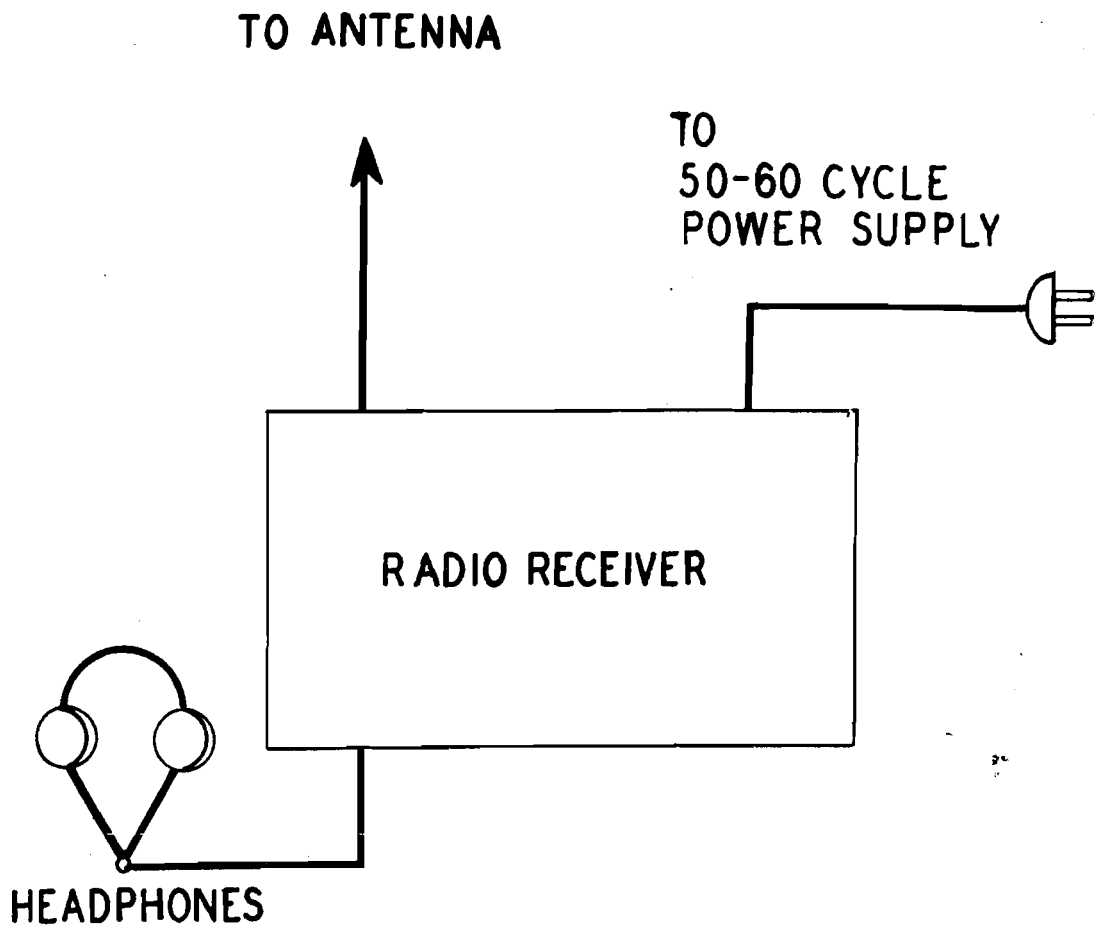
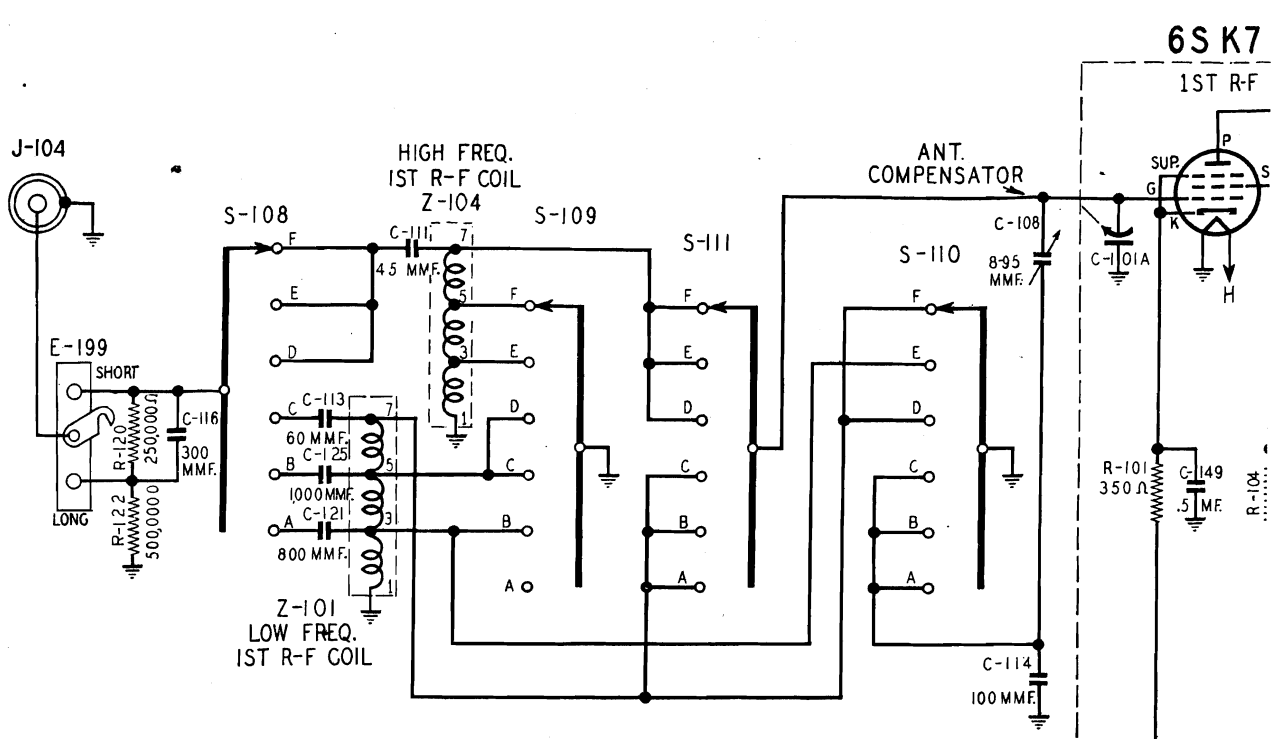
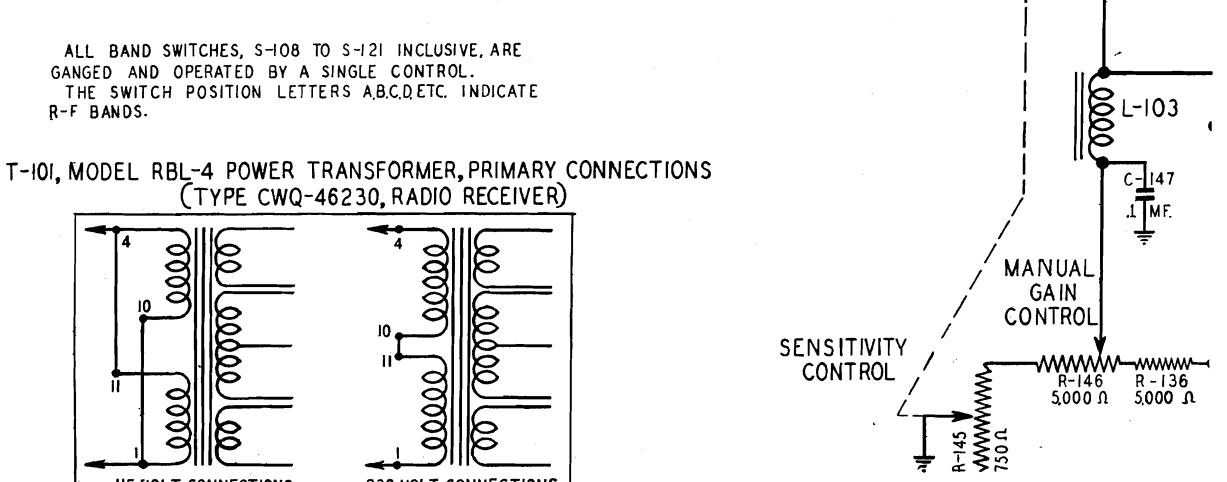


Fig. 29. Block Diagram, Receiver Connections

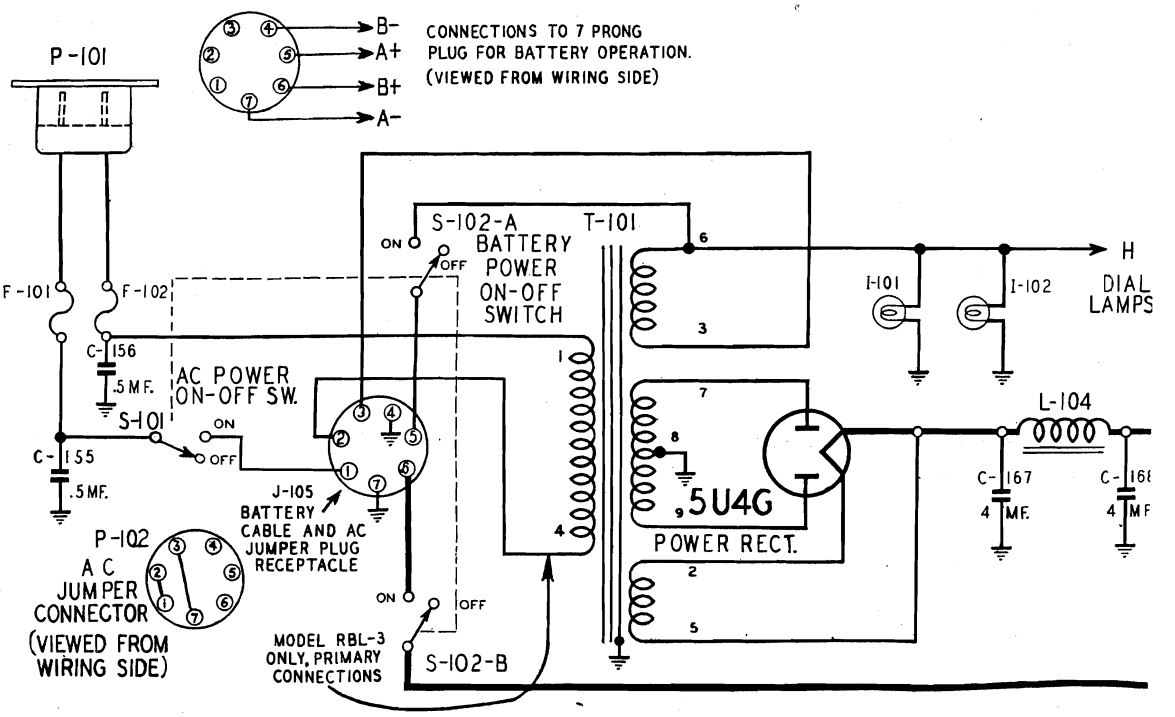
NOTES

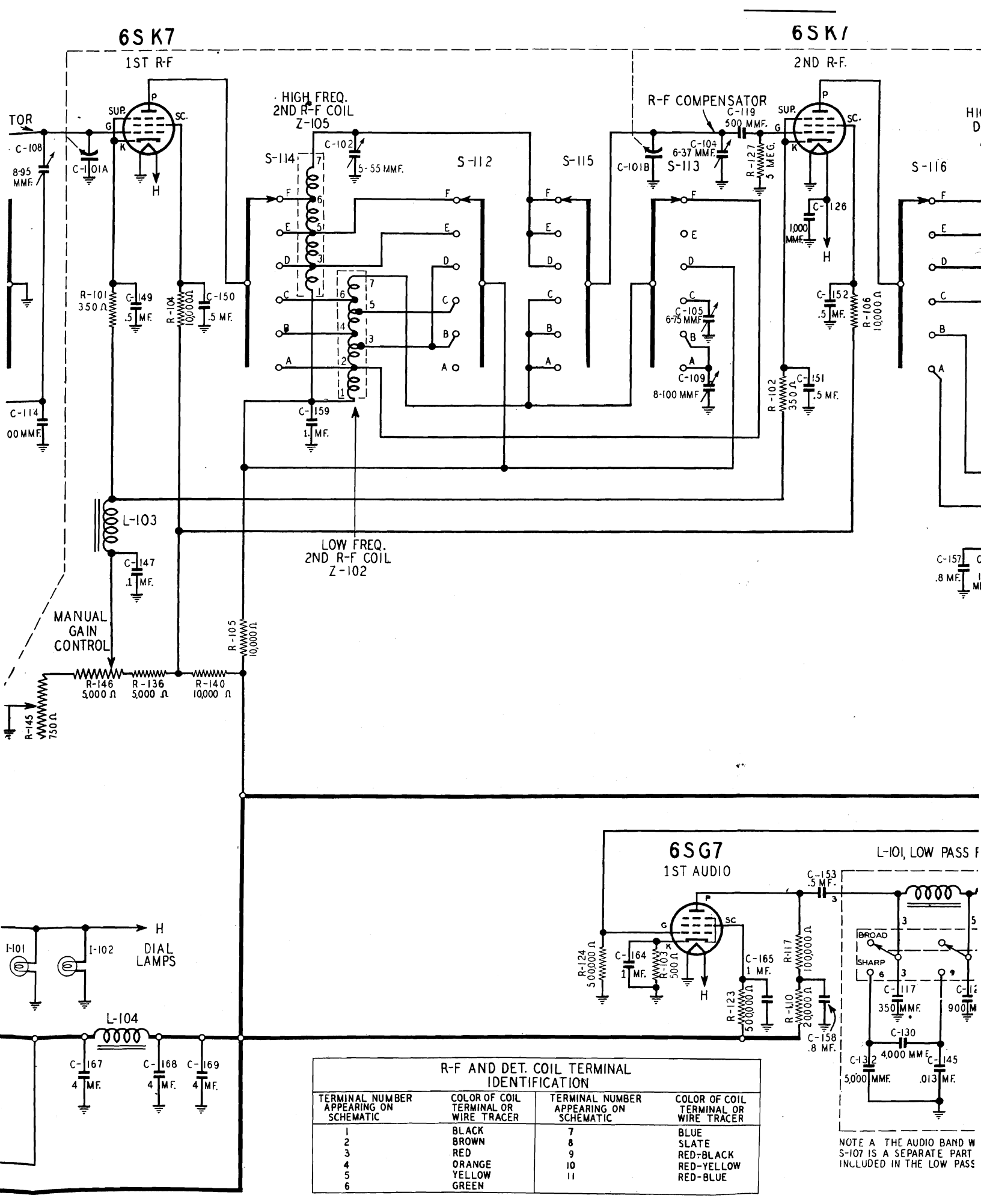


ALL BAND SWITCHES, S-108 TO S-121 INCLUSIVE, ARE GANGED AND OPERATED BY A SINGLE CONTROL. THE SWITCH POSITION LETTERS A,B,C,D,ETC. INDICATE R-F BANDS.



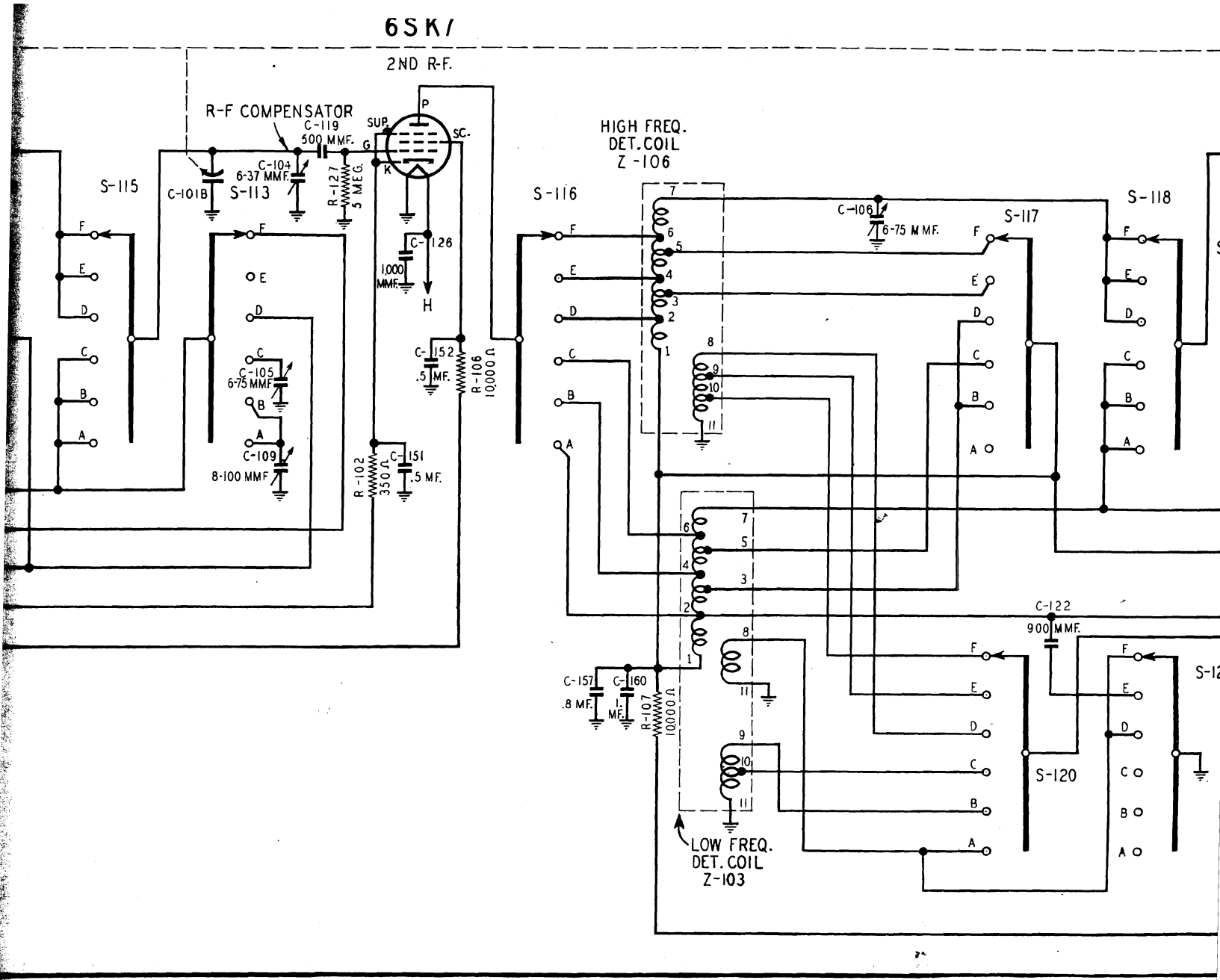
T-101, MODEL RBL-4 POWER TRANSFORMER, PRIMARY CONNECTIONS
(TYPE CWQ-46230, RADIO RECEIVER)

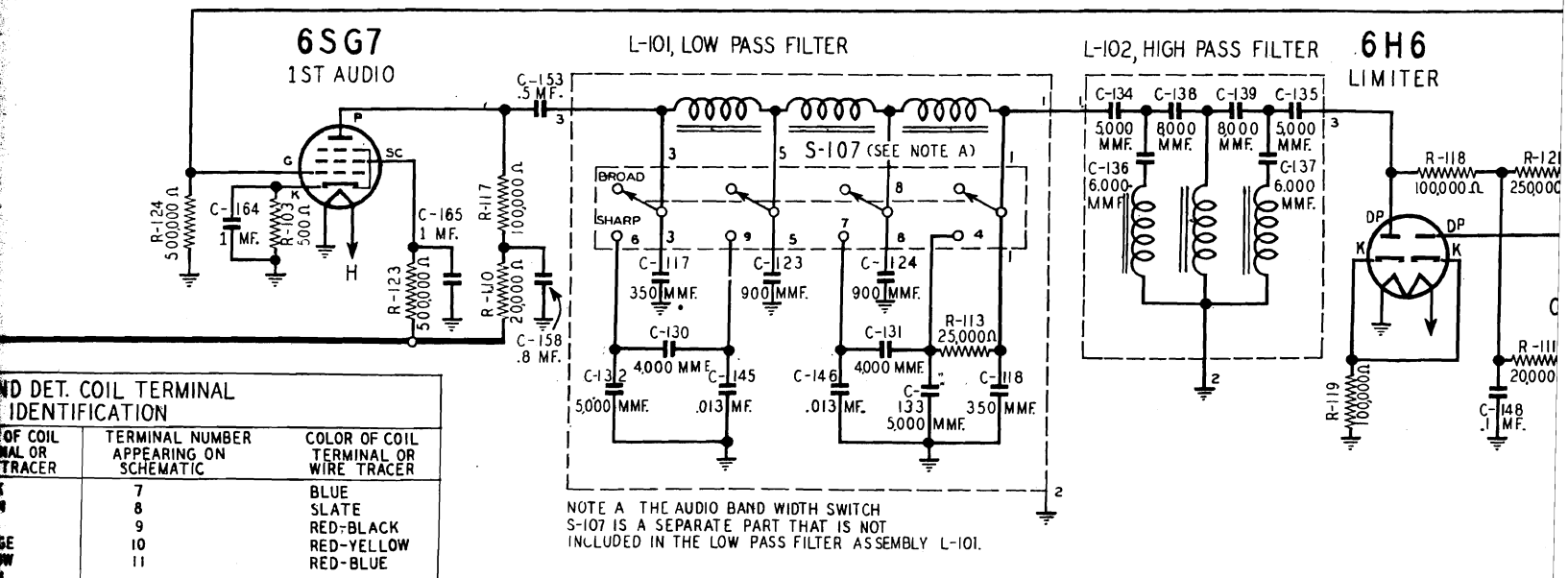




R-F AND DET. COIL TERMINAL IDENTIFICATION			
TERMINAL NUMBER APPEARING ON SCHEMATIC	COLOR OF COIL TERMINAL OR WIRE TRACER	TERMINAL NUMBER APPEARING ON SCHEMATIC	COLOR OF COIL TERMINAL OR WIRE TRACER
1	BLACK	7	BLUE
2	BROWN	8	SLATE
3	RED	9	RED-BLACK
4	ORANGE	10	RED-YELLOW
5	YELLOW	11	RED-BLUE
6	GREEN		

NOTE A THE AUDIO BAND W
S-107 IS A SEPARATE PART
INCLUDED IN THE LOW PASS





NOTE A THE AUDIO BAND WIDTH SWITCH S-107 IS A SEPARATE PART THAT IS NOT INCLUDED IN THE LOW PASS FILTER ASSEMBLY L-101.

ND DET. COIL TERMINAL IDENTIFICATION		
OF COIL NAL OR TRACER	TERMINAL NUMBER APPEARING ON SCHEMATIC	COLOR OF COIL TERMINAL OR WIRE TRACER
	7	BLUE
	8	SLATE
	9	RED-BLACK
GE	10	RED-YELLOW
W	11	RED-BLUE

Fig

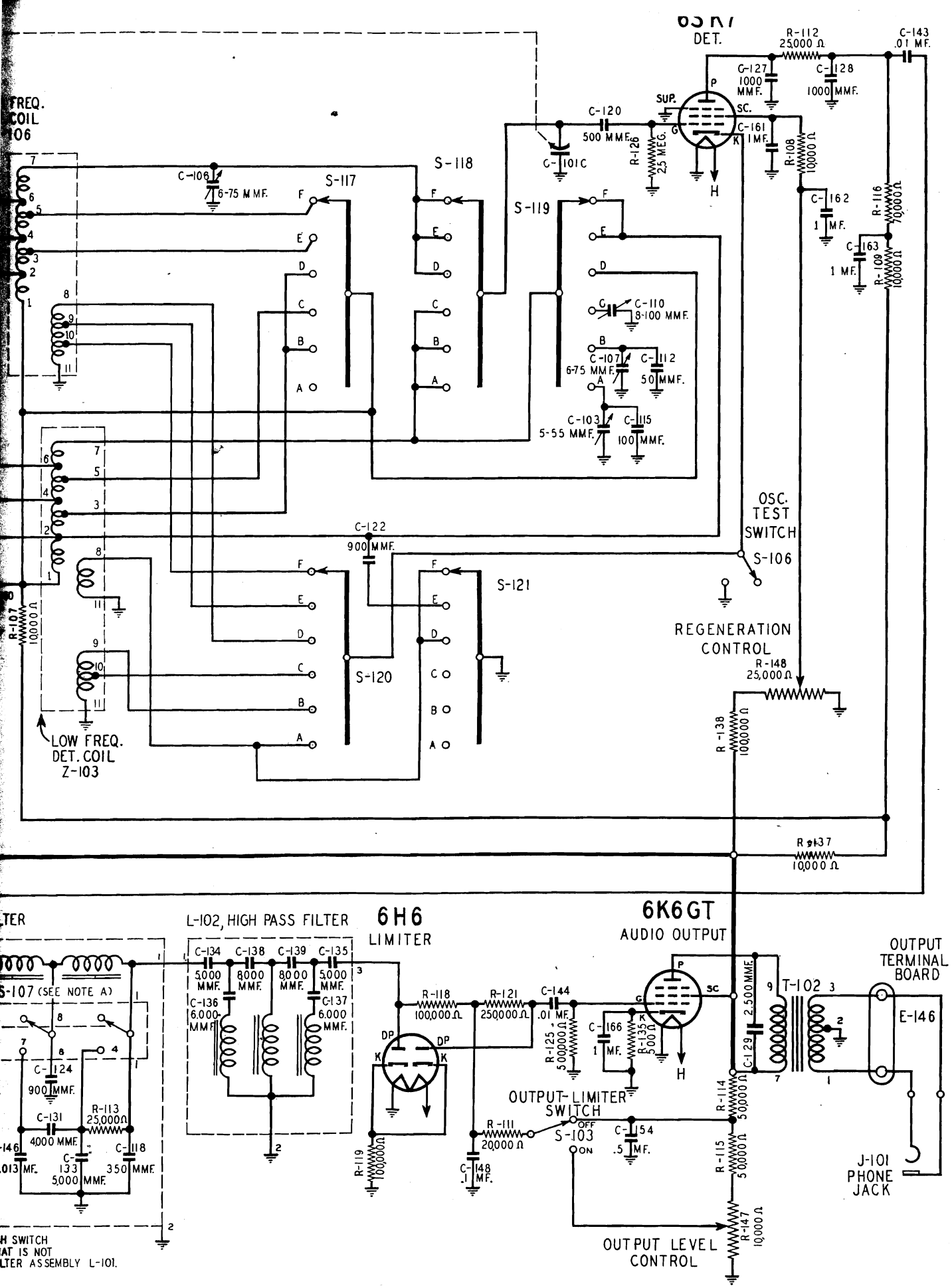
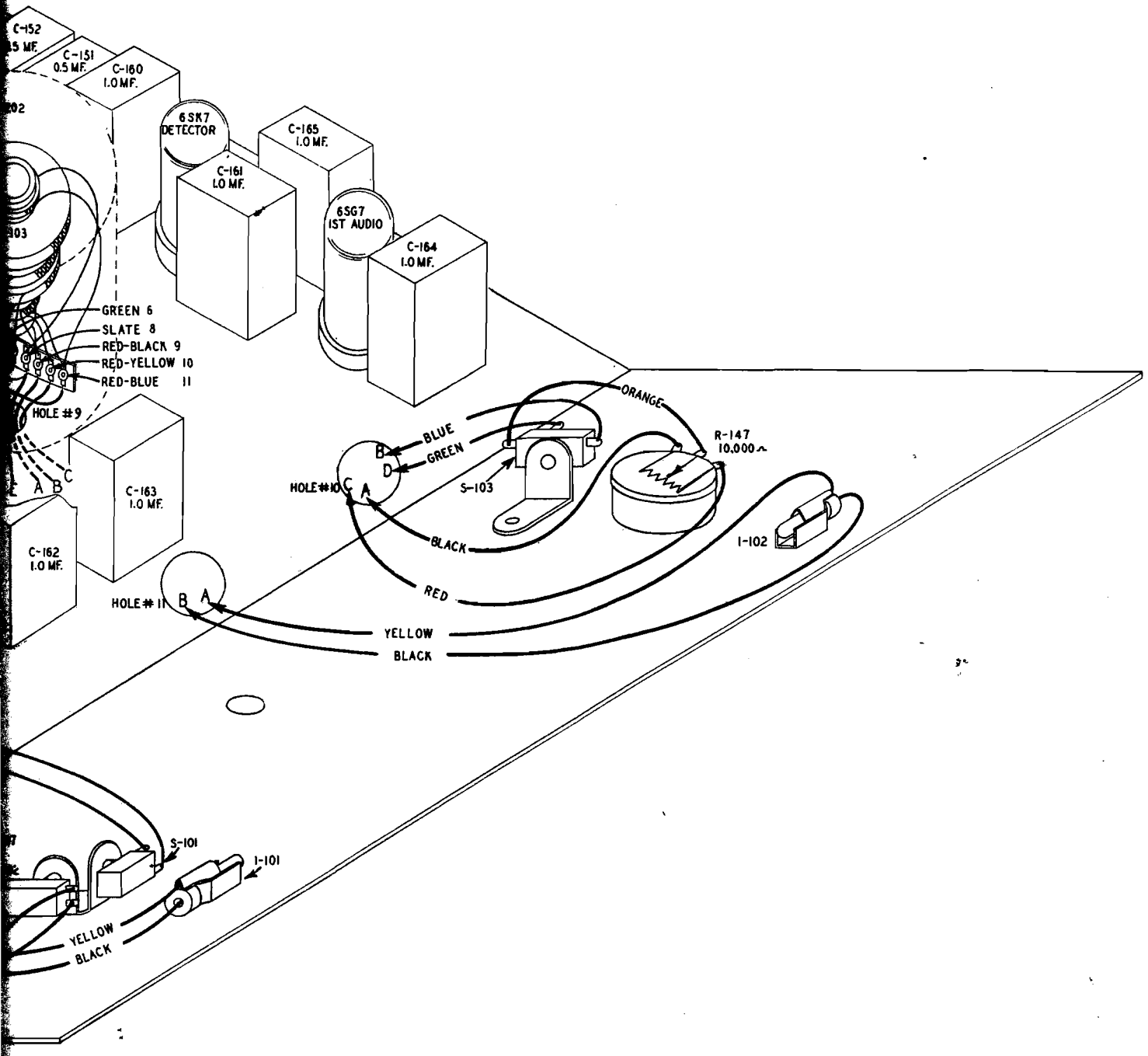
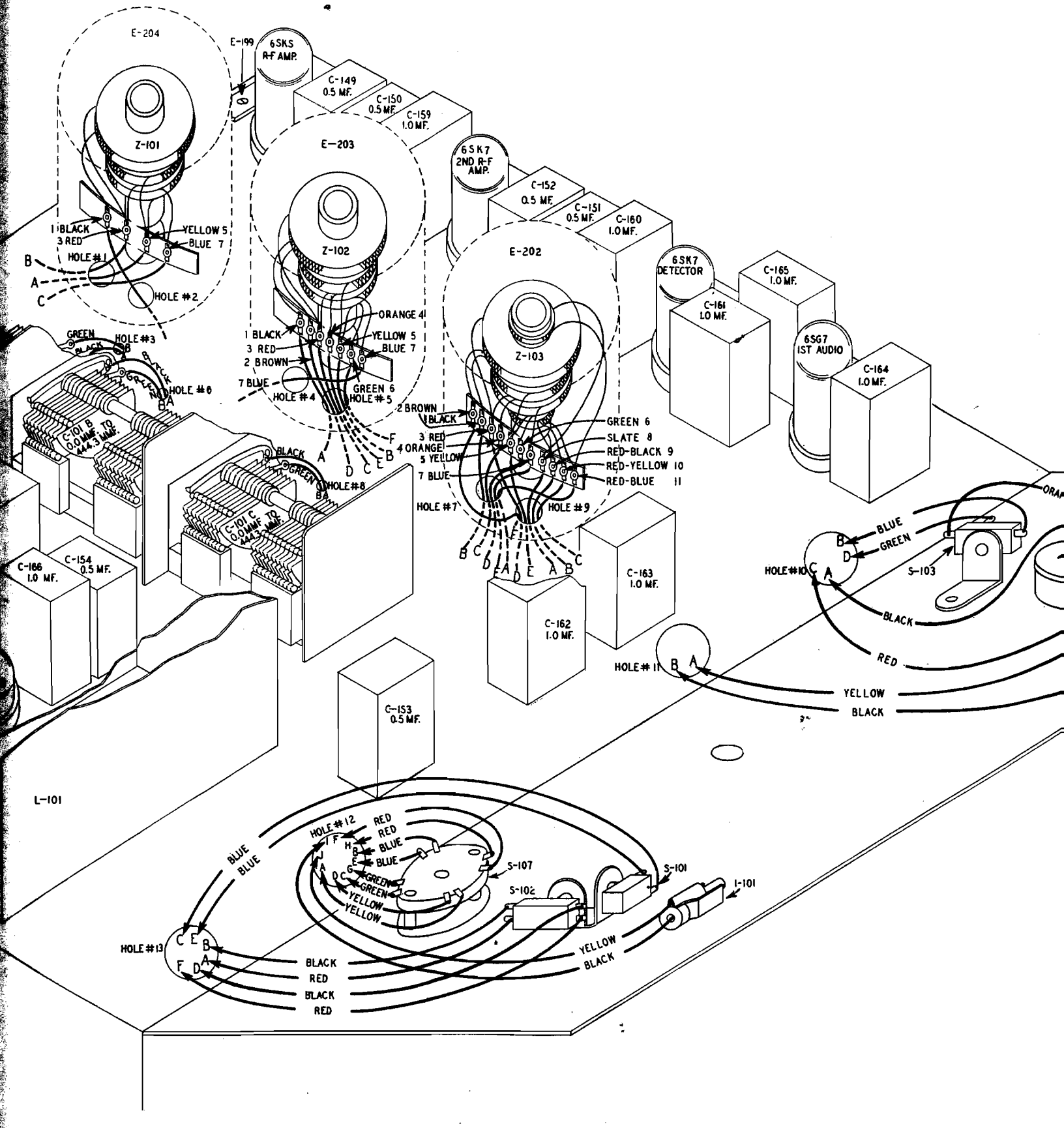


Fig. 30. Schematic Diagram, Type CWQ-46161-A and CWQ-46 Radio Receivers


C-152
.5 MF.
C-151
0.5 MF.
C-160
1.0 MF.
6SK7
DETECTOR
C-161
1.0 MF.
C-165
1.0 MF.
6SG7
1ST AUDIO
C-164
1.0 MF.
GREEN 6
SLATE 8
RED-BLACK 9
RED-YELLOW 10
RED-BLUE 11
HOLE #9
C-163
1.0 MF.
C-162
1.0 MF.
HOLE #10
HOLE #11
BLUE
GREEN
ORANGE
S-103
R-147
10,000Ω
BLACK
RED
YELLOW
BLACK
I-102
S-101
I-101
YELLOW
BLACK


E-204
E-199
6SK5 R-F AMP.
C-149 0.5 MF.
C-150 0.5 MF.
C-159 1.0 MF.
Z-101
E-203
6SK7 2ND R-F AMP.
C-152 0.5 MF.
C-151 0.5 MF.
C-160 1.0 MF.
Z-102
E-202
6SK7 DETECTOR
C-161 1.0 MF.
C-165 1.0 MF.
6SG7 1ST AUDIO
C-164 1.0 MF.
Z-103
1 BLACK
3 RED
YELLOW 5
BLUE 7
HOLE #1
HOLE #2
GREEN
HOLE #3
HOLE #6
ORANGE 4
2 BROWN
7 BLUE
HOLE #4
GREEN 6
HOLE #5
C-101 B 0.0 MMF. TO 444.3 MMF.
C-101 C 0.0 MMF. TO 444.3 MMF.
HOLE #8
HOLE #7
HOLE #9
SLATE 8
RED-BLACK 9
RED-YELLOW 10
RED-BLUE 11
C-166 1.0 MF.
C-154 0.5 MF.
C-163 1.0 MF.
C-162 1.0 MF.
C-153 0.5 MF.
HOLE #10
S-103
HOLE #11
L-101
HOLE #12
S-107
S-102
S-101
I-101
HOLE #13

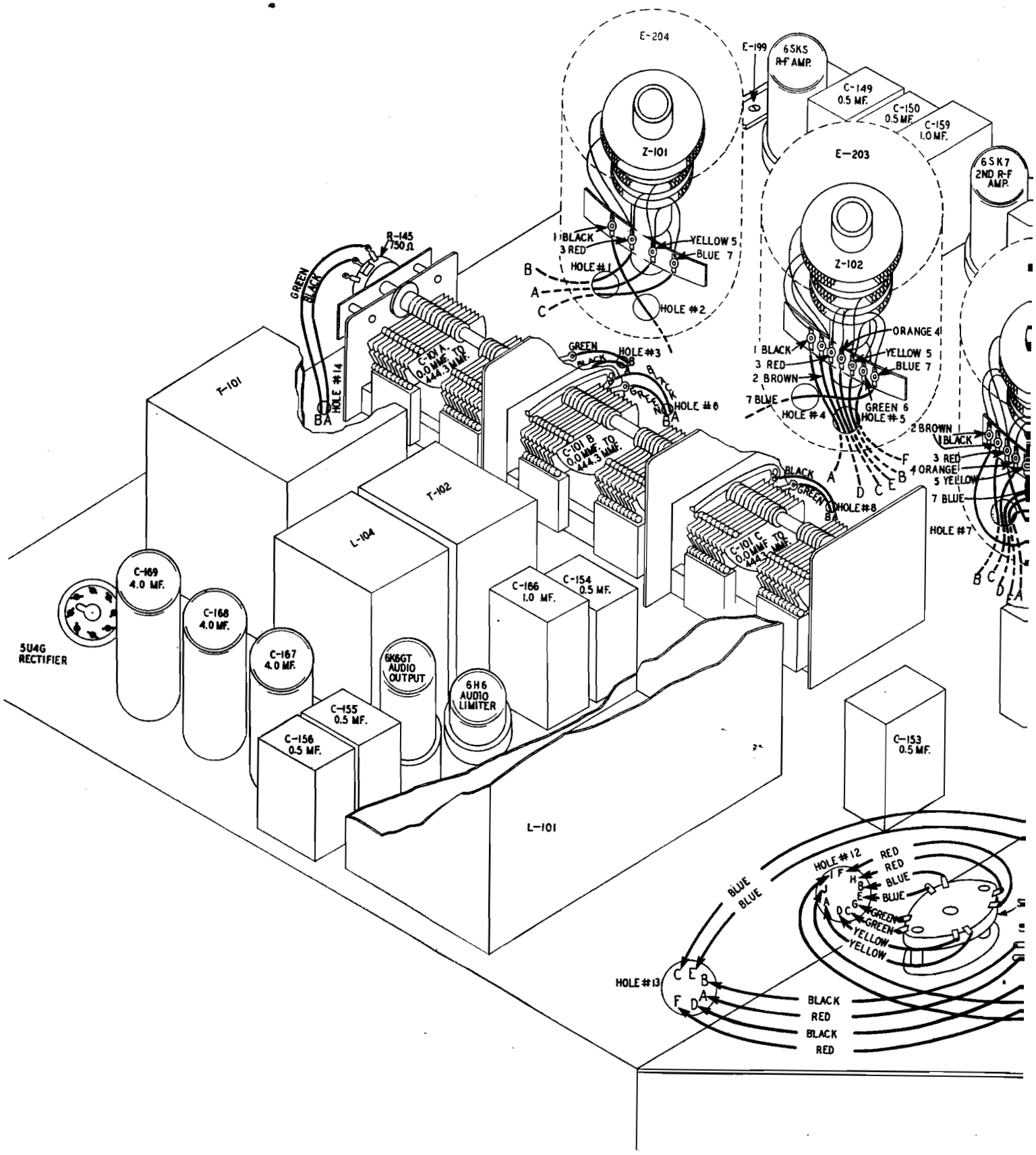
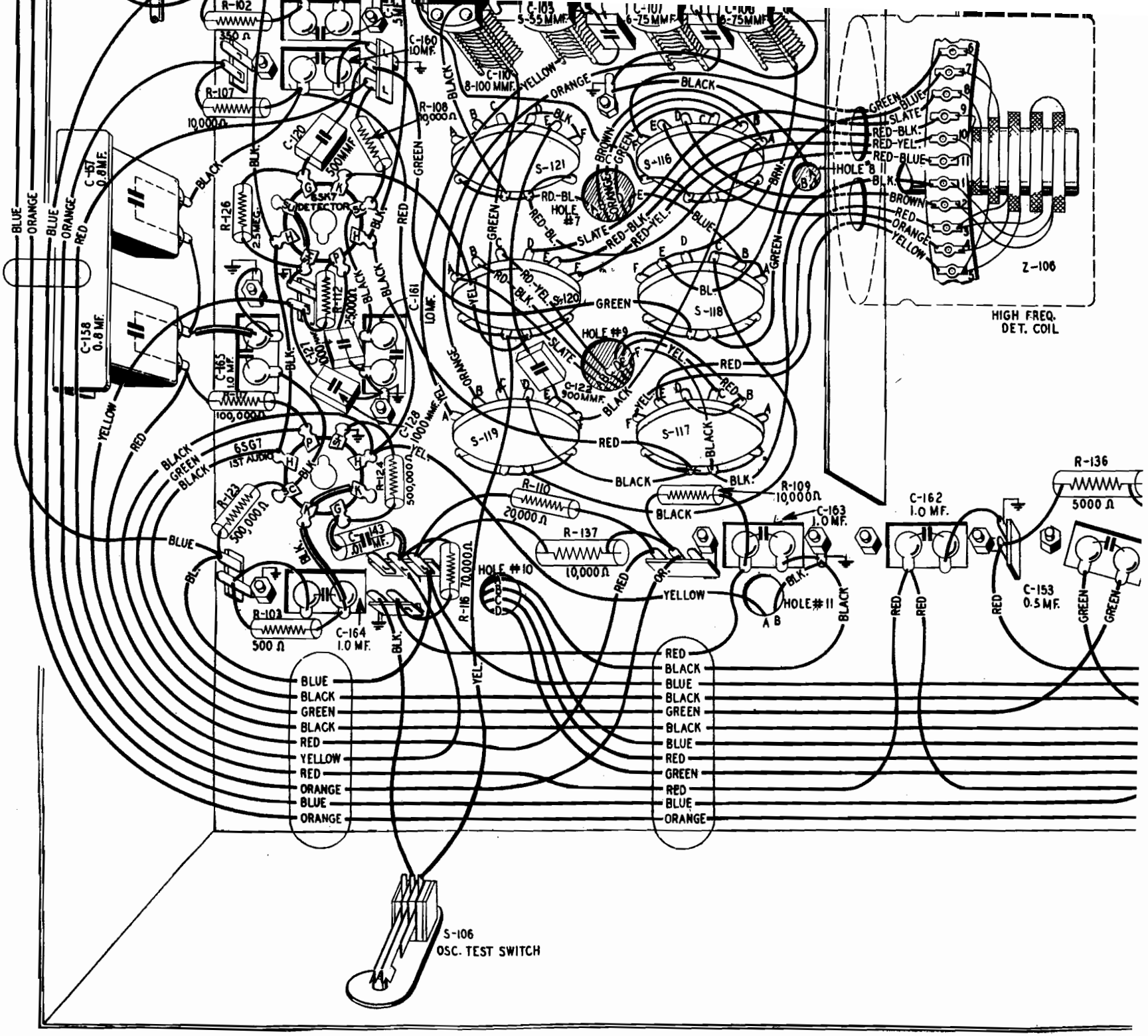
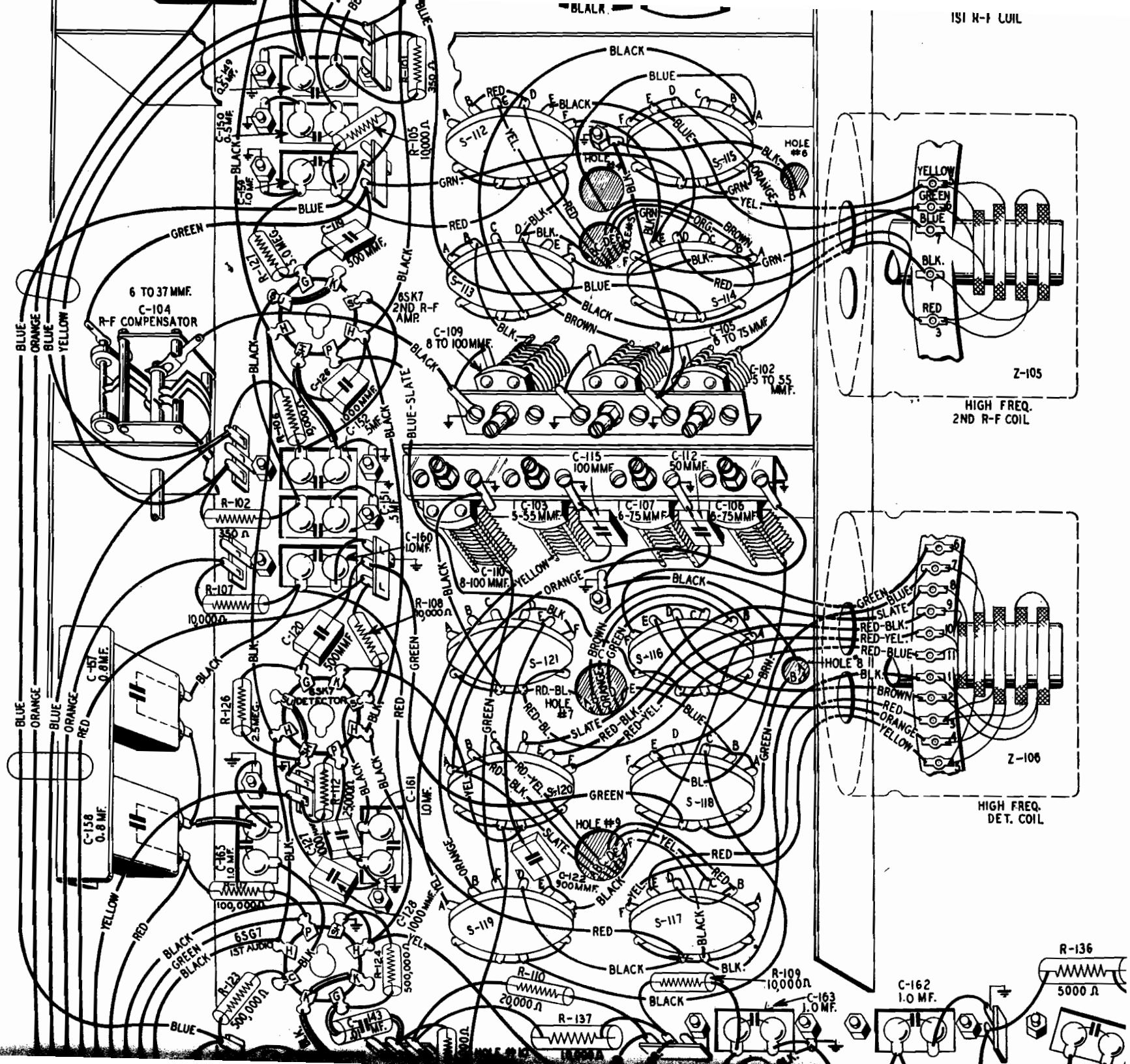
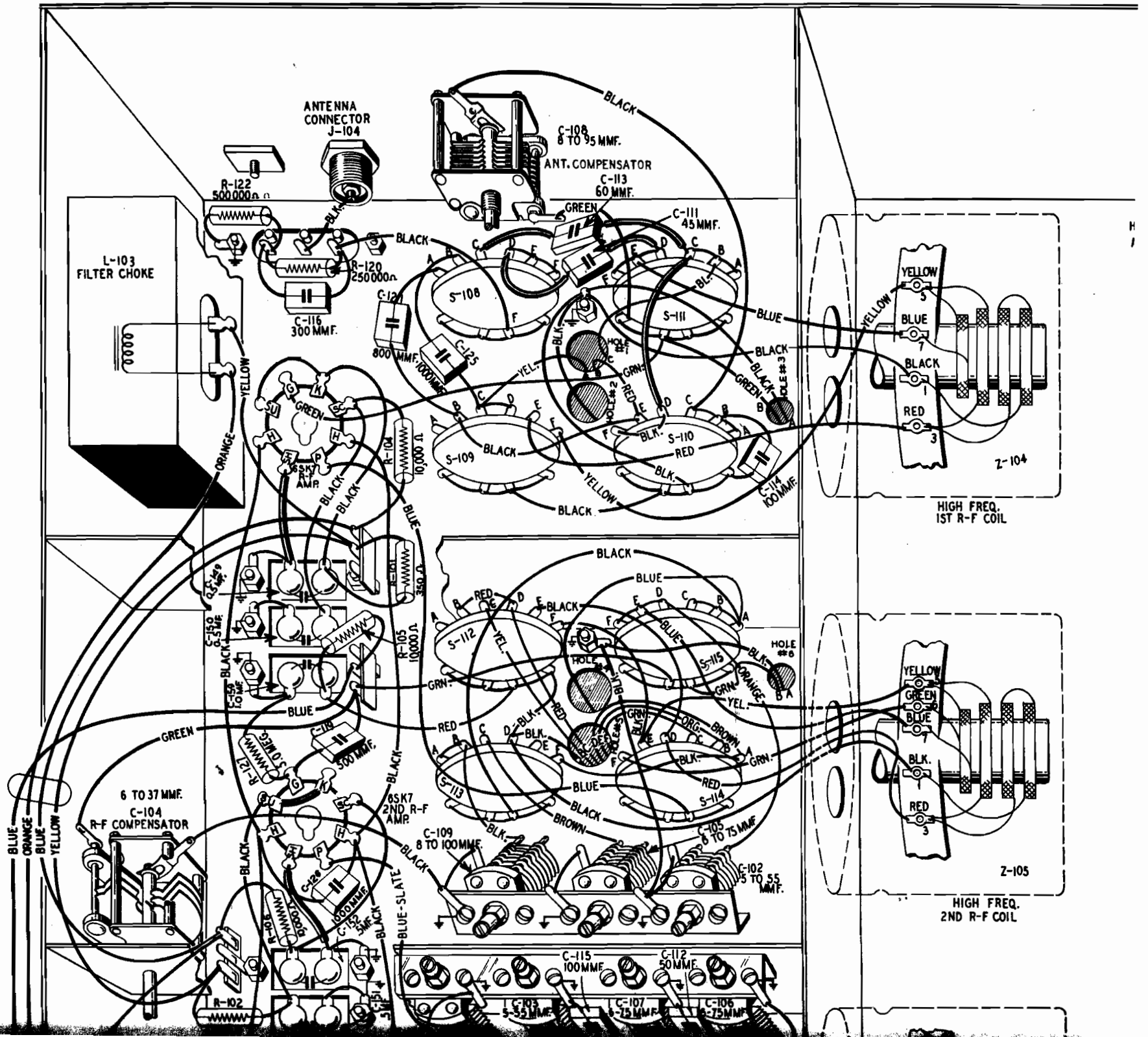
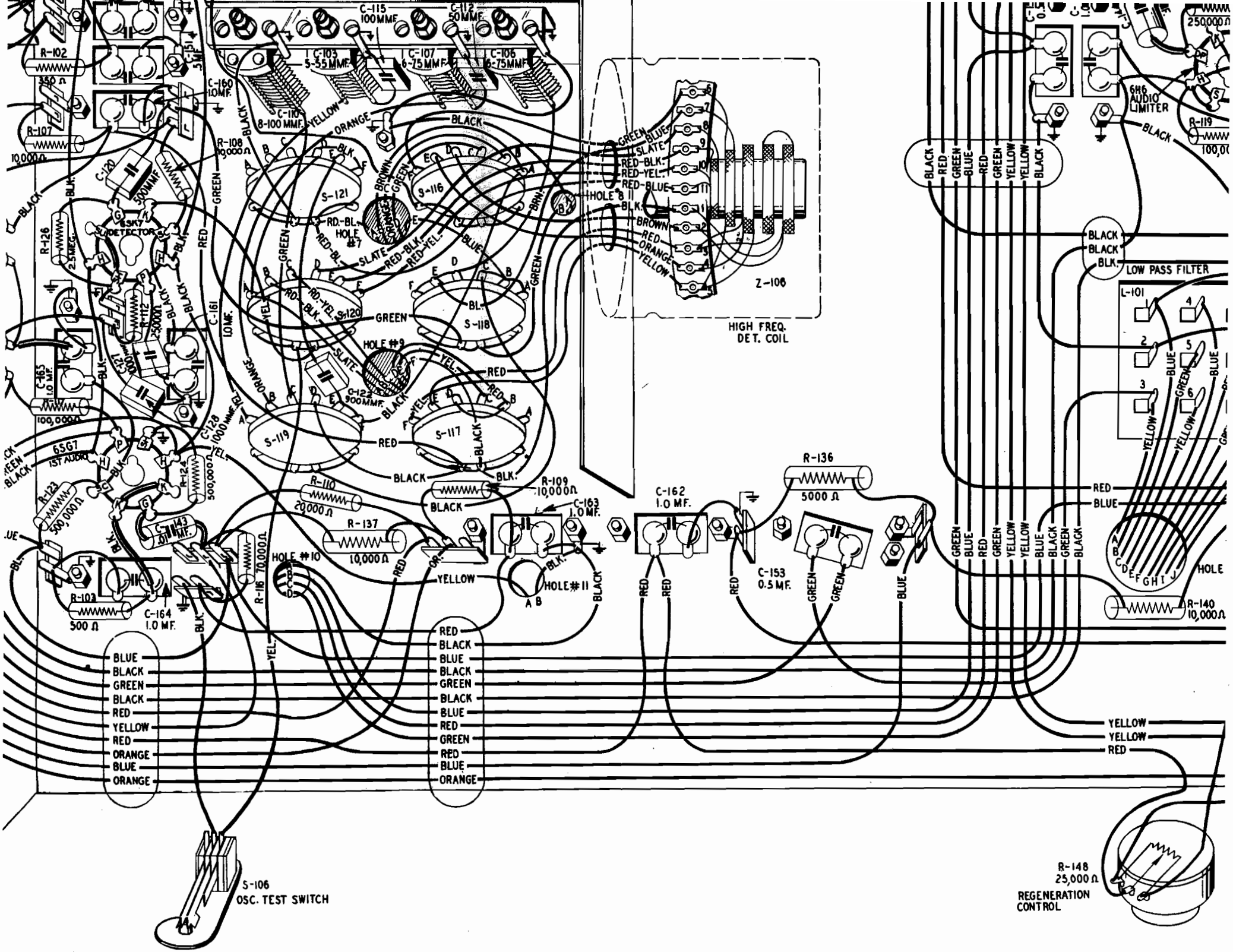


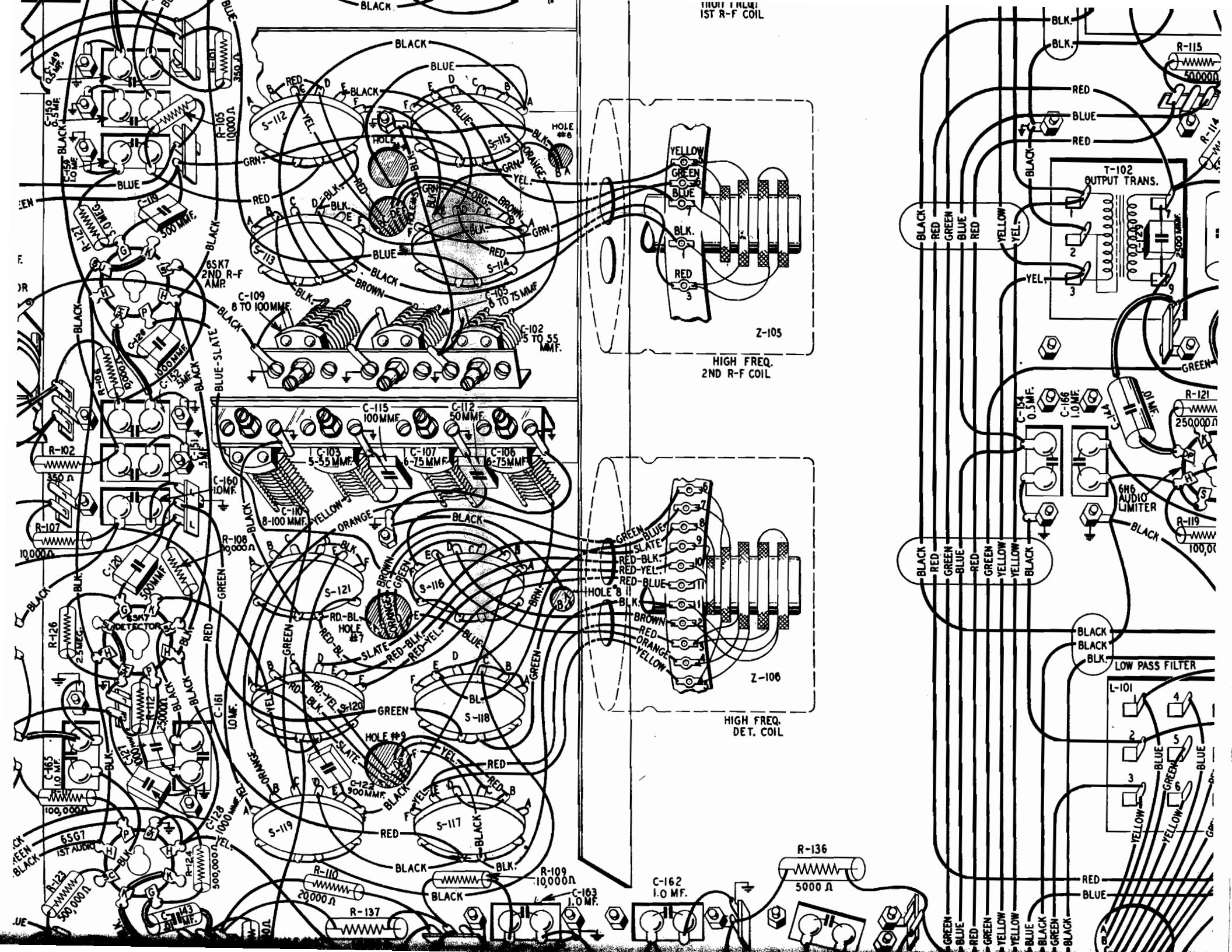
Fig. 31. Pictorial Diagram, Top View of Chassis

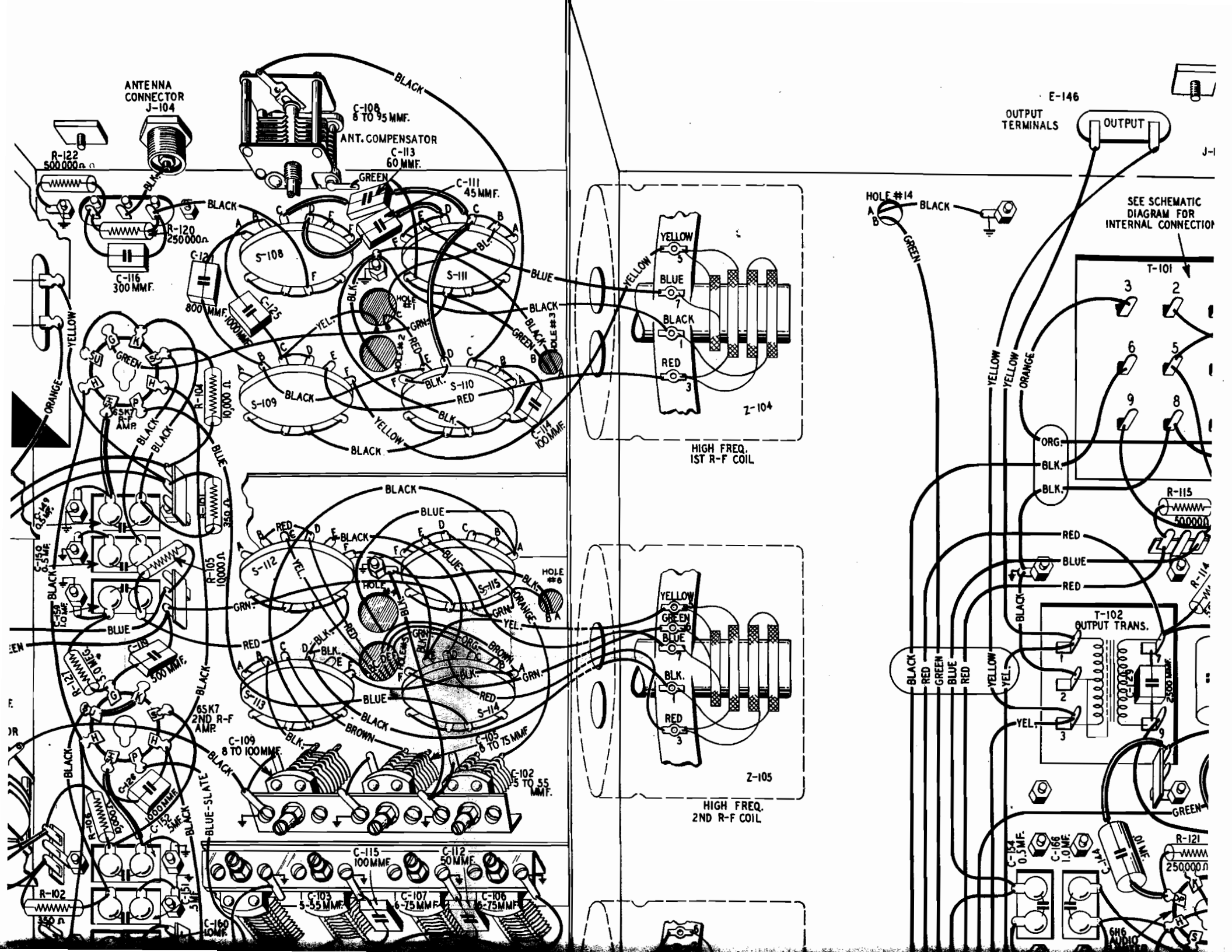

R-102
350 Ω
R-107
10,000 Ω
C-160
.1 MF.
C-103
5-55 MMF.
C-107
6-75 MMF.
C-106
6-75 MMF.
C-110
8-100 MMF.
R-108
10,000 Ω
C-120
500 MMF.
6SK7
1ST DETECTOR
R-126
2.5 MEG.
C-157
0.8 MF.
C-158
0.8 MF.
R-112
250,000 Ω
C-161
.1 MF.
C-165
1.0 MF.
100,000 Ω
6SG7
1ST AUDIO
R-123
500,000 Ω
R-124
500,000 Ω
C-128
1000 MMF.
C-143
.01 MF.
R-103
500 Ω
C-164
1.0 MF.
R-116
70,000 Ω
S-121
S-116
S-120
S-118
S-119
S-117
C-122
900 MMF.
HOLE #7
HOLE #8
HOLE #9
HOLE #10
HOLE #11
R-110
20,000 Ω
R-137
10,000 Ω
R-109
10,000 Ω
C-163
1.0 MF.
C-162
1.0 MF.
R-136
5000 Ω
C-153
0.5 MF.
Z-106
HIGH FREQ.
DET. COIL
S-106
OSC. TEST SWITCH
BLUE
BLACK
GREEN
BLACK
RED
YELLOW
RED
ORANGE
BLUE
ORANGE
RED
BLACK
BLUE
BLACK
GREEN
BLACK
BLUE
RED
GREEN
RED
BLUE
ORANGE


6 TO 37 MMF.
C-104
R-F COMPENSATOR
6SK7
2ND R-F
AMP.
6SK7
DETECTOR
6SG7
1ST AUDIO
C-109
8 TO 100 MMF.
C-105
8 TO 75 MMF.
C-102
5 TO 55 MMF.
C-115
100 MMF.
C-112
50 MMF.
C-103
5-55 MMF.
C-107
6-75 MMF.
C-106
6-75 MMF.
C-110
8-100 MMF.
R-102
350 Ω
R-107
10,000 Ω
R-108
10,000 Ω
R-105
10,000 Ω
R-109
10,000 Ω
R-110
20,000 Ω
R-123
500,000 Ω
R-124
500,000 Ω
R-126
2.5 MEG.
R-136
5000 Ω
R-137
C-158
0.8 MF.
C-157
0.8 MF.
C-160
1.0 MF.
C-161
1.0 MF.
C-162
1.0 MF.
C-163
1.0 MF.
C-165
1.0 MF.
C-143
.01 MF.
C-120
500 MMF.
C-128
1000 MMF.
C-122
500 MMF.
C-152
.5 MF.
C-151
.5 MF.
S-112
S-113
S-114
S-115
S-116
S-117
S-118
S-119
S-120
S-121
HOLE #6
HOLE #7
HOLE #8
HOLE #9
Z-105
HIGH FREQ.
2ND R-F COIL
Z-106
HIGH FREQ.
DET. COIL
151 R-F COIL
BLACK
BLUE
RED
GREEN
YELLOW
ORANGE
BROWN
SLATE
BLUE-SLATE
RED-BLK.
RED-YEL.
RED-BLUE
RED-BL.
RD.-BL.
RD.-YEL.
BLK.
BRN.
GRN.
YEL.
ORG.


ANTENNA CONNECTOR J-104
C-108 8 TO 95 MMF.
ANT. COMPENSATOR
C-113 60 MMF.
C-111 45 MMF.
R-122 500000Ω
R-120 250000Ω
C-116 300 MMF.
L-103 FILTER CHOKE
C-120 800 MMF.
C-125 1000 MMF.
S-108
S-111
S-109
S-110
6SK7 R-F AMP.
R-104 10000Ω
C-114 100 MMF.
HOLE #1
HOLE #2
HOLE #3
Z-104
HIGH FREQ. 1ST R-F COIL
C-150 0.5 MF.
C-151 1.0 MF.
R-101 10000Ω
R-105 10000Ω
S-112
S-113
S-114
S-115
HOLE #4
HOLE #5
HOLE #6
C-119 500 MMF.
R-121 5.0 MEG.
6 TO 37 MMF. C-104 R-F COMPENSATOR
6SK7 2ND R-F AMP.
C-109 8 TO 100 MMF.
C-105 6 TO 75 MMF.
C-102 5 TO 55 MMF.
C-128 1000 MMF.
C-152 .5 MF.
R-103 5000Ω
R-102
C-115 100 MMF.
C-112 50 MMF.
C-103 5-55 MMF.
C-107 8-75 MMF.
C-106 8-75 MMF.
Z-105
HIGH FREQ. 2ND R-F COIL
BLACK
BLUE
GREEN
YELLOW
ORANGE
RED
BROWN
BLK.
YEL.
GRN.
ORG.
BLUE-SLATE


C-115 100 MMF.
C-112 50 MMF.
C-103 5-55 MMF.
C-107 6-75 MMF.
C-106 6-75 MMF.
C-110 8-100 MMF.
R-102 350 Ω
R-107 10,000 Ω
C-160 10 MF.
R-108 10,000 Ω
C-120 500 MMF.
R-126 2.5 MEG.
6SK7 S. DETECTOR
C-161 10 MF.
R-112 250,000 Ω
C-165 1.0 MF.
R-117 100,000 Ω
6SG7 1ST AUDIO
R-123 500,000 Ω
C-128 1000 MMF.
R-124 500,000 Ω
C-143 .01 MF.
R-103 500 Ω
C-164 1.0 MF.
R-116 70,000 Ω
S-121
S-116
S-120
S-118
S-119
S-117
C-122 900 MMF.
HOLE #7
HOLE #8
HOLE #9
HOLE #10
HOLE #11
R-110 20,000 Ω
R-137 10,000 Ω
R-109 10,000 Ω
C-163 1.0 MF.
C-162 1.0 MF.
R-136 5000 Ω
C-153 0.5 MF.
Z-106
HIGH FREQ. DET. COIL
6H6 AUDIO LIMITER
R-119 100,000 Ω
LOW PASS FILTER
L-101
R-140 10,000 Ω
S-106 OSC. TEST SWITCH
R-148 25,000 Ω
REGENERATION CONTROL
BLACK
BROWN
RED
ORANGE
YELLOW
GREEN
BLUE
SLATE
VIOLET
GRAY
WHITE


HIGH FREQ.
1ST R-F COIL
Z-105
HIGH FREQ.
2ND R-F COIL
Z-106
HIGH FREQ.
DET. COIL
6SK7
2ND R-F
AMP.
6SK7
DETECTOR
6SG7
1ST AUDIO
6H6
AUDIO
LIMITER
T-102
OUTPUT TRANS.
LOW PASS FILTER
C-109
8 TO 100 MMF.
C-105
8 TO 75 MMF.
C-102
5 TO 55
MMF.
C-115
100 MMF.
C-112
50 MMF.
C-103
5-55 MMF.
C-107
6-75 MMF.
C-106
6-75 MMF.
C-110
8-100 MMF.
C-123
500 MMF.
C-136
2500 MMF.
C-162
1.0 MF.
C-163
1.0 MF.
C-164
0.5 MF.
C-166
1.0 MF.
C-167
.01 MF.
R-102
350 Ω
R-105
10,000 Ω
R-107
10,000 Ω
R-108
10,000 Ω
R-109
10,000 Ω
R-110
20,000 Ω
R-112
250,000 Ω
R-114
R-115
500,000 Ω
R-119
100,000
R-121
250,000 Ω
R-123
500,000 Ω
R-124
500,000 Ω
R-126
2.5 MEG.
R-136
5000 Ω
R-137
S-112
S-113
S-114
S-115
S-116
S-117
S-118
S-119
S-120
S-121
HOLE #6
HOLE #7
HOLE #8
HOLE #9
BLACK
BLUE
RED
GREEN
YELLOW
ORANGE
BROWN
SLATE
BLUE-SLATE
RED-BLK.
RED-YEL.
RED-BLUE
RED-BL.
BLK.
GRN.
YEL.
BL.
BRN.
ORG.


ANTENNA CONNECTOR J-104
R-122 500000Ω
R-120 250000Ω
C-116 300 MMF.
C-108 8 TO 95 MMF.
ANT. COMPENSATOR
C-113 60 MMF.
C-111 45 MMF.
C-124 800 MMF.
C-125 1000 MMF.
S-108
S-111
S-109
S-110
S-112
S-115
S-113
S-114
HOLE #1
HOLE #2
HOLE #3
HOLE #6
HOLE #14
6SK7 R-F AMP.
6SK7 2ND R-F AMP.
R-104 10,000Ω
R-105 10000Ω
R-101 350Ω
R-123 50 MEG.
R-126 10000Ω
R-102 350Ω
C-150 0.5 MF.
C-166 1.0 MF.
C-119 500 MMF.
C-126 1000 MMF.
C-152 .5 MF.
C-151 .5 MF.
C-160 1.0 MF.
C-109 8 TO 100 MMF.
C-105 8 TO 75 MMF.
C-102 5 TO 55 MMF.
C-115 100 MMF.
C-112 50 MMF.
C-103 5-35 MMF.
C-107 6-75 MMF.
C-106 6-75 MMF.
C-114 100 MMF.
Z-104
HIGH FREQ. 1ST R-F COIL
Z-105
HIGH FREQ. 2ND R-F COIL
E-146
OUTPUT TERMINALS
OUTPUT
SEE SCHEMATIC DIAGRAM FOR INTERNAL CONNECTION
T-101
T-102 OUTPUT TRANS.
R-115 500000Ω
R-114
R-121 250000Ω
C-154 0.5 MF.
C-166 1.0 MF.
C-129 .01 MF.
6H6 AUDIO
BLACK
BLUE
GREEN
YELLOW
RED
ORANGE
BROWN
BLUE-SLATE
GRN.
YEL.
BLK.
ORG.

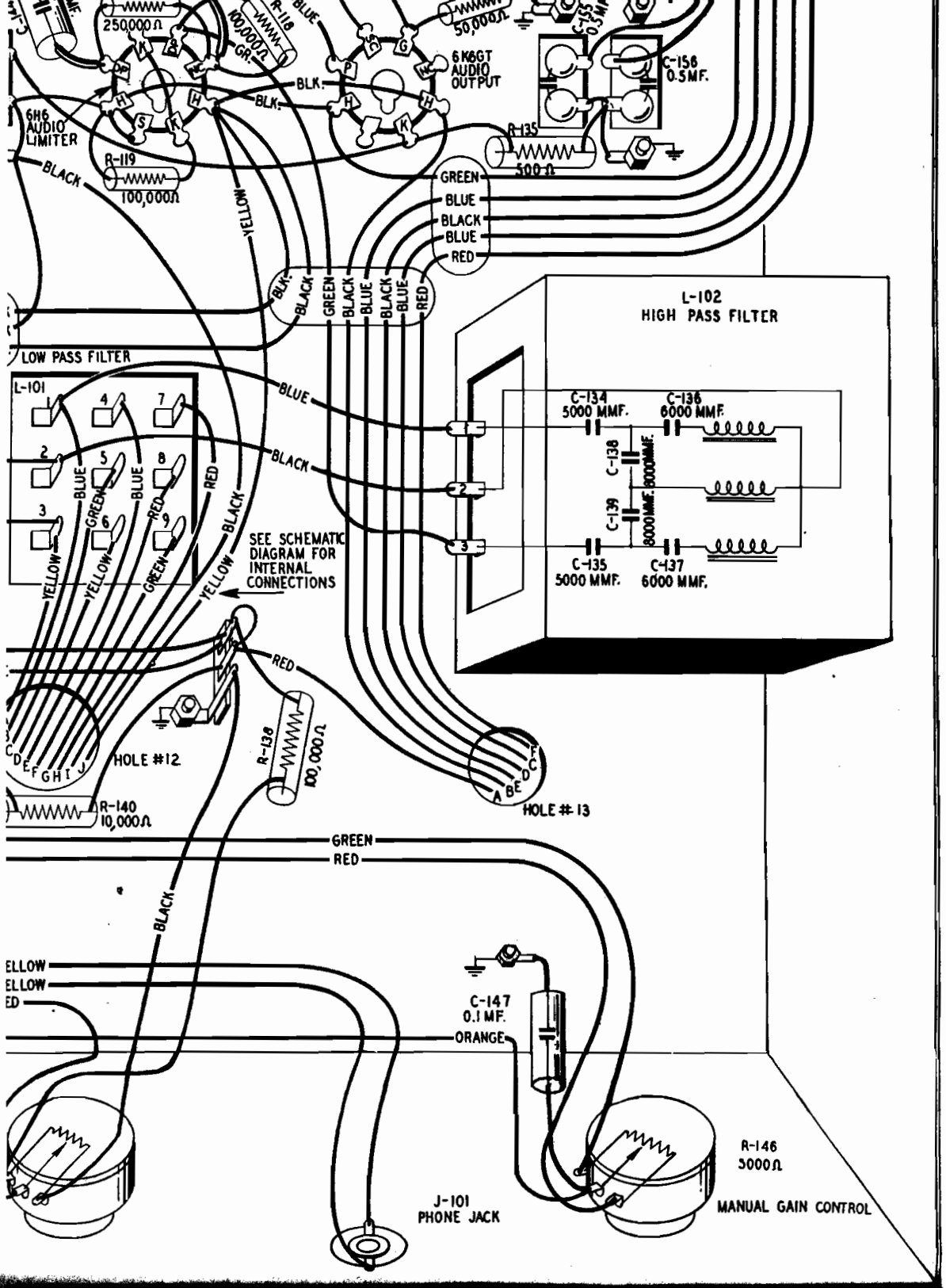
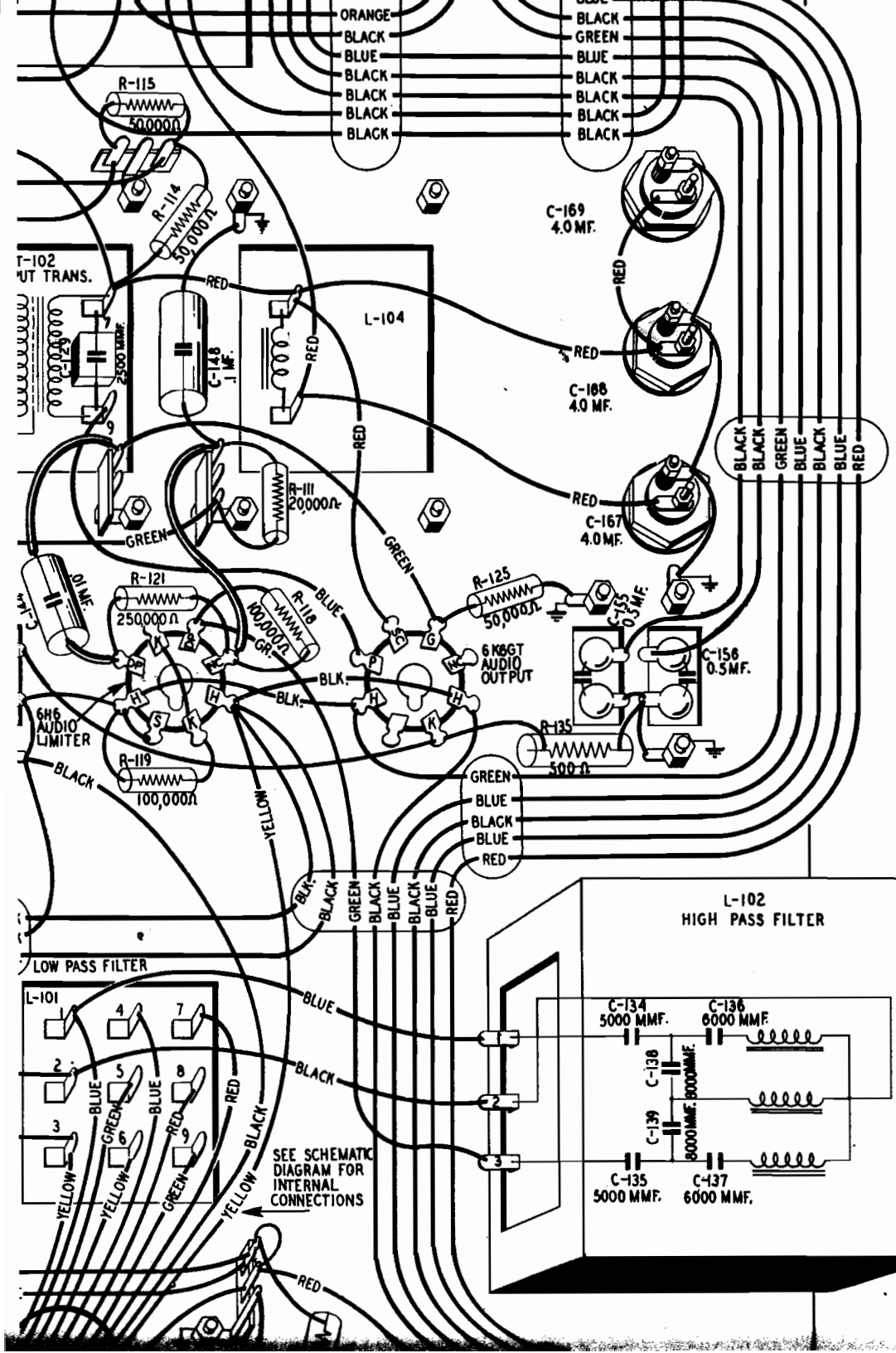
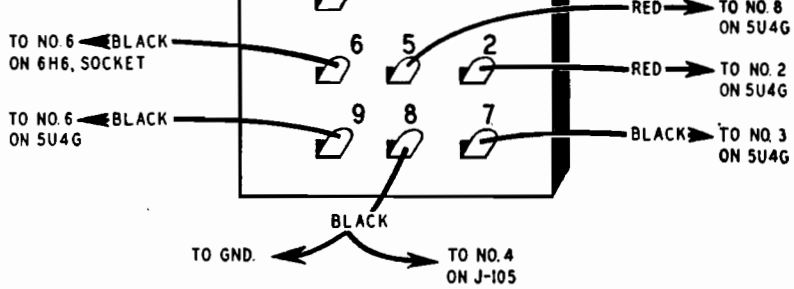
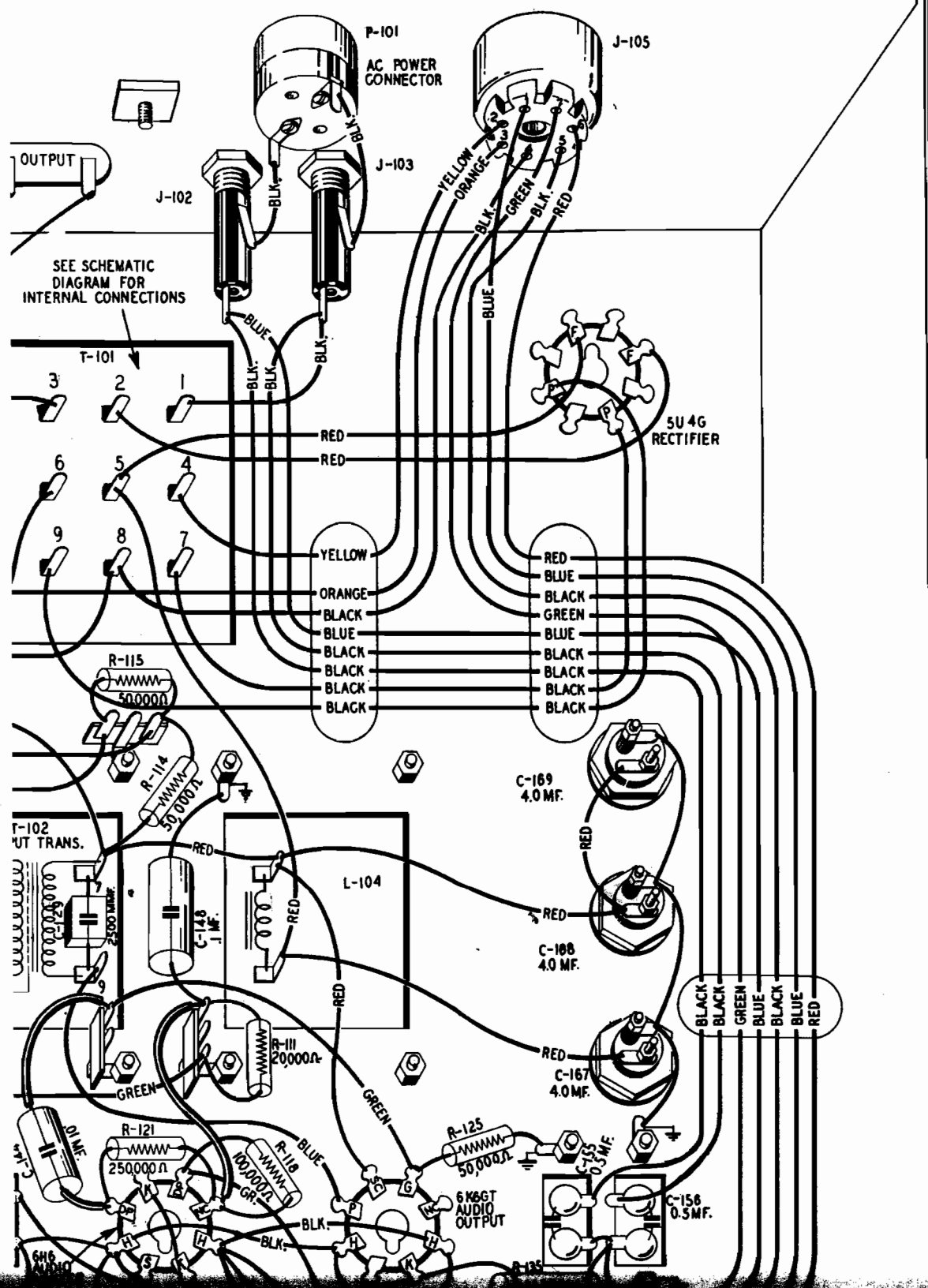


Fig. 32. Pictorial Diagram, Bottom View of Chassis



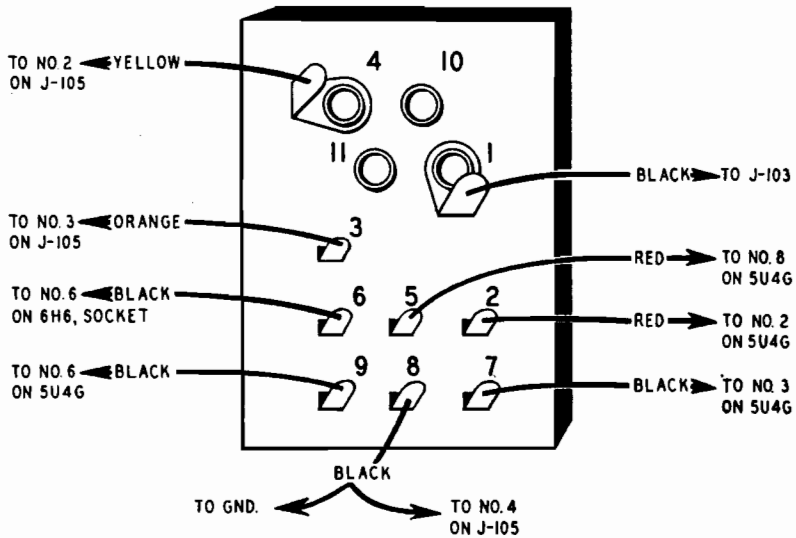


SEE SCHEMATIC DIAGRAM FOR INTERNAL TRANSFORMER CONNECTIONS.



POWER TRANSFORMER CONNECTIONS ON RBL-4

T-101



SEE SCHEMATIC DIAGRAM FOR INTERNAL TRANSFORMER CONNECTIONS.

NOTE:
PROVIDE SUFFICIENT CLEARANCE BETWEEN THE REAR OF THE RECEIVER CABINET AND THE WALL TO ALLOW FOR THE CURVATURE OF THE CABLES USED FOR ANTENNA AND POWER CONNECTIONS.

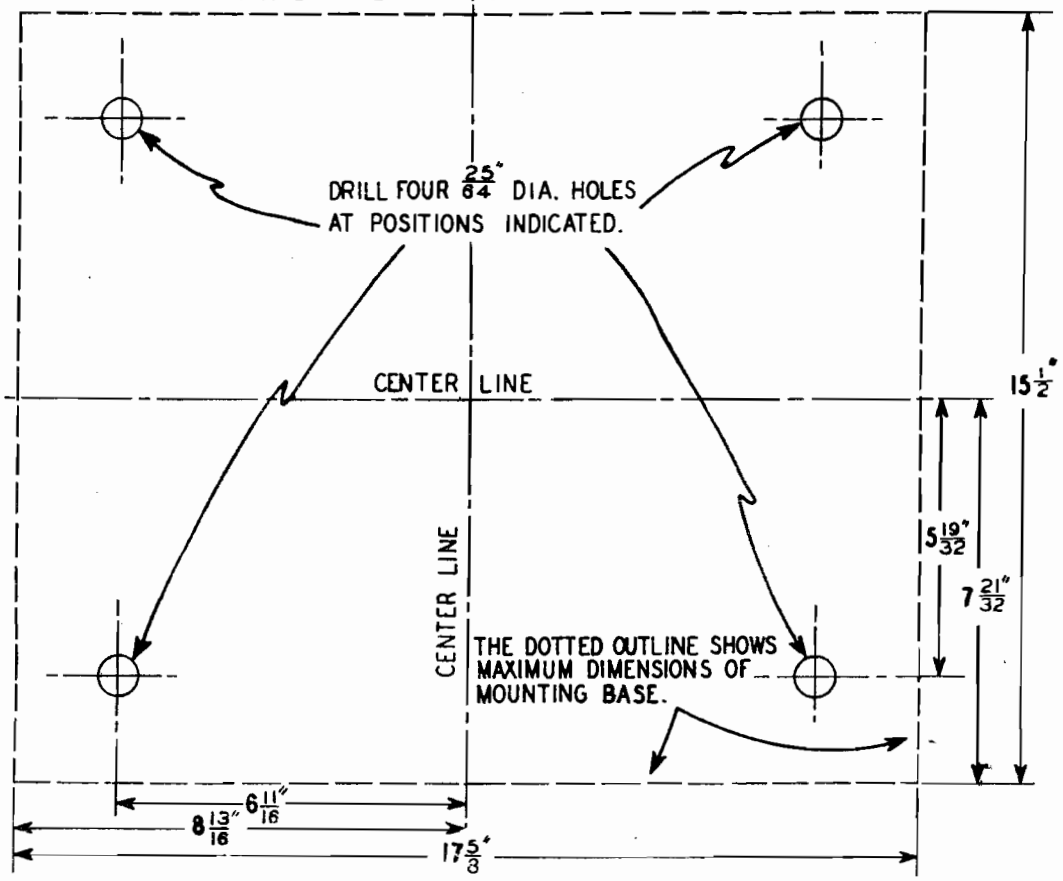


Fig. 33. Drilling Plan for Mounting Base Installation

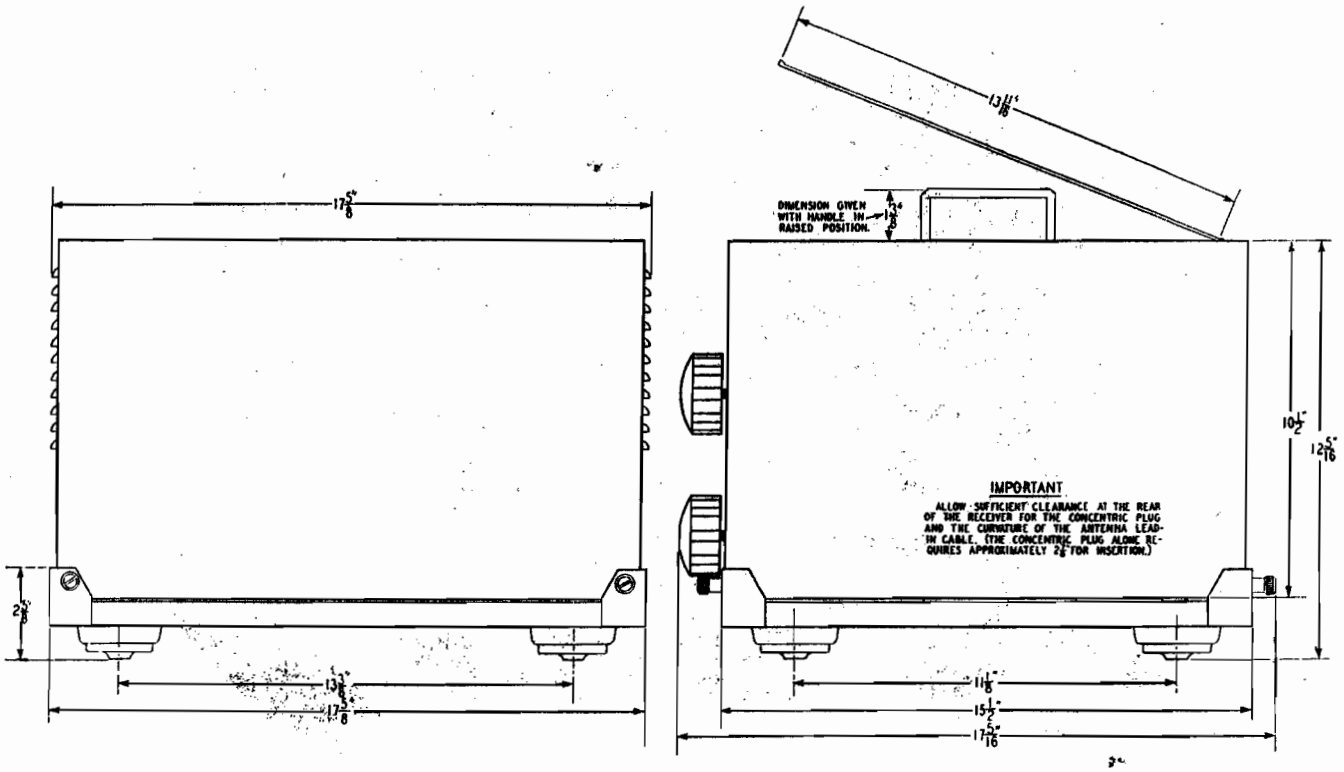


Fig. 34. Outline Dimensions

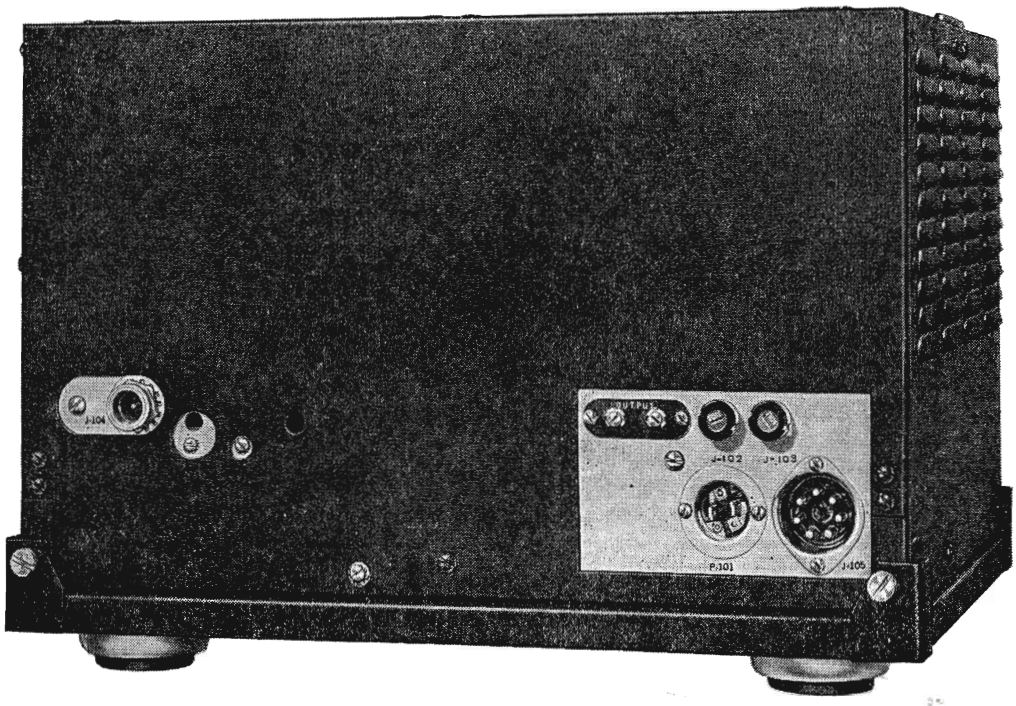


Fig. 35. Rear View of Receiver

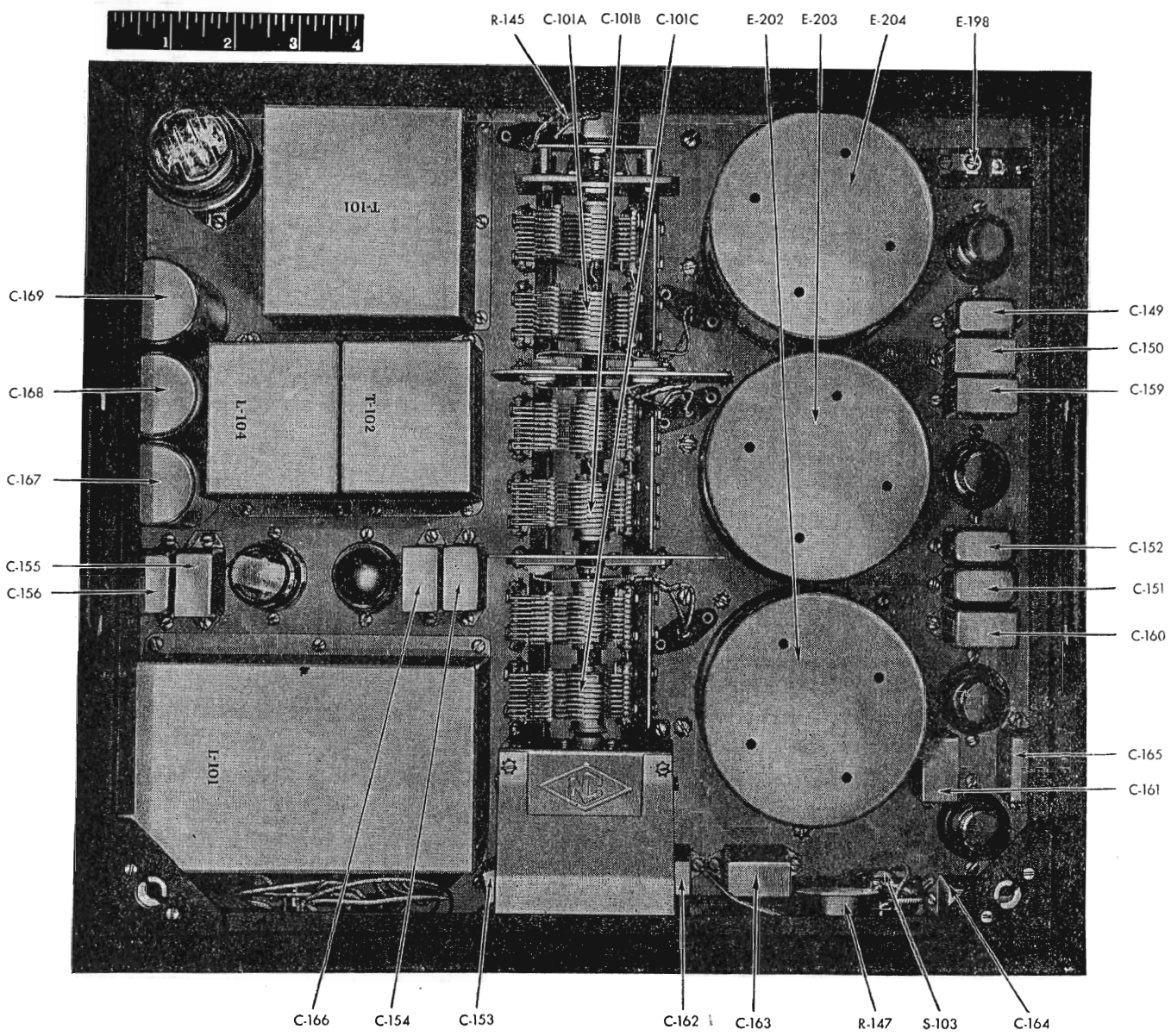


Fig. 36. Top View of Receiver

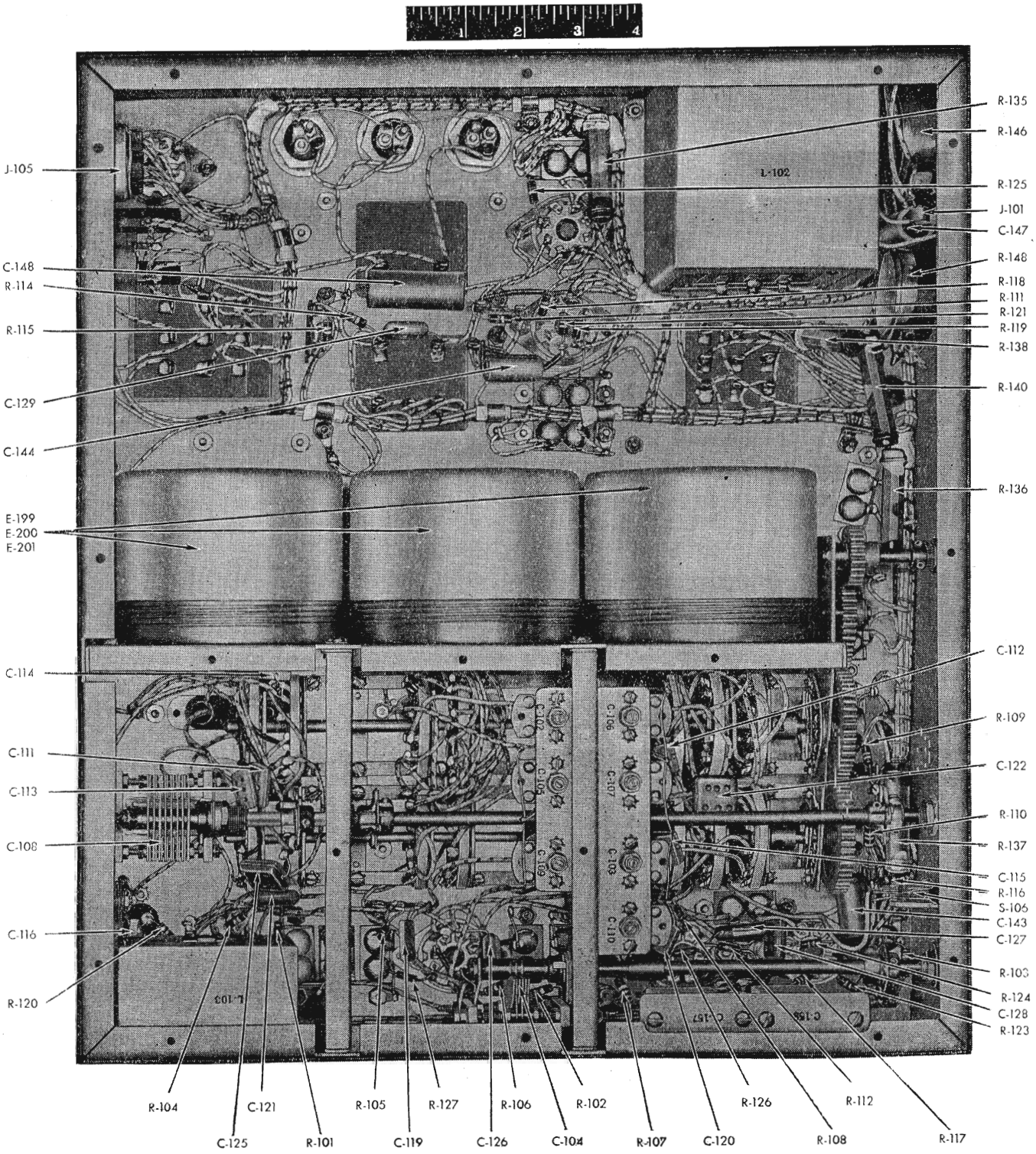


Fig. 37. Bottom View of Type CWQ-46161-A Radio Receiver

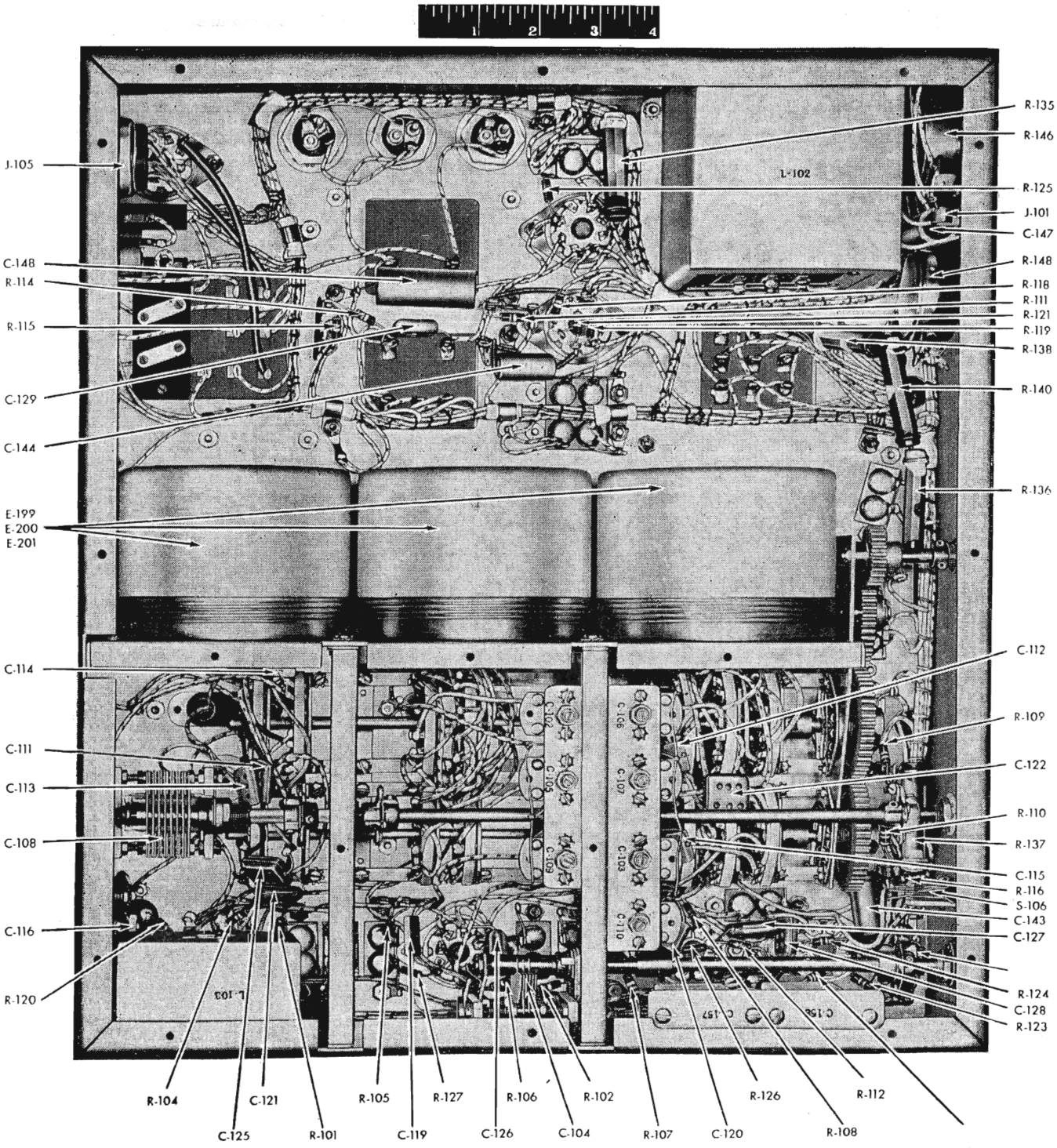


Fig. 38. Bottom View of Type CWQ-46230 Radio Receiver

MEMORANDUM