NAVSHIPS 900,235

INSTRUCTION BOOK

FOR

NAVY MODELS RBK-12, RBK-13, AND RBK-14 RADIO RECEIVING EQUIPMENT

THE HALLICRAFTERS COMPANY
CHICAGO, ILLINOIS

NAVY DEPARTMENT BUREAU OF SHIPS

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CONTRACTUAL GUARANTEE

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

INSTALLATION RECORD

Contract Number_____ Date of Contract_____

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

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 installation of the equipment. For procedure in reporting failures see Chapter 67 of the "Bureau of Ships Manual," or superseding instructions.

ORDERING PARTS

All requests or requisitions for replacement material should include the following data:

1. Navy stock number or, when ordering from an Army supply depot, the Army stock number.
2. Name of part.

If the Navy stock number has not been assigned, the requisitions should specify the following:

1. Equipment model designation.
2. Name of part and complete description.
3. Manufacturer's designation.
4. Contractor's drawing and part number.
5. AWS, JAN, or Navy type designation.

SAFETY NOTICES

The attention of officers and operating personnel is directed to Chapter 67 of Bureau of Ships Manual or superseding instructions on the subject of Radio-Safety precautions to be observed.

This equipment employs voltages which are dangerous and may be fatal if contacted by operating personnel. Extreme caution should be exercised when working with the equipment.

KEEP AWAY FROM LIVE CIRCUITS

Operating personnel must at all times observe all safety regulations. Do not change tubes or make adjustments inside equipment with high voltage supply on. Under certain conditions dangerous potentials may exist in circuits with power controls in the off position due to charges retained by capacitors. To avoid casualties always remove power and discharge and ground circuits prior to touching them.

DON'T SERVICE OR ADJUST ALONE

Under no circumstances should any person reach within or enter the enclosure for the purpose of servicing or adjusting the equipment without the immediate presence or assistance of another person capable of rendering aid.

RESUSCITATION

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

Figure 1-1: Model RBK-14 Radio Receiving Equipment.

SECTION I

GENERAL DESCRIPTION

1. SCOPE.

The models RBK-12 and RBK-13 Radio Receiving Equipments use the type CHL-46130-C Radio Receiver. The model RBK-14 Radio Receiving Equipment uses the type CHL-46130-D Radio Receiver. These two types of receivers are identical except for a few minor circuit differences. This instruction book describes both receiver types.

Separate illustrations and instructions are given for each receiver type wherever differences in the two receivers occur.

2. BRIEF DESCRIPTION.

This receiver uses a high frequency superheterodyne receiver circuit, designed for the reception of amplitude-modulated (a-m), frequency-modulated (f-m), and continuous-wave telegraph (c-w) signals. The overall frequency range of the receiver (27.8 to 143 megacycles) is divided into three bands which have frequency ranges as follows: band 1—27.8 to 46 megacycles, band 2—46 to 82 megacycles, and band 3—82 to 143 megacycles. The i-f frequency is 5.25 megacycles.

The receiver is housed in a metal cabinet with a hinged lid. The high frequency oscillator, r-f amplifier, and mixer circuits (with acorn tubes), are separately shielded by a metal housing within the receiver cabinet.

A tuning meter ("CARRIER INDICATOR") at the upper right hand side of the control panel is provided to aid in tuning.

3. CHARACTERISTICS OF REQUIRED POWER SUPPLY.

The receiver is designed to operate from either a 115 volt or 230 volt 50 to 60 cycle, single phase, a-c source, or from a 6 volt storage battery and 270 volt "B" battery. The "B" batteries may be replaced by an equivalent vibrator type power supply if it meets the following current requirements.

A-C OPERATION	D-C OPERATION
Line Voltage—115 V., 230 V.	Filament voltage—6.3 volts
Line current—1.0 amp., 0.5 amp.	Filament current—4.5 amps.
Power Consumption—115 watts	"B" voltage—270 volts
	"B" current—145 ma.

4. REFERENCE DATA.

a. Nomenclature: FM/AM Radio Receiving Equipment Models RBK-12, RBK-13, and RBK-14.

b. Contract Data:

CONTRACT NO.	DATE	RBK MODEL NO.
NXsr-39265	6/10/44	12
NXsr-56768	2/2/45	13
NXsr-39265	6/10/44	14
NXsr-69198	6/30/44	14
NXsr-67988	6/30/44	13
NXsr-85032	12/30/44	14

c. Contractor: The Hallicrafters Co.
2611 South Indiana Avenue
Chicago, Illinois

d. Cognizant Naval Inspector: Inspector of Naval Material, Chicago, Illinois.

e. Shipping Information:
(1) Number of packages per complete shipment.2
(2) Receiver Package:
(a) Height .....13.5 inches
(b) Width .....18.5 inches
(c) Depth .....22.75 inches
(d) Cubical Content.....5,681 cubic inches
(e) Weight .....100 pounds
(3) Spare Parts Package:
(a) Height .....12.75 inches
(b) Width ..... 15 inches
(c) Depth .....20.5 inches
(d) Cubical Content.....3,921 cubic inches
(e) Weight .....88 pounds
(4) Crate (contains receiver and spare parts packages):
(a) Height .....15.5 inches
(b) Width .....22.75 inches
(c) Depth .....32.5 inches
(d) Cubical Content.....11,461 cubic inches
(e) Weight .....228 pounds

f. Frequency Range.....27.8 mc to 143 mc

g. Frequency Bands
Band 1.....27.8 mc to 46 mc
Band 2.....46 mc to 82 mc
Band 3.....82 mc to 143 mc

h. Type Receiver .....Superheterodyne

i. Intermediate Frequency .....5.25 mc

j. Receiver Output.....3 watts at less than 5 per cent distortion into 500 or 5000 ohm load.

k. Type of Reception
AM.....Voice (A1), Tone (A2), and CW (A3)
FM.....Wide "Swing" (±75 kc)

l. Power Supply Requirements
Voltage.....115/230 v. 60 cycle, 1 phase, a-c
Power .....115 watts

m. Output Impedances.....500 ohm, 5000 ohm, 600 ohm balanced

n. Audio Frequency Response...±3 db between 40 and 10,000 cycles

o. Recommended Antennas.....See Figure 3-4

p. Receiver Sensitivity
(1) For 500 mw output (signal plus noise):
BAND 1
30 MC—3.2 microv.
38 MC—1.8 microv.
46 MC—1.8 microv.

BAND 2

50 MC—5.6 microv.
60 MC—4.5 microv.
80 MC—3.2 microv.

BAND 3

90 MC—27 microv.
105 MC—30 microv.
135 MC—22 microv.

(2) For 100 db signal to noise ratio:

BAND 1

30 MC—3.6 microv.
38 MC—2.6 microv.
46 MC—3.0 microv.

BAND 2

50 MC—3.5 microv.
60 MC—3.2 microv.
80 MC—4.0 microv.

BAND 3

90 MC—6 microv.
105 MC—6.5 microv.
135 MC—5 microv.

(3) For 20 db "hiss" reduction (on FM):

Band 1—20 microv.
Band 2—12 microv.
Band 3—18 microv.

5. TUBE COMPLEMENT.

The following table gives the symbol, type, and function of all of the tubes used in the receiver.

SYMBOL	TUBE TYPE	FUNCTION
V1	JAN-956 (acorn)	r-f amplifier
V2	JAN-954 (acorn)	mixer
V3	JAN-6AC7	1st i-f amplifier
V4	JAN-6AB7	2nd i-f amplifier
V5	JAN-6SK7	3rd i-f amplifier
V6	JAN-6H6	a-m detector and automatic noise limiter
V7	JAN-6AC7	f-m limiter
V8	JAN-6H6	f-m discriminator
V9	JAN-6SL7 GT	audio voltage amplifier
V10	JAN-0D3/VR150	voltage regulator
V11	JAN-6V6-GT	audio power amplifier
V12	JAN-6V6 GT	audio power amplifier
V13	JAN-5U4G	full wave rectifier
V14	JAN-6J5	beat frequency oscillator
V15	JAN-955 (acorn)	high frequency oscillator

SECTION II

THEORY OF OPERATION

1. INTRODUCTION.

Navy Models RBK-12 and RBK-13 Radio Receiving Equipment both use the Type CHL-46130-C Radio Receiver. Navy Model RBK-14 Radio Receiving Equipment uses the Type CHL-46130-D Radio Receiver. These two receivers are identical, except for a few minor circuit differences.

The following description applies to both receivers. For those circuits in which differences occur, separate descriptions are given for each receiver.

2. PRINCIPLES OF OPERATION.

a. GENERAL FUNCTIONING.—The radio receiver utilizes a superheterodyne circuit having r-f preselection and a separate Heterodyne Oscillator stage. The general functioning of the receiver is illustrated in the Functional Block Diagram, Figure 2-1. Either frequency modulated (FM), amplitude modulated (AM), or continuous-wave (C-W) signals may be received. The incoming signal is selected and amplified by the R-F Amplifier stage, which uses the Type JAN-956 High-Frequency (acorn) Amplifier Pentode (V1). The output of the R-F Amplifier is mixed with the locally-generated oscillator signal in the Mixer stage. The Mixer stage uses the Type JAN-954 High-Frequency (acorn) Pentode (V2). The Heterodyne Oscillator stage is tuned to 5.25 megacycles above the frequency of the incoming signal on the first band of operation, and is tuned to 5.25 megacycles below the frequency of the incoming signal on the second and third bands. The resultant intermediate frequency, which is 5.25 megacycles in either case, is amplified by the I-F Amplifier stages. For FM reception, only the first two I-F Amplifier stages are used. These stages contain, respectively, the Type JAN-6AC7 "Television" Pentode Amplifier Tube (V3), and the type JAN-6AB7 "Television" Amplifier Tube (V4).

These two stages provide the wide i-f band necessary for F-M reception.

A-M Signals continue through the Third I-F Amplifier stage, but uses the Type JAN-6SK7 pentode amplifier tube (V5) and then are demodulated in the Second Detector stage, which uses one section of the Type JAN-6H6 duo-triode tube (V6). The resulting audio signal is fed through the First Audio Amplifier stage and the Phase-Inverter stage, which use both sections of the Type JAN-6SL7-GT duo-triode tube (V9). The two audio signals, 180 degrees out of phase, then are fed to the push-pull Audio Output stage, which uses the two Type JAN-6V6-GT beam-power pentode tubes (V11 and V12). Output impedances of 5,000, 500 and 600 ohms (center-tapped) are provided from this stage.

The Power Supply stage provides approximately 300 volts for operation of all the stages of the radio receiver. The Power Supply stage uses the Type JAN-5U4G full-wave, high-vacuum, rectifier tube (V13). In some stages, where lower regulated voltages are required, 150 volts is provided from the Voltage Regulator stage, which uses the Type JAN-VR-150/30 gaseous regulator tube (V10).

b. DETAILED FUNCTIONING.—The overall schematic diagram for Type CHL-46130-C Radio Receiver is shown in Figure 7-10. Various simplified schematic illustrations are inserted throughout the following text, and these are made applicable to both radio receivers. The following text analyzes the various radio receiver circuits by describing their effects on a received signal. The text and diagrams assume that the receiver is operating on Band 1 (27.8 to 46 mc). Differences encountered on other bands will be noted where they are required.

(1) R-F AMPLIFIER STAGE.—Simplified schematic diagrams of the R-F Amplifier stage for each of the receiver chassis are shown in Figures 2-2 and 2-3. The signal picked up by the antenna is coupled through the r-f transformer (T1) through the parasitic suppressor resistor (R26) to the grid of the r-f amplifier tube (V1). The secondary of the transformer (T1) is tuned by a section of the main tuning capacitor (C1A). The "ANTENNA" capacitor (C2) is connected in parallel with the tuning capacitor section, and provides a front-panel control to compensate for variations in circuit capacitance due to antenna loading from band to band. In the Type CHL-46130-D Radio Receiver, an additional resistance-capacitance network (R72 C80) is inserted in series with the grid lead in order to enable the prompt recovery of this stage from the blanking action. Note also, that a blanking jack (SO3) is provided on the Type CHL-46130-D chassis. This jack is connected in the screen voltage lead to the r-f tube (V1) at such a point that it may be grounded to remove screen voltage from the tube but still will not short-circuit the power supply. The minimum-bias resistor (R1) is included to maintain a minimum grid bias voltage for the tube when no AVC voltage is being applied. The amplified signal is coupled to the succeeding stage through the second r-f transformer (T4). The plate return lead of this transformer contains the r-f filter network (C6, C78 and R3) to prevent leakage of radio-frequency energy from the stage.

(2) MIXER AND HETERODYNE OSCILLATOR STAGES.—A simplified schematic diagram of the Mixer and Heterodyne Oscillator stages is shown in Figure 2-4.

(a) HETERODYNE OSCILLATOR.—The Heterodyne Oscillator stage uses the Type JAN-955 Triode (V15) in an inductively coupled feedback circuit. The secondary of the oscillator transformer (T7) is tuned

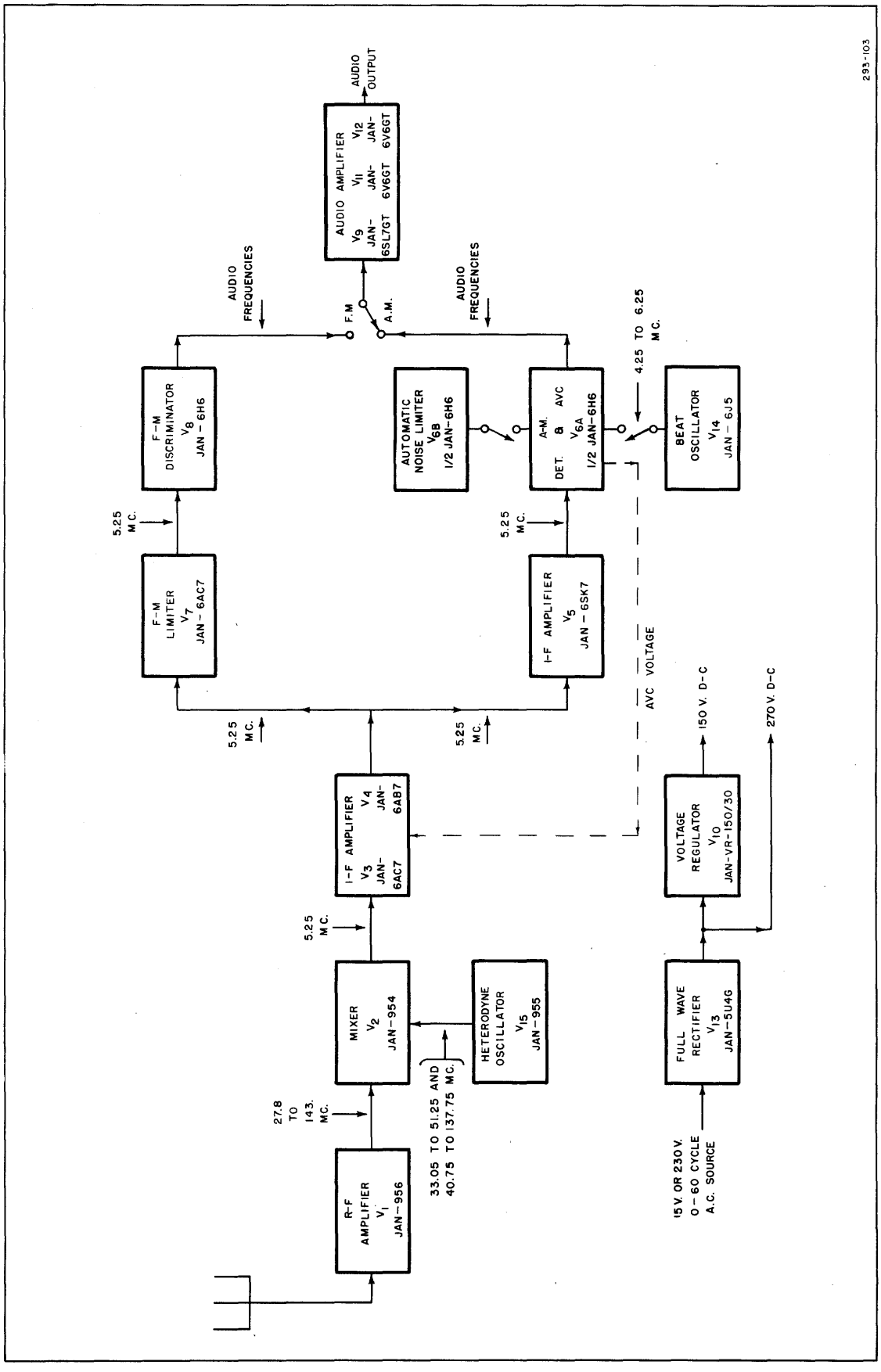

Figure 2-1: Types CHL-46130-C and CHL-46130-D Receiver Functional Block Diagram.

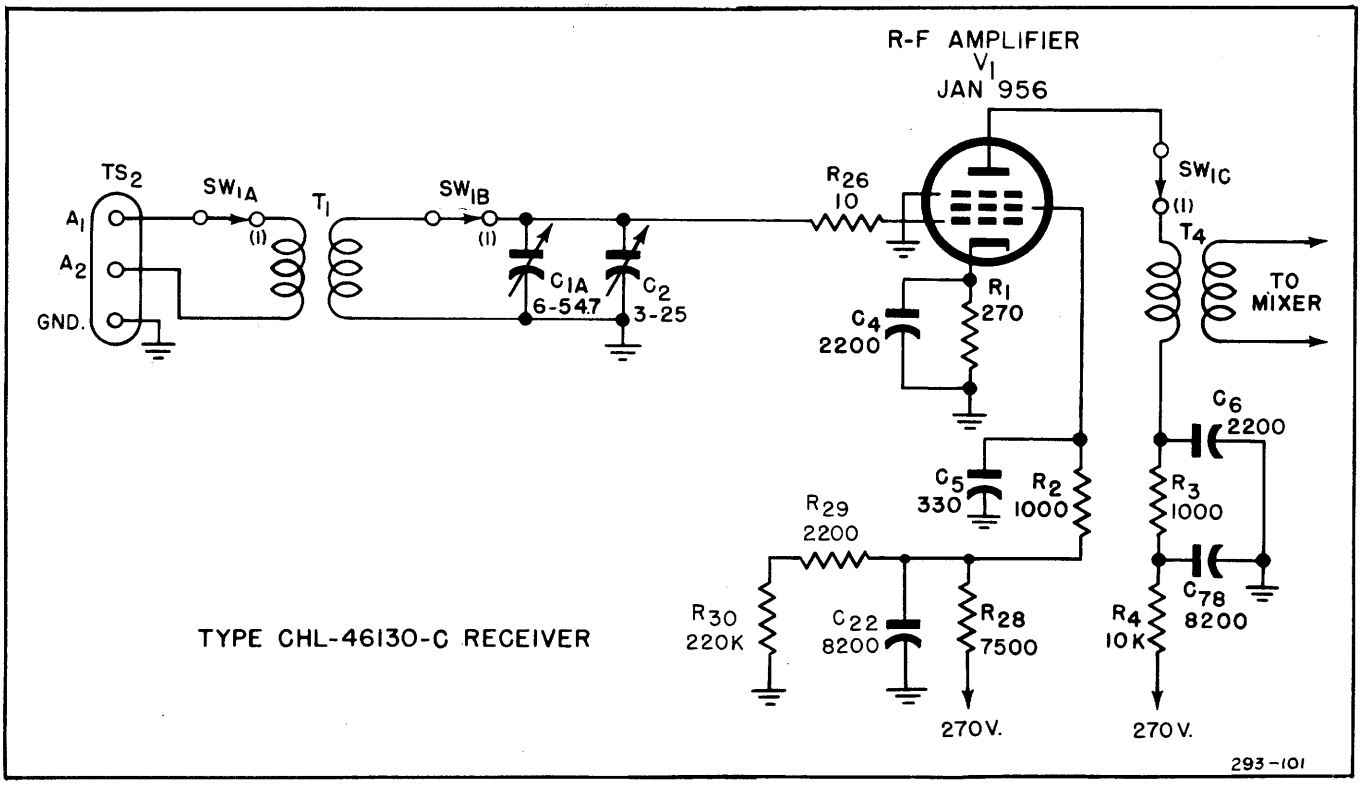

Figure 2-2: Type CHL-36130-C Receiver, R-F Stage Simplified Schematic Diagram.

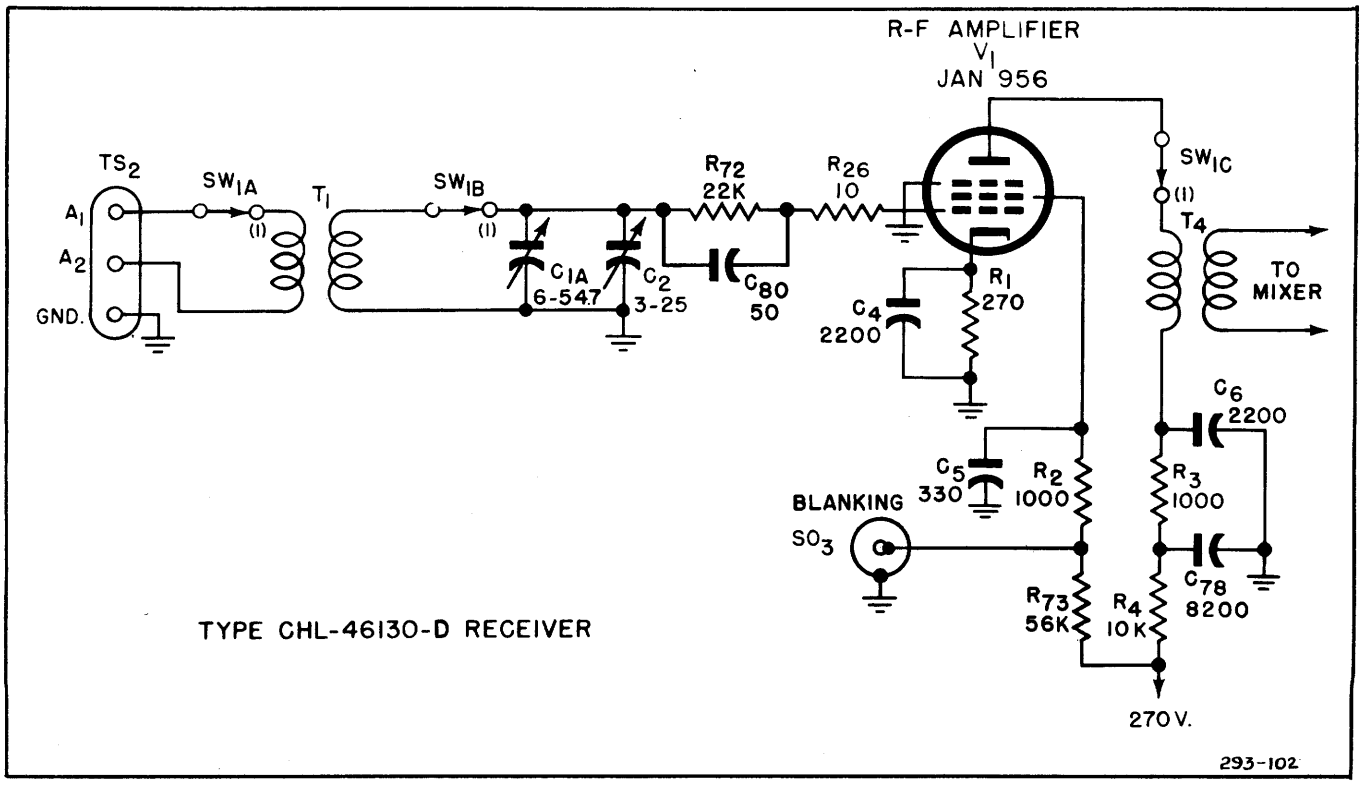

Figure 2-3: Type CHL-46130-D Receiver, R-F Stage Simplified Schematic Diagram.

by the oscillator section of the tuning capacitor (C1C) to a frequency 5.2 megacycles above that of the incoming signal, except in the case of Bands 2 and 3 (46 to 143 mc) in which case the oscillator is tuned 5.25 megacycles below the frequency of the incoming signal. The trimmer capacitors (C58 and C66) are used to align the oscillator stage so that it will "track" at the correct frequency difference over the entire tuning range. The oscillator stage uses parallel plate feed, and the leakage of the r-f energy through the plate lead is suppressed by the filter (L1, C55, R62, and R63). The oscillator signal is introduced into the mixer circuit by means of a tertiary winding of the transformer (T7), which is connected in the cathode circuit of the mixer tube (V2).

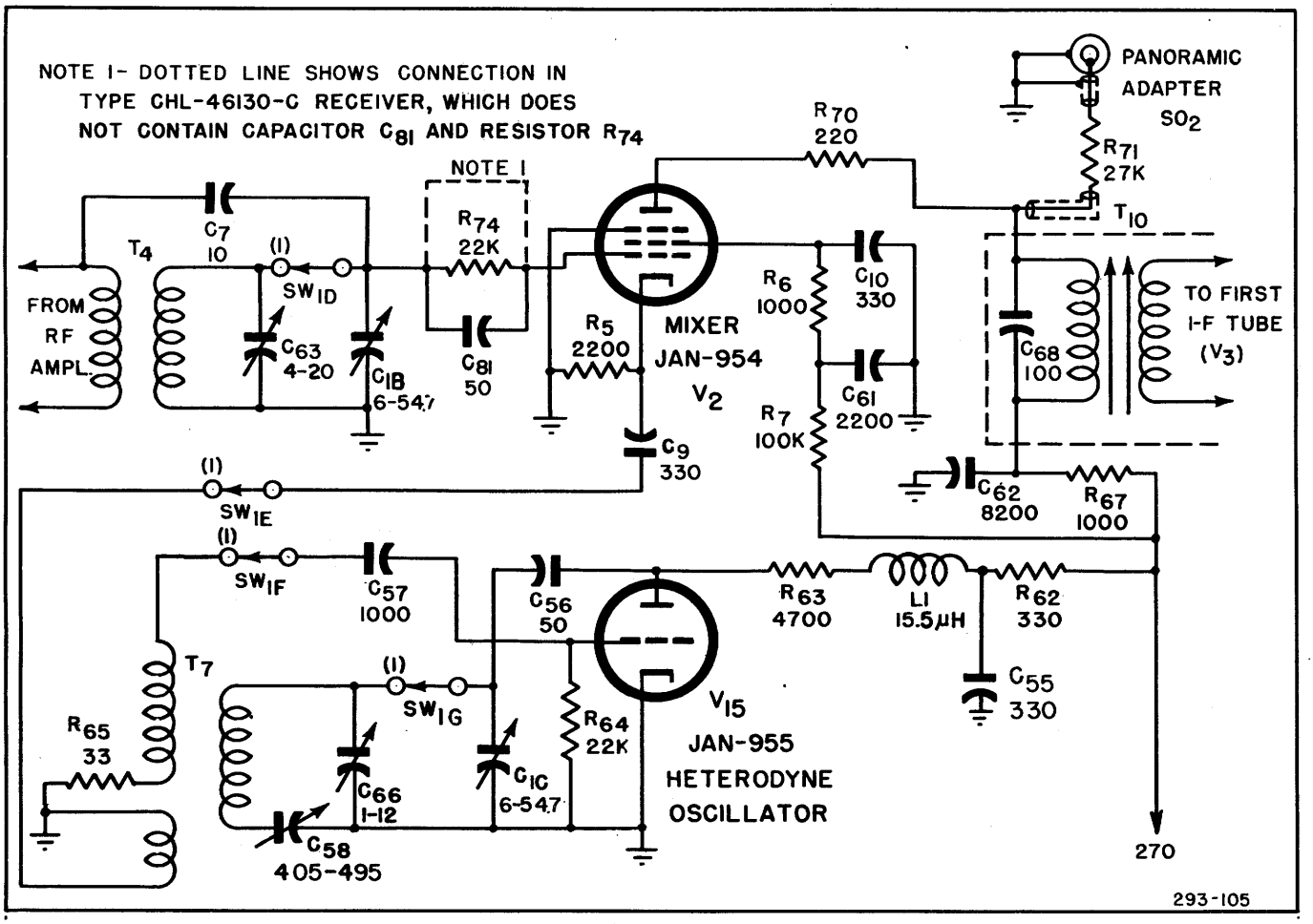

Figure 2-4: Mixer and Oscillator Stages Simplified Schematic Diagram.

(b) MIXER.—The output of the R-F Amplifier stage is coupled both inductively and capacitively to the Mixer stage by means of the second r-f transformer (T4) and the coupling capacitor (C7). The secondary of the transformer (T4) is tuned by a section of the tuning capacitor (C1B), and the trimmer (C63) is provided for alignment. The resistor-capacitor network (R74, C81) is included only on the Type CHL-46130-D chassis, and prevents undesirable effects which might otherwise occur from the blanking circuit action. Mixing of the incoming signal with the heterodyne oscillator signal occurs in the plate-cathode circuit, and the 5.25 megacycle intermediate frequency signal is coupled to the succeeding stage through the first i-f transformer (T10). Leakage of r-f energy through the screen-voltage supply lead is suppressed by means of the resistance-capacitance filter (R6, C10, and C61). A connection from the Mixer stage for an associated panoramic adapter unit is brought out to the "panoramic adapter" jack (SO2).

(3) I-F AMPLIFIER.

(a) FIRST I-F AMPLIFIER STAGE.—The intermediate-frequency output of the Mixer stage is coupled to the first i-f amplifier tube (V3) through the first i-f transformer (T10). Fixed capacitors are used across both primary and secondary of this transformer, and it is tuned to resonance by means of the adjustable powdered iron cores. The transformer contains an additional (tertiary) winding, which increases the coupling across the transformer and provides a wider i-f frequency band. This winding is connected in the circuit

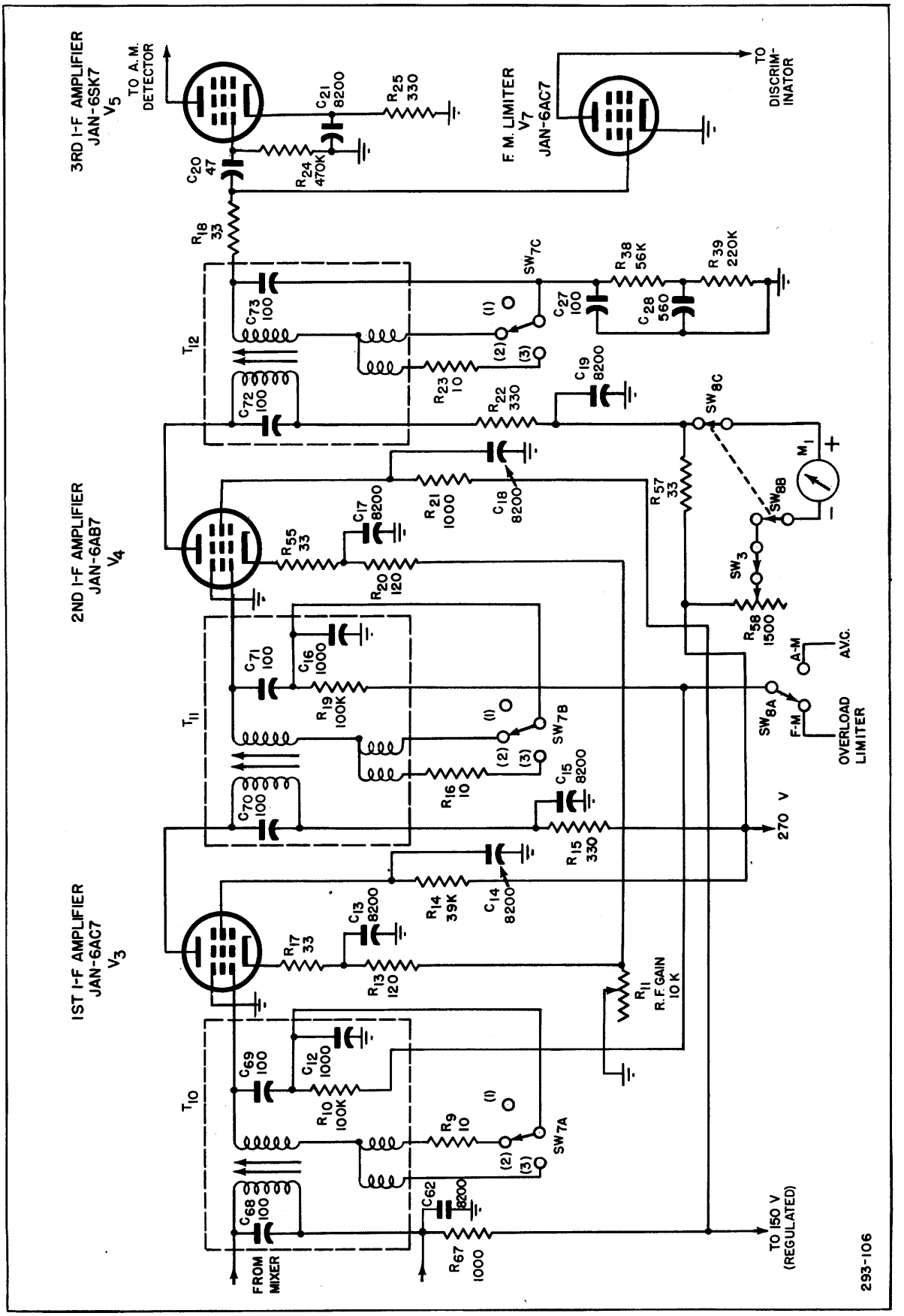

Figure 2-5: Types CHL-46130-C and CHL-46130-D Receiver, Simplified Schematic Diagram of I-F Stages.

when the "SELECTIVITY" switch (SW7) is at the number 3 (broad) position. When this switch (SW7) is in the number 2 (sharp) position, an inductance equivalent to that of the tertiary winding is inserted, but this inductance is not coupled back to the primary winding. To provide the proper i-f band width at the sharp position, series resistance (R9) is included in the grid circuit. The grid return lead for the first i-f tube (V3) is connected to a section of the F-M/A-M switch (SW8A), which connects it either to the AVC voltage lead (during A-M operation) or to the overload-limiting voltage lead (during F-M operation). The screen of the first i-f tube (V3) is connected to the screen-voltage supply through the series resistor (R14). This type of circuit connection gives the tube a remote cut-off characteristic. The gain of this stage may be varied by means of the "R.F. GAIN" cathode resistor (R11). This control is used only during A-M reception. During F-M reception, it is kept at its most clockwise position at which point it closes the tuning-meter circuit switch (SW3).

(b) SECOND I-F AMPLIFIER STAGE.—The Second I-F Amplifier stage operates almost the same as the First I-F Amplifier stage. However, it uses the remote cut-off Type JAN-6AB7 pentode (V4) which, in combination with the Type JAN-6AC7 First I-F Amplifier pentode (V3), provides the proper gain and band width for F-M reception. The plate current of the second i-f amplifier tube (V4) causes a voltage drop across R57 which is indicated by the tuning meter during A-M reception. The screen voltage for this tube is obtained from the 150-volt regulated source. Note that in the connections to the second i-f transformer (T11) resistance (R16) is inserted in the broad position of the "SELECTIVITY" switch (SW7) to maintain the correct i-f band width.

(c) THIRD I-F AMPLIFIER STAGE.—For A-M reception, the output of the Second I-F Amplifier stage is coupled through the third i-f transformer (T12) to the grid of the Type JAN-6SK7 Third I-F amplifier tube (V5). This stage provides the additional amplification necessary to develop a signal of sufficient magnitude to operate the succeeding diode detector. (A portion of the signal coupled across the transformer, T12, is fed to the F-M Limiter tube, V7). The course of the F-M signal will be described in a later paragraph.

(4) DIODE DETECTOR AND AVC STAGE.—The A-M signal from the third i-f tube (V5) is coupled across the fourth i-f transformer (T13) into the Diode Detector stage. This stage uses one-half of the Type JAN-6H6 duo-diode tube (V6A). (Refer to Figure 2-6). The voltage rectified by the diode elements is developed across the resistor network (R31, R33, R34, R36) between the secondary of the transformer (T13) and the cathode of the tube (V6A). Any r-f component of this voltage is by-passed through the capacitor, C24. The audio input signal is tapped off at the junction of two of the resistors (R33 and R34) and is connected through the "F-M/A-M" switch (SW8D) to the First Audio Amplifier stage. A smaller amount of voltage is tapped off between two of the other resistors (R34 and R36), from where it is filtered (by resistor, R35, and capacitor, C8), and then is run through the "AVC" switch (SW4) to the grid returns of the two i-f tubes (V3 and V4).

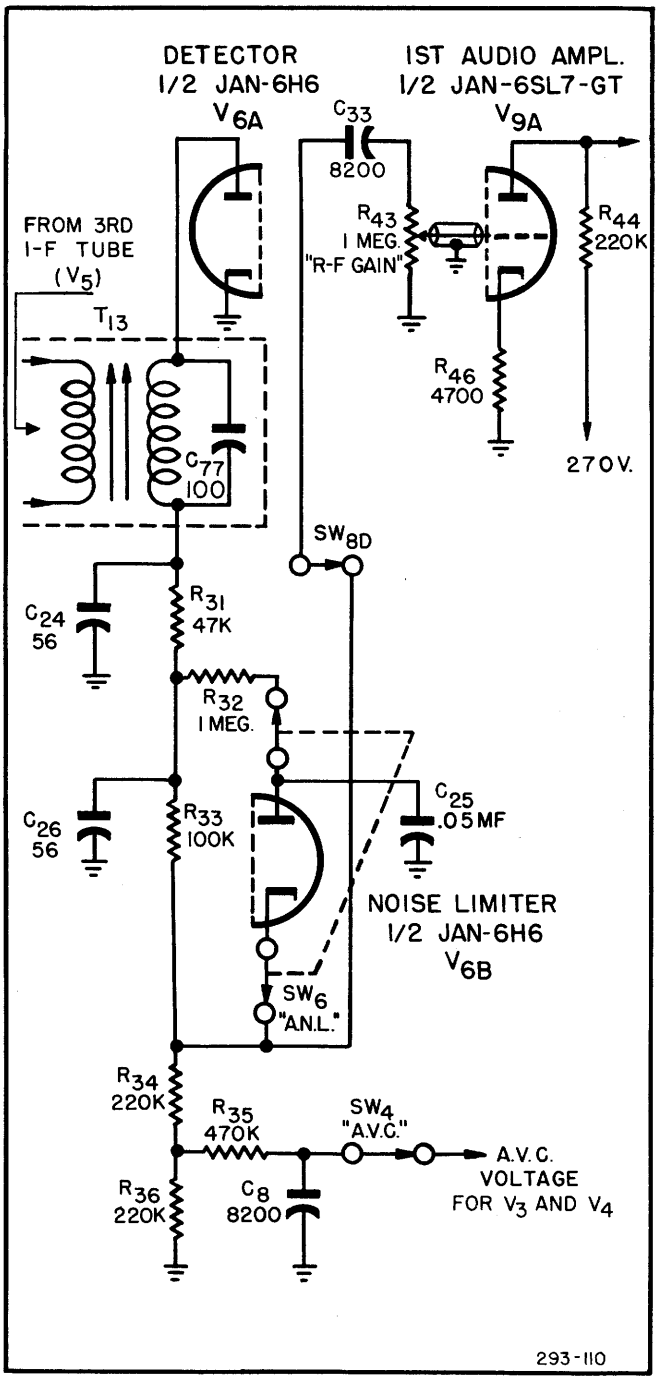

Figure 2-6: Types CHL-46130-C and CHL-46130-D Receiver, A.M. Detector and A.N.L. Simplified Schematic Diagram.

(5) AUTOMATIC NOISE LIMITER STAGE.—The Automatic Noise Limiter (ANL) stage uses the remaining half of the Type JAN-6H6 duo-diode tube (V6A). The diode elements are connected from the audio signal voltage lead (through the capacitor, C25) to ground as an electronic switch. During operation with an audio voltage of normal amplitude, the capacitor, C25, attains a rather constant "average" state of charge, and the plate and cathode of the diode (V6B) remain at substantially the same potential. However, a static burst or a sudden noise peak will apply a momentary negative potential to the diode cathode. Due to the time constant associated with the resistor-capacitor network (R32 and C25), this voltage is not instantly transmitted to the plate, so that a current flow takes place within the diode, causing its internal resistance to become very low. This condition practically short-circuits the audio input voltage through the diode and the capacitor, C25, to ground, to prevent the audio signal from reaching the Audio Amplifier stages. Therefore, in effect, the noise peak is blanked out for about the period of its duration. The ANL circuit may be rendered inoperative by opening the "ANL" switch (SW6).

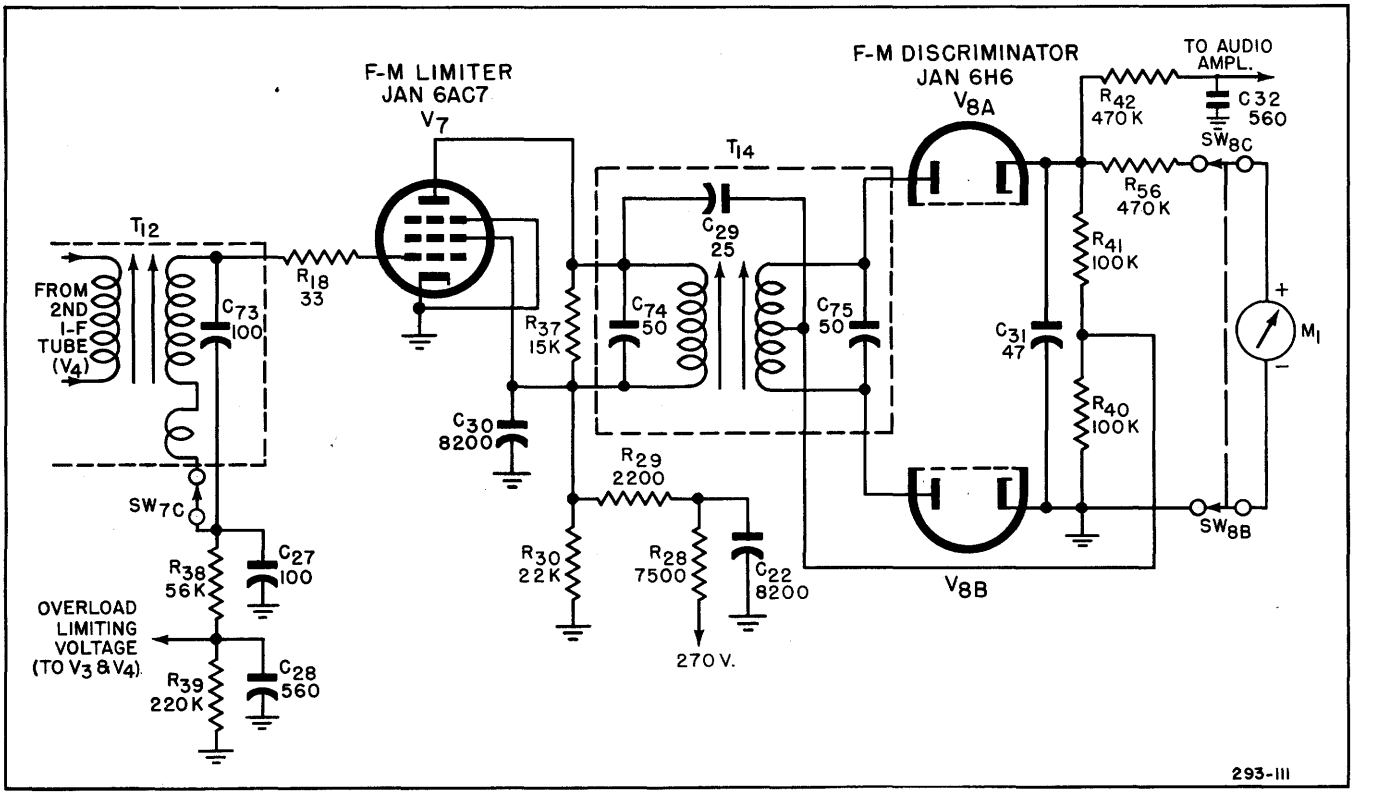

Figure 2-7: Types CHL-46130-C and CHL-46130-D Receiver, F-M Limiter and Discriminator Simplified Schematic Diagram.

(6) F-M LIMITER AND DISCRIMINATOR.—A simplified schematic diagram of the Limiter and Discriminator stages is shown in Figure 2-7.

(a) LIMITER STAGE.—The output of the Second I-F Amplifier stage is coupled through the third i-f transformer (T12) to both the Third I-F Amplifier tube (V5) and to the Limiter tube (V7). During F-M reception, only the signal flowing through the Limiter and Discriminator stages is connected to the audio amplifier. The F-M signal is fed from the transformer (T12) through the parasitic suppression resistor (R18) directly to the grid of the Type JAN-6AC7 Limiter tube (V7). The Limiter tube operates as a saturated amplifier, in which the output remains constant for inputs above a pre-determined level. Thus, any amplitube modulation of the incoming signal is effectively suppressed in this stage. The "clipping" action of the limiter tube, by means of which the output is kept constant, is illustrated in Figure 2-8. Note that negative variations in the grid potential are duplicated in the plate circuit of the tube up to the point at which the grid voltage causes plate current cut-off. Positive variations of the grid potential are duplicated up to the point at which saturation is reached. By operating the tube on the proper portion of the characteristic curve, the output is "clipped" within substantially the same limits in both positive and negative direction. On strong signals, the grid of the Limiter tube (V7) draws current, but results in a d-c voltage being developed across the grid return resistors (R38 and R39). Part of this voltage is tapped off at the junction of the two resistors, and is supplied to the grids of the first two i-f

tubes (V3 and V4) as an overload limiting voltage. (The Automatic Volume control circuits are inoperative during F-M reception.)

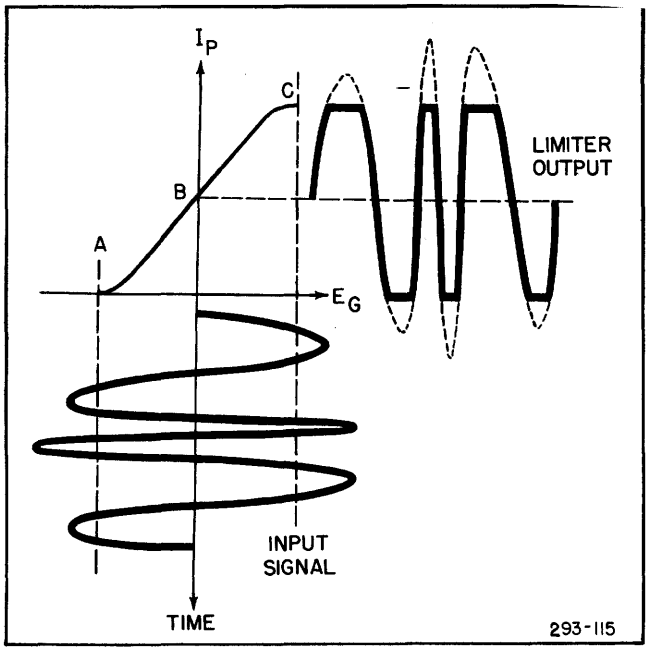

Figure 2-8: Illustration of Limiter Action.

(b) DISCRIMINATOR (F-M DETECTOR) STAGE.—In order to provide an amplitude-modulated signal for the audio amplifier, a circuit is required to change variations in the frequency of the signal to variations in voltage amplitude. This is accomplished by means of a stage whose voltage output varies according to the FREQUENCY of the input. The output of the Limiter stage is coupled across the discriminator transformer (T14), and is applied in opposite phase to each half of the Type JAN-6H6 duo-dode discriminator tube (V8). The output of the Limiter stage also is coupled capacitively (through capacitor C29) to the diode plates of the tube, V8, through the center-tap of the secondary of the transformer, T14. At the center intermediate frequency (5.25 megacycles), the two voltages applied to the discriminator tube have phase relations such that the rectified currents from the two diode sections (V8A and V8B) are equal but opposite in phase. Therefore, the voltages developed across each diode load resistor (R40 and R41) are equal and opposite, and the effective voltage across both of these resistors (which is the output of the stage) is zero. As the intermediate frequency is frequency-modulated, and varies from 5.25 megacycles, the phase relations in the Limiter circuit change, causing a difference in the current flowing in each diode circuit. The greater the frequency variation, the greater is the difference in current flow, and the greater is the net voltage developed across the load resistors (R40 and R41). Thus, an amplitude modulated signal, the magnitude of which is determined by the magnitude of the frequency deviation of the F-M signal, is developed by the discriminator. The action of the Discriminator is illustrated graphically in Figure 2-9. The resistor-capacitor network (C32, R42) in the limiter audio-output circuit is a frequency correcting circuit designed to correct the audio response characteristic of the F-M signal.

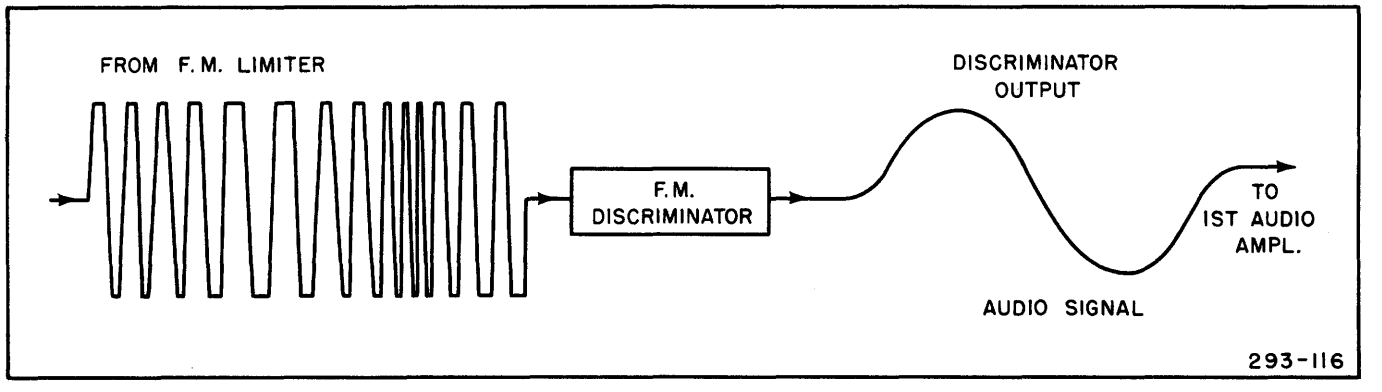

Figure 2-9: Illustration of Discriminator Action.

(7) THE "B.F.O."—The beat frequency oscillator circuit (Refer to Figure 2-10), consists of the triode V14 (JAN-6J5), the inductance assembly L5, and the variable capacitor C60. This circuit is a Hartley type tuned oscillator which operates at frequencies from 4.25 to 6.25 megacycles. The oscillator frequency is adjusted by means of a movable powdered iron core within the field of the coil L5. Fine adjustment of the oscillator frequency needed for the control of the beat note frequency, is provided by means of the capacitor C60 ("PITCH CONTROL"). The "B.F.O." switch (SW2) is used to "make" or "break" the "B" supply plate lead of the triode V14, the position of which determines whether the circuit is active or inactive. The decoupling network R60 and C52 prevents the oscillator signal from reaching the other stages of the receiver through the "B" voltage supply.

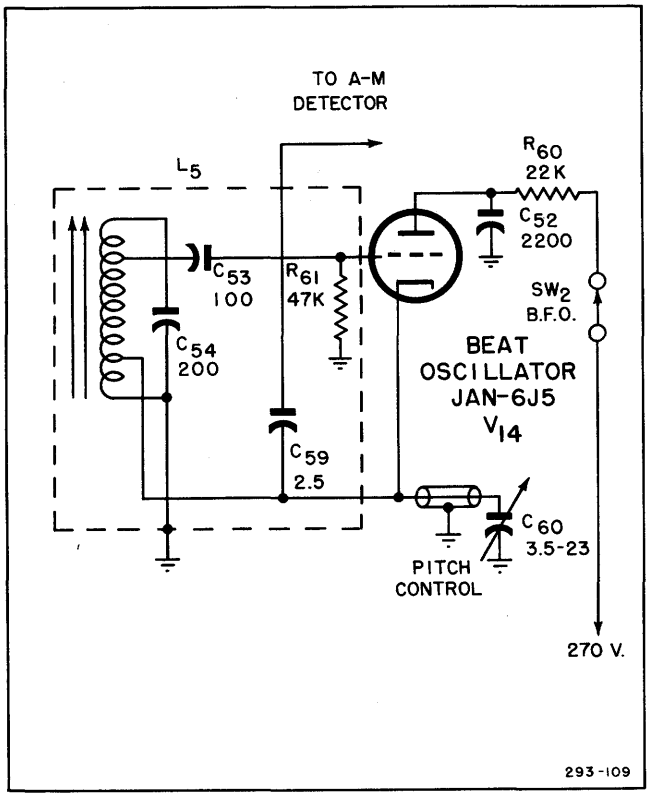

Figure 2-10: Types CHL-46130-C and CHL-46130-D Receiver. Beat Oscillator Stage Simplified Schematic Diagram.

(8) AUDIO AMPLIFIER.

(a) FIRST AUDIO AMPLIFIER AND PHASE INVERTER STAGES.—Depending upon the position of the F-M/A-M switch (SW8), an audio signal is fed to the grid of one triode section (V9A) of the First Audio amplifier tube, Type JAN-6SL7-GT, from either the Diode Detector or Discriminator stage. (Refer to Figure 2-11.) The amplitude of this signal may be controlled by means of the "A-F GAIN" potentiometer (R43). The first audio tube (V9A) operates as a Class A, resistance-coupled amplifier, and feeds the second audio (power amplifier) tube (V12). In order to obtain an out-of-phase signal for the remaining second audio tube (V11), a portion of the voltage delivered to the grid circuit of the second audio tube (V12) is tapped off (at the junction of R50 and R51) and is fed to the grid of the Phase Inverter tube (V9B)—the second triode section of the Type JAN-6SL7-GT tube (V9). The output of this tube, V9B, is resistance-coupled to the grid of the remaining second audio tube (V11). Since an additional stage of amplification (of a 1-to-1 ratio) is used for this half of the audio signal, its phase is changed 180 degrees.

(b) SECOND AUDIO (POWER AMPLIFIER) STAGE.—Two Type JAN-6V6-GT beam-power pentodes (V11 and V12) are used in the second audio stage to provide sufficient power output for a loudspeaker. The output of this stage may be coupled through the output transformer (T15) to a 5,000 ohm line, a 500 ohm unbalanced line, or a 600 ohm balanced line.

(c) TONE-CONTROL CIRCUIT.—A control of the audio response characteristic of the audio amplifier is provided by means of frequency-selective inverse feedback from the second audio plate circuit to the first audio cathode circuit. Any one of four resistor-capacitor combinations may be connected into this circuit by means of the "TONE" switch (SW9). The resulting audio response is designated as "BASS BOOST," "HIGH FIDELITY," "NORMAL," and "LOW."

(9) POWER SUPPLY.

(a) POWER INPUT.—The radio receiver is designed to operate from either 115 volts or 230 volts, 50 to 60 cycles, single phase, a-c power source. The line voltage switch (SW10) permits connection of the two power transformer primaries either in parallel or in series, to accommodate either of the input voltages. (Refer to Figure 2-12.) The power line filter (LF1) suppresses any high-frequency radiation being carried through the power lines. One side of the power line is fused, and the other side contains the power switch section (SW7D) of the "SELECTIVITY" switch.

(b) HIGH-VOLTAGE CIRCUITS.—The power supply consists of a Type JAN-5U4-G high vacuum rectifier tube (V13) connected in a full wave rectifying circuit. The a-c ripple of the rectified d-c power is removed by means of the two section choke and capacitor filter (L6, L7, C42, C43, and C44). The shunt capacitor (C40) across the first choke (L6) resonates in that particular circuit to remove 120 cycle ripple voltage. The voltage supplied to the second audio tube (V11 and V12) is tapped off after the first filter section. The remaining high voltage is taken off after the second filter section, or is taken from the Type JAN-VR-150/30 regulator tube, where 150 volts stabilized d-c is desired. The high-voltage connections are broken at a socket (S01). For a-c operations, a plug (PL2), which has the necessary pins short-circuited, is inserted in the socket to provide suitable connections on the a-c power supply. However, external d-c voltages (from batteries, or a motor generator, if desired) may be connected by means of the plug (PL2) to the input of the filter, and to the filament connections. The rectifier tube filament is supplied from a separate low-voltage, secondary winding, and during a-c operations all remaining filaments are supplied from another low-voltage secondary winding. The "SEND REC." switch (SW5) opens the high-voltage lead immediately following the rectifier tube (V13) to place the receiver in a standby condition.

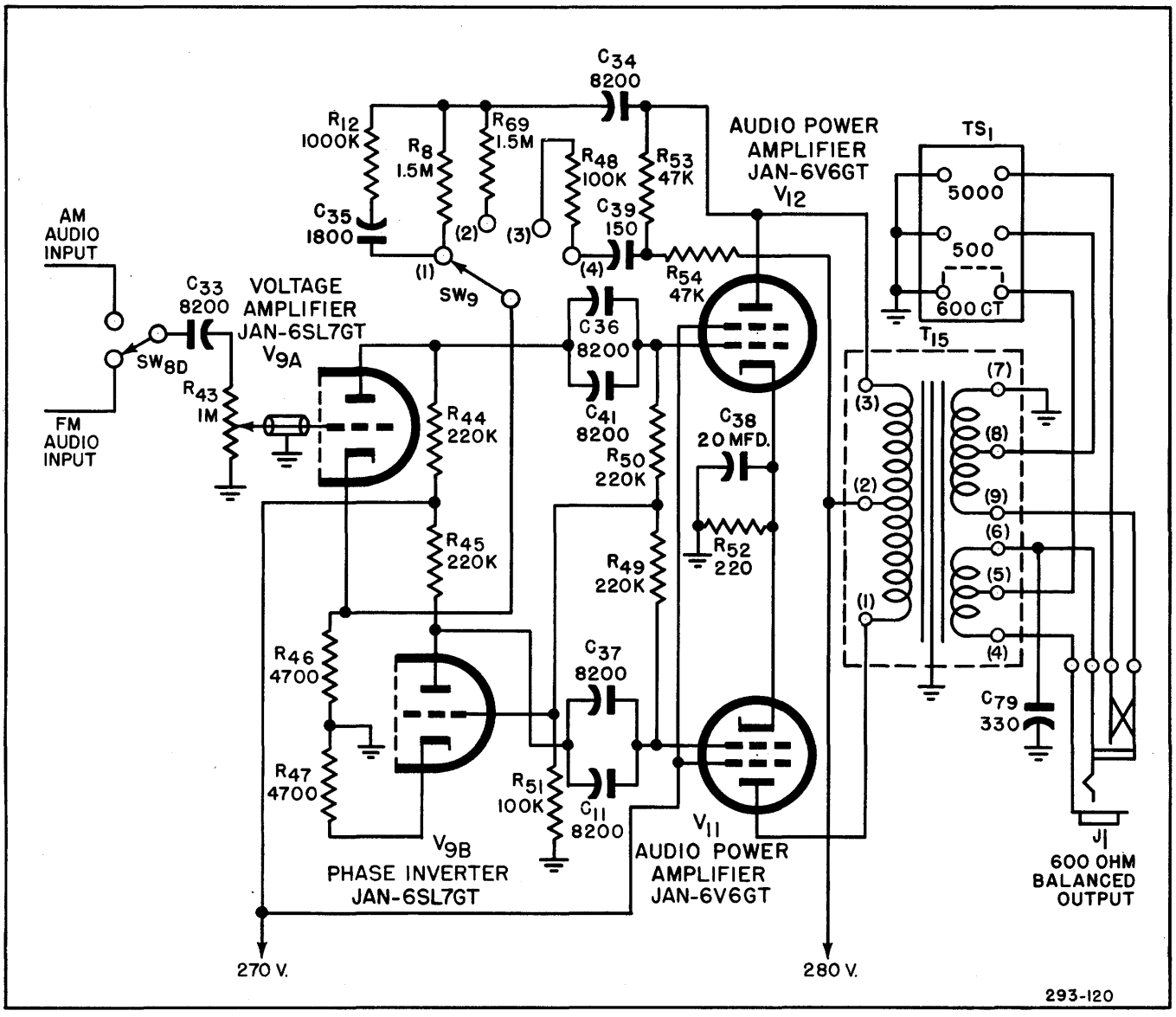

Fig. 2-11: Types CHL-46130-C and CHL-46130-D Receiver, Audio Amplification Stages; Simplified Schematic Diagram.

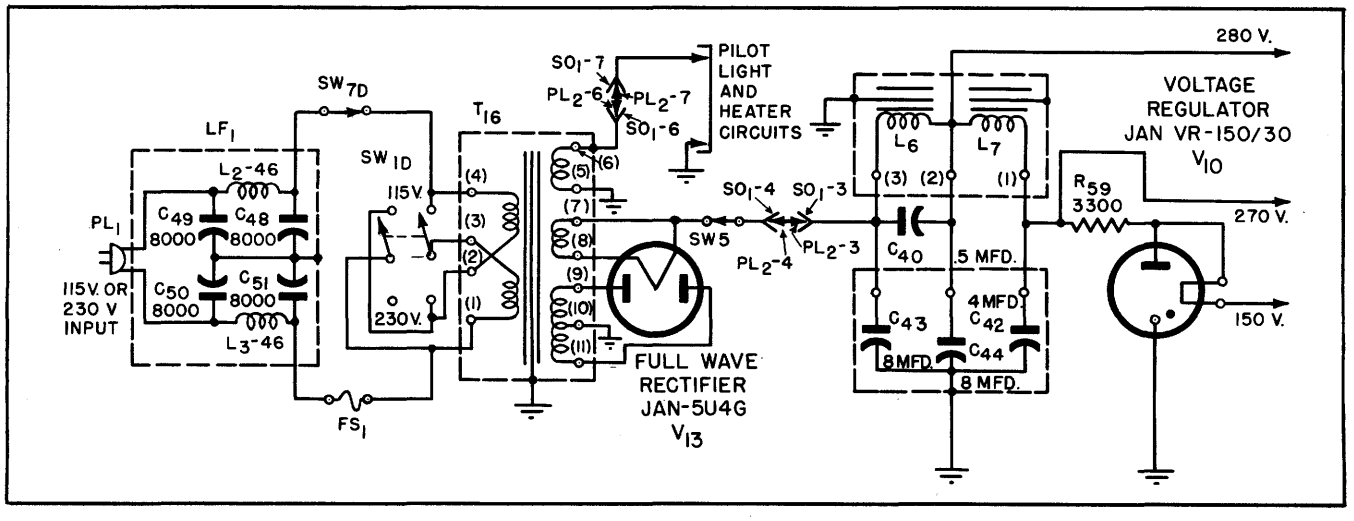

Fig. 2-12: Types CHL-46130-C and CHL-46130-D Receiver, Power Supply, Simplified Schematic Diagram.

CHL-46130-D RECEIVER.
CHL-46130-D RECEIVER.

ECEIVER, IN WHICH CASE BLANKING JACK SO_3 AND RESISTOR R_{73} ARE DELETED.

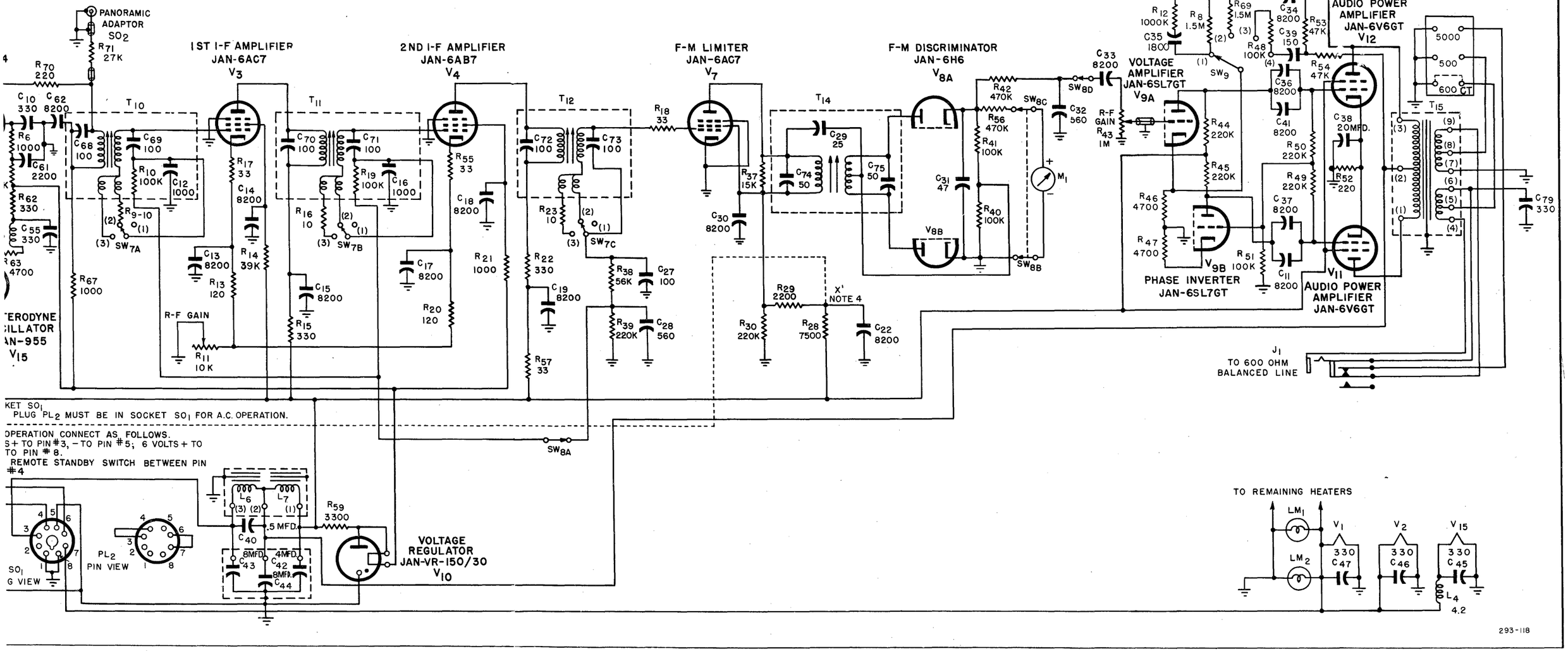

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Figure 2-13: Types CHL-46130-C and CHL-46130-D Receiver, Overall Schematic Diagram for F-M Circuit.

NOTE 1 - CAPACITOR C_{80} AND RESISTOR R_{72} ARE INCLUDED ONLY IN THE CIRCUIT OF THE TYPE CHL-46130-D RECEIVER.
NOTE 2 - CAPACITOR C_{81} AND RESISTOR R_{74} ARE INCLUDED ONLY IN THE CIRCUIT OF THE TYPE CHL-46130-D RECEIVER.

NOTE 4 - POINT X IS CONNECTED TO POINT X' ONLY IN THE CIRCUIT OF THE TYPE CHL-46130-C RECEIVER, IN WHICH CASE BLANKING JACK SO_3 AND RESISTOR R_{73} ARE DELETED.

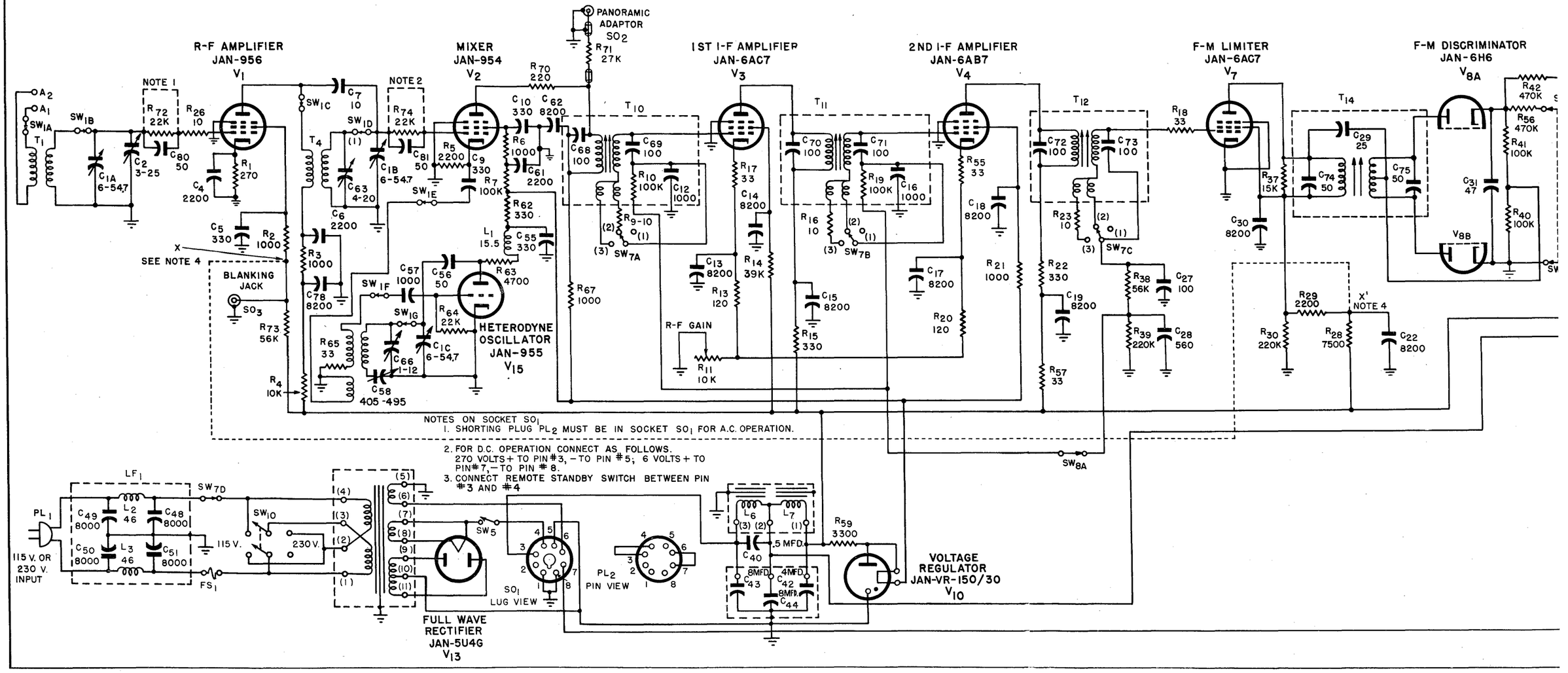


Figure 2-13: Types CHL-46130-C and CHL-46130-D Receiver, Overall Schematic Diagram for F-M Circuit.

CHL-46130-D RECEIVER.
CHL-46130-D RECEIVER.

CEIVER, IN WHICH CASE BLANKING JACK SO_3 AND RESISTOR R_{73} ARE DELETED.

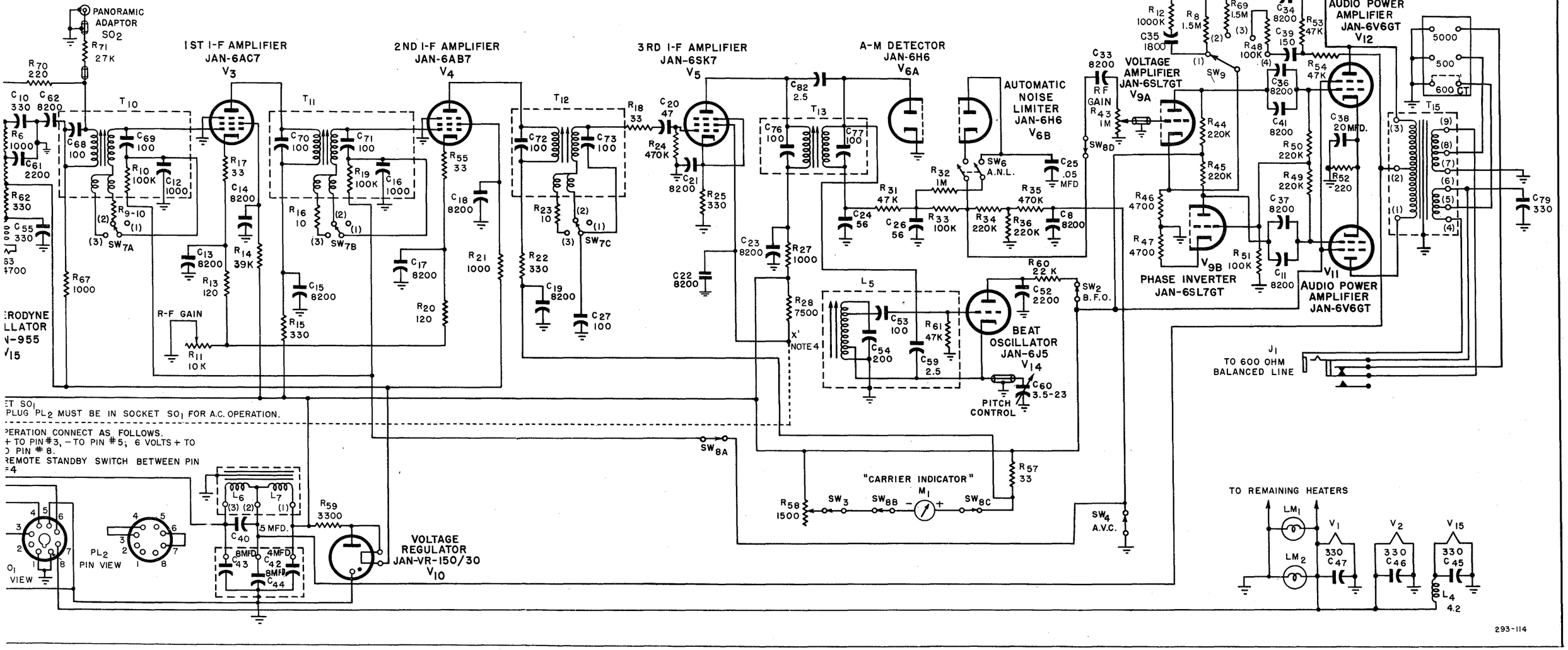


Figure 2-14: Type CHL-46130-C and CHL-46130-D Receiver, Overall Schematic Diagram for A-M Circuit.

NOTE 1 - CAPACITOR C_{80} AND RESISTOR R_{72} ARE INCLUDED ONLY IN THE CIRCUIT OF THE TYPE CHL-46130-D RECEIVER.
NOTE 2 - CAPACITOR C_{81} AND RESISTOR R_{74} ARE INCLUDED ONLY IN THE CIRCUIT OF THE TYPE CHL-46130-D RECEIVER.

NOTE 4 - POINT X IS CONNECTED TO POINT X' ONLY IN THE CIRCUIT OF THE TYPE CHL-46130-C RECEIVER, IN WHICH CASE BLANKING JACK SO_3 AND RESISTOR R_{73} ARE DELETED.

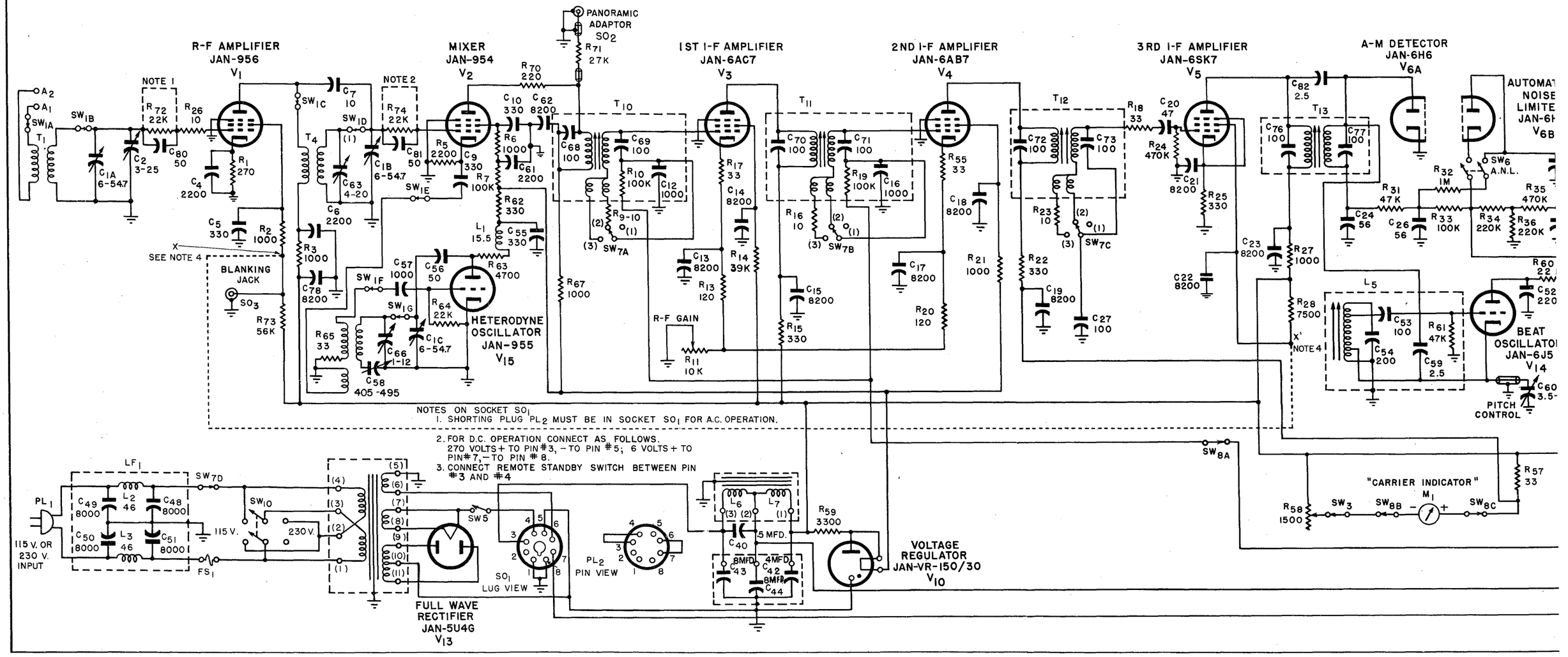


Figure 2-14: Type CHL-46130-C and CHL-46130-D Receiver, Overall Schematic Diagram for A-M Circuit.

SECTION III

INSTALLATION AND INITIAL ADJUSTMENTS

1. INSTALLATION.

a. GENERAL.—Carefully unpack the equipment and examine it for any visible damage which may have been incurred during shipment. Be sure that all packages have been removed from the crate before discarding it. This receiver was designed for table top use, for which purpose it is provided with rubber feet at the underside of its cabinet. The following text gives instructions for preparing the receiver for use.

b. POWER CONNECTIONS.—The receiver is designed to operate from either a 115 or 230 volt, 50 to 60 cycle, single phase, a-c source. It may also be operated from a 6 volt d-c source and a 270 volt d-c supply which fulfills the requirements given in Sub-paragraph 3 of Section 1. (CHARACTERISTICS OF REQUIRED POWER SUPPLY.)

(1) A-C OPERATION.—Before connecting the receiver to a 115 or 230 volt power source, check the line voltage and the position of the line voltage switch (SW10). (Refer to Figure 7-6.) In order to change from one line voltage to another, it is necessary to throw the line voltage switch (SW10) to the position which corresponds to the voltage of the power source. Failure to do so may damage the equipment. If there is any doubt about the line voltage, throw the line voltage switch to the 230 volt position. If, after doing so, the pilot lamps light up dimly (indicating a 115 volt power source), switch over to the 115 volt position.

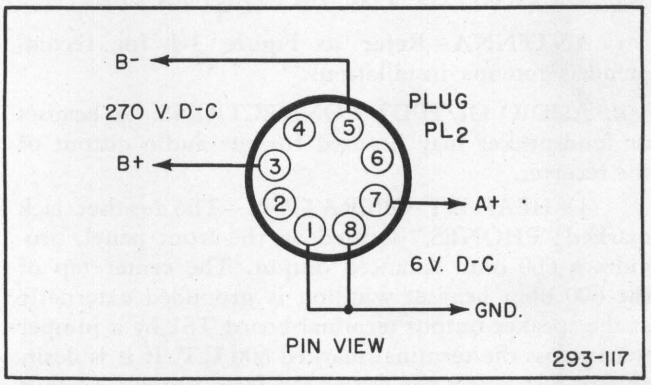


Figure 3-1: Illustration of Plug Connections for D-C Operation.

(2) D-C OPERATION.—To connect the receiver for d-c operation, remove the octal plug (PL2) from the socket (SO1). Use No. 18 (AWG) wire leads for the 270 volt "B" supply connections to pins No. 3 and 5. Use No. 12 (AWG) wire leads for the 6 volt "A" battery connections to pins No. 1, 8, and 7. (Refer to Figure 3-1.)

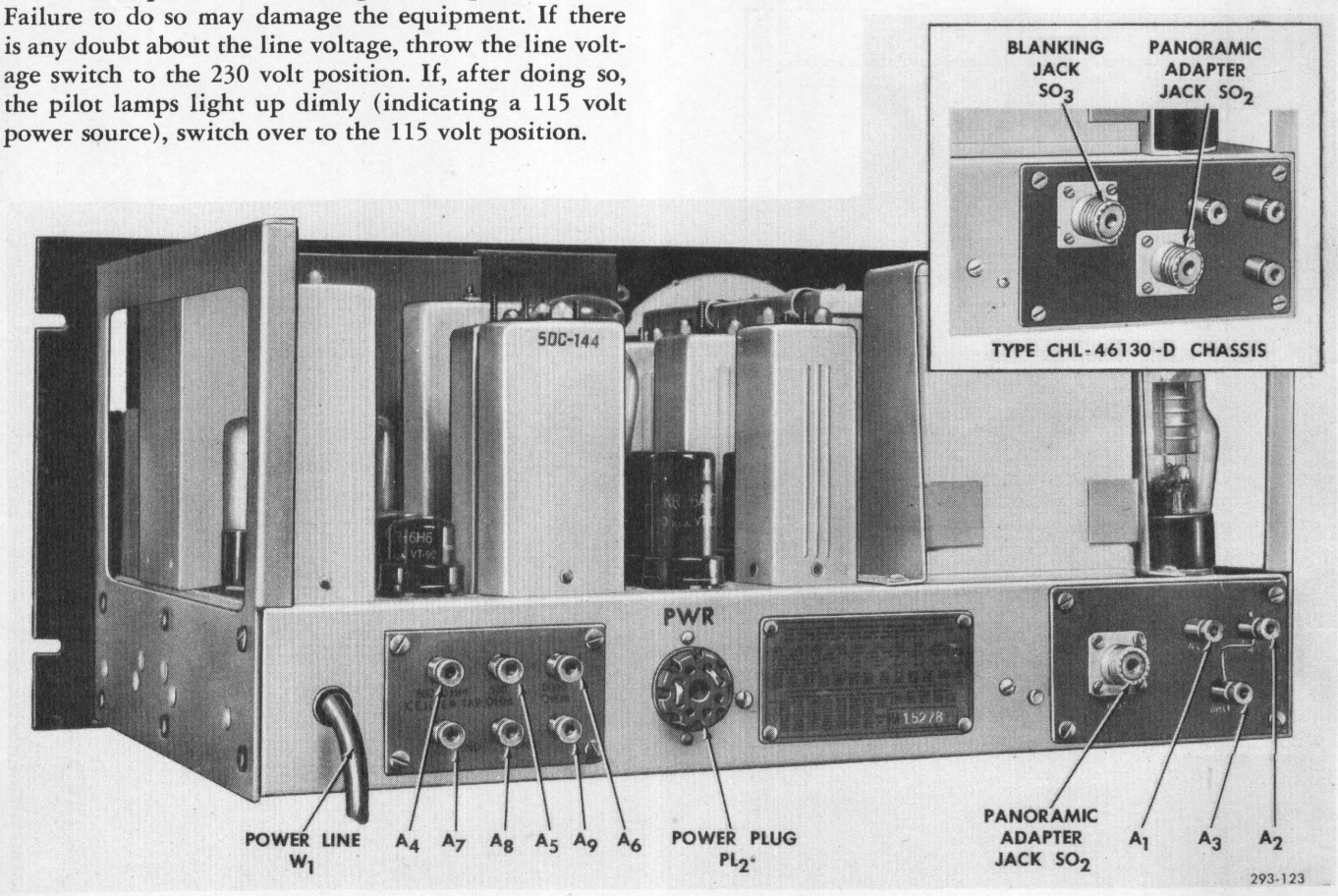


Figure 3-2; Type CHL-46130-C Chassis, Rear View.

CAUTION

BE SURE TO MAKE ALL CONNECTIONS AND CHECK ALL WIRING BEFORE CONNECTING TO THE BATTERY SUPPLY.

c. ANTENNA.—Refer to Figure 3-4 for recommended antenna installations.

d. AUDIO OUTPUT CONNECTIONS.—A headset or loudspeaker may be used for the audio output of the receiver.

(1) HEADSET OPERATION.—The headset jack marked "PHONES," located on the front panel, provides a 600 ohm balanced output. The center tap of the 600 ohm headset winding is grounded externally at the speaker output terminal board TS1 by a jumper wire across the terminal marked 600 C.T. If it is desirable to disconnect the center tap from ground, remove the jumper from the terminal board TS1. (Refer to Figure 3-2.)

(2) SPEAKER OPERATION.—The two sets of speaker terminals located on the rear chassis apron, provide for coupling into lines of 500 and 5000 ohms impedance. One side of each of the 500 and 5000 ohm output connections is grounded. This should be kept in mind if this receiver is to be used in conjunction with other equipment. A speaker equipped with a suitable coupling transformer and capable of handling 5 watts of audio power should be used with this equipment.

e. ADJUSTMENTS.—No preliminary adjustments are required on the equipment. It has been aligned and tested at the factory before shipment.

f. PRE-OPERATION CHECK.—The following checkup on a newly installed receiver is recommended before turning on the power for the first time.

(1) See that the tubes are securely seated in their sockets. (Refer to Figure 5-1 for the tube locations.)

(2) Check the pilot lamps to see if they are securely in place.

(3) Make a visual check of the line fuse (FS1), located on the front panel. (Refer to Figure 4-1.)

(4) Check all external connections to make sure that they make positive contact.

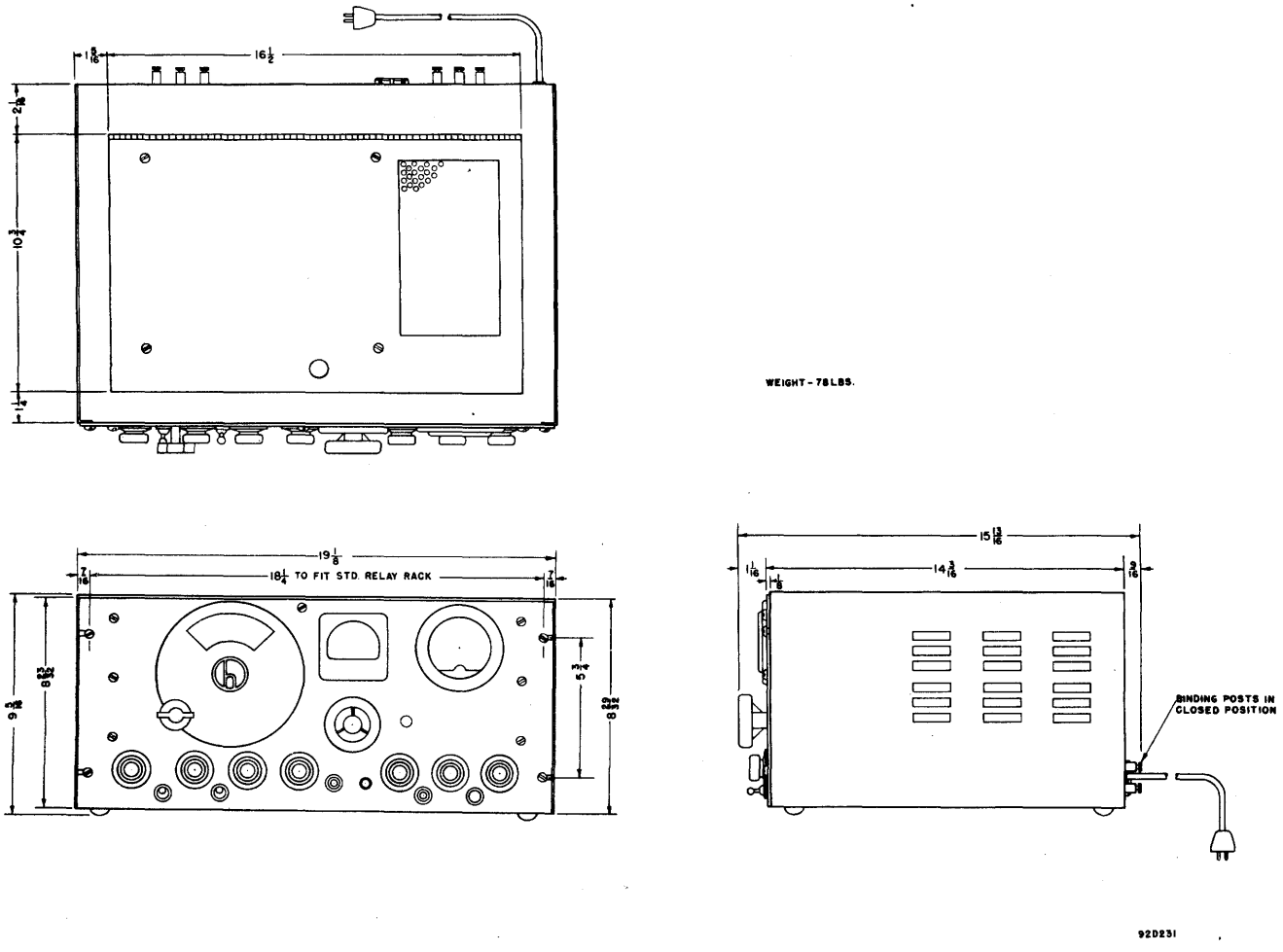
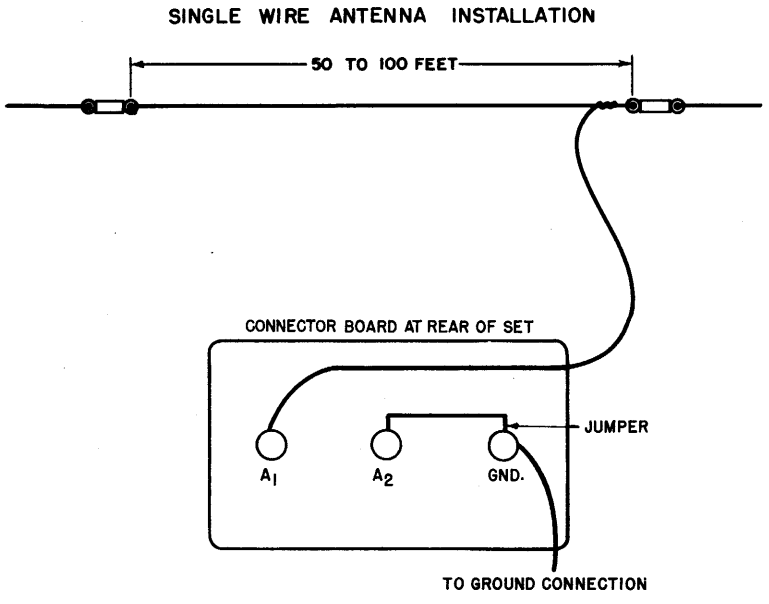
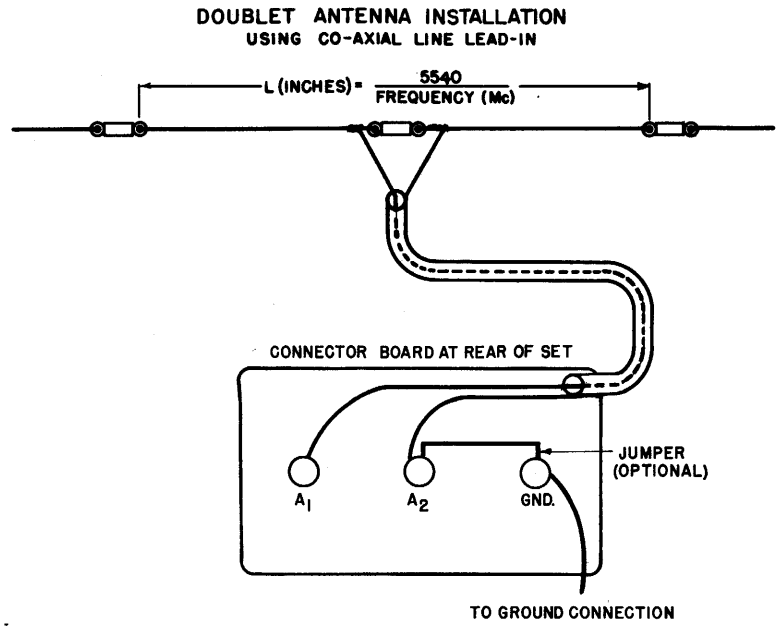
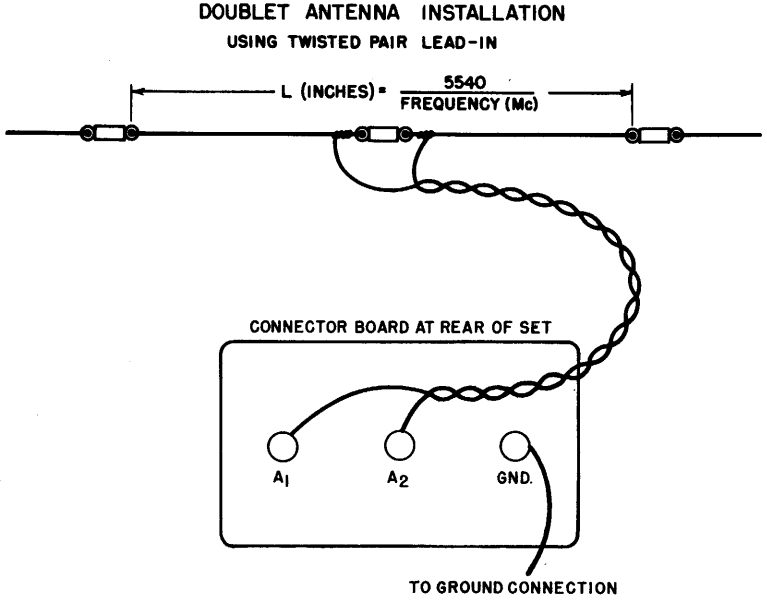


Figure 3-3: Outline Drawing of Receiver.







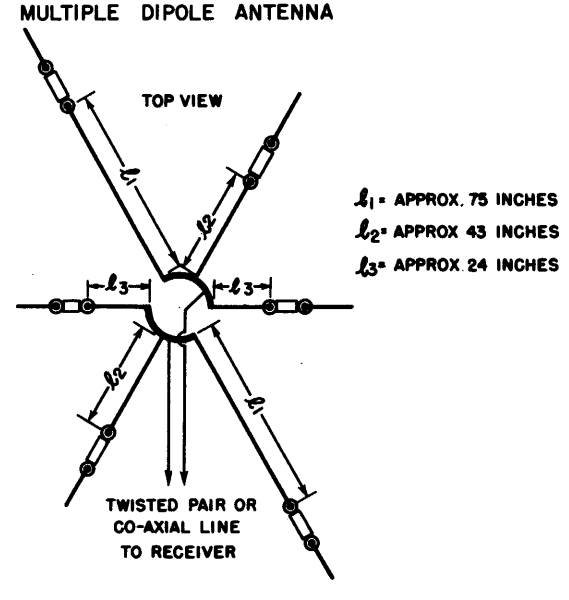


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Figure 3-4: Recommended Antenna Installations.

SECTION IV

OPERATION

1. GENERAL.

This communications receiver is designed to operate within the frequency range between 27.8 and 143 megacycles. The range is covered in three bands: "BAND 1" (27.8 to 46 mc.), "BAND 2" (46 to 82 mc.), and "BAND 3" (82 to 143 mc.). Any one of three types of signals may be received, namely: amplitude-modulated (A-M), frequency-modulated (F-M), or continuous-wave telegraph (CW). A "CARRIER INDICATOR" meter is provided on the front panel as an aid to tuning. Automatic volume control (AVC) and automatic noise limiting (ANL) action may be switched into operation when desired. A "PITCH CONTROL" is provided to vary the note obtained on CW signals, and a "TONE" control is provided to alter the frequency response during reception of voice signals or reception of musical programs.

2. OPERATING PROCEDURES.

Specific procedures for obtaining reception of A-M signals, CW signals, and F-M signals are given in the following sub-paragraphs.

a. AMPLITUDE - MODULATED RECEPTION. — Amplitude-modulated reception may include tone-telegraph (MCW), voice (or phone), or musical programs. The procedure for reception, which is substantially the same in all cases, follows:

(1) Set the controls designated below to the positions indicated.

CONTROL DESIGNATION	POSITION
"A.M./F.M."	"A.M."
"SEND/REC."	"REC."
"SELECTIVITY"	"SHARP"
"B.F.O."	"OFF"
"A.V.C."	"ON"
"R.F. GAIN"	Turn the dial all the way clockwise (until a "click" is heard).
"BAND SWITCH"	Set at range number corresponding to band covering desired frequency.

(2) Turn the "TUNING" wheel until the frequency of the desired signal is indicated on the tuning dial. When the desired signal is picked up, the "CARRIER INDICATOR" meter needle will rise towards a maximum indication. Adjust the "TUNING" wheel until the maximum reading is obtained.

(3) Adjust the "ANTENNA" control to obtain a higher maximum meter reading. (Operation of this control will increase the meter reading unless it already is adjusted to its most efficient setting.)

(4) If the volume level is too high or too low, rotate the "A.F. GAIN" control for the desired level.

(5) If static or "noise" interferes with reception of a signal, set the "TONE" control to the "NORMAL" or "LOW" position. If static or electrical "noise" tends to destroy the intelligibility of the signal, set "A.N.L." switch at the "ON."

Note

Those controls which are not mentioned in the preceding instructions are not used during this type of reception.

b. CONTINUOUS-WAVE TELEGRAPH (CW) RECEPTION.—Continuous-wave telegraph, or CW, reception includes only the reception of unmodulated carrier (code) signals. The procedure for reception is as follows:

(1) Set the controls designated below to the positions indicated.

CONTROL DESIGNATION	POSITION
"A.M./F.M."	"A.M."
"SEND/REC."	"REC."
"SELECTIVITY"	"SHARP"
"A.V.C."	"OFF"
"B.F.O."	"ON"
"BAND SWITCH"	Set at range number corresponding to band covering desired frequency.
"R.F. GAIN"	Turn up as high as the signal strength of the code signal will allow. Too much gain will result in distortion of the signal.

(2) Turn the "TUNING" wheel until the frequency of the desired signal is indicated on the tuning dial.

(3) Adjust the "ANTENNA" control to obtain a signal response from the headset or loudspeaker. (Operation of this control will increase the signal strength unless it already is adjusted to its most efficient setting.)

(4) If the volume level is too high or too low, rotate the "A.F. GAIN" control for the desired level.

(5) Set the "TONE" control at the "NORMAL" position.

(6) Adjust the "PITCH CONTROL" to vary the pitch, or tone, of the signal to the desired point.

(7) If static or electrical "noise" interferes with reception of a signal, set the "TONE" control to the "LOW" position. If static or electrical "noise" tends to destroy the intelligibility of the signal, set the "A.N.L." switch at "ON."

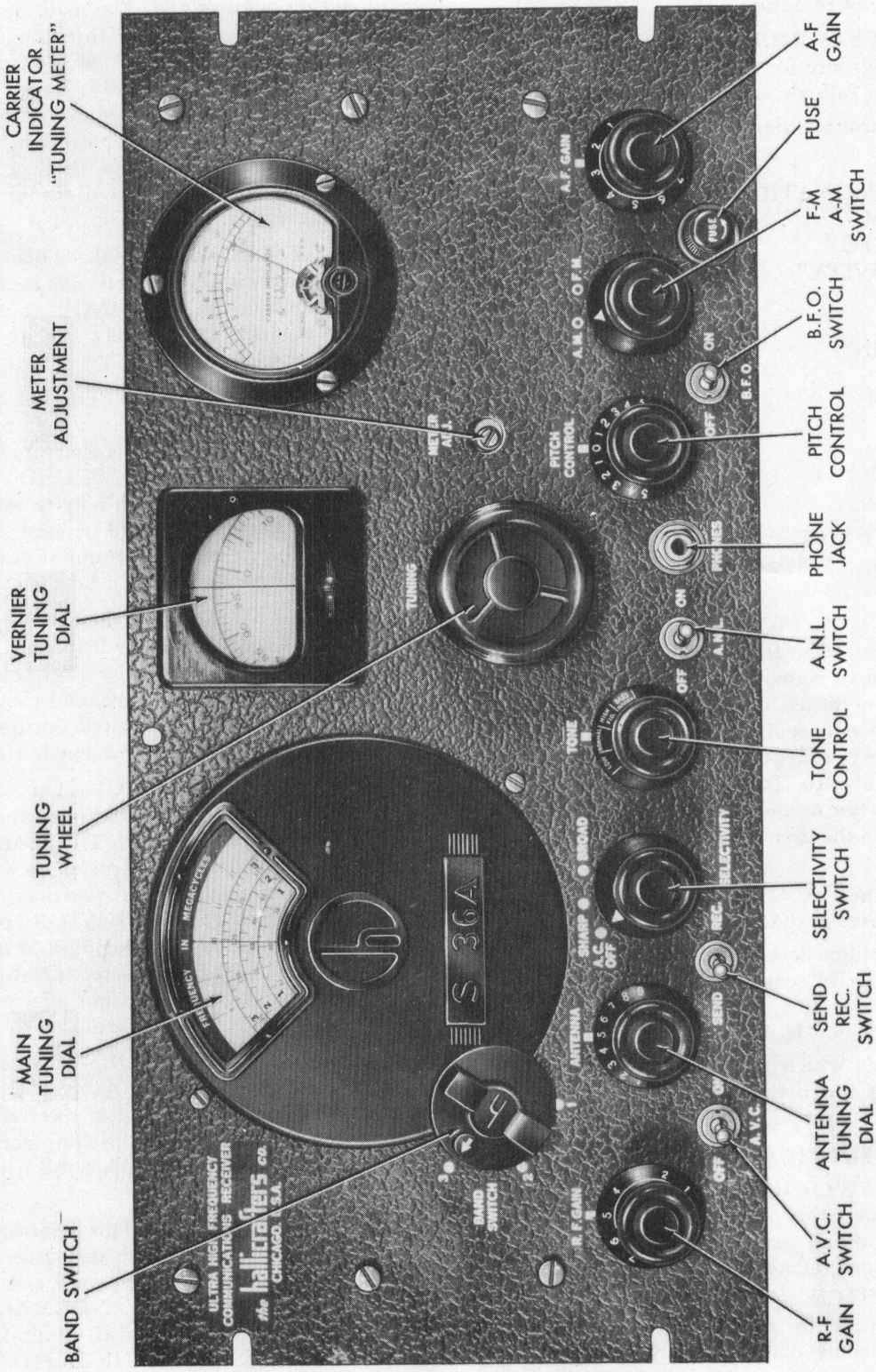


Figure 4-1: Receiver Front Panel Showing Operating Controls.

Note

Those controls which are not mentioned in the preceding instructions are not used during this type of reception.

c. FREQUENCY-MODULATED (F-M) RECEPTION.—The procedure for receiving frequency-modulated signals is as follows:

(1) Set the controls designated below to the positions indicated.

CONTROL DESIGNATION	POSITION
"A.M./F.M."	"F.M."
"SEND/REC."	"REC."
"SELECTIVITY"	"BROAD"
"B.F.O."	"OFF"
"A.N.L."	"OFF"
"R.F. GAIN"	Turn all the way to the right. (The switch ganged to this control does not operate during f-m reception.)
"TONE"	"BASS BOOST" or "HIGH FID."
"BAND SWITCH"	Set at range number corresponding to band covering desired frequency.

(2) Turn the "TUNING" wheel until the frequency of the desired signal is indicated on the tuning dial. If a signal is picked up, the "CARRIER INDICATOR" meter needle will deflect first to one side of zero, return to zero and deflect an equal distance on the opposite side of zero. Turn the "TUNING" wheel slowly until the meter needle points to the "F.M TUNE TO ZERO" mark—the zero position in the middle of the swing.

(3) Adjust the "ANTENNA" control for the greatest volume level at the headset or speaker.

(4) If the volume level is too high or too low, rotate the "A.F. GAIN" control until the desired volume level is obtained.

Note

Those controls which are not mentioned in the preceding instructions are not used during this type of reception.

3. CONTROL IDENTIFICATION.

a. "A.M.-F.M." SWITCH.—This switch connects the circuit elements for either A-M or F-M reception. At the "A.M." position, the receiver also is connected for the reception of unmodulated (CW) signals.

b. "BAND SWITCH."—This switch connects the proper circuit elements for reception at any one of the three frequency bands making up the overall frequency range of the receiver. The receiver will tune from 27.8 to 46 megacycles at the "BAND 1" setting, from 46 to 82 megacycles at the "BAND 2" setting, and from 80 to 143 megacycles at the "BAND 3" setting.

c. "TUNING" WHEEL.—This wheel provides for setting the receiver at any frequency within the band on which it is operating. This wheel rotates both the main and the vernier dial. The main dial is calibrated in frequency for each of the three bands, and is also divided along the top into 23 equally spaced divisions (calibrated from "0" to "23"). The vernier dial is divided into 100 equally spaced divisions (calibrated at every five divisions from "0" through "95." By combining indications of the two dials, a calibration is supplied equivalent to 2300 divisions of the main tuning dial.

d. "ANTENNA" CONTROL.—This control adjusts the antenna circuit of the receiver to resonance. It is an auxiliary knob to the "TUNING" wheel, and should always be adjusted immediately after the "TUNING" adjustment is completed.

e. SELECTIVITY" CONTROL.—This control includes the OFF-ON switch (for A-C operation). To turn the receiver on, it is necessary to set control at either the "SHARP" or the "BROAD" position. For F-M reception, and for high-fidelity A-M reception, the "BROAD" position should be used. For maximum rejection of interference in communications reception, the "SHARP" position should be used.

f. "A.V.C." SWITCH.—This switch is operative only when the "A.M.-F.M." switch is at "A.M." It permits the disconnecting of the AVC circuits during reception of code (CW) signals, and permits the addition of AVC action when desired during reception of voice (or other amplitude-modulated) signals.

g. "R.F. GAIN" CONTROL.—This control regulates the sensitivity of the receiver. It is used only when AVC action is not used. This control is used to prevent overloading of the receiver on strong signals. At its maximum clockwise position, this control switches the "CARRIER INDICATOR" meter into the circuit for A-M operation. (During F-M operation, the "CARRIER INDICATOR" meter is continuously connected into the circuit and is not affected by the setting of the "R.F. GAIN" control.)

h. "A.F. GAIN" CONTROL.—This control adjusts the audio volume level of the receiver. During "AVC" operation, it is the sole control of receiver gain. When AVC is not used, it operates in conjunction with the "R.F. GAIN" control to regulate the overall receiver gain.

i. "TONE" CONTROL.—This control adjusts the audio-frequency response of the receiver. At the "LOW" position, the high-frequency end of the audio response is attenuated. At the "NORMAL" position, a well-balanced (but not extended) audio-frequency response is obtained. At the "HIGH FID." position, a balanced, extended, audio-frequency response is obtained. At the "BASS BOOST" position, an extended audio-frequency response, having amplification of the bass frequencies, is obtained. This control may be used to provide better intelligibility of the signal during

static disturbances or surrounding acoustic disturbances. Also, for musical program reception, the audio response may be altered to provide high-fidelity response.

j. "A.N.L." SWITCH.—During AM reception, the "A.N.L." switch may be set at "ON" to cut off noise peaks during extremely noisy reception. This switch generally is used only during communications operation of the receiver.

k. "B.F.O." SWITCH.—For reception of CW signals, the beat frequency oscillator may be placed in operation by setting the "B.F.O." switch at "ON."

l. "PITCH CONTROL."—The pitch control adjusts the pitch of the C-W signals when receiving C-W code signals.

m. "SEND-REC." SWITCH.—To place the receiver in a standby condition, set this switch at "SEND" position. To restore the receiver to an operating condition, set switch at "REC."

n. "METER ADJ." SHAFT.—This slotted-shaft adjustment is provided to set the meter pointer at the "0" calibration when no carrier (signal) is being received.

SECTION V

OPERATOR'S MAINTENANCE

1. SCOPE.

Maintenance operations which can be performed by the operator for the Model RBK-12/13/14 Radio Receiving Equipment are confined mainly to replacement of tubes, fuses, and pilot lamps. The location of these components is shown in the top view and front panel view of the receiver, Figure 5-1, Receiver Tube and Pilot Lamp Location and Figure 4-1, Fuse Location.

2. TUBE REPLACEMENT.

a. ACORN TYPE TUBES.—The high-frequency acorn-type tubes are located in the shielded r-f section of the receiver. To gain access to these tubes, remove the lid of the r-f section, freeing it by pushing back the four retaining clips. Then remove the grid and plate clips from the r-f amplifier and mixer tubes (V1 and V2), pulling straight back in line with the axis of the tube. A side pressure may break the tube envelope, or may spread the clip. Disengage the acorn tubes from their sockets, using both hands, one on either side of the socket wherever possible. In replacing the tube, make sure to insert the short end of the envelope through the socket. Check also that the plate and grid clips make positive contact.

b. OCTAL BASE TUBES.—The remaining tubes in the equipment may be withdrawn by pulling them straight up and out of their sockets. Swaying the tube slightly from side to side will help loosen it, if the withdrawel becomes difficult.

CAUTION

During operation of the receiver, several of the tubes become hot enough to cause a burn if they are touched. If the receiver has just been turned off, do not grasp any tube until it has cooled to a safe temperature.

Note

ALL TUBES OF A GIVEN TYPE SUPPLIED WITH THE EQUIPMENT SHALL BE CONSUMED PRIOR TO EMPLOYMENT OF TUBES FROM GENERAL STOCK.

3. FUSE FAILURE.

a. SYMPTOMS.—The RBK-12/13/14 Radio Receiving Equipment uses one fuse (FS1) which is located in a fuse holder mounted on the front panel. This fuse is a protection against overloading of the receiver circuits. If the fuse (FS1) "burns out," the power supply to the receiver is cut off and all of its circuits "go dead," i.e., the tubes stop glowing, the pilot lamps go out, and the equipment becomes cold to the touch.

b. REPLACEMENT PROCEDURE.—To withdraw the defective fuse, grasp the "FUSE" cap located on the front panel; twist it slightly in the direction of the arrow on the fuse cap, and pull it forward. Remove the defective fuse from the fuse cap and replace it with one of the same rating. Then insert and lock the fuse cap in the holder.

WARNING

NEVER REPLACE a fuse with one of higher rating unless continued operation of the equipment is more important than probable damage. If a fuse burns out immediately after replacement, do not replace it a second time until the cause of the trouble has been corrected.

4. PILOT LAMP REPLACEMENT.

The "TUNING" and vernier dials are illuminated by means of two 6 to 8 volt, 250 milliampere, pilot lamps.

To gain access to the pilot lamps, lift the lid of the receiver cabinet. The lamps, which are of the bayonet base type are located immediately behind the tuning dials, and may be withdrawn by applying a slight pressure inward and twisting to the left.

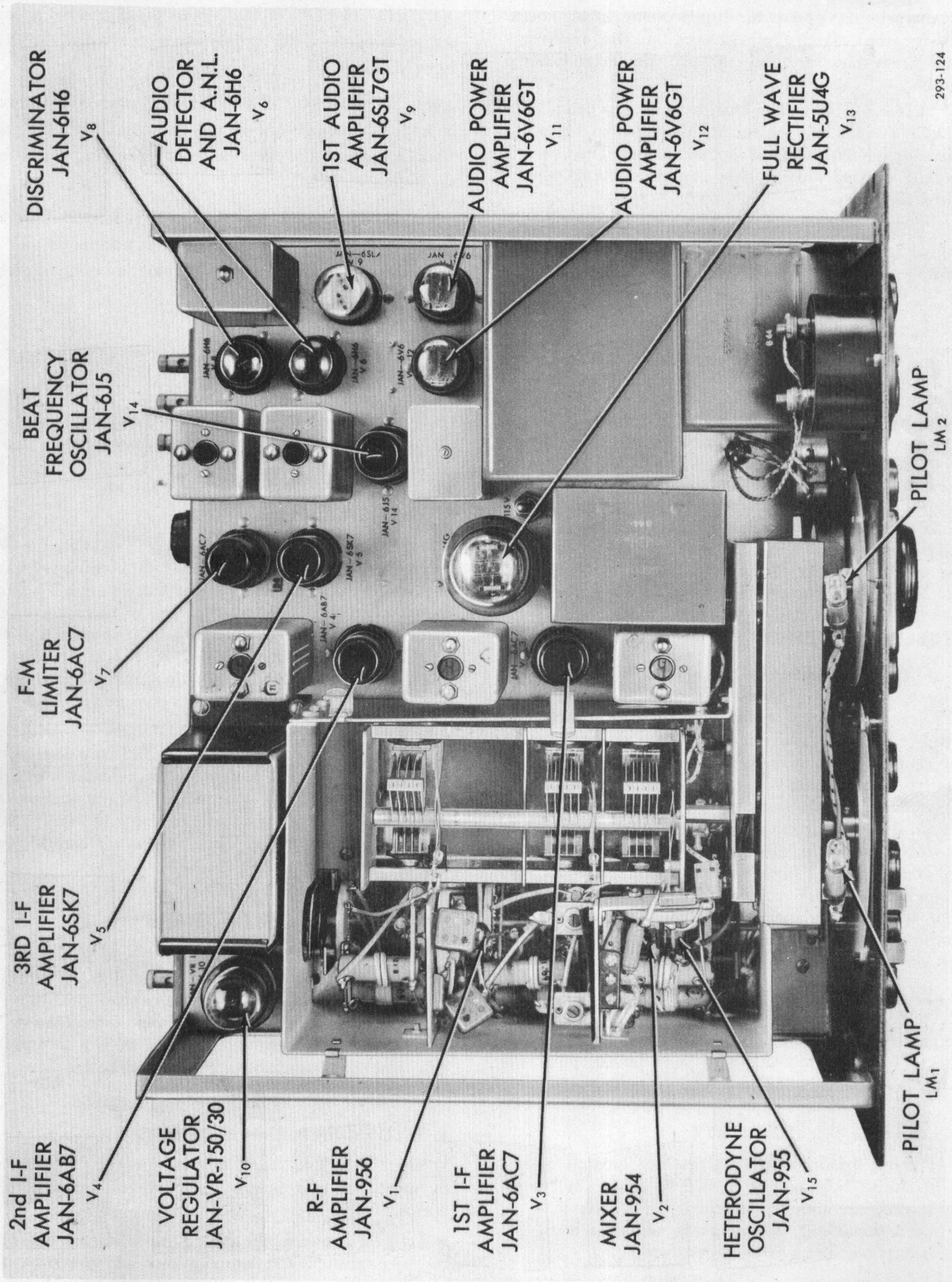


Figure 5-1: Receiver Chassis, Top View Showing Tube Locations.

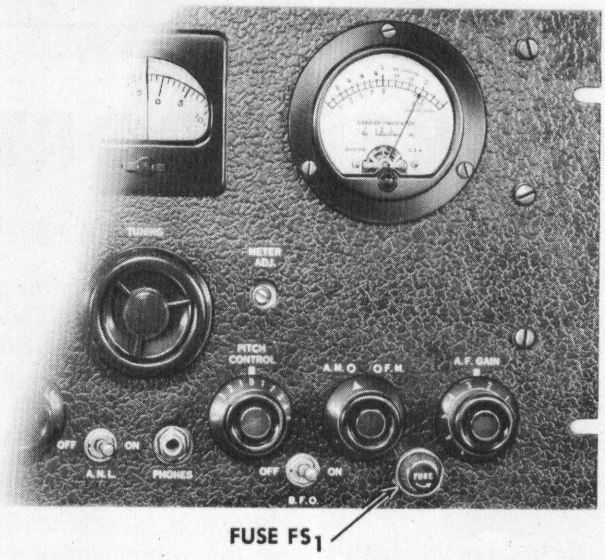


Figure 5-2: Receiver Panel, Showing Fuse Location.

SECTION VI

PREVENTIVE MAINTENANCE

THE ATTENTION OF MAINTENANCE PERSONNEL IS INVITED TO THE REQUIREMENTS OF CHAPTER 67 OF THE "BUREAU OF SHIPS MANUAL" OF THE LATEST ISSUE.

WARNING

TURN THE "SELECTIVITY" SWITCH TO "A.C. OFF" AND DISCONNECT THE A-C LINE BEFORE PERFORMING ANY SERVICING OPERATIONS WITHIN THE RECEIVER.

MAINTENANCE SCHEDULE

DAILY CHECK	PROCEDURE
Antenna	Inspect visually. Make sure that wiring is taut, free and clear.
Receiver	Turn on. Tune in a station on each band and check panel controls for effective operation. Look for noisy operation of "R.F.GAIN" and "A.F.GAIN" controls. Wobble "BAND SWITCH" slightly to show up poor (noisy) contacts. Note operation of "CARRIER INDICATOR" meter.
WEEKLY CHECK	**PROCEDURE**
Tubes	Inspect all tubes for firm seating in sockets. Inspect grid clips for secure contact.
Connections	Inspect all plugs and jacks for tight connections.
Chassis	Withdraw chassis part way from case. Remove all dirt and dust with a bellows and a dry cloth. Unclip the cover of the r-f compartment, and blow out all dust around condenser plates.
Case	Wipe all dirt and dust from case. Clean dials and meter glass. Make sure ventilating openings in case are open, and that air flow is not blocked by adjacent apparatus.
SEMI-ANNUAL CHECK	**PROCEDURE**
Tubes	Install a new set of tubes in the receiver. Test those removed and save any which are satisfactory for future emergency use.
Receiver	Disconnect and remove the receiver chassis. Inspect the chassis for loose or broken wiring, foreign particles, and loosened components. Remove any rust spots or corrosion on chassis or components. Reinstall chassis and realign it. See procedure, Paragraph 2, Section 7.

FAILURE REPORTS

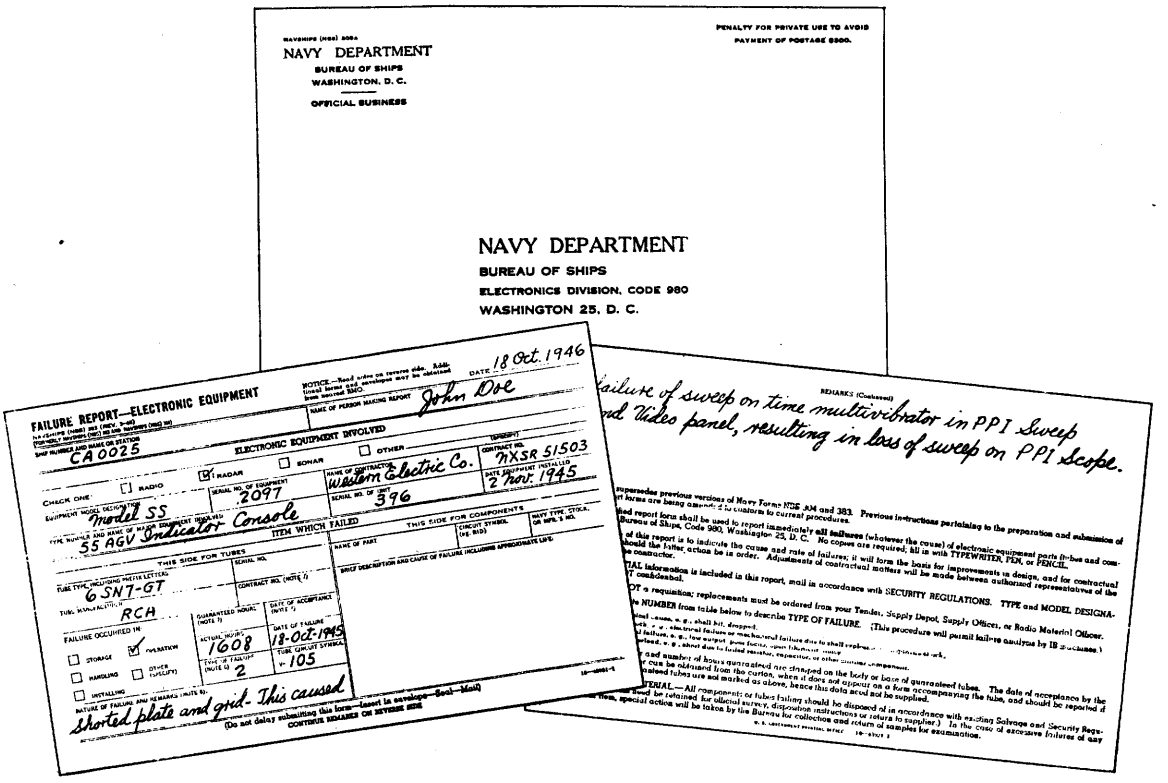
A FAILURE REPORT must be filled out for the failure of any part of the equipment whether caused by defective or worn parts, improper operation, or external influences. It should be made on Failure Report, form NBS-383, which has been designed to simplify this requirement. The card must be filled out and forwarded to BUSHIPS in the franked envelope which is provided. Full instructions are to be found on each card.

Use great care in filling the card out to make certain it carries adequate information. For example, under "Circuit Symbol" use the proper circuit identification taken from the schematic drawings, such as T-803, in the case of a transformer, or R-207, for a resistor. Do not substitute brevity for clarity. Use the back of the card to completely describe the cause of failure and attach an extra piece of paper if necessary.

The purpose of this report is to inform BUSHIPS of the cause and rate of failures. The information is used by the Bureau in the design of future equipment and in the maintenance of adequate supplies to keep the present equipment going. The cards you send in, together with those from hundreds of other ships, furnish a store of information permitting the Bureau to keep in touch with the performance of the equipment of your ship and all other ships of the Navy.

This report is not a requisition. You must request the replacement of parts through your Officer-in-Charge in the usual manner.

Make certain you have a supply of Failure Report cards and envelopes on board. They may be obtained from any Electronics Officer.



Sample Failure Report Cards Properly Filled In

SECTION VII

CORRECTIVE MAINTENANCE

1. TROUBLE SHOOTING.

a. GENERAL.—When trouble occurs in the radio receiver, it may be possible to find the defective component most quickly by referring to the Table 7-1, Trouble Shooting Chart. This chart suggests sections of the receiver which are likely to cause the listed symptoms. If with the aid of the Trouble Shooting Chart the trouble is not located, a systematic check of voltages throughout the equipment should be made. When a voltage is discovered to be low or missing, check the resistance of the various components of the associated stage. See the voltage and resistance values, Figures 7-9 and 7-10, and the overall schematic diagram, Figure 7-11.

TABLE 7-1
TROUBLE SHOOTING CHART

SYMPTOM	AUXILIARY CHECK	MOST PROBABLE CAUSES
1. No reception	1. No pilot lamps lit and unit cold to touch.	1. No. a.c. supply. 2. Plug disconnected. 3. Defective switch (SW7D). 4. Defective switch (SW10). 5. *Burned out fuse (7S1).
	2. Pilot lamps not lit and unit cold to touch.	1. Open filament winding (T16). 2. Defective connections between plug (PL2) and/or socket (SO1).
	3. Pilot lamps lit and unit warm to touch.	1. Disconected or defective speaker or headset. 2. Defective output connections. 3. Defective full wave rectifier tube (V13). 4. Short circuited filter capacitor C42, C43, or C44. 5. Defective switch (SW5) or defective connection between plug (PL2) and socket (SO1). 6. Defective component or wiring in first or second audio stage. 7. Defective component or wiring in second i-f stage.
2. Reception of f-m signals only		1. Defective switch section (SW8D) or defective component or wiring in third i-f stage or detector diode circuit.
3. Reception of a-m signals only		1. Defective switch section (SW8D) or defective component or wiring in limiter or discriminator circuits.
4. No reception on one or more of the three bands		1. Defective section of switch (SW1). 2. Defective transformer or trimmer capacitor associated with band in question.
5. No reading on tuning meter ("CARRIER INDICATOR")	1. Tuning meter inoperative during a-m and c-w reception but operative during f-m signal reception. Good reception of a-m, f-m, or c-w signals.	1. Defective switch sections (SW8B), (SW8C), or (SW3). 2. Defective component or wiring of tuning meter circuit.
	2. Tuning meter inoperative only during f-m reception. Good reception of a-m, f-m, and c-w signals.	1. Defective switch section (SW8B), (SW8C), or (SW3). 2. Defective component or wiring of tuning meter circuit.
	3. Tuning meter inoperative for all types of reception. Reception good.	1. Defective switch section (SW8B), (SW8C), or (SW3). 2. Defective component or wiring of tuning meter circuit.

*Possibly caused by shorted tube V13 or shorted capacitor C43 or C44.

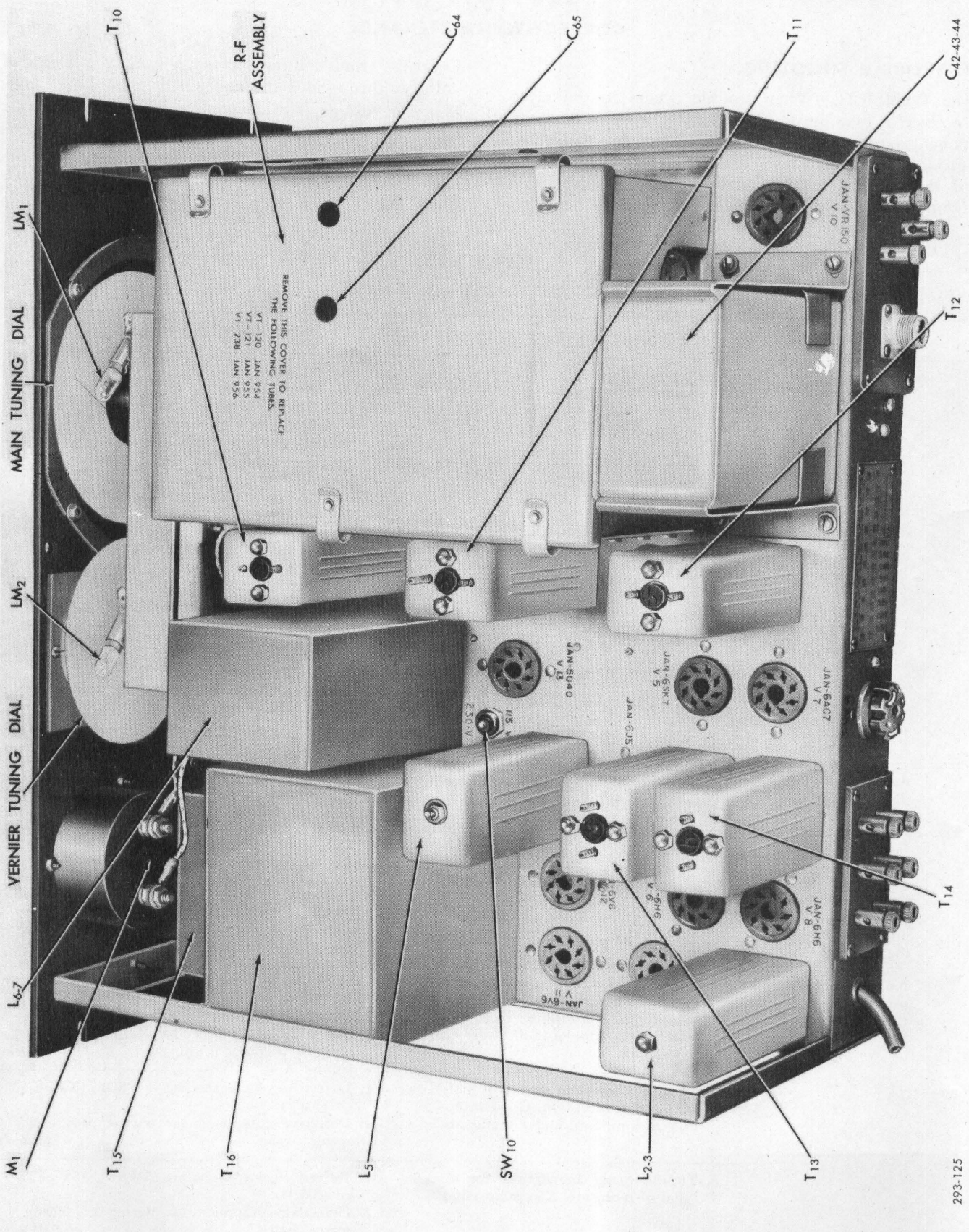


Figure 7-1: Rear Oblique View of Receiver Chassis.

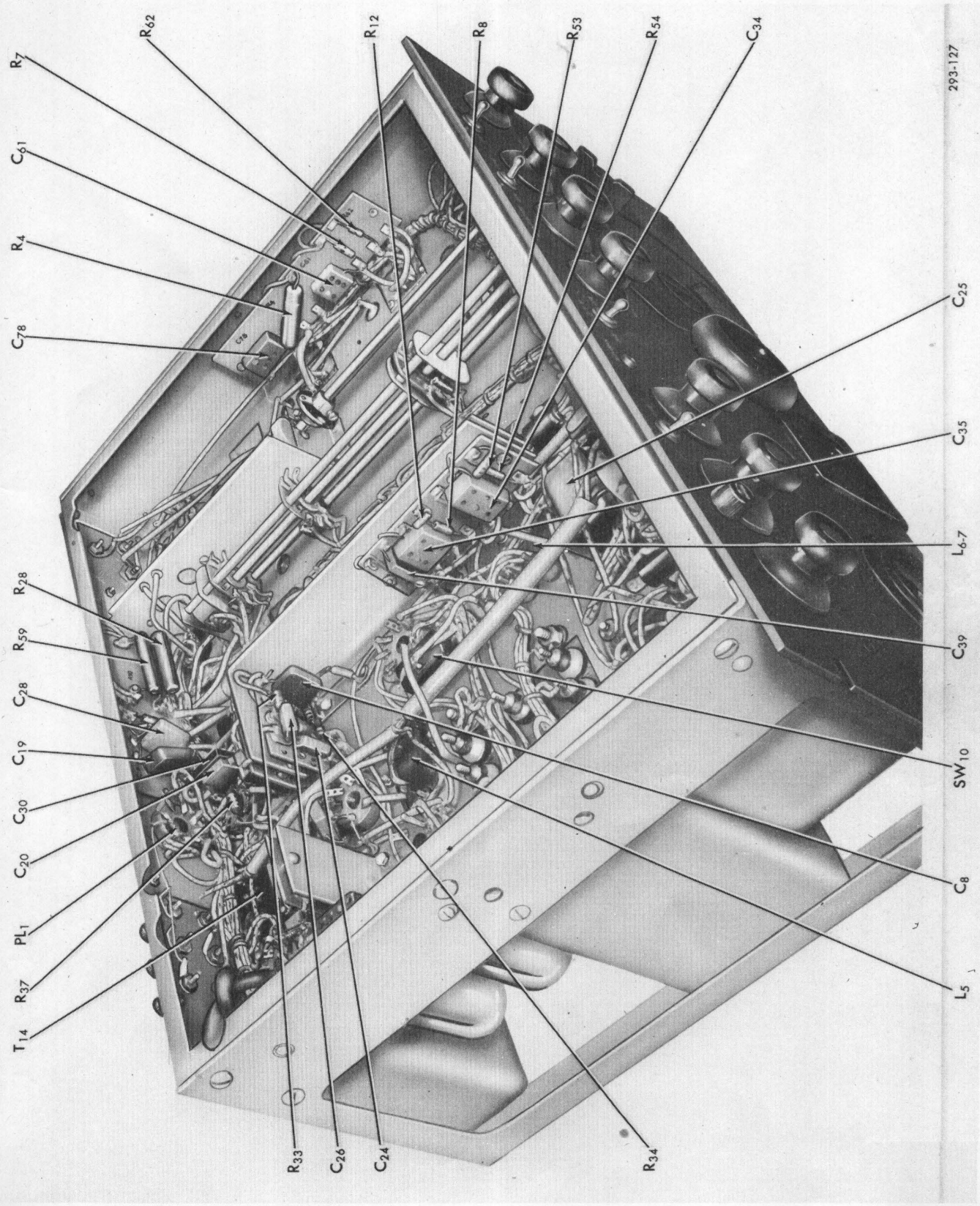


Figure 7-2: Bottom View of Receiver Chassis Looking Toward Rear.

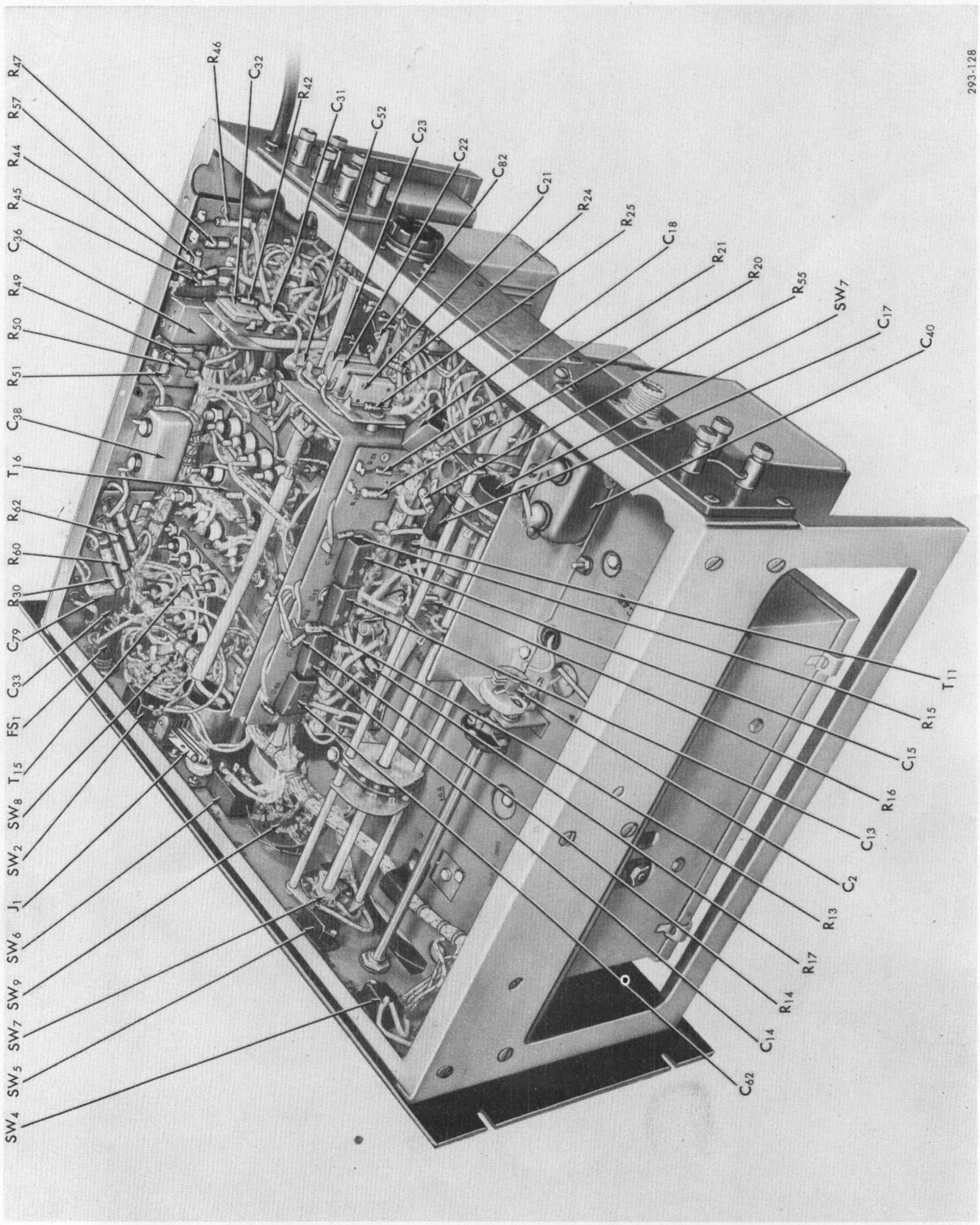


Figure 7-3: Bottom View of Receiver Chassis Looking Toward Front.

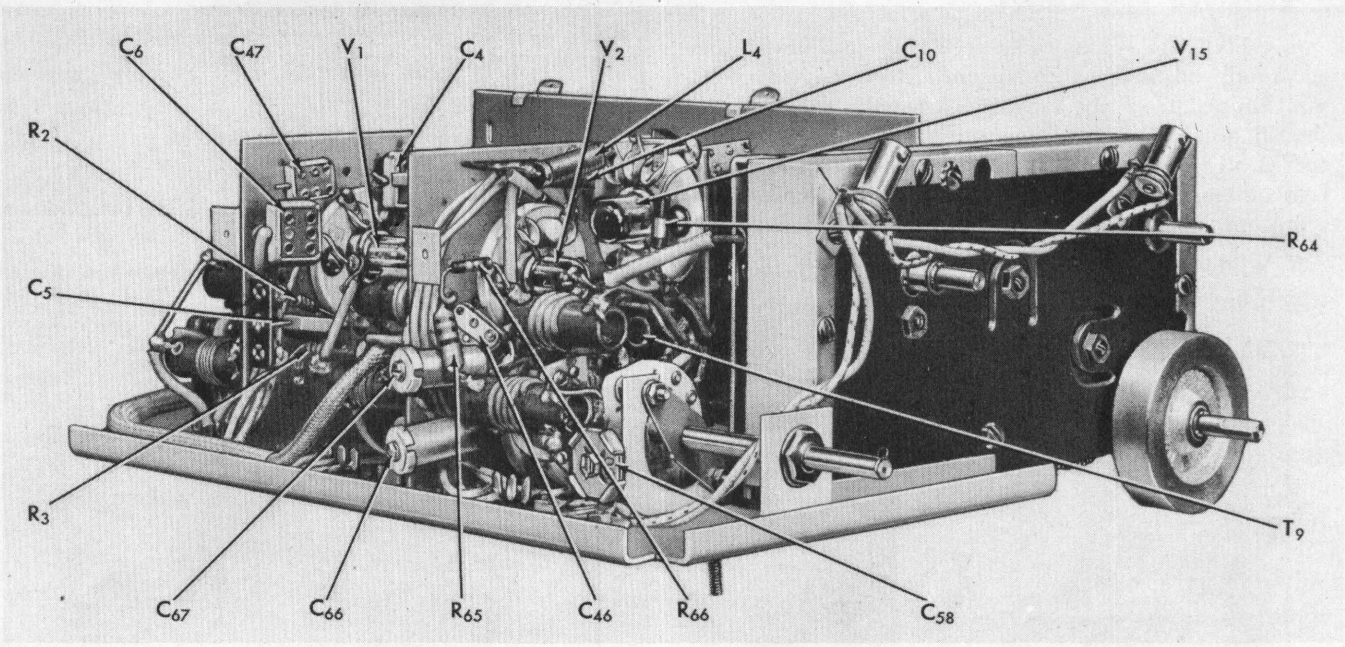


Figure 7-4: R-F Assembly, Front Oblique View.

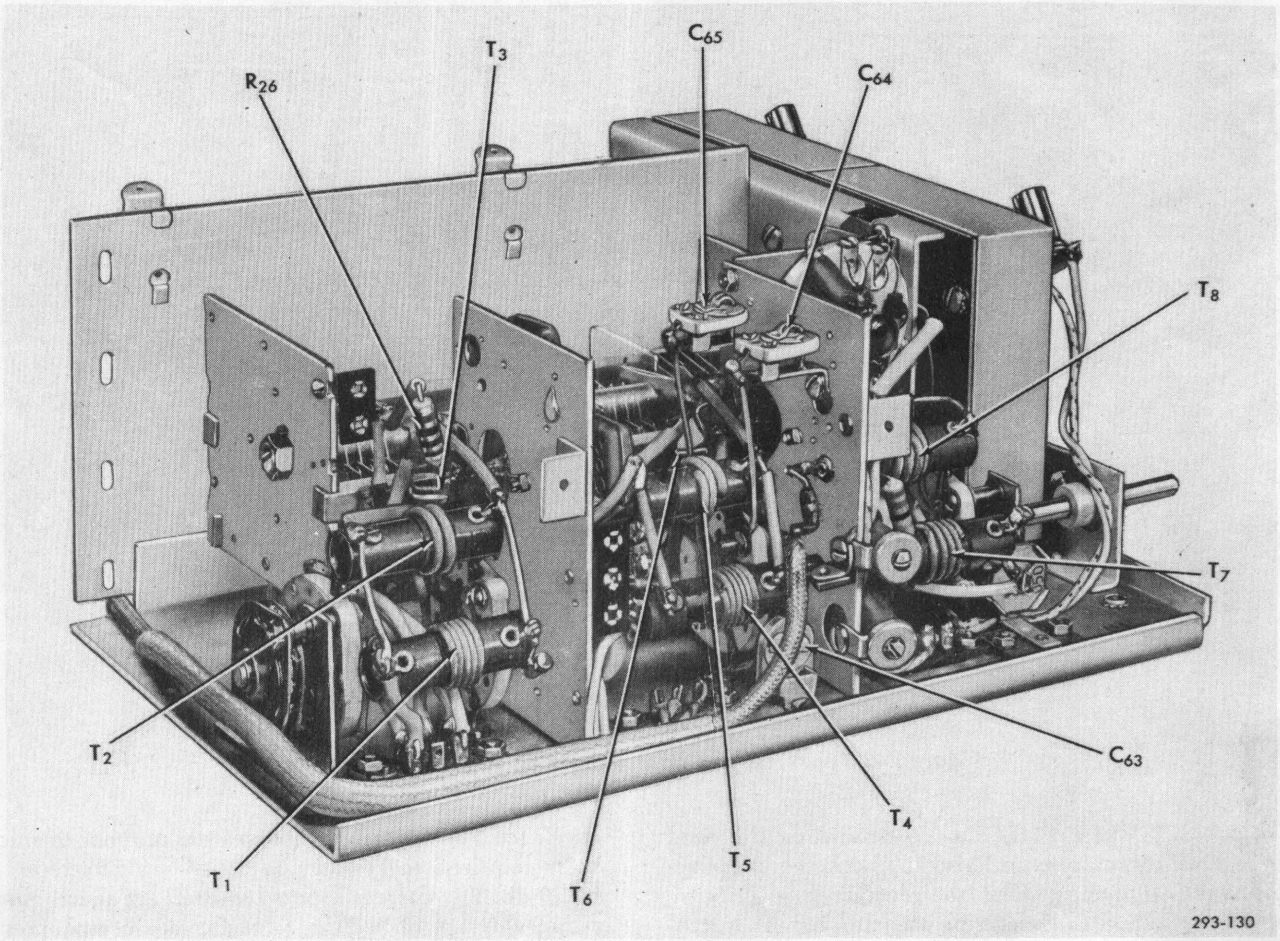


Figure 7-5: R-F Assembly, Rear Oblique View.

2. RECEIVER ALIGNMENT.

a. GENERAL.—This radio receiving equipment was accurately adjusted, aligned, and inspected before it was shipped from the factory. Normally, the receiver should not require realignment until about the time that it will require new tubes in its r-f and i-f stages. Loss of sensitivity and inaccurate dial calibration are symptoms indicating the necessity of realignment.

b. ALIGNING TOOLS.—Below are listed those tools which are required in the alignment procedure.

(1) A non-metallic screw driver. (A *short* metal blade with a non-metallic handle can also be used.)

(2) A 50 ohm non-inductive "dummy" antenna resistor.

(3) A Navy Type-22195 Output Meter.

(4) A 500 ohm, 25 watt resistor.

(5) A Navy Model LP-Series Signal Generator (for i-f alignment).

(6) A Navy Model LX-1 Signal Generator (for r-f alignment).

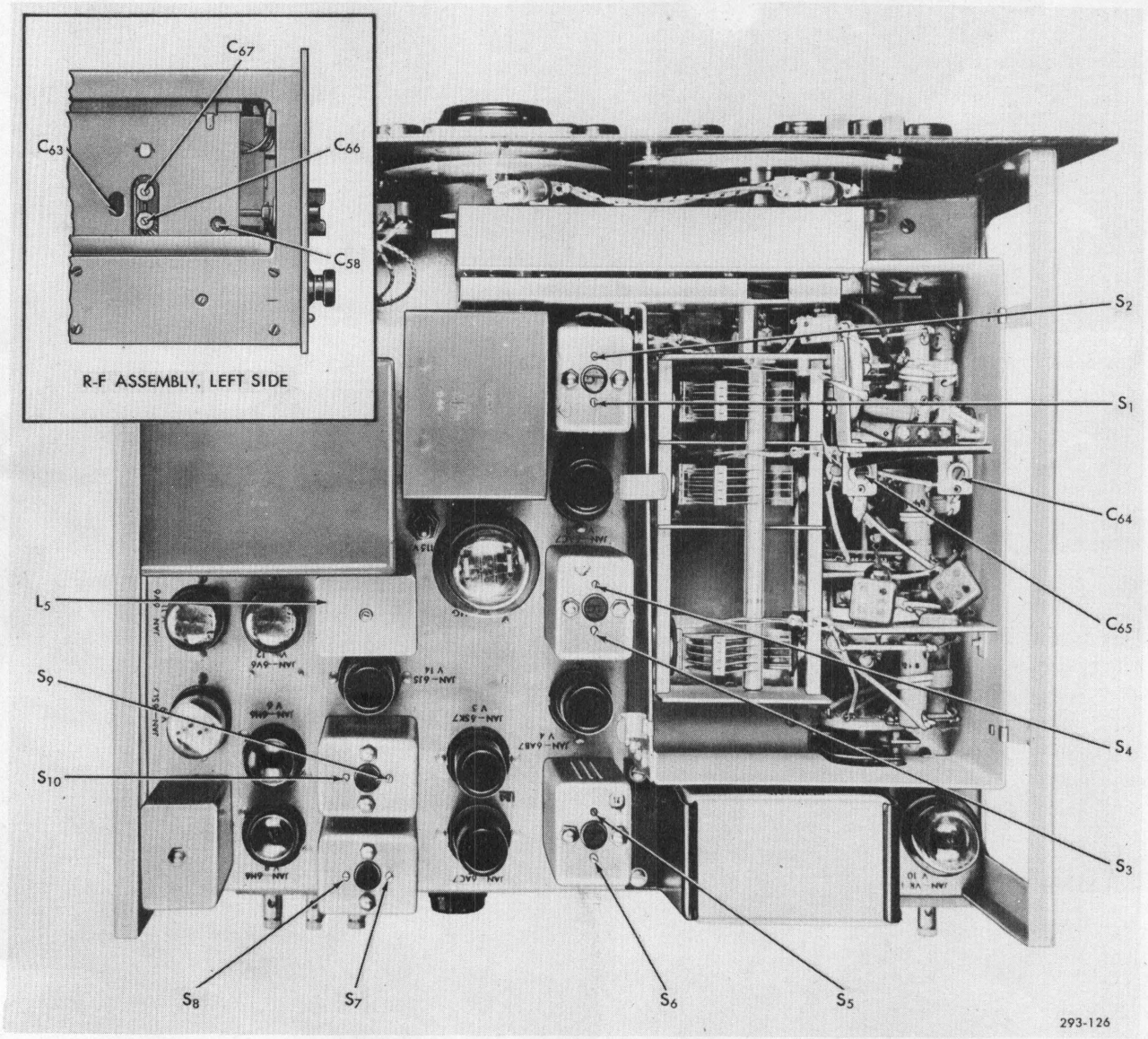


Figure 7-6: Top View of Chassis Showing Adjustment Points.

c. SENSITIVITY CHECK.—To determine the need for receiver alignment, and also to check the effectiveness of the alignment, check the receiver sensitivity by the NRL method to determine the number of microvolts required to produce a 10 db signal-to-noise ratio with the modulation turned off and on. The sensitivity check for FM operation involves the number of microvolts required to reduce the "hiss" on FM reception by 20 db. The correct inputs required are listed in subparagraph 4.*p.* of Section I. These measurements were made with r-f and a-f gain controls full on.

Note

On the Type-22195 Output Meter, 3 watts will be indicated at 26.95 db above 6 mw; 500 mw will be indicated at 19.2 db above 6 mw.

Signal generator calibration cannot be relied upon in the 30 to 150 mc. range since leakage from the signal generator may be so great as to produce considerable output in the receiver even though the attenuator is set for zero output.

d. I-F AMPLIFIER ALIGNMENT.—The following text gives the steps (in their proper order) for the i-f amplifier alignment procedure.

(1) Disconnect the grid lead of the Type JAN-954 mixer tube (V2) and connect the "hot" lead of the signal generator to the grid of the mixer tube using a small clip or a short piece of flexible wire to make the connection. Connect the ground wire of the signal generator to the receiver chassis.

CAUTION

Do not attempt to solder to the tube terminal as the heat of the soldering iron will crack the glass envelope of the tube.

DANGER

DO NOT UNCOVER THE R-F SHIELDING COMPARTMENT WITHOUT MAKING SURE THAT THE POWER SUPPLY IS OFF. CONTACT WITH ANY OF THE EXPOSED HIGH POTENTIAL POINTS IN THIS COMPARTMENT MAY RESULT IN ELECTRIC SHOCK.

(2) Connect the output meter across the speaker terminals. In order to prevent accidental overloading of the output meter, set it for its highest range.

(3) After letting the receiver warm up for approximately fifteen to thirty minutes, set the front panel controls as follows:

CONTROL	POSITION
R. F. GAIN	At maximum clockwise setting
A. F. GAIN	At maximum clockwise setting
SELECTIVITY	At SHARP
A.M./F.M.	A.M.
BAND SWITCH	3
A.V.C.	OFF
SEND/REC.	REC.
A.N.L.	OFF
TONE	HIGH FID.
B.F.O.	OFF

(4) Set the signal generator frequency at 5.25 mc. and turn on the 400 cycle modulation.

(5) With the aid of Figure 7-1 and 7-6, locate the transformer assemblies T13, T12, T11, and T10. Protruding from the top of the metal envelopes of each of these transformer assemblies are two slug adjustment screws. Turning these screws in or out varies the inductance of the coils of the transformer, thereby resonating the transformer at a higher or lower frequency, depending upon the direction in which the screws are turned. Starting with transformer assembly T13 and using a non-metallic screw driver, turn slug screw S10 in the clockwise direction. Observe the output meter to see if this operation increases the output. If the output is decreased instead, turn the screw counter-clockwise. After establishing the direction in which the screw must be turned in order to get a higher reading on the output meter, continue to turn the screw in that direction until the output meter needle reaches a maximum reading and begins to drop off. At this point, minor adjustments of the slug screw will give a maximum output meter reading. Repeat the process with the other slug screw S9 of the transformer assembly T13. Perform the same operation on the transformer assemblies T12, T11, and T10 in the order given, adjusting slug screws S2, S1, S4, S3, S6 and S5.

After performing the operations on all four of the i-f transformer assemblies (T13, T12, T11, and T10) start again with T13, and repeat the whole procedure. One or two such repetitions of the overall procedure will bring the i-f stages to an accurate alignment. A signal level at the generator of not more than 70 microvolts should give a 500 milliwatt audio output. If the audio output is appreciably less than 500 milliwatts for a 70 microvolt generator signal, it is likely that one or more of i-f amplifier tubes is defective. For this reason, an overall tube check for the receiver should precede the alignment procedure.

e. F-M DISCRIMINATOR ALIGNMENT. – The discriminator stage gives a linear response between 5.22 mc and 5.28 mc. This characteristic is inherent in the discriminator transformer (T14) and cannot be altered by adjustment. A short distance beyond these frequencies, the response falls off, so that two output peaks may be located: one between 5.21 and 5.22 mc, and the other at approximately 5.29 mc. A curve of the discriminator frequency characteristic is shown in Figure 7-7. The alignment procedure makes use of this characteristic in the following steps:

(1) Set the "A.M./F.M." switch on the control panel of the receiver to the "F.M." position.

(2) Set the "SELECTIVITY" switch at the "BROAD" position.

(3) Connect the signal generator according to the instructions of step (1) of the I-F ALIGNMENT PROCEDURE.

(4) Tune the Navy Model LF-series Signal Generator to 5.25 mc, and turn on the 1000 cycle modulation.

(5) Adjust the secondary slug screw (S8) of the discriminator transformer (T14) with the non-metallic screw driver until the "CARRIER INDICATOR" meter (M1) indicates "0." Turn the screw (S8) slowly as this point is reached; it is easy to pass through it

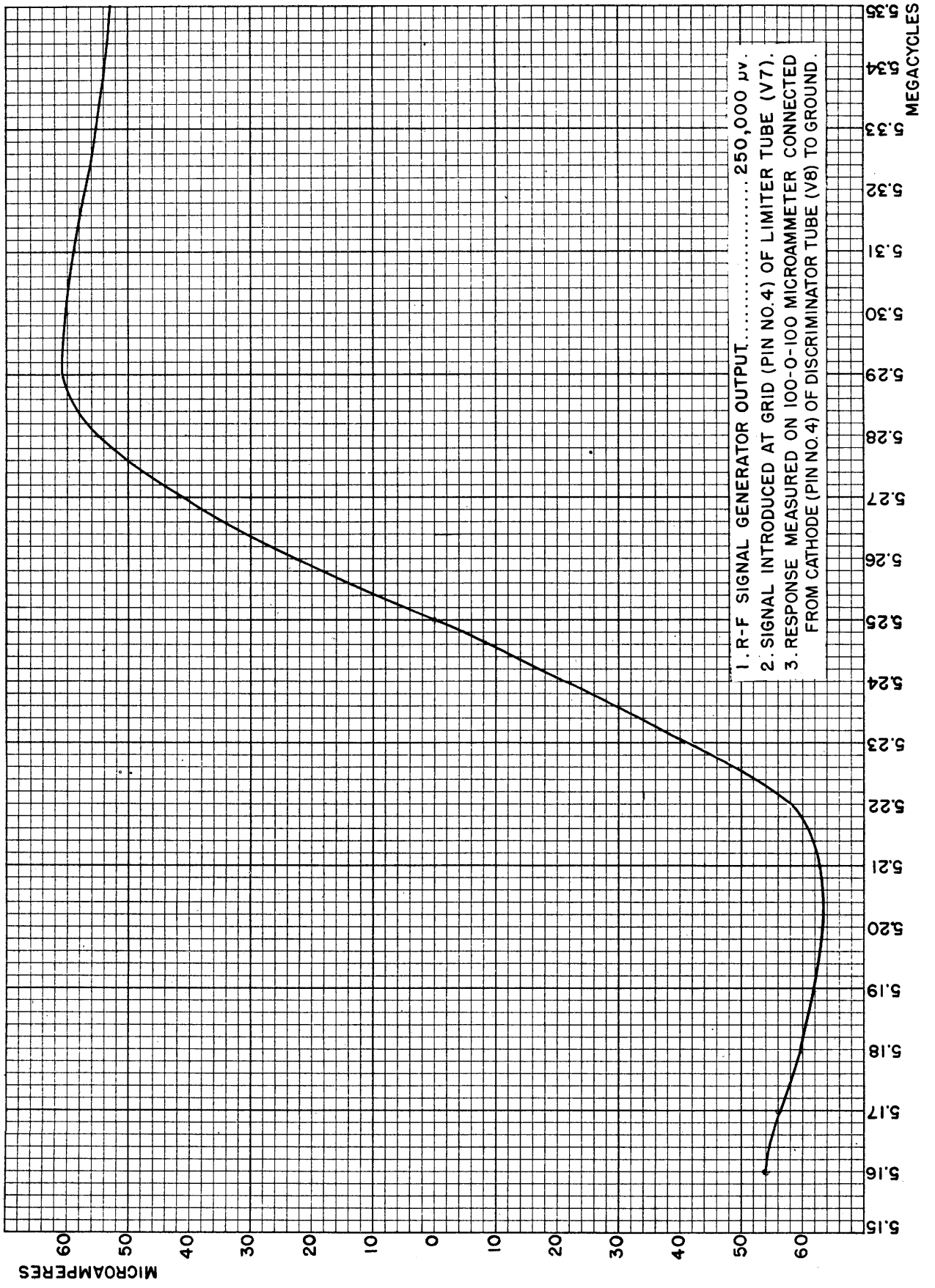


Figure 7-7: Discriminator Frequency—Characteristic Curve.

without recognizing it.

(6) Detune the adjustment of step (5) slightly so that the output meter gives an easily readable indication.

(7) Adjust the primary slug screw (S7) of the discriminator transformer (T14) for a maximum response.

(8) Repeat step (5).

(9) Slowly and continuously lower the frequency setting of the Signal Generator (from 5.25 mc) until the meter (M1) reaches a maximum indication. The Signal Generator frequency at this point should be between 5.21 and 5.22 mc. Record the exact frequency, and note the extent of the deviation from 5.25 mc.

(10) Slowly and continuously raise the frequency setting of the Signal Generator (from 5.25 mc) until the meter (M1) reaches a maximum indication. The Signal Generator frequency at this point should be approximately 5.29 mc. Record the exact frequency and note the extent of the deviation from 5.25 mc.

(11) The two frequency deviations noted in subparagraphs (9) and (10) should be the same within 0.01 mc. If they are, the discriminator is in alignment. If they are not, tune the Signal Generator to the low-frequency peak. Then adjust the primary slug screw (S7) until the meter (M1) indication changes by about one-half the difference between the maximum indications shown during the procedures of subparagraphs (9) and (10).

(12) Repeat steps (9) and (10) until a balance is obtained. If repetitions of steps (9) and (10) do not result in a balance, start from the beginning of the f-m discriminator alignment procedure and repeat the whole process.

f. BEAT FREQUENCY OSCILLATOR ALIGNMENT.—Set up the receiver and signal generator in the manner described in the first four steps of the I-F AMPLIFER ALIGNMENT procedure, and proceed as follows.

(1) Shut off the 1000 cycle modulation of the signal generator.

(2) Set the "PITCH" control at the "0" position.

(3) Set the "B.F.O." switch at the "ON" position.

(4) Plug a headset into the "PHONES" jack.

(5) With the aid of Figures 7-1 and 7-6, locate the slug screw of L5.

(6) Using the non-metallic screw driver, adjust the slug screw until no sound is heard at the headset (zero beat). Turning the slug screw in a given direction will either raise or lower the pitch of the note heard with the headset. After establishing the direction in which the slug screw must be turned in order to *lower* the pitch of the note, continue to turn the screw in that direction until the note can no longer be heard.

(7) Step (6) completes the B.F.O. ALIGNMENT procedure. As a final check, turn the "PITCH" control to the right and to the left of the "0" position. In doing so, the frequency of the note at the headset should vary from zero at the "0" position to a very high pitch at the "5" position.

g. R-F AMPLIFIER ALIGNMENT.—The following text gives the steps (in their proper order) of the procedure which should be followed in aligning the r-f amplifier stage.

(1) SIGNAL GENERATOR CONNECTION.—Connect the "hot" lead of the signal generator to terminal "A1" of the antenna terminal strip through a 50 ohm non-inductive resistor (carbon). Connect the ground lead of the generator to the receiver chassis. Leave the jumper connection between terminals "A2" and "GND."

(2) Turn on the 1000 cycle signal generator modulation.

(3) RECEIVER CONTROLS.—After letting the receiver "warm up" for approximately fifteen minutes, set the receiver controls as follows:

CONTROL	POSITION
R. F. GAIN	At maximum gain
A. F. GAIN	At maximum gain
SELECTIVITY	SHARP during alignment of band 1 BROAD during alignment of bands 2 and 3
A.M./F.M.	A.M.
A.V.C.	OFF
SEND/REC.	REC.
A.N.L.	OFF
B.F.O.	OFF
TONE	HIGH FID.

Note

For all alignment adjustments the signal generator output control must be adjusted to provide a 500 milliwatt audio signal output at the speaker terminals of the receiver.

Note

DURING EACH OF THE FOLLOWING ADJUSTMENTS THE ANTENNA CONTROL MUST BE "TOUCHED UP" TO KEEP THE ANTENNA STAGE IN ALIGNMENT. THIS IS DONE BY ADJUSTING THE "ANTENNA" CONTROL FOR A MAXIMUM AUDIO OUTPUT.

(4) BAND 1.—The following procedure is used in aligning Band 1.

(a) Set the signal generator at 45 megacycles.

(b) Using the "TUNING" control, tune the generated signal in on the receiver.

(c) If the calibrated dial indicates 45 megacycles, go on to step (d). If the calibrated dial does not indicate 45 megacycles, do the following:

1. Set the calibrated dial at 45 megacycles.

2. Refer to Figure 7-6; locate the trimmer capacitor (C66) and adjust it for a maximum audio output.

(d) Set the signal generator at 30 megacycles.

(e) Using the "TUNING" control, tune in its signal on the receiver.

(f) If the calibrated dial reads 30 megacycles, go on to step (g). If the calibrated dial does not indicate 30 megacycles, do the following:

1. Set the calibrated dial at 30 megacycles.

2. With the aid of Figure 7-6, locate the trimmer capacitor (C58) and adjust it for a maximum audio output.

(g) Set the signal generator at 45 megacycles.

(h) Set the calibrated dial at 45 megacycles.

(i) With the aid of Figure 7-6, locate the trimmer capacitor (C63) and adjust it for a maximum audio output.

(j) Set the signal generator at 30 megacycles.

(k) Using the "TUNING" control, tune the generated signal in on the receiver. If the calibrated dial indicates 30 megacycles, go on to step (1). If the calibrated dial does not indicate 30 megacycles, and if setting the calibrated dial at 30 megacycles results in an appreciable decrease in the audio output, do the following:

1. Refer to Figure 7-5; locate the transformer T4 and using a small brush, apply lacquer thinner to the windings of the transformer. (This loosens the windings from the transformer form.)

2. Using a non-metallic screw driver, adjust the secondary winding so that the audio output of the receiver is at a maximum when the calibrated dial is set at 30 megacycles. Adjustment of the winding is accomplished by either spreading the turns of the secondary winding further apart, or pushing them closer together. Spreading them will decrease the mutual inductance of the transformer, and pushing them closer together will increase the mutual inductance. In order to make sure that adjustments of too great a magnitude are not made (which may completely misalign the transformer) begin your adjustments by spreading or pushing together the turns only by a very small amount and noting the corresponding changes which occur in the audio output, until an idea of how much change will occur in the audio output, for a corresponding adjustment of the secondary winding is obtained.

3. Repeat the procedures of the preceding subparagraphs *(g), (h), (i), (j),* and *(k).*

4. Cement the coils in place with Amphenol 912 cement.

(l) If the sensitivity of the receiver is such that a 2 microvolt signal at 30 megacycles will result in approximately a 50 milliwatt audio output, band 1 can be considered aligned.

(5) BAND 2.—The following procedure is used in aligning Band 2.

(a) Set the signal generator at 80 megacycles.

(b) Using the "TUNING" control, tune the generated signal in on the receiver.

(c) If the calibrated dial indicates 80 megacycles, go on to step (d). If the calibrated dial does not indicate 80 megacycles, do the following:

1. Set the calibrated dial at 80 megacycles.

2. With the aid of Figure 7-6, locate the trimmer capacitor (C67) and adjust it for a maximum audio output.

(d) Set the signal generator at 50 megacycles.

(e) Using the "TUNING" control, tune in the generated signal on the receiver.

(f) If the calibrated dial indicates 50 megacycles, go on to subparagraph *(g).* If the calibrated dial does not indicate 50 megacycles, do the following:

1. Set the calibrated dial at 50 megacycles.

2. With the aid of Figure 7-5, locate transformer T8 and using a small brush, apply lacquer thinner to the windings of the transformer, as in step (1) of the alignment for band 1.

3. Using a non-metallic screw driver, adjust the secondary winding so that the audio output of the receiver is at a maximum when the calibrated dial is set at 50 megacycles (as in step 2 of the alignment procedure for band 1).

4. Repeat the procedures of sub-paragraphs *(a), (b), (c), (d), (e),* and *(f).*

(g) Set the signal generator at 80 megacycles.

(h) Using the "TUNING" control, tune the generated signal in on the receiver.

(i) If the calibrated dial indicates 80 megacycles, go on to step *(j).* If the calibrated dial does not indicate 80 megacycles, do the following:

1. With the aid of Figure 7-6, locate the trimmer capacitor (C64) and adjust it for a maximum audio output.

(j) Set the signal generator at 50 megacycles.

(k) Using the "TUNING" control tune in the generated signal on the receiver.

(l) If the calibrated dial indicates 50 megacycles, go on to step *(m).* If the dial does not indicate 50 megacycles, do the following:

1. With the aid of Figure 7-5, locate the transformer T5, and, using a small brush, apply lacquer thinner to the windings of the transformer, as in step *(f).*

2. Using a non-metallic screw driver, adjust the secondary winding so that the audio output of the receiver is at a maximum when the calibrated dial is set at 50 megacycles (as in step 2 of the alignment procedure for band 1).

3. Repeat the procedures of sub-paragraphs *(g), (h), (i), (j), (k),* and *(l).*

4. Cement the coils in place by applying Amphenol 912 cement.

(m) If the sensitivity of the receiver is such that a 3 microvolt signal at 50 megacycles will result in

approximately a 50 milliwatt audio output, band 2 can be considered aligned.

(6) BAND 3.—The following procedure is used in aligning band 3.

(a) Set the signal generator at 135 megacycles.

(b) Using the "TUNING" control, tune in the generated signal on the receiver.

(c) If the receiver calibrated dial indicates 135 megacycles, go on to sub-paragraph *(d)*. If the calibrated dial does not indicate 135 megacycles, do the following:

1. With the aid of Figure 7-4, locate the transformer T9, and, using a small brush, apply lacquer thinner to the windings of the transformer.

2. Using a non-metallic screw driver, adjust the secondary winding of the transformer until the audio output of the receiver is at a maximum with the calibrated dial set at 135 megacycles.

3. Repeat the procedures of sub-paragraphs *(a), (b), (c),* and *(d)*.

(d) Set the signal generator at 90 megacycles.

(e) Using the "TUNING" control, tune in the generated signal on the receiver.

(f) If the calibrated dial reads 90 megacycles, go on to step *(g)*. If the calibrated dial does not read 90 megacycles, do the following:

1. Locate the tertiary winding associated with transformer T9, and adjust its position with respect to the transformer so that the audio output of the receiver will be a maximum when the calibrated dial reads 90 megacycles.

2. Starting from sub-paragraph (a), repeat the whole of the alignment procedure for band 3.

(g) Set the signal generator at 135 megacycles.

(h) If the calibrated dial indicates 135 megacycles, go on to step *(i)*. If the calibrated dial does not indicate 135 megacycles, do the following:

1. Set the calibrated dial at 135 megacycles.

2. With the aid of Figure 7-6, locate the trimmer capacitor (C65), and adjust it so that the audio output will be at a maximum.

(i) Set the signal generator at 90 megacycles.

(j) If the calibrated dial indicates 90 megacycles, go on to step *(k)*. If the calibrated dial does not indicate 90 megacycles, do the following:

1. Refer to Figure 7-5; locate the transformer T6 and using a small brush, apply lacquer thinner to the windings of the transformer.

2. Using a non-metallic screw driver, adjust the secondary winding of the transformer until the audio output of the receiver is at a maximum.

3. Repeat sub-paragraphs *(g),* and *(h)*.

4. Cement the coils in place with Amphenol 912 cement.

(k) If the reception on band 3 still indicates misalignment, repeat the alignment procedure for band 3.

3. METER ADJUSTMENT.

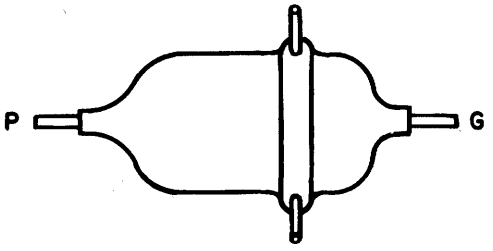
The "CARRIER INDICATOR" meter (M1) is a "center-zero" type of meter. When it is used for indications of AM reception, a bucking current is utilized to bring the pointer to the left end of the scale at no signal. To adjust the pointer position, proceed as follows:

a. Remove the antenna connection and the receiver chassis, and connect the antenna terminal (A1) to the ground terminal (A3).

b. Rotate the "METER ADJ." shaft (R58)—accessible through the front panel—until the meter pointer is aligned with the "0" calibration line at the left of the scale.

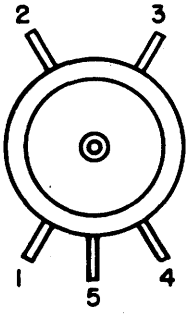
c. Replace the antenna connections.

ACORN TYPE TUBES



954
956

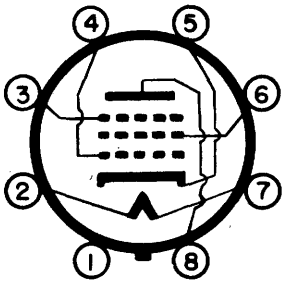
954 / 956
1 HEATER
2 SCREEN
3 SUPPRESSOR
4 HEATER
5 CATHODE



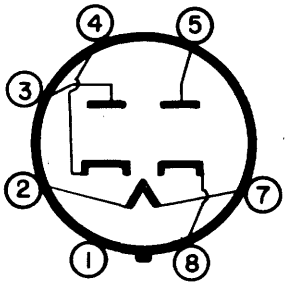
(BOTTOM VIEW)
954
955
956

955
1 HEATER
2 PLATE
3 GRID
4 HEATER
5 CATHODE

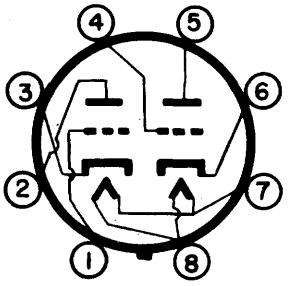
STANDARD TYPE TUBES



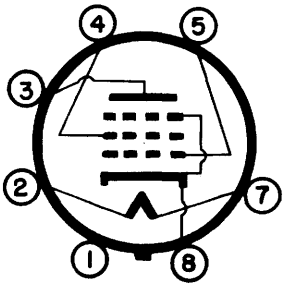
6AC7
6AB7
6SK7



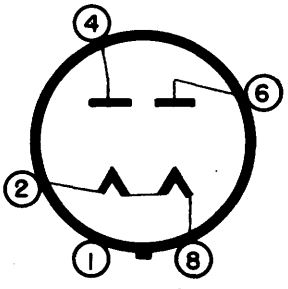
6H6



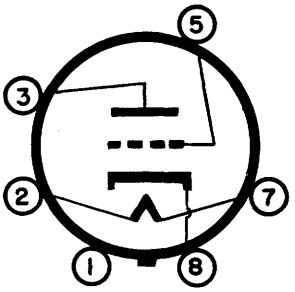
6SL7-GT



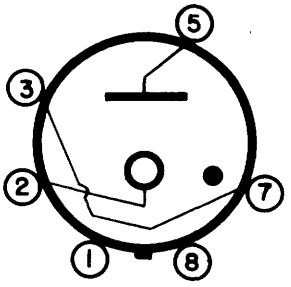
6V6-GT/G



5U4-G



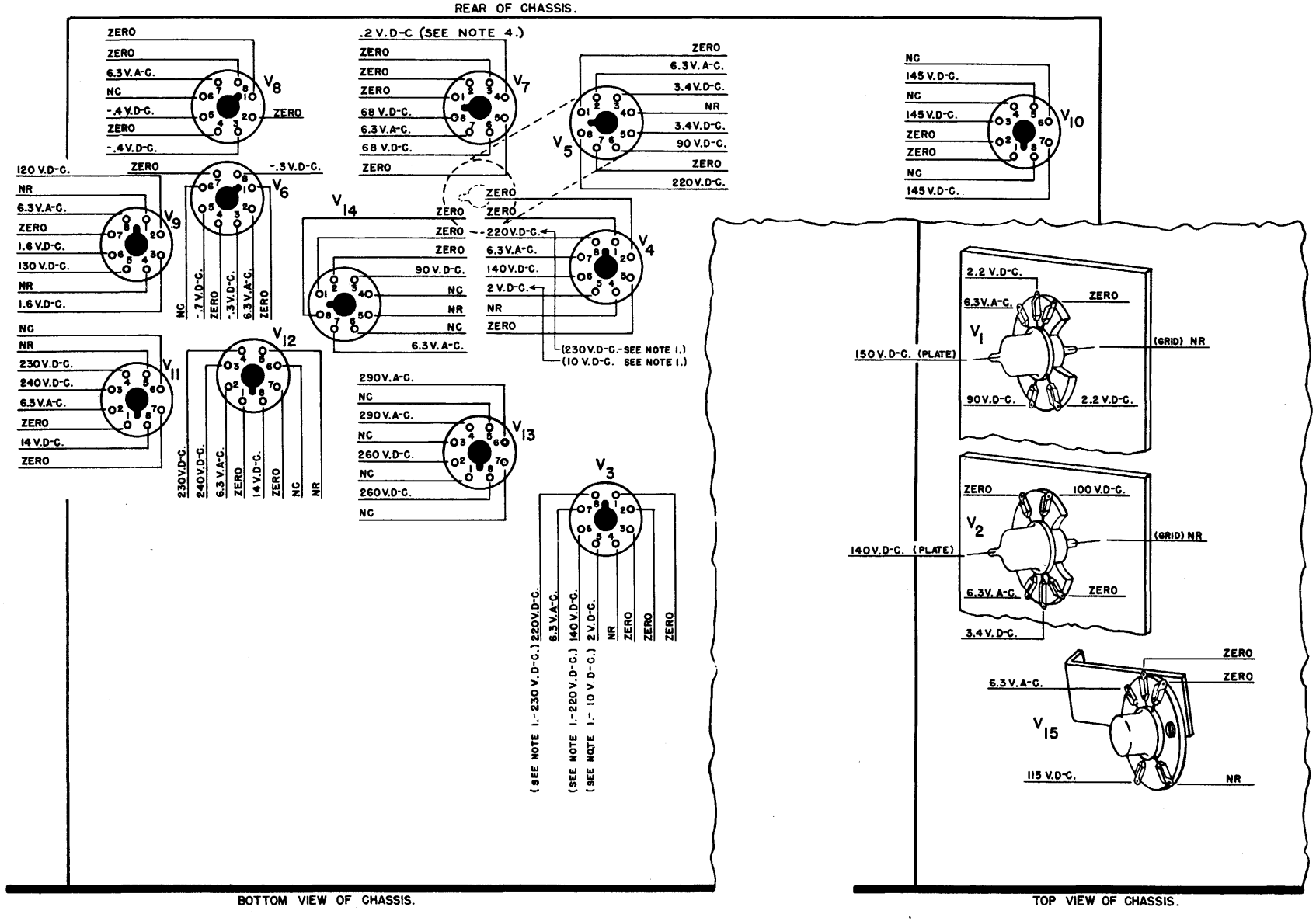
6J5



0D3/VR150

92B249

Figure 7-8: Receiver Tube Socket Connections.

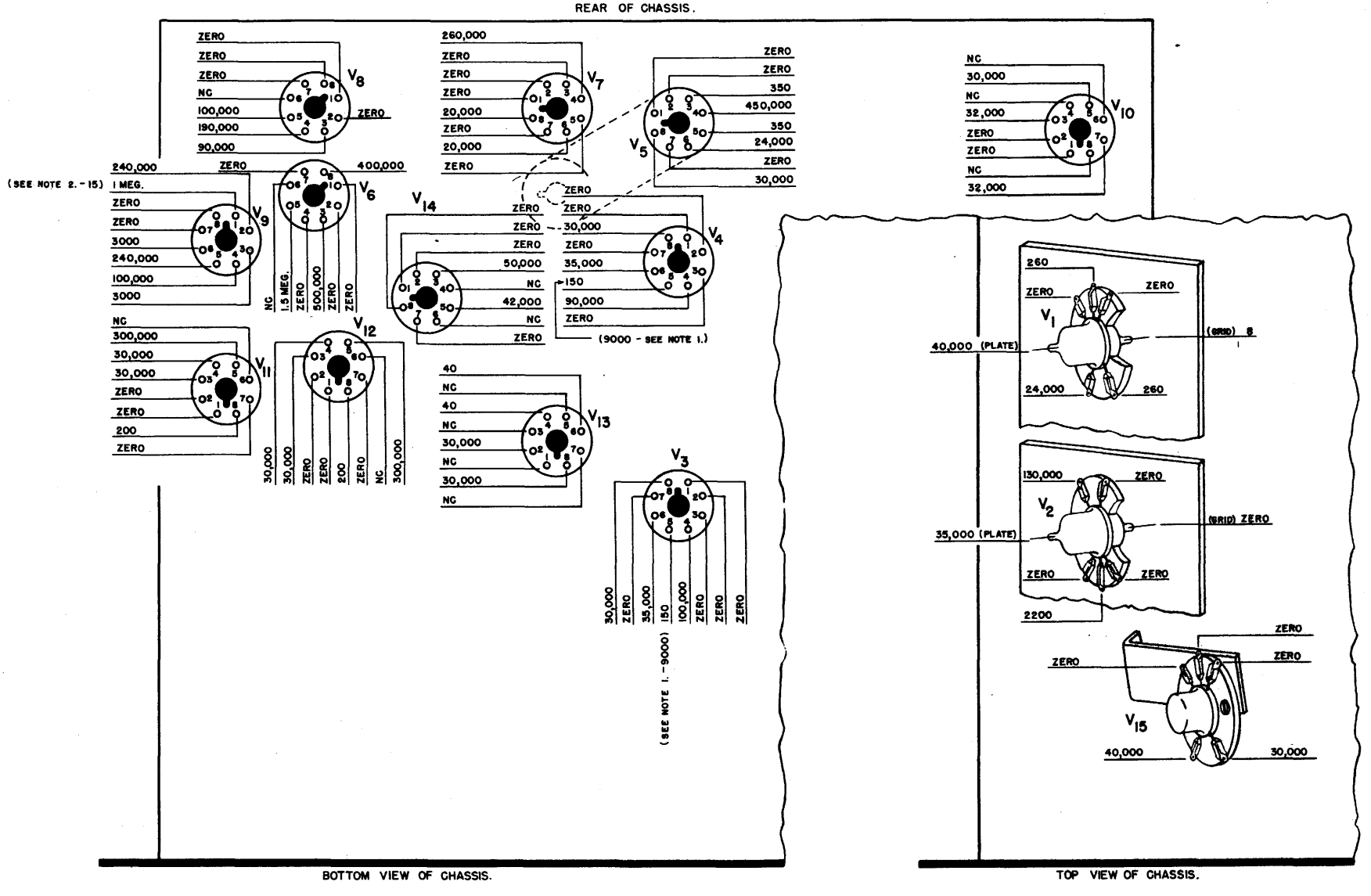


ALL READINGS TAKEN WITH A WESTON MODEL 772 ANALYSER.
LINE INPUT VOLTAGE AT 117-VOLTS A-C.

NOTE: 1. VOLTAGE READING WITH R.F. GAIN CONTROL SET AT MINIMUM GAIN POSITION.
2. NC = NO CONNECTION.
3. NR = NOT READABLE ON A 20,000 OHM PER VOLT METER.
4. READABLE AT 20,000 OHMS/VOLT. (THIS READING OBTAINED WITH A HIGH SENSITIVITY INSTRUMENT.)

920251

Figure 7-9: Radio Receiver Voltage Chart.



NOTE: 1. R.F. GAIN CONTROL SET AT MINIMUM GAIN POSITION.
2. A.F. GAIN CONTROL SET AT MINIMUM GAIN POSITION.
3. NC = NO CONNECTION.
4. READINGS TAKEN FROM TUBE TERMINAL TO GROUND.

92D250

Figure 7-10: Radio Receiver Resistance Chart.

THE TYPE CHL-46130-D RECEIVER.
THE TYPE CHL-46130-D RECEIVER.

46130-C RECEIVER, IN WHICH CASE BLANKING JACK SO_3 AND RESISTOR R_{73} ARE DELETED.

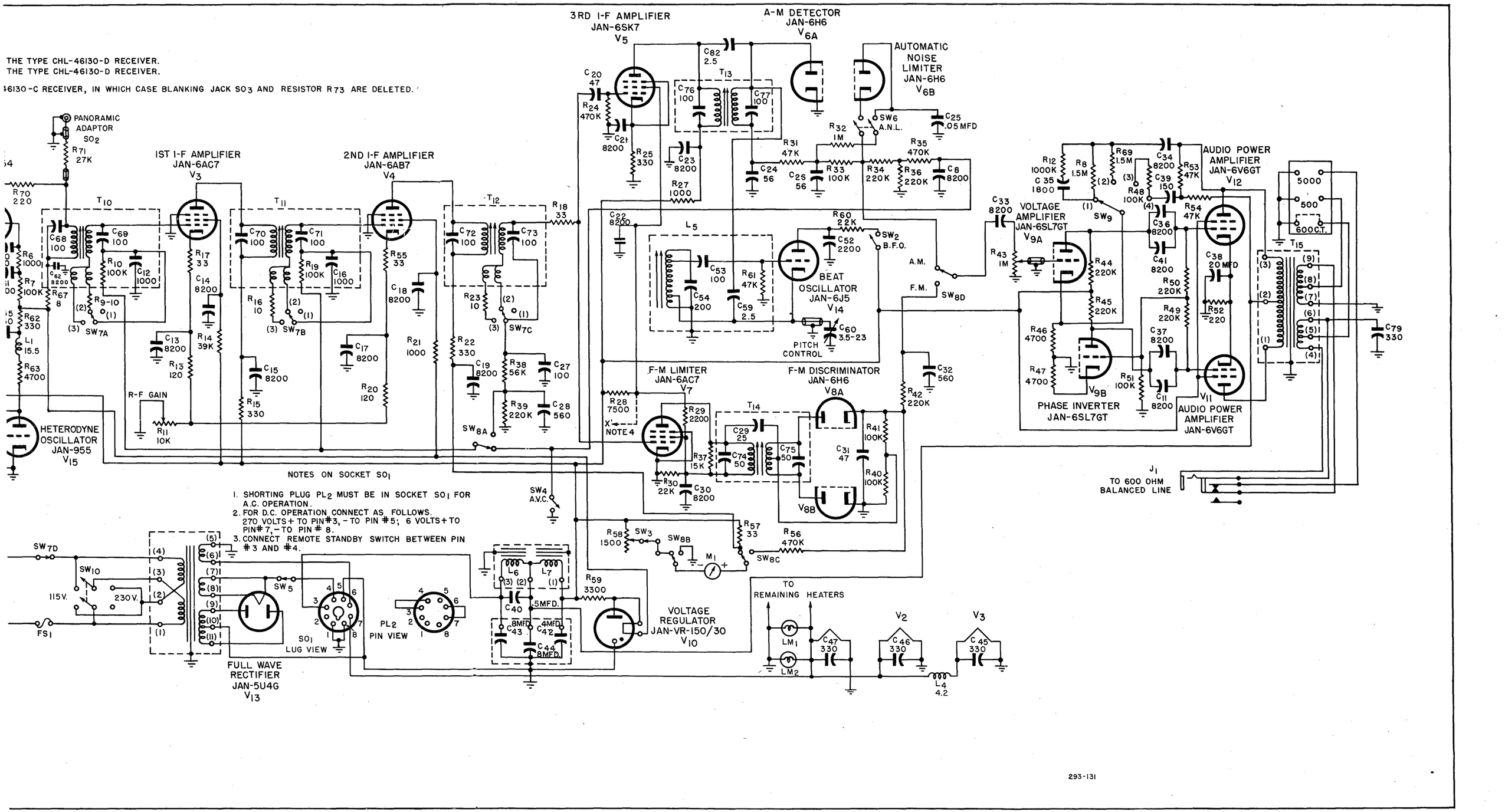


Figure 7-11: Type CHL-46130-C and CHL-46130-D Receiver, Overall Schematic Diagram.

NOTE 1 – CAPACITOR C80 AND RESISTOR R72 ARE INCLUDED ONLY IN THE CIRCUIT OF THE TYPE CHL-46130-D RECEIVER.
NOTE 2 – CAPACITOR C81 AND RESISTOR R74 ARE INCLUDED ONLY IN THE CIRCUIT OF THE TYPE CHL-46130-D RECEIVER.

NOTE 4 – LEAD X IS CONNECTED TO LEAD X' ONLY IN THE CIRCUIT OF THE TYPE CHL-46130-C RECEIVER, IN WHICH CASE BLANKING JACK SO3 AND RESISTOR R73 ARE DELETED.

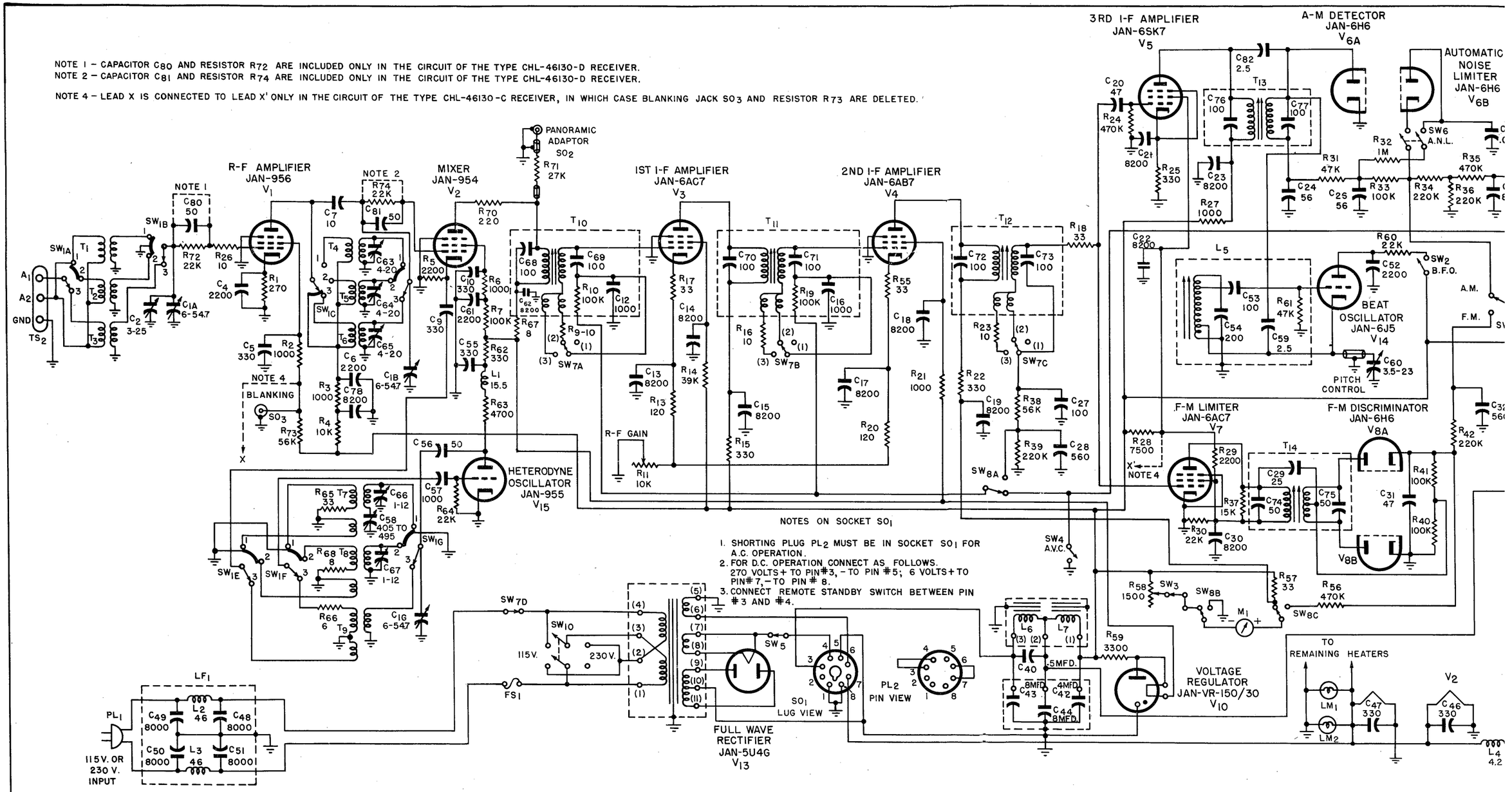


Figure 7-11: Type CHL-46130-C and CHL-46130-D Receiver, Overall Schematic Diagram.

SECTION VIII

PARTS LISTS

TABLE 8-1

LIST OF MAJOR UNITS

FOR MODELS RBK-12, RBK-13 & RBK-14 RADIO RECEIVING EQUIPMENT

Quantity			Name of Major Unit	Navy Type Designation	Symbol Group
RBK-12	RBK-13	RBK-14			
1			UHF Radio Receiver	CHL-46130-C	1-99
	1		UHF Radio Receiver	CHL-46130-C	1-99
		1	UHF Radio Receiver	CHL-46130-D	1-99

CONTRACT NXsr-39265 (RBK-12)
CONTRACT NXsr-67988 (RBK-13)
CONTRACT NXsr-56768 (RBK-13)
CONTRACT NXsr-85032 (RBK-14)
CONTRACT NXsr-69198 (RBK-14)
CONTRACT NXsr-39265 (RBK-14)

Foot Notes for Tables 8-2 and 8-3

1 For replacement use Navy Type—482643-5.

2 For replacement use Navy Type—481910 (Mfr. C-D).

3 For replacement use Navy Type—481223.

4 Alternate Hallicrafters #46B047. Supplied as spare part on Contract NXsr-85032.

5 Hallicrafters #47A025 (Centralab 812-109) supplied as spare parts. For replacement use CC25U-510J.

6 Alternate CM25A102K (mica). Supplied as spare parts.

7 Was Hallicrafters #44A049 (3-50 mmf), Navy Type—482695. #44A049 supplied, as spare part on all contracts except Contract NXsr-85032.

8 CM20A510J supplied as spare parts for use on RBK-14 equipments only.

9 For replacement use CC25U-510J for use on RBK-14 equipments only.

10 Used on RBK-14 equipments only.

11 RBK-12 and RBK-13 equipments, total quantity per equipment is 1.

12 Used on RBK-12 and RBK-13 equipments only.

13 Supplied as spare part only, on all contracts except NXsr-85032.

TABLE 8-2
PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATIONS FOR MODELS RBK-12, RBK-13 & RBK-14 RADIO RECEIVING EQUIPMENT

PARTS									SPARE PARTS QUANTITIES ⊛										
									RBK-14				RBK-13				RBK-12		
Symbol Desig.	Function	Name of Part and Description	AWS, JAN or Navy Type Desig.	Navy Stock No.	Mfr. and Mfr's Desig.	Contr. Drawing or Part No.	Total Per Equip.	All Symbol Desig. Involved	NXsr-39265 NXsr-69198 Equip.	NXsr-39265 NXsr-69198 Tender	NXsr-39265 NXsr-69198 Stock	NXsr-85032 Equip.	NXsr-56768 Equip.	NXsr-56768 Tender	NXsr-56768 Stock	NXsr-67988 Equip.	NXsr-39265 Equip.	NXsr-39265 Tender	NXsr-39265 Stock
A1	Ant. binding post	POST ASSEMBLY, binding: comprised of A1A and A1B	•	•	Hallicrafters 72A034	72A034	9	A1, A2, A3, A4, A5, A6, A7, A8, A9	•	•	•	•	•	•	•	•	•	•	•
A1A	Base for A1	BASE, binding post: tubular screw; nickel plated brass; #10-32 thd; 1 5/32" lg x 3/8" diam. overall; part of A1	•	•	Hudson Screw	11A034	9	A1A, A2A, A3A, A4A, A5A, A6A, A7A, A8A, A9A	•	•	•	•	•	•	•	•	•	•	•
A1B	Screw for A1	SCREW, binding post: round knurled head; nickel plated brass; 1/4-28 thd approx. 3/8" lg; approx. 9/16" lg. overall; part of A1	•	•	Hudson Screw	11A035	9	A1B, A2B, A3B, A4B, A5B, A6B, A7B, A8B, A9B,	•	•	•	•	•	•	•	•	•	•	•
A2	Ant. binding post	Same as A1; includes A2A, A2B	•	•															
A2A	Base for A2	Same as A1; part of A2	•	•															
A2B	Screw for A2	Same as A1B; part of A2	•	•															
A3	Ant. binding post	Same as A1; includes A3A, A3B	•	•															
A3A	Base for A3	Same as A1A; part of A3	•	•															
A3B	Screw for A3	Same as A1B; part of A3	•	•															
A4	Audio output binding post	Same as A1; includes A4A, A4B	•	•															
A4A	Base for A4	Same as A1A; part of A4	•	•															
A4B	Screw for A4	Same as A1B; part of A4	•	•															
A5	Audio output binding post	Same as A1; includes A5A, A5B	•	•															
A5A	Base for A5	Same as A1A; part of A5	•	•															

⊛ ALL items of each set of Spares are packed together in one carton

Contracts NXsr-39265, 56768, 67988, 69198, 85032

TABLE 8-2—CONTINUED
PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATIONS
FOR MODELS RBK-12, RBK-13 & RBK-14 RADIO RECEIVING EQUIPMENT

PARTS									SPARE PARTS QUANTITIES ⊛										
									RBK-14				RBK-13				RBK-12		
Symbol Desig.	Function	Name of Part and Description	AWS, JAN or Navy Type Desig.	Navy Stock No.	Mfr. and Mfr's Desig.	Contr. Drawing or Part No.	Total Per Equip.	All Symbol Desig. Involved	NXsr-39265 NXsr-69198 Equip.	NXsr-39265 NXsr-69198 Tender	NXsr-39265 NXsr-69198 Stock	NXsr-85032 Equip.	NXsr-56768 Equip.	NXsr-56768 Tender	NXsr-56768 Stock	NXsr-67988 Equip.	NXsr-39265 Equip.	NXsr-39265 Tender	NXsr-39265 Stock
A5B	Screw for A5	Same as A1B; part of A5	•	•															
A6	Audio output binding post	Same as A1; includes A6A, A6B	•	•															
A6A	Base for A6	Same as A1A; part of A6	•	•															
A6B	Screw for A6	Same as A1B; part of A6	•	•															
A7	Audio output binding post	Same as A1; includes A7A, A7B	•	•															
A7A	Base for A7	Same as A1A; part of A7	•	•															
A7B	Screw for A7	Same as A1B; part of A7	•	•															
A8	Audio output binding post	Same as A1; includes A8A, A8B	•	•															
A8A	Base for A8	Same as A1A; part of A8	•	•															
A8B	Screw for A8	Same as A1B; part of A8	•	•															
A9	Audio output binding post	Same as A1; includes A91A, A9B	•	•															
A9A	Base for A9	Same as A1A; part of A9																	
A9B	Screw for A9	Same as A1B; part of A9	•	•															
A10	Radio receiver mtg foot	FOOT, mounting: rubber; black; #6 hole; ¾" diam x 7/16" h overall	•	•	Active Screw Type 6	16A007	4	A10, A11, A12, A13	•	•	•	•	•	•	•	•	•	•	•
A11	Radio receiver mtg foot	Same as A10	•	•															
A12	Radio receiver mtg foot	Same as A10	•	•															
A13	Radio receiver mtg foot	Same as A10																	
C1A, B, C	Sec tuning of T1 to T9 incl	CAPACITOR, variable: air; 3-section; 6-54.7 mmf; 3 3/16" x 2¾" x 6½" lg overall; 0.375" diam x ½" lg shaft	•	•	Oak special	48C124	1	C1A, B, C	•	•	•	1	•	•	•	•	•	•	•

⊛ ALL items of each set of Spares are packed together in one carton

Contracts NXsr-39265, 56768, 67988, 69198, 85032

TABLE 8-2—CONTINUED
PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATIONS
FOR MODELS RBK-12, RBK-13 & RBK-14 RADIO RECEIVING EQUIPMENT

PARTS									SPARE PARTS QUANTITIES ⊛										
									RBK-14				RBK-13				RBK-12		
Symbol Desig.	Function	Name of Part and Description	AWS, JAN or Navy Type Desig.	Navy Stock No.	Mfr. and Mfr's Desig.	Contr. Drawing or Part No.	Total Per Equip.	All Symbol Desig. Involved	NXsr-39265 NXsr-69198 Equip.	NXsr-39265 NXsr-69198 Tender	NXsr-39265 NXsr-69198 Stock	NXsr-85032 Equip.	NXsr-56768 Equip.	NXsr-56768 Tender	NXsr-56768 Stock	NXsr-67988 Equip.	NXsr-39265 Equip.	NXsr-39265 Tender	NXsr-39265 Stock
C2	Vernier tuning on sec of T1, T2 and T3	CAPACITOR, variable: air; 3-25 mmf; 800 vdc test; $1\frac{7}{32}$" x $\frac{15}{16}$" x $\frac{7}{8}$" overall; 0.250" diam x $\frac{3}{4}$" lg shaft	482639	•	RCC 22-7	48A039	1	C2	•	•	•	1	•	•	•	•	•	•	•
C3		Not used.																	
C4	V1 cathode bypass	CAPACITOR, fixed: mica; 2200 mmf ±10%; 500 vdcw; $\frac{53}{64}$" x $\frac{9}{32}$" thk max overall	AWS-CM30A222K Spec-C75.3-1942	•	AWS-CM30A222K	CM30A222K	4	C4, C6, C52, C61	1	3	1	1	1	3	1	1	1	3	1
C5	V1 screen bypass	CAPACITOR, fixed: mica; 330 mmf ±10%; 500 vdcw; $\frac{51}{64}$" x $\frac{15}{32}$" x $\frac{7}{32}$" thk max overall	AWS-CM20A331K Spec-C75.3-1942	•	AWS-CM20A331K	CM20A331K	8	C5, C9, C10, C45, C46, C47, C55, C79	3	6	8	2	3	6	8	2	3	6	8
C6	V1 plate return	Same as C4	AWS-CM30A222K Spec-C75.3-1942	•															
C7	V1 and V2 coupling	CAPACITOR, fixed: ceramic; 10 mmf ±10%; temp coeff 0.00055 mmf/mmf/°C; 500 vdcw; 0.625" lg x 0.225" diam overall	-482640-10	•	Centralab 811-077	47A006	1	C7	1	1	1	1	1	1	1	1	1	1	1
C8	AVC filter	CAPACITOR, fixed: mica; 8200 mmf ±10%; 500 vdcw; $1\frac{1}{32}$" x $\frac{41}{64}$" x $\frac{11}{32}$" thk max overall	AWS-CM40A822K Spec-C75.3-1942	•	AWS-CM40A822K	CM40A822K	19	C8, C11, C13, C14, C15, C17, C18, C19, C21, C22, C23, C30, C33, C34, C36, C37, C41, C62, C78	4	12	19	4	4	12	19	4	4	12	19
C9	V15 and V2 coupling	Same as C5	AWS-CM20A331K Spec-C75.3-1942	•															

⊛ ALL items of each set of Spares are packed together in one carton

Contracts NXsr-39265, 56768, 67988, 69198, 85032

TABLE 8-2—CONTINUED
PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATIONS
FOR MODELS RBK-12, RBK-13 & RBK-14 RADIO RECEIVING EQUIPMENT

PARTS									SPARE PARTS QUANTITIES ⊛										
									RBK-14				RBK-13				RBK-12		
Symbol Desig.	Function	Name of Part and Description	AWS, JAN or Navy Type Desig.	Navy Stock No.	Mfr. and Mfr's Desig.	Contr. Drawing or Part No.	Total Per Equip.	All Symbol Desig. Involved	NXsr-39265 NXsr-69198 Equip.	NXsr-39265 NXsr-69198 Tender	NXsr-39265 NXsr-69198 Stock	NXsr-85032 Equip.	NXsr-56768 Equip.	NXsr-56768 Tender	NXsr-56768 Stock	NXsr-67988 Equip.	NXsr-39265 Equip.	NXsr-39265 Tender	NXsr-39265 Stock
C10	V2 screen grid return	Same as C5	AWS-CM20A331K Spec-C75.3-1942	•															
C11	V9 and V11 coupling	Same as C8	AWS-CM40A822K Spec-C75.3-1942	•															
C12	V3 AVC filter	CAPACITOR, fixed: mica; 1000 mmf +100% −20%; 600 vdcw; part of T10	•	•	Electro Motive	47A121	2	C12, C16	•	•	•	•	•	•	•	•	•	•	•
C13	V3 cathode bypass	Same as C8	AWS-CM40A822K Spec-C75.3-1942	•															
C14	V3 screen grid bypass	Same as C8	AWS-CM40A822K Spec-C75.3-1942	•															
C15	V3 plate bypass	Same as C8	AWS-CM40A822K Spec-C75.3-1942	•															
C16	V4 AVC filter	Same as C12; part of T11	•	•															
C17	V4 cathode bypass	Same as C8	AWS-CM40A822K Spec-C75.3-1942	•															
C18	V4 screen grid bypass	Same as C8	AWS-CM40A822K Spec-C75.3-1942	•															
C19	V4 plate return	Same as C8	AWS-CM40A822K Spec-C75.3-1942	•															
C20	T12 and V5 coupling	CAPACITOR, fixed; mica; 47 mmf ±10%; 500 vdcw; 51/64" x 15/32" x 1/32" thk max overall	AWS-CM20A470K Spec-C75.3-1942	•	AWS-CM20A470K	CM20A470K	2	C20, C31	1	2	2	1	1	2	2	1	1	2	2

⊛ ALL items of each set of Spares are packed together in one carton

Contracts NXsr-39265, 56768, 67988, 69198, 85032

TABLE 8-2—CONTINUED
PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATIONS
FOR MODELS RBK-12, RBK-13 & RBK-14 RADIO RECEIVING EQUIPMENT

PARTS									SPARE PARTS QUANTITIES ⊛										
									RBK-14				RBK-13				RBK-12		
Symbol Desig.	Function	Name of Part and Description	AWS, JAN or Navy Type Desig.	Navy Stock No.	Mfr. and Mfr's Desig.	Contr. Drawing or Part No.	Total Per Equip.	All Symbol Desig. Involved	NXsr-39265 NXsr-69198 Equip.	NXsr-39265 NXsr-69198 Tender	NXsr-39265 NXsr-69198 Stock	NXsr-85032 Equip.	NXsr-56768 Equip.	NXsr-56768 Tender	NXsr-56768 Stock	NXsr-67988 Equip.	NXsr-39265 Equip.	NXsr-39265 Tender	NXsr-39265 Stock
C21	V5 cathode bypass	Same as C8	AWS-CM40A822K Spec-C75.3-1942	•															
C22	V5 screen grid bypass	Same as C8	AWS-CM40A822K Spec-C75.3-1942	•															
C23	V5 plate return	Same as C8	AWS-CM40A822K Spec-C75.3-1942	•															
C24	V6 diode return	CAPACITOR, fixed: mica; 56 mmf ±10%; 500 vdcw; 51/64" x 15/32" x 7/32" thk max overall	AWS-CM20A560K Spec-C75.3-1942	•	AWS-CM20A560K	CM20A560K	2	C24, C26	1	2	2	1	1	2	2	1	1	2	2
C25	ANL bypass	CAPACITOR, fixed: paper; 50,000 mmf +20% −10%; 600 vdcw; 1 25/32" lg x 1 1/32" wd x 13/16" h case overall	•	•	Incco 7678	46A005	1	C25	1	2	3	1	1	2	3	1	1	2	3
C26	V6 diode filter	Same as C24	AWS-CM20A560K Spec-C75.3-1942	•															
C27	AVC filter	CAPACITOR, fixed: mica; 100 mmf ±10%; 500 vdcw; 51/64" x 15/32" x 7/32" thk max overall	AWS-CM20A101K Spec-C75.3-1942	•	AWS-CM20A101K	CM20A101K	2	C27, C53	1	1	1	1	1	1	1	1	1	1	1
C28	AVC filter	CAPACITOR, fixed: mica; 560 mmf ±10%; 500 vdcw; 53/64" x 63/64" x 9/32" thk max overall	AWS-CM30561K Spec-C75.3-1942	•	AWS-CM30A561K	CM30A561K	1	C28	1	1	1	1	1	1	1	1	1	1	1
C29	V7 and T14 coupling	CAPACITOR, fixed: ceramic; 25 mmf ±10%; 500 vdcw; part of T14	•	•	Muter 20-PNOO	47A142	1	C29	•	•	•	•	•	•	•	•	•	•	•
C30	V7 plate return	Same as C8	AWS-CM40A822K Spec-C75.3-1942	•															
C31	V8 cathode bypass	Same as C20	AWS-CM20A470K Spec-C75.3-1942	•															

⊛ ALL items of each set of Spares are packed together in one carton

Contracts NXsr-39265, 56768, 67988, 69198, 85032

TABLE 8-2—CONTINUED
PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATIONS FOR MODELS RBK-12, RBK-13 & RBK-14 RADIO RECEIVING EQUIPMENT

PARTS									SPARE PARTS QUANTITIES ⊛										
									RBK-14				RBK-13				RBK-12		
Symbol Desig.	Function	Name of Part and Description	AWS, JAN or Navy Type Desig.	Navy Stock No.	Mfr. and Mfr's Desig.	Contr. Drawing or Part No.	Total Per Equip.	All Symbol Desig. Involved	NXsr-39265 NXsr-69198 Equip.	NXsr-39265 NXsr-69198 Tender	NXsr-39265 NXsr-69198 Stock	NXsr-85032 Equip.	NXsr-56768 Equip.	NXsr-56768 Tender	NXsr-56768 Stock	NXsr-67988 Equip.	NXsr-39265 Equip.	NXsr-39265 Tender	NXsr-39265 Stock
C32	V8 de-emphasis	CAPACITOR, fixed: mica; 560 mmf ±10%; 500 vdcw; 1 1/16" x 15/32" x 7/32" thk max overall	AWS-CM25A561K Spec-C75.3-1942	•	AWS-CM25A561K	CM25A561K	1	C32	1	1	1	1	1	1	1	1	1	1	1
C33	V6, V8 and V9 coupling	Same as C8	AWS-CM40A822K Spec-C75.3-1942	•															
C34	V11 and V12 tone control	Same as C8	AWS-CM40A822K Spec-C75.3-1942	•															
C35	V11 and V12 tone control	CAPACITOR, fixed: mica; 1800 mmf ±10%; 500 vdcw; 53/64" x 53/64" x 9/32" thk max overall	AWS-CM30A182K Spec-C75.3-1942	•	AWS-CM30A182K	CM30A182K	1	C35	1	1	1	1	1	1	1	1	1	1	1
C36	V9 and V12 coupling	Same as C8	AWS-CM40A822K Spec-C75.3-1942	•															
C37	V9 and V11 coupling	Same as C8	AWS-CM40A822K Spec-C75.3-1942	•															
C38	V11 and V12 cathode bypass	CAPACITOR, fixed: dry electrolytic; 20 mfd +75% −10%; 25 vdcw; 1 13/16" lg x 1" wd x 13/16" h case overall	•	•	Incco	46A011	1	C38	1 ③	2 ③	3 ③	1 ③	1	2	3	1 ③	1	2	3
C39	V11 and V12 tone control	CAPACITOR, fixed: mica; 150 mmf ±10%; 500 vdcw; 51/64" x 15/32" x 7/32" thk max overall	AWS-CM20A151K Spec-C75.3-1942	•	AWS-CM20A151K	CM20A151K	1	C39	1	1	1	1	1	1	1	1	1	1	1
C40	Power supply filter	CAPACITOR, fixed: paper; 500,000 mmf +14% −6%; 400 vdcw; 1 13/16" lg x 1" wd x 7/8" h case overall	•	•	Incco 6BA50	46A050	1	C40	1 ③	2 ③	3 ③	1 ③	1	2	3	1 ③	1	2	3
C41	V9 and V12 coupling	Same as C8	AWS-CM40A822K Spec-C75.3-1942	•															

⊛ ALL items of each set of Spares are packed together in one carton

Contracts NXsr-39265, 56768, 67988, 69198, 85032

TABLE 8-2—CONTINUED
PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATIONS
FOR MODELS RBK-12, RBK-13 & RBK-14 RADIO RECEIVING EQUIPMENT

PARTS									SPARE PARTS QUANTITIES ⊛										
									RBK-14				RBK-13				RBK-12		
Symbol Desig.	Function	Name of Part and Description	AWS, JAN or Navy Type Desig.	Navy Stock No.	Mfr. and Mfr's Desig.	Contr. Drawing or Part No.	Total Per Equip.	All Symbol Desig. Involved	NXsr-39265 NXsr-69198 Equip.	NXsr-39265 NXsr-69198 Tender	NXsr-39265 NXsr-69198 Stock	NXsr-85032 Equip.	NXsr-56768 Equip.	NXsr-56768 Tender	NXsr-56768 Stock	NXsr-67988 Equip.	NXsr-39265 Equip.	NXsr-39265 Tender	NXsr-39265 Stock
C42, 43, 44	Power supply filter	CAPACITOR, fixed: paper; 3-section; 8-8-4 mfd +10% −3%; 650 vdcw; 4¼" lg x 2½" wd x 5⁷⁄₁₆" h case overall	-481313	•	Incco 7392-E	42B043④	1	C42, 43, & 44	1	2	3	1④	1	2	3	1	1	2	3
C45	V15 heater bypass	Same as C5	AWS-CM20A331K Spec-C75.3-1942	•															
C46	V2 heater bypass	Same as C5	AWS-CM20A331K Spec-C75.3-1942	•															
C47	V1 heater bypass	Same as C5	AWS-CM20A331K Spec-C75.3-1942	•															
C48	Power line filter	CAPACITOR, fixed: mica; 8200 mmf ±20%; 300 vdcw; ⁵³⁄₆₄" x ⁵³⁄₆₄" x ¹¹⁄₆₄" thk max overall; part of LF1	AWS-CM35A822M Spec-C75.3-1942	•	AWS-CM35A822M	CM35A822M	4	C48, C49, C50, C51	•	•	•	•	•	•	•	•	•	•	•
C49	Power line	Same as C48; part of LF1 filter	AWS-CM35A822M Spec-C75.3-1942	•															
C50	Power line filter	Same as C48; part of LF1	AWS-CM35A822M Spec-C75.3-1942	•															
C51	Power line filter	Same as C48; part of LF1	AWS-CM35A822M Spec-C75.3-1942	•															
C52	V14 plate decoupling	Same as C4	AWS-CM30A222K Spec-C75.3-1942	•															
C53	BFO grid coupling	Same as C27; part of L5	AWS-CM20A101K Spec-C75.3-1942	•															

⊛ ALL items of each set of Spares are packed together in one carton

Contracts NXsr-39265, 56768, 67988, 69198, 85032

TABLE 8-2—CONTINUED
PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATIONS
FOR MODELS RBK-12, RBK-13 & RBK-14 RADIO RECEIVING EQUIPMENT

PARTS									SPARE PARTS QUANTITIES ⊛										
									RBK-14				RBK-13				RBK-12		
Symbol Desig.	Function	Name of Part and Description	AWS, JAN or Navy Type Desig.	Navy Stock No.	Mfr. and Mfr's Desig.	Contr. Drawing or Part No.	Total Per Equip.	All Symbol Desig. Involved	NXsr-39265 NXsr-69198 Equip.	NXsr-39265 NXsr-69198 Tender	NXsr-39265 NXsr-69198 Stock	NXsr-85032 Equip.	NXsr-56768 Equip.	NXsr-56768 Tender	NXsr-56768 Stock	NXsr-67988 Equip.	NXsr-39265 Equip.	NXsr-39265 Tender	NXsr-39265 Stock
C54	BFO tuning	CAPACITOR, fixed: ceramic; 200 mmf ±10%; zero temp coeff; 500 vdcw; 5/8" lg x 1/8" diam overall; part of L5	•	•	Centralab 810Z-110	47A026	1	C54	•	•	•	•	•	•	•	•	•	•	•
C55	V15 plate decoupling	Same as C5	AWS-CM20A331K Spec-C75.3-1942	•															
C56	V15 plate blocking	CAPACITOR, fixed: ceramic; 50 mmf ±2.5 mmf; temp coeff 0.00075 mmf/mmf/°C; 500 vdcw; 7/16" lg x 7/32" diam overall	-482285-5	•	Erie N750K	47A109	1	C56	1⑤	1⑤	1⑤	1	1⑤	1⑤	1⑤	1⑤	1⑤	1⑤	1⑤
C57	V15 grid coupling	CAPACITOR, fixed: ceramic; 1000 mmf ±20%; variable temp coeff; 300 vdcw; 11/16" lg x 3/16" diam overall	-482092-20⑥	•	Muter 20K1200	47A132	1	C57	1⑥	1⑥	1⑥	1	1⑥	1⑥	1⑥	1	1⑥	1⑥	1⑥
C58	T7 padder	CAPACITOR, variable: ceramic; 405-495 mmf; 500 vdcw; 1 1/4" lg x 7/8" wd x 1 1/32" h overall	-482691	•	Underwood Elec S81▲	44A050	1	C58	1	1	1	1	1	1	1	1	1	1	1
C59	V14 and V6 coupling	CAPACITOR, fixed: glass braid and air; 1 mmf; 4" of #20 wire, glass braid stranded white/blue tracer, twisted leads; part of L5	•	•	Hallicrafters 87A1007	87A1007	1	C59	•	•	•	•	•	•	•	•	•	•	•
C60	T14 pitch control	CAPACITOR, variable: air; 3.5-23.0 mmf; 5000 v peak, 1 7/32" x 15/32" x 1 15/32" overall; 0.250" diam x 49/32" lg shaft	-482692	•	RCC 22-7	48A064	1	C60	•	•	•	1	•	•	•	•	•	•	•
C61	V2 screen grid decoupling	Same as C4	AWS-CM30A222K Spec-C75.3-1942	•															
C62	V2 plate decoupling	Same as C8	AWS-CM40A822K Spec-C75.3-1942	•															
C63	T4 sec trimmer	CAPACITOR, variable: ceramic; 4-20 mmf; 1500 vac; 0.9125" lg x 0.893" w x 0.610" h overall; 3/16" diam x 3/4" lg shaft	-482694	•	Centralab B-820-305	44A076⑦	3	C63, C64, C65	1⑦	2⑦	3⑦	2	1⑦	2⑦	3⑦	1⑦	1⑦	2⑦	3⑦

⊛ ALL items of each set of Spares are packed together in one carton

Contracts NXsr:39265, 56768, 67988, 69198, 85032

TABLE 8-2—CONTINUED
PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATIONS
FOR MODELS RBK-12, RBK-13 & RBK-14 RADIO RECEIVING EQUIPMENT

PARTS									SPARE PARTS QUANTITIES ⊛										
									RBK-14				RBK-13				RBK-12		
Symbol Desig.	Function	Name of Part and Description	AWS, JAN or Navy Type Desig.	Navy Stock No.	Mfr. and Mfr's Desig.	Contr. Drawing or Part No.	Total Per Equip.	All Symbol Desig. Involved	NXsr-39265 NXsr-69198 Equip.	NXsr-39265 NXsr-69198 Tender	NXsr-39265 NXsr-69198 Stock	NXsr-85032 Equip.	NXsr-56768 Equip.	NXsr-56768 Tender	NXsr-56768 Stock	NXsr-67988 Equip.	NXsr-39265 Equip.	NXsr-39265 Tender	NXsr-39265 Stock
C64	T5 sec trimmer	Same as C63	-482694	•															
C65	T6 sec trimmer	Same as C63	-482694	•															
C66	T7 sec trimmer	CAPACITOR, variable: air; 1-12 mmf; 1⅜″ lg x 7/16″ diam overall	-482697	•	Meissner 22-5230	48A031	2	C66, C67	•	•	•	1	•	•	•	•	•	•	•
C67	T8 sec trimmer	Same as C66	-482697	•															
C68	T10 pri trimmer	CAPACITOR, fixed: ceramic; 100 mmf ±3%; 500 v; part of T10	•	•	Muter	47A117	8	C68, C69, C70, C71, C72, C73, C76, C77	•	•	•	•	•	•	•	•	•	•	•
C69	T10 sec trimmer	Same as C68; part of T10	•	•															
C70	T11 pri trimmer	Same as C68; part of T11	•	•															
C71	T11 sec trimmer	Same as C68; part of T11	•	•															
C72	T12 pri trimmer	Same as C68; part of T12	•	•															
C73	T12 sec trimmer	Same as C68; part of T12	•	•															
C74	T14 pri trimmer	CAPACITOR, fixed: ceramic; 50 mmf ±10%; zero temp coeff; 500 vdcw; ¼″ diam x ¾″ lg overall; part of T14	•	•	Muter 31PN00	47A091	2	C74, C75	•	•	•	•	•	•	•	•	•	•	•
C75	T14 sec trimmer	Same as C74; part of T14	•	•															
C76	T13 pri trimmer	Same as C74; part of T13	•	•															
C77	T13 sec trimmer	Same as C74; part of T13	•	•															

⊛ ALL items of each set of Spares are packed together in one carton

Contracts NXsr-39265, 56768, 67988, 69198, 85032

TABLE 8-2—CONTINUED
PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATIONS
FOR MODELS RBK-12, RBK-13 & RBK-14 RADIO RECEIVING EQUIPMENT

PARTS									SPARE PARTS QUANTITIES ⊛										
									RBK-14				RBK-13				RBK-12		
Symbol Desig.	Function	Name of Part and Description	AWS, JAN or Navy Type Desig.	Navy Stock No.	Mfr. and Mfr's Desig.	Contr. Drawing or Part No.	Total Per Equip.	All Symbol Desig. Involved	NXsr-39265 NXsr-69198 Equip.	NXsr-39265 NXsr-69198 Tender	NXsr-39265 NXsr-69198 Stock	NXsr-85032 Equip.	NXsr-56768 Equip.	NXsr-56768 Tender	NXsr-56768 Stock	NXsr-67988 Equip.	NXsr-39265 Equip.	NXsr-39265 Tender	NXsr-39265 Stock
C78	V1 plate decoupling	Same as C8	AWS-CM40A822K Spec-C75.3-1942	•															
C79	T15 AF balance	Same as C5	AWS-CM20A331K Spec-C75.3-1942	•															
C80 ⑩	Grid enabling	CAPACITOR, fixed: ceramic; 50 mmf ±10%; temp coeff 0.00075 mmf/mmf/°C; 500 vdcw; 0.625″ lg x 0.225″ diam overall	•	•	Centralab 812-109	47A025	2	C80, C81	1 ⑧	2 ⑧	2 ⑧	1 ⑨	•	•	•	•	•	•	•
C81 ⑩	Grid enabling	Same as C80	•	•															
C82	HF compensation coupling	CAPACITOR, fixed: bakelite; 2½ mmf ±20%; 500 vdcw; 3/16″ lg x 5/32″ diam overall	•	•	Stackpole	49A001	1	C82	1	1	1	1	1	1	1	1	1	1	1
E1	RF terminal board	BOARD, terminal: 10 solder lug terminals; bakelite; 5¼″ lg x 1½″ wd x 1/16″ thk overall	•	•	Halli-crafters 88A126	88A126	1	E1	•	•	•	•	•	•	•	•	•	•	•
E2	Rear chassis apron terminal board	BOARD, terminal: 13 solder lug terminals; bakelite; 4¾″ lg x 1½″ wd x 1/16″ thk overall	•	•	Halli-crafters 88A127	88A127	1	E2	•	•	•	•	•	•	•	•	•	•	•
E3	Audio, BFO, & bleeder terminal board	BOARD, terminal: 11 solder lug terminals; bakelite; 3½″ lg x 1½″ wd x 1/16″ thk overall	•	•	Halli-crafters 88A128	88A128	1	E3	•	•	•	•	•	•	•	•	•	•	•
E4	Audio terminal board	BOARD, terminal: 18 solder lug terminals; bakelite; 4¾″ lg x 1½″ wd x 1/16″ thk overall	•	•	Halli-crafters 88A129	88A129	1	E4	•	•	•	•	•	•	•	•	•	•	•
E5	IF terminal board	BOARD, terminal: 16 solder lug terminals; bakelite; 7¼″ lg x 1½″ wd x 1/16″ thk overall	•	•	Halli-crafters 88B130	88B130	1	E5	•	•	•	•	•	•	•	•	•	•	•
E6	ANL resistor board	BOARD, terminal: 8 solder lug terminals; bakelite; 3¾″ lg x 1½″ wd x 1/16″ thk overall	•	•	Halli-crafters 88A132	88A132	1	E6	•	•	•	•	•	•	•	•	•	•	•
E7	AM detector terminal board	BOARD, terminal: 8 solder lug terminal; bakelite; 3¾″ lg x 1½″ wd x 1/16″ thk overall	•	•	Halli-crafters 88A133	88A133	1	E7	•	•	•	•	•	•	•	•	•	•	•

⊛ ALL items of each set of Spares are packed together in one carton

TABLE 8-2—CONTINUED
PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATIONS
FOR MODELS RBK-12, RBK-13 & RBK-14 RADIO RECEIVING EQUIPMENT

PARTS									SPARE PARTS QUANTITIES ⊛										
									RBK-14				RBK-13				RBK-12		
Symbol Desig.	Function	Name of Part and Description	AWS, JAN or Navy Type Desig.	Navy Stock No.	Mfr. and Mfr's Desig.	Contr. Drawing or Part No.	Total Per Equip.	All Symbol Desig. Involved	NXsr-39265 NXsr-69198 Equip.	NXsr-39265 NXsr-69198 Tender	NXsr-39265 NXsr-69198 Stock	NXsr-85032 Equip.	NXsr-56768 Equip.	NXsr-56768 Tender	NXsr-56768 Stock	NXsr-67988 Equip.	NXsr-39265 Equip.	NXsr-39265 Tender	NXsr-39265 Stock
E8	Limiter terminal board	BOARD, terminal: 8 solder lug terminals; bakelite; 3¾" lg x 1½" wd x 1/16" thk overall	•	•	Halli-crafters 88A134	88A134	1	E8	•	•	•	•	•	•	•	•	•	•	•
E9	Tone control resistor board	BOARD, terminal: 14 solder lug terminals; bakelite; 2¼" lg x 1½" wd x 1/16" thk overall	•	•	Halli-crafters 88A131	88A131	1	E9	•	•	•	•	•	•	•	•	•	•	•
E10	Terminal strip	BOARD, terminal: 2 lug terminals; bakelite; 1⅛" lg x 9/16" wd x 1/16" thk overall	•	•	Cinch 1520WI	88A091	2	E10 E11	•	•	•	•	•	•	•	•	•	•	•
E11	Terminal strip	Same as E10	•	•															
E12	Terminal strip	BOARD, terminal: 1 lug terminal; laminated plastic; ¾" lg x ⅜" wd x 1/16" thk overall	•	•	Cinch 1513W1	88A501	3	E12, E13, E14	•	•	•	•	•	•	•	•	•	•	•
E13	Terminal strip	Same as E12	•	•															
E14	Terminal strip	Same as E12	•	•															
E15	Terminal strip	BOARD, terminal: 1 lug terminal; laminated plastic; ¾" lg x ⅜" wd x 1/16" thk overall	•	•	Cinch 1510 Modified	88A502	1	E15	•	•	•	•	•	•	•	•	•	•	•
E16	Terminal strip	BOARD, terminal: 2 lug terminals; bakelite; 1⅛" lg x 9/16" wd x 1/16" thk overall	•	•	Cinch 1529WI	88A517	1	E16	•	•	•	•	•	•	•	•	•	•	•
E17	Terminal strip	BOARD, terminal: 3 lug terminals; bakelite; 1½" lg x 5/16" wd x 21/32" thk overall	•	•	Jones HB 3.3 modified	88A527	1	E17	•	•	•	•	•	•	•	•	•	•	•
E18	"R.F. GAIN" control	KNOB ASSEMBLY: comprised of E18A and E18B staked together so No. 5 on skirt falls 135 degrees from tapped hole	•	•	Halli-crafters 83A180	83A180	2	E18, E24	•	•	•	•	•	•	•	•	•	•	•
E18A	Knob for E18	KNOB: black bakelite; for ¼" diam shaft; two #8-32 x ¼" set screws; 1⅛" diam x 23/64" thk overall; part of E18	•	•	Midwest Molding	15A007	7	E18A, E19A, E20A, E21A, E22A, E23A, E24A	•	•	•	•	•	•	•	•	•	•	•

⊛ ALL items of each set of Spares are packed together in one carton

Contracts NXsr-39265, 56768, 67988, 69198, 85032

TABLE 8-2—CONTINUED
PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATIONS
FOR MODELS RBK-12, RBK-13 & RBK-14 RADIO RECEIVING EQUIPMENT

PARTS									SPARE PARTS QUANTITIES ⊛										
									RBK-14				RBK-13				RBK-12		
Symbol Desig.	Function	Name of Part and Description	AWS, JAN or Navy Type Desig.	Navy Stock No.	Mfr. and Mfr's Desig.	Contr. Drawing or Part No.	Total Per Equip.	All Symbol Desig. Involved	NXsr-39265 NXsr-69198 Equip.	NXsr-39265 NXsr-69198 Tender	NXsr-39265 NXsr-69198 Stock	NXsr-85032 Equip.	NXsr-56768 Equip.	NXsr-56768 Tender	NXsr-56768 Stock	NXsr-67988 Equip.	NXsr-39265 Equip.	NXsr-39265 Tender	NXsr-39265 Stock
E18B	Skirt for E18	SKIRT, knob: black bakelite; markings 0 to 9 incl in 360 degrees; 1½" diam x 9/16" thk overall; part of E18	•	•	Croname	83B062	2	E18B, E24B	•	•	•	•	•	•	•	•	•	•	•
E19	"ANTENNA" control	KNOB ASSEMBLY: comprised of E19A and E19B staked together so No. 5 on skirt falls opposite of one set screw	•	•	Hallicrafters 83A178	83A178	1	E19	•	•	•	•	•	•	•	•	•	•	•
E19A	Knob for E19	Same as E18A; part of E19	•	•															
E19B	Skirt for E19	SKIRT, knob: black bakelite; markings 0 to 9 incl in 180 degrees; 1½" diam x 9/16" thk overall; part of E19	•	•	Croname	83A045	1	E19B	•	•	•	•	•	•	•	•	•	•	•
E20	"SELECTIVITY" control	KNOB ASSEMBLY: comprised of E20A and E20B staked together so arrow on skirt falls 135 degrees from tapped hole	•	•	Hallicrafters 83A207	83A207	2	E20, E23	•	•	•	•	•	•	•	•	•	•	•
E20A	Knob for E20	Same as E18A; part of E20	•	•															
E20B	Skirt for E20	SKIRT, knob: black bakelite; arrow marking; 1½" diam x 9/16" thk overall; part of E20	•	•	Croname	83A046	2	E20B, E23B	•		•	•	•	•	•	•	•	•	•
E21	"TONE" control	KNOB ASSEMBLY: comprised of E21A and E21B staked together so marking line between "NORMAL" and "HIGH FID." on skirt falls 135 degrees from tapped hole	•	•	Hallicrafters 83A208	83A208	1	E21	•	•	•	•	•	•	•	•	•	•	•
E21A	Knob for E21	Same as E18A; part of E21	•	•															
E21B	Skirt for E21	SKIRT, knob: black bakelite; markings "LOW," "NORMAL," "HIGH FID." "BASS BOOST" and marking lines; 1½" diam x 9/16" thk overall, part of E21	•	•	Croname	83A048	1	E21B	•	•	•	•	•	•	•	•	•	•	•
E22	"PITCH CONTROL"	KNOB ASSEMBLY: comprised of E22A and E22B staked together so No. 0 on skirt is opposite of one set screw	•	•	Hallicrafters 83A177	83A177	1	E22	•	•	•	•	•	•	•	•	•	•	•

⊛ ALL items of each set of Spares are packed together in one carton

Contracts NXsr-39265, 56768, 67988, 69198, 85032

TABLE 8-2—CONTINUED
PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATIONS
FOR MODELS RBK-12, RBK-13 & RBK-14 RADIO RECEIVING EQUIPMENT

PARTS									SPARE PARTS QUANTITIES ⊛										
									RBK-14				RBK-13				RBK-12		
Symbol Desig.	Function	Name of Part and Description	AWS, JAN or Navy Type Desig.	Navy Stock No.	Mfr. and Mfr's Desig.	Contr. Drawing or Part No.	Total Per Equip.	All Symbol Desig. Involved	NXsr-39265 NXsr-69198 Equip.	NXsr-39265 NXsr-69198 Tender	NXsr-39265 NXsr-69198 Stock	NXsr-85032 Equip.	NXsr-56768 Equip.	NXsr-56768 Tender	NXsr-56768 Stock	NXsr-67988 Equip.	NXsr-39265 Equip.	NXsr-39265 Tender	NXsr-39265 Stock
E22A	Knob for E22	Same as E18A; part of E22	•	•															
E22B	Skirt for E22	SKIRT, knob: black bakelite; markings 5, 4, 3, 2, 1, 0, 1, 2, 3, 4, 5 in 180 degrees; 1 1/2" diam x 9/32" thk overall; part of E22	•	•	Croname	83B061	1	E22B	•	•	•	•	•	•	•	•	•	•	•
E23	"A.M.O." "OF. M." control	Same as E20; comprised of E23A and E23B	•	•															
E23A	Knob for E23	Same as E18A; part of E23	•	•															
E23B	Skirt for E23	Same as E20B; part of E23	•	•															
E24	"A.F. GAIN" control	Same as E18; comprised of E24A and E24B	•	•															
E24A	Knob for E24	Same as E18A; part of E24	•	•															
E24B	Skirt for E24	Same as E18B; part of E24	•	•															
E25	"BAND SWITCH"	KNOB: black bakelite; for 1/4" diam shaft; two #8-32 x 1/4" set screws; 1 3/4" diam x 13/16" thk overall	•	•	Chi Molded Products	15B018	1	E25	•	•	•	•	•	•	•	•	•	•	•
E26	"TUNING" control	KNOB: black bakelite; for 1/4" diam shaft; two #8-32 x 1/4" set screws; 2 15/16" diam x 1" thk overall	•	•	Midwest Molding	81A003	1	E26	•	•	•	•	•	•	•	•	•	•	•
E27	Insulator for J1	INSULATOR, board: square; xx natural paper base bakelite; 1 7/16" sq x 1/8" thk overall, 0.390" diam hole in center; four 0.120" mtg holes on 1" centers	•	•	Micarta Fab	8A350	1	E27	1	1	2	1	1	1	2	1	1	1	2
E28	Bandswitch shaft insulator and support	INSULATOR and SUPPORT: oval; brown bakelite; 1 7/8" lg x 5/8" wd x 1/16" thk overall	•	•	Oak	8A170	2	E28, E29	•	•	•	•	•	•	•	•	•	•	•
E29	Bandswitch shaft insulator and support	Same as E28	•	•															

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Contracts NXsr-39265, 56768, 67988, 69198, 85032

TABLE 8-2—CONTINUED
PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATIONS
FOR MODELS RBK-12, RBK-13 & RBK-14 RADIO RECEIVING EQUIPMENT

PARTS									SPARE PARTS QUANTITIES ⊛										
									RBK-14				RBK-13				RBK-12		
Symbol Desig.	Function	Name of Part and Description	AWS, JAN or Navy Type Desig.	Navy Stock No.	Mfr. and Mfr's Desig.	Contr. Drawing or Part No.	Total Per Equip.	All Symbol Desig. Involved	NXsr-39265 NXsr-69198 Equip.	NXsr-39265 NXsr-69198 Tender	NXsr-39265 NXsr-69198 Stock	NXsr-85032 Equip.	NXsr-56768 Equip.	NXsr-56768 Tender	NXsr-56768 Stock	NXsr-67988 Equip.	NXsr-39265 Equip.	NXsr-39265 Tender	NXsr-39265 Stock
E30	Acorn tube grid clip	CLIP, tube contact: phosphor bronze; silver plated; 7/16″ lg x 3/32″ w overall	•	•	RCA 9939	76A060	4	E30, E31, E32, E33	•	•	1	•	•	•	1	•	•	•	1
E31	Acorn tube grid clip	Same as E30	•	•															
E32	Acorn tube grid clip	Same as E30	•	•															
E33	Acorn tube grid clip	Same as E30	•	•															
E34	Hood for S02	HOOD, receptacle: silver plated brass; 1″ sq flange; four 1/8″ mtg holes on 23/32″ centers; 3/4″ lg, 0.344″ OD for single braid wire	-49193 Signal Corps M-360	•	Amphenol 83-1H	10A055	2 ⑪	E34, E35 ⑩	1	1	2	1	•	•	•	•	•	•	•
E35 ⑩	Hood for S03	Same as E34	-49193	•															
E36	Insulator	INSULATOR: fishpaper; rectangular; 2 1/32″ lg x 7/8″ w overall	•	•	Micarta Fab	8A366	1	E36	1	1	2	•	1	1	2	1	1	1	2
FS1	Power transf pri protection	FUSE, cartridge: 3 amp. 250 v; non-renewable; glass body; ferrule, 9/32″ diam x 3/8″ lg; 1 1/4″ lg x 9/32″ diam overall	-28035-3	•	Littelfuse 1093	39A318	1	FS1	10	20	50	10	10	20	50	10	10	20	50
H1	Nuts for SW1	NUT, hexagon: nickel plated brass; #5-40 x 1/4; part of SW1	•	•	Centralab	2BKAY	10	H1	8	8	8	•	8	8	8	8	8	8	8
H2	Screws for SW1	SCREW, machine: RH; nickel plated brass; #5-40 x 2; part of SW1	•	•	Centralab	3BKAH	4	H2	4	4	4	•	4	4	4	4	4	4	4
H3	Screws for SW1	SCREW, machine: RH; nickel plated brass; #5-40 x 7/8; part of SW1	•	•	Centralab	3BKAP	4	H3	2	2	2	•	2	2	2	2	2	2	2
H4	Washers for SW1	WASHER, extruded: nickel plated brass; #5; part of SW1	•	•	Centralab	4A201	6	H4	12	12	12	•	12	12	12	12	12	12	12
H5	Washers for SW1	WASHER, flat: gray fibre; 0.130″ ID x 0.286″ OD x 0.032″ thk overall; part of SW1	•	•	Centralab	4A560	28	H5	16	16	16	•	16	16	16	16	16	16	16

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TABLE 8-2—CONTINUED
PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATIONS
FOR MODELS RBK-12, RBK-13 & RBK-14 RADIO RECEIVING EQUIPMENT

PARTS									SPARE PARTS QUANTITIES ⊛										
									RBK-14				RBK-13				RBK-12		
Symbol Desig.	Function	Name of Part and Description	AWS, JAN or Navy Type Desig.	Navy Stock No.	Mfr. and Mfr's Desig.	Contr. Drawing or Part No.	Total Per Equip.	All Symbol Desig. Involved	NXsr-39265 NXsr-69198 Equip.	NXsr-39265 NXsr-69198 Tender	NXsr-39265 NXsr-69198 Stock	NXsr-85032 Equip.	NXsr-56768 Equip.	NXsr-56768 Tender	NXsr-56768 Stock	NXsr-67988 Equip.	NXsr-39265 Equip.	NXsr-39265 Tender	NXsr-39265 Stock
H6	Washers for SW1	WASHER, flat: nickel plated brass; 0.133″ ID x 0.281″ OD x 0.025″ thk overall; part of SW1	•	•	Centralab	4AXDX	4	H6	8	8	8	•	8	8	8	8	8	8	8
H7	Washers for SW1	WASHER, flat: nickel plated brass; #6; 0.147″ ID x 3/8″ OD x 0.032″ thk overall; part of SW1	•	•	Centralab	4AXEX	13	H7	2	2	2	•	2	2	2	2	2	2	2
H8	Washers for SWI	WASHER, lock: split ring; nickel plated phosphor bronze; #5; part of SW1	•	•	Centralab	4AWDY	4	H8	4	4	4	•	4	4	4	4	4	4	4
H9	Washer for SW1	WASHER, lock: nickel plated phosphor bronze; #5 Int.; part of SW1	•	•	Centralab	4AZDY	4	H9	4	4	4	•	4	4	4	4	4	4	4
H10	Screws for SW1	SCREW, machine: RH; nickel plated brass; #5-40 x 3/4; part of SW1	•	•	Centralab	3BKAQ	(13)	H10	2	2	2	•	2	2	2	2	2	2	2
J1	"PHONES" jack	JACK, telephone: for 2 conductor 1/4″ diam plug; 1 29/32″ x 1 1/8″ x 1 11/32″ overall; complete with nickel plated brass hex nut and steel washer	-49770	•	Uthrad ST-1003-A	36B008	1	J1	1	1	2	1	1	1	2	1	1	1	2
L1	V15 plate choke	COIL, RF: osc; plate; single winding close wound; unshielded; 15.5 mmh ±10%; 4.10 ohm resistance ±13%; 7/8″ lg x 9/32″ diam overall	-47706	•	S-W Inductor 661	53A008	1	L1	1	1	1	1	1	1	1	1	1	1	1
L2	Power line filter choke	COIL, RF: choke; single winding; universal wound; 46 uh; part of LF1	•	•	•	Part of 53C056	2	L2, L3	•	•	•	•	•	•	•	•	•	•	•
L3	Power line filter choke	Same as L2; part of LF1	•	•															
L4	V15 heater choke	COIL, RF: osc; heater; single winding, close wound; unshielded; 4.20 mh ±10%; 0.25 ohm resistance ±3%; 7/8″ lg x 9/32″ diam overall	-47705	•	S-W Inductor 662	53A009	1	L4	1	1	1	1	1	1	1	1	1	1	1
L5	Beat freq osc coil	COIL, RF: beat freq osc; single winding; includes C53, C54, C59 and R61; enclosed in aluminum shield can, 1 13/16″ wd x 1 3/8″ d x 4 15/32″ h overall	-47699	•	S-W Inductor 3491	54C024	1	L5	1	2	3	1	1	2	3	1	1	2	3

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Contracts NXsr-39265, 56768, 67988, 69198, 85032

TABLE 8-2—CONTINUED
PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATIONS
FOR MODELS RBK-12, RBK-13 & RBK-14 RADIO RECEIVING EQUIPMENT

PARTS									SPARE PARTS QUANTITIES ⊛										
									RBK-14				RBK-13				RBK-12		
Symbol Desig.	Function	Name of Part and Description	AWS, JAN or Navy Type Desig.	Navy Stock No.	Mfr. and Mfr's Desig.	Contr. Drawing or Part No.	Total Per Equip.	All Symbol Desig. Involved	NXsr-39265 NXsr-69198 Equip.	NXsr-39265 NXsr-69198 Tender	NXsr-39265 NXsr-69198 Stock	NXsr-85032 Equip.	NXsr-56768 Equip.	NXsr-56768 Tender	NXsr-56768 Stock	NXsr-67988 Equip.	NXsr-39265 Equip.	NXsr-39265 Tender	NXsr-39265 Stock
L6&7	Power supply filter choke	COIL, AF: filter; 2 windings; 12-3 hy, 90-150 ma, 215-85 ohm dc resist.; enclosed in metal case, 3¼″ lg x 2 9/16″ wd x 5½″ h overall	-301745	•	Stancor 10CU27	56C048	1	L6 & 7	1	2	3	1	1	2	3	1	1	2	3
LF1	AC line filter	FILTER UNIT: ac input line; consists of C48, C49, C50, C51, L2 and L3; enclosed in aluminum shield can, 4 15/32″ h x 1⅜″ d x 1 13/16″ wd overall	-53275		Guthman 30-5376	53C056	1	LF1	1	2	3	1	1	2	3	1	1	2	3
LM1	Main tuning dial lamp	LAMP, incandescent: 6-8 v, 0.25 amp; T-3¼ bulb; miniature bayonet base	•	•	GE Mazda 44	39A003	2	LM1, LM2	4	8	12	4	4	8	12	4	4	8	12
LM2	Vernier tuning dial lamp	Same as LM1	•	•															
M1	AM/FM tuning meter	METER, microammeter: DC; calibrated 160-0-40 microamperes; round black bakelite case and flange; flange 3.5″ diam; body 2.820″ diam x 1.66″ d; 2.8″ d overall	-22477	•	Mc Clintock 3001 3001	82A065	1	M1	•	•	1	•	•	•	1	•	•	•	1
N1	Dial window	WINDOW: vinylite; 2 27/32″ sq x 0.021″ thk overall	•	•	Hallicrafters 22A138	22A138	1	N1	•	•	•	•	•	•	•	•	•	•	•
N2	Band spread dial	DIAL: lamacoid; marked 0 to 100 divisions in 360 degrees; 4¼″ diam x 7/16″ thk overall	•	•	Croname P52698-NS	83C166	1	N2	•	•	•	•	•	•	•	•	•	•	•
N3	Main tuning dial	DIAL: lamacoid; marked 0 to 23; 82 to 140; 48 to 80; 28 to 46; 5⅛″ diam x 7/16″ thk overall	•	•	Croname P61033	83C042	1	N3	•	•	•	•	•	•	•	•	•	•	•
O1	Gear drive mechanism	GEAR DRIVE MECHANISM: complete with flywheel O2; housed in CRS case; 3⅞″ wd x 7⅜″ lg x 3⅛″ thk overall	•	•	Hallicrafters 71D155	71D155	1	O1	•	1	1	•	•	1	1	•	•	1	1
O2	Flywheel	FLYWHEEL: cast iron; 2¼″ diam x 9/16″ thk overall; part of O1	•	•	Hallicrafters 71A169	71A169	1	O2	•	•	•	•	•	•	•	•	•	•	•

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Contracts NXsr-39265, 56768, 67988, 69198, 85032

TABLE 8-2—CONTINUED
PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATIONS
FOR MODELS RBK-12, RBK-13 & RBK-14 RADIO RECEIVING EQUIPMENT

PARTS									SPARE PARTS QUANTITIES ⊛										
									RBK-14				RBK-13				RBK-12		
Symbol Desig.	Function	Name of Part and Description	AWS, JAN or Navy Type Desig.	Navy Stock No.	Mfr. and Mfr's Desig.	Contr. Drawing or Part No.	Total Per Equip.	All Symbol Desig. Involved	NXsr-39265 NXsr-69198 Equip.	NXsr-39265 NXsr-69198 Tender	NXsr-39265 NXsr-69198 Stock	NXsr-85032 Equip.	NXsr-56768 Equip.	NXsr-56768 Tender	NXsr-56768 Stock	NXsr-67988 Equip.	NXsr-39265 Equip.	NXsr-39265 Tender	NXsr-39265 Stock
O3	Coupler	COUPLER: flexible; ¼ x ⅜; phosphor bronze ring, brass insert and hubs; 1⅛" diam x $^{21}/_{32}$" thk overall	•	•	Halli-crafters 29A092	29A092	1	O3	•	1	1	•	•	1	1	•	•	1	1
O4	Coupler	COUPLER: flexible; ¼ x ¼; insulated; wax impreg linen bakelite ring, brass inserts & hubs; 1⅛" diam x $^{11}/_{16}$" thk overall	•	•	Halli-crafters 29A097	29A097	1	O4	•	1	1	•	•	1	1	•	•	1	1
O5	Condenser mounting bracket	BRACKET: formed 18 gage steel; 4 $^{15}/_{16}$" lg x 2½" wd one end and 2" wd other end x 1⅝" th k overall	•	•	Halli-crafters 67A147	67A147	1	O5	•	•	•	1	•	•	•	•	•	•	•
PL1	Plug for W1	CONNECTOR, male contact: 2 blade contacts; spring type; rubber body; molded on cable W1	•	•	Allied 371	Part of 87A125	1	PL1	•	•	•	•	•	•	•	•	•	•	•
PL2	"PWR" plug	CONNECTOR, male contact: 8 male contacts; octal; black bakelite; approx 1¼" diam x $^{7}/_{16}$" thk overall	-49767	•	Amphenol CP-8	35A003	1	PL2	1	1	2	1	1	1	2	1	1	1	2
R1	V1 cathode bias	RESISTOR, fixed: composition: 270 ohms ±10%; ½ w; 0.655" lg x 0.249" diam max overall	AWS-RC21AE271K Spec-C75.7-1943	•	AWS-RC21AE271K	RC21AE271K	1	R1	1	3	5	1	1	3	5	1	1	3	5
R2	V1 screen voltage dropping	RESISTOR, fixed: composition; 1000 ohms ±10%; ½ w; 0.655" lg x 0.249" diam max overall	AWS-RC21AE102K Spec-C75.7-1943	•	AWS-RC21AE102K	RC21AE102K	6	R2, R3, R6, R21, R27, R67	3	18	30	3	3	18	30	3	3	18	30
R3	V1 plate decoupling	Same as R2	AWS-RC21AE102K Spec-C75.7-1943	•															
R4	V1 plate decoupling	RESISTOR, fixed: composition; 10,000 ohms ± 20%; 2 w; 1.78" lg x 0.342" diam max overall	AWS-RC41AE103M Spec-C75.7-1943	•	AWS-RC41AE103M	RC41AE103M	1	R4	1	3	5	1	1	3	5	1	1	3	5
R5	V2 cathode bias	RESISTOR, fixed: composition; 2200 ohms±10%; ½" w; 0.655" lg x 0.249" diam max overall	AWS-RC21AE222K Spec-C75.7-1943	•	AWS-RC21AE222K	RC21AE222K	2	R5, R29	1	2	10	1	1	6	10	1	1	6	10

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Contracts NXsr-39265, 56768, 67988, 69198, 85032

TABLE 8-2—CONTINUED
PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATIONS
FOR MODELS RBK-12, RBK-13 & RBK-14 RADIO RECEIVING EQUIPMENT

PARTS									SPARE PARTS QUANTITIES ⊛										
									RBK-14				RBK-13				RBK-12		
Symbol Desig.	Function	Name of Part and Description	AWS, JAN or Navy Type Desig.	Navy Stock No.	Mfr. and Mfr's Desig.	Contr. Drawing or Part No.	Total Per Equip.	All Symbol Desig. Involved	NXsr-39265 NXsr-69198 Equip.	NXsr-39265 NXsr-69198 Tender	NXsr-39265 NXsr-69198 Stock	NXsr-85032 Equip.	NXsr-56768 Equip.	NXsr-56768 Tender	NXsr-56768 Stock	NXsr-67988 Equip.	NXsr-39265 Equip.	NXsr-39265 Tender	NXsr-39265 Stock
R6	V2 screen voltage dropping	Same as R2	AWS-RC21AE102K Spec-C75.7-1943	•															
R7	V2 screen voltage dropping	RESISTOR, fixed: composition; 100,000 ohms ±10%; ½ w; 0.655″ lg x 0.249″ diam max overall	AWS-RC21AE104K Spec-C75.7-1943	•	AWS-RC21AE104K	RC21AE104K	6	R7, R33, R40, R41, R48, R51	3	18	30	3	3	18	30	3	3	18	30
R8	V11 and V12 base boost tone control	RESISTOR, fixed: composition; 1.5 meg ±10%; ½ w; 0.655″ lg x 0.249″ diam max overall	AWS-RC21AE155K Spec-C75.7-1943	•	AWS-RC21AE155K	RC21AE155K	2	R8, R69	1	6	10	1	1	6	10	1	1	6	10
R9	T10 1st if band expansion	RESISTOR, fixed: composition; 10 ohms ±10%; ½ w; 0.655″ lg x 0.249″ diam max overall	AWS-RC21AE100K Spec-C75.7-1943	•	AWS-RC21AE100K	RC21AE100K	4	R9, R16, R23, R26	2	12	20	2	2	12	20	2	2	12	20
R10	V3 AVC decoupling	RESISTOR, fixed: composition; 100,000 ohms ±10%; ¼ w; 0.406″ lg x 0.170″ diam max overall; part of T10	AWS-RC10AE104K Spec-C75.7-1943	•	AWS-RC10AE104K	RC10AE104K	2	R10, R19	•	•	•	•	•	•	•	•	•	•	•
R11	RF gain	RESISTOR, variable: carbon; 10,000 ohms; 5 terminals; body 1 7/16″ diam x 9/16″ thk; shaft 0.250″ diam x ½″ lg; complete with switch SW3	-633176-20	•	CTS Type SS	25C058G	1	R11	1	3	5	1	1	3	5	1	1	3	5
R12	V11 and V12 base boost tone control	RESISTOR, fixed: composition; 1 meg ±10%; ½ w; 0.655″ lg x 0.249″ diam max overall	AWS-RC21AE105K Spec-C75.7-1943	•	AWS-RC21AE105K	RC21AE105K	2	R12, R32	1	5	10	1	1	6	10	1	1	6	10
R13	V3 cathode bias	RESISTOR, fixed: composition; 120 ohms ±10%; ½ w; 0.655″ lg x 0.249″ diam max overall	AWS-RC21AE121K Spec-C75.7-1943	•	AWS-RC21AE121K	RC21AE121K	2	R13, R20	1	6	10	1	1	6	10	1	1	6	10
R14	V3 screen voltage dropping	RESISTOR, fixed: composition; 39,000 ohms ±10%; ½ w; 0.655″ lg x 0.249″ diam max overall	AWS-RC21AE393K Spec-C75.7-1943	•	AWS-RC21AE393K	RC21AE393K	1	R14	1	3	5	1	1	3	5	1	1	3	5
R15	V3 plate decoupling	RESISTOR, fixed: composition; 330 ohms ±10%; ½ w; 0.655″ lg x 0.249″ diam max overall	AWS-RC21AE331K Spec-C75.7-1943	•	AWS-RC21AE331K	RC21AE331K	4	R15, R22, R25, R62	2	12	20	2	2	12	20	2	2	12	20

⊛ ALL items of each set of Spares are packed together in one carton

Contracts NXsr-39265, 56768, 67988, 69198, 85032

TABLE 8-2—CONTINUED
PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATIONS
FOR MODELS RBK-12, RBK-13 & RBK-14 RADIO RECEIVING EQUIPMENT

PARTS									SPARE PARTS QUANTITIES ⊛										
									RBK-14				RBK-13				RBK-12		
Symbol Desig.	Function	Name of Part and Description	AWS, JAN or Navy Type Desig.	Navy Stock No.	Mfr. and Mfr's Desig.	Contr. Drawing or Part No.	Total Per Equip.	All Symbol Desig. Involved	NXsr-39265 NXsr-69198 Equip.	NXsr-39265 NXsr-69198 Tender	NXsr-39265 NXsr-69198 Stock	NXsr-85032 Equip.	NXsr-56768 Equip.	NXsr-56768 Tender	NXsr-56768 Stock	NXsr-67988 Equip.	NXsr-39265 Equip.	NXsr-39265 Tender	NXsr-39265 Stock
R16	T11 2nd if band ex-expansion	Same as R9	AWS-RC21AE100K Spec-C75.7-1943	•															
R17	V3 de-generation	RESISTOR, fixed: composition; 33 ohms ±10%; ½ w; 0.655" lg x 0.249" diam max overall	AWS RC21AE330K Spec-C75.7-1943	•	AWS-RC21AE330K	RC21AE330K	5	R17, R18, R55, R57, R65	3	15	25	3	3	15	25	3	3	15	25
R18	V5 parasitic suppressor	Same as R17	AWS-RC21AE330K Spec-C75.7-1943	•															
R19	V4 AVC decoupling	Same as R10; part of T11	AWS-RC10AE104K Spec-C75.7-1943	•															
R20	V4 cathode bias	Same as R13	AWS-RC21AE121K Spec-C75.7-1943	•															
R21	V4 screen voltage dropping	Same as R2	AWS-RC21AE102K Spec-C75.7-1943	•															
R22	V4 plate decoupling	Same as R15	AWS-RC21AE331K Spec-C75.7-1943	•															
R23	Band broadening	Same as R9	AWS-RC21AE100K Spec-C75.7-1943	•															
R24	V5 grid return	RESISTOR, fixed: composition; 470,000 ohms ±10%; ½ w; 0.655" lg. x 0.249" diam max overall	AWS-RC21AE474K Spec-C75.7-1943	•	AWS-RC21AE474K	RC21AE474K	3	R24, R35, R56	2	9	15	2	2	9	15	2	2	9	15
R25	V5 cathode bias	Same as R15	AWS-RC21AE331K Spec-C75.7-1943	•															

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Contracts NXsr:39265, 56768, 67988, 69198, 85032

TABLE 8-2—CONTINUED
PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATIONS
FOR MODELS RBK-12, RBK-13 & RBK-14 RADIO RECEIVING EQUIPMENT

PARTS									SPARE PARTS QUANTITIES ⊛										
									RBK-14				RBK-13				RBK-12		
Symbol Desig.	Function	Name of Part and Description	AWS, JAN or Navy Type Desig.	Navy Stock No.	Mfr. and Mfr's Desig.	Contr. Drawing or Part No.	Total Per Equip.	All Symbol Desig. Involved	NXsr-39265 NXsr-69198 Equip.	NXsr-39265 NXsr-69198 Tender	NXsr-39265 NXsr-69198 Stock	NXsr-85032 Equip.	NXsr-56768 Equip.	NXsr-56768 Tender	NXsr-56768 Stock	NXsr-67988 Equip.	NXsr-39265 Equip.	NXsr-39265 Tender	NXsr-39265 Stock
R26	VI parasitic suppressor	Same as R9	AWS-RC21AE100K Spec-C75.7-1943	•															
R27	V5 plate decoupling	Same as R2	AWS-RC21AE102K Spec-C75.7-1943	•															
R28	V1, V5 and V7 screen voltage	RESISTOR, fixed: wire wound; 7500 ohms ±5%; 10w; 1¾" lg x ⅜" diam overall	-632807	•	Uthrad X-1042	24BG752D	1	R28	1	3	5	1	1	3	5	1	1	5	5
R29	V7 screen and plate voltage dropping	Same as R5	AWS-RC21AE222K Spec-C75.7-1943	•															
R30	V7 screen voltage dropping	RESISTOR, fixed: composition; 22,000 ohms ±10%; 2w; 1.78" lg. x 0.342" diam max overall	AWS-RC41AE223K Spec-C75.7-1943	•	AWS-RC41AE223K	RC41AE223K	2	R30, R60	1	6	10	1	1	6	10	1	1	6	10
R31	V6 diode load	RESISTOR, fixed: composition; 47,000 ohms ±10%; ½w; 0.655" lg x 0.249" diam max overall	AWS-RC21AE473K Spec-C75.7-1943	•	AWS-RC21AE473K	RC21AE473K	3	R31, R53, R54	2	9	15	2	2	9	15	2	2	9	15
R32	ANL load	Same as R12	AWS-RC21AE105K Spec-C75.7-1943	•															
R33	V6 diode load	Same as R7	AWS-RC21AE104K Spec-C75.7-1943																
R34	V6 diode load	RESISTOR, fixed: composition; 220,000 ± 10%; ½ w; 0.655" x 0.249" diam max overall	AWS-RC21AW224K Spec-C75.7-1943	•	AWS-RC21AE224K	RC21AE224K	8	R34, R36, R39, R42, R44, R45, R49, R50	4	24	40	4	4	24	40	4	4	24	40
R35	AVC load	Same as R24	AWS-RC21AE474K Spec-C75.7-1943	•															

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Contracts NXsr-39265, 56768, 67988, 69198, 85032

TABLE 8-2—CONTINUED
PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATIONS
FOR MODELS RBK-12, RBK-13 & RBK-14 RADIO RECEIVING EQUIPMENT

PARTS									SPARE PARTS QUANTITIES ⊛										
									RBK-14				RBK-13				RBK-12		
Symbol Desig.	Function	Name of Part and Description	AWS, JAN or Navy Type Desig.	Navy Stock No.	Mfr. and Mfr's Desig.	Contr. Drawing or Part No.	Total Per Equip.	All Symbol Desig. Involved	NXsr-39265 NXsr-69198 Equip.	NXsr-39265 NXsr-69198 Tender	NXsr-39265 NXsr-69198 Stock	NXsr-85032 Equip.	NXsr-56768 Equip.	NXsr-56768 Tender	NXsr-56768 Stock	NXsr-67988 Equip.	NXsr-39265 Equip.	NXsr-39265 Tender	NXsr-39265 Stock
R36	V6 diode load	Same as R34	AWS-RC21AE224K Spec-C75.7-1943	•															
R37	T14 pri load	RESISTOR, fixed: composition; 15,000 ohms ±10%; ½ w; 0.665″ lg x 0.249″ diam max overall	AWS-RC21AE153K Spec-C75.7-1943	•	AWS-RC21AE153K	RC21AE153K	1	R37	1	3	5	1	1	3	5	1	1	3	5
R38	V7 grid return	RESISTOR, fixed: composition; 56,000 ohms ±10%; ½ w; 0.655″ lg x 0.249″ diam max overall	AWS-RC21AE563K Spec-C75.7-1943	•	AWS-RC21AE563K	RC21AE563K	2 ⑪	R38, R73 ⑩	2	6	10	1	1	3	5	1	1	3	5
R39	V7 grid return	Same as R34	AWS-RC21AE224K Spec-C75.7-1943	•															
R40	V8 diode load	Same as R7	AWS-RC21AE104K Spec-C75.7-1943	•															
R41	V8 diode load	Same as R7	AWS-RC21AE104K Spec-C75.7-1943	•															
R42	V8 de-emphasis network	Same as R34	AWS-RC21AE224K Spec-C75.7-1945	•															
R43	V9 af gain	RESISTOR, variable: carbon; 1 meg; 3 terminals; body 1 7/16 diam x 9/16″ thk; shaft 0.250″ diam x ½″ lg	-633181-20	•	CTS	25C059	1	R43	1	3	5	1	1	3	5	1	1	3	5
R44	V9 plate load	Same as R34	AWS-RC21AE224K Spec-C75.7-1944 Spec-	•															
R45	V9 plate load	Same as R34	AWS-RC21AE224K Spec-C75.7-1943	•															

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Contracts NXsr-39265, 56768, 67988, 69198, 85032

TABLE 8-2—CONTINUED
PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATIONS
FOR MODELS RBK-12, RBK-13 & RBK-14 RADIO RECEIVING EQUIPMENT

PARTS									SPARE PARTS QUANTITIES ⊛										
									RBK-14				RBK-13				RBK-12		
Symbol Desig.	Function	Name of Part and Description	AWS, JAN or Navy Type Desig.	Navy Stock No.	Mfr. and Mfr's Desig.	Contr. Drawing or Part No.	Total Per Equip.	All Symbol Desig. Involved	NXsr-39265 NXsr-69198 Equip.	NXsr-39265 NXsr-69198 Tender	NXsr-39265 NXsr-69198 Stock	NXsr-85032 Equip.	NXsr-56768 Equip.	NXsr-56768 Tender	NXsr-56768 Stock	NXsr-67988 Equip.	NXsr-39265 Equip.	NXsr-39265 Tender	NXsr-39265 Stock
R46	V9 cathode bias	RESISTOR, fixed: composition; 4700 ohms ±10%; ½ w; 0.655″ lg x 0.249″ diam max overall	AWS-RC21AE472K Spec-C75.7-1943	•	AWS-RC21AE472K	RC21AE472K	3	R46, R47, R63	2	9	15	2	2	9	15	2	2	9	15
R47	V9 cathode bias	Same as R46	AWS-RC21AE472K Spec-C75.7-1943	•															
R48	V11 and V12 low tone control	Same as R7	AWS-RC21AE104K Spec-C75.7-1943	•															
R49	V11 grid return	Same as R34	AWS-RC21AE224K Spec-C75.7-1943	•															
R50	V12 grid return	Same as R34	AWS-RC21AE224K Spec-C75.7-1943	•															
R51	V9 af balancing	Same as R7	AWS-RC21AE104K Spec-C75.7-1943	•															
R52	V11 and V12 cathode bias	RESISTOR, fixed: composition; 220 ohms ±10%; 2 w; 1.78″ lg x 0.342″ diam max overall	AWS-RC41AE221K Spec-C75.7-1943	•	AWS-RC41AE221K	RC41AE221K	1	R52	1	3	5	1	1	3	5	1	1	3	5
R53	V11 and V12 tone control	Same as R31	AWS-RC21AE473K Spec-C75.7-1943	•															
R54	V11 and V12 tone control	Same as R31	AWS-RC21AE473K Spec-C75.7-1943	•															
R55	V4 degeneration	Same as R17	AWS-RC21AE330K Spec-C75.7-1943	•															

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Contracts NXsr-39265, 56768, 67988, 69198, 85032

TABLE 8-2—CONTINUED
PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATIONS
FOR MODELS RBK-12, RBK-13 & RBK-14 RADIO RECEIVING EQUIPMENT

PARTS									SPARE PARTS QUANTITIES ⊛										
									RBK-14				RBK-13				RBK-12		
Symbol Desig.	Function	Name of Part and Description	AWS, JAN or Navy Type Desig.	Navy Stock No.	Mfr. and Mfr's Desig.	Contr. Drawing or Part No.	Total Per Equip.	All Symbol Desig. Involved	NXsr-39265 NXsr-69198 Equip.	NXsr-39265 NXsr-69198 Tender	NXsr-39265 NXsr-69198 Stock	NXsr-85032 Equip.	NXsr-56768 Equip.	NXsr-56768 Tender	NXsr-56768 Stock	NXsr-67988 Equip.	NXsr-39265 Equip.	NXsr-39265 Tender	NXsr-39265 Stock
R56	"S" meter current limiting	Same as R24	AWS-RC21AE474K Spec-C75.7-1943	•															
R57	"S" meter shunt	Same as R17	AWS-RC21AE330K Spec-C75.7-1943	•															
R58	V3 and V4 "S" meter adj.	RESISTOR, variable: carbon; 1500 ohms; 3 terminals; body 1 1/16" diam x 9/16" thk; shaft 0.250" diam x 1/8" lg	-633569	•	CTS Type S	25C060	1	R58	1	3	5	1	1	3	5	1	1	3	5
R59	V10 voltage dropping	RESISTOR, fixed: wire wound; 3500 ohms ±5%; 10 w; 1 3/4" lg x 3/8" diam overall	-632805	•	Uthrad X-1295	24BG332D	1	R59	1	3	5	1	1	3	5	1	1	3	5
R60	V14 plate decoupling	Same as R30	AWS-RC41AE223K Spec-C75.7-1943	•															
R61	V14 grid return	RESISTOR, fixed: composition; 47,000 ohms ±10%; 0.468" lg. x 0.249" diam max overall; part of L5	AWS-RC20AE473K Spec-C75,7-1943	•	AWS-RC20AE473K	RC20AE473K	1	R61	•	•	•	•	•	•	•	•	•	•	•
R62	V15 plate decoupling	Same as R15	AWS-RC21AE331K Spec-C75.7-1943	•															
R63	V15 plate decoupling	Same as R46	AWS-RC21AE472K Spec-C75.7-1943	•															
R64	V15 grid return	RESISTOR, fixed: composition 22,000 ohms ±10%; 1/2 w; 0.655" lg x 0.249" diam max overall	AWS-RC21AE223K Spec-C75.7-1943	•	AWS-RC21AE223K	RC21AE223K	3 ⑪	R64, R72 ⑩, R74 ⑩	2	9	15	2	1	3	5	1	1	3	5
R65	V15 grid current limiter	Same as R17	AWS-RC21AE330K Spec-C75.7-1943	•															
R66	V15 grid current limiter	RESISTOR, fixed: composition 6 ohms ±10%; 1/2 w; 1/16" lg x 0.215" diam overall	-63360-6RO	•	Erie Type 504	23A011	1	R66	1	3	5	1	1	3	5	1	1	3	5

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Contracts NXsr-39265, 56768, 67988, 69198, 85032

TABLE 8-2—CONTINUED
PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATIONS
FOR MODELS RBK-12, RBK-13 & RBK-14 RADIO RECEIVING EQUIPMENT

PARTS									SPARE PARTS QUANTITIES ⊛										
									RBK-14				RBK-13				RBK-12		
Symbol Desig.	Function	Name of Part and Description	AWS, JAN or Navy Type Desig.	Navy Stock No.	Mfr. and Mfr's Desig.	Contr. Drawing or Part No.	Total Per Equip.	All Symbol Desig. Involved	NXsr-39265 NXsr-69198 Equip.	NXsr-39265 NXsr-69198 Tender	NXsr-39265 NXsr-69198 Stock	NXsr-85032 Equip.	NXsr-56768 Equip.	NXsr-56768 Tender	NXsr-56768 Stock	NXsr-67988 Equip.	NXsr-39265 Equip.	NXsr-39265 Tender	NXsr-39265 Stock
R67	V2 plate decoupling	Same as R2	AWS-RC21AE102K Spec-C75.7-1943	•															
R68	V15 grid current limiter	RESISTOR, fixed: composition; 8 ohms ±10%; ½ w; 7/16" lg x 0.215" diam overall	-63360-8RO	•	Erie Type 504	23A019	1	R68	1	3	5	1	1	3	5	1	1	3	5
R69	V11 and V12 high fidelity tone control	Same as R8	AWS-RC21AE155K Spec-C75.7-1943	•															
R70	V2 parasitic suppressor	RESISTOR, fixed: composition; 220 ohms ±10%; ½ w; 0.665" lg x 0.249" diam max overall	AWS-RC21AE221K Spec-C75.7-1943	•	AWS-RC21AE221K	RC21AE221K	1	R70	1	3	5	1	1	3	5	1	1	3	5
R71	Panoramic isolating	RESISTOR, fixed: composition; 27,000 ohms ±10%; ½ w; 0.655" lg x 0.249" diam max overall	AWS-RC21AE273K Spec-C75.7-1943	•	AWS-RC21AE273K	RC21AE273K	1	R71	1	3	5	1	1	1	1	1	1	3	5
R72 ⑩	Grid enabling	Same as R64	AWS-RC21AE223K Spec-C75.7-1943	•															
R73 ⑩	B+ series	Same as R38	AWS-RC21AE563K Spec-C75.7-1943	•															
R74 ⑩	Grid enabling	Same as R64	AWS-RC21AE223K Spec-C75.7-1943	•															
• ⑫	•	RESISTOR, fixed: composition; 22 ohms +10%; ½ w; 0.655" lg x 0.249" diam max overall	AWS-RC21AE220K Spec-C75.7-1943	•	AWS-RC21AE220K	RC21AE220K	•	•	•	•	•	1	•	•	•	•	•	•	•
S01	Socket for PL2	SOCKET, tube: octal; mica-filled bakelite, silver plated contacts, steel mtg plate molded in body; two mtg holes on 1½" centers; for mtg in 1 7/64" diam mtg hole	-49374	•	Amphenol MIP-8TM Special	6A200	12	S01, X4, X5, X6, X7, X8, X9, X10, X11, X12, X13, X14	6	6	12	6	6	6	12	6	6	6	12

⊛ ALL items of each set of Spares are packed together in one carton

TABLE 8-2—CONTINUED
PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATIONS
FOR MODELS RBK-12, RBK-13 & RBK-14 RADIO RECEIVING EQUIPMENT

PARTS									SPARE PARTS QUANTITIES ⊛										
									RBK-14				RBK-13				RBK-12		
Symbol Desig.	Function	Name of Part and Description	AWS, JAN or Navy Type Desig.	Navy Stock No.	Mfr. and Mfr's Desig.	Contr. Drawing or Part No.	Total Per Equip.	All Symbol Desig. Involved	NXsr-39265 NXsr-69198 Equip.	NXsr-39265 NXsr-69198 Tender	NXsr-39265 NXsr-69198 Stock	NXsr-85032 Equip.	NXsr-56768 Equip.	NXsr-56768 Tender	NXsr-56768 Stock	NXsr-67988 Equip.	NXsr-39265 Equip.	NXsr-39265 Tender	NXsr-39265 Stock
S02	"PAN." connector	CONNECTOR, female contact: single contact coaxial connector; silver plated die cast zinc shell; polystyrene seal; 1″ sq flange; four 0.120″ mtg holes on 23/32″ mtg centers; 1 1/16″ lg; for mtg in 5/8″ diam mtg hole	-49194 Signal Corps SO-239	•	Amphenol 83-1RTY	10A056	2 ⑪	S02, SO3 ⑩	1	2	4	2	•	•	•	•	•	•	•
SO3 ⑩	"BLANKING" connector	Same as SO2	-49194 Signal Corps SO-239	•															
SW1	"BAND SWITCH"	SWITCH, rotary: comprised of SW1A, SW1B, SW1C, SW1D, SW1E, SW1F, SW1G, H1, H2, H3, H4, H5, H6, H7, H8, H9, H10 ⑬, shaft and spacers	•	•	Centralab	60B181	1	SW1	•	•	•	•	•	•	•	•	•	•	•
SW1A	Wafer for SW1	SWITCH SECTION, rotary: ceramic wafer, natural bakelite rotor retaining wafer; 1 5/8″ x 5/32″ thk overall; part of SW1	•	•	Centralab	62A037	2	SW1A, SW1G	2	2	2	1	2	2	2	2	2	2	2
SW1B	Wafer for SW1	SWITCH SECTION, rotary: ceramic wafer; 1 5/8″ x 5/32″ thk overall; part of SW1	•	•	Centralab	62A035	3	SW1B, SW1D, SW1E	3	3	3	1	3	3	3	3	3	3	3
SW1C	Wafer for SW1	SWITCH SECTION, rotary: ceramic wafer, natural bakelite rotor retaining wafer; 1 5/8″ x 5/32″ thk overall; part of SW1	•	•	Centralab	62A038	1	SW1C	1	1	1	1	1	1	1	1	1	1	1
SW1D	Wafer for SW1	Same as SW1B; part of SW1	•	•															
SW1E	Wafer for SW1	Same as SW1B; part of SW1	•	•															
SW1F	Wafer for SW1	SWITCH SECTION, rotary: ceramic wafer, natural bakelite rotor retaining wafer; 1 5/8″ x 5/32″ thk overall; part of SW1	•	•	Centralab	62036	1	SW1F	1	1	1	1	1	1	1	1	1	1	1
SW1G	Wafer for SW1	Same as SW1A; part of SW2	•	•															
SW2	"B.F.O." "ON" "OFF" switch	SWITCH, toggle: SPST; molded black bakelite case, nickel plated brass mechanism; 1″ x 17/32″ x 1 1/32″ overall	-24381	•	C-H 8280	60A175	3	SW2, SW4, SW5	1	2	3	1	1	2	3	1	1	2	3

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Contracts NXsr-39265, 56768, 67988, 69198, 85032

TABLE 8-2—CONTINUED
PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATIONS
FOR MODELS RBK-12, RBK-13 & RBK-14 RADIO RECEIVING EQUIPMENT

PARTS									SPARE PARTS QUANTITIES ⊛										
									RBK-14				RBK-13				RBK-12		
Symbol Desig.	Function	Name of Part and Description	AWS, JAN or Navy Type Desig.	Navy Stock No.	Mfr. and Mfr's Desig.	Contr. Drawing or Part No.	Total Per Equip.	All Symbol Desig. Involved	NXsr-39265 NXsr-69198 Equip.	NXsr-39265 NXsr-69198 Tender	NXsr-39265 NXsr-69198 Stock	NXsr-85032 Equip.	NXsr-56768 Equip.	NXsr-56768 Tender	NXsr-56768 Stock	NXsr-67988 Equip.	NXsr-39265 Equip.	NXsr-39265 Tender	NXsr-39265 Stock
SW3	M1 activating switch	SWITCH, rotary: SPST; built in resistor R11	•	•	CTS	Part of 25C058	1	SW3	•	•	•	•	•	•	•	•	•	•	•
SW4	"A.V.C." "ON" "OFF" switch	Same as SW2	-24381	•															
SW5	"SEND" "REC." switch	Same as SW2	-24381	•															
SW6	"A.N.L." "ON" "OFF" switch	SWITCH, toggle: DPST; molded black bakelite case, nickel plated brass mechanism; 1 3/32" x 21/32" x 1 3/32" overall	-24456	•	C-H 8360	60A123	1	SW6	1	1	1	1	1	1	1	1	1	1	1
SW7A B C D	Selectivity Selectivity Selectivity AC on & off	SWITCH, rotary: 3 section, 3 position; phenolic rotors and stators, silver plated brass mechanism, stainless steel index spring and ball; approx 1½" diam x 11" overall; approx 1" lg shaft	•	•	Oak Type "H"	69B178	1	SW7A, B,C,D	1	1	1	1	1	1	1	1	1	1	1
SW8A B C D	FM-AM selector FM-AM selector FM-AM selector FM-AM selector	SWITCH, rotary: 1 section, 2 position; phenolic rotors and stators, silver plated brass mechanism, stainless steel index spring and ball; approx 1½" diam x 3/8" overall; approx 1" lg shaft	•	•	Oak Type "QH"	60A177	1	SW8A, B,C,D	1	1	1	1	1	1	1	1	1	1	1
SW9	Tone control switch	SWITCH, rotary: 1 section, 4 position; phenolic rotors and stators, silver plated brass or phosphor bronze mechanism; 1½" x 1 3/8" x 5/32" overall; ½" lg shaft	•	•	C-H 8280	60B176	1	SW9	1	1	1	1	1	1	1	1	1	1	1
SW10	115 or 230 v power switch	SWITCH, toggle: DPDT; molded black bakelite case, nickel plated brass mechanism; 1¾" x 21/32" x 1 3/32" overall	-24227	•	AH & H	60A090	1	SW10	1	1	1	1	1	1	1	1	1	1	1
T1	Antenna and V1 grid coupling for band 1	COIL, RF: antenna; integral type; two windings, single layer wound; unshielded; approx 1 5/8" lg x ½" OD overall	-47716	•	S-W Inductor 651	51A265	1	T1	1	2	3	1	1	2	3	1	1	2	3

⊛ALL items of each set of Spares are packed together in one carton

Contracts NXsr-39265, 56768, 67988, 69198, 85032

TABLE 8-2—CONTINUED
PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATIONS
FOR MODELS RBK-12, RBK-13 & RBK-14 RADIO RECEIVING EQUIPMENT

PARTS									SPARE PARTS QUANTITIES ⊛										
									RBK-14				RBK-13				RBK-12		
Symbol Desig.	Function	Name of Part and Description	AWS, JAN or Navy Type Desig.	Navy Stock No.	Mfr. and Mfr's Desig.	Contr. Drawing or Part No.	Total Per Equip.	All Symbol Desig. Involved	NXsr-39265 NXsr-69198 Equip.	NXsr-39265 NXsr-69198 Tender	NXsr-39265 NXsr-69198 Stock	NXsr-85032 Equip.	NXsr-56768 Equip.	NXsr-56768 Tender	NXsr-56768 Stock	NXsr-67988 Equip.	NXsr-39265 Equip.	NXsr-39265 Tender	NXsr-39265 Stock
T2	Antenna and V1 grid coupling for band 2	COIL, RF: antenna; integral type; two windings, single layer wound; unshielded; approx 1⅝" lg x ½" OD overall	-47710	•	S-W Inductor 654	51A268	1	T2	1	2	3	1	1	2	3	1	1	2	3
T3	Antenna and V1 grid coupling for band 3	COIL, RF: antenna; integral type; two windings, single layer wound; unshielded; approx ¾" lg x ¼" diam overall	-47707	•	S-W Inductor 657	51A271	1	T3	1	2	3	1	1	2	3	1	1	2	3
T4	V1 and V2 coupling for band 1	COIL, RF: RF transformer; integral type; two windings, single layer wound; unshielded; approx 1⅝" lg x ½" OD overall	-47711	•	S-W Inductor 652	51A266	1	T4	1	2	3	1	1	2	3	1	1	2	3
T5	V1 and V2 coupling for band 2	COIL, RF: RF transformer; integral type; two windings, single layer wound; unshielded; approx 1⅝" lg x ½" OD overall	-47712	•	S-W Inductor 655	51A269	1	T5	1	2	3	1	1	2	3	1	1	2	3
T6	V1 and V2 coupling for band 3	COIL, RF: RF transformer; integral type; two windings, single layer wound; unshielded; approx ⅞" lg x ¼" diam overall	-47713	•	S-W Inductor 658	51A272	1	T6	1	2	3	1	1	2	3	1	1	2	3
T7	Tuned circuit of osc stage for band 1	COIL, RF: osc; integral type; three windings, single layer wound; unshielded; approx 1⅝" lg x ½" OD overall	-47714	•	S-W Inductor 653	51A267	1	T7	1	2	3	1	1	2	3	1	1	2	3
T8	Tuned circuit of osc stage for band 2	COIL, RF: osc; integral type; three windings, single layer wound; unshielded; approx 1⅝" lg x ½" OD overall	-47715	•	S-W Inductor 656	51A270	1	T8	1	2	3	1	1	2	3	1	1	2	3
T9	Tuned circuit of osc stage or band 3	COIL, RF; osc; integral type; three windings, single layer wound; unshielded; approx 1⅝" lg x ⅝" diam overall	-47709	•	S-W Inductor 659	51A273	1	T9	1	2	3	1	1	2	3	1	1	2	3
T10	V2 and V3 coupling	TRANSFORMER, IF: 5.25 mc; 1st if; shielded; 1⅞" x 1 1/16" x 4" h overall; includes C12, C68, C69 and R10	-47694	•	Elec Windings	50C140	1	T10	1	2	3	1	1	2	3	1	1	2	3
T11	V3 and V4 coupling	TRANSFORMER, IF: 5.25 mc; 2nd if; shielded; 1⅞" x 1 1/16" x 4" h overall; includes C16, C70, C71 and R19	-47695	•	Elec Windings	50C141	1	T11	1	2	3	1	1	3	3	1	1	2	3

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Contracts NXsr-39265, 56768, 67988, 69198, 85032

TABLE 8-2—CONTINUED
PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATIONS
FOR MODELS RBK-12, RBK-13 & RBK-14 RADIO RECEIVING EQUIPMENT

PARTS									SPARE PARTS QUANTITIES ⊛										
									RBK-14				RBK-13				RBK-12		
Symbol Desig.	Function	Name of Part and Description	AWS, JAN or Navy Type Desig.	Navy Stock No.	Mfr. and Mfr's Desig.	Contr. Drawing or Part No.	Total Per Equip.	All Symbol Desig. Involved	NXsr-39265 NXsr-69198 Equip.	NXsr-39265 NXsr-69198 Tender	NXsr-39265 NXsr-69198 Stock	NXsr-85032 Equip.	NXsr-56768 Equip.	NXsr-56768 Tender	NXsr-56768 Stock	NXsr-67988 Equip.	NXsr-39265 Equip.	NXsr-39265 Tender	NXsr-39265 Stock
T12	V4 and V5 coupling	TRANSFORMER, IF: 5.25 mc; 3rd if; shielded; 1⅞" x 1 7/16" x 4" h overall; includes C72 and C73	-47696	•	Elec Windings	50C142	1	T12	1	2	3	1	1	2	3	1	1	2	3
T13	V5 and V6 coupling	TRANSFORMER, IF: 5.25 mc; diode; shielded; 1⅞" x 1 7/16" x 4" h overall; includes C76 and C77	-47693	•	Elec Windings	50C143	1	T13	1	2	3	1	1	2	3	1	1	2	3
T14	V7 and V8 coupling	TRANSFORMER, IF: 5.25 mc; discriminator; shielded; 1⅞" x 1 7/16" x 4" h overall; includes C29, C74, C75	-47697		Elec Windings	50C144	1	T14	1	2	3	1	1	2	3	1	1	2	3
T15	V11 and V12 audio output and load coupling	TRANSFORMER, AF: audio; pri. 12,000 ohms CT, sec. 1 600 ohms CT, sec. 2 5000 ohms tap at 500 ohms; CRS case, hermetically sealed; 3¾" x 2⅜" x 2⅞" h overall	-301746	•	Stancor 10A45	55C062	1	T15	1	2	3	1	1	2	3	1	1	2	3
T16	AC power	TRANSFORMER, power: fil and plate; CRS case, hermetically sealed; 4 15/16" x 3¾" x 5 5/16" h overall	-301671	•	Stancor 10P51	52C084	1	T16	1	2	3	1	1	2	3	1	1	2	3
TS1 ⑫	Ant. panoramic connection board	BOARD, terminal: natural paper base phenolic; 4 5/16" lg x 2½" wd x 3/16" thk overall; with one 21/32" hold for mtg one jack	•	•	Hallicrafters 8B357	8B357	1	TS1	•	•	•	•	•	•	•	•	•	•	•
TS1 ⑩	Ant, panoramic connection board	BOARD, terminal: natural paper base phenolic; 4 5/16" lg x 2½" wd x 3/16" thk overall; with two 21/32" holes for mtg two jacks	•	•	Hallicrafters 8B425	8B425	1	TS1	•	•	•	•	•	•	•	•	•	•	•
TS2	Output terminal board	BOARD, terminal: natural paper base bakelite; 3 7/16" lg x 2 5/16" wd x ⅛" thk overall	•	•	Hallicrafters 8A356	8A356	1	TS2	•	•	•	•	•	•	•	•	•	•	•
V1	RF amplifier	TUBE, electron: JAN ( ) 956	JAN ( ) 956	•	JAN ( ) 956	90X956	1	V1	3	6	•	3	3	6	•	3	3	6	•
V2	Converter-mixer	TUBE, electron: JAN ( ) 954	JAN ( ) 954	•	JAN ( ) 954	90X954	1	V2	3	6	•	3	3	6	•	3	3	6	•
V3	1st if amplifier	TUBE, electron: JAN ( ) 6AC7	JAN ( ) 6AC7	•	JAN ( ) 6AC7	90X6AC7	2	V3, V7	4	6	•	4	4	6	•	4	4	6	•

⊛ALL items of each set of Spares are packed together in one carton

Contracts NXsr-39265, 56768, 67988, 69198, 85032

TABLE 8-2—CONTINUED
PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATIONS
FOR MODELS RBK-12, RBK-13 & RBK-14 RADIO RECEIVING EQUIPMENT

PARTS									SPARE PARTS QUANTITIES ⊛										
									RBK-14				RBK-13				RBK-12		
Symbol Desig.	Function	Name of Part and Description	AWS, JAN or Navy Type Desig.	Navy Stock No.	Mfr. and Mfr's Desig.	Contr. Drawing or Part No.	Total Per Equip.	All Symbol Desig. Involved	NXsr-39265 NXsr-69198 Equip.	NXsr-39265 NXsr-69198 Tender	NXsr-39265 NXsr-69198 Stock	NXsr-85032 Equip.	NXsr-56768 Equip.	NXsr-56768 Tender	NXsr-56768 Stock	NXsr-67988 Equip.	NXsr-39265 Equip.	NXsr-39265 Tender	NXsr-39265 Stock
V4	2nd if amplifier	TUBE, electron: JAN ( ) 6AB7	JAN ( ) 6AB7	•	JAN ( ) 6AB7	90X6AB7	1	V4	3	6	•	2	3	6	•	3	3	6	•
V5	3rd if amplifier	TUBE, electron: JAN( ) 6SK7	JAN( ) 6SK7	•	JAN( ) 6SK7	90X6SK7	1	V5	2	3	•	2	2	3	•	2	2	3	•
V6	AM second detector	TUBE, electron: JAN( ) 6H6	JAN( ) 6H6	•	JAN( ) 6H6	90X6H6	2	V6, V8	4	6	•	4	4	6	•	4	4	6	•
V7	FM limiter	Same as V3	JAN( ) 6AC7	•															
V8	FM discriminator	Same as V6	JAN( ) 6H6	•															
V9	Audio voltage amplifier	TUBE, electron: JAN( ) 6SL7GT	JAN( ) 6SL7GT	•	JAN( ) 6SL7GT	90X6SL7GT	1	V9	2	3	•	2	2	3	•	2	2	3	•
V10	Voltage regulator	TUBE, electron: JAN( ) OD3/VR150	OD3/VR150	•	JAN( ) OD3/VR150	90XVR150/30	1	V10	2	3	•	2	2	3	•	2	2	3	•
V11	Audio power amplifier	TUBE, electron: JAN( ) 6V6GT	JAN( ) 6V6GT	•	JAN( ) 6V6GT	90X6V6GT	2	V11, V12	4	6	•	4	4	6	•	4	4	6	•
V12	Audio power amplifier	Same as V11	JAN( ) 6V6GT	•															
V13	Plate supply rectifier	TUBE, electron: JAN( ) 5U4G	JAN( ) 5U4G	•	JAN( ) 5U4G	90X5U4G	1	V13	2	3	•	2	2	3	•	2	2	3	•
V14	Beat freq osc	TUBE, electron: JAN( ) 6J5	JAN( ) 6J5	•	JAN( ) 6J5	90X6J5	1	V14	2	3	•	2	2	3	•	2	2	3	•
V15	HF osc	TUBE, electron; JAN( ) 955	JAN( ) 955	•	JAN( ) 955	90X955	1	V15	3	6	•	3	3	6	•	3	3	6	•
W1	Power cord	CABLE ASSEMBLY, power: general purpose; 40% rubber insulation outer jacket; round, 0.305″ diam; approx 6′ lg; two #18 AWG copper conductors ea comprising 41 #34 strands; complete with connector PL1	•	•	Belden 1750	87A125	1	W1	•	•	•	•	•	•	•	•	•	•	•
X1	Socket for V1	SOCKET, tube: acorn; ceramic wafer, steatite insulated; five silver plated beryllium copper contacts; approx 1¾″ OD x ⅞″ ID x 3/16″ thk overall	-49761	•	Johnson EF 235	6AO75	3	X1, X2, X15	2	2	3	2	2	2	3	2	2	2	3
X2	Socket for V2	Same as X1	-49761	•															

⊛ALL items of each set of Spares are packed together in one carton

Contracts NXsr-39265, 56768, 67988, 69198, 85032

TABLE 8-2—CONTINUED
PARTS AND SPARE PARTS LIST BY SYMBOL DESIGNATIONS
FOR MODELS RBK-12, RBK-13 & RBK-14 RADIO RECEIVING EQUIPMENT

PARTS									SPARE PARTS QUANTITIES ⊛										
									RBK-14				RBK-13				RBK-12		
Symbol Desig.	Function	Name of Part and Description	AWS, JAN or Navy Type Desig.	Navy Stock No.	Mfr. and Mfr's Desig.	Contr. Drawing or Part No.	Total Per Equip.	All Symbol Desig. Involved	NXsr-39265 NXsr-69198 Equip.	NXsr-39265 NXsr-69198 Tender	NXsr-39265 NXsr-69198 Stock	NXsr-85032 Equip.	NXsr-56768 Equip.	NXsr-56768 Tender	NXsr-56768 Stock	NXsr-67988 Equip.	NXsr-39265 Equip.	NXsr-39265 Tender	NXsr-39265 Stock
X3	Socket for V3	SOCKET, tube: same as SO1, except complete with center shield	-49758	•	Amphenol MIP-8TM Special	6A201	1	X3	1	1	1	1	1	1	1	1	1	1	1
X4	Socket for V4	Same as SO1	-49374	•															
X5	Socket for V5	Same as SO1	-49374	•															
X6	Socket for V6	Same as SO1	-49374	•															
X7	Socket for V7	Same as SO1	-49374	•															
X8	Socket for V8	Same as SO1	-49374	•															
X9	Socket for V9	Same as SO1	-49374	•															
X10	Socket for V10	Same as SO1	-49374	•															
XII	Socket for V11	Same as SO1	-49374	•															
X12	Socket for V12	Same as SO1	-49374	•															
X13	Socket for V13	Same as SO1	-49374	•															
X14	Socket for V14	Same as SO1	-49374	•															
X15	Socket for V15	Same as X1	-49761	•															
X16	Fuse holder for FS1	HOLDER, fuse: extractor post; for 4AG cartridge type fuse; black bakelite; approx 2⅜" lg x ¾" OD	•	•	Buss HCM	6A147	1	X16	1	1	1	1	1	1	1	1	1	1	1
X17	Socket for LM1	LAMPHOLDER: miniature bayonet base; steel, bakelite insulated; 1⅜" d x 1 13/16" wd x 13/16" h overall	•	•	Drake	86A009	2	X17 X18	1	1	2	1	1	1	2	1	1	1	2
X18	Socket for LM2	Same as X17	•	•															
Z1	RF section	TUNING ASSEMBLY, RF: complete with resistors, capacitors, transformers and all other misc parts and hardware	-50270	•	Hallicrafters 41X2618	41X2618	1	Z1	•	1	1	•	•	1	1	•	•	1	1

⊛ALL items of each set of Spares are packed together in one carton

Contracts NXsr-39265, 56768, 67988, 69198, 85032

TABLE 8-3
PARTS LIST BY NAVY TYPE NUMBERS
FOR MODELS RBK-12, RBK-13 & RBK-14 RADIO RECEIVING EQUIPMENT

Quantity	AWS, JAN, or Navy Type Desig.	All Symbol Designations Involved
	MISCELLANEOUS (CLASS 10)	
9	•	A1, A2, A3, A4, A5, A6, A7, A8, A9
9	•	A1A, A2A, A3A, A4A, A5A, A6A, A7A, A8A, A9A
9	•	A1B, A2B, A3B, A4B, A5B, A6B, A7B, A8B, A9B
4	•	A10, A11, A12, A13
1	•	E1
1	•	E2
1	•	E3
1	•	E4
1	•	E5
1	•	E6
1	•	E7
1	•	E8
1	•	E9
2	•	E10, E11
3	•	E12, E13, E14
1	•	E15
1	•	E16
1	•	E17
2	•	E18, E24
7	•	E18A, E19A, E20A, E21A, E22A, E23A, E24A
2	•	E18B, E24B
1	•	E19
1	•	E19B
2	•	E20, E23
2	•	E20B, E23B
1	•	E21
1	•	E21B
1	•	E22
1	•	E22B
1	•	E25
1	•	E26
4	•	E30, E31, E32, E33
10	•	H1
4	•	H2
4	•	H3
6	•	H4
28	•	H5
4	•	H6
13	•	H7
4	•	H8
4	•	H9
2 (13)	•	H10 (13)
2	•	LM1, LM2
1	•	N1
1	•	N2
1	•	N3
1	•	O1
1	•	O2
1	•	O3
1	•	O4
1	•	O5
1 (12)	•	TS1 (12)
1 (10)	•	TS1 (10)
1	•	TS2
2	•	X17, X18
	METERS (CLASS 22)	
1	-22477	M1
	SWITCHES (CLASS 24)	
1	-24227	SW10
3	-24381	SW2, SW4, SW5
1	-24456	SW6
1	•	SW1
2	•	SW1A, SW1G
3	•	SW1B, SW1D, SW1E
1	•	SW1C
1	•	SW1F
1	•	SW3
1	•	SW7A, B, C, D
1	•	SW8A, B, C, D
1	•	SW9
	FUSES, FUSE HOLDERS (CLASS 28)	
1	-28035-3	FS1
1	•	X16
	AF COILS, AF & POWER TRANSFORMERS (CLASS 30)	
1	-301671	T16
1	-301745	L6 & 7
1	-301746	T15
	VACUUM TUBES (CLASS 38)	
1	-VR150/30	V10
1	-5U4G	V13
1	-6AB7	V4
2	-6AC7	V3, V7
2	-6H6	V6, V8
1	-6J5	V14
1	-6SK7	V5
1	-6SL7GT	V9
2	-6V6GT	V11, V12
1	-954	V2
1	-955	V15
1	-956	V1
	RF COIL, IF TRANSFORMERS (CLASS 47)	
1	-47693	T13
1	-47694	T10
1	-47695	T11
1	-47696	T12
1	-47697	T14
1	-47699	L5
1	-47705	L4
1	-47706	L1
1	-47707	T3

Contracts NXsr:39265, 56768, 67988, 69198, 85032

TABLE 8-3 (Continued)
PARTS LIST BY NAVY TYPE NUMBERS
FOR MODELS RBK-12, RBK-13 & RBK-14 RADIO RECEIVING EQUIPMENT

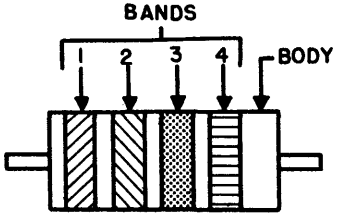
Quantity	AWS, JAN, or Navy Type Desig.	All Symbol Designations Involved
	RF COIL, IF TRANSFORMERS (CLASS 47) Cont'd	
1	-47709	T9
1	-47710	T2
1	-47711	T4
1	-47712	T5
1	-47713	T6
1	-47714	T7
1	-47715	T8
1	-47716	T1
2	•	L2, L3
	CAPACITORS (CLASS 48)	
1	-14313	C42, 43 & 44
1	-482092-20	C57
1	-482285-5	C56
1	-482639	C2
1	-482640-10	C7
1	-482691	C58
1	-482692	C60
3	-482694	C63, C64, C65
2	-482697	C66, C67
1	•	C1A, B, C
4	•	C4, C6, C52, C61
8	•	C5, C9, C10, C45, C46, C47, C55, C79
19	•	C8, C11, C13, C14, C15, C17, C18, C19, C21, C22, C23, C30, C33, C34, C36, C37, C41, C62, C78
2	•	C12, C16
2	•	C20, C31
2	•	C24, C26
1	•	C25
2	•	C27, C53
1	•	C28
1	•	C29
1	•	C32
1	•	C35
1	•	C38
1	•	C39
1	•	C40
4	•	C48, C49, C50, C51
1	•	C54
1	•	C59
8	•	C68, C69, C70, C71, C72, C73, C76, C77
2	•	C74, C75
2 ⑩	•	C80 ⑩, C81 ⑩
1	•	C82
	CONNECTORS, SOCKETS (CLASS 49)	
2	-49193	E34, E35
2 ⑪	-49194	SO2, SO3 ⑩
12	-49374	SO1, X4, X5, X6, X7, X8, X9, X10, X11, X12, X13, X14
1	-49758	X3
3	-49761	X1, X2, X15

Quantity	AWS, JAN, or Navy Type Desig.	All Symbol Designations Involved
	CONNECTORS, SOCKETS (CLASS 49) Cont'd	
1	-49767	PL2
1	-49770	J1
1	•	PL1
	RF ASSEMBLIES (CLASS 50)	
1	-50270	Z1
	FILTER (CLASS 53)	
1	-53275	LF1
	INSULATORS (CLASS 61)	
1	•	E27
2	•	E28, E29
1	•	E36
	WIRES, CABLES (CLASS 62)	
1	•	W1
	RESISTORS (CLASS 63)	
1	-63360-6RO	R66
1	-63360-8RO	R68
1	-632805	R59
1	-632807	R28
1	-633176-20	R11
1	-633181-20	R43
1	-633569	R58
1	•	R1
6	•	R2, R3, R6, R21, R27, R67
1	•	R4
2	•	R5, R29
6	•	R7, R33, R40, R41, R48, R51
2	•	R8, R69
4	•	R9, R16, R23, R26
2	•	R10, R19
2	•	R12, R32
2	•	R13, R20
1	•	R14
4	•	R15, R22, R25, R62
5	•	R17, R18, R55, R57, R65
3	•	R24, R35, R56
2	•	R30, R60
3	•	R31, R53, R54
8	•	R34, R36, R39, R42, R44, R45, R49, R50
1	•	R37
2 ⑪	•	R38, R73 ⑩
3	•	R46, R47, R63
1	•	R52
1	•	R61
3 ⑪	•	R64, R72 ⑩, R74 ⑩
1	•	R70
1	•	R71

Contracts NXsr-39265, 56768, 67988, 69198, 85032

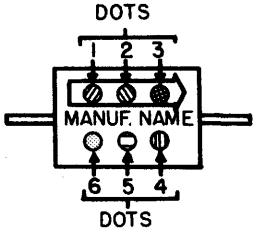
TABLE 8-4
APPLICABLE COLOR CODES

AMERICAN WAR STANDARD COLOR CODE CHART
FOR RESISTORS



COLOR	1ST BAND 1ST DIGIT	2ND BAND 2ND DIGIT	3RD BAND DECIMAL MULTIPLIER	4TH BAND TOLERANCE
BLACK	0	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	10,000,000	
GRAY	8	8	100,000,000	
WHITE	9	9	1,000,000,000	
GOLD	...	...	0.1	±5% (J)
SILVER	...	...	0.01	±10%(K)
NO COLOR	...	...	...	±20%(M)

AMERICAN WAR STANDARD 6-DOT COLOR CODE CHART
FOR CAPACITORS (MOLDED MICA)



COLOR	1ST DOT 1ST DIGIT	2ND DOT 2ND DIGIT	3RD DOT 3RD DIGIT	4TH DOT DECIMAL MULTIPLIER	5TH DOT TOLERANCE	6TH DOT CHARACTERISTICS
BLACK	0	0	0	1	±20% (M)	*A
BROWN	1	1	1	10		B
RED	2	2	2	100	± 2% (G)	C
ORANGE	3	3	3	1,000		D
YELLOW	4	4	4	10,000		E
GREEN	5	5	5	100,000		F
BLUE	6	6	6	1,000,000		G
VIOLET	7	7	7	10,000,000		
GRAY	8	8	8	100,000,000		
WHITE	9	9	9	1,000,000,000		
GOLD	...	...	...	0.1	±5% (J)	
SILVER	...	...	...	0.01	±10%(K)	

***A—Ordinary Mica By-pass**
B—Same as A—Low Loss Case
C—By-pass or Silver Mica Capacitor (±200 Parts/Million/C)
D—Silver Mica Capacitor (±100 Parts/Million/C)
E—Silver Mica Capacitor (0 to ±100 Parts/Million/C)
F—Silver Mica Capacitor (0 to ±50 Parts/Million/C)
G—Silver Mica Capacitor (0 to ±50 Parts/Million/C)

TABLE 8-5
LIST OF MANUFACTURERS
FOR MODELS RBK-12, RBK-13 & RBK-14 RADIO RECEIVING EQUIPMENT

CODE	NAVY PREFIX	NAME	ADDRESS
Active Screw	•	Active Screw & Mfg. Co.	773 W. Jackson Blvd. Chicago, Ill.
Allied	CZY	Allied Radio Corp.	833 W. Jackson Blvd. Chicago, Ill.
Amphenol	CPH	American Phenolic Corp.	1830 S. 54th St. Chicago 50, Ill.
A H & H	CHH	The Arrow-Hart & Hegman Electric Co.	103 Hawthorne St. Hartford, Conn.
Belden	CQG	Belden Mfg. Co.	4647 W. Van Buren St. Chicago, Ill.
Buss	CFA	Bussman Mfg. Co.	Jefferson & University Sts. St. Louis 7, Mo.
Centralab	CBN	Centralab Div. Globe Union, Inc.	900 E. Keefe Ave. Milwaukee, Wis.
Chi Molded Products	• •	Chicago Molded Prod. Corp.	1020 N. Kolmar Ave. Chicago 51, Ill.
CTS	CTC	Chicago Telephone Supply Co.	1142-1232 W. Beardsley Ave. Elkhart, Ind.
Cinch	CMG	Cinch Mfg. Co.	2335 W. Van Buren St. Chicago 12, Ill.
Croname	CAHW	Croname, Inc.	3701 Ravenswood Ave. Chicago 13, Ill.
C-H	CAE	Cutler-Hammer, Inc.	1333 W. St. Paul Ave. Milwaukee 1, Wis.
Drake Mfg.	•	Drake Mfg. Co.	1713 W. Hubbard St. Chicago 22, Ill.
Electro Motive	CMF	The Electro Motive Mfg. Co.	Willimantic, Conn.
Elec Windings	CEO	Electrical Windings, Inc.	2015 N. Kolmar Ave. Chicago, Ill.
Erie	CER	Erie Resistor Corp.	644 W. 12th St. Erie, Pa.
GE	CG	General Electric Co.	1 River Rd. Schenectady 5, N. Y.
Guthman	•	Edwin I. Guthman & Co., Inc.	15 S. Throop St. Chicago, Ill.
Hallicrafters	CHL	The Hallicrafters Co.	2611 Indiana Ave. Chicago 16, Ill.
Hudson Screw	•	Hudson Screw Machine Prod. Co.	4500 W. Augusta Blvd. Chicago, Ill.
Incco	CIE	Industrial Condenser Corp.	3243-65 N. California Ave. Chicago 18, Ill.
Johnson EF	CEJ	E. F. Johnson Co.	206 Second Ave. S. W. Waseca, Minn.
Jones HB	CJC	Howard B. Jones	2300 W. Wabansia Ave. Chicago, Ill.
Littelfuse	CLF	Littelfuse, Inc.	4757 N. Ravenswood Ave. Chicago 40, Ill.

TABLE 8-5 (Continued)
LIST OF MANUFACTURERS
FOR MODELS RBK-12, RBK-13, & RBK-14 RADIO RECEIVING EQUIPMENT

CODE	NAVY PREFIX	NAME	ADDRESS
McClintock	•	O. B. Mc Clintock Corp.	139 N. Lyndale Ave. Minneapolis 3, Minn.
Meissner	CML	Meissner Mfg. Co.	Mt. Carmel, Ill.
Micarta	•	Micarta Fabricators, Inc.	5324 E. Ravenswood Ave. Chicago, Ill.
Midwest Molding	•	Midwest Molding & Mfg. Co.	319 N. Whipple St. Chicago 12, Ill.
Muter	CAKD	Muter Co.	1255 S. Michigan Ave. Chicago 5, Ill.
Oak	COC	Oak Mfg. Co.	1260 Clybourn Ave. Chicago 10, Ill.
RCC	CRK	Radio Condenser Co.	Camden, N. J.
RCA	CRV	RCA Victor Division of Radio Corp. of America	Camden, N. J.
Stackpole	CSA	Stackpole Carbon Co.	St. Mary's, Pa.
Stancor	CADF	Standard Transformer Corp.	1500 N. Halsted St. Chicago 22, Ill.
S-W Inductor	•	S-W Inductor Co.	1056 N. Wood St. Chicago, Ill.
Underwood Elec	CYU	Underwood Electric & Mfg. Co.	3120 W. Grand Ave. Chicago, Ill.
Uthrad	CRA	Utah Radio Products Co.	812-820 N. Orleans St. Chicago, Ill.