Stainbaumt

T.O. 31R2-3SCR624-2
(FORMERLY AN 16-40SCR624-2)

HANDBOOK
MAINTENANCE INSTRUCTIONS

RADIO SET
SCR-624 AND SCR-624-B

REVISION NOTICE

LATEST REVISED PAGES SUPERSEDE THE SAME PAGES OF PREVIOUS DATE

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SAFETY NOTICE

This equipment employs high voltages which are dangerous and may be fatal if contacted by personnel. Use extreme caution when working with this equipment.

Destruction of Abandoned Materiel in the Combat Zone

In case it should become necessary to prevent the capture of this equipment and when ordered to do so, DESTROY IT SO THAT NO PART OF IT CAN BE SALVAGED, RECOGNIZED OR USED BY THE ENEMY. BURN ALL PAPERS AND BOOKS.

Means:-

1. Explosives, when provided.
2. Hammers, axes, sledges, machetes, or whatever heavy object is readily available.
3. Burning by means of incendiaries such as gasoline, oil, paper, or wood.
4. Grenades and shots from available arms.
5. Burying all debris or disposing of it in streams or other bodies of water, where possible and when time permits.

Procedure:-

1. Obliterate all identifying marks. Destroy nameplates and circuit labels.
2. Demolish all panels, castings, switch- and instrument-boards.
3. Destroy all controls, switches, relays, connections, and meters.
4. Rip out all wiring and cut interconnections of electrical equipment. Smash gas, oil, and water-cooling systems in gas-engine generators, etc.
5. Smash every electrical or mechanical part, whether rotating, moving, or fixed.
6. Break up all operating instruments such as keys, phones, microphones, etc.
7. Destroy all classes of carrying cases, straps, containers, etc.
8. Bury or scatter all debris.

DESTROY EVERYTHING!

★

Unsatisfactory Report

For U. S. Army Air Force Personnel:

In the event of malfunctioning, unsatisfactory design, or unsatisfactory installation of any of the component units of this equipment, or if the material contained in this book is considered inadequate or erroneous, an Unsatisfactory Report, AAF Form No. 54, or a report in similar form, shall be submitted in accordance with the provisions of Army Air Force Regulation No. 15-54 listing:

1. Station and organization.
2. Nameplate data (type number or complete nomenclature if nameplate is not attached to the equipment).
3. Date and nature of failure.
4. Radio model and serial number.
5. Remedy used or proposed to prevent recurrence.
6. Handbook errors or inadequacies, if applicable.

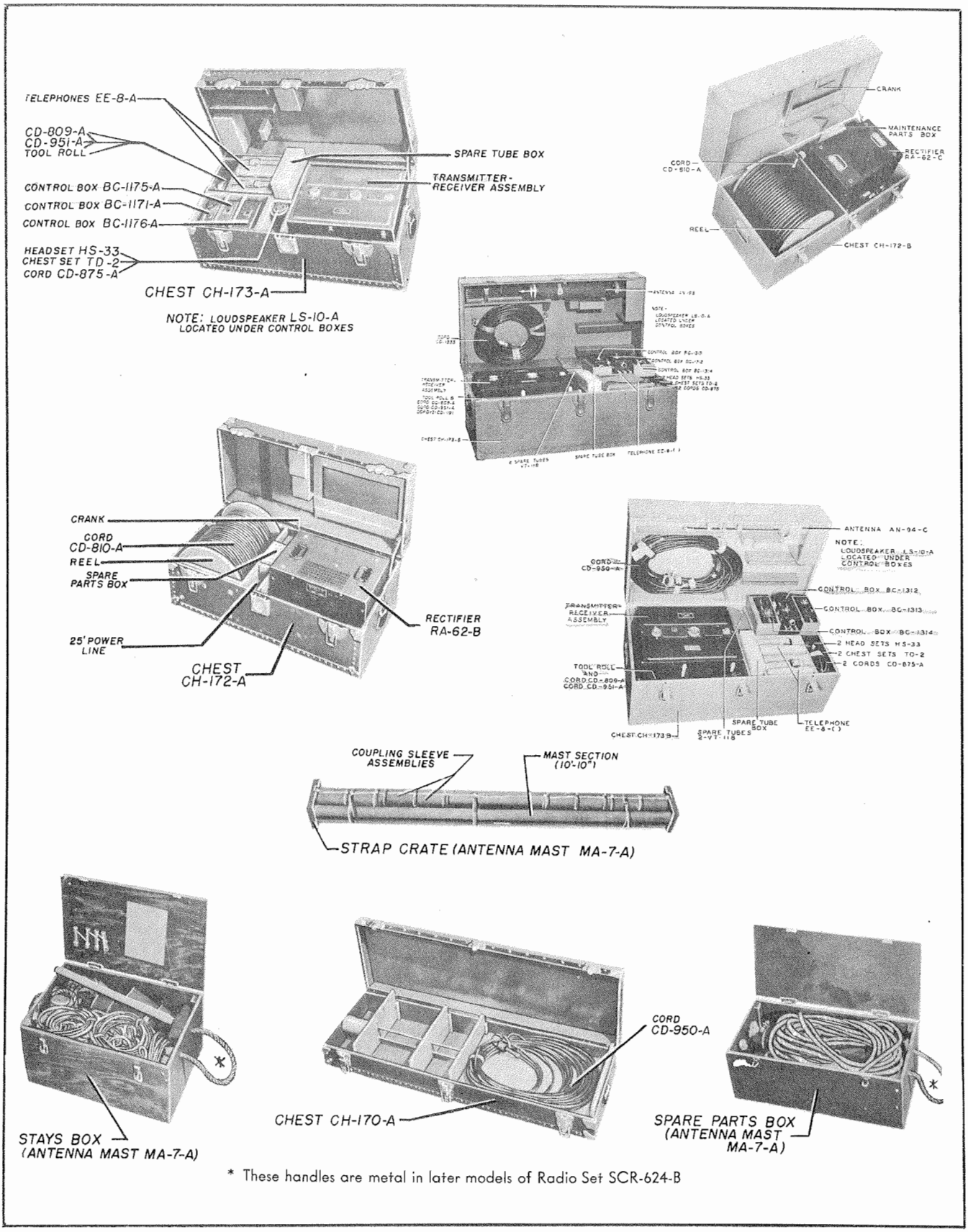
For U. S. Navy Personnel:

Report of failure of any part of this equipment during its guaranteed life shall be made on Form N. Aer. 4112, "Report of Unsatisfactory or Defective Material," or a report in similar form, and forwarded in accordance with the latest instructions of the Bureau of Aeronautics. In addition to other distribution required, one copy shall be furnished to the inspector of Naval Materiel (location to be specified) and the Bureau of Ships. Such reports of failure shall include:

1. Reporting activity.
2. Nameplate data.
3. Date placed in service.
4. Part which failed.
5. Nature and cause of failure.
6. Replacement needed (yes—no).
7. Remedy used or proposed to prevent recurrence.

For British Personnel:

Form 1022 procedure shall be used when reporting failure of radio equipment.



* These handles are metal in later models of Radio Set SCR-624-B

Figure 1-1. Radio Sets SCR-624-A and SCR-624-B—Major Assemblies

SPECIAL NOTICE

All material in this handbook applies to both Radio Set SCR-624-A and SCR-624-B except as otherwise designated. All similar units are mechanically interchangeable.

SECTION I
GENERAL DESCRIPTION

1. GENERAL.

a. Radio Set SCR-624-A is a complete radio ground station consisting of a transmitter and receiver designed for communications work at very high frequencies. It is especially constructed for transportation by air.

b. Radio Set SCR-624-A may be operated on any one of four crystal-controlled channels within 100 to 156 megacycles. Control facilities are provided so that the transmitter and receiver may be operated at the station, at a remote distance of 500 feet from the station, or at a remote distance up to two miles. Channel selection can be made at the station or at the 500-foot remote points of control, while only send-receive communica tion is possible at the two-mile remote point. Lan line telephone control is possible between any tw points of control by use of Telephone EE-8-A or EE-8-B *(See fig. 2-7 for installation.)*

c. The normal carrier power of this equipment is to 8 watts at a frequency of 100 to 156 megacycle A-C power requirements are 40 to 60-cycle, singl phase, 100 to 130 volts or 200 to 260 volts, supplie by an a-c power line or by an auxiliary power uni The power source must be able to furnish 325 watts a 115 volts or 320 watts at 230 volts.

2. EQUIPMENT SUPPLIED.

(See Table 1-1.)

TABLE 1-1—EQUIPMENT SUPPLIED WITH RADIO SET SCR-624-A OR SCR-624-B

Quantity per Equipment	*Name of Unit*	*Army Type Designation*	*Navy Type Designation*	*Over-all Dimensions*	*Weight lbs.*	*Numerica Series o Referenc No.*
	(1) RADIO SET SCR-624-A					
1	Chest Including:	CH-173-A		34" x 16¾" x 13¾"	134	
1	Control Box	BC-1175-A		7¼" x 4⅛" x 4¾"		200
1	Control Box	BC-1171-A		6¾" x 3⅜" x 3⅜"		200
1	Control Box	BC-1176-A		6-5/6" x 2½" x 2⅞"		200
2	Telephone	EE-8-A				
1	Tool roll					
1	Cord	CD-875-A		6" long		
1	Cord	CD-809-A		6" long		
1	Cord	CD-951-A		6" long		
1	Loudspeaker	LS-10-A, LS-10-B, or LS-10-C				
2	Chest Sets	TD-2				
2	Headsets	HS-33				
1	Transmitter-Receiver Assembly, consisting of:			$16\frac{5}{32}$" x $12\frac{9}{16}$" x $10\frac{11}{16}$"	49	
1	Radio Transmitter	BC-625-A or BC-625-AM				100
1	Radio Receiver	BC-624-A or BC-624-AM or BC-624-C				200
1	Spare Tubes Box, containing:			12¾" x 9" x 3"		

TABLE 1-1—EQUIPMENT SUPPLIED WITH RADIO SET SCR-624-A OR SCR-624-B (Con't).

Quantity per Equipment	*Name of Unit*	*Army Type Designation*	*Navy Type Designation*	*Over-all Dimensions*	*Weight lbs.*	*Numerical Series of Reference No.*
2	Tube	JAN-832 (VT-118)	JAN-832			
3	Tube	JAN-12A6 (VT-134)	JAN-12A6			
1	Tube	JAN-12J5 (VT-135)	JAN-12J5			
1	Tube	JAN-12C8 (VT-169)	JAN-12C8			
1	Tube	JAN-6G6G (VT-198)	JAN-6G6G			
2	Tube	JAN-6SS7 (VT-199)	JAN-6SS7			
1	Tube	JAN-9002 (VT-202)	JAN-9002			
1	Tube	JAN-12AH7GT (VT-207)	JAN-12AH7GT			
3	Tube	JAN-12SG7 (VT-209)	JAN-12SG7			
1	Chest, including:	CH-172-A		34" x 16¾" x 13¾"	205	
1	Rectifier	RA-62-B or				
		RA-62-C		16" x 11$\frac{5}{32}$" x 10⅝"	75	100
1	Spare Parts Box containing:					
1	Tube	JAN-6X5GT (VT-126-B)	JAN-6X5GT			
2	Tube	JAN-5U4G (VT-244)	JAN-5U4G			
10	Fuse	FU-50				
1	Cord			25' (a-c line)		
1	Cord, with reel	CD-810-A		500'		
1	Crank					
1	Chest including:	CH-170-A		47¼" x 14⅜" x 6¾"	41	
1	Antenna	AN-94-A or				
		AN-94-B or				
		AN-94-C		20½" long		
1	Cord	CD-950-A		75' long		
1	Mast Strap Crate, including:			11" x 16½" x 12"	152	
		Antenna Mast MA-7-A, consisting of:				
1	Mast sections			10' 10"		
1	Mast section			4' 8"		
4	Coupling sleeve assemblies					
1	Digging bar					
4	Anchors (screw)					
4	Anchors (straight)			23" x 13½" x 11"	121	
1	Stays Box, including:					
4	Stays, bottom (orange)					
4	Stays, top (black)					
1	Radius rope (black)					
2	Guy ropes (boom vang)					
1	Block and tackle assembly					
22	Shackles			$\frac{5}{16}$"		
4	Shackles			½"		
1	Base plate assembly					
1	Boom and assembly					
1	Sledge					
4	Ring and chain					
4	Stakes					
1	Mast end clamp assembly					
8	Clamps (coaxial cable)					
4	Wrenches (T socket)			$\frac{11}{16}$"		
2	Wrenches (end)			$\frac{11}{16}$"		
2	Wrenches (spintite)			½"		
2	Wrenches (spintite)			$\frac{5}{16}$"		
1	Spare Parts Box, includes:			27" x 13½" x 11"	45	
2	Shackles			½"		
2	Shackles			$\frac{5}{16}$"		
1	Rope			75'		
8	Clamps (coaxial cable)					
1	Coupling sleeve assembly (plain)			4"		

1	Coupling sleeve assembly (with eyebolts)			4″		
	(2) RADIO SET SCR-624-B					
1	Chest, including:	CH-173-B		34″ x 16¾″ x 15¾″	188	
1	Control Box	BC-1312		7¼″ x 4⅛″ x 4¾″		20
1	Control Box	BC-1314		6¾″ x 3⅜″ x 3⅜″		20
1	Control Box	BC-1313		6⅝″ x 2½″ x 2⅞″		20
1	Tool roll					
2	Telephone	EE-8-A or EE-8-B				
2	Cord	CD-875-A		6″ long		
1	Cord	CD-809-A		6′ long		
1	Cord	CD-951-A		6′ long		
3	Cord	CD-1191		6′ long		
1	Loudspeaker	LS-10-A, LS-10-B, or LS-10-C				
2	Chest sets	TD-2				
2	Headsets	HS-33				
1	Receiver-Transmitter Assembly consisting of:					
1	Radio Transmitter	BC-625-A or BC-625-AM				10
	Radio Receiver	BC-624-A or BC-624-AM or BC-624-C				20
1	Spare Tubes Box, containing:			12¾″ x 9″ x 3″		
3	Tube	JAN-12A6 (VT-134)	JAN-12A6			
1	Tube	JAN-12J5 (VT-135)	JAN-12J5			
1	Tube	JAN-12H6 (VT)	JAN-12H6			
1	Tube	JAN-12C8 (VT-169)	JAN-12C8			
1	Tube	JAN-6G6G (VT-198-A)	JAN-6G6G			
1	Tube	JAN-6SS7 (VT-199)	JAN-6SS7			
1	Tube	JAN-9002 (VT-202)	JAN-9002			
3	Tube	JAN-9003 (VT-203)	JAN-9003			
1	Tube	JAN-12AH7GT (VT-207)	JAN-12AH7GT			
3	Tube	JAN-12SG7 (VT-209)	JAN-12SG7			
2	Tube	JAN-832A (VT-118)	JAN-832A			
1	Antenna	AN-94-A or AN-94-B or AN-94-C or AN-188*				
1	Cord	CD-950-A or CD-1333*		75′ long 75′ long		
1	Chest, including:	CH-172-B		34″ x 16¾″ x 15¾″	205	
1	Rectifier	RA-62-B or RA-62-C		16″ x 11 5/32″ x 10⅝″	75	10
1	Spare Parts Box, includes:					
1	Tube	JAN-6X5GT (VT-126-B)	JAN-6X5GT			
2	Tube	JAN-5U4G (VT-244)	JAN-5U4G			
10	Fuse	FU-50				
1	Cord (with reel)	CD-810-A		500′ long		
1	Cord			25′		
1	Crank					
1	Mast Strap Crate, including:	Antenna Mast MA-7-A, consisting of:		11″ x 16½″ x 12″	152	
5	Mast sections			10′ 10″		
1	Mast section			4′ 8″		
4	Coupling sleeve assemblies					
1	Digging bar					
4	Anchors (screw)					
4	Anchors (straight)					

* Supplied with later models of Radio Set SCR-624-B.

TABLE 1-1—EQUIPMENT SUPPLIED WITH RADIO SET SCR-624-A OR SCR-624-B (Con't).

Quantity per Equipment	*Name of Unit*	*Army Type Designation*	*Navy Type Designation*	*Over-all Dimensions*	*Weight lbs.*	*Numerical Series of Reference No.*
1	Stays Box, including:			23" x 13½" x 11"	121	
4	Stays, bottom (orange)					
4	Stays, top (black)					
1	Radius rope					
2	Guy ropes (boom vang)					
1	Block and tackle assembly					
6	Shackles			⅜"		
4	Shackles			½"		
1	Base plate assembly					
1	Boom end assembly					
1	Sledge					
4	Ring and Chain					
4	Stakes					
1	Mast and clamp assembly					
4	Wrenches (T socket)			11/16"		
2	Wrenches (end)			11/16"		
2	Wrenches (spintite)			½"		
2	Wrenches (spintite)			5/16"		
1	Spare Parts Box, includes:			27" x 13½" x 11"	45	
2	Shackles			½"		
2	Shackles			5/16"		
1	Coupling sleeve assembly (plain)			4"		
1	Coupling sleeve assembly (with eyebolts)			4"		

3. EQUIPMENT REQUIRED BUT NOT SUPPLIED.

One Power Unit PE-75-D, an auxiliary a-c power supply, is required when no a-c power line is available. This unit is not supplied with the radio set, however.

4. DESCRIPTION OF MAJOR ASSEMBLIES.

a. GENERAL.

(1) RADIO SET SCR-624-A—The assemblies of Radio Set SCR-624-A are contained in three chests, two boxes, and one crate, namely: Chest CH-172-A, CH-173-A, and CH-170-A, the mast stays and the mast spare parts boxes, and the mast strap crate. *(See fig. 1-1.)* Their total weight is 711 pounds.

(2) RADIO SET SCR-624-B.—The assemblies of Radio Set SCR-624-B are contained in two chests, two boxes, and one crate, namely: Chest CH-172-B and CH-173-B the mast stays and the mast spare parts boxes and the mast strap case. Their total weight is 669 pounds.

Note

Chest CH-170-A has been eliminated in Radio Set SCR-624-B and its contents have been placed in Chest CH-173-B.

b. TRANSMITTER-RECEIVER ASSEMBLY.—This assembly is comprised of Radio Transmitter BC-625-A or BC-625-AM, and Radio Receiver BC-624-A, BC-624-AM or BC-624-C. *(See figs. 2-1 and 5-1.)* When properly interconnected to the other components, this assembly provides transmission or reception of voice, amplitude-modulated signals on any one of four crystal-controlled frequencies within the range 100 to 156 megacycles. The description of each part follows:

(1) CASE CS-80-A OR CS-80-C.

(a) Case CS-80-A is the metal housing provided for the assembly of the radio transmitter, the radio receiver and Rack FT-244-A. The case is equipped with 4 shockmounts and a ground strap, and is located in the right-hand compartment of Chest CH-173-A (or in the left-hand compartment in Chest CH-173-B.)

(b) Case CS-80-C is similar to Case CS-80-A except that it is equipped with a metal plate bolted to the shockmounts to provide for installation of Mounting FT-488.

(2) RACK FT-244-A.—RACK FT-244-A *(see fig. 4-20)* is a shallow tray which contains interconnecting wires for the receiver and transmitter, plug sockets for the attachment of cables from other components of the equipment, the antenna changeover relay, the channel-control motor and associated mechanisms, etc. The rack also serves as a mounting base for the transmitter and receiver. *(See fig. 4-20.)*

(a) All electrical connections between the rack and the transmitter or receiver are made through plugs and sockets mounted in these units.

(b) Eight red-painted long-shank screws are

employed to hold the transmitter and receiver units firmly in place.

(c) Recessed handles at each end of the center channel are provided to facilitate removal of the rack, receiver, and transmitter from Case CS-80-A or CS-80-C.

(d) The rack *(see fig. 4-20)* is provided with covers attached by means of a slot-and-screw arrangement which makes it possible to slide them away from over the controls of the transmitter and receiver and to let them drop alongside the front (transmitter side) and rear (receiver side) of the case.

(3) RADIO TRANSMITTER.—The transmitter occupies half of Case CS-80-A or CS-80-C. The top *(see fig. 2-1)* is equipped with four tuning controls, a receptacle for the d-c meter cord, and a "METER SWITCH." The antenna-coupling control *(see fig. 2-1)* is located on the right side of the transmitter panel, and the "GAIN" control* is on the left. Four crystal sockets are to the right of the "METER SWITCH" and are identified by the channel letters "A," "B," "C," and "D."

(4) RADIO RECEIVER BC-624-A OR BC-624-AM OR BC-624-C.—The radio receiver occupies the other half of Case CS-80-A or CS-80-C. The top contains the audio control, the relay control†, two receiver tuning controls, four oscillator plate coil tuning screws, the channel shifter release button, and sockets for the four receiver crystals. *(See fig. 2-1.)*

(5) CRYSTAL UNIT CR-1/A.

(a) The fundamental frequency of each crystal unit appears on the crystal nameplate.

(b) Receiver and transmitter crystals are mechanically interchangeable but differ in frequency due to the receiver intermediate frequency of 12 megacycles.

(c) Crystal Unit CR-1/A will operate satisfactorily in any ambient temperature within the limits —40°C and +50°C. (—30°F and +122°F.)

Note

Crystal Unit DC-11A may also be used.

c. RECTIFIER RA-62-B OR RA-62-C.

(1) Rectifier RA-62-B or RA-62-C is located in the right-hand compartment of Chest CH-172-A or CH-172-B but is not secured to the chest as it must be removed for operation.

(2) Rectifier RA-62-B or RA-62-C is a self-contained unit used to furnish operating power for the transmitter-receiver assembly. All controls and receptacles are mounted on the lower front control panel. The receptacles and controls, from left to right are as follows: receptacle for 110/220-volt single phase, 40/60-cycle a-c input which is a straight plug in Rectifier RA-62-B and a twist lock plug in Rectifier RA-62-C; a voltage selector switch with taps for input voltages 105, 115, 125, 210, 230 and 250 volts; a power "ON-OFF" switch; and a six-prong d-c output receptacle. Also located on the control panel, at the left of the power "ON-OFF" switch, is a double-pole hinged-type main fuse container. The upper front panel is remov by taking out 6 flat-head screws which secure it to top cover. A "SPARE FUSE" container with 3-amp 250-volt spare fuses is mounted on the outside of removable front panel.

(3) Tubes for rectifying the a-c input voltage the required three d-c output voltages are two recti tubes JAN-5U4G (for plate supply), one rectifier tu JAN-6X5GT (for bias supply), and one magnesi copper sulphide rectifier, type 1S36B7 (for hea supply).

(4) The 25-foot line cord for connecting the re fier unit to the a-c power source is contained, with rectifier unit, in Chest CH-172-A or (CH-172B).

d. ANTENNA AN-94-A, AN-94-B OR AN-9 AND CORD CD-950-A.

(1) Antenna AN-94-A, AN-94-B or AN-94-C used with Radio Set SCR-624-A or Radio Set SCR-62 and is packed with Cord CD-950-A in Chest CH-17 or Chest CH-173-B.

(2) The antenna is a J-type antenna with a lo (radiator) section and a short (matching) secti mounted in a base for connection to Antenna M MA-7-A. The long and short sections of the anter are telescopic for adjusting the length to accommod the transmitting frequency. On one end of Cord C 950-A is a small straight plug for connection to receptacle in the base of the antenna, and on other end is a large straight plug for connection to transmitter-receiver assembly.

(3) The extended length of Antenna AN-94-A 70-3/4 inches and the collapsed length is 26-3/8 inch

(4) Antenna AN-94-C is electrically interchan able with Antenna AN-94-A or AN-94-B and is pack with Cord CD-950-A in Chest CH-172-B. Antenna A 94-C is used with Radio Set SCR-624-B.

(5) The radiator element of Antenna AN-94-C 22-1/2 inches long when extended and 17-7/8 incl long when collapsed.

e. ANTENNA AN-188 AND CORD CD-1333.

(1) Antenna AN-188 is used with later models Radio Set SCR-624-B and is packed with Cord C 1333 in Chest CH-173-B.

(2) The antenna is a broadband coaxial type ra ator with the lower end of the 3-inch diameter slee designed to engage Antenna Mast MA-7-A. Cord C 1333 is provided with Plug PL-259 on one end for co nection to the receptacle in the base of the antenna, a with a large right-angle Plug PL-Q170 on the other e for connection to the transmitter-receiver assembly.

(3) Antenna AN-188 is mechanically interchan able and offers improved electrical characteristics o Antenna AN-94-A, AN-94-B, or AN-94-C.

* The "GAIN" control has been eliminated on later models Radio Transmitter BC-625-A and all models of Radio Tra mitter BC-625-AM.

† The relay control has been replaced by the squelched con on Radio Receiver BC-624-C.

f. ANTENNA MAST MA-7-A.

(1) Antenna Mast MA-7-A is contained in a strap crate and two boxes. It is tubular plywood mast, 50 feet high, used to support Antenna AN-94-A, AN-94-B, AN-94-C or AN-188.

(2) The mast sections, with a boom section, are packed in the strap crate. There are five 10-foot 10-inch sections, one 4-foot 8-inch section, and four coupling sleeve assemblies. Clamped to one of the long mast sections is a digging bar while in another long section are four anchors.

(3) The stays box contains all other accessories and tools required for assembly and erection of the mast (refer to par. 2*a*, this sec. for a list of items contained in the stays box).

(4) The spare parts box contains items used only for replacement and repair purposes.

g. CONTROL BOXES BC-1175-A, BC-1171-A, BC-1176-A, BC-1312, BC-1313 AND BC-1314.

(1) Only three control boxes are used in any one installation. Control Boxes BC-1175-A, BC-1171-A, and BC-1176-A (these contain no volume control), are furnished with Radio Set SCR-624-A while the last three Control Boxes BC1312, BC-1313 and BC-1314 (these contain a volume control and a socket) are furnished with Radio Set SCR-624-B. They provide complete control of communication functions.

(2) The control boxes are packed for transportation in three compartments of the chest.

(3) Control Box BC-1175-A is used for master control and channel selection at the station location for Radio Set SCR-624-A. In use, it is mounted directly to the center receptacle of the transmitter-receiver assembly. Control Box BC-1312 replaces Control Box BC-1175-A in Radio Set SCR-624-B installation.

(4) Control Box BC-1171-A provides the send-receive control and channel selection from a remote point up to a maximum of 500 feet from the station or Radio Set SCR-624-A, while Control Box BC-1314 performs a similar function for Radio Set SCR-624-B.

(5) Control Box BC-1176-A provides a send-receive control from a remote point up to a maximum of two miles over telephone lines for Radio Set SCR-624-A. Control Box BC-1313 is used as a replacement for Control Box BC-1176-A in Radio Set SCR-624-B.

(6) The control boxes also provide connection for land-phone communications between any two of the three locations, utilizing Telephone EE-8-A or EE-8-B.

h. LOUDSPEAKER LS-10-A.—Loudspeaker LS-10-A, LS-10-B, or LS-10C is located underneath the three control boxes in the left rear of Chest CH-173-A or CH-173-B. The loudspeaker is a self-contained unit, which has an amplifier and rectifier. Loudspeaker LS-10-A has a leather handle, LS-10-B has a metal handle and LS-10-C has no handle.

SECTION II
INSTALLATION AND ADJUSTMENT

1. PRE-TRANSPORTATION CHECK.

Radio Set SCR-624-A or SCR-624-B is packed so that it is easily transported by air. Prior to transportation, take precautions to see that the equipment is in proper operating condition as it is necessary that there be no delay in establishing communication. Also prior to transportation, perform the checks listed below.

a. EQUIPMENT CHECK.—Check that each chest and box contains the proper equipment as listed in section I, paragraphs 2 and 3.

Note

Two Batteries BA-30 should be in place in Telephone EE-8-A or EE-8-B.

b. CHECK OF POWER UNIT PE-75-D.—If the auxiliary source of a-c power, the gasoline driven generator Power Unit PE-75-D, is to be used, see that there is sufficient fuel for the gasoline motor.

c. BENCH CHECK FOR RADIO SET SCR-624-A OR SCR-624-B.

(1) USING TEST EQUIPMENT IE-19-(*).

Note

Radio Set SCR-624-A or SCR-624-B is normally shipped from factory with all vacuum tubes installed. When exceptions occur, install the tubes according to the directions given in section V, paragraph 5*a*(1).

(a) Place the transmitter-receiver assembly on the test bench.

(b) Loosen the Dzus fasteners on the rack covers, raise the covers, and slide them away from the center.

(c) Connect Control Box BC-1175-A or BC-1312 to the 18-contact socket on the rack.

(d) Connect Rectifier RA-62-B or RA-62-C to Power Unit PE-75-D or to a 40- to 60-cycle, 100- to 130-volt or 200- to 260-volt source of a-c power, if available.

(e) Connect Rectifier Unit RA-62-B or RA-62-C to the 12-contact socket on Rack FT-244-A by Cord CD-809-A.

(f) Set the voltage selector switch on the rectifier to the proper input voltage.

Note

Depress the small detent button at the top of the voltage switch as the switch is turned in order to change from the low voltage to the high voltage side.

(g) Place the "LOCAL-REMOTE" switch on the control box in the "LOCAL" position.

(h) Place the "ON-OFF" switch on the rectifier unit in the "ON" position.

(i) Place the "SEND-REC" switch at "SEND" when using Radio Set SCR-624-B, or push the "PRESS-TO-TALK" button when using Radio Set SCR-624-A. These controls are located on the control boxes.

(j) Select channel "A" by means of the "A-B-C-D-CHANNEL" switch on the control box. The top channel slides on both transmitter and receiver frequency shifter assemblies will be actuated. If the shifter mechanism does not operate when channel "A" is selected, press the channel release button 426 in Rack FT-244-A because the motor may be stopped on an open contact position.

(k) Make a similar check for channels "B," "C," and "D."

(l) Connect Antenna AN-94-A, AN-94-B, or AN-94-C to Socket SO-153 on the rack by means of Cord CD-950-A, or connect Antenna AN-198 to Socket SO-153 by means of Cord CD-1333. Insert the proper crystals for the pre-tuned channels in the transmitter. (Refer to sec. V, par. 9*a*(2).) Select channel "A" on the control box.

(m) Set up Field Strength Meter I-95-(*) and extend the antenna on the meter to the desired length, depending on the strength of the signal. Turn the "ON-OFF" switch on the meter to "ON." Adjust the "ZERO ADJ." control so that the "RELATIVE FIELD STRENGTH" meter on the field strength meter reaches zero. Set the "TUNING" dial on the field strength meter to the frequency of the transmitter and adjust the dial for a maximum reading on the "RELATIVE FIELD STRENGTH" meter.

(n) Connect a microphone to the proper terminal and speak into the microphone. There should be a slight increase in the reading of the indicating meter on Field Strength Meter I-95-(*), indicating modulation.

(o) Do not change the setting of the transmitter "GAIN" control if it is locked with glyptal or with a locking nut. If the control is not locked, advance, if necessary, to secure modulation.

Note

The "GAIN" control has been eliminated on later models of the radio transmitter.

(p) Repeat step (11) above on channels "B," "C," and "D." If any channel operates improperly or if the channel frequencies have to be changed, retune in accordance with the instructions in section V, 9*a*.

* Refers to any issue.

(q) Place crystals of the proper operating quency in the channels to be used in the receiver. (R to sec. V, par. 9*d*(3)*(b)*.)

(r) Select channel "A" on the control box.

(s) Place the "SEND-REC-SEND" switch Control Box BC-1312 in the "REC" position. Con Box BC-1175-A is in the receive position when "PRESS-TO-TALK" button is not depressed. Con a head set to the proper audio output.

(t) Set the receiver "AUDIO" control (236) the "RELAY" control (237) to their maximum cl wise position.

(u) With no signal applied, turn the "RELA control (237) counterclockwise until there is a sl cut off of the signal.

(v) Return the "RELAY" control (237) to maximum clockwise position. Apply a small sig of proper frequency from Signal Generator I-13 through Cord CD-477 to Socket SO-153 on Rack 244-A. The signal should be heard in the head Repeat this step on channels "B," "C," and "D."

(w) If proper operation of any channel is obtained or if the frequencies are to be changed, re in accordance with the instruction in sec. V, par. 9.

(2) USING TEST EQUIPMENT IE-36.

(a) Place the transmitter-receiver assembly the test bench.

(b) Loosen the Dzus fasteners on Rack 244-A, raise the covers slightly, and slide them a from the center.

(c) Plug Control Unit BC-1303 into the contact socket on the rack.

(d) Connect Rectifier RA-62-B or RA-62-(the 12-contact socket on Rack FT-244-A by Cord 809-A.

(e) Turn the "OFF A-B-C-D" switch on Control Unit BC-1303 to "A." The top channel sl on both transmitter and receiver frequency shifte semblies will be actuated.

(f) If the shifter mechanism does not ope when channel "A" is selected, press channel rel button 426 on the rack because the motor may stopped on an open contact position.

(g) Make a similar check for channels "B," and "D."

(h) Plug Phantom Antenna A-29 into So SO-153 on the rack.

(i) Insert the proper crystals or the pre-t channels in the transmitter. (Refer to sec. V, 9*a*(2)*(b)*.)

(j) Turn the "OFF A-B-C-D" switch on the trol unit to "A."

(k) Throw the toggle switch on control un "T." The lamp in the phantom antenna will light.

(l) Plug Microphone T-34 or T-44 into CD-1169. Plug Cord CD-1169 into the control uni

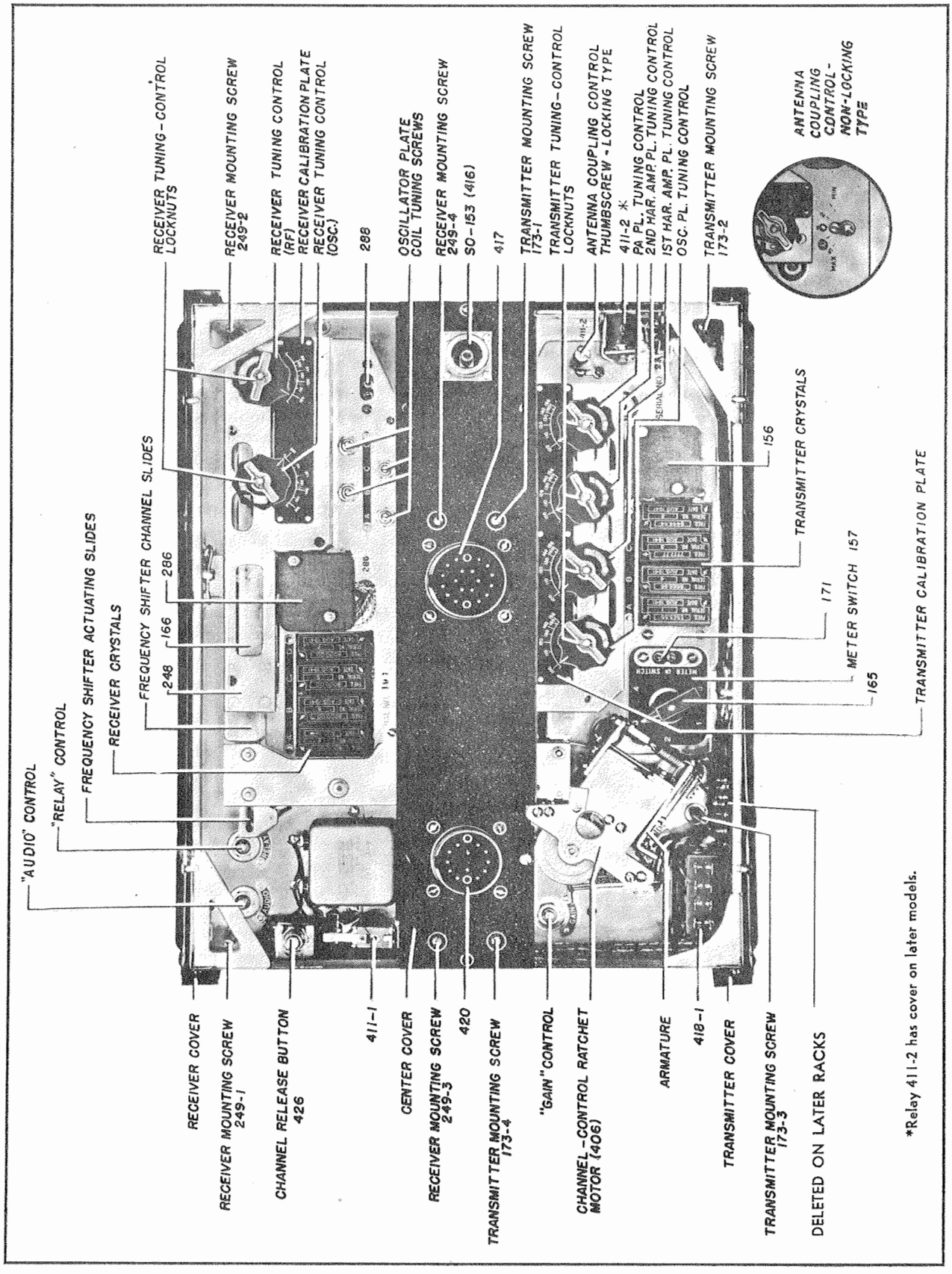
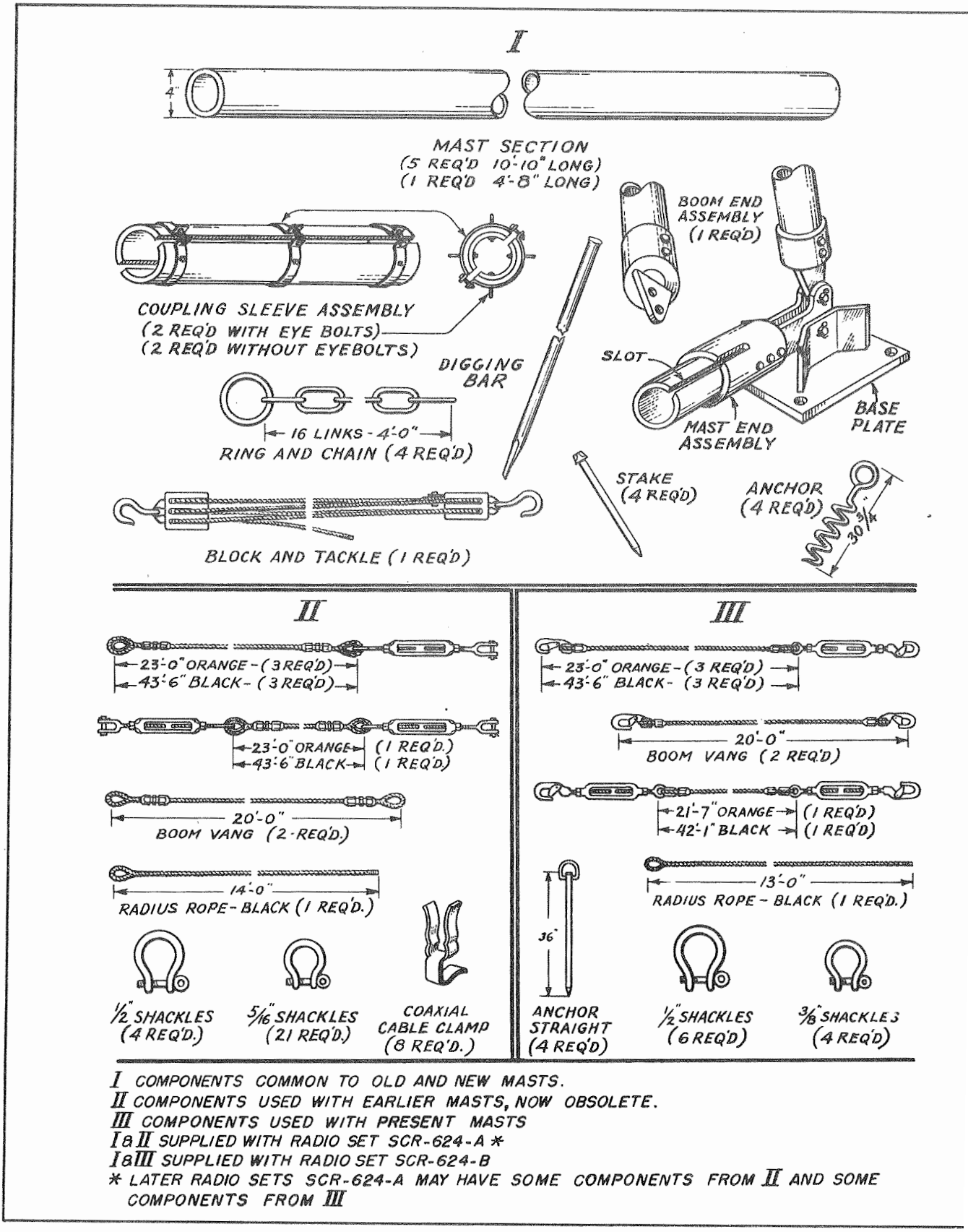


Figure 2-1. Transmitter-Receiver Assembly—Covers Open, Top View



I COMPONENTS COMMON TO OLD AND NEW MASTS.
II COMPONENTS USED WITH EARLIER MASTS, NOW OBSOLETE.
III COMPONENTS USED WITH PRESENT MASTS
I & II SUPPLIED WITH RADIO SET SCR-624-A *
I & III SUPPLIED WITH RADIO SET SCR-624-B
* LATER RADIO SETS SCR-624-A MAY HAVE SOME COMPONENTS FROM II AND SOME COMPONENTS FROM III

Figure 2-2. Antenna Mast MA-7-A—Components

Microphone T-17 is used, plug it directly into the control unit. Speak into the microphone. The lamp in the phantom antenna should increase in brilliance, indicating modulation.

(m) Do not change the position of the transmitter "GAIN" control if it is locked with glyptal or with a locking nut. If it is not locked, advance if necessary to secure modulation.

Note

The "GAIN" control has been eliminated on later models of the transmitter.

(n) Repeat step *(e)* on channels "B," "C," and "D." If proper operation on any channel is not obtained, retune in accordance with the instructions in sec. V, par. *9a.*

(o) Place crystals of the proper operating frequency in the channels to be used in the receiver. (Refer to sec. V, par. *9d*(3).).

(p) Insert the probe end of Cord CD-1170 in the "ANT" jack on the control unit and clip the alligator clip on the other end of the cord to the center pin of socket 416 on the rack.

(q) Place the "OFF A-B-C-D" switch of the control unit in position "A."

(r) Throw the toggle switch on Control Unit BC-1303 to "R." Plug Head Set HS-33 or equivalent into the jack marked "TEL" on the control unit.

(s) Set the receiver "AUDIO" control (236) and the "RELAY" control (237) to their maximum clockwise position.

(t) With no signal applied, turn the "RELAY" control (237) counterclockwise until there is a sharp cut off of signal.

(u) Return the "RELAY" control (237) to the maximum clockwise position. Turn the "SIG GEN" switch on Control Unit BC-1303 to the "ON" position. A tone should be heard in the head set. Repeat this step for channels "B," "C" and "D."

(v) If any channel operates improperly or if the frequencies are to be changed, retune the equipment according to the instructions given in sec. V, *9d.*

2. INSTALLATION.

a. CHOICE OF SITE.—In choosing a site for erection of Radio Set SCR-624-A, or SCR-624-B, make certain that the site is not over 500 feet from a telephone line (if telephone line connection is required), and not over 50 feet from an a-c single phase power source of 40 to 60 cycles at 100 to 130 volts or 200 to 260 volts (Power Unit PE-75-D may be used when no power line is available). Select a well cleared area, sufficiently large for assembly and erection of the antenna mast *(see fig. 2-3)*; and one that is fairly level, with a slope not exceeding one foot (rise or fall) in seven feet distance.

b. ARRANGEMENT OF EQUIPMENT ON SITE.

(1) Thoroughly clear an area approximately 26 feet in diameter.

(2) Place the stays box and spare parts box near the center of this cleared area. In one direction from the center of the cleared area provide additional cleared space for a distance of approximately 60 feet in length. In width, gradually taper it from 26 feet at center location to 4 to 6 feet at the far end of the area. *(See fig. 2-3.)*

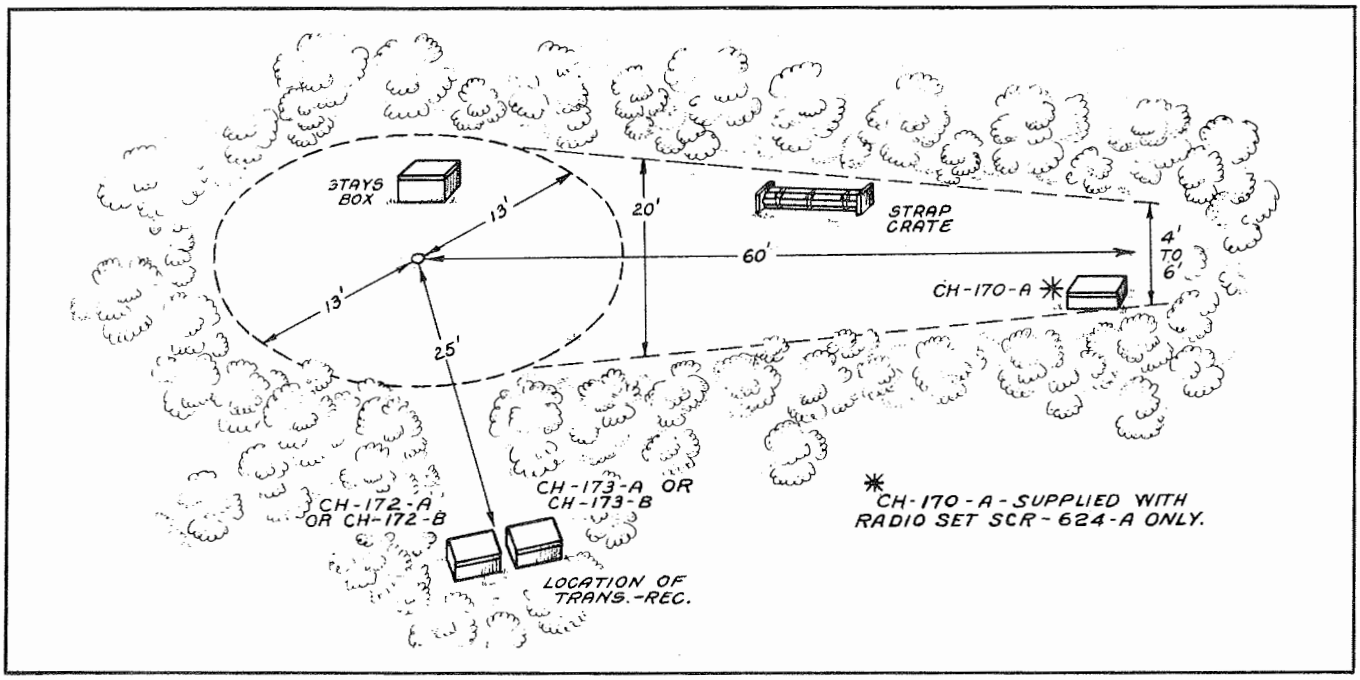


Figure 2-3. Antenna Mast MA-7-A—Location and Assembly Size

(3) In a cleared space and within 25 feet in any direction from the antenna base, place Chest CH-172-A, or CH-172-B and Chest CH-173-A or CH-173-B. Unpack the chests, boxes, and crate, and visually inspect components for possible damage during transportation. Check to see that there are two Batteries BA-30 installed in Telephone EE-8-A or EE-8-B.

c. ASSEMBLY OF ANTENNA MAST MA-7-A.

(1) To erect the plywood mast and antenna and adjust the antenna *(see figs. 2-5)*, proceed as follows: *(See figs 2-5 and 2-6.)* Estimate the approximate center of the 26-foot diameter cleared space. Drive a stake lightly into the ground at this point. Place the loop end of the radius rope *(see fig. 2-2)* over the stake, extending it in the direction where the 60-foot clearance has been provided. At the far end of the radius rope locate the position of the first anchor. *(See fig. 2-2.)* Take the anchor from the plywood mast section in which it has been transported. Two sets of anchors are furnished: one set resembling corkscrews for use in soft soil, the other set consisting of straight rods suitable for hard or frozen soil. Select the anchors required and place the duplicate set in the spare parts chest. At the end

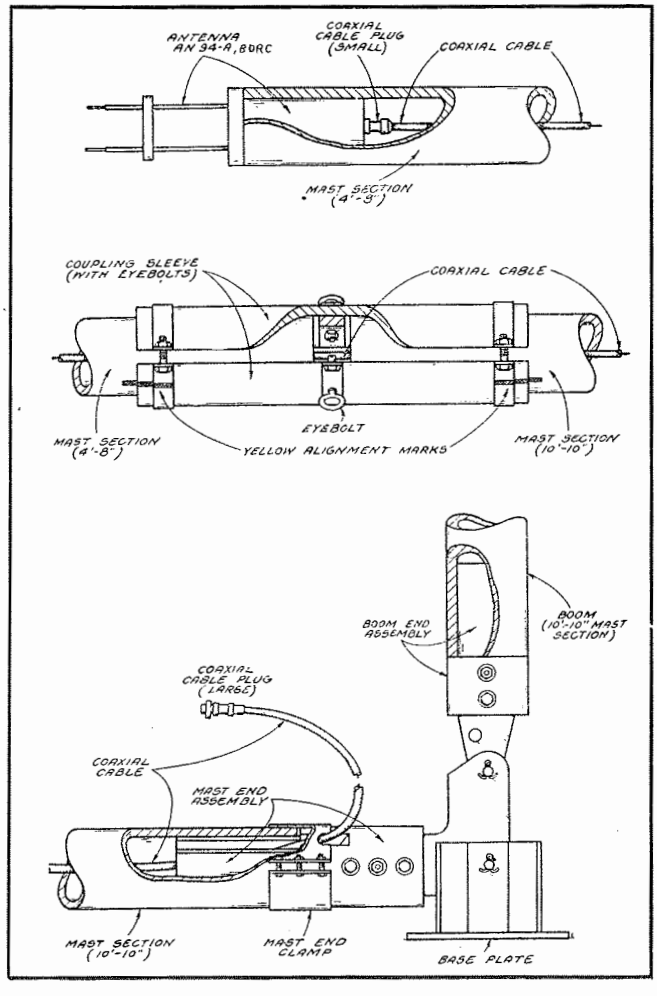


Figure 2-4A. Antenna Mast MA-7-A—Assembly Details

of the radius rope, turn the anchor down into th ground until its top ring projects about 2 inches abo the ground. Using the radius rope, find the prop location for the second corkscrew anchor, directly o posite the first anchor, and place it. In the same manne locate and place the third and fourth anchors from sid to-side at right angles to the first two. Remove the ce ter stake and center the base plate over the hole in th ground from which this stake was removed. Using th stake and the three other stakes from the stays box, pe manently secure the base plate to the ground. Dri the stakes, through the holes in the base plate, into th ground to their full length. Be sure that the base pla assembly is so positioned that its mast-end projectio *(see figs. 2-4A and 2-5)* is horizontal and in the dire tion of the mast clearance space where the first anch was placed.

(2) Lay out on the ground in the following orde beginning at the base plate the mast section and cou lings from the strap crate.

(a) 1 mast section, 10 feet 10 inches.
(b) 1 coupling sleeve assembly (plain).
(c) 1 mast section, 10 feet 10 inches.
(d) 1 coupling sleeve, with eyebolts.
(e) 1 mast section, 10 feet 10 inches.
(f) 1 coupling sleeve (plain).
(g) 1 mast section, 10 feet 10 inches.
(h) 1 coupling sleeve, with eyebolts.
(i) 1 mast section, 4 feet 8 inches.

(3) Assemble the mast sections as follows:

(a) Take the mast-bottom clamp from the sta box and place it on the end of the first mast secti nearest the base plate. The notch of the clamp must away from the mast section and toward the base plate

(b) If Antenna AN-94-A, AN-94-B, or AN-94 is to be used, take Cord CD-950-A from Chest C 170-A or CH-173-B. If Antenna AN-188 is to be us take Cord CD-1333 from Chest CH-173-B. Thread t

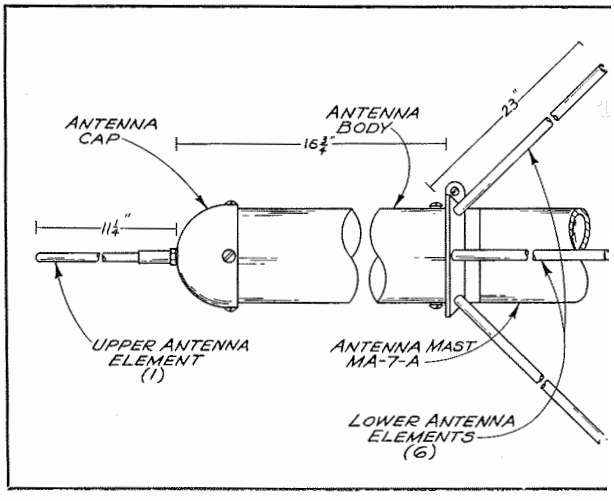


Figure 2-4B. Antenna AN-188—Assembled

small straight-plug-end of the cord, beginning at the base-plate-end, through the mast sections and couplings (without fitting the sections together), as laid out in the above order.

(c) If Antenna AN-94-A, AN-94-B, or AN-94-C is to be used, take it from the chest. Be careful to avoid damage to the antenna in handling and assembly. Couple the small straight plug of the coaxial cable to the receptacle in the base of Antenna AN-94-A, AN-94-B, or AN-94-C. *(See fig. 2-4, A.)*

(d) Insert the base of Antenna AN-94-A, AN-94-B, or AN-94-C into the outer mast end of the outer mast (4-foot 8-inch) section. *(See fig. 2-4, A.)* This antenna must be adjusted following table 2-1 before the mast is erected.

(e) If Antenna AN-188 *(see fig. 2-4, B)* is to be used, leave it in Chest CH-173-B until Antenna Mast MA-7-A is ready to be erected because the lower antenna elements might be damaged on the ground.

(f) Fit the mast sections and couplings together in the following manner:

1. Insert the remaining end of the 4-foot 8-inch mast section into the coupling sleeve assembly which has eyebolts, making sure that the yellow marks are in line and that the coupling is on the mast section down to its center hub. [A snug fit will be obtained when the yellow line on the mast is adjacent to the yellow mark on the coupling *(see fig. 2-4, A).*]

2. Insert the end of the outer 10-foot 10-inch mast section into the coupling as far as possible noting the yellow line alignment as described for the preceding mast section.

3. Continue in this manner for all remaining mast sections. Then securely tighten all coupling clamps of the coupling sleeve assemblies but do not tighten the mast end clamp *(see fig. 2-4, A.)*

Note

The yellow marks on the mast sections and coupling sleeve assemblies must align to insure proper position of eyebolts on the coupling sleeves with respect to the anchors, thereby avoiding the possibility of twisted or tangled stays in the erection of the mast.

(g) Place the assembled mast over the mast end assembly of the base plate. Make sure that the notch of the clamp and the slot of the mast end assembly align to permit bringing the coaxial cable out of the mast through the notch of the clamp. Securely tighten the mast end clamp.

(h) Place the remaining 10-foot 10-inch mast section on the boom fitting of the base plate, laying the section on top of the mast. Place the boom-end assembly into the other end of the mast section. *(See fig. 2-4, A.)*

(i) Take the four black stay ropes and four 5/16-inch shackles from the stays box. Attach the snap fasteners of the stay ropes to each of the four eyebolts of the outer mast coupling sleeve by means of the 3/8-inch shackles.

(j) Take the four orange stay ropes and four 3/8-inch shackles from the stays box, and couple to the innermost (center) coupling sleeve in the same manner. Make sure that the black and orange stays (with turnbuckles on both ends) are used on the boom anchor side of the mast. These stays with an additional turnbuckle permit greater tightening of the stays attached to the boom anchor.

(k) Take the two guy ropes (boom vang ropes) from the stays box and attach to the free end of the boom with snap fasteners.

(l) Take four large shackles (1/2 inch) and the four ring and chain assemblies from the stays box. By

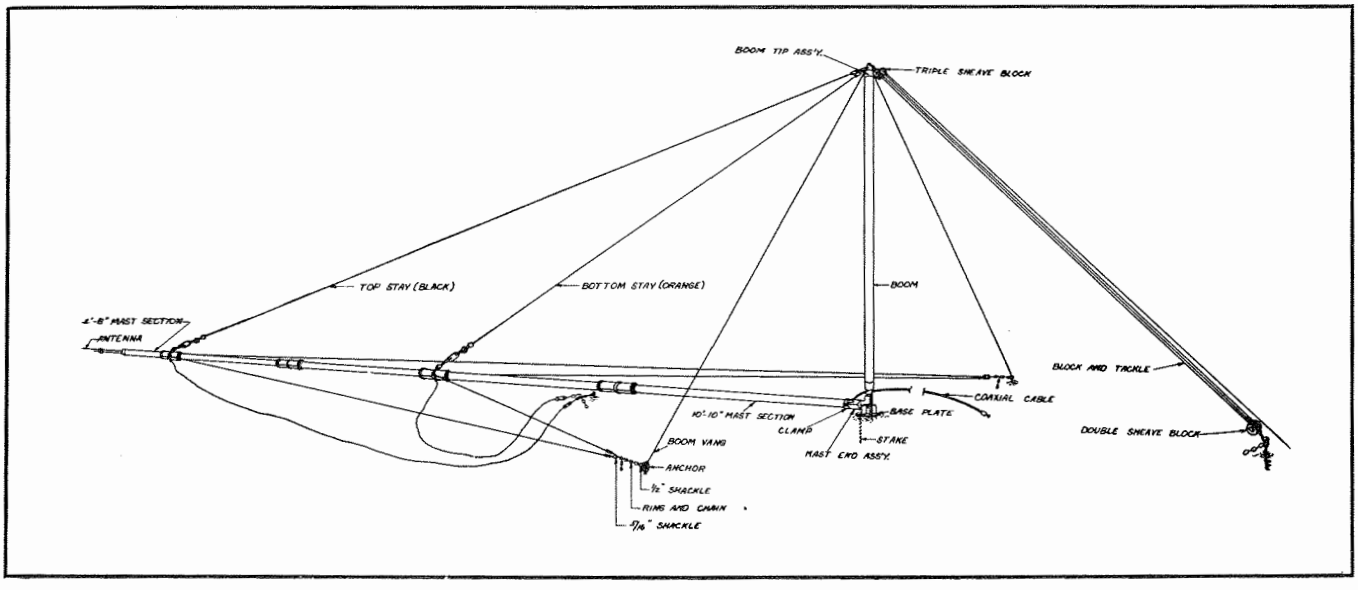


Figure 2-5. Antenna Mast MA-7-A—Assembled

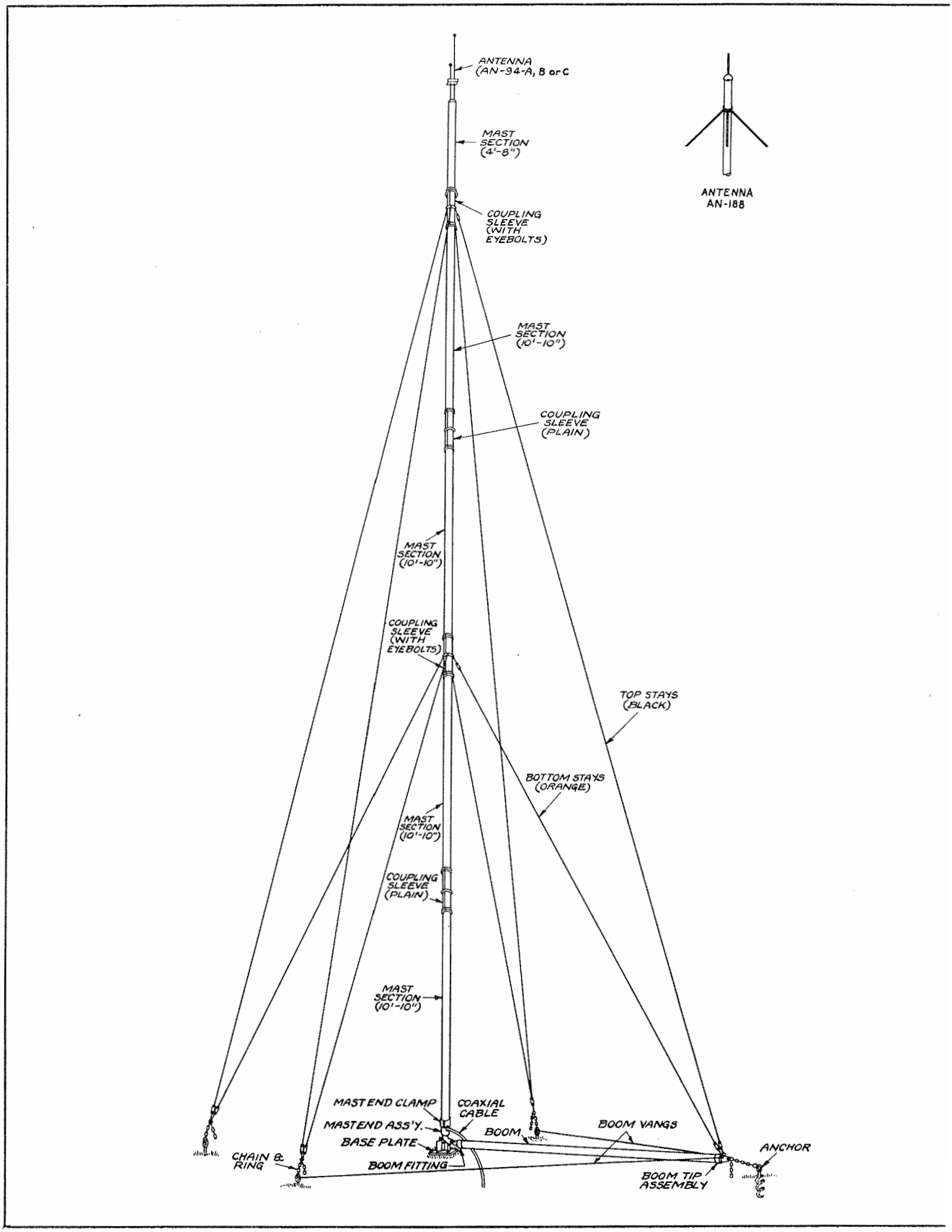


Figure 2-6. Antenna Mast MA-7-A—Erected

means of one of these shackles attach the ring of the ring and chain, one each, to each anchor. With the exception of the anchor to which the boom will be attached, the stays, one long (black) and one short (orange) are attached to the other three anchors. Take one long stay and one short stay, the ones leading from the mast in the direction of the appropriate anchor, and attach them to the chain on the anchor by means of a snap fastener. Estimate the required length of chain needed, placing the shackle in the link required to give that length. Attach the remaining long and short stays leading from the eyebolts on the top-side of the mast to the boom tip fitting by means of snap fasteners using the end hole of the boom tip. The boom vang ropes are also attached here. The other hole in the boom tip is for attaching the boom end to the chain in the boom anchor and for the block and tackle hook. Fasten the free ends of the boom vang ropes, stretching them tightly, to the side anchors by means of a snap fastener.

(m) Take the block and tackle from the stays box. Hook the triple-sheave block through the top of the boom anchor. Make sure that the ring and chain are ready to attach to the end of the boom when the mast is elevated. Antenna AN-94-A, AN-94-B, or AN-94-C must be adjusted for proper transmitting conditions *(see fig. 2-4 and table 2-1)*. If Antenna AN-188 is used it must now be assembled, see paragraph 2*c* this section.

d. ADJUSTMENT OF ANTENNA AN-94-A, AN-94-B, OR AN-94-C.—To transmit efficiently, adjust the telescopic sections of Antenna AN-94-A, AN-94-B or AN-94-C according to the following tables:

TABLE 2-1. ADJUSTMENT OF ANTENNAS AN-94-A, AN-94-B, or AN-94-C FOR OPTIMUM EFFICIENCY.

ANTENNA AN-94-A

Transmitting Frequency	*Short Element*	*Long Element*
100/125 mcs	22-1/2 inches	70-1/2 inches
114/140 mcs	19-1/2 inches	61-1/2 inches
125/156 mcs	17-1/2 inches	53-1/2 inches

ANTENNA AN-94-B OR AN-94-C

Transmitting Frequency	*Short Element (AN-94-B or AN-94-C)*	*Long Element AN-94-B only)*	*Long Element (AN-94-C only)*
100/125 mcs	Sliding section fully extended.	Section extended to engraved figure "3".	Middle section fully extended. Small section extended to engraved figure "3".
114/140 mcs	Sliding section extended to engraved figure "2".	Section extended to engraved figure "2".	Middle section fully extended. Small section extended to engraved figure "2".
125/156 mcs	Sliding section fully telescoped.	Section fully extended to engraved figure "1".	Middle section fully extended. Small section extended to engraved figure "1".

e. ASSEMBLY OF ANTENNA AN-188.—Remove the disassembled parts of Antenna AN-188 from the lid of Chest CH-173-B and assemble them. The short element is the upper element which screws into the antenna cap. The other six identical elements are the lower elements which screw into six holes on a ring around the lower portion of the antenna body. *(See fig. 2-4, B.)*

Note

Antenna AN-188 requires no adjustment.

f. ERECTION OF ANTENNA MAST MA-7-A.

(1) If Antenna AN-94-A, AN-94-B, or AN-94-C is used it should be inserted into the top of the mast according to subparagraph *c* and adjusted according to subparagraph *d*. The mast and antenna should now be erected by use of the block and tackle.

(2) If Antenna AN-188 is used, Antenna Mast MA-7-A should be slightly elevated off the ground. Then couple the small straight plug of the coaxial cable to the receptacle in the base of Antenna AN-188. Insert the base of the antenna into the outer mast end of the outer mast section.

CAUTION

Do not lay r-f Cord CD-950-A or Cord CD-1333 where it will be stepped on or run over by any vehicle. Such treatment will increase r-f losses in the line and reduce the power output.

g. INTERCONNECTION OF ASSEMBLIES.

(1) Connect the equipment as shown in figures 2-7 or 2-8. Inasmuch as the length of Cord CD-950-A or Cord CD-1333 from the antenna mast is only 25 feet, set up the transmitter-receiver assembly a little less than 25 feet from the mast to allow for flexibility.

(2) Place Chest CH-173-A or CH-173-B on any conveniently located table or on the ground. Place Chest CH-172-A or CH-172-B adjacent to and to the left of Chest CH-173-A as the connecting cable (Cord CD-809-A) from Rectifier RA-62-B to Rack FT-244-A is only 6 feet long. Place Rectifier RA-62-B or RA-62-C, 25 feet or less from the nearest a-c power supply source because the power line cord is only 25 feet long. If remote operation up to two miles is desired, place the chest within 500 feet of a telephone line if lines already set up are to be used, because the cable (Cord CD-810-A) is only 500 feet long. Now the equipment should be in such position that the sides of Chest CH-172-A or CD-172-B are accessible, to permit connection to and reeling of the 500-foot cable.

(3) Remove Rectifier RA-62-B or RA-62-C from Chest CH-172-A or Chest CH-172-B and place it on a table or flat dry ground in front of the chest and with its control panel accessible. Remove Cord CD-809-A from Chest CH-173-A or CH-173-B. Place the 6-contact plug of the cord into the 6-contact receptacle on the rectifier control panel, and the 12-contact plug of the cord into the left top receptacle of Rack FT-244-A. Tighten both plugs by means of the knurled locking ring on the plug. If either of the plugs are loose, tighten the end ring with a spanner wrench from the set of special tools. *Do not connect the 25-foot power line cord before consulting paragraph 3, this section.*

(4) Remove Control Box BC-1175-A from Chest CH-173-A (or Control Box BC-1312 in the case of Radio Set SCR-624-B) and place it into the 18-contact (center) receptacle of Rack FT-244-A. Turn down tight by means of the large locking ring on the bottom of the control box. Connect the coaxial antenna transmission line (Cord CD-950-A or Cord CD-1333) into the remaining (right hand) receptacle of the rack.

(5) Remove the reel-end cover cap located on the back of Chest CH-172-A or CH-172-B. Unreel as much of the 500-foot cable (Cord CD-810-A) as may be needed. Turn the reel to such a position that two sides of the socket flange are vertical. Place the special plug of Cord CD-951-A in this receptacle, making certain that the locking edges of this special plug fully engage the notches in the chest and the flanges on the plug engage the reel socket, locking the reel to the chest while the plug is attached. Remove this when more or less cable is desired and to reel in the cable when the set is dismantled. Place the remaining plug of Cord CD-951-A into the 12-contact receptacle of Control Box BC-1175-A or BC-1312.

(6) At the free end of the 500-foot cable atta remote Control Box BC-1171-A or BC-1314 by inse ing the plug into the receptacle in the end of the cc trol box. If operation at a more remote point, up tc maximum distance of 2 miles, is necessary or desire connect the three terminals ("K," "COM.," "TEL.") Control Box BC-1171-A (or Control Box BC-1314 wh Radio Set SCR-624-B is used) to a three-wire telepho line. Connect these telephone lines at the remote po to the three terminals ("K," "COM.," "TEL.") of Cc trol Box BC-1176-A (or Control Box BC-1313 wh Radio Set SCR-624-B is used).

(7) To any two of the three control boxes conn Telephone EE-8-A or EE-8-B for line of radio commu cation by means of Cord *CD-1191. Connect termin L1 and L2 of the telephone to terminals "TEL." a "TEL." of remote Control Boxes BC-1171-A, BC-13 BC-1313 or BC-1176-A, but on master Control B BC-1175-A or BC-1312 connect the telephone to ter nals "TEL." and "COM." (the polarity is unimportan In a noisy location, use Chest Set TD-2 and Head HS-33 in place of the handset of Telephone EE-8-A EE-8-B. Loudspeaker LS-10-A, LS-10-B or LS-10-C m be used at any of the control locations. The telepho and loudspeaker may be used simultaneously if desir

3. ADJUSTMENTS.

a. Set the voltage selector switch on the cont panel of Rectifier RA-62-B or RA-62-C to the volta which is nearest that available at the point of operati

Note

In order to switch from the low voltage (105, 115, 125 volts) side to the high voltage (210, 230, 250 volts) side, press the small detent button at the top of the voltage selector switch in as the switch is turned.

b. After the voltage selector switch is set, be sure t the "ON-OFF" switch on the rectifier is in the "OF position and connect the a-c power line to the po receptacle on the rectifier.

c. If the operating frequencies have to be chang retune the receiver and the transmitter according to directions given in paragraph 9*a*, section V.

4. AFTER-INSTALLATION TESTS.

a. Turn the "ON-OFF" switch on the rectifier to "ON" position.

b. Select the operating frequency by means of "A-B-C-D-CHANNEL" switch on the control box a in cooperation with a similar station, send and rec test signals.

c. At the conclusion of the tests, turn the "ON-O switch on the rectifier to the "OFF" position.

* Cord CD-1191 is used with the control boxes of the 13 series Cord CD-1147 is used with the control boxes of the 11 series

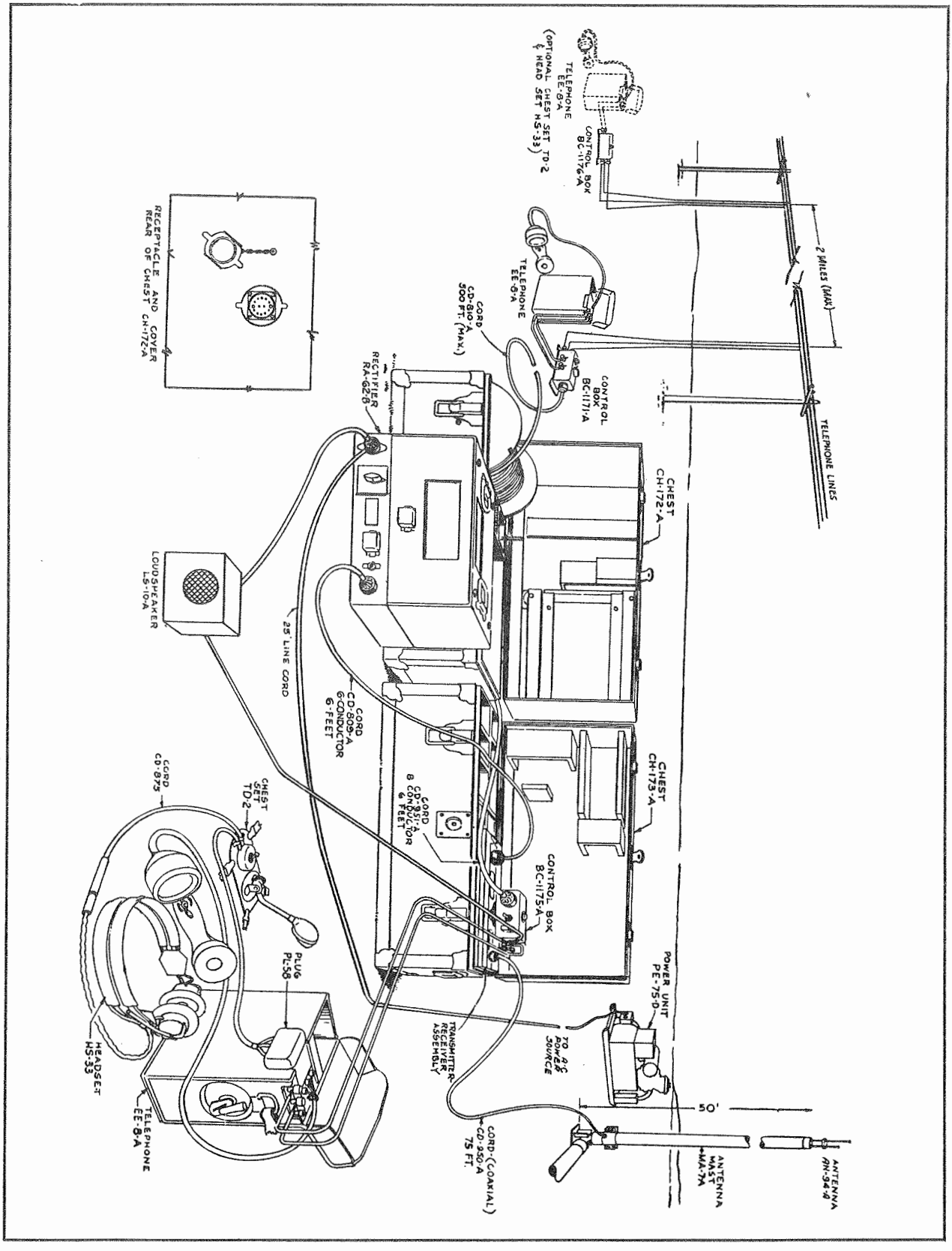
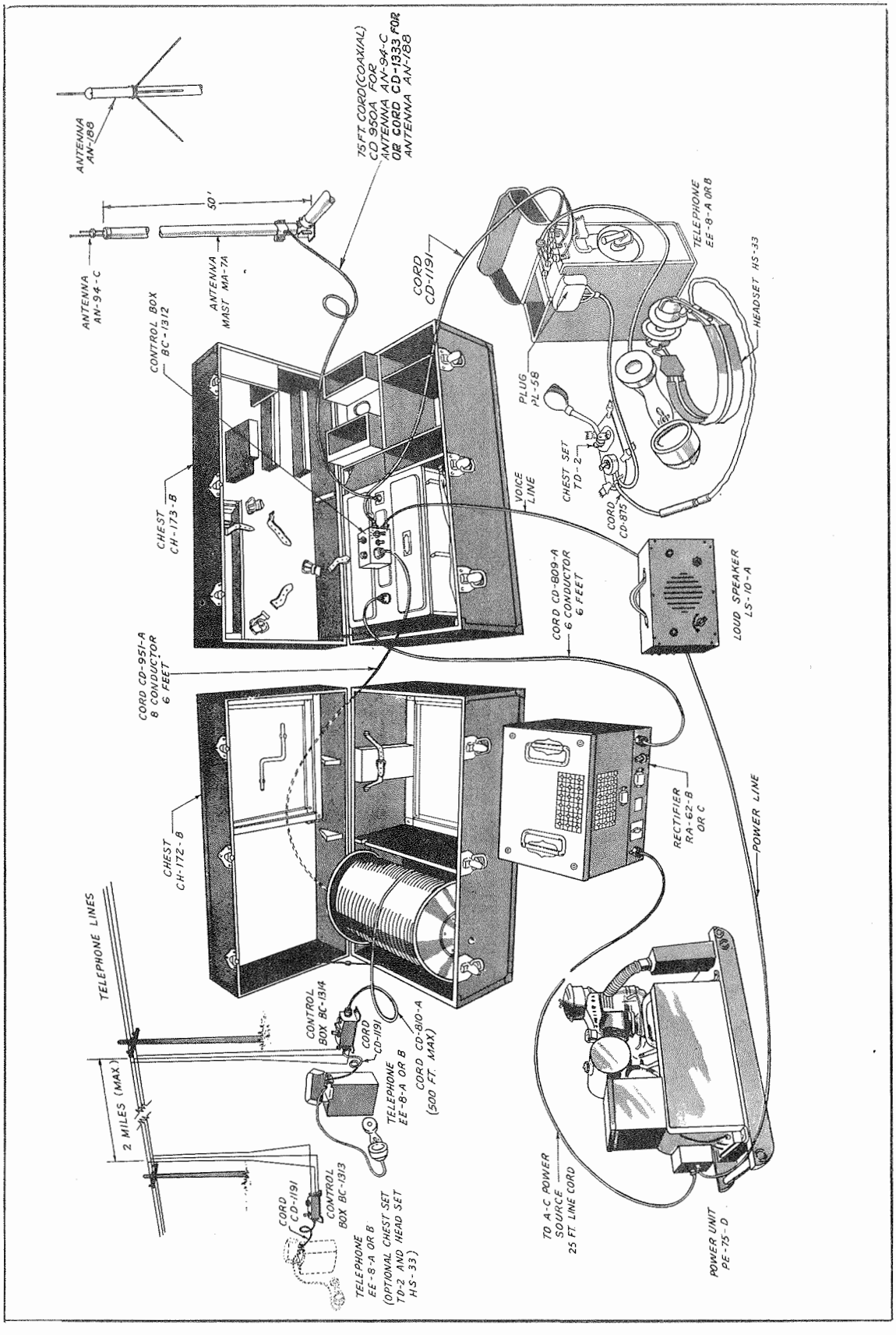


Figure 2-7. Radio Set SCR-624-A—Installation


ANTENNA AN-188
75 FT. CORD (COAXIAL) CD 930A FOR ANTENNA AN-94-C OR CORD CD-1333 FOR ANTENNA AN-188
ANTENNA AN-94-C
50'
ANTENNA MAST MA-7A
CORD CD-1191
TELEPHONE EE-8-A OR B
HEADSET HS-33
CONTROL BOX BC-1312
PLUG PL-55
CHEST CH-173-B
CHEST SET TD-2
VOICE LINE
CORD CD-875
CORD CD-809-A 6 CONDUCTOR 6 FEET
LOUD SPEAKER LS-10-A
CORD CD-951-A 8 CONDUCTOR 6 FEET
CHEST CH-172-B
RECTIFIER RA-62-B OR C
POWER LINE
TELEPHONE LINES
2 MILES (MAX)
CONTROL BOX BC-1314
CORD CD-1191
TELEPHONE EE-8-A OR B
CORD CD-810-A (500 FT. MAX)
CORD CD-1191
CONTROL BOX BC-1313
TELEPHONE EE-8-A OR B (OPTIONAL CHEST SET TD-2 AND HEAD SET HS-33)
TO A-C POWER SOURCE 25 FT. LINE CORD
POWER UNIT PE-75-D

SECTION III
OPERATION

1. STARTING AND STOPPING THE EQUIPMENT.

a. To start the equipment, turn the "ON-OFF" switch on the control panel of Rectifier RA-62-B or RA-62-C to the "ON" position. This turns on both the rectifier and the transmitter-receiver assembly.

b. To stop the equipment, turn the "ON-OFF" switch on the control panel of the rectifier to the "OFF" position. This turns off both the rectifier and the transmitter-receiver assembly.

2. NORMAL OPERATION.

Note

Operation of this set is line of sight limited. Check that there are no large metal objects, mountains or other interfering objects between the transmitting and receiving antennas because communication may become difficult or impossible due to low signal strength or garbled reception.

a. USING CONTROL BOX BC-1175-A (USED WITH RADIO SET SCR-624-A).

(1) CHANNEL SELECTION.

(a) Set the "LOCAL-REMOTE" switch to "LOCAL."

(b) Set the "A-B-C-D-CHANNEL" switch to the desired channel.

(2) TRANSMISSION.

(a) Press the lever switch on the handset and the "PRESS TO TALK" button on the control box.

Note

If Chest Set TD-2 and Head Set HS-33 are used in place of the handset, use the "ON-OFF" switch on the chest piece instead of the lever switch on the handset.

(b) Speak into the handset, microphone or chest microphone.

(3) RECEPTION.

Note

Radio Set SCR-624-A or SCR-624-B is normally in the receive position when the power is turned on. The equipment will return to the receive position when the "PRESS TO TALK" button and the lever switch on the handset are released.

(a) Listen to a signal in the head set.

(b) Adjust the receiver output by turning the "AUDIO" control, located on Rack FT-244-A, with a screw driver.

b. USING CONTROL BOX BC-1312 (USED WITH RADIO SET SCR-624-B).

(1) CHANNEL SELECTION.

(a) Set the "LOCAL-REMOTE" switch to "LOCAL."

(b) Set the "A-B-C-D-CHANNEL" switch to the desired frequency.

(2) TRANSMISSION.

(a) Place the "SEND-REC.-SEND" switch in either the momentary "SEND" or the fixed "SEND" position.

(b) Press the lever switch on the handset or operate the "ON-OFF" switch on Chest Set TD-2 to the "ON" position, depending on whether the handset or the chest-set is being used.

(3) RECEPTION.

Note

The radio set is normally in the receive position when the power is turned on. The equipment returns to receive when the "SEND-REC.-SEND" switch is released from the momentary "SEND" position."

(a) Turn the "AUDIO" control on the radio receiver fully clockwise.

(b) Adjust the audio output by means of the "VOLUME" control on the control box.

c. USING CONTROL BOX BC-1171-A.

(1) CHANNEL SELECTION.

(a) Place the "LOCAL-REMOTE" switch on Control Box BC-1175-A in the "REMOTE" position.

(b) Set the "A-B-C-D-CHANNEL" switch on Control Box BC-1171-A to the desired frequency.

(2) TRANSMISSION.—To transmit using Control Box BC-1171-A, follow the instruction given in paragraph 2*a*(2), this section.

(3) RECEPTION.—To receive using Control Box BC-1171-A, follow the instruction given in paragraph 2*a*(3), this section.

d. USING CONTROL BOX BC-1314.

(1) CHANNEL SELECTION.

(a) Place the "LOCAL-REMOTE" switch on Control Box BC-1312 in the "REMOTE" position.

(b) Set the "A-D-C-D-CHANNEL" switch on Control Box BC-1314 to the desired frequency.

(2) TRANSMISSION.—To transmit using Control Box BC-1314, follow the instructions given in paragraph 2*b*(2), this section.

(3) RECEPTION.—To receive using Control Box BC-1314, follow the instructions given in paragraph 2*b*(3), this section.

e. USING CONTROL BOX BC-1176-A. (REMOTE.)

(1) CHANNEL SELECTION.—Channel selection is not possible at this remote control box.

(2) TRANSMISSION.—To transmit using Control Box BC-1176-A (Remote) follow the instructions given in paragraph 2*a*(2), this section.

(3) RECEPTION.—To receive using Control Box BC-1176-A (Remote), follow the instructions given in paragraph 2*a*(3), this section.

f. USING CONTROL BOX BC-1313.

(1) CHANNEL SELECTION.—Channel selection is not possible at this remote control box.

(2) TRANSMISSION.—To transmit using Control Box BC-1313, follow the instructions given in paragraph 2*b*(2), this section.

(3) RECEPTION.—To receive using Control Box BC-1313, follow instructions given in paragraph 2*b*(3), this section.

3. LAND-LINE (TELEPHONE) COMMUNICATION.

Remove the handset from the telephone case. Ring the station by turning the magneto crank. Listen for an answer. Press the lever switch on the handset. Speak into the microphone. Release the lever switch to listen.

4. DEFENSE AGAINST JAMMING.

a. GENERAL.—Jamming is the intentional generation by the enemy of radio signals designed to make friendly signals unreadable and to surprise and confuse the radio operators. The various types of jamming are described in section VI, paragraph 2.

b. PROCEDURE.—If bad interference is received and jamming is suspected, proceed as follows:

(1) Remove the antenna from the binding post of the receiver. If the noise level drops appreciably the interference is coming from outside the receiver. If th noise does not diminish there is something wrong wit the receiver.

(2) *Report jamming immediately to the command ing officer.*

(3) Use a noise limiter when available. If no lim iter is available turn the receiver gain up as high as i will go. To make this noise less hard on the ears put handkerchief between the ears and the head set or tur the head set around so it is facing away from the ears.

(4) Change to an alternate frequency and call sig if the primary frequency is badly jammed. Tune u quickly and accurately using a dummy antenna if one i available. If not, tune up at a reduced power.

(5) Generally C-W is the most difficult to jam Also try tone telegraph. When using radiophones us the phonetic alphabet and speak each word twice.

(6) Beware of fake messages slipped into the jam ming by the enemy. In case of doubt authenticate. Don allow the enemy to distract your attention with cor versation.

(7) Do not shut down. That is exactly what th enemy wants to happen, and it would let him kno that the jamming is effective. Practice, concentratio and persistence will help the operator to work throug jamming many times stronger than the desired signal.

5. DISASSEMBLY AFTER OPERATION.

If further communication is not desired and the i stallation is to be disassembled and repacked, obser the following cautions:

a. Detach the special plug in the receptacle in th rear of Chest CH-172-A or CH-172-B, reel in the e tended part of the 500-foot cable (Cord CD-810-A and place the locking cap over the receptacle to preve the reel from turning while in transit.

b. When replacing Rectifier RA-62-A or RA-62-B Chest CH-172-A or CH-172-B, make certain the bus ings on the bottom of the rectifier properly engage th spike on the shockmount cradle in the chest.

SECTION IV
THEORY OF OPERATION

1. GENERAL.

a. Radio Set SCR-624-A (or SCR-624-B) provides transmission or reception of amplitude-modulated r-f energy of any one of four crystal-controlled frequencies within the range of 100 to 156 megacycles. Only voice communication facilities are available.

b. The average power output of the transmitter is six to eight watts. The average sensitivity of the receiver 3 to 4 microvolts for a 10 decibel signal-to-noise ratio

c. Operation of Radio Transmitter BC-625-AM identical to the operation of Radio Transmitter B 625-A except that there is no slow release relay 130 Radio Transmitter BC-625-AM. There is no control the percentage modulation in some Radio Transmitt BC-625-AM in which a fixed attenuator circuit has placed the "GAIN" Control.

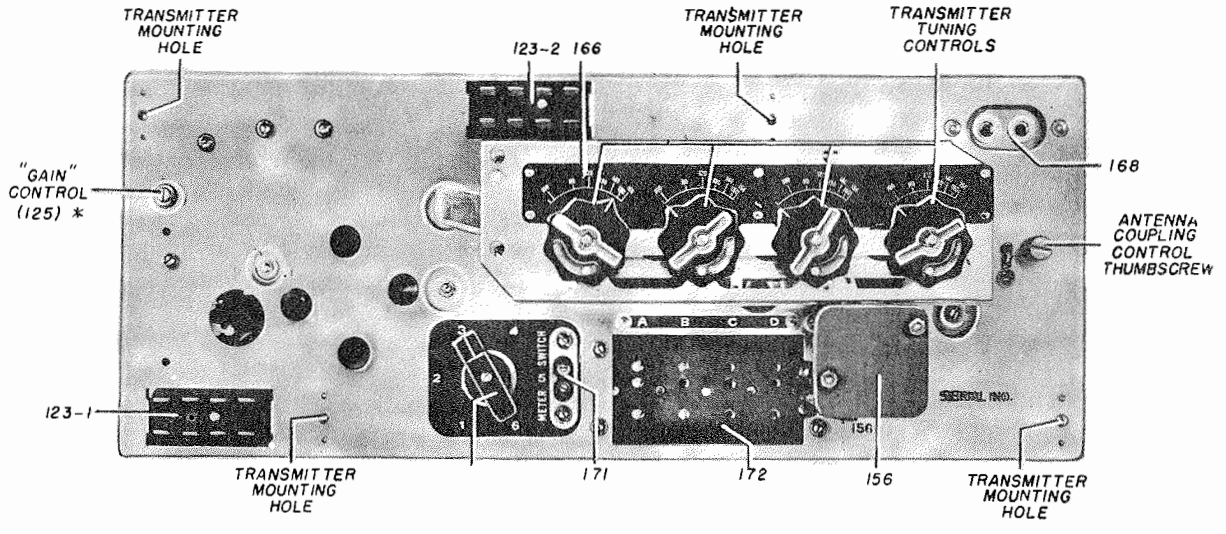


Figure 4-1. Radio Transmitters BC-625-A and BC-625-AM—Top View

2. RADIO TRANSMITTER BC-625-A OR BC-625-AM.

a. GENERAL.

(1) Radio Transmitter BC-625-A and BC-625-AM employs a crystal-controlled oscillator circuit, the plate circuit of which is tuned to the crystal's second harmonic. Two tripler stages follow the oscillator and precede the final amplifier, thus making the final output frequency greater than the crystal fundamental by a factor of 18. The final output stage is modulated by a push-pull modulator driven by a pentode voice amplifier.

(2) The transmitter operates on any one of four crystal-controlled channels lying within the frequency range of 100-156 megacycles. Channels are selected by both local and remote control.

(3) When a channel is selected, the channel-control ratchet motor 406 located on Rack FT-244-A actuates a frequency-shifter slide which automatically selects the correct channel crystal and tunes the transmitter circuits to the desired frequencies. The crystal is chosen as the slide closes the appropriate section "A," "B," "C," or "D" of crystal switch 156.

(4) The transmitter circuits are tuned by means of a cam-and-shaft arrangement which enables the slide to adjust the crystal oscillator, the first and second harmonic amplifier, and the power amplifier plate-capacitors to a predetermined frequency setting.

b. OSCILLATOR.

(1) The oscillator tube JAN-6G6G (VT-198-A) is connected in a modified Pierce circuit in which the tank circuit is provided by the crystal constants. Oscillations will occur at the crystal fundamental regardless of the frequency to which the oscillator plate circuit is tuned.

(2) The tuned plate circuit comprises inductor 118 and variable capacitor 114 and is adjusted to resonate at the crystal's second harmonic. The plate of oscillator tube JAN-6G6G (VT-198-A) is electron-coupled to the oscillatory circuit comprising the control grid, the cathode, and the screen.

(3) Grid bias is supplied by resistor 151-1. The oscillations are sustained by the impedance in the cathode circuit consisting of inductor 128-2 and bypass capacitor 103. Capacitor 102-1 couples the screen to the cathode, and capacitor 101 supplements the control-grid-to-screen capacitance. The screen is biased by resistor 152-1.

c. FIRST HARMONIC AMPLIFIER.

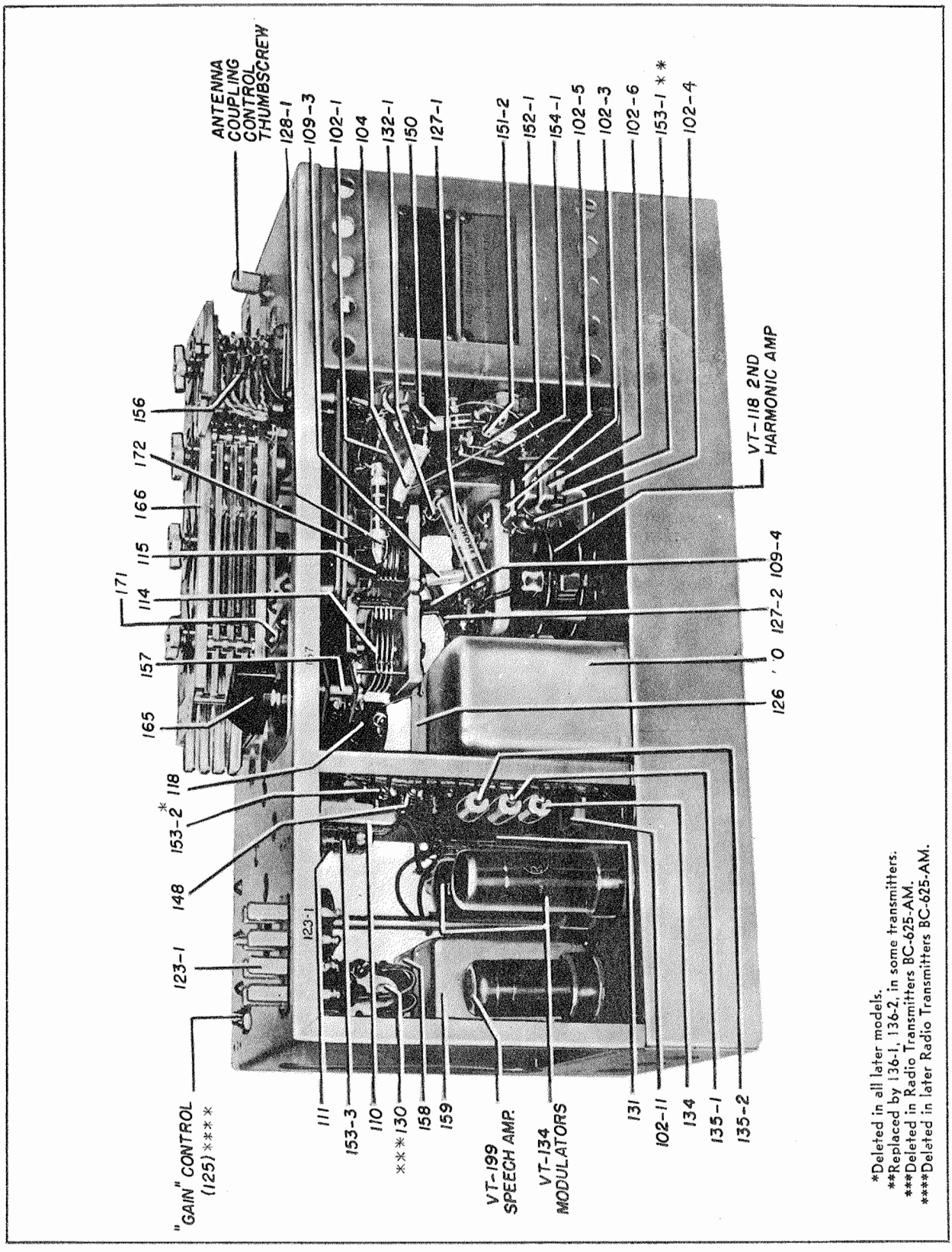
(1) The oscillator output is coupled to the first harmonic-amplifier tube JAN-12A6 (VT-134) by coupling capacitor 104 and the parasitic-suppressing resistor 150.

(2) The plate circuit of tube JAN-12A6 (VT-134) consists of variable capacitor 115 and the tapped inductor 119 and is tuned to the crystal's sixth harmonic. The output frequency of this stage is the third multiple of the oscillator output.

(3) The d-c plate voltage is applied at the tap of inductor 119. The voltages appearing at the terminals of this inductor are in correct phase for alternately exciting the grids of the push-pull second harmonic-amplifier tube JAN-832 (VT-118).

d. SECOND HARMONIC AMPLIFIER.

(1) The output of the first harmonic amplifier is coupled to the grid of the second harmonic amplifier through coupling capacitors 109-3 and 109-4.



*Deleted in all later models.
**Replaced by 136-1, 136-2, in some transmitters.
***Deleted in Radio Transmitters BC-625-AM.
****Deleted in later Radio Transmitters BC-625-AM.

Figure 4-2. Radio Transmitters BC-625-A and BC-625-AM—Front View

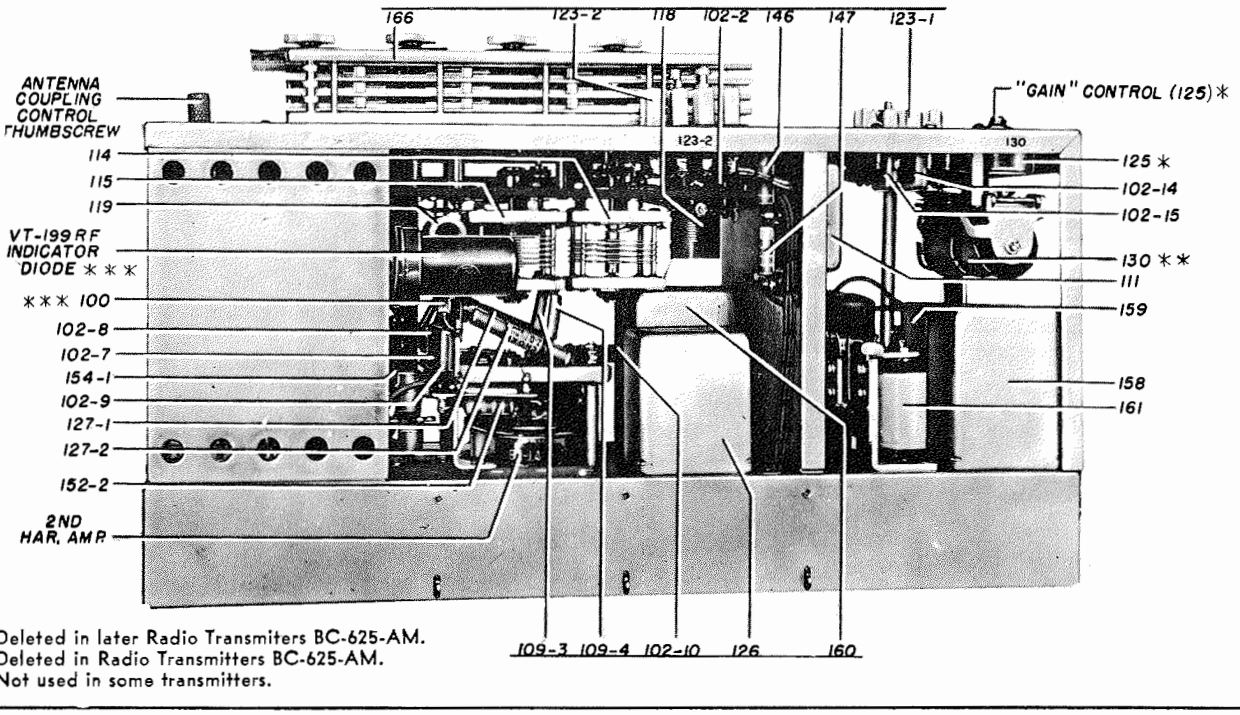
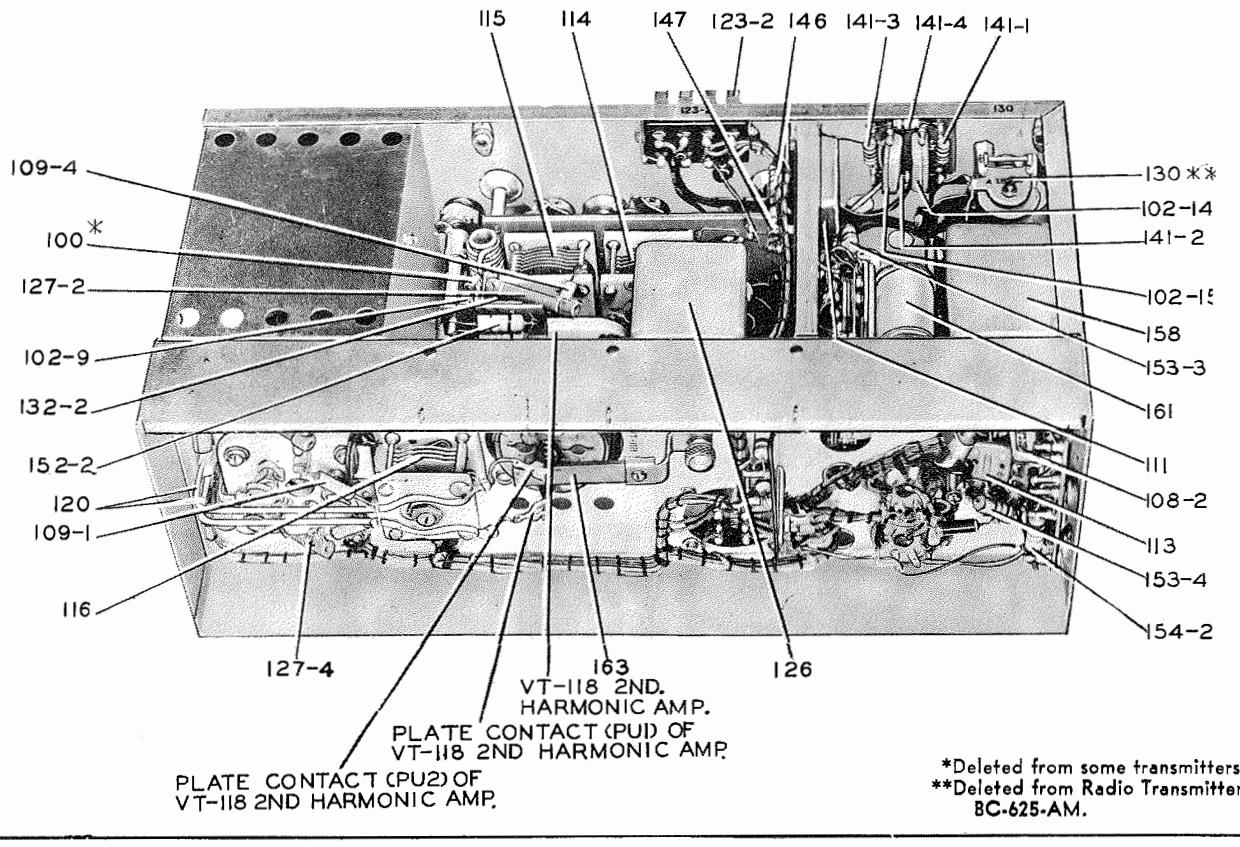


Figure 4-3. Radio Transmitters BC-625-A and BC-625-AM—Rear View



NOTE: SHOWING R-F DIODE INDICATOR TUBE VT-199 REMOVED

Figure 4-4. Radio Transmitters BC-625-A and BC-625-AM—Bottom Oblique View

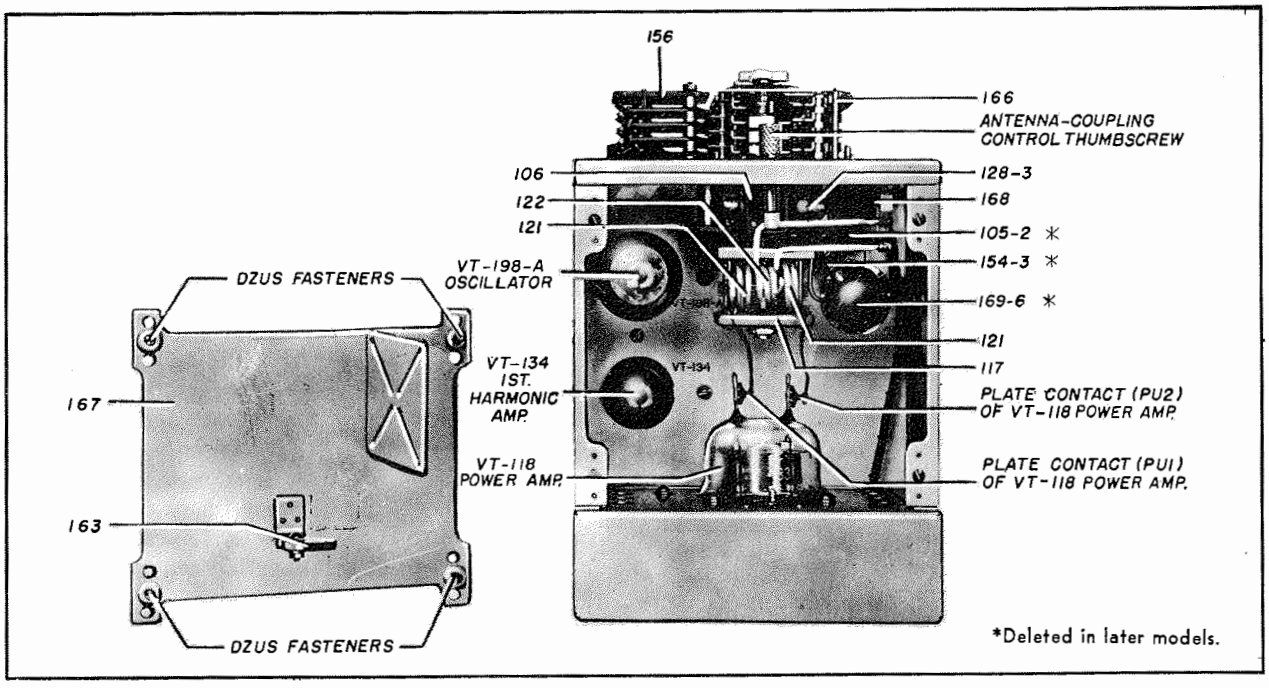


Figure 4-5. Radio Transmitters BC-625-A and BC-625-AM—Showing Locking Type Antenna Coupling

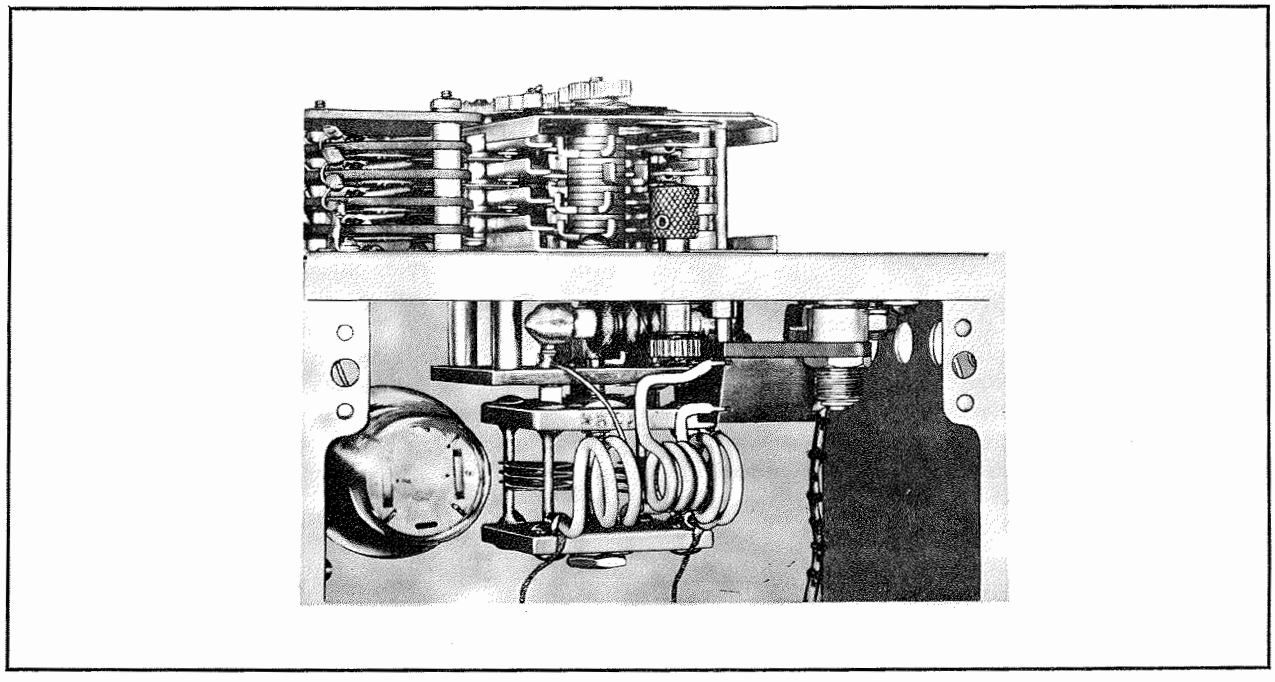


Figure 4-6. Radio Transmitters BC-625-A and BC-625-AM—Showing Non-Locking Type Antenna Coupling

(2) The rectified d-c grid current develops grid-bias voltage across r-f chokes 127-1 and 127-2 and resistors 132-1 and 132-2. R-F currents passing through these chokes are bypassed to ground by capacitors 102-8 and 102-9.

(3) The tank circuit consists of variable capacitor 116 and inductor 120 and is tuned to the third multiple of the first harmonic-amplifier output frequency, or the 18th multiple of the crystal fundamental.

(4) The d-c plate voltage is applied at the center tap the inductor 120. The voltages appearing at the terminal of inductor 120 are in correct phase for alternately driving the grids of the push-pull power-amplifier tube JAN-832 (VT-118).

e. POWER AMPLIFIER.

(1) The output of the second harmonic-amplifier is coupled to the grids of the power amplifier through coupling capacitors 109-1 and 109-2.

(2) The power-amplifier input circuit resembles that of the second harmonic-amplifier except for the absence of the grid-bias resistors.

(3) The output circuit consists of variable capacitor 117 and the center-tapped inductor 121 and is tuned to the same frequency as the second harmonic-amplifier, namely, the 18th multiple of the crystal fundamental.

(4) D-C plate voltage is applied at the center tap of inductor 121. This arrangement serves to balance the push-pull output circuit. Coupling inductor 122 lies between the two sections of inductor 121. The degree of coupling between the power-amplifier output circuit and the antenna is varied by moving inductor 122 by means of the antenna-coupling control. *(See figs. 4-5 and 4-6.)*

f. SPEECH AMPLIFIER.

(1) The audio input originates from the microphone through the rack and enters the transmitter through terminals 1 and 2 of plug 123-1. The a-f input is then impressed on terminals 1 and 3 of the primary of input transformer 158.

(2) The secondary of this transformer is connected to a bridge circuit comprising resistors 141-1, 141-2, 141-3, and 141-4. The bridge circuit is balanced so that it allows voltages from the secondary of the audio-input transformer to excite the grid of the speech-amplifier tube JAN-6SS7 (VT-199) but at the same time prevents a-f voltages from the receiver from also exciting the speech-amplifier grid.

(3) Potentiometer 125 serves as a gain control for transmitter modulation only and is replaced in some Radio Transmitter BC-625-AM by a fixed attenuator circuit consisting of resistors 180 and 181.

(4) Tube JAN-6SS7 (VT-199) is cathode-biased by resistor 153-3 which is bypassed for audio frequencies by capacitor 110.

(5) Grid resistor 153-4 and cathode choke 162 (162-1 in some models) block r-f energy from the sensitive speech amplifier.

(6) The plate is fed through audio choke 126 and is coupled to the primary of the interstage transformer 159 by capacitor 113. The frequency response is held to desirable values by plate-loading resistor 144 connected across the primary of transformer 159.

g. MODULATOR.

(1) The secondary of the interstage transformer 159 is connected to the grids of the push-pull modulator tubes JAN-12A6 (VT-134). Grid-bias voltage from the bias dividers 145, 152-3 and 152-4 is applied through the centertap terminal No. 4 of the transformer secondary.

(2) Capacitor 109-5 is connected in parallel with the modulator grids and terminals 3 and 5 of the transformer 159 secondary and serves to reduce the high-frequency response and suppress oscillations in the modulator circuit.

(3) D-C plate voltage is applied through the centertap terminal No. 2 of the primary of the modulator transformer 160. D-C screen voltage is obtained through terminal No. 2 of transformer 160 and dropping resistor 154-2.

(4) The audio voltage across the secondary terminals of transformer 160 modulates the plate input of power-amplifier tube JAN-832 (VT-118).

h. METER SHUNT CIRCUITS.

(1) The six-position two-section "METER SWITCH" (157) is connected to a network of shunts which are listed together with the currents they aid in measuring in section V, paragraph 9*b*(9) as follows: shunt 134 for first harmonic-amplifier plate current, 135-1 for second harmonic-amplifier plate current, and 148 for power-amplifier grid current. Switch position 6 is not used.

(2) The control grid, the screen, and the suppressor grid of the r-f* indicator tube are connected together to form the diode plate which terminates through load resistor 154-3* and by-pass capacitor 105-2* and the plate in turn is capacitively coupled to the power-amplier tank circuit.

(3) The test milliammeter when connected across shunt 153-2*, measures the plate-to-cathode rectified current in the r-f indicator diode, and since the amplitude of the diode depends on the r-f voltage developed in the power-amplifier plate circuit, the test milliammeter indicates tuning of the power-amplifier plate.

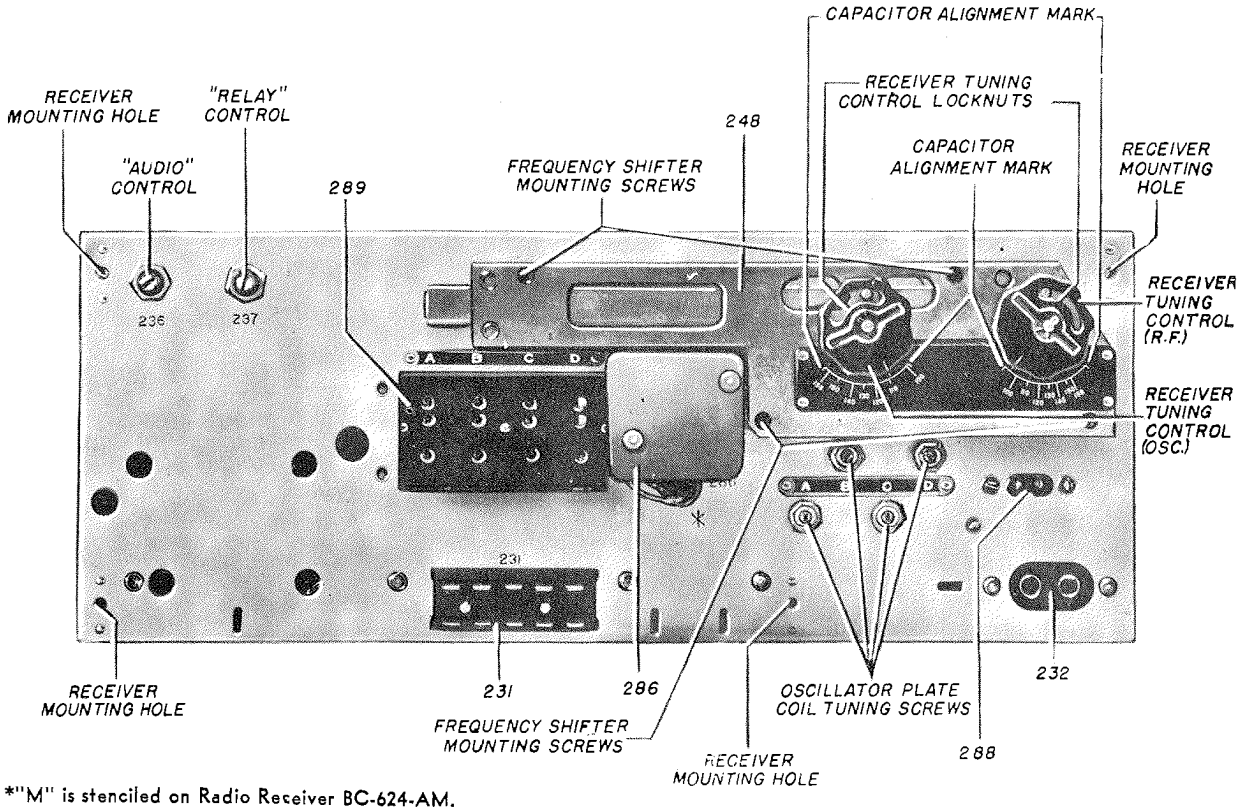
3. RADIO RECEIVER BC-624-A OR BC-624-AM.

a. GENERAL.

(1) Radio Receiver BC-624-A or BC-624-AM is a superheterodyne receiver *(see fig. 8-1)* which operates in the frequency range 100-156 megacycles on any of four present crystal-controlled channels. The intermediate frequency is 12 megacycles.

(2) After a channel has been selected by adjusting switch 286 to "A," "B," "C," or "D," the channel-control ratchet motor 406 located on Rack FT-244-A actu-

*Eliminated in later models of the transmitter.



*"M" is stenciled on Radio Receiver BC-624-AM.

Figure 4-7. Radio Receivers BC-624-A and BC-624-AM—Top View

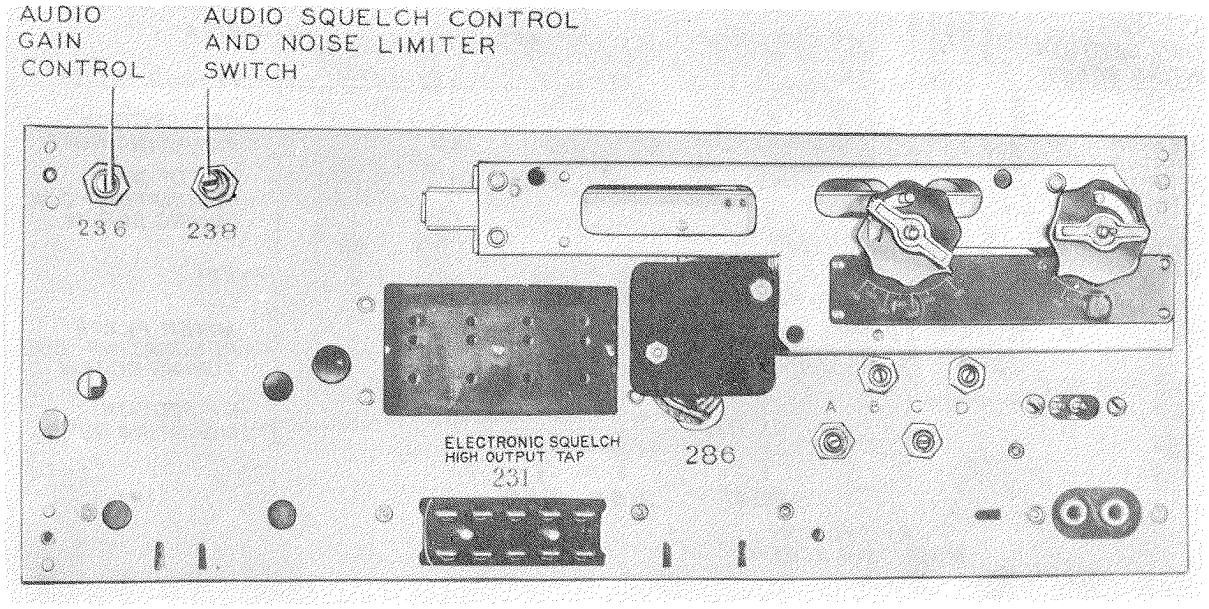


Figure 4-8. Radio Receiver BC-624-C—Top View

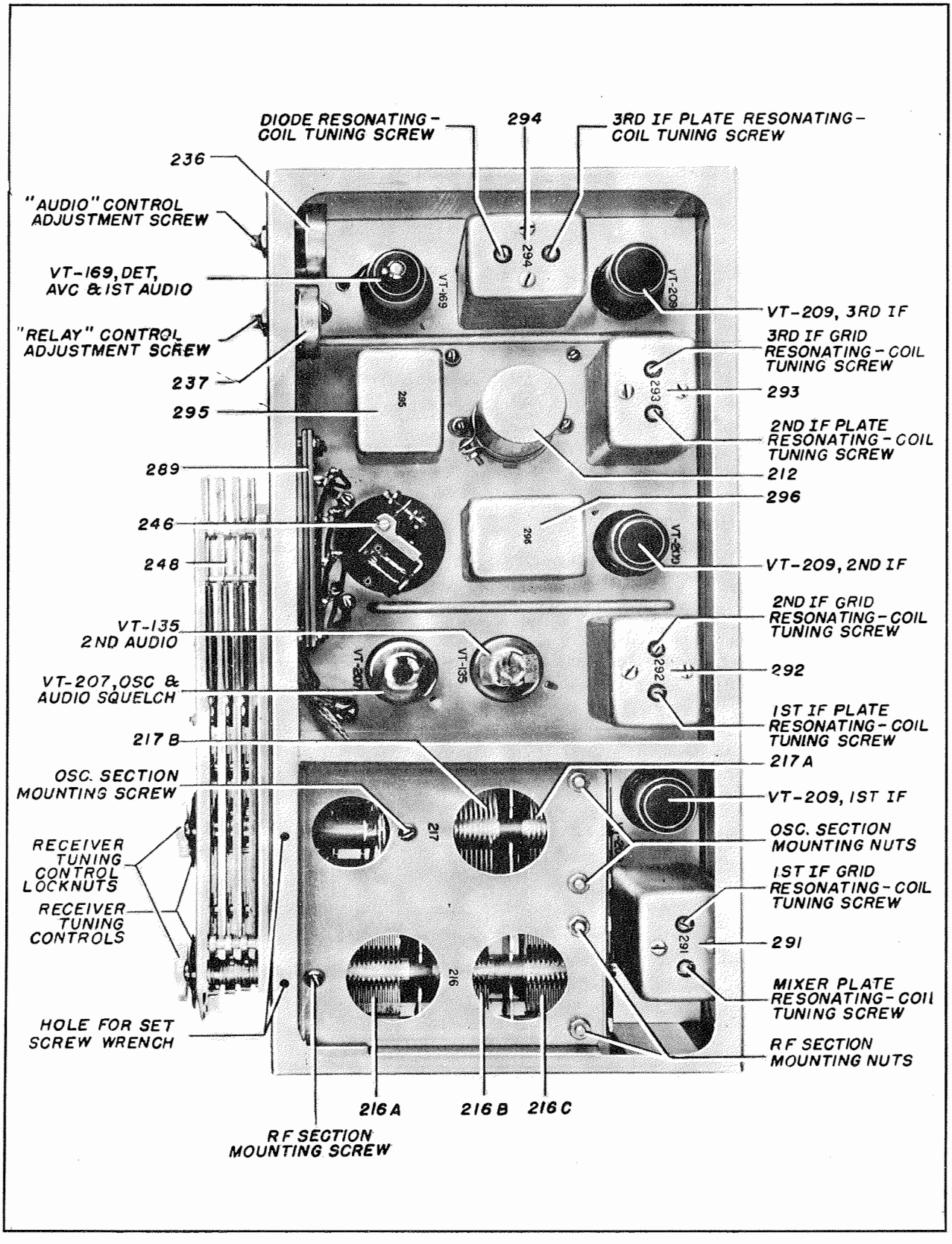
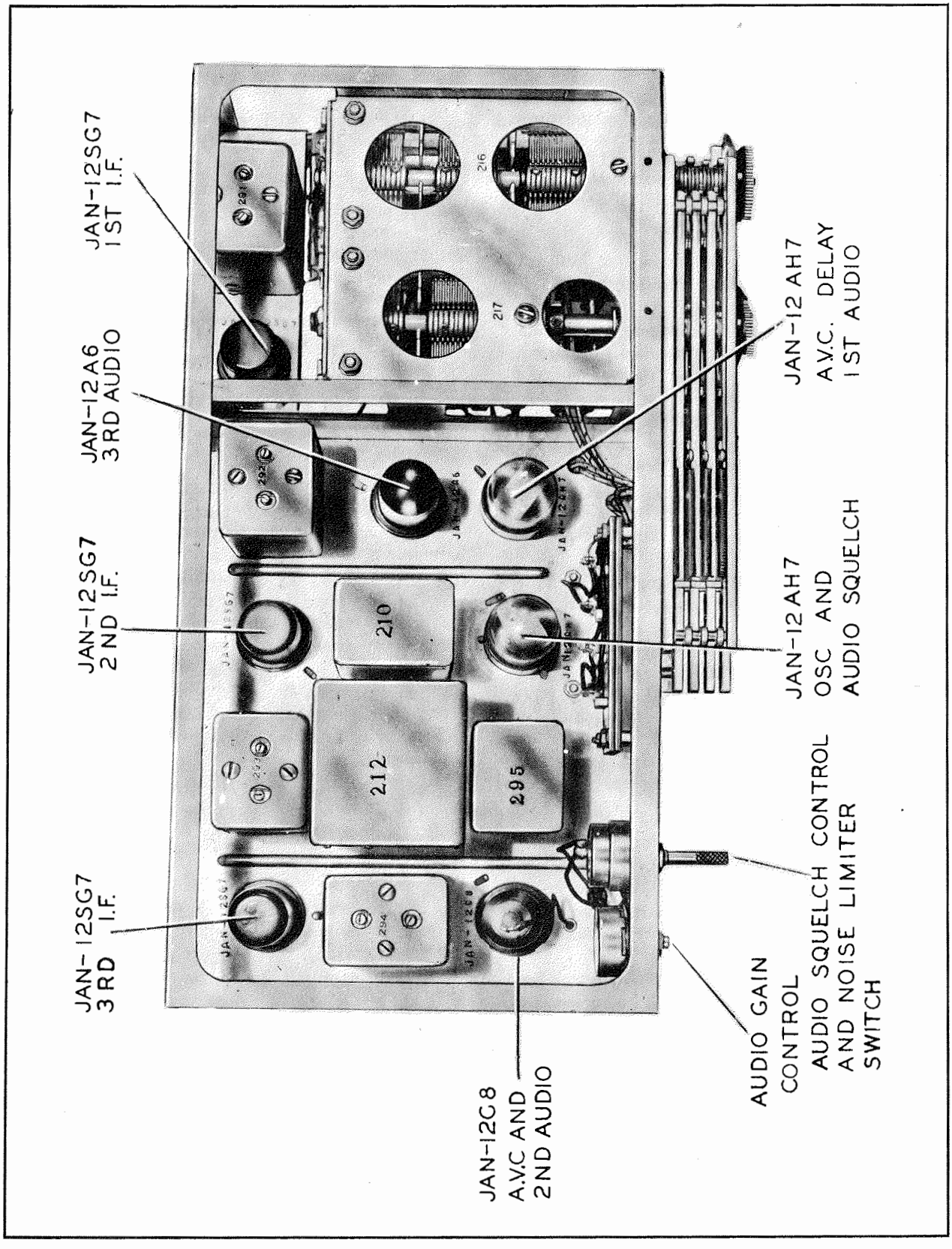


Figure 4-9. Radio Receivers BC-624-A and BC-624-AM—Rear View


JAN-12SG7
1ST I.F.
JAN-12A6
3RD AUDIO
JAN-12SG7
2ND I.F.
JAN-12SG7
3RD I.F.
JAN-12C8
A.V.C AND
2ND AUDIO
JAN-12AH7
A.V.C. DELAY
1ST AUDIO
JAN-12AH7
OSC AND
AUDIO SQUELCH
AUDIO SQUELCH CONTROL
AND NOISE LIMITER
SWITCH
AUDIO GAIN
CONTROL
210
212
295
216
217

ates a frequency-shifter slide which automatically selects the correct channel crystal and tunes the receiver circuits to the desired frequencies. The crystal is chosen as the slide closes the appropriate section, "A," "B," "C," or "D" of channel switch 286.

(3) The receiver circuits are tuned by means of a cam-and-shaft arrangement enabling the slide to adjust the following variable capacitors to a predetermined setting: capacitor 216A in the r-f grid circuit, capacitor 216B in the r-f plate circuit, capacitor 216C in the mixer grid circuit, capacitor 217A in the harmonic-amplifier plate circuit, and capacitor 217B in harmonic generator plate circuit.

b. R-F AMPLIFIER.

(1) Inductor 221 couples the antenna to inductor 222 in the grid circuit of the r-f amplifier tube JAN-9003 (VT-203).

(2) Inductor 222, variable capacitor 216A and trimmer capacitor 218-1 comprise the tuned grid circuit which is adjusted to resonate at the frequency of the received carrier.

(3) The grid is coupled to this tuned circuit through capacitor 201 which also serves to prevent the AVC voltage applied to the grid from grounding through inductor 222.

(4) The tuned plate circuit consists of inductor 223, variable capacitor 216B and trimmer capacitor 218-2.

(5) Meter-shunt resistor 259 is connected across the terminals of the receiver test-milliammeter socket 288.

(6) When the receiver is being tuned with a large signal voltage applied to the input circuit, the AVC voltage developed is impressed as additional bias on the control grid of r-f tube JAN-9003 (VT-203). This additional bias reduces the plate current and causes a decrease in the reading indicated by Test Set I-139-A. For a constant signal input, the plate current decreases as the receiver circuits become better aligned.

c. CRYSTAL OSCILLATOR.

(1) The crystal oscillator operates in the frequency range of 8 to 8.72 megacycles and utilizes one section of the twin-triode tube JAN-12AH7GT.

(2) The crystal is connected in series between the control grid and ground and is in parallel with grid leak resistor 266-1.

(3) Crystal switch 286 consists of four wafer sections, each of which is provided with contacts for simultaneously selecting the desired crystal and the corresponding variable iron-core oscillator plate inductors 227-1, 227-2, 227-3, or 227-4. Capacitors 204 and 205, together with any of these inductors provide the tuned plate circuit of the oscillator. When a crystal is not in use it is shorted to ground.

(4) The plate inductors are tuned by varying the inductance by means of the adjustable iron cores.

(5) Resistor 265-1 provides cathode bias for the oscillator section of tube JAN-12AH7GT (VT-207) and is bypassed for radio frequency by capacitor 206-2.

d. HARMONIC GENERATOR.

(1) The r-f output of the crystal oscillator is coupled to the grid of the harmonic generator tube JAN-9002 (VT-202) through capacitor 205. This grid-driving voltage is comparatively high and causes the output of tube JAN-9002 (VT-202) to be rich in harmonic content.

(2) Resistor 262-1 provides a d-c grid return. Cathode bias is obtained through resistor 261 which is bypassed for radio frequency by capacitor 202-15.

(3) The tuned plate circuit, comprising inductor 226, variable capacitor 217B and trimmer capacitor 218-5, is tuned to that harmonic of the crystal-oscillator output frequency which, when heterodyned with the receiver frequency, will produce a frequency equal to the intermediate frequency of 12 megacycles. For example, if a 100-megacycle signal is received and an 8-megacycle crystal is employed for the channel in use, the harmonic-generator plate circuit will be tuned to the eleventh crystal harmonic, or 88 megacycles, and the difference in frequency will be 12 megacycles.

(4) Plate bypass capacitors 202-13 and 202-14 provide stable operation. D-C plate voltage is supplied through resistor 260.

e. HARMONIC AMPLIFIER.

(1) Capacitor 203-2 couples the plate circuit of the harmonic generator to the grid of the harmonic-amplifier tube JAN-9003 (VT-203).

(2) The plate circuit of tube JAN-9003 (VT-203), comprising inductor 225, variable capacitor 217A and trimmer capacitor 218-4, is tuned to the same frequency as the output of the preceding stage.

(3) Harmonic-amplifier tube JAN-9003 (VT-203) serves merely to amplify the harmonic-generator output sufficiently to provide adequate voltage for coupling to the mixer grid.

(4) Resistor 255-2 provides a d-c grid return.

(5) Cathode bias is supplied through resistor 253-2 which is bypassed for radio frequency by capacitor 202-11.

f. MIXER.

(1) Inductor 225 couples the harmonic-amplifier output to the mixer grid through inductor 224 and capacitor 203-1.

(2) The output of r-f amplifier tube JAN-9003 (VT-203) is also coupled to the mixer grid through inductor 224 and capacitor 203-1.

(3) The mixer grid circuit, comprising inductor 224, variable capacitor 216C and trimmer capacitor 218-3, is tuned to the frequency of the received signal.

(4) Resistor 225-1 is the grid leak and resistor 256 is the cathode-bias resistor.

(5) Direct current plate and screen voltage is supplied through resistors 263-1 and 257 respectively.

(6) The plate is connected to the inductance-tuned primary circuit of the i-f transformer assembly 291. This plate circuit, comprising the variable iron-core in-

ductor 228-1 and capacitors 207-1 and 208-1, is tuned to the intermediate frequency, 12 megacycles.

g. FIRST, SECOND, AND THIRD I-F.

(1) RADIO RECEIVER BC-624-A.

(a) The mixer output is coupled to the grid of the first i-f amplifier tube JAN-12SG7 (VT-209) through the secondary circuit of i-f transformer 291. This circuit is inductance-tuned (by means of the adjustable iron core of inductor 228-2).

(b) Cathode bias is provided by resistor 268 which is bypassed by capacitor 206-5. The voltage divider consisting of resistors 267-2 and 267-3 provides a stable screen voltage.

(c) The second and third i-f amplifier tubes JAN-12SG7 (VT-209) are connected in circuits similar to that of the first i-f tube except that a screen-dropping resistor 271 is used instead of a voltage divider in the third i-f stage.

(d) Transformer assembly 292 couples the first i-f plate to the second i-f grid, 293 couples the second i-f plate to the third i-f grid, and 294 couples the third i-f plate to the detector diode.

(e) Plate voltage for all r-f circuits appears at terminal 3 of plug 231.

(f) Choke 241-2 and capacitor 202-16 filter any extraneous r-f voltage from this high-voltage circuit. No voltage appears on terminal 3 of plug 231 when the transmitter is operating. Therefore, only the receiver audio circuits are operative during transmission.

(g) Although i-f transformers 291, 292, 293 and 294 are given different reference numbers, they are electrically and mechanically identical and may be used interchangeability.

(2) RADIO RECEIVER BC-624-AM.

(a) The operation of the i-f amplifier in Radio Receiver BC-624-AM is essentially the same as in Radio Receiver BC-624-A. The principal differences are in the grid returns. The grid of the third tube JAN-12SG7 (VT-209) is returned directly to ground.

(b) An additional capacitor 211-2C has been added to the grid return of the second i-f tube JAN-12SG7 (VT-209). These improvements serve to reduce cross modulation due to grid currents on high noise voltage peaks.

h. DETECTOR AND AVC CIRCUITS IN RADIO RECEIVER BC-624-A.

(1) The r-f voltage induced in the tuned secondary circuit of transformer 294, variable inductor 228-8 and capacitors 208-8 and 207-8, is applied to one of the diode plates of detector tube JAN-12C8 (VT-169). This r-f current is rectified in JAN-12C8 and the audio component appears across resistor 281, and potentiometer 236, and resistors 277 and 278. Capacitors 203-3 couples a portion of the r-f voltage to the other diode plate of JAN-12C8.

(2) Because of the voltage drop through resistors 277 and 276, the cathode of JAN-12C8 is 8.5 volts above ground. Since the AVC diode plate is returned to ground, no rectified voltage will flow in the AVC circuit until the potential developed by the signal on the AVC diode plate exceeds this cathode bias. As soon as the r-f signal exceeds the cathode bias, the delay voltage is said to be overcome, the AVC diode rectifies the r-f signal, and the voltage drop through the resistor 275-1 places a negative voltage at the junction of 266-2 and 275-1. This negative voltage, varying with the average signal voltage because of the smoothing action of capacitor 211-C, is shunt fed to the grid of the r-f amplifier, JAN-9003 (VT-203), and series fed to the grids of the first and second i-f amplifiers, JAN-12SG7 (VT-209).

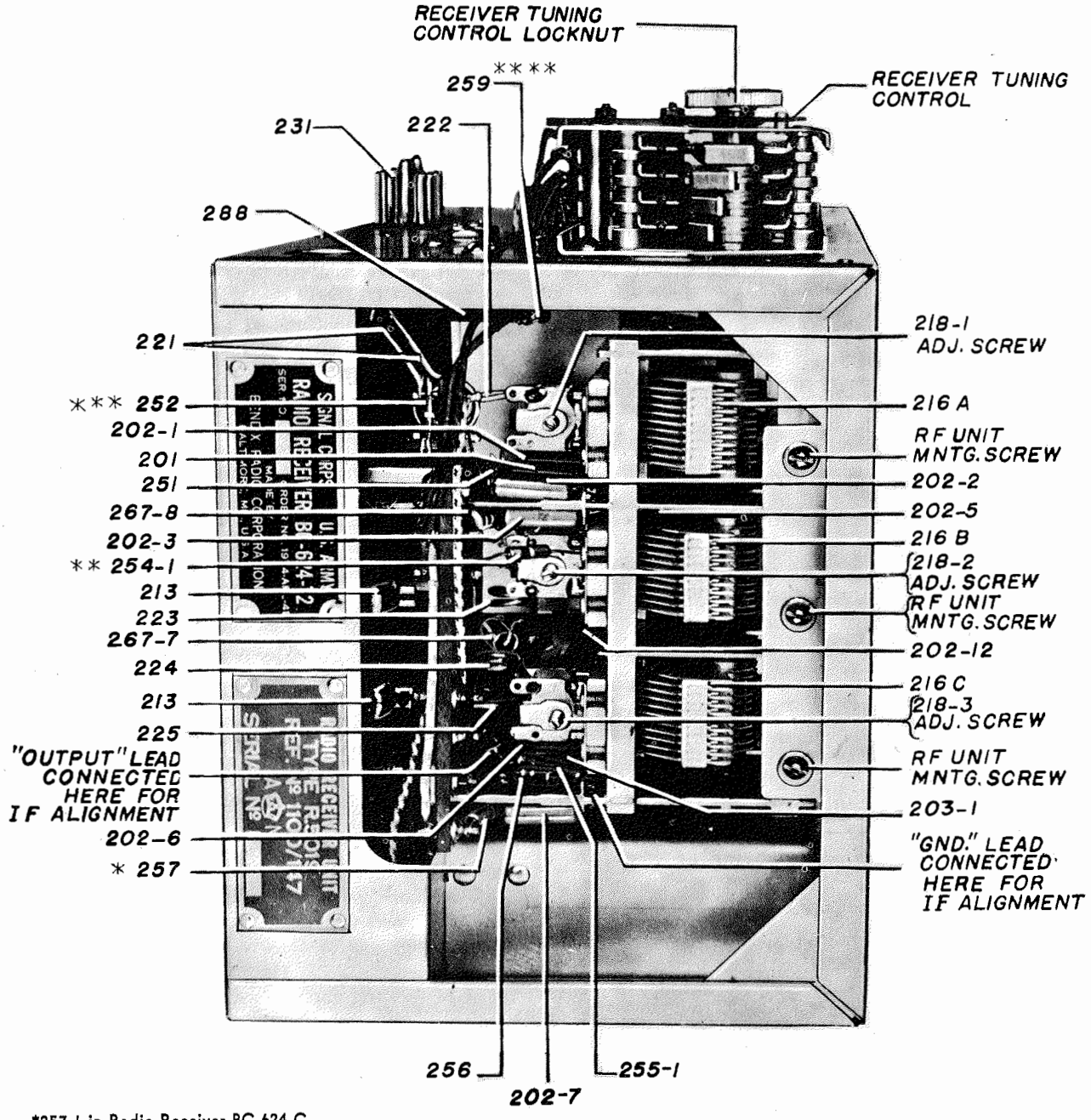
(3) Resistors 251, 252, 267-1, and 267-4 are isolation resistors which also serve to provide high resistance grid leaks to ground. Capacitor 202-2 bypasses the r-f energy to ground.

i. DETECTOR, NOISE LIMITER, AVC DELAY CIRCUITS IN RADIO RECEIVER BC-624-AM.

(1) In Radio Receiver BC-624-AM, the tuned circuit of the secondary of the last i-f transformer 294 feeds the r-f signal to the audio diode of the detector tube JAN-12C8 (VT-169). The signal is rectified in JAN-12C8 and appears as a-f voltage across resistors 264-2 and 276-2. The average rectified carrier voltage appears between the junction of resistors 271-2 and 272-2 and the cathode of tube JAN-12C8 because of the filtering action of capacitor 211-2A and 211-2B in combination with resistor 271-2.

(2) The noise limiter diode section of tube JAN-12H6 (VT-214) operates on the average voltage applied to it which is of proper polarity for plate current to flow. However, noise peaks appear at the plate of the noise limiter diode as a sharp change in voltage in a negative direction. Since the time constant of the resistor 271-2 and capacitor 211-2A and 211-2B combination, which provides the average bias on the cathode of the noise limiter diode, JAN-12H6, is long with respect to the highest audio frequency modulation of the incoming signal, this bias remains essentially constant with audio modulation. If a noise peak appears across the diode load resistors 276-2 and 264-2, the noise limiter diode plate is driven negative with respect to the bias on its cathode. This causes the diode to cease conducting, and, therefore, no voltage appears across load resistor 272-2. Hence no signal appears on the grid of the first audio amplified JAN-12C8. Since this action is momentary, no deadening of the set is apparent to the operator. The total effect is to produce a noticeable reduction in the amplitude of the intermittent noise bursts such as ignition interference.

(3) The second plate of the diode, JAN-12H6, and its cathode are utilized for delayed AVC. The plate of this diode is coupled to the primary of the last i-f transformer 294 through the coupling capacitor 203-3. The selection of the r-f voltage from the primary rather than the secondary of the i-f transformer results in higher AVC voltage and serves to reduce the shunting



*257-1 in Radio Receiver BC-624-C.
**Not used in Radio Receiver BC-624-C.
***252-1 in some receivers.
****287 in some receivers.

Figure 4-11. Radio Receivers BC-624-A, BC-624-AM and BC-624-C—Right Side View

effect of the AVC on the i-f secondary and to reduce the modulation rise in the a-f amplifier at the point when the signal voltage is just overcoming the AVC delay bias. The potential difference between the AVC diode plate and ground, 8.5 volts, is established by the delay diode tube JAN-12H6 by which potential the application of the AVC is delayed.

j. FIRST AUDIO-FREQUENCY AMPLIFIER.—The pentode section of JAN-12C8 (VT-169) provides the first stage of audio frequency amplification and also provides interphone communication. The a-f voltage is fed to the amplifier grid through audio gain potentiometer 236 and transformer 295.

k. SECOND AUDIO-FREQUENCY AMPLIFIER.—The amplified a-f signal is resistance coupled to the amplifier, JAN-12J5GT (VT-135), the output of which is coupled to the load through transformer 296. This transformer is tapped for impedance matching at terminal 7, 4000 ohms; terminal 6, 300 ohms; and terminal 5, 50 ohms.

l. AUDIO SQUELCH.

(1) The purpose of the squelch circuit is to keep objectionable noise out of the receiver headsets when no carrier is being received.

(2) One triode section of JAN-12AH7GT (VT-207) is used to operate the audio squelch relay 246. A portion of the d-c component of the audio voltage, developed at the audio diode of the second detector JAN-12C8 (VT-169) when an r-f carrier is being received, is coupled to the grid of tube JAN-12AH7GT. The audio voltage variations are smoothed out by capacitor 206-16 leaving only the average value of the rectified voltage to be applied to the grid of the audio squelch tube.

(3) The cathode of this triode section of tube JAN-12AH7GT is connected to a bleeder-resistor network consisting of resistors 279-1, 279-2, 282 and potentiometer (relay control) 237. This network, connected between plus 300 volts and ground, puts a positive voltage on the cathode, the potential of which may be controlled by potentiometer 237.

(4) Additional grid bias is determined by the magnitude of the d-c component of the diode current flowing through resistor 279-3 and therefore varies with the strength of the signal carrier.

(5) The audio squelch tube is biased nearly to cutoff, and on received signals, the additional bias cuts off current through JAN-12AH7GT, and relay 246 is released. With no signal the bias is removed, current again flows in the tube, and relay 246 closes. With the relay contacts closed the audio voltage from the diode JAN-12C8 (VT-169) is shorted to ground. The opening of this relay contact restores the receiver output to normal.

(6) The bias on the squelch tube JAN-12AH7GT is regulated by potentiometer 237 and thus the sensitivity of the squelch circuit is adjusted.

4. RADIO RECEIVER BC-624-C.

a. GENERAL.

(1) Radio Receiver BC-624-C is a modification c Radio Receiver BC-624-AM with major changes in th AVC, squelch, and audio amplifier circuits.

(2) Minor changes have been made in certain re sistances previously used in order to increase the over-a gain and thus improve the AVC characteristics.

(3) In addition, resistors which were found to b overheating in the former receiver were replaced i Radio Receiver BC-624-C by two resistors in paralle A paper capacitor was substituted for capacitor 212 Circuits changed in the later type receiver are describe in the following paragraphs.

b. DETECTOR AND AVC.

(1) Signal voltage developed in the secondary ci cuit of the last i-f transformer 294 is applied to on diode section of tube JAN-12H6 (VT-214) mounte underneath the chassis of the receiver.

(2) Audio voltage is developed across resistors 29 and 276-2. The average rectified voltage of this diod is utilized as AVC voltage effectively in series with th voltage developed by the paralleled diodes in vacuu tube JAN-12C8. The radio frequency voltage rectifie by this latter tube is derived from the primary circuit o the last i-f transformer to secure an additional gain i voltage.

(3) Normally the negative AVC voltage applied t the grids of the r-f and i-f stages increases with an in crease in signal strength. The application of increasin amounts of negative AVC voltage serves to increase th grid bias and thus reduces the sensitivity of the receive

(4) Without any system to delay this function, th weak signals plus the added noise components furnis enough AVC voltage to reduce the sensitivity of the r ceiver to the point where the signal would be inaudibl In order to avoid this reduction of sensitivity to wea signals in the presence of noise components, the AVC held at a constant potential until the signal level reach a sufficiently high predetermined value. After this lev is reached the AVC operates normally.

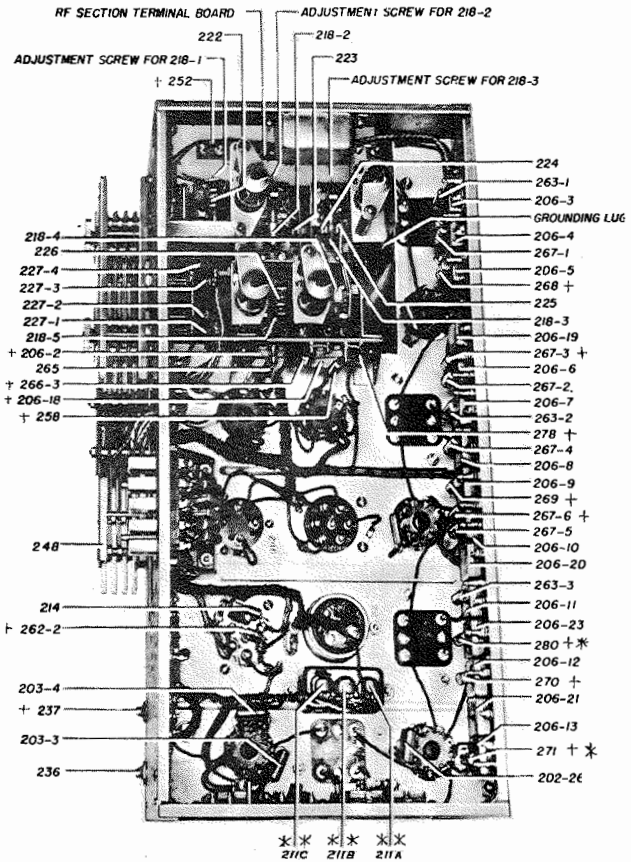
(5) The AVC delay tube JAN-12AH7GT (V 207), when no signal is present, receives a positive vo age on its plate from the cathode circuit of the AVC a second audio tube JAN-12C8 (VT-169). As long this voltage equals or is greater than the cathode bi on the delay section of tube JAN-12AH7GT, the tu conducts and the voltage dropping across resistor 258 maintains the AVC bus at a slightly positive potenti This positive AVC voltage serves to increase the and i-f sensitivity. The AVC delay section of tu JAN-12AH7GT, in addition, protects the r-f and tubes by limiting the maximum positive potential th can be applied to their grids.

c. NOISE LIMITER.

(1) One-half of tube JAN-12H6 (VT-214) is us as a series limiter. The audio signal can get to the auc

†Circuit symbol not used on Radio Receiver BC-624-C.

NOTE: Tube JAN-12A6 and an additional tube JAN-12AH7GT have been added to Radio Receiver BC-624-C.



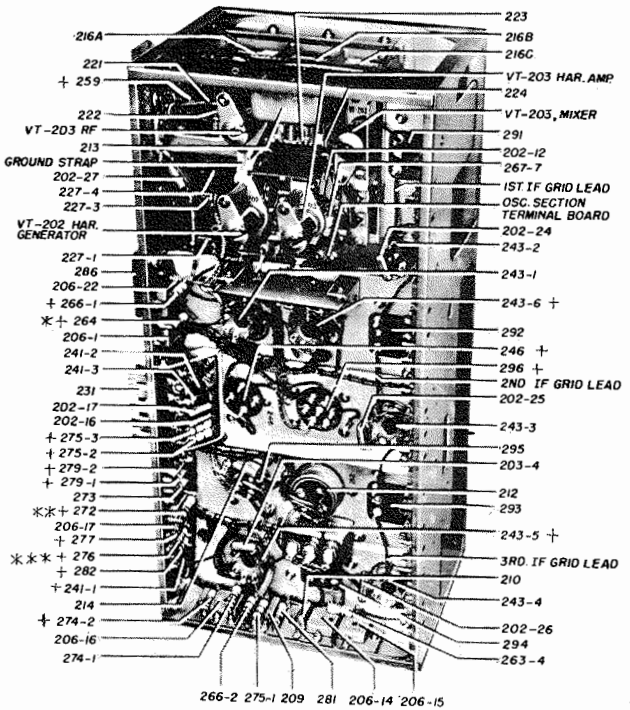
*Not used in Radio Receiver BC-624-AM.

*These capacitors are mounted on a new assembly on Radio Receiver BC-624-AM and are called 211-1A, -1B, -1C. Mounted on same assembly is a new capacitor 211-2A, -2B, -2C.

NOTE: Tube JAN-12H6 has been added to Radio Receiver BC-624-AM.

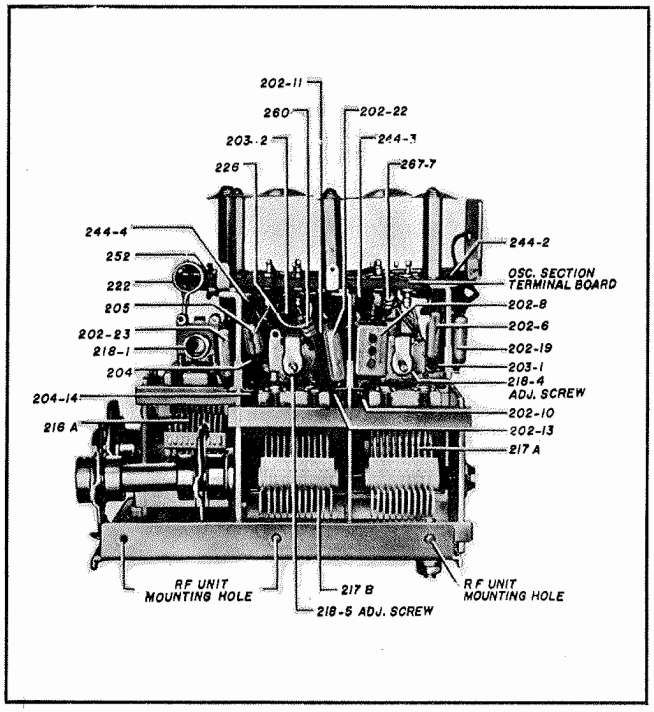
Figure 4-12. Radio Receivers BC-624-A, BC-624-AM and BC-624-C—Front View

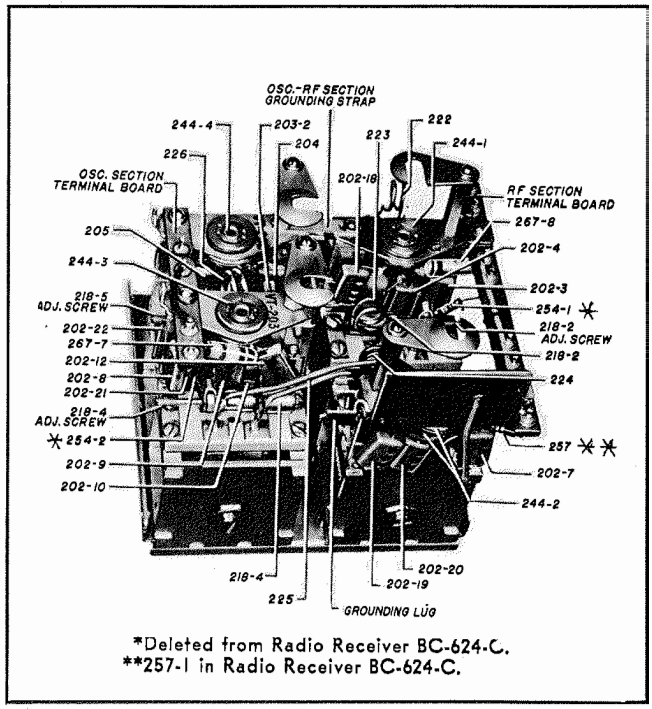
†Circuit symbol not used on Radio Receiver BC-624-C.



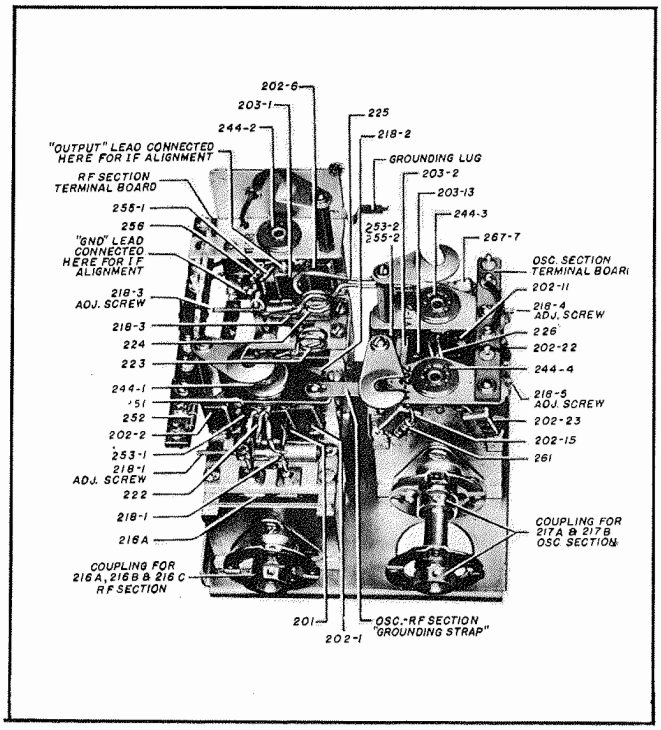
*Becomes 264-1 in Radio Receiver BC-624-AM.
**Becomes 272-1 in Radio Receiver BC-624-AM.
***Becomes 276-1 in Radio Receiver BC-624-AM.

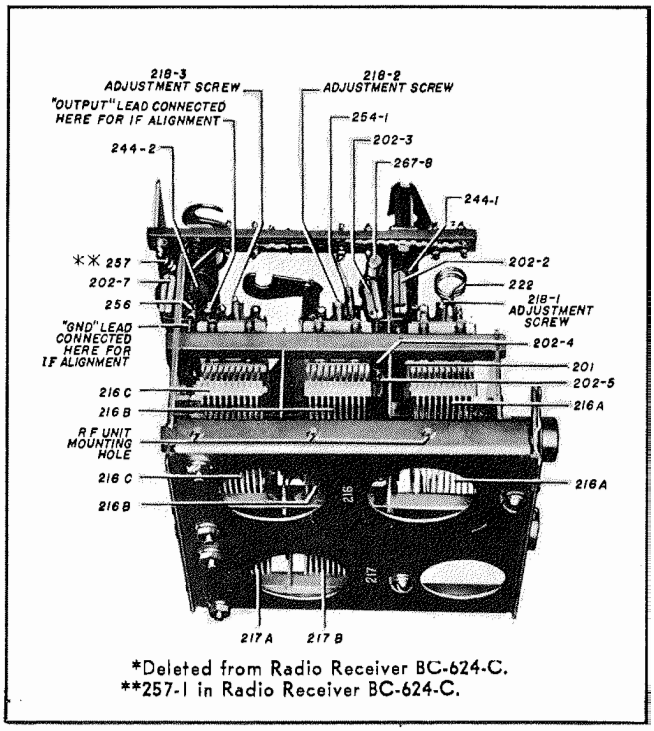
Figure 4-13. Radio Receivers BC-624-A, BC-624-AM and BC-624-C—Front Oblique View





*Deleted from Radio Receiver BC-624-C.
**257-1 in Radio Receiver BC-624-C.





*Deleted from Radio Receiver BC-624-C.
**257-1 in Radio Receiver BC-624-C.

Figure 4-14—R-F Oscillator Assembly

amplifier grid only by passing through this noise limiter tube. This diode will pass the audio signal only when conducting. Moreover, conduction takes place only when the plate is positive with respect to its cathode. During the reception of signals the average rectified voltage appearing at terminal 2 of the i-f transformer 294 is negative.

(2) Because of the voltage drop across resistor 276-2, the potential at the plate of the noise limiter section of tube JAN-12H6 is positive with respect to its cathode. On noise bursts, the plate of the tube is driven negative while the cathode is held at the original potential by the charge on the filter capacitors 211-4B and 202-28 and the tube ceases to conduct. Conduction is resumed when the noise impulse has passed and the plate again becomes positive with respect to the cathode. The filter capacitors 211-4B and 202-28 resume their quiescent charge and the tube operates normally, if the noise continues, the filter capacitor charges sufficiently to again place the cathode potential lower than the plate and the tube operates normally, transmitting both the desired signal and the sustained noise.

(3) The audio signal passed by the series limiter is developed across resistor 281-3 and is then passed by the coupling capacitor 206-17 to volume control 236.

Note

For convenience in tuning the receiver with a buzzer or similar source of radio frequency energy, the noise limiter circuit may be disabled by rotating the squelch control 238A to its maximum clockwise position, thus opening switch 238B.

d. SQUELCH.

(1) A squelch circuit is incorporated in order to silence the receiver when no signal is being received or when the signal is sufficiently below the noise level to be unusable.

(2) The d-c voltage developed by the rectification of the r-f signal in the detector circuit is utilized by the audio squelch tube to determine whether the bias on the first audio amplifier will be such as to allow that tube to respond to the audio signals on its grid.

(3) When a signal is being received, its average d-c rectified value from the detectors is applied through resistor 274-1 to the grid of the audio squelch tube, one section of tube JAN-12AH7GT (also used as the oscillator). The voltage at the grid of the squelch tube with no signal being received is positive by the amount of the delay bias which reaches it through resistors 276-2, 290, 280-2, and 271-2 from the high end of the cathode bias resistor 277-2. The position of the squelch bias potentiometer 238A in operation is set such that current through the squelch tube is not cut off until a signal of sufficient strength to develop the necessary negative bias

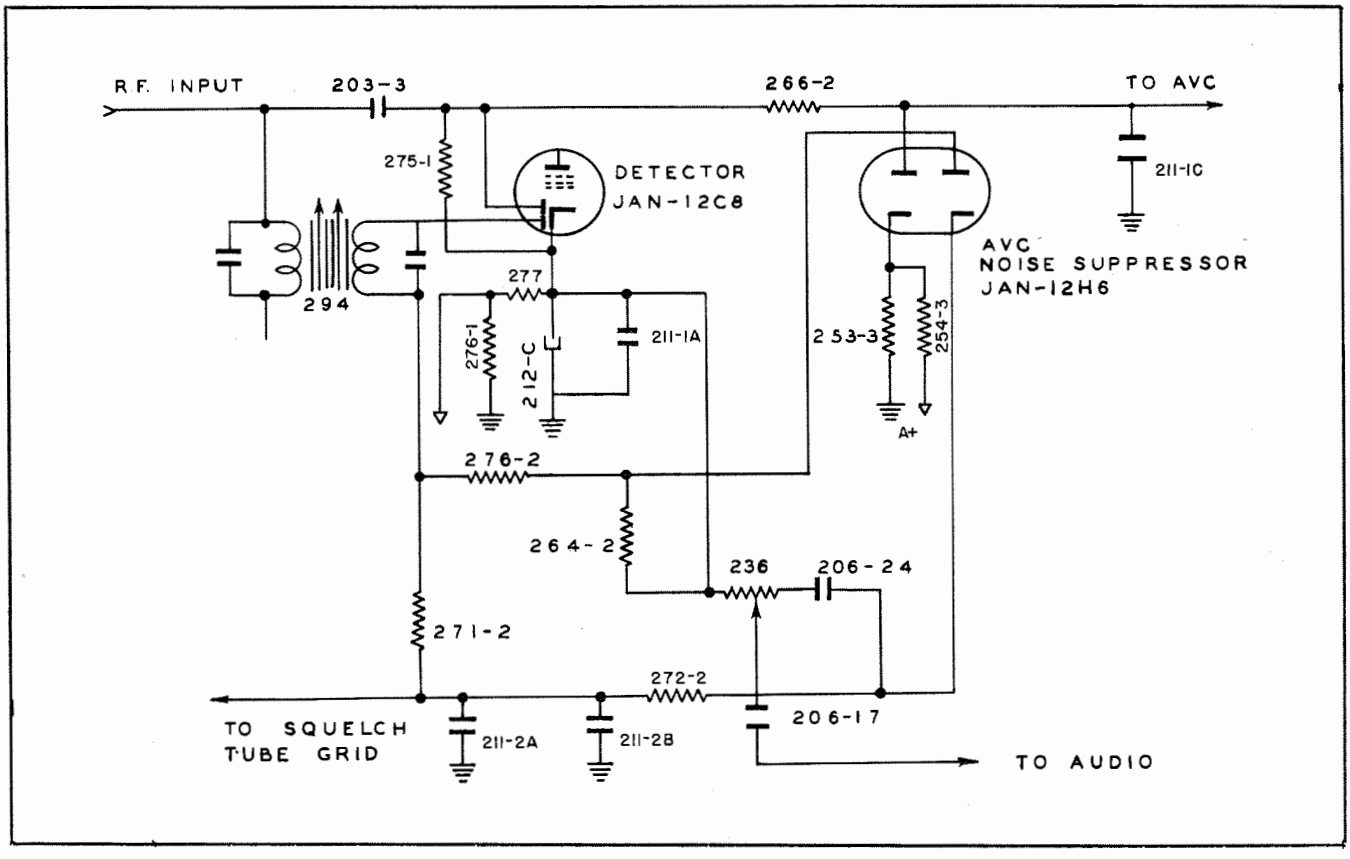


Figure 4-15. Radio Receiver BC-624-AM—Simplified Schematic of AVC and Noise Suppressor

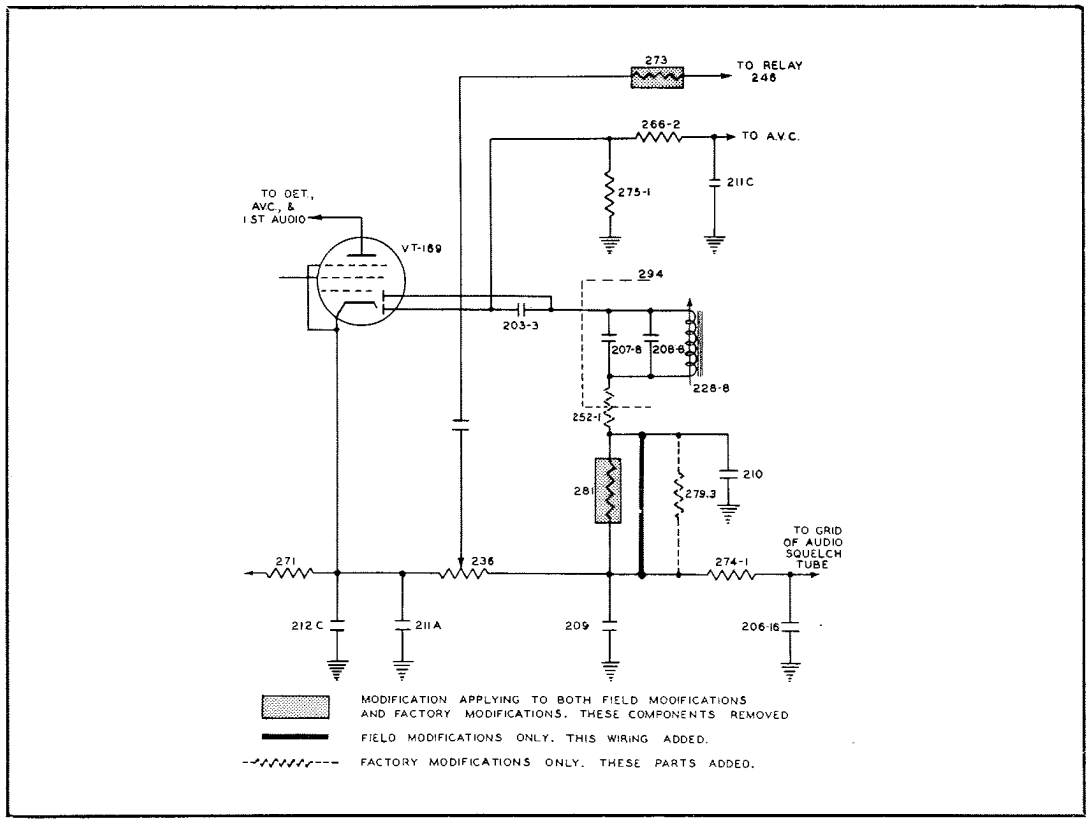


Figure 4-16. Radio Receiver BC-624-A—Rewiring of the Squelch Circuit

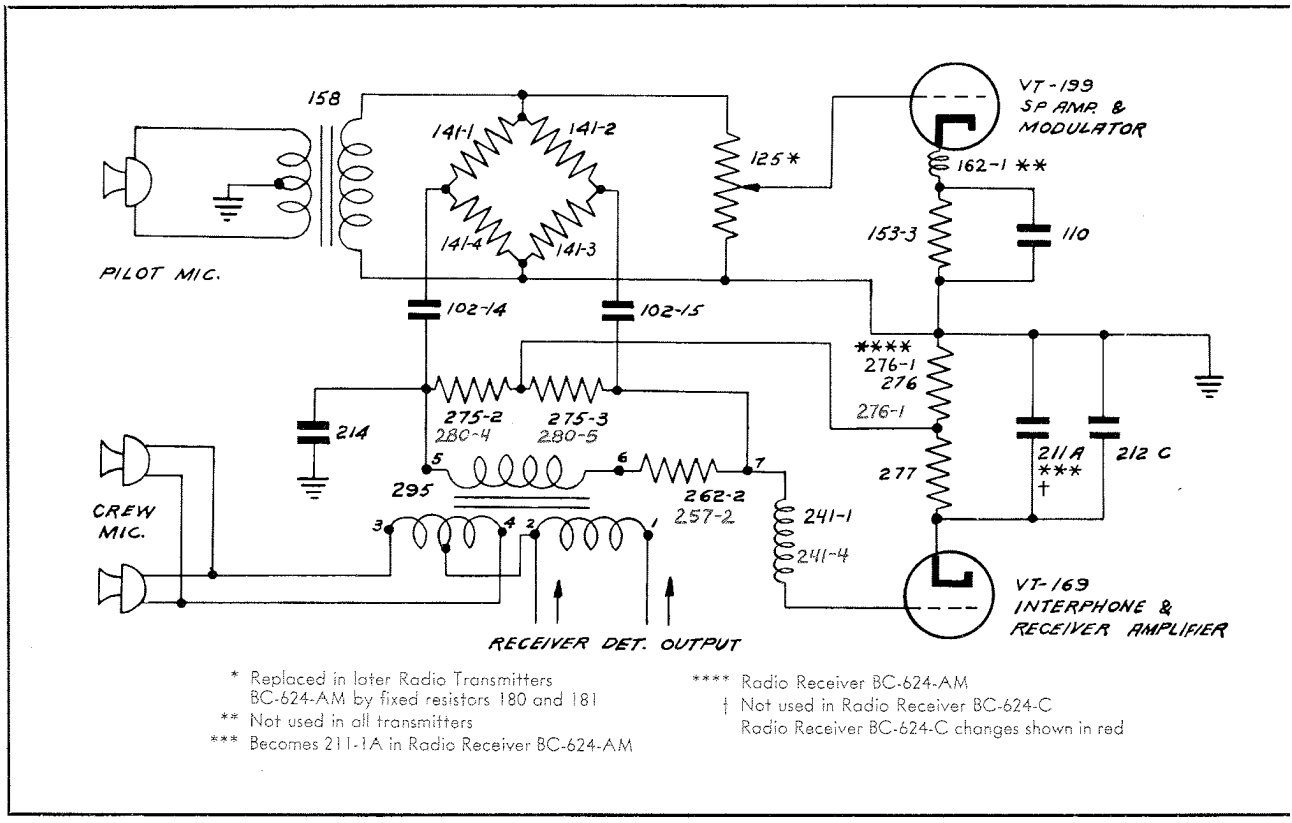


Figure 4-17. Simplified Diagram of the Transmitter-Receiver Microphone Mixing Circuit

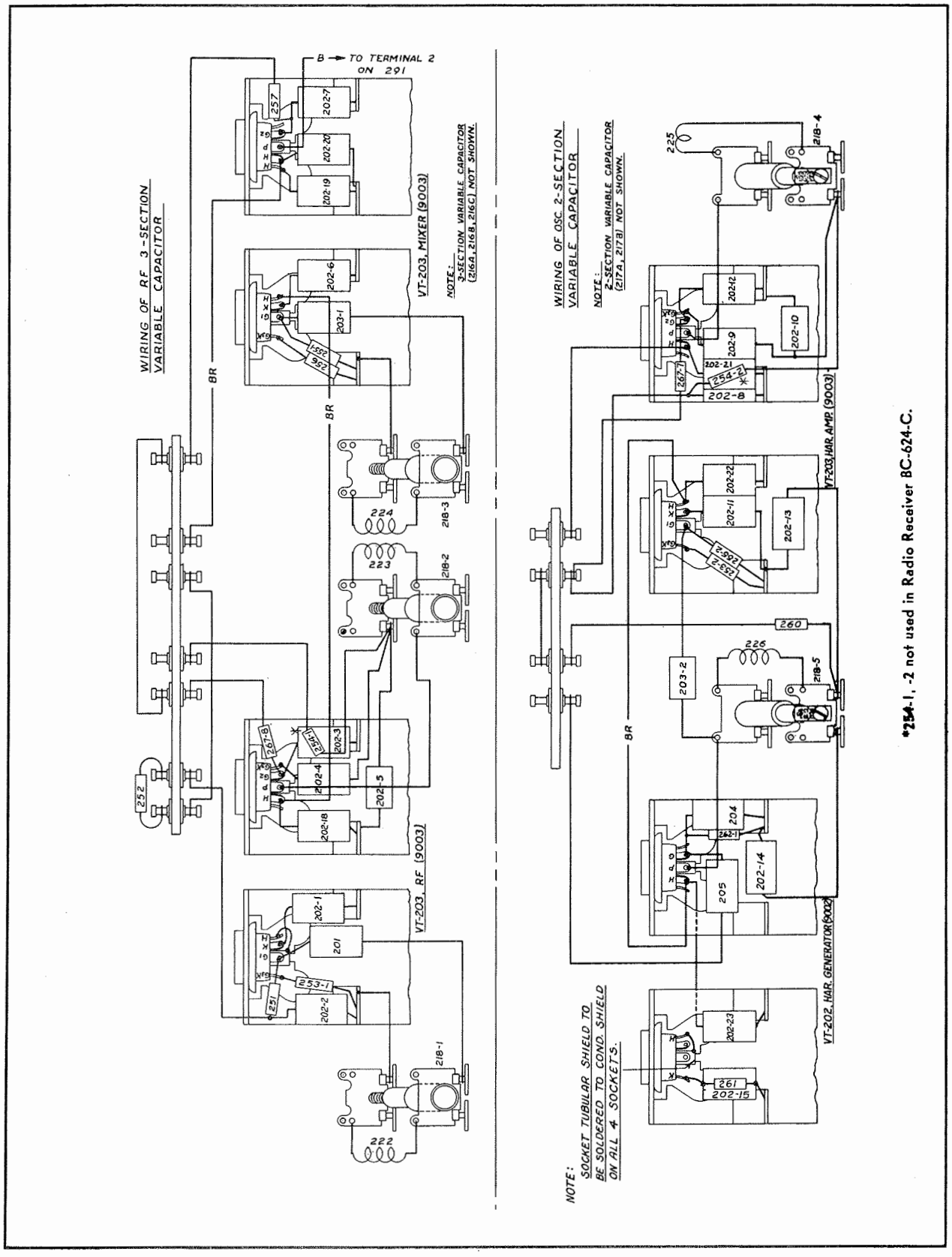


Figure 4-18. Receiver R-F and Oscillator Assembly—Wiring Diagram

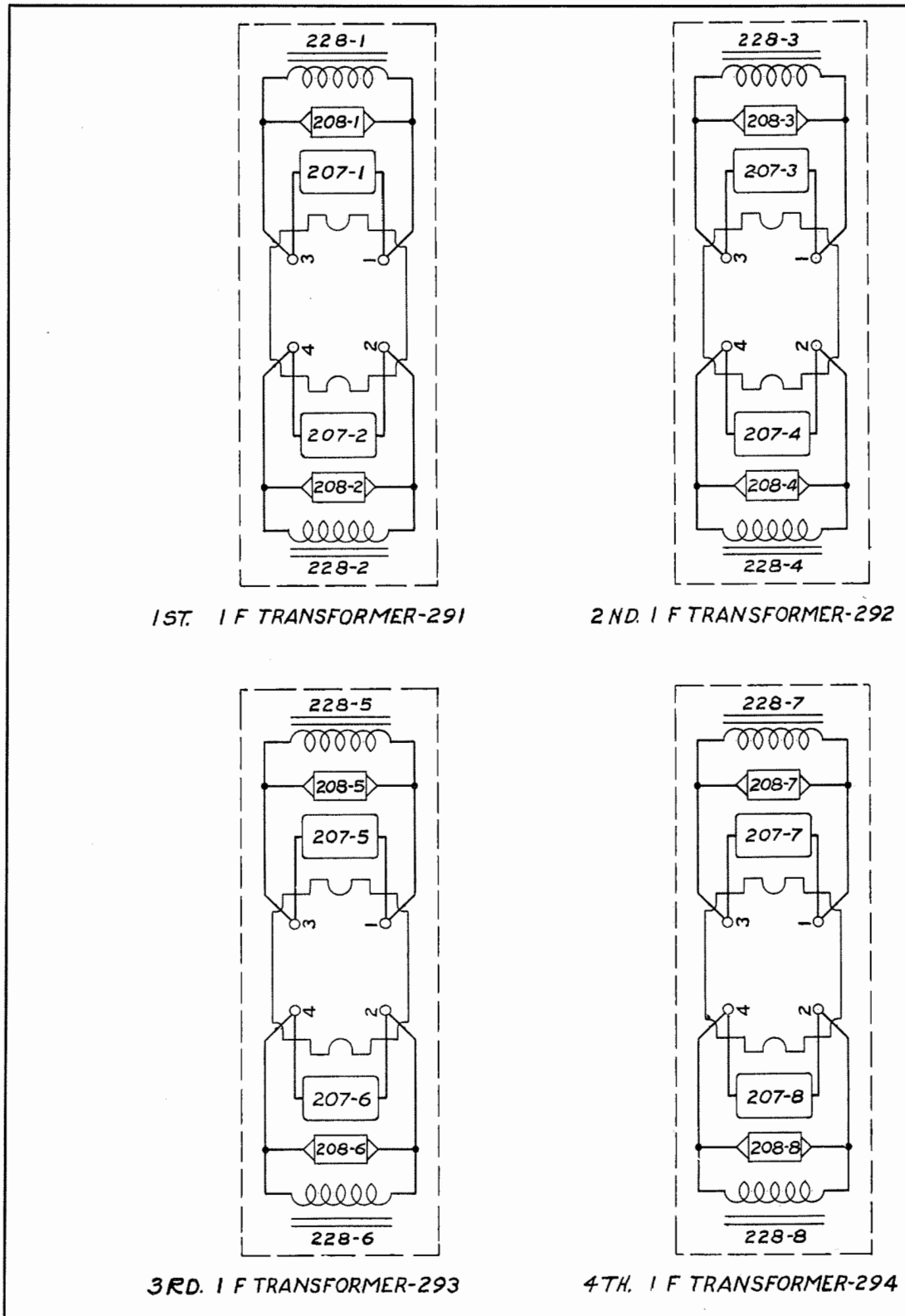


Figure 4-19. Receiver I-F Transformers—Wiring Diagram

is received. This latter adjustment is manual and may be varied to silence the receiver output at any signal below 2 to 10 microvolts.

(4) When the negative bias applied to the squelch tube is sufficiently high to cut off plate current through this tube, the flow of current through resistor 275-4 becomes zero, and the potential on the grid of the first audio tube becomes substantially the same voltage as that appearing at the junction of resistors 285 and 273-3. Under this condition, normal operation of the first audio stage takes place, whereas with a current flowing in resistor 275-4, the grid of the first audio tube is negative with respect to the cathode and the tube becomes inoperative.

(5) The first audio stage operates as a cathode follower with a gain of less than one (resistor 285 is used for cathode load and bias). Although this mode of operation inherently limits distortion, some will occur at the point where the squelch circuit just cuts off. The plate voltage for the squelch tube and the first and second audio amplifiers is filtered by the resistance capacitance combination, resistor 264-3 and capacitor 212A. This permits deletion of the choke 269B used in Radio Receiver BC-624-AM.

e. SECOND AND THIRD AUDIO STAGES.

(1) Audio voltage supplied from the first audio stage through capacitor 206-25 and resistor 272-1 is applied to transformer 295.

(2) The output of the secondary winding is then applied to the grid of tube JAN-12C8 through resistor 257-2 and radio frequency choke 241-4. Cathode bias for this tube is provided by resistor 277-2 (screen circuit bypassing).

(3) The audio voltage applied to the last stage is developed across the plate load resistor 266-4 and is coupled by capacitor 206-26 to the grid of tube JAN-12A6 (VT-134). Resistor 258-3 is a grid leak. Cathode bias is provided by resistors 235-1 and 235-2, paralleled to increase the total wattage dissipation capabilities. Capacitor 212D is an audio bypass around the cathode bias circuit.

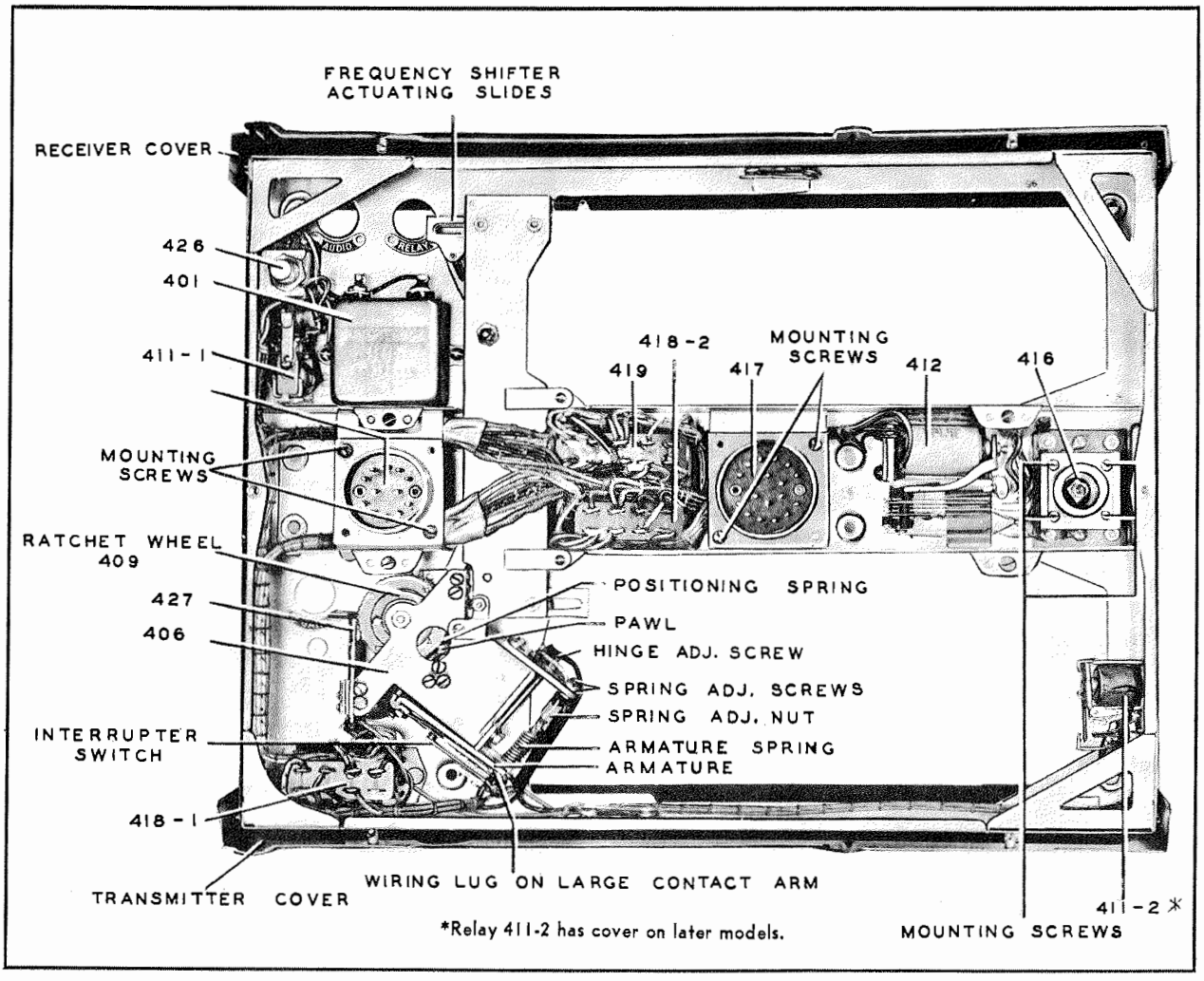


Figure 4-20. Rack FT-244-A—Center Cover Removed—Top View

(4) To improve the output regulation of the third audio stage, some negative feedback is introduced through resistor 240. The output circuit is matched to the final audio stage by means of transformer 200.

(5) Two impedance levels are available for the connection of both high and low impedance headsets. Tap 4 matches from one to twelve pairs of 600 ohm headsets connected in parallel; tap 5 similarly matches one to twelve paralleled 8000 ohm headsets.

5. RACK FT-244-A.

(See figures 4-20 and 4-21.)

a. Rack FT-244-A fits over the transmitter and receiver. The complete assembly is held together mechanically by eight mounting screws. *(See fig. 2-1, also refer to sec. I, par. 4 b.)*

b. All input and output connections to the transmitter and receiver are made through the rack. *(See fig. 4-20.)* The filtered d-c output is applied to the transmitter and receiver through socket 420. The master control box is connected to socket 417. The transmitter r-f output of receiver signal input is made through socket 416. Receiver plug 231 engages rack socket 419. Transmitter plugs 123-1 and 123-2, respectively, engage rack sockets 418-1 and 418-2. By means of these connections, the rack functions as a junction box which interconnects the transmitter and receiver and the other units of the equipment.

c. The channel-control ratchet motor 406 and the antenna-changeover relay 412 are respectively the means by which it is possible to actuate the frequency-shifter mechanism and to alternate the mode of operation between reception and transmission.

d. The ratchet wheel of the channel control motor 406 is equipped with four arms spaced 90 degrees apart. The motor is so positioned that a ratchet-wheel arm will release a frequency-shifter actuating slide when the ratchet wheel is displaced one tooth past the point where the opposite arm first opens a pair of positioning-switch contacts 427A, B, C, or D. In this position of the motor assembly, the contacts remain open. When a channel is selected, the solenoid of motor 406 receives operating power through terminal 4 of socket 420. The motor solenoid and the interrupter switch cause the armature to oscillate; and the pawl, which is part to the armature assembly, rotates the ratchet wheel. As this wheel rotates, the arms attached to it displace the frequency-shifter actuating slides in the order "A," "B," "C," "D" and open the contacts of the positioning switch 427, in the same order. When the positioning switch contacts "A," "B," "C," or "D," which correspond to the channel selected on the control box, are opened, the motor circuit is broken and the process of channel-selection ceases. When this happens, the ratchet wheel arms will have displaced the actuating slide, and consequently the receiver and transmitter shifter slides for the desired channel to the position where the proper crystals are chosen and the circuits tuned.

e. When the pushbutton switch 426 (the release button) is depressed the motor solenoid is energized a attracts the armature. When the armature is releas the pawl attached to it displaces the ratchet wheel tooth which is just sufficient to cause the complete lease of the channel slides. There is no contact wh ever between the actuating slides and the channel slic This is the only condition of the frequency-shifter me anism which permits removal of the transmitter or ceiver from the rack without damaging the equipme

f. Now if release pushbutton 426 is pressed a secc time, the ratchet wheel is again displaced one tooth a the ratchet-wheel arm is completely disengaged from positioning switch contacts or the channel in use. T closes the motor circuit again, and channels are selec in the order "A," "B," "C," "D" until the channel p viously selected on the control box is reached. The fore, the release pushbutton 426 makes it possible release the frequency-shifter mechanism and to selec channel again without touching any control on the c trol box.

g. Locking relay 411-1 is connected across the mot voltage supply and is energized whenever the moto energized. When the contacts of locking relay 411-1 closed, the antenna-changeover relay 412 is energi and switches the antenna to "RECEIVE." This p vents transmission while channel selection takes pl When the antenna-changeover relay is in the uner gized state, the transmitter-receiver assembly is c nected for transmission. (See par. 8, this section, fc detailed description of the control circuit and the l circuit switching effected by means of the anten changeover relay 412.)

6. RECTIFIER RA-62-B AND RA-62-C.

a. GENERAL.—Rectifier RA-62-B or RA-62-C is signed to supply power from a 110- or 220-volt, sir phase 40-60-cycle, a-c power source, and to supply di current for the operation of Radio Set SCR-624-A eq ment. *(See fig. 8-1.)*

(1) The d-c output voltages supplied are the lowing:

(a) The plate supply is 300 volts at 230-m amperes.

(b) The bias supply is 150 volts at 8-m amperes.

(c) The heater supply is 13 volts at 3.9 ampe

(2) The a-c input voltage is rectified by mean the following rectifier elements:

(a) The plate supply is rectified by two rect tubes JAN-5U4G (VT-244).

(b) The bias supply is rectified by one rect tube JAN-6X5G (VT-126-B).

(c) The heater supply is rectified by one ma sium copper sulphide rectifier (IS36B7).

(3) All outputs are completely filtered to pre radio interference in the transmitter-receiver assemb

(4) The high-voltage circuit of Rectifier RA- or RA-62-C has a time delay feature, preventing the

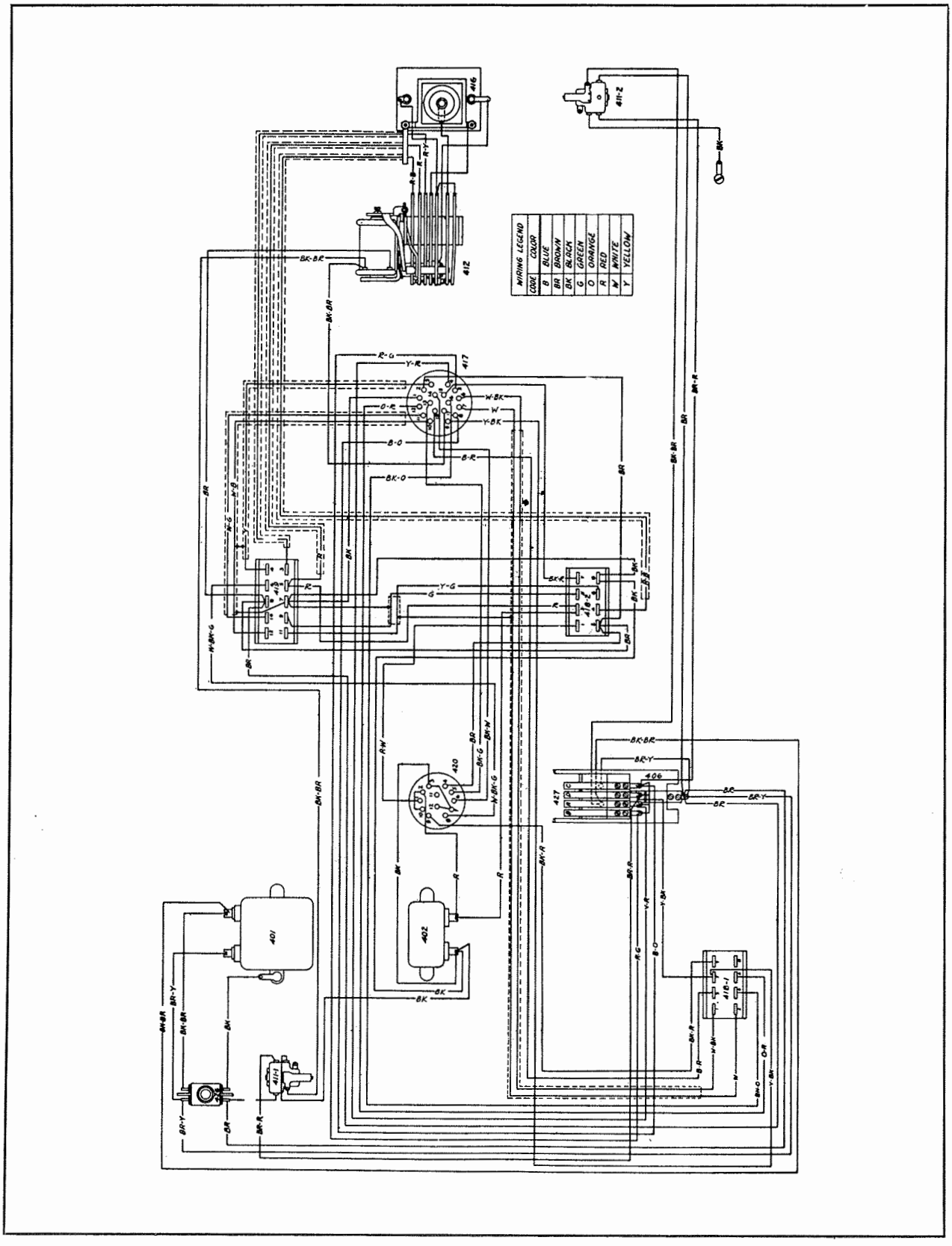


Figure 4-21. Rack FT-244-A—Wiring Diagram

plication of plate and bias voltage to the radio equipment until the filaments are sufficiently heated. This requires 10 to 15 seconds, during which time the plate voltage will measure zero at the power supply.

(5) An automatic carbon-pile voltage regulator controls the heater supply voltage. This regulator does not affect the high-voltage supply.

(6) The rectifier will operate at any ambient temperature within the range of minus 50 to plus 70 degrees C. (minus 58 to plus 150 degrees F). At minus 50 degrees C. (minus 58 degrees F) the ripple voltage of the plate and the bias voltage does not increase more than 60 percent, and the heater voltage ripple does not increase more than 150 percent.

b. A-C INPUT.

(1) Rectifier RA-62-B has a male a-c input plug which is flush with the face of the panel, but the Rectifier RA-62-C has a recessed male twist plug for a-c input.

(2) The power transformer is a double-primary type having six input voltage selector taps for a-c inputs of 105, 115, 125, 210, 230, or 250 volts.

(3) Each primary winding is individually fused with 3-ampere, 250-volt fuses. The proper a-c input voltage is selected by a 3-hole, 6-position switch. This switch connects the power transformer primaries in parallel at the 105-, 115-, and 125-volt positions, and in series at the 210-, 230-, and 250-volt positions. When it is in the "ON" position the single-pole, single-throw "ON-OFF" toggle switch connects the power transformer primary to the a-c input receptacle.

c. D-C HEATER VOLTAGE OUTPUT.

(1) The a-c voltage from the power transformer secondary terminals 19 and 20 is rectified by the magnesium copper sulphide rectifier.

(2) The rectified voltage, now pulsating d-c, is filtered by the .01-henry choke and the two 6000-microfarad capacitors, resulting in a ripple voltage of not more than 2 percent.

(3) A voltage regulator holds the heater output voltage constant over a wide range of input and load voltages.

(4) The voltage is maintained within the limits of 12.6 to 13.5 volts at a load of between 2.75 and 5.0 amperes.

(5) Terminal 4 of the 6-contact receptacle is the plus 13-volt heater output connection.

d. D-C BIAS VOLTAGE OUTPUT.

(1) Heater voltage for the rectifier tube JAN-6X5GT (VT-126-B) is supplied by terminals 14 to 15 of a secondary winding of the power transformer. Alternating current voltage from terminals 16 and 18 of one of the power transformer secondaries is rectified by tube JAN-6X5GT (VT-126-B).

(2) The pulsating d-c voltage, obtained at terminal 17 of the winding and at the cathode of this tube, is filtered by two chokes and a three-section capacitor. The values of the units in this three-section capacitor are 15, and 30 microfarad. The ripple voltage does exceed 0.25 percent.

(3) Terminal 1 of the 6-contact receptacle is minus 150 volt bias supply connection. The bias cir is fitted with a relay so that, in the event of bias fail the plate supply voltage is removed. This relay cl the plate supply voltage (plus 310 volts) circuit at more than 10-milliamperes and opens the circuit at more than 4-milliampere flow through the relay coil

e. D-C PLATE VOLTAGE OUTPUT.

(1) The heater voltage for the two rectifier tu JAN-5U4G (VT-244) is supplied by terminals 9 and of a secondary winding of the power transformer.

(2) Alternating current voltage from terminals and 13 of one of the power transformer secondarie rectified by tubes JAN-5U4G (VT-244).

(3) The pulsating d-c voltage, obtained at minals 12 and 9, is filtered by a 10-henry choke an 30-microfarad capacitor. A 15,000 ohm bleeder resi is connected across this capacitor. The ripple volt does not exceed 0.3 percent.

(4) Terminal 2 of the 6-contact receptacle is plus 310-volt plate supply connection.

7. CONTROL BOXES.

Note

Control Boxes BC-1175-A, BC-1171-A, and BC-1176-A are used in Radio Set SCR-624-A, while Control Boxes BC-1312, BC-1313, and BC-1314 are used in Radio Set SCR-624-B.

a. GENERAL.

(1) In general, the control boxes function as ju tion boxes and as transmit-receive control at three ferent points of operation.

(2) In addition to these functions, Control Bo BC-1175-A, BC-1171-A, BC-1312, and BC-1314 also c trol channel selection. *(See figs. 5-6, 5-7, 5-8 and 5-*

b. CONTROL BOX BC-1175-A.

(1) Control Box BC-1175-A is supported by connected to the 18-contact receptacle of Rack FT-24

(2) Depressing the "RADIO PRESS TO TAI push button (220) energizes relay 228 in Con Box BC-1175-A causing Telephone EE-8-A or EE through binding post 225-3, to be connected thro the resistor network 226-1, 226-2, and 227 to the in transformer 158 of Radio Transmitter BC-625-A.

(3) Releasing this push button de-energizes relay 228, switching the telephone to the output tr former 296A of Radio Receiver BC-624-A, and energ the relay 412 of Rack FT-244-A which in turn swit the antenna and plate supply to the receiver circuits

(4) Placing the "LOCAL-REMOTE" switch (2 in the "LOCAL" position connects the "COM" bin post 225-2 to "CHANNEL" control switch 224, per ting channel selection only at Control Box BC-1175-

(5) Placing the switch 223 in the "REMOTE" position disconnects "CHANNEL" control switch 224 of Control Box BC-1175-A and connects it, through contact 2 of Cord CD-951-A, to "CHANNEL" control switch 211 of Control Box BC-1171-A. This permits channel selection at the 500-foot control point (Control Box BC-1171-A) instead of at Control Box BC-1175-A.

(6) Placing the switch on any contact of channel control switch 224, grounds the appropriate contact of the ratchet motor control circuits in Rack FT-244-A. Thus the channel selector circuits controlled by the ratchet motor are operated until the contact is mechanically opened, and the desired channel is selected.

c. CONTROL BOX BC-1171-A.

(1) The binding posts "K," "COM" and "TEL" and "CHANNEL" selector contacts are connected to the equivalent contacts in Control Box BC-1175-A through the 500-foot, eight-conductor Cord CD-810-A.

(2) "RADIO PRESS TO TALK" push button 210 operates in the same manner as push button 220 on Control Box BC-1175-A which is described in paragraph 7. *b,* this section.

(3) "CHANNEL" control switch (211) will operate only when "LOCAL-REMOTE" switch 223 on Control Box BC-1175-A is in the "REMOTE" position. The function of switch 211 then becomes similar to "CHANNEL" control switch (224) as described in paragraph 7.*b.*(6), this section.

d. CONTROL BOX BC-1176-A (REMOTE).

(1) Binding posts "K," "COM." and "TEL." of Control Box BC-1176-A are connected to "K," "COM.," and "Tel." binding posts of Control Box BC-1171-A by means of a three-wire telephone (2 mile maximum) line.

(2) The only control on Control Box BC-1176-A is the "RADIO PRESS TO TALK" push button (200) which operates in the same manner as push button 220 on Control Box BC-1175-A. This function is described in paragraph 7.*b.*(2), this section.

e. CONTROL BOX BC-1312.

(1) Control Box BC-1312 is supported by and connected directly to the 18-contact receptacle of Rack FT-244-A.

(2) Throwing the "SEND-REC." switch (220) to "SEND" position energizes relay 228 in Control Box BC-1312 causing Telephone EE-8-A or EE-8-B, through socket 231, to be connected through the resistor network 226-1, 226-2, 227, and 233 to the input transformer 158 of the radio transmitter. Throwing the "SEND-REC." switch to "REC." position de-energizes relay 228, switching the Telephone EE-8-A or EE-8-B and Loudspeaker LS-10-A, LS-10-B or LS-10-C to the output transformer of the radio receiver, and energizes relay 412 of Rack FT-244-A which in turn switches the antenna and plate supply to the reciever circuits. Potentiometer 232 is the "VOLUME" control which permits adjustment of the radio receiver output.

(3) Placing "LOCAL-REMOTE" switch (224), in the "LOCAL" position connects the "COM." binding post (225-2) to the arm of "CHANNEL" control switch 224, permitting channel selection only at Control Box BC-1312. Placing "LOCAL-REMOTE" switch (223) in the "REMOTE" position disconnects the "CHANNEL" control switch (224) of Control Box BC-1312 and connects it, through pin 2 of receptacle 222 and by Cord CD-951-A, to "CHANNEL" control switch (211) of Control Box BC-1314. This permits channel selection at the 500-foot control point (Control Box BC-1314) instead of at Control Box BC-1312.

(4) Placing the switch on any cotact of "CHANNEL" control switch (224), grounds the appropriate contact of the ratchet motor control circuits in Rack FT-244-A. Thus the channel selector circuits controlled by the ratchet motor are operated until the contact is mechanically opened, and the desired channel is selected.

f. CONTROL BOX BC-1314.

(1) Socket 212 connects the "K," "COM.," and "TEL." lines and channel selector contacts to the equivalent contacts in Control Box BC-1312 through the 500-foot, eight-conductor Cord CD-810-A.

(2) Switch 210 operates in the same manner as "SEND-REC." switch (220) on Control Box BC-1312 which is described in paragraph 7.*e.*(2), above. The audio output is controlled by "VOLUME" control (215).

(3) "CHANNEL" control switch (211) will operate only when "LOCAL-REMOTE" switch (223) on Control Box BC-1312 is in the "REMOTE" position. The function of this switch is to select a radio channel by operating relay 230-1, 230-2, 230-3 or 230-4 located in Control Box BC-1312. The channel selector determines the relay which will be operated, and the relay acts like a secondary switch selecting a radio channel for Control Box BC-1314. The actual circuit for selecting the channel is not completed directly from Control Box BC-1314 because in some cases, the resistance of the cable to and from Control Box BC-1314 may drop the voltage to a potential which would not operate the relays in Rack FT-244-A necessary to change channels.

g. CONTROL BOX BC-1313.

(1) Binding post "K," "COM," and "TEL." of Control Box BC-1313 is connected to "K," "COM," and "TEL." binding posts to Control Box BC-1314 by means of a three-wire telephone (2-mile maximum) line.

(2) The only two controls on Control Box BC-1313 are "SEND-REC." switch (200) which operates in the same manner as "SEND-REC." switch (220) on Control Box BC-1312 and volume control 203. (See paragraph 7.*e.*(2), above.)

8. CONTROL CIRCUIT.

a. FREQUENCY CHANGING OPERATION.

(1) If channel "A" is selected the "A" contacts of switch 224 or relay 230-4 are closed, permitting a flow of current from the plus 13-volt supply through the coils of relays 411-1 and 411-2, the contacts of motor positioning switch 427-A, switch 224 (or 211) and the contacts of relay 130 to ground (minus 13 volts).

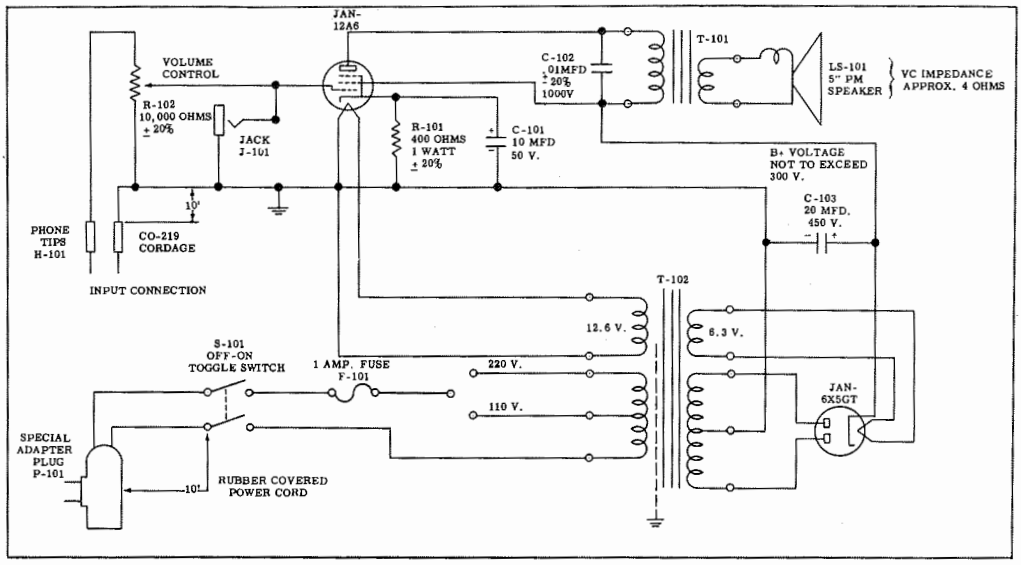


Figure 4-22. Loudspeaker LS-10-A Circuit Diagram

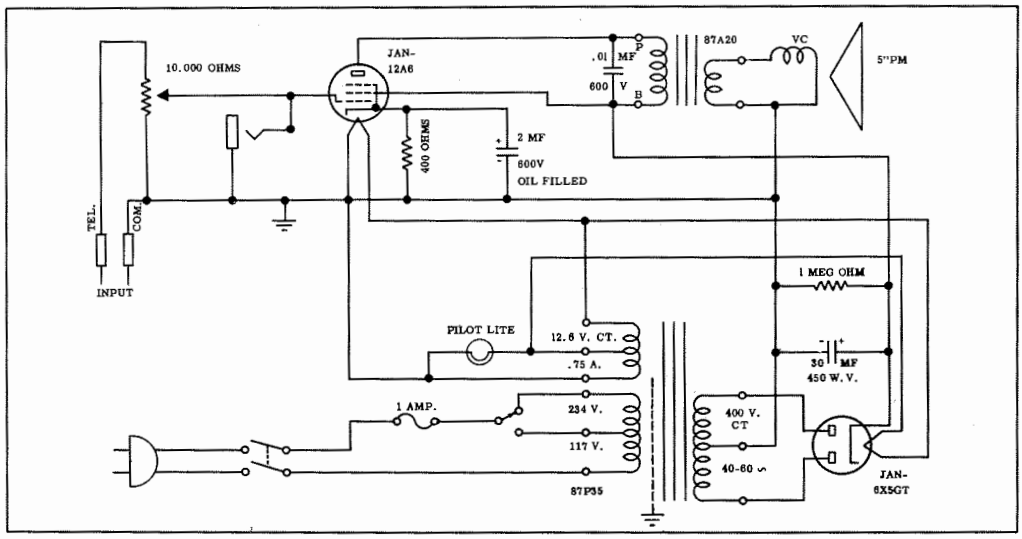


Figure 4-23. Loudspeaker LS-10-B Circuit Diagram

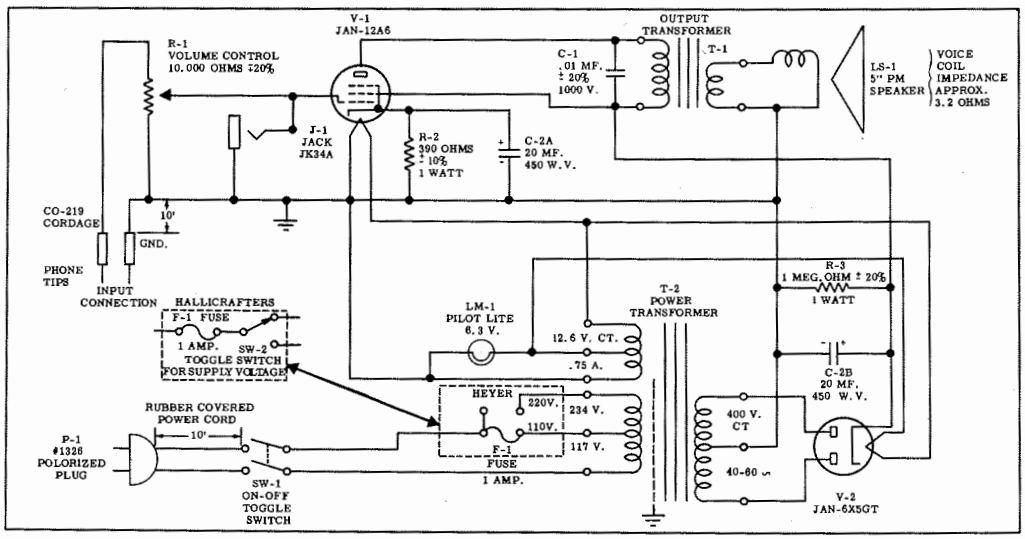


Figure 4-24. Loudspeaker LS-10-C Circuit Diagram

(2) Relays 411-1 and 411-2 immediately operate. When the contacts of relay 411-2 close, a potential of 13 volts is applied to ratchet motor 406, causing it to rotate until positioning switch 427A opens, at which time the transmitter and receiver channel "A" slides will be completely engaged. The opening of contacts 427A breaks the circuit through relays 411-1 and 411-2, stopping the motor instantly.

(3) The operation of relay 411-1 may be disregarded when the equipment is in the "RECEIVE" (normal stand by) condition, since relay 412 is already energized by current flowing from the plus 13-volt supply, through one pair of contacts of relay 228 to ground. However, if channel shifting were to start while transmission was going on (antenna relay 412 de-energized), current would flow from the plus 13-volt supply through the coil of relay 412 and through relay 411-1 to ground, thus transferring the antenna relay 412 to the "RECEIVE" position until channel shifting was completed.

b. TRANSMIT OPERATION.

(1) When the equipment is in "RECEIVE" position, the antenna relay 412 is operated by the current from the plus 13-volt supply through its coil and one pair of contacts on relay 228 to ground.

(2) In its operated position, relay 312 connects the antenna to Radio Receiver BC-624-A or BC-624-AM and connects plus 300-volt to the r-f circuit of the receiver. When the "SEND-REC." switch is on "SEND," relay 228 is operated and the circuit from the plus 13-volt supply through relay 412 is broken, and relay 412 is de-energized. With the antenna relay in this condition, the antenna is connected to the r-f output terminal of Radio Transmitter BC-625-A or BC-625-AM and a potential of plus 300-volt is transferred to the plate circuit of the transmitter oscillator tube JAN-6G6G (VT-198-A) and second harmonic amplifier tube JAN-832 (VT-118).

9. LOUDSPEAKER LS-10-A, LS-10-B AND LS-10-C

Loudspeaker LS-10-A, LS-10-B or LS-10-C contains a permanent magnet speaker, a power supply for operation from 115 to 230 volts, 40 to 60 cycles a-c input, and a two-watt amplifier for boosting audio-frequency output. For rectification the power supply uses a tube JAN-6X5GT (VT-126-B) and for amplification a JAN-12A6 (VT-244). (*See figs. 4-22, 4-23 and 4-24.*)

SECTION V
MAINTENANCE

IMPORTANT

Periodic inspections prescribed herein represent minimum requirements. If, because of local conditions, peculiarities of equipment, or abnormal usage these inspections are found insufficient to assure satisfactory operation of equipment, local authorities should not hesitate to increase their scope or frequency.

WARNING

This equipment employs high voltages which are dangerous and may be fatal if contacted by personnel. Use extreme caution when working with the equipment.

1. DAILY INSPECTION.

a. VISUAL INSPECTION.

(1) Check that the antenna mast is secure.

(2) Check for intermittent contacts by placing the receiver in operation and subjecting the major units and associated plugs and cordage to jarring.

(3) Check all plug and socket connections.

(4) Check all interconnecting cords for breakage. (Note particularly the power and antenna cables.)

(5) Power Unit PE-75-D for gasoline, oil, and water.

b. OPERATIONAL INSPECTION.

(1) Select channels "A," "B," "C," and "D" on one of the control boxes in sequence to check the operation of the ratchet motor and the shifter mechanism. Repeat for each control box used on the installation.

(2) Check with another station to check the modulation of the transmitter.

(3) Check the operation of the receiver by listening for noises.

(4) Check the telephones for proper operation.

2. WEEKLY INSPECTION.

a. INSPECTION OF ANTENNA MAST MA-7-A.

(1) Check the security of mounting and condition of all stays and anchors.

(2) Check the antenna base cable connection for corrosion and loose contact.

b. INSPECTION OF CONTROL BOXES BC-1175-A, BC-1171-A, BC-1176-A, BC-1312, BC-1314, AND BC-1313.

(1) Remove the screws at the base of the control box in question and pull the bottom plate free.

(2) Check relay contacts for fungus growth and corrosion.

(3) Check switches for satisfactory operation.

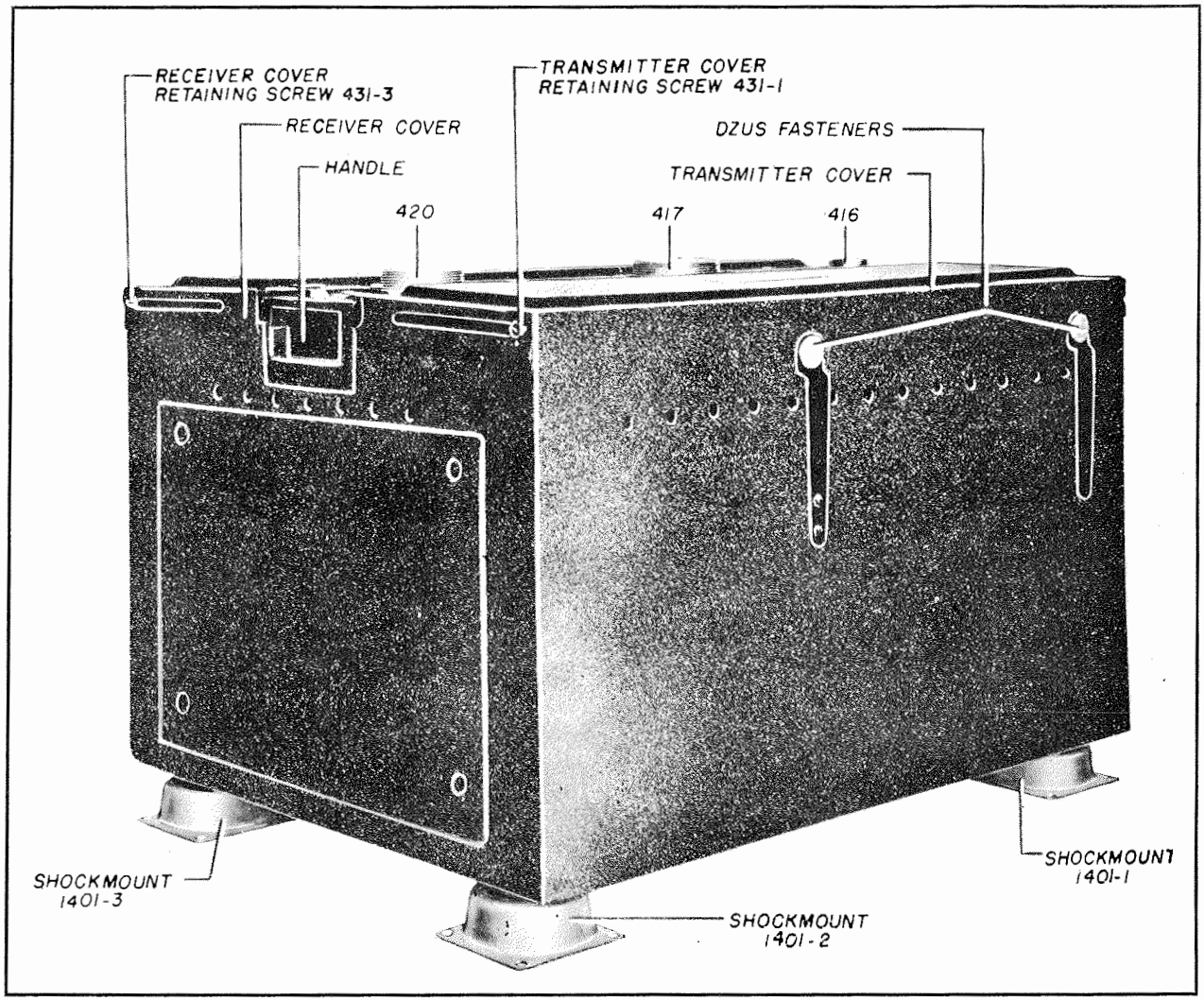


Figure 5-1. Transmitter-Receiver Assembly—Front Oblique View

(4) Visually inspect all connections for breaks, fungus growth and corrosion.

(5) Reassemble the control box taking care to tighten the screws securely.

c. INSPECTION OF RACK FT-244-A.—This inspection applies to racks in Radio Transmitter BC-625-A or BC-625-AM, and in Radio Receiver BC-624-A, BC-624-AM, or BC-624-C.

(1) RACK INSPECTION.

(See figure 4-20.)

(a) Remove the six screws on the rack center cover which are not recessed and the lock washers securing the rack center cover. Remove the center cover.

(b) Blow the dust and dirt out with dry compressed air. Avoid subjecting the delicate parts, particularly the antenna changeover relay, to direct blasts.

(c) Inspect the mounting screws and electrical connections on the antenna receptacle 416. *(See fig. 5-1.)*

(d) Inspect the mounting and electrical connections on antenna relay 412. Clean and burnish or polish the relay contact points as directed in paragraph 6*c*(8)*(b)*, this section.

(e) Inspect the condition of the pins of ceptacles 420 and 417.

(f) Inspect relays 411-1 and 411-2 by pressi the armature lightly until it stops. Then check the cc tact points of the relay. Clean the contact points directed in paragraph 6*c*(8)*(b)*, this section.

(g) Inspect the cable wiring for wear where goes through the center channel of the rack. At t same time inspect the cable where it passes under t receptacle and over the shifter mechanism shield.

(2) RACK SHIFTER MECHANISM AN RATCHET MOTOR INSPECTION.—Stand the ra on its end with the ratchet motor down and insp the following parts for dirt, corrosion, and need lubrication: *(For location of parts see fig. 5-12.)*

(a) The receiver shifter actuating slides a their respective tracks and spacers. (If relubrication necessary, refer to par. 6*b*, this sec.)

(b) The transmitter shifter actuating slides a their respective tracks, spacers, and slide heads. (

fer to paragraph *6b*, this section, if lubrication is needed.)

(c) The motor arms (refer to paragraph *6b*, this section, if lubrication is needed).

(d) Each pair of cross arms at each end and at the pivoting point.

(e) The ratchet wheel of the motor. (To clean the ratchet wheel, rotate the wheel by pressing and repressing the pawl spring perch. Make sure the ratchet wheel is left in a position where all the shifter actuating slides are disengaged.)

(f) The pawl and pawl stop of the motor.

(g) The hinge assembly on the motor.

(h) The shifter slides (for broken or damaged cams and springs).

(3) MOTOR INTERRUPTER CONTACTS INSPECTION.—Inspect the motor interrupter contacts. If the contacts need repair other than cleaning, replace the rack assembly. *(For location of parts see fig. 5-12.)*

d. INSPECTION OF THE RECEIVER.

(1) VACUUM TUBES.

(a) Inspect the vacuum tubes for signs of oxidation and their sockets for cracks.

(b) If the tubes require replacement, refer to paragraph 5, this section.

Note

Use all tubes of a given type supplied with the equipment before employing tubes from general stock. Remove the vacuum tubes from their sockets by pulling nearly straight up. Install the tubes by pushing nearly straight down. If necessary, rock tubes slightly.

(2) MECHANICAL.—Place the receiver so that slides and tuning controls are up and rotate the two turning controls *(see fig. 4-9)* making certain each turns easily and does not bind. Inspect the following:

(a) The four shifter mounting screws (for security).

(b) The mounting nuts on the "AUDIO" and "RELAY" controls *(see fig. 4-9)*. If they are loose, tighten and seal them with glyptal.

(c) The mounting screws of all plugs and receptacles.

(d) The four positioning clips, clip springs, and the four cam assemblies on each stack assembly. To check, push each shifter in with a finger until it seats firmly. Release quickly. Unless a cam or positioning clip or clip spring is defective, the slide will return to the released position and the tuning controls will rotate to their respective settings as each slide is depressed.

(e) The bearing surfaces of the shifter slides. Clean them with solvent PS-661 or carbon tetrachloride. If relubrication is necessary, see paragraph *6b*, this section.

(f) The mounting of the r-f and oscillator assembly for security. (Be careful not to disturb the settings of the coils and trimmer capacitors.)

(g) The mounting nuts on the crystal board.

(h) The various parts mounted on the chassis (for security).

(i) The three mounting screws on the end of the chassis holding the r-f and oscillator assembly (for security). *(See fig. 4-9.)*

(j) The mounting screws and nuts of each component part accessible from the bottom of the chassis (for security).

(3) ELECTRICAL.—Inspect for the following:

(a) Evidence of wearing of cables in the chassis.

(b) Loose solder joints and terminal board connections.

(c) Frayed leads or broken strands of wire.

(d) Nearly shorted connection.

e. INSPECTION OF THE TRANSMITTER.

(1) Place the transmitter with the tuning controls up.

(2) Remove the power amplifier shield, located on the end of the chassis, after loosening the four Dzus fasteners. *(See fig. 4-5.)*

(3) Inspect the vacuum tubes for tightness in the sockets and tight fitting grid caps. Check all tubes except tube JAN-832 in a tube checker. (Instructions for testing tube JAN-832 appear later in this section.) If tubes require replacement, see paragraph 5*a*(1), this section.

Note

Use all tubes of a given type supplied with the equipment before employing tubes from general stock.

(4) Check in the power amplifier section for security of parts and wiring, paying particular attention to the mechanical condition of the antenna coupling inductor 122 *(see figs. 4-5 and 4-6)* and flexible plate leads to tube JAN-832.

(5) Replace the power amplifier shield making certain that the mycalex strip 163 *(see fig. 4-5)* rests securely between the plate pins on tube JAN-832 and is exerting a downward pressure.

(6) Inspect for security of the four frequency shifter mounting screws.

(7) Rotate each of four tuning controls making certain that each turns easily.

(8) Inspect the mounting nut on the "GAIN" control 125. *(See fig. 4-1.)* If it is loose, tighten and seal it with glyptal.

Note

This "GAIN" control has been eliminated on later productions of the transmitter.

(9) Rotate the knob of the "METER SWITCH" 165 *(see fig. 4-1)* from position 1 to 6 and check for normal rotation and locking.

(10) Inspect the four positioning clips, the clip springs, and the four cam assemblies by pushing each shifter slide in with the fingers until it seats firmly. Release quickly. If the cams, positioning clips and clip springs are not defective, the slide will return to the released position, and the tuning controls will rotate to their respective settings as each slide is depressed.

(11) Inspect the bearing surface of the shifter slides and clean with PS-661 solvent or carbon tetrachloride. If lubrication is necessary, see paragraph 6*b*, this section.

(12) Place the transmitter on one side, then on the other side and finally up on one end, and, in each position, inspect for security of the component parts which are accessible in each position.

(13) Reassemble the receiver and transmitter with the rack. Make certain, before tightening the mounting screws of the receiver and transmitter, that their respective actuating slides are approximately 1/32-inch from the slide assemblies when in the released position. Reassemble in Case CS-80-A or Case CS-80-C and nect the plugs to the rack sockets.

f. TRANSMITTER AND RECEIVER TUNIN

(1) Install crystals corresponding to the assig channel frequencies in the transmitter crystal soc *(See fig. 4-1.)* Tune the transmitter according to directions in paragraphs 9*a* and *b*, this section.

(2) Install crystals corresponding to the assig frequencies in the crystal sockets of the receiver. T the receiver according to the directions given in p graph 9*c*, this section.

3. TROUBLE LOCATION.

a. TRANSMITTER-RECEIVER ASSEMBLY.— fore removing any component from Radio Set S 624-A, determine the cause of failure and isolate particular faulty circuit or component of the equipm *Look for the simple causes of trouble first.* Once identity of the defective unit has been established yond reasonable doubt, remove and repair it or rep it with a good unit.

The following list of troubles and probable ca will assist in locating and remedying some of the m common faults in the radio set.

TABLE 5-1. TROUBLE LOCATION CHART FOR RADIO SET SCR-624.

Symptom	*Probable Cause*
Receiver operates properly, but no transmitter output on any channel.	Transmitter not tuned properly. No crystal in socket. Defective antenna 412. Locking relay 411-1 jammed in operative position. Ground on pi in 18-pin socket 417 on Rack FT-244-A, or associated wiring connecti that pin. Defective transmitter.
Transmitter operates properly but receiver dead or only rectifier ripple audible in headset.	Receiver not tuned properly. No crystal in socket. Receiver "AUDIC "RELAY" controls rotated fully counterclockwise. Defective receiver. fective wiring in audio output circuit (pin 3 in 18-pin socket 417 on FT-244-A). Defective microphone-headset jack or plug. Defective an relay 412 or associated control wiring.
Audible howl in head set; also modulation present on transmitter carrier.	Water or dirt between terminals or contacts of microphone jack.
Channel selecting mechanism in Rack FT-244-A is operated when any channel is selected but one or two channels are inoperative for both transmitting and receiving.	Defective or misadjusted motor positioning switch 427 in Rack FT-244-A, ing overtravel of rachet motor and subsequent release of receiver and mitter channel-selecting slides. This may also be due to sluggish relay
Transmitter and receiver both apparently properly tuned, but communication is either very poor or impossible.	Defective antenna relay 412 in Rack FT-244-A. Open transmission line. fective connection between antenna Socket SO-153 and antenna mast.
Receiver output will not squelch properly when "RELAY" control in receiver is rotated counterclockwise, or set is very noisy when vibrated after output is squelched.	Coil of squelch relay 246 if receiver is open, or relay is out of adjus Contacts of relay may be dirty.
Transmitter or receiver will not stay in tune.	Tuning control locknuts not sufficiently tightened. Defective coupling be tuning control and variable capacitor. Loose set screws fastening cou to tuning control shaft or variable capacitor shaft. Broken mycalex or ce shaft in receiver gang capacitor.

b. RADIO RECEIVER BC-624-A, BC-624-AM, or BC-624-C.—The following chart gives the possible causes of trouble in the radio receiver.

TABLE 5-2. TROUBLE LOCATION CHART FOR THE RADIO RECEIVER.

Symptom	*Probable Cause*
Set dead and no microphone sidetone audible in headset.	Defective tube JAN-12C8 (VT-169) or tube JAN-12J5 (VT-135). Defective resistor, capacitor, transformer or wiring associated with these tubes. No crystal in socket.
Set dead but sidetone is audible in headset.	Defective tube JAN-12SG7 (VT-209). Defective resistor, capacitor or wiring associated with these tubes. Check alignment of i-f transformers (see paragraph 9.,*c.*).
Set operates on extremely strong signals.	Defective tubes JAN-9002 (VT-202), JAN-9003 (VT-203), or JAN-12AH7GT (VT-207). Defective resistor, capacitor or wiring associated with these tubes. Check alignment of r-f and oscillator assembly. (See paragraph 9.,*d.*)
Set will not remain in tune although locknuts are tight.	Check all variable-capacitor coupling set screws and if found tight, examine the couplings themselves for slippage. Examine variable capacitors for cracked rotor shaft or evidence of slippage between the rotor plates and the front end of the shaft.
Impossible to obtain proper adjustment of squelch relay by manipulation of "RELAY" control.	Check contacts of relay 246 for dirt (use a contact burnisher or draw a piece of paper through the contacts when closed). If this relay does not open and close when the "RELAY" control is varied from maximum to minimum rotation, adjust the armature spring tension so that the relay will operate when the "RELAY" control is varied through a point about one-third of the way down from the maximum clockwise rotation stop. This adjustment should be made with the transmitter plugged into the rack, but with no antenna or transmission line connected to Socket SO-153. If relay still does not operate properly, try replacing tube JAN-12AH7GT (VT-207); check relay coil for open or short circuit and check all resistors and capacitors associated with this circuit. See paragraph 9.,*c.*, this section, for adjustment of squelch relay.

c. RADIO TRANSMITTER BC-625-A or BC-625-AM.—In addition to making the checks suggested in paragraph 2*e.*, this section, inspect the following:

(1) Capacitors for shorts, intermittent shorts, or opens.

(2) Resistors for opens or wrong values.

(3) Faulty connections or pieces of solder or wire which might cause short circuits.

d. RECTIFIER RA-62-B or RA-62-C.—The following chart gives the troubles and causes which may occur in the rectifier.

Trouble	*Probable Cause*
Power does not reach rectifier.	Faulty plugs or contacts in a-c power line cord. Broken wiring in this cord. Poor contacts in voltage selector switch. Burned out fuses. Defective "OFF-ON" switch.
Low output on 105, 115 and 125 voltage taps and no output on 210, 230 and 250 voltage taps.	One of fuses in either primary of power transformer burned out. Broken contacts or defective wiring in any circuit of either primary of power transformer.
Tubes JAN-5U4G (VT-244) do not light.	Defective wiring or connections between tubes and terminals 9 and 10 of power transformer secondary. Defective tube.
Tube JAN-6X5GT (VT-126B) does not light.	Defective wiring or connections between tube and terminals 14 and 15 of power transformer secondary. Defective tube.
Tubes JAN 5U4G (VT-244) light but do not function.	Defective wiring or connections between plates of tube and terminals 11 and 13 of power transformer secondary. Defective wiring between terminal 9 of power transformer secondary and pin 2 in d-c output socket. Defective relay or associated control wiring in plus 310 volt line. Defective capacitor or choke in the filter of the plus 310 volt circuit.
Tube JAN-6X5GT (VT-126B) lights but does not function.	Defective wiring or connections between plate terminals of tube and terminals 16 and 17 of power transformer secondary. Defective wiring or components of filter in the cathode circuit. Defective tube.
Voltage at plus 13.0-volts terminal not constant.	Defective wiring or connection in voltage regulator. Voltage regulator not properly adjusted.

e. CONTROL BOXES BC-1175-A, BC-1312, BC-1171-A, BC-1314, BC-1176-A, or BC-1313.—The location of trouble in these control boxes is simple and can often be accomplished by checking the following:

(1) The binding posts and switch contacts for security.

(2) The switch contacts for cleanliness.

(3) All the units for broken wires.

(4) Interconnecting cords for breakage.

4. TROUBLE SHOOTING—DETAILED.

a. TRANSMITTER TUBE SOCKET VOLTAGE MEASUREMENTS.

(1) Loosen the Dzus fasteners at the top front and top rear of Case CS-80-A or CS-80-C. Grasp the rack by the recessed handles and remove it, together with the transmitter and receiver, from the case.

(2) Loosen the Dzus fasteners that hold the top covers to the center of the rack and take out the four screws that hold the top covers at the sides. Take off the covers.

(3) Place the assembly on its side on a test bench, so that the transmitter vacuum tube sockets are accessible.

(4) Connect the proper plugs to the sockets the rack and to a proper voltage source of supp Connect antenna AN-94-A, AN-94-B, AN-94-C or A 188 to the antenna socket on the rack.

(5) Turn the equipment on by pressing any ch nel button on the radio control box.

(6) Using Test Set I-56-(*) or equivalent (me sensitivity of 1000 ohms per volt), make the t socket voltage measurements listed in the chart bel

(7) Make all measurements to chassis ground on the 500-volt scale unless otherwise specified. low the additional suggestions in the voltage diag *(fig. 5-2).*

(8) If the voltages vary appreciably (more t plus or minus 15 percent from the values given in chart below), make a further examination of the c ponents associated with the circuit.

Note

The following readings are taken with dynamotor unit outputs of exactly plus 300 volts, minus 150 volts, and plus 13 volts. The output of Dynamotor Unit PE-94-A is slightly higher so the voltage readings for the plates and screens may be slightly higher.

TABLE 5-3. TRANSMITTER TUBE SOCKET VOLTAGE MEASUREMENTS.

Tube (Army Type)	*Function*	*Volts*						
		Plate	*Screen*	*GRID G1U1*	*GRID G1U2*	*Cathode*	*Heater*	*Heater*	*Suppres.*
JAN-832 * (VT-118)	2nd harmonic amplifier	300	150	-57	-80	0	12.5	6.4	....
JAN-832 (VT-118)	Power amplifier	283	160	-52	-52	0	12.5	6.4	....
JAN-6G6G (VT-198-A)	Oscillator	300	157	-29		....	12.5	6.5	0.75
JAN-12A6 (VT-134)	1st harmonic amplifier	300	280	-40		40	12.5	0	....
JAN-6SS7 (VT-199)	Speech amplifier	286	40	Varieties		2.2	6.5	0	2.2
JAN-12A6 (VT-134)	Modulator	290	265	-13.5		0	12.5	0	....
JAN-12A6 (VT-134)	Modulator	290	265	-13.5		0	12.5	0	....
JAN-6SS7 **	R-F indicator diode	-2.4	2.4	-	-2.4	0	6.5	0	-2.4

* Tubes VT-115 are push-pull amplifiers. The voltage on the first grid of the second harmonic amplifier varies from about minus 40 to minus 87 volts and the second grid varies from about minus 40 to minus 105 volts.

** Not installed in later models. (Identified by painte next to "METER SWITCH" position "4") or in Radio T mitter BC-625-AM.

b. RECEIVER TUBE SOCKET VOLTAGE MEASUREMENTS.

(1) After making the transmitter tube socket voltage measurements, press channel release button 426 to release the frequency shifter slides.

CAUTION

Damage to equipment will result if the shifter slides are not released prior to removing the transmitter from the rack.

* Refers to any issue.

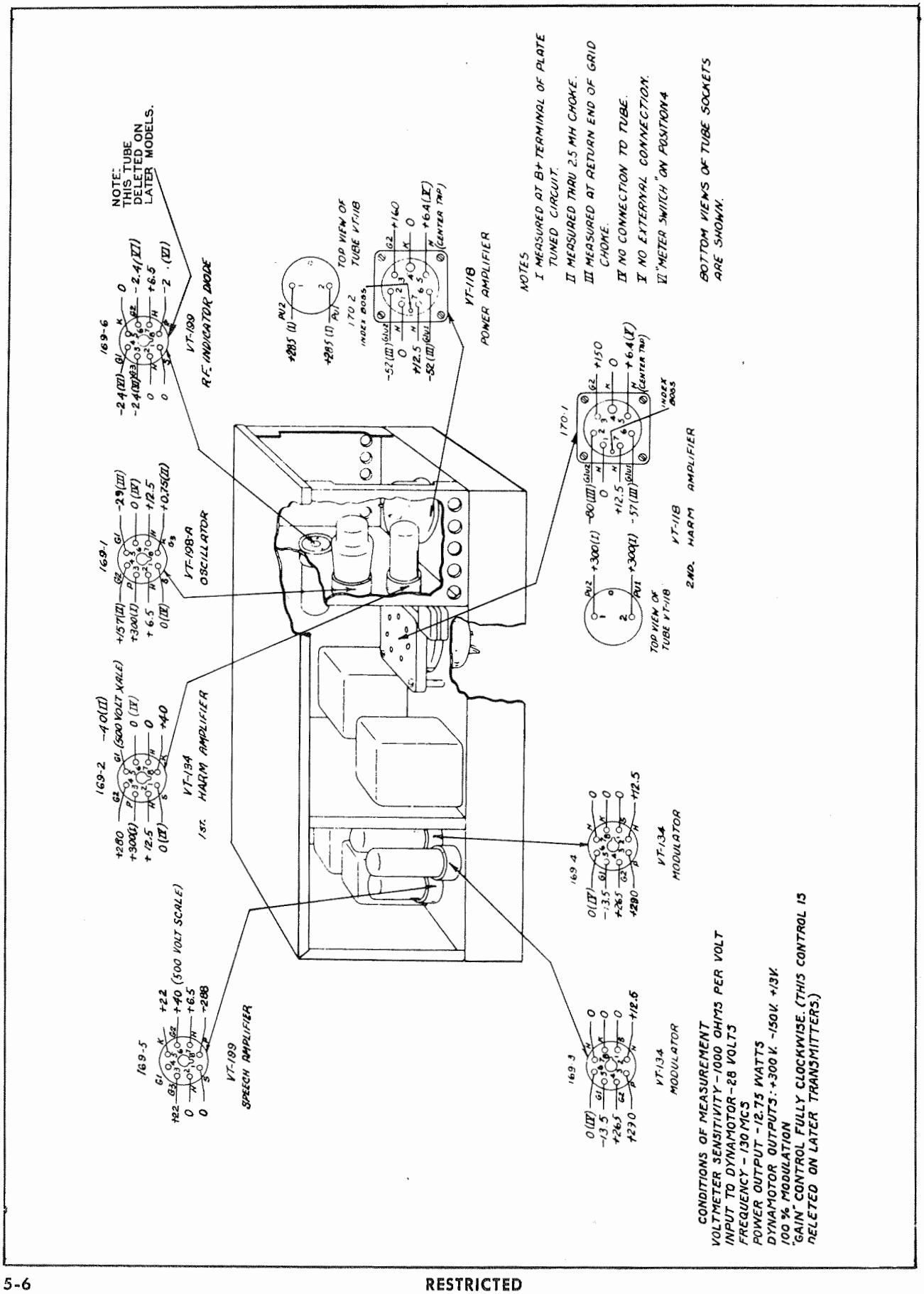


Figure 5-2. Transmitter Tube Socket Layout and Voltages

(2) Turn the equipment off by pushing the "OFF" button on the radio control box.

(3) Remove the four red mounting screws fastening the transmitter to the rack.

(4) Lift the transmitter side of the rack slightly while pressing the top of the transmitter down with the thumbs. Lift the rack, together with the receiver, away from the transmitter.

(5) Block the blocking relay 411-1 in the energized position.

(6) Connect a jumper from terminal 4 of socket 418-1 to any convenient ground point on the rack chassis.

(7) Rotate the receiver "AUDIO" and "RELA controls to their extreme clockwise positions.

(8) Press any one of the channel selector butt on the control box.

(9) Using Test Set I-156-(*) or equivalent, (se tivity of 1000 ohms-per-volt) make the tube soc voltage measurements listed in the chart below.

(10) Use the 500-volt scale and make the measu ments to chassis ground unless otherwise specifi Follow the additional directions given in the volt diagram, figure 5-3.

(11) If the voltages vary appreciably (more t plus or minus 15 percent) from the values given in chart below, make a further examination of the co ponents of the associated circuit.

TABLE 5-4A. RADIO RECEIVER BC-624-A OR BC-624-AM TUBE SOCKET VOLTAGE MEASUREMENTS.

		VOLTS						
Tube (Army) Type	*Function*	*Plate*	*Suppressor*	*Screen*	*Grid*	*Cathode*	*Heater*	*Heat*
JAN-9003 (VT-203)	R-F amplifier	255	2.7	80	0	2.7	6.5	0
JAN-9003 (VT-203)	Mixer	295	2.3	42	0	2.3	12.9	6
JAN-9003 (VT-203)	Harmonic amplifier	260	2.5	75	0	2.5	13.0	6
JAN-9002 (VT-202)	Harmonic generator	180	—	—	0	4.5	6.9	0
JAN-12SG7 (VT-209)	1st I-F	290	1.8	70	0	1.8	13.0	0
JAN-12SG7 (VT-209)	2nd I-F	285	1.4	65	0	1.4	13.0	0
*†JAN-12SG7 (VT-209)	3rd I-F	280	3	135	0	3	13.0	0
JAN-12C8 (VT-169)	Detector	75	8.5	20	4	8.5	13.0	0
JAN-12J5GT (VT-135)	2nd A-F amplifier	295	—	—	0	10.5	13.0	0
JAN-12AH7GT	Oscillator squelch	260	—	—	0	12.0	13.0	0
		290	—	—	0	27		
‡JAN-12SG7 (VT-209)	3rd I-F	308	5	200	0	5	13.0	0
‡JAN-12H6 (VT-214)	Noise limiter AVC	—	—	—	—	0.6	13.0	0

* Radio Receiver BC-624-A only.

† Note that this tube is a duplex diode-pentode.

‡ Radio Receiver BC-624-AM only.

TABLE 5-4B. RADIO RECEIVER BC-624-C—TUBE SOCKET VOLTAGE MEASUREMENTS.

Tube	*Function*	*Pin Number*	*Element*	*Scale Used*	*Volts (1000 Ohms-Per-Unit)*	*Volts‡ (20000* Oh Per-Unit*
JAN-9003 VT-203	R-f amplifier	1	G_1		0	0
		2	E	10-volt	+3.0	+3.0
		3	H		0	0
		4	K	10-volt	+6.5	+7
		5	P		+255.	+280
		6	G_2		+90.	+100
		7	K-G_3	10-volt	+3.	+3.1
JAN-9003 VT-203	Mixer	1	G_1		0	0
		2	K	10-volt	+3	+3
		3	H	10-volt	+6.6	+6.5
		4	H	50-volt	+13.	+13
		5	P		+285.	310
		6	G_2	250-volt	+50.	+60
		7	K-G_3	10-volt	+3.	+3

‡The input was +320V and +13V.

* These measurements were taken with a Weston 772 voltmeter.

TABLE 5-4B. RADIO RECEIVER BC-624-C—TUBE SOCKET VOLTAGE MEASUREMENTS—(Cont'd).

Tube	*Function*	*Pin Number*	*Element*	*Scale Used*	*Volts (1000 Ohms-Per-Unit)*	*Volts‡ (20000* Ohms-Per-Unit)*
JAN-9003 VT-203	Harmonic amplifier	1	G_1		0	0
		2	K	10-volt	+2.5	+2.9
		3	H	10-volt	+6.5	+7.0
		4	H	50-volt	+13.	+13.0
		5	P		+250.	+280
		6	G_2	250-volt	+85.	+90
		7	K-G_3	10-volt	+2.5	+2.9
JAN-9002 VT-202	Harmonic generator	1	P		+185.	+200
		2	K	10-volt	+4.5	+5.2
		3	H		0	0
		4	H	10-volt	+6.5	+7.0
		5	P		+185.	+200
		6	G		0	0
		7	K	10-volt	+4.5	+4.5
JAN-12SG7 VT-209	First i-f amplifier	1	S		0	0
		2	H		0	0
		3	K-G_3	10-volt	+1.8	+1.9
		4	G_1	10-volt	+.02	+.2
		5	K-G_3	10-volt	+1.8	+1.9
		6	G_2	250-volt	+65.	+75
		7	H	50-volt	+13.	+13
		8	P		+275.	+295
JAN-12SG7 VT-209	Second i-f amplifier	1	S		0	0
		2	H		0	0
		3	K-G_3	10-volt	+1.3	+1.3
		4	G_1	10-volt	+.02	.2
		5	K-G_3	10-volt	+1.3	+1.3
		6	G_2	250-volt	+60.	+75
		7	H	50-volt	+13.	+13
		8	P		+275.	+290
JAN-12SG7 VT-209	Third i-f amplifier	1	S		0	0
		2	H		0	0
		3	K-G_3	10-volt	+2.6	+3.0
		4	G_1		0	0
		5	K-G_3	10-volt	+2.6	+3.0
		6	G_2	250-volt	+155.	+165
		7	H	50-volt	+13.	+13
		8	P		+265.	+280
JAN-12AH7GT VT-207	AVC delay and first audio	1	G_1	10-volt	+0.2	+.5
		2	K_1	10-volt	+0.7	+1.25
		3	P_1	10-volt	+0.2	+.5
		4	K_2	50-volt	+32.	+42
		5	G_2	10-volt	+0.2	+.6
		6	P_2	50-volt	+43.	+50
		7	H		0	0
		8	H	50-volt	+13.	+13
JAN-12C8 VT-169	AVC and second audio	1	S		0	0
		2	H		0	0
		3	P		+45.	+60
		4	P_{D^2}	50-volt	+7.	+19
		5	P_{D^1}	50-volt	+7.	+19
		6	G_2	250-volt	+30.	+50
		7	H	50-volt	+13.	+13
		8	K	50-volt	+16.	+20

‡The input was +320V and +13V.

* These measurements were taken with a Weston 772 voltmeter.

TABLE 5-4B. RADIO RECEIVER BC-624-C—TUBE SOCKET VOLTAGE MEASUREMENTS—(Cont'd).

Tube	*Function*	*Pin Number*	*Element*	*Scale Used*	*Volts (1000 Ohms-Per-Unit)*	*Volts‡ (20000* Oh Per-Unit)*
JAN-12A6 VT-134	Third audio	1	S		0	0
		2	H	50-volt	+13.	+13
		3	P		+290.	+300
		4	G_2		+290.	+305
		5	G_1		0	0
		6	No connection		No connection	
		7	H		0	0
		8	K	50-volt	+16.	+19
JAN-12AH7G7 VT-207	Oscillator and audio squelch	1	G_1			+.125
		2	K_1	50-volt	+17.	+18
		3	P_1	10-volt	+1.0	28
		4	K_2	50-volt	+12**	+12.5**
		5	G_2		0**	0**
		6	P_2		+240**	280**
		7	H		0	0
		8	H		+13	+13
JAN-12H6 VT-214	Detector and noise limiter	1	S		0	0
		2	H	50-volt	+13.	+13
		3	P_2	10-volt	+0.3	+1.0
		4	K_2	10-volt	+0.4	+1.0
		5	P_1	10-volt	+0.3	+1.0
		6	No connection			
		7	H		0	0
		8	K_1	10-volt	+0.3	+1.0

‡The input was +320V and +13V.

* These measurements were taken with a Weston 772 voltmeter.

** Depress channel slide.

c. TRANSMITTER CONTINUITY AND RESISTANCE MEASUREMENTS.

Note

The following measurements are for Radio Transmitter BC-625-A and BC-625-AM. (Measurements pertaining to relay 130 will not apply to Radio Transmitter BC-625-AM since that relay has been removed from that model.)

(1) After making the receiver tube socket voltage measurements, turn the equipment off by turning the rectifier "ON-OFF" switch to "OFF."

(2) Disconnect the equipment from the sup source.

(3) Rotate the transmitter "GAIN" control to extreme clockwise position.

(4) Leave all the vacuum tubes in their sock unless otherwise specified.

(5) Use Test Set I-56-(*) or equivalent to m the resistance measurements listed in the follow chart.

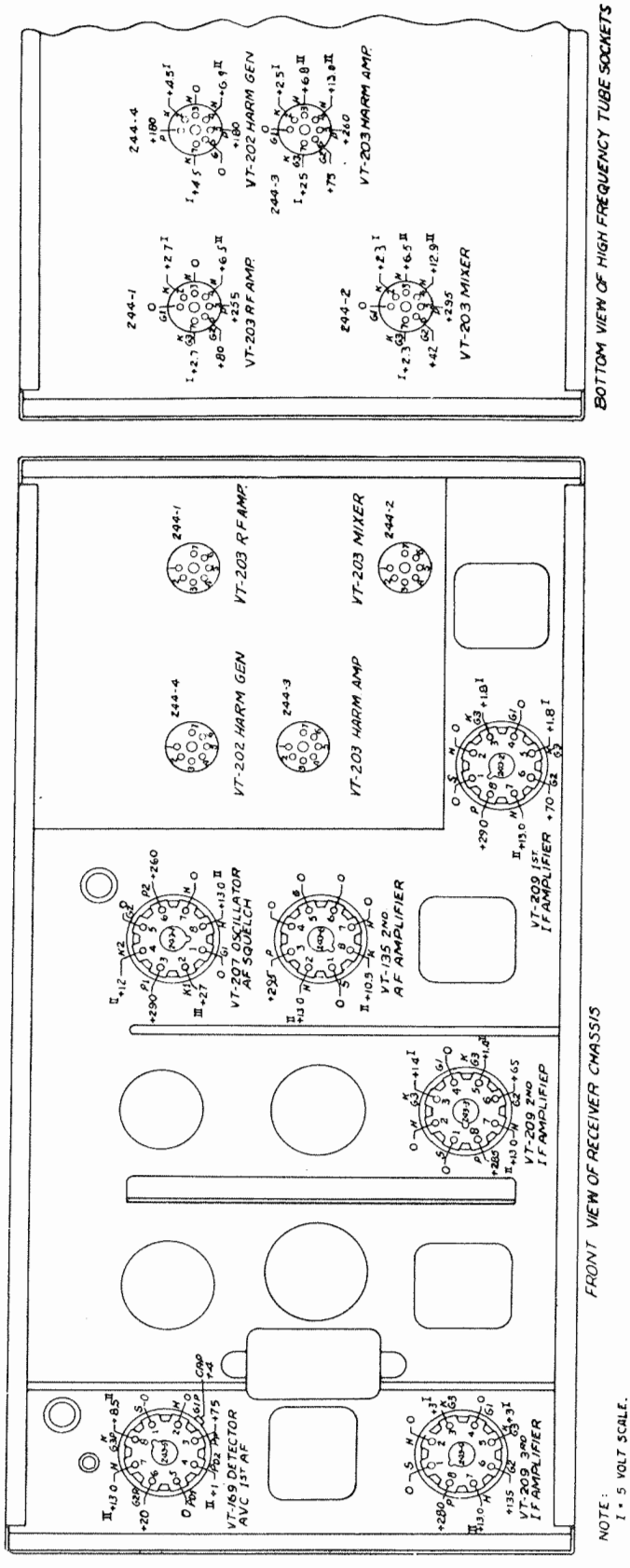
Note

Deviations in resistance greater than plus or minus 10 percent should be investigated.

* Refers to any issue.

TABLE 5-5. TRANSMITTER CONTINUITY AND RESISTANCE MEASUREMENTS.

From	*To*	*Control Positions If Not Normal*	*Ohmeter Scale Used*	*Resistance (Ohms)*	*Probable Cause of Incorrect Reading*
123-1, Term. 4	Ground		R x 1000	Open	Dirty or shorted contacts on relay 130.
123-1, Term. 5	Ground	Relay 130 closed	R x 1000	Open	Same as above.
123-2, Term. 3	Ground		R x 1000	Open	Shorted capacitor 102-5, 102-7, 102-11, 106, 1 108-2, 111 or 113.



These measurements apply to Radio Receiver BC-624-AM except for changes in the third I-F voltages, and addition of tube JAN-12H6. See Table 5-4A.

Figure 5-3. Radio Receiver BC-624-A or BC-624-AM—Tube Socket Layout and Voltages

by removing the alligator clip on Cord CD-1170 from the center pin of Socket SO-153 of the rack.)

Note

For Radio Receivers BC-624-AM modified for suppression of impulse noise, the signal heard in the head set will be considerably less in volume than before modification. Most accurate tuning is obtained if controls 5 and 6 are peaked using only circuit noise or hiss and with the "SIG. GEN." switch on the control unit in the "OFF" position. This "fine" adjustment is to be made after "rough" tuning with the "SIG. GEN." switch in the "ON" position.

(2) TUNING OF REMAINING CHANNELS.

(a) Turn the "OFF A-B-C-D" switch on Control Unit BC-1303 to "B" and completely loosen all tuning-control lock nuts.

IMPORTANT

Before turning the switch to "B," hold the tuning controls with the fingers and tighten the lock nuts 5 and 6 just enough to exert a slight pressure on the cam pile-up. While doing this, make certain that the audio output level remains constant. This is accomplished by readjusting the receiver tuning controls.

(b) Follow the same tuning procedure outlined for channel "A." (See par. 9*d*, this sec.)

Note

The tuning instructions for channel "A" will apply to channel "B" only if the letter "B" is substituted for "A" wherever the crystal, the channel, and the oscillator plate-coil tuning screw are mentioned. This note likewise applies when tuning channels "C" and "D."

(c) Tune channels "C" and "D" in a like manner; then press the channel-release push button 426 and tighten the two receiver tuning-control lock nuts 5 and 6 by turning them tightly clockwise with the fingers. If a tool is being used, do not tighten lock nuts excessively. Recheck all channels for satisfactory receiver output. With slight movement of the receiver tuning controls against the detent, maximum signal should be obtained in the rest position. This completes the tuning of the receiver.

(3) PROCEDURE FOR TUNING ONE CHANNEL ONLY.—If one channel is out of adjustment, it may be tuned without disturbing the other channels.

(a) Turn the "OFF A-B-C-D" switch on the control unit to the channel preceding the channel to be tuned in the sequence "A," "B," "C," "D." For example, if channel "B" is being retuned, turn the switch to "A," if channel "A" is being retuned, turn switch to "D," and so forth.

(b) Press the channel-release push button 42

(c) Loosen the two receiver tuning-control loc nuts.

(d) Turn the "OFF A-B-C-D" switch to th desired channel.

(e) Tune the desired channel as described paragraph 9*d*., this section, ignoring reference to cha nel "A" and substituting the applicable letter.

(f) Press the channel-release push button.

(g) Tighten the receiver tuning-control loc nuts.

(h) Press the channel release push button re-select the channel just tuned.

IMPORTANT

Never shut the radio set off when the shifter slides of the transmitter-receiver assembly are disengaged since this will result in failure to turn on the transmitter and receiver if one particular channel is selected on the "OFF A-B-C-D" switch on Control Unit BC-1303.

(4) RECEIVER "AUDIO" CONTROL ADJUSTMENT.—The correct setting of the "AUDIO" contr 236 depends on the type of headset being used and t volume desired by the operator. However, for Rad Receiver BC-624-A never advance the "AUDIO" co trol beyond three-quarters or seven-eighths of its ma mum rotation. At full volume excessive distortion curs with strong signals. When using Radio Recei BC-624-AM or BC-624-C set the audio control to t extreme clockwise position. If the operator desi more volume and the audio output is connected terminal No. 6 of transformer 296, transfer the outp connection to terminal No. 7. (This reference numb appears near the transformer in the receiver.)

(5) RECEIVER "RELAY" OR "SQUELCH" CONTROL ADJUSTMENT.

(a) Make this last adjustment on the recei with the antenna connected, the equipment operati on any tuned channel, and no signal being received

(b) Rotate "RELAY" control (237) to the treme clockwise position (do not operate noise limi switch on Radio Receiver BC-624-C) and then turn slowly counterclockwise until the noise ceases and c tinue the counterclockwise rotation for a very sm fraction of a turn.

f. TESTING REMOTE (PRESS-TO-TALK) OPERATION USING TEST EQUIPMENT IE-36.

(1) Plug Control Unit BC-1303 into socket of the rack and Phantom Antenna A-29 into Soc SO-153, throw "T-R-REM" switch (107) on the c trol unit to "REM."

(2) With the switch in this position, test the ceiver with head set and buzzer to make certain it is operating.

CAUTION

When Radio Receiver BC-624-C is tuned with a buzzer or similar radio frequency source, turn the "SQUELCH" or "RELAY" control clockwise until the snap of a switch is heard. Then follow usual tuning procedure. If the "SQUELCH" or "RELAY" control is in the extreme clockwise position, it must be adjusted before the receiver is used for communications. To adjust the "SQUELCH" or "RELAY" control, first turn the control counterclockwise until the snap of a switch is heard. Then adjust the "SQUELCH" or "RELAY" control as described in *e*(5), this section.

SECTION VI
SUPPLEMENTARY DATA

1. CHARACTERISTICS OF RADIO SET SCR-624-A.

a. FREQUENCY RANGE.—The frequency range is 100 to 156 megacycles.

b. POWER SUPPLY.

(1) The input to Rectifier RA-62-B or RA-62-C is 110 volts a-c or 220 volts a-c.

(2) The output is positive 300 volts, negative 150 volts and positive 13 volts.

c. INPUT CURRENT REQUIREMENTS.—The input current requirements are 2.6 amperes, 110 volts for transmission and 2.7 amperes, 110 volts for reception.

d. TYPE OF MODULATION.—The radio set is amplitude modulated.

e. METHOD OF MODULATION.—Plate modulation is used in Radio Set SCR-624-A or SCR-624-B.

f. BEAT FREQUENCY OSCILLATOR.—Radio Set SCR-624-A or SCR-624-B has no beat frequency oscillator.

g. CRYSTAL FILTER.—The radio set has no crystal filter.

h. SQUELCH CIRCUIT CHARACTERISTICS. — The sensitivity is 0-20, 0-250 microvolts for Radio Receiver BC-624-A and 0-6, 0-20 for Radio Receiver BC-624-AM or BC-624-C.

2. TYPES OF RADIO JAMMING.

Types of jamming likely to be employed by the enemy are the following:

a. "Spark" jamming, the familiar type of noise obtained from small electric motors, razors, ignition systems, et cetera.

b. "Sweep-through" jamming, the result of sweeping a carrier back and forth across a frequency band at a relatively rapid rate (100 to 600 cycles per second). The resulting noise is much like that of an airplane engine.

c. "Stepped tone" jamming, a monotonous repetition of three to five audio tones which resemble the Scotch bagpipe. The Germans use this regularly.

d. "Noise" jamming, sounding the same as noise which is heard when the gain is turned up on a radio receiver that is not tuned to a signal. It may easily be mistaken for receiver noise.

e. Combination of any of the above types of jamming.

3. TUBE COMPLEMENT.

The tubes used in Radio Set SCR-624-A or SCR-624-B are listed below.

Quantity	*Army-Navy Type*	*VT Numbers*	*Function*
1	Tube JAN-832	VT-118	2nd Harmonic amplifier
1	Tube JAN-832	VT-118	R-F power amplifier
1	Tube Jan-12A6	VT-134	Harmonic amplifier
2	Tube JAN-12A6	VT-134	Modulator
*1	Tube JAN-12J5GT	VT-135	A-F amplifier
1	Tube JAN-12C8	VT-169	2nd Detector AVC a-f amplifier
†1	Tube JAN-12A6	VT-134	Audio output
1	Tube JAN-6G6G	VT-198A	Transmitter oscillator
‡1	Tube JAN-6SS7	VT-199	R-F indicator
1	Tube JAN-6SS7	VT-199	Speech amplifier
1	Tube JAN-9002	VT-202	Harmonic generator
1	Tube JAN-9003	VT-203	R-F amplifier
1	Tube JAN-9003	VT-203	Mixer
1	Tube JAN-9003	VT-203	Harmonic amplifier
1	Tube JAN-12AH7GT	VT-207	Oscillator

Quantity	*Army-Navy Type*	*VI Numbers*	*Function*
§1	Tube JAN-12AH7GT	VT-207	1st audio and AVC delay
3	Tube JAN-12SG7	VT-209	I-F amplifier
‖1	Tube JAN-12H6	VT-214	AVC delay diode noise limiter diode
1	Tube JAN-6X5GT	VT-126	Rectifier
1	Tube JAN-5U4G	VT-244	Rectifier

*Not included in Radio Receiver BC-624-C.
†Included in Radio Receiver BC-624-C.
‡Not included in some radio transmitter.
§Included in Radio Receiver BC-624-C.
‖Included in Radio Receiver BC-624-AM and BC-624-C.

4. SUPPLEMENTARY PARTS LIST.

A supplementary parts list for Radio Receiver BC-624-C is given below.

Note

The following table is for reference purposes only although the parts will be furnished as spares.

TABLE 6-1. SUPPLEMENTARY PARTS LIST FOR RADIO RECEIVER BC-624-C.

Reference Number	*Description*	*Function*
201	Capacitor: 10 micromicrofarad ± 20%	R-F grid coupling
202-1	Capacitor: 680 micromicrofarad ± 20%	R-F cathode bypass
202-2	Capacitor: 680 micromicrofarad ± 20%	R-F AVC filter
202-3	Capacitor: 680 micromicrofarad ± 20%	R-F screen bypass
202-4	Capacitor: 680 micromicrofarad ± 20%	R-F plate bypass to cathode
202-5	Capacitor: 680 micromicrofarad ± 20%	R-F plate bypass to ground
202-6	Capacitor: 680 micromicrofarad ± 20%	Mixer cathode bypass
202-7	Capacitor: 680 micromicrofarad ± 20%	Mixer screen bypass
202-8	Capacitor: 680 micromicrofarad ± 20%	Harmonic amplifier B + filter
202-9	Capacitor: 680 micromicrofarad ± 20%	Harmonic amplifier plate bypass to cathode
202-10	Capacitor: 680 micromicrofarad ± 20%	Harmonic amplifier plate bypass to ground
202-11	Capacitor: 680 micromicrofarad ± 20%	Harmonic amplifier cathode bypass
202-12	Capacitor: 680 micromicrofarad ± 20%	Harmonic amplifier screen bypass
202-13	Capacitor: 680 micromicrofarad ± 20%	Harmonic generator plate bypass
202-14	Capacitor: 680 micromicrofarad ± 20%	Harmonic generator plate bypass
202-15	Capacitor: 680 micromicrofarad ± 20%	Harmonic generator cathode bypass
202-16	Capacitor: 680 micromicrofarad ± 20%	R-F B + filter
202-17	Capacitor: 680 micromicrofarad ± 20%	Audio B + filter
202-18	Capacitor: 680 micromicrofarad ± 20%	R-F heater bypass
202-19	Capacitor: 680 micromicrofarad ± 20%	Mixer heater bypass
202-20	Capacitor: 680 micromicrofarad ± 20%	Mixer heater bypass
202-21	Capacitor: 680 micromicrofarad ± 20%	Harmonic amplifier heater bypass
202-22	Capacitor: 680 micromicrofarad ± 20%	Harmonic amplifier heater bypass
202-23	Capacitor: 680 micromicrofarad ± 20%	Harmonic generator heater bypass
202-25	Capacitor: 680 micromicrofarad ± 20%	2nd I-F suppressor bypass
202-26	Capacitor: 680 micromicrofarad ± 20%	3rd I-F suppressor bypass
202-27	Capacitor: 680 micromicrofarad ± 20%	Oscillator plate coil bypass
202-28	Capacitor: 680 micromicrofarad ± 20%	Limiter cathode bypass
202-29	Capacitor: 680 micromicrofarad ± 20%	Audio compensating
202-30	Capacitor: 680 micromicrofarad ± 20%	Diode R-F bypass
203-1	Capacitor: 47 micromicrofarad ± 20%	Mixer grid coupling
203-2	Capacitor: 47 micromicrofarad ± 20%	Harmonic amplifier grid coupling
203-3	Capacitor: 47 micromicrofarad ± 20%	AVC diode coupling
203-4	Capacitor: 47 micromicrofarad ± 20%	2nd audio R-F bypass
204	Capacitor: 15 micromicrofarad ± 20%	Oscillator plate resonator
205	Capacitor: 220 micromicrofarad ± 20%	Harmonic generator grid coupling
206-1	Capacitor: 6800 micromicrofarad ± 20%	Oscillator plate bypass
206-2	Capacitor: 6800 micromicrofarad ± 20%	Oscillator cathode bypass
206-3	Capacitor: 6800 micromicrofarad ± 20%	Mixer plate bypass
206-4	Capacitor: 6800 micromicrofarad ± 20%	1st I-F AVC filter
206-5	Capacitor: 6800 micromicrofarad ± 20%	1st I-F cathode filter
206-6	Capacitor: 6800 micromicrofarad ± 20%	1st I-F screen bypass
206-7	Capacitor: 6800 micromicrofarad ± 20%	1st I-F plate bypass
206-8	Capacitor: 6800 micromicrofarad ± 20%	2nd I-F AVC filter
206-9	Capacitor: 6800 micromicrofarad ± 20%	2nd I-F cathode bypass
206-10	Capacitor: 6800 micromicrofarad ± 20%	2nd I-F screen bypass
206-11	Capacitor: 6800 micromicrofarad ± 20%	2nd I-F plate bypass
206-12	Capacitor: 6800 micromicrofarad ± 20%	3rd I-F cathode bypass

TABLE 6-1. SUPPLEMENTARY PARTS LIST FOR RADIO RECEIVER BC-624-C (Con't).

Reference Number	*Description*	*Function*
206-13	Capacitor: 6800 micromicrofarad ± 20%	3rd I-F screen bypass
206-14	Capacitor: 6800 micromicrofarad ± 20%	3rd I-F plate bypass
206-15	Capacitor: 6800 micromicrofarad ± 20%	B + bypass
206-16	Capacitor: 6800 micromicrofarad ± 20%	Audio squelch grid bypass
206-17	Capacitor: 6800 micromicrofarad ± 20%	Audio coupling
206-19	Capacitor: 6800 micromicrofarad ± 20%	1st I-F heater bypass
206-20	Capacitor: 6800 micromicrofarad ± 20%	2nd I-F heater bypass
206-21	Capacitor: 6800 micromicrofarad ± 20%	3rd I-F heater bypass
206-22	Capacitor: 6800 micromicrofarad ± 20%	Oscillator and audio squelch heater bypass
206-24	Capacitor: 6800 micromicrofarad ± 20%	1st audio grid coupling
206-25	Capacitor: 6800 micromicrofarad ± 20%	1st audio cathode coupling
206-26	Capacitor: 6800 micromicrofarad ± 20%	3rd audio grid coupling
206-27	Capacitor: 6800 micromicrofarad ± 20%	Detector cathode r-f bypass
207-1	Capacitor: 60 micromicrofarad ± 20%	Mixer plate resonator
207-2	Capacitor: 60 micromicrofarad ± 20%	1st I-F grid resonator
207-3	Capacitor: 60 micromicrofarad ± 20%	1st I-F plate resonator
207-4	Capacitor: 60 micromicrofarad ± 20%	2nd I-F grid resonator
207-5	Capacitor: 60 micromicrofarad ± 20%	2nd I-F plate resonator
207-6	Capacitor: 60 micromicrofarad ± 20%	3rd I-F grid resonator
207-7	Capacitor: 60 micromicrofarad ± 20%	3rd I-F plate resonator
207-8	Capacitor: 60 micromicrofarad ± 20%	Detector diode resonator
208-1	Capacitor: 15 micromicrofarad ± 10%	Mixer plate resonator
208-2	Capacitor: 15 micromicrofarad ± 10%	1st I-F grid resonator
208-3	Capacitor: 15 micromicrofarad ± 10%	1st I-F plate resonator
208-4	Capacitor: 15 micromicrofarad ± 10%	2nd I-F grid resonator
208-5	Capacitor: 15 micromicrofarad ± 10%	2nd I-F plate resonator
208-6	Capacitor: 15 micromicrofarad ± 10%	3rd I-F grid resonator
208-7	Capacitor: 15 micromicrofarad ± 10%	3rd I-F plate resonator
208-8	Capacitor: 15 micromicrofarad ± 10%	Detector diode resonator
210	Capacitor: 330 micromicrofarad ± 20%	Audio diode bypass
211-3A	3 x .1	Audio diode cathode bypass
211-3B		AVC filter
211-3C		2nd audio screen bypass
211-4A	3 x 1 microfarad	1st audio bypass
211-4B		Noise limiter filter
211-4C		2nd I-F AVC filter
212-A	1 microfarad	Audio B filter
212-B	4 microfarad	Audio B filter
212-C	1 microfarad	2nd audio cathode bypass
212-D	2 microfarad	3rd audio cathode bypass
213	Capacitor 1 microfarad	R-F and mixer heater bypass
214	Capacitor: 82 micromicrofarad + 10%	Bridge balancing
216-A	Capacitor	R-F grid tuning
216-B	Capacitor	R-F plate tuning
216-C	Capacitor	Mixer grid tuning
217-A	Capacitor	Harmonic amplifier plate tuning
217-B	Capacitor	Harmonic generator plate tuning
218-1	Capacitor	R-F grid trimmer for 216-A
218-2	Capacitor	R-F plate trimmer for 216-B
218-3	Capacitor	Mixer grid trimmer for 216-C
218-4	Capacitor	Harmonic amplifier plate trimmer for 217-A
218-5	Capacitor	Harmonic generator plate trimmer for 217-B
221	Coil: One turn No. 14 tinned copper wire	Antenna coupling coil
222	Coil: Two turns No. 14 tinned copper wire	R-F grid resonator
223	Coil: Two turns No. 14 tinned copper wire	R-F plate resonator
224	Coil: Two turns No. 14 tinned copper wire	Mixer grid resonator
225	Coil: Two turns No. 14 tinned copper wire	Harmonic amplifier plate resonator
226	Coil: Two turns No. 14 tinned copper wire	Harmonic generator plate resonator
227-1	Coil: 23 turns No. 26 enameled wire, permeability tuned	Oscillator plate resonator "A"
227-2	Coil: Same as 227 ± 1	Oscillator plate resonator "B"
227-3	Coil: Same as 227 ± 1	Oscillator plate resonator "C"
227-4	Coil: Same as 227 ± 1	Oscillator plate resonator "D"
228-1	Coil: 10 turns No. 22 enameled wire, threaded form, part 291.	Mixer plate resonator
228-2	Coil: Same as 228-1, part of 291	1st I-F grid resonator
228-3	Coil: Same as 228-1, part of 292	1st I-F plate resonator

TABLE 6-1. SUPPLEMENTARY PARTS LIST FOR RADIO RECEIVER BC-624-C (Con't).

Reference Number	*Description*	*Function*
228-4	Coil: Same as 228-1, part of 292	2nd I-F grid resonator
228-5	Coil: Same as 228-1, part of 293	2nd I-F plate resonator
228-6	Coil: Same as 228-1, part of 293	3rd I-F grid resonator
228-7	Coil: Same as 228-1, part of 294	3rd I-F plate resonator
228-8	Coil: Same as 228-1, part of 294	Detector diode resonator
230-1	Resistor: 12,000 ohms ± 10%; 1/4 watt	R-F plate filter
230-2	Resistor: 12,000 ohms ± 10%; 1/4 watt	R-F plate filter
230-3	Resistor: 12,000 ohms — 10%; 1/4 watt	Harmonic amplifier plate filter
230-4	Resistor: 12,000 ohms — 10%; 1/4 watt	Harmonic amplifier plate filter
231	Plug	Receiver connector plug
232	Plug board assembly	Receiver input plug
233-1	Resistor: 180,000 ohms ± 10%; 1/2 watt	1st I-F screen bleeder
233-2	Resistor: 180,000 ohms ± 10%; 1/2 watt	1st I-F screen bleeder
233-3	Resistor: 180,000 ohms ± 10%; 1/2 watt	2nd I-F screen bleeder
233-4	Resistor: 180,000 ohms ± 10%; 1/2 watt	2nd I-F screen bleeder
234-1	Resistor: 160,000 ohms ± 5%; 1/2 watt	Audio squelch bleeder
234-2	Resistor: 160,000 ohms ± 5%; 1/2 watt	Audio squelch bleeder
235-1	Resistor: 1,000 ohms ± 5%; 1/2 watt	3rd audio cathode bias
235-2	Resistor: 1,000 ohms ± 5%; 1/2 watt	3rd audio cathode bias
236	Potentiometer: 150,000 ohms	Audio volume control
238-A 238-B	Potentiometer 5000 ohms w/switch	Squelch sensitivity control Noise limiter switch
239	Resistor: 680 ohms ± 10%; 1/2 watt	AVC delay cathode bias
240	Resistor: 3.3 megohms ± 10%; 1/2 watt	3rd audio inverse feedback
241-2	Choke	B + R-F choke
241-3	Choke	B + R-F choke
241-4	Choke	2nd audio grid choke
241-5	Choke	3rd i-f B + isolation choke
243-1	Oscillator and audio squelch	Socket for JAN-12AH7GT
243-2	1st I-F	Socket for JAN-12SG7
243-3	2nd I-F	Socket for JAN-12SG7
243-4	3rd I-F	Socket for JAN-12SG7
243-7	Det. and N. L.	Socket for JAN-12H6
243-8	AVC and 2nd audio	Socket for JAN-12C8
243-9	AVC delay and 1st audio	Socket for JAN-12AH7-GT
243-10	3rd audio	Socket for JAN-12A6
244-1	R-F amplifier	Socket for JAN-9003
244-2	Mixer	Socket for JAN-9003
244-3	Harmonic amplifier	Socket for JAN-9003
244-4	Harmonic generator	Socket for JAN-9002
248	Frequency shifter	Frequency shifter
249-1	Screw	Red mounting screw
249-2	Screw	Red mounting screw
249-3	Screw	Red mounting screw
249-4	Screw	Red mounting screw
250	Spring	Spring for tube holder
251	Resistor: 470,000 ohms ± 20%; 1/4 watt	R-F stage grid leak
252-1	Resistor: 100,000 ohms ± 20%; 1/4 watt	R-F stage AVC filter
253-1	Resistor: 330,000 ohms ± 5%; 1/4 watt	R-F stage cathode bias
253-2	Resistor: 330,000 ohms ± 5%; 1/4 watt	Harmonic amplifier cathode bias
255-1	Resistor: 1.8 megohms ± 20%; 1/4 watt	Mixer grid leak
255-2	Resistor: 1.8 megohms ± 20%; 1/4 watt	Harmonic amplifier grid leak
256	Resistor: 1,000 ohms ± 5%; 1/4 watt	Mixer cathode bias
257-1	Resistor: 330,000 ohms ± 10%; 1/4 watt	Mixer screen dropping
257-2	Resistor: 330,000 ohms ± 10%; 1/4 watt	2nd audio compensating
258-2	Resistor: 680,000 ohms ± 20%; 1/2 watt	AVC filter
258-3	Resistor: 680,000 ohms ± 20%; 1/2 watt	3rd audio grid leak
260	Resistor: 27,000 ohms ± 20%; 1/4 watt	Harmonic generator plate filter
261	Resistor: 1,200 ohms ± 5%; 1/4 watt	Harmonic generator cathode bias
262-1	Resistor: 560,000 ohms ± 10%; 1/4 watt	Harmonic generator grid leak
263-1	Resistor: 4,700 ohms ± 20%; 1/2 watt	Mixer plate filter
263-2	Resistor: 4,700 ohms ± 20%; 1/2 watt	1st I-F plate filter
263-3	Resistor: 4,700 ohms ± 20%; 1/2 watt	2nd I-F plate filter
263-4	Resistor: 4,700 ohms ± 20%; 1/2 watt	3rd I-F plate filter
264-1	Resistor: 10,000 ohms ± 20%; 1/2 watt	Oscillator plate filter
264-3	Resistor: 10,000 ohms ± 20%; 1/2 watt	Audio and squelch filter
265	Resistor: 2,700 ohms ± 5%; 1/2 watt	Oscillator cathode bias

TABLE 6-1. SUPPLEMENTARY PARTS LIST FOR RADIO RECEIVER BC-624-C (Con't).

Reference Number	*Description*	*Function*
266-4	Resistor: 270,000 ohms ± 10%; ½ watt	2nd audio plate load
267-1	Resistor: 100,000 ohms ± 20%; ½ watt	1st I-F AVC filter
267-2	Resistor: 100,000 ohms ± 10%; ½ watt	1st I-F screen voltage divider
267-4	Resistor: 100,000 ohms ± 20%; ½ watt	2nd I-F AVC filter
267-5	Resistor: 100,000 ohms ± 10%; ½ watt	2nd I-F screen voltage divider
267-7	Resistor: 100,000 ohms ± 10%; ½ watt	Harmonic amplifier screen dropping
267-8	Resistor: 100,000 ohms ± 10%; ½ watt	R-F screen dropping
267-9	Resistor: 100,000 ohms ± 10%; ½ watt	3rd I-F screen dropping
267-10	Resistor: 100,000 ohms ± 10%; ½ watt	3rd I-F screen dropping
269-2	Resistor: 270 ohms ± 5%; ½ watt	1st I-F cathode bias
269-3	Resistor: 270 ohms ± 5%; ½ watt	3rd I-F cathode bias
271-3	Resistor: 82,000 ohms ± 10%; ½ watt	AVC diode load
272-1	Resistor: 120,000 ohms ± 10%; ½ watt	Audio squelch compensating
273-2	Resistor: 5,600 ohms ± 10%; ½ watt	AVC delay cathode bias
273-3	Resistor: 5,600 ohms ± 5%; ½ watt	Audio squelch bleeder
274-1	Resistor: 2.2 megohms ± 20%; ½ watt	Audio squelch coupling
274-3	Resistor: 2.2 megohms ± 20%; ½ watt	Audio squelch filter
275-4	Resistor: 470,000 ohms ± 10%; ½ watt	Audio squelch plate load
276-1	Resistor: 18,000 ohms ± 5%; ½ watt	AVC delay
276-2	Resistor: 18,000 ohms ± 10%; ½ watt	Audio diode filter
277-2	Resistor: 1,800 ohms ± 5%; ½ watt	2nd audio cathode bias
278-1	Resistor: 1,500 ohms ± 5%; ½ watt	Audio squelch cathode bias
280-2	Resistor: 1 megohm ± 20%; ½ watt	AVC coupling
280-3	Resistor: 1 megohm ± 10%; ½ watt	2nd audio screen dropping
280-4	Resistor: 1 megohm ± 10%; ½ watt	2nd audio grid
280-5	Resistor: 1 megohm ± 10%; ½ watt	2nd audio grid
281-2	Resistor: 150,000 ohms ± 10%; ½ watt	Noise limiter filter
281-3	Resistor: 150,000 ohms ± 10%; ½ watt	Noise limiter load
281-4	Resistor: 150,000 ohms ± 10%; ½ watt	Crystal oscillator grid resistor
283	Resistor: 180 ohms ± 5%; ½ watt	2nd I-F cathode bias
284	Resistor: 8.200 ohms ± 5%; ½ watt	Audio squelch bleeder
285	Resistor: 15,000 ohms ± 10%; ½ watt	1st audio cathode load
286 A, B, C, & D	Switch	Crystal switch
287	Resistor: 7.5 ohms ± 10%; ½ watt	Test meter shunt
288	Socket	Rec. test milliameter socket
289	Socket	Crystal socket
290	Resistor: 10,000 ohms ± 10%; ¼ watt	Audio diode load
291	Transformer	Mixer to 1st I-F coupling
292	Transformer	1st I-F to 2nd I-F coupling
293	Transformer	2nd I-F to 3rd I-F coupling
294	Transformer	3rd I-F to diode coupling
295	Transformer	Audio input transformer
297	Variable capacitor assembly	Capacitor assembly, r-f 2nd osc.
200	12A6 to 4000 and 300 ohms	Output transformer

5. DIFFERENCES BETWEEN RADIO RECEIVERS BC-624-A AND BC-624-AM.

Most of the material provided in Radio Receiver BC-624-AM is also used elsewhere in Radio Set SCR-624-A. The material now in the depots may be used to service both Radio Receiver BC-624-A and BC-624-AM. The followin table shows the difference between Radio Receiver BC-624-A and BC-624-AM.

TABLE 6-2. DIFFERENCES BETWEEN RADIO RECEIVERS BC-624-A AND BC-624-AM

Reference Number		*Description*	*Function*
BC-624-A	*BC-624-AM*		
206-23		Capacitor: 6,800 micromicrofarads	3rd I-F grid bypass
209		Capacitor: 100 micromicrofarads	Audio diode bypass
211A		Capacitor: 100,000 micromicrofarads	1st audio cathode bypass
211B		Capacitor: 100,000 micromicrofarads	1st audio screen bypass
211C		Capacitor: 100,000 micromicrofarads	AVC filter
	211-1A	Capacitor: 100,000 micromicrofarads	1st audio cathode bypass
	211-1B	Capacitor: 100,000 micromicrofarads	1st audio screen bypass
	211-1C	Capacitor: 100,000 micromicrofarads	AVC filter

TABLE 6-2. DIFFERENCES BETWEEN RADIO RECEIVERS BC-624-A AND BC-624-AM (Cont'd).

Reference Number		*Description*	*Function*
BC-624-A	*BC-624-AM*		
	211-2A	Capacitor: 100,000 micromicrofarads	Limiter filter
	211-2B	Capacitor: 100,000 micromicrofarads	Limiter filter
	211-2C	Capacitor: 100,000 micromicrofarads	2nd I-F grid bypass
	219	Capacitor: 1,000 micromicrofarads	Limiter cathode bypass
	243-7	Tube socket	Limiter and AVC delay
252-2		Resistor: 100,000 ohms	Audio diode load
	253-3	Resistor: 330 ohms	AVC delay
	254-3	Resistor: 6,800 ohms	AVC delay
264		Resistor: 10,000 ohms	Oscillator plate filter
	264-1	Resistor: 10,000 ohms	Oscillator plate filter
	264-2	Resistor: 10,000 ohms	Audio diode load
271		Resistor: 82,000 ohms	3rd I-F screen dropping
	271-2	Resistor: 82,000 ohms	Limiter filter
272		Resistor: 120,000 ohms	Audio squelch compensating
	272-1	Resistor: 120,000 ohms	Audio squelch compensating
	272-2	Resistor: 120,000 ohms	Limiter load
276		Resistor: 18,000 ohms	AVC delay
	276-1	Resistor: 18,000 ohms	AVC delay
	276-2	Resistor: 18,000 ohms	Audio diode load
279-3		Resistor: 47,000 ohms	Audio diode load
	279-4	Resistor: 47,000 ohms	3rd I-F screen dropping
280		Resistor: 1.0 megohms	3rd I-F grid leak

6. CRYSTAL FREQUENCY CHART.

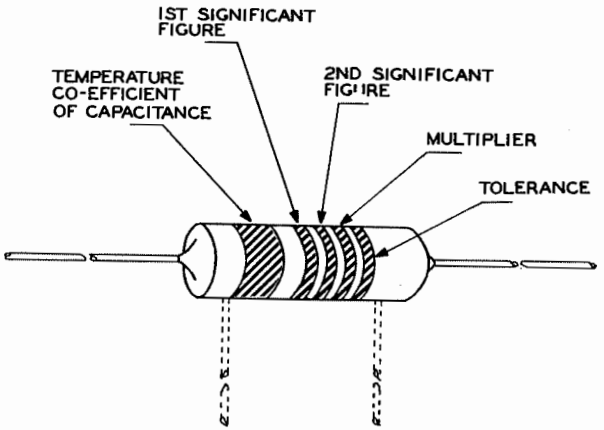
The crystal frequencies and their corresponding carrier frequency are listed in the following table:

TABLE 6-3. CRYSTAL FREQUENCY CHART.

Carrier Frequency	*Crystal Frequency Kilocycles*		*Carrier Frequency*	*Crystal Frequency Kilocycles*		*Carrier Frequency*	*Crystal Frequency Kilocycles*		*Carrier Frequency*	*Crystal Frequency Kilocycles*	
Megacycles	*Receive*	*Trans.*	*Megacycles*	*Receive*	*Trans.*	*Megacycles*	*Receive*	*Trans.*	*Megacycles*	*Receive*	*Trans.*
100.08	8007.27	5560.0	105.12	8465.45	5840.0	110.16	8180.00	6120.0	115.20	8600.00	6400.0
100.26	8023.64	5570.0	105.30	8481.82	5850.0	110.34	8195.00	6130.0	115.38	8615.00	6410.0
100.44	8040.00	5580.0	105.48	8498.18	5860.0	110.52	8210.00	6140.0	115.56	8630.00	6420.0
100.62	8050.36	5590.0	105.66	8514.55	5870.0	110.70	8225.00	6150.0	115.74	8645.00	6430.0
100.80	8072.73	5600.0	105.84	8530.91	5880.0	110.88	8240.00	6160.0	115.92	8660.00	6440.0
100.98	8089.09	5610.0	106.02	8547.27	5890.0	111.06	8255.00	6170.0	116.10	8007.69	6450.0
101.16	8105.45	5620.0	106.20	8563.64	5900.0	111.24	8270.00	6180.0	116.28	8021.54	6460.0
101.34	8121.82	5630.0	106.38	8580.00	5910.0	111.42	8285.00	6190.0	116.46	8035.38	6470.0
101.52	8138.18	5640.0	106.56	8596.36	5920.0	111.60	8300.00	6200.0	116.64	8049.23	6480.0
101.70	8154.55	5650.0	106.74	8612.73	5930.0	111.78	8315.00	6210.0	116.82	8063.08	6490.0
101.88	8170.91	5660.0	106.92	8629.09	5940.0	111.96	8330.00	6220.0	117.00	8076.92	6500.0
102.06	8187.27	5670.0	107.10	8645.45	5950.0	112.14	8345.00	6230.0	117.18	8090.77	6510.0
102.24	8203.64	5680.0	107.28	8661.82	5960.0	112.32	8360.00	6240.0	117.36	8104.62	6520.0
102.42	8220.00	5690.0	107.46	8678.18	5970.0	112.50	8375.00	6250.0	117.54	8118.46	6530.0
102.60	8236.36	5700.0	107.64	8694.55	5980.0	112.68	8390.00	6260.0	117.72	8132.31	6540.0
102.78	8252.73	5710.0	107.82	8710.91	5990.0	112.86	8405.00	6270.0	117.90	8146.15	6550.0
102.96	8269.09	5720.0	108.00	8000.00	6000.0	113.04	8420.00	6280.0	118.08	8160.00	6560.0
103.14	8285.45	5730.0	108.18	8015.00	6010.0	113.22	8435.00	6290.0	118.26	8173.85	6570.0
103.32	8301.82	5740.0	108.36	8030.00	6020.0	113.40	8450.00	6300.0	118.44	8187.69	6580.0
103.50	8318.18	5750.0	108.54	8045.00	6030.0	113.58	8465.00	6310.0	118.62	8201.54	6590.0
103.68	8334.55	5760.0	108.72	8060.00	6040.0	113.76	8480.00	6320.0	118.80	8215.38	6600.0
103.86	8350.91	5770.0	108.90	8075.00	6050.0	113.94	8495.00	6330.0	118.98	8229.23	6610.0
104.04	8367.27	5780.0	109.08	8090.00	6060.0	114.12	8510.00	6340.0	119.16	8243.08	6620.0
104.22	8383.64	5790.0	109.26	8105.00	6070.0	114.30	8525.00	6350.0	119.34	8256.92	6630.0
104.40	8400.00	5800.0	109.44	8120.00	6080.0	114.48	8540.00	6360.0	119.52	8270.77	6640.0
104.58	8416.36	5810.0	109.62	8135.00	6090.0	114.66	8555.00	6370.0	119.70	8284.62	6650.0
104.76	8432.73	5820.0	109.80	8150.00	6100.0	114.84	8570.00	6380.0	119.88	8298.46	6660.0
104.94	8449.09	5830.0	109.98	8165.00	6110.0	115.02	8585.00	6390.0	120.06	8312.31	6670.0

TABLE 6-3. CRYSTAL FREQUENCY CHART (Con't).

Carrier Frequency Megacycles	Crystal Frequency Kilocycles	
	Receive	Trans.
120.24	8326.15	6680.0
120.42	8340.00	6690.0
120.60	8353.85	6700.0
120.78	8367.69	6710.0
120.96	8381.54	6720.0
121.14	8395.38	6730.0
121.32	8409.23	6740.0
121.50	8423.08	6750.0
121.68	8436.92	6760.0
121.86	8450.77	6770.0
122.04	8464.62	6780.0
122.22	8478.46	6790.0
122.40	8492.31	6800.0
122.58	8506.15	6810.0
122.76	8520.00	6820.0
122.94	8533.85	6830.0
123.12	8547.69	6840.0
123.30	8561.54	6850.0
123.48	8575.38	6860.0
123.66	8589.23	6870.0
123.84	8603.08	6880.0
124.02	8001.43	6890.0
124.20	8014.29	6900.0
124.38	8027.14	6910.0
124.56	8040.00	6920.0
124.74	8052.86	6930.0
124.92	8065.71	6940.0
125.10	8078.57	6950.0
125.28	8091.43	6960.0
125.46	8104.29	6970.0
125.64	8117.14	6980.0
125.82	8130.00	6990.0
126.00	8142.86	7000.0
126.18	8155.71	7010.0
126.36	8168.57	7020.0
126.54	8181.43	7030.0
126.72	8194.29	7040.0
126.90	8207.14	7050.0
127.08	8220.00	7060.0
127.26	8232.86	7070.0
127.44	8245.71	7080.0
127.62	8258.57	7090.0
127.80	8271.43	7100.0
127.98	8284.29	7110.0
128.16	8297.14	7120.0
128.34	8310.00	7130.0
128.52	8322.86	7140.0
128.70	8335.71	7150.0
128.88	8348.57	7160.0
129.06	8361.43	7170.0
129.24	8374.29	7180.0
129.42	8387.14	7190.0
129.60	8400.00	7200.0
129.78	8412.86	7210.0
129.96	8425.71	7220.0
130.14	8438.57	7230.0
130.32	8451.43	7240.0
130.50	8464.29	7250.0
130.68	8477.14	7260.0
130.86	8490.00	7270.0
131.04	8502.86	7280.0
131.22	8515.71	7290.0
131.40	8528.57	7300.0
131.58	8541.43	7310.0
131.76	8554.29	7320.0
131.94	8567.14	7330.0
132.12	8008.00	7340.0
132.30	8020.00	7350.0
132.48	8032.00	7360.0
132.66	8044.00	7370.0
132.84	8056.00	7380.0
133.02	8068.00	7390.0
133.20	8080.00	7400.0
133.38	8092.00	7410.0
133.56	8104.00	7420.0
133.74	8116.00	7430.0
133.92	8128.00	7440.0
134.10	8140.00	7450.0
134.28	8152.00	7460.0
134.46	8164.00	7470.0
134.64	8176.00	7480.0
134.82	8188.00	7490.0
135.00	8200.00	7500.0
135.18	8212.00	7510.0
135.36	8224.00	7520.0
135.54	8236.00	7530.0
135.72	8248.00	7540.0
135.90	8260.00	7550.0
136.08	8272.00	7560.0
136.26	8284.00	7570.0
136.44	8296.00	7580.0
136.62	8308.00	7590.0
136.80	8320.00	7600.0
136.98	8332.00	7610.0
137.16	8344.00	7620.0
137.34	8356.00	7630.0
137.52	8368.00	7640.0
137.70	8380.00	7650.0
137.88	8392.00	7660.0
138.06	8404.00	7670.0
138.24	8416.00	7680.0
138.42	8428.00	7690.0
138.60	8440.00	7700.0
138.78	8452.00	7710.0
138.96	8464.00	7720.0
139.14	8476.00	7730.0
139.32	8488.00	7740.0
139.50	8500.00	7750.0
139.68	8512.00	7760.0
139.86	8524.00	7770.0
140.04	8002.50	7780.0
140.22	8013.75	7790.0
140.40	8025.00	7800.0
140.58	8036.25	7810.0
140.76	8047.50	7820.0
140.94	8058.75	7830.0
141.12	8070.00	7840.0
141.30	8081.25	7850.0
141.48	8092.50	7860.0
141.66	8103.75	7870.0
141.84	8115.00	7880.0
142.02	8126.25	7890.0
142.20	8137.50	7900.0
142.38	8148.75	7910.0
142.56	8160.00	7920.0
142.74	8171.25	7930.0
142.92	8182.50	7940.0
143.10	8193.75	7950.0
143.28	8205.00	7960.0
143.46	8216.25	7970.0
143.64	8227.50	7980.0
143.82	8238.75	7990.0
144.00	8250.00	8000.0
144.18	8261.25	8010.0
144.36	8272.50	8020.0
144.54	8283.75	8030.0
144.72	8295.00	8040.0
144.90	8306.25	8050.0
145.08	8317.50	8060.0
145.26	8328.75	8070.0
145.44	8340.00	8080.0
145.62	8351.25	8090.0
145.80	8362.50	8100.0
145.98	8373.75	8110.0
146.16	8385.00	8120.0
146.34	8396.25	8130.0
146.52	8407.50	8140.0
146.70	8418.75	8150.0
146.88	8430.00	8160.0
147.06	8441.25	8170.0
147.24	8452.50	8180.0
147.42	8463.75	8190.0
147.60	8475.00	8200.0
147.78	8486.25	8210.0
147.96	8497.50	8220.0
148.14	8008.24	8230.0
148.32	8018.82	8240.0
148.50	8029.41	8250.0
148.68	8040.00	8260.0
148.86	8050.59	8270.0
149.04	8061.18	8280.0
149.22	8071.76	8290.0
149.40	8082.35	8300.0
149.58	8092.94	8310.0
149.76	8103.53	8320.0
149.94	8114.12	8330.0
150.12	8124.71	8340.0
150.30	8135.29	8350.0
150.48	8145.88	8360.0
150.66	8156.47	8370.0
150.84	8167.06	8380.0
151.02	8177.65	8390.0
151.20	8188.24	8400.0
151.38	8198.82	8410.0
151.56	8209.41	8420.0
151.74	8220.00	8430.0
151.92	8230.59	8440.0
152.10	8241.18	8450.0
152.28	8251.76	8460.0
152.46	8262.35	8470.0
152.64	8272.94	8480.0
152.82	8283.53	8490.0
153.00	8294.12	8500.0
153.18	8304.71	8510.0
153.36	8315.29	8520.0
153.54	8325.88	8530.0
153.72	8336.47	8540.0
153.90	8347.06	8550.0
154.08	8357.65	8560.0
154.26	8368.24	8570.0
154.44	8378.82	8580.0
154.62	8389.41	8590.0
154.80	8400.00	8600.0
154.98	8410.59	8610.0
155.16	8421.18	8620.0
155.34	8431.76	8630.0
155.52	8442.35	8640.0
155.70	8452.94	8650.0
155.88	8463.53	8660.0



AWS TYPE DESIGNATION:

Type designation of fixed ceramic-dielectric capacitors is in the following form:

CC 25 SL 100 G

CC Component designation, fixed ceramic-dielectric capacitors.

25 Style; identifies size and shape.

SL First letter, temp. coefficient; second letter, tolerance of temp. coefficient.

100 Capacitance value in micromicrofarads.

G Capacitance tolerance.

NOTE: 1. Leads may be oxial or terminal.
2. Inner electrode at broad band end.
3. Capacitance in micromicrofarads.
4. Broad band and four narrow bands identifies as complying with AWS color code.

Color	*Significant Figure*	*Multiplier*	*±Tolerance of Capacitance*				*Temp. Co-eff. of Capacitance*
			Capacitors Greater than 10		*Capacitors of 10 or Smaller*		
			Tolerance in %	*Letter Symb.*	*Tolerance in %*	*Letter Symb.*	*Parts / Million Degrees C*
Black	0	1	20	(M)	2.0	(G)	0
Brown	1	10	1	(F)			—30
Red	2	100	2	(G)			—80
Orange	3	1000					—150
Yellow	4						—220
Green	5		5	(J)			—330
Blue	6						—470
Violet	7						—750
Gray	8	0.01			0.25	(C)	+30
White	9	0.1	10	(K)	1.0	(F)	—300 +500

EXAMPLE: Broad band, green; 1st narrow band, brown; 2nd narrow band, black; 3rd narrow band, brown; 4th narrow band, red.
AWS Type CC SL 100 G
Capacitance; 100 micromicrofarads
AWS Type CC25SL 100 G

AWS COLOR CODE FIXED CERAMIC-DIELECTRIC CAPACITORS

SECTION VII
TABLE OF REPLACEABLE PARTS

Introduction

The parts listed in this table do not constitute a complete electrical and mechanical breakdown of the equipment. The table lists all electrical parts together with such operative mechanical parts as are subject to loss or failure, with the exception of structural and minor parts such as standard bolts, screws, nuts, and the like. In some instances individual detail parts of a sub-assembly may not be listed as separate items, since replacement of such items is impractical.

Ordering of Spare Parts

Each Service using this list has established certain depots and service groups for the storage and issue of spare parts to its organizations requiring them. The regulations of each Service should be studied to determine the method and source for requisitioning spare parts. The information in this list, as to manufacturer's or contractor's name, type, model, or drawing number, is not to be interpreted as authorization to field agencies to attempt to purchase identical or comparable spare parts directly from the manufacturer or a wholesale or retail store except under emergency conditions as covered by existing regulations of the Service concerned.

U.S. Army Personnel: This table is for information *only* and is not to be used as a basis for requisitioning parts. Authorities for obtaining maintenance items are as follows: 1. For using organizations: applicable Service publications of the 00-30 series of AAF Technical Orders. 2. For higher maintenance and supply echelons: applicable Service publications of the 08-55 series of AAF Technical Orders.

	3DKA6.800-13 —— —— or	CAPACITOR: Fixed; 6800 micromicrofarads ± 10%; 400 volts DCW; paper		Micamold type 340	Bendix No. A18015-682
	3DKA6.800-14 —— —— or	CAPACITOR: Fixed; 6800 micromicrofarads + 30%; — 20%; 400 volts DCW; paper		Micamold type 336	Zenith No. 22G791
	3DA6-23 —— 110C/2994	CAPACITOR: Fixed; 6000 micromicrofarads ± 20%; 300 volts DCW; mica or		Aerovox type 1467 Cornell-Dubilier type 1WL-3D6 Micamold type W Electromotive Co. type 502L	Bendix No. A102967-7
	3DA10-87 —— ——	CAPACITOR: Fixed; 10,000 micromicrofarads ± 5% 300 volts DCW; mica.		Cornell-Dubilier type 1WL	Bendix No. A102967-1
102-2		CAPACITOR: Same as ref. 102-1.	Oscillator plate bypass		
102-3		CAPACITOR: Same as ref. 102-1.	First harmonic amplifier grid bypass		
102-4		CAPACITOR: Same as ref. 102-1.	First harmonic amplifier filament bypass		
102-5		CAPACITOR: Same as ref. 102-1.	First harmonic amplifier screen bypass		
102-6		CAPACITOR: Same as ref. 102-1.	First harmonic amplifier cathode bypass		
102-7		CAPACITOR: Same as ref. 102-1.	First harmonic amplifier plate bypass		
102-8		CAPACITOR: Same as ref. 102-1.	Second harmonic amplifier grid bypass		
102-9		CAPACITOR: Same as ref. 102-1.	Second harmonic amplifier grid bypass		
102-10		CAPACITOR: Same as ref. 102-1.	Second harmonic amplifier filament bypass		
102-11		CAPACITOR: Same as ref. 102-1.	Meter shunt bypass		
102-12		CAPACITOR: Same as ref. 102-1.	Power amplifier grid bypass		
102-13		CAPACITOR: Same as ref. 102-1.	Power amplifier grid bypass		
102-14		CAPACITOR: Same as ref. 102-1.	Bridge blocking		
102-15		CAPACITOR: Same as ref. 102-1.	Bridge blocking		
103	3D9050-40 —— 110C/2936	CAPACITOR: Fixed; 50 micromicrofarads ± 1%; 500 volts DCW; silver mica or CAPACITOR: Fixed; 50 micromicrofarads ± 10%; 500 volts DCW; mica.	Oscillator cathode bypass	Erie type MIJ F. W. Sickles	Bendix No. A18253-1 Zenith No. 22G751 Bendix No. C56315-500
104	3D9100-51 —— 110C/3026	CAPACITOR: Fixed; 100 micromicrofarads ± 100%; 500 volts DCW; zero temperature coefficient; ceramicon.	First harmonic amplifier grid coupling	Erie type NPOD Muter Co.	Bendix No. A104485-1 Zenith No. 22G740
105-1	3DA1-55 —— 110C/25	CAPACITOR: Fixed; 1000 micromicrofarads ± 10%; 300 volts DCW; mica.	Power amplifier filament bypass	Aerovox type 1468 Cornell-Dubilier type 5WL Micamold type OXM Electromotive type 503M	Bendix No. C56415-102 Zenith No. 22G745

TABLE OF REPLACEABLE PARTS

MODEL: RADIO SET SCR-624-A OR SCR-624-B **MAJOR ASSEMBLY: RADIO TRANSMITTER BC-625-A AND BC-625-AM**

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*NAME OF PART and DESCRIPTION*	*FUNCTION*	*MFR. and DESIG. or AWS TYPE*	*CONT. or GOVT. DWG. or SPEC. No.*
105-3		CAPACITOR: Same as ref. 105-1.	Speech amplifier grid bypass		
105-4		CAPACITOR: Same as ref. 105-1. (Not used on all transmitters.)	Meter shunt bypass		
106	3DA2-63 —— 110C/2944	CAPACITOR: Fixed; 2000 micromicrofarads ± 5%; 800 volts DCW; mica. (Not used on all transmitters.)	Power amplifier bypass	Cornell-Dubilier type 1WPLS	Bendix No. A18255-1
107-1	3DA100-124 —— 110/C43	CAPACITOR: Fixed; 100,000 micromicrofarads ± 10%; 400 volts DCW; paper.	Speech amplifier screen bypass	Micamold type 345-21	Bendix No. A18015-104 Zenith No. 22G746
108-2	3DKA1-109 —— 110C/2992	CAPACITOR: Fixed; 1000 micromicrofarads ± 5%; 500 volts DCW; mica.	Tone feedback	Cornell-Dubilier type 1W-501 Micamold type WXM Aerovox type 1467	Bendix No. A102967-2 Zenith No. 22G742
109-1	3D9020-5 —— 110C/2933 —— or	CAPACITOR: Fixed; 20 micromicrofarads ± 1 micromicrofarad; 500 volts DCW; zero temperature coefficient; ceramicon	Power amplifier grid coupling	Muter Co. Erie type NPOL	Bendix No. A18182-16 Zenith No. 22G749
	3DK9020-19	CAPACITOR: Fixed; 20 micromicrofarads ± 1 micromicrofarad; 500 volts DCW; negative temperature coefficient; ceramic.		Centralab type 931-005	Zenith No. 22G749
109-2		CAPACITOR: Same as ref. 109-1.	Power amplifier grid coupling		
109-3		CAPACITOR: Same as ref. 109-1.	Second harmonic amplifier grid coupling		
109-4		CAPACITOR: Same as ref. 109-1.	Second harmonic amplifier grid coupling		
109-5		CAPACITOR: Same as ref. 109-1.	High frequency bypass		
110	3DB1.092 —— 110C/3014	CAPACITOR: Fixed; 1 microfarad + 20% — 15%; 100 volts DCW; oil paper or	Speech amplifier cathode bypass	Cornell-Dubilier type DYR-6100 Aerovox type 130 Micamold type 306	Bendix No. A104092-2 Zenith No. 22G739
	3DB1.092-1 —— —— or	CAPACITOR: Fixed; 1 microfarad ± 15%; 100 volts DCW; oil paper, in metal case		Cornell-Dubilier type DY Aerovox	Bendix No. A104092-2
	3DB1.092-2 —— ——	CAPACITOR: Fixed; 1 microfarad ± 10%; 100 volts DCW; oil paper, in metal case.		Cornell-Dubilier type DYR	Bendix No. A104092-2
111	3DA500-40 —— 110C/3013	CAPACITOR: Fixed; 500,000 micromicrofarads + 20%; — 15%; 400 volts DCW; oil paper, in metal case.	Modulator screen bypass	Cornell-Dubilier type DYR-6050 Aerovox type 430 Sprague type P6748 Micamold type 306	Bendix No. A104092-1 Zenith No. 22G738

113	3D9300-1 —— 110C/2993	CAPACITOR: Fixed; 300 micromicrofarads ± 5%; 500 volts DCW; mica or CAPACITOR: Fixed; 300 micromicrofarads ± 5%; 500 volts DCW; mica.	Speech amplifier plate blocking	Aerovox type 1468 Cornell-Dubilier type 5W1 Micamold type OXM Aerovox type 1467L8	Bendix No. C56314-301 Zenith No. 22G773 Bendix No. A102967-3
114	3D9077VE5 —— 110C/2983 ——	CAPACITOR: Variable; 11 micromicrofarads minimum to 65.6 micromicrofarads maximum ± 1.5 micromicrofarads; 8 stators; 5 rotors.	Oscillator plate tuning	General instrument special Radio Condenser special	Bendix No. L72950 AL74116-1 Zenith No. SG2367
115	3D9027V-1 —— 110C/2984 ——	CAPACITOR: Variable; 3.5 micromicrofarads minimum to 27 micromicrofarads maximum ± 1 micromicrofarad; 12 stators; 7 rotors.	First harmonic amplifier plate tuning	General Instrument special Radio Condenser special	Bendix No. L72951 AL74117-1 Zenith No. SG2368
116	3D9016E5 —— 110C/2982 ——	CAPACITOR: Variable; 3 micromicrofarads minimum to 16.5 micromicrofarads maximum ± 1 micromicrofarad; 8 stators; 5 rotors.	Second harmonic amplifier plate tuning	General Instrument special Radio Condenser special	Bendix No. L72949 AL74115-1 Zenith No. SG2366
117	3D9011 —— 110C/2981 ——	CAPACITOR: Variable; 2.8 micromicrofarad minimum to 11 micromicrofarads maximum ± 10%; 6 stators; 3 rotors.	Power amplifier plate tuning	General Instrument special Radio Condenser special	Bendix No. L72948 AL74114-1 Zenith No. SG2365
118	2C6525A/56 —— 110C/2958	COIL-R.F.: 9-1/2 turns of No. 24 enameled copper wire on ground coil from 1" long x 7/8" dia.	Oscillator plate tuning	Bendix	Bendix No. AC57998-1 Zenith No. SG2234
119	2C6525A/57 —— ——	COIL-R.F.: 15 turns No. 10 bare copper wire tapped at 8 turns; 5/8" dia. x 1-7/8" long.	First harmonic amplifier plate tuning	Bendix	Bendix No. AC57999-1 Zenith No. SG2235
120	2C6525A/J8 110C/2960	COIL-R.F.: No. 10 silver plated S. D. copper wire distributed inductance line; approximately "U" shaped.	Second harmonic amplifier plate tuning	Bendix	Bendix No. AC58149-1 Zenith No. SG2246
121	3C1074-24 —— 110C/2961	COIL-R.F.: 2 turns, gap, 2 turns of No. 10 S. D. silver plated wire, center tapped at gap; 1-11/32" long 3/4" dia.	Power amplifier plate tuning	Bendix	Bendix No. AC58150-1 Zenith No. SG2215
122	2C6525A/J10.1 —— 110C/3225	COIL ASSEMBLY-ANTENNA COUPLING: 3 turns No. 10 S. D. silver plated copper wire; adjusting screw provided to vary coupling; 2-3/4" x 2-1/4" x 9/16" or COIL ASSEMBLY-ANTENNA COUPLING: L-shaped antenna board assembly with jacks and adjusting knob; supports and gears mounted; consists of coil and block assembly, spring washer, and retaining washer.	Antenna coupling	Bendix Bendix	Bendix No. AC59922-1 Zenith No. SG2546 Colonial No. 49291
123-1	2Z7228.4 —— 110H/924	CONNECTOR: 8-contact; male; polarized.	Transmitter control circuit	Jones type P-408 Amalgamated Radio Tel.	Bendix No. A102811 Zenith No. 58G62
123-2		CONNECTOR: Same as ref. 123-1.	Power input from rack		
125	2Z7298-2 —— 110C/3024 or 2Z7273-36 ——	POTENTIOMETER: 1 megohm ± 20%; 1/2 watt; taper "C"; carbon. (See Ref. 180 and 181.) or POTENTIOMETER: 1 megohn; 1/2 watt; carbon; taper "C"; case 1/8" dia. x 13/32" deep	Audio gain control	International resistance type CM Chicago Tel. Supply type 35	Bendix No. A104470-2 Zenith No. 63G658 Bendix No. A105317-2

TABLE OF REPLACEABLE PARTS

MODEL: RADIO SET SCR-624-A OR SCR-624-B **MAJOR ASSEMBLY: RADIO TRANSMITTER BC-625-A AND BC-625-AM**

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*NAME OF PART and DESCRIPTION*	*FUNCTION*	*MFR. and DESIG. or AWS TYPE*	*CONT. or GOVT. DWG. or SPEC. No.*
	2Z7273-35 —— ——	POTENTIOMETER: 1 megohm; 1/2 watt; carbon; taper "C"; case 1-1/4" dia. x 1/2" deep.		International Resistance type CM	Bendix No. A114717
126	3C336-19 —— 110C/3009	COIL-A.F.: Reactor; 5000 ohms d-c resistance; can size 1-7/16" x 1-7/8" x 2-1/4".	Speech amplifier plate	Acme type T-3794 Dinion type SC3034	Bendix No. A103034 Zenith No. 95C31
127-1	3C336-11 —— 110C/3012	COIL-R.F.: Choke; 9.19 ohms d-c; single layer wound on steatite core 1/4" dia. x 1-3/4" long.	Second harmonic amplifier grid choke	Ohomite type Z-0 Presto Electric Utah Radio Scientific Industry type B-1450 or U. S. Rubber type L-100	Bendix No. A104090 Zenith No. 20039
127-2		COIL-R.F.: Same as ref. 127-1.	Second harmonic amplifier grid choke		
127-3		COIL-R.F.: Same as ref. 127-1.	Power amplifier grid choke		
127-4		COIL-R.F.: Same as ref. 127-1.	Power amplifier grid choke		
128-1	3C326-100 —— 110C/2895	COIL-R.F.: Choke, 50 ohm d-c resistance; 2" long x 1/2" dia.	Oscillator grid choke	National type R100 Guthman type 5012 Sickles type 1380	Bendix No. A10556 Zenith No. 20G28
		COIL-R.F.: Choke; 2.5 microhenries; pie wound 2-1/8" long x 3-1/8" dia.	Oscillator grid choke	James Millon type 34103	Bendix No. A1133-32
128-2		COIL-R.F.: Same as ref. 128-1.	Oscillator cathode choke		
128-3		COIL-R.F.: Same as ref. 128-1.	Power amplifier plate choke		
130	2Z7650.3 —— 110F/489	RELAY: Single pole double throw; 12 volts d-c; 200 ohms d-c resistance coil; 2 mounting holes; overall 2-1/8" x 2-1/2" x 1-1/4". (Relay 130 deleted in Radio Transmitter BC-625-AM.)	Slow release relay	Clare Co. type B-6106 Cook Electric type 612-100	Bendix No. A18258 Zenith No. 195G44
131	2Z765-B6106 —— 110F/490	RELAY: Double pole single throw; 12 volts d-c; 200 ohms d-c resistance coil; 2 mounting holes; overall 2-1/8" x 2-1/2" x 1-1/4".	Contactor relay	Clare Co. type B-6106 Cook Electric type 612-100	Bendix No. A18259 Zenith No. 195G43
132-1	3Z6625-6 —— 110C/1673	RESISTOR: Fixed; 25,000 ohms ± 5%; 1 watt; carbon or	Second harmonic amplifier grid bias	Erie type 505 Allen-Bradley type EB Speer type SI-1	Bendix No. A18004-253 Zenith No. 63G675
	3Z6625-37 —— ——	RESISTOR: Fixed; 25,000 ohms ± 10%; 1/2 watt; carbon or		Erie type 504	Bendix No. A18151-253
	3Z6625-38	RESISTOR: Fixed; 25,000 ohms ± 10%; 1 watt; carbon.		Erie type 505	Bendix No. A18150-253
132-2		RESISTOR: Same as ref. 132-1.	Second harmonic amplifier grid bias		
133-1	3Z6640-13 —— 110C/2926	RESISTOR: Fixed; 40,000 ohms ± 5%; 1 watt; carbon or	Power amplifier screen dropping	Erie type 518 Allen Bradley type EB	Bendix No. A18158-403 Zenith No. 63G681

	3Z6640-31 —— ——	RESISTOR: Fixed; 40,000 ohms ± 10%; 1 watt; carbon.		Erie type 518	
133-2		RESISTOR: Same as ref. 133-1.	Power amplifier screen dropping		
133-3		RESISTOR: Same as ref. 133-1.	Voltage divider		
133-4		RESISTOR: Same as ref. 133-1.	Voltage divider		
134	3Z5991-5 —— 110C/2938	RESISTOR: Fixed; 1.53 ohms ± 1%; 1/2 watt; wire-wound.	First harmonic amplifier plate meter shunt	Shallcross type 181 International resistance	Bendix No. A18254-2 Zenith No. 63G660
135-1	3Z5976 —— 110C/2937	RESISTOR: Fixed; 0.76 ohms ± 1%; 1/2 watt; wire-wound.	Second harmonic amplifier plate meter shunt	Shallcross type 181	Bendix No. A18254-1 Zenith No. 63G659
135-2		RESISTOR: Same as ref. 135-1.	Power amplifier plate meter shunt		
136-1	3ZK6400-36 —— ——	RESISTOR: Fixed; 4000 ohms ± 5%; 1 watt; carbon. or	First harmonic amplifier cathode bias	Erie type 518	Bendix No. A18158-402 Zenith No. 63G780
	3Z6400-28 —— ——	RESISTOR: Fixed; 4000 ohms ± 10%; 1 watt; carbon.		Erie type 518	Bendix No. A13907-402
136-2		RESISTOR: Same as ref. 136-1.	First harmonic amplifier cathode bias		
138-3	3Z6801-25 —— 110C/1677	RESISTOR: Fixed; 1 megohm ± 5%; 1 watt; carbon or	Speech amplifier screen dropping Third i-f grid leak	Erie type 505 Allen-Bradley type GB Speer type SI-1	Bendix No. A18004-105 Zenith No. 63G705
	3Z6801-47 —— ——	RESISTOR: Fixed; 1 megohm ± 10%; 1 watt; carbon or		Speer type SI-1	
	3Z6801-22	RESISTOR: Fixed; 1 megohm ± 20%; 1 watt; carbon.		Erie type 505	
140-2	3Z6750-25 —— 110C/1671	RESISTOR: Fixed; 500,000 ohms ± 5%; 1 watt; carbon or	Tone voltage divider	Erie type 505 Allen-Bradley type GB Speer type SI-1	Bendix No. A18004-504 Zenith No. 63G674
	3Z6750-39 —— ——	RESISTOR: Fixed; 50,000 ohms ± 10%; 1 watt; carbon.		Erie type 505 Allen-Bradley type GB Speer type SI-1	
140-3		RESISTOR: Same as ref. 140-2.	Tone voltage divider		
140-4		RESISTOR: Same as ref. 140-2.	Tone feedback coupling		
141-1	3Z6801-3 —— 110C/1221	RESISTOR: Fixed; 1 megohm ± 5%; 1/2 watt; carbon.	Input bridge	Erie, Speer, Allen-Bradley	Bendix No. A18001-105 Zenith No. 63G667
141-2		RESISTOR: Same as ref. 141-1.	Input bridge		
141-3		RESISTOR: Same as ref. 141-1.	Input bridge		
141-4		RESISTOR: Same as ref. 141-1.	Input bridge		
142	3Z6500-61 —— 110C/1669	RESISTOR: Fixed; 5000 ohms ± 5%; 1 watt; carbon or	Speech amplifier grid bias	Erie type 505 Allen-Bradley type GB Speer type SI-1	Bendix No. A18004-502 Zenith No. 63G672

TABLE OF REPLACEABLE PARTS

MODEL: RADIO SET SCR-624-A OR SCR-624-B **MAJOR ASSEMBLY: RADIO TRANSMITTER BC-625-A AND BC-625-AM**

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*NAME OF PART and DESCRIPTION*	*FUNCTION*	*MFR. and DESIG. or AWS TYPE*	*CONT. or GOVT. DWG. or SPEC. No.*
	3Z6500-62	RESISTOR: Fixed; 5000 ohms ± 10%; 1 watt; carbon.		Speer type SI-1	
143-1	3Z6008B2	RESISTOR: Fixed; 82 ohms ± 5%; 1 watt; carbon. (This resistor has been deleted from production models.)	Speech amplifier filament dropping	Erie type 518	Bendix No. A18158-820 Zenith No. 63G735
	110C/2931				
143-2		RESISTOR: Same as ref. 143-1. (Deleted on some models.)	Speech amplifier filament dropping		
144	3Z6725-1	RESISTOR: Fixed; 250,000 ohms ± 5%; 1/2 watt; carbon	Speech amplifier plate load	Erie type 504 Allen-Bradley type EB Speer type SI-1/2	Bendix No. A18001-254 Zenith No. 63G668
	110C/1675	or			
	3Z6725-21	RESISTOR: Fixed; 250,000 ohms ± 10%; 1/2 watt carbon.		Allen-Bradley type EB-1/2	
145	3Z6615-27	RESISTOR: Fixed; 15,000 ohms ± 5%; 1 watt; carbon	Modulator bias bleeder	Allen-Bradley type GB Erie type 518	Bendix No. A18158-153 Zenith No. 63G678
	110C/2923	or			
	3Z661-49	RESISTOR: Fixed; 15,000 ohms ± 10%; 1 watt; carbon.	Modulator bias bleeder	Erie type 518	
146	3Z6560-30	RESISTOR: Fixed; 6000 ohms; ± 10%; 1 watt; carbon.	Transformer bias bleeder	Erie type 518	Bendix No. A18158-602 Zenith No. 63G684
	110C/2929				
147	3Z6618-13	RESISTOR: Fixed; 18,000 ohms ± 5%; 1 watt; carbon	Transformer bias bleeder	Erie type 518	Bendix No. A18158-183 Zenith No. 63G679
	110C/2924	or			
	3RC31AE183K	RESISTOR: Fixed; 18,000 ohms ± 10%; 1 watt; carbon.	Transformer bias bleeder	Erie type 518	
148	3Z6007E-13	RESISTOR: Fixed; 75 ohms ± 5%; 1 watt; carbon.	Power amplifier grid shunt	Erie type 518 Allen-Bradley type GB	Bendix No. A18158-750 Zenith No. 63G685
	110C/2930				
150	3Z6005-6	RESISTOR: Fixed; 50 ohms ± 5%; 1 watt; carbon	First harmonic amplifier grid coupling	Erie type 505 Allen-Bradley type GB Speer type SI-1	Bendix No. A18004-500 Zenith No. 63G676
	110C/2902	or			
	3ZK6005-61	RESISTOR: Fixed; 50 ohms ± 10%; 1 watt; carbon.	First harmonic amplifier grid coupling	Erie type 505 Speer type SI-1	Bendix No. A18005-500
151-1	3Z6650-38	RESISTOR: Fixed; 50,000 ohms ± 5%; 1 watt; carbon.	Oscillator grid bias	Erie type 505 Allen-Bradley type GB Speer type SI-1	Bendix No. A18004-503 Zenith No. 63G673
	110C/1666				
	3Z6650-30	RESISTOR: Fixed; 50,000 ohms ± 10%; 1 watt; carbon.		Erie type 505	
151-2		RESISTOR: Same as ref. 151-1.	First harmonic amplifier grid bias		

152-1	3Z6650-39 110C/2928	RESISTOR: Fixed; 50,000 ohms ± 5%; 1 watt; carbon or	Oscillator screen dropping	Allen-Bradley type GB Erie type 518	Bendix No. A18158-503 Zenith No. 63G683
	3Z6650-51 —— ——	RESISTOR: Fixed; 50,000 ohms ± 10%; 1 watt; carbon.	Oscillator screen dropping	Erie type 518	
152-2		RESISTOR: Same as ref. 152-1.	Second harmonic amplifier screen dropping		
152-3		RESISTOR: Same as ref. 152-1.	Modulator bias divider		
152-4		RESISTOR: Same as ref. 152-1.	Modulator bias divider		
153-1	3Z6200-34 —— 110C/2925	RESISTOR: Fixed; 2000 ohms ± 5%; 1 watt; carbon. (Replaced by ref. 136-1 and 136-2 in some equipments.)	First harmonic amplifier cathode bias	Erie type 518	Bendix No. A18158-202 Zenith No. 63G680
153-3		RESISTOR: Same as ref. 153-1 or	Speech amplifier cathode bias		
	3Z6200-72 —— ——	RESISTOR: Fixed; 2000 ohms ± 10%; 1 watt; carbon.	Speech amplifier cathode bias	Erie type 518	
153-4		RESISTOR: Same as ref. 153-3.	Speech amplifier grid		
154-1	3Z6500-62 —— 110C/2927	RESISTOR: Fixed; 5000 ohms ± 5%; 1 watt; carbon or	First harmonic amplifier screen dropping	Erie type 518	Bendix No. A18158-502 Zenith No. 63G682
	3Z6500-113 —— ——	RESISTOR: Fixed; 5000 ohms ± 10%; 1 watt; carbon.	First harmonic amplifier screen dropping	Erie type 518	
154-2		RESISTOR: Same as ref. 154-1.	Modulator screen dropping		
156A	3Z9827.27 ——	SWITCH-ROTARY: 4 section; 2 position; 1 pole; roll over type; no shaft; changed by shifter slides.	Crystal selector, channel A	Oak special Yaxley special	Bendix No. AC56534-1 Zenith No. 85G72
156B	110F/493	SWITCH-ROTARY: Part of ref. 156A.	Crystal selector, channel B		
156C		SWITCH-ROTARY: Part of ref. 156A.	Crystal selector, channel C		
156D		SWITCH-ROTARY: Part of ref. 156A.	Crystal selector, channel D		
157	3Z9825-38 —— 110F/492	SWITCH-ROTARY: 6 position; 1 pole; 2 deck; switch travel stop; non-shorting rotor contacts.	Meter switch	Oak type 10206-H2 23045-H2	Bendix No. C56333 Zenith No. 85G71
158	2Z10000-14 —— 110K/709	TRANSFORMER-A.F.: Microphone; center tapped primary with 5.2 ohms d-c resistance; secondary 4000 ohms d-c resistance; 5 soldered lugs on bottom.	Microphone transformer	Acme type T3791 Dinion Coil Co. type SC3014 Rola Co.	Bendix No. 103014 Zenith No. 95G32
159	2Z10000-16 —— 110K/710	TRANSFORMER-A.F.: Interstage; center tapped secondary primary 1050 ohms d-c resistance; secondary 2750 ohms d-c resistance.	Interstage transformer	Acme type T3792 Dinion Coil Co. type SC3016 Rola Co.	Bendix No. A1045016 Zenith No. 95G33
160	2Z10000-18 —— 110K/711	TRANSFORMER-A.F.: Modulation; center tapped primary; primary 690 ohms d-c resistance; secondary 170 ohms d-c resistance.	Modulation transformer	Acme type T3795 Dinion Coil Co. type SC3018 Kenyon special Rola Co.	Bendix No. A103018 Zenith No. 95G34
161	2Z7650-G.7 —— 110F/509	RELAY: Single pole single throw; 200 ohms d-c resistance coil; 2-1/2" x 1-3/4" x 1-1/4".	"Press-To-Talk" control	Clare type G Cook Electric type 612-101	Bendix No. A107141 Zenith No. 195G50

TABLE OF REPLACEABLE PARTS

MODEL: RADIO SET SCR-624-A OR SCR-624-B **MAJOR ASSEMBLY: RADIO TRANSMITTER BC-625-A AND BC-625-AM**

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*NAME OF PART and DESCRIPTION*	*FUNCTION*	*MFR. and DESIG. or AWS TYPE*	*CONT. or GOVT. DWG. or SPEC. No.*
162	3C336-21 —— 110C/3017	COIL-R.F. CHOKE: Single layer of 38 turns No. 28 enameled wire; wound on a 1 megohn ± 20%, 1/2 watt resistor or on a specially molded form. (Replaced by ref. 162-1 in some equipments.)	Speech amplifier cathode r-f choke	Bendix	Bendix No. A104301-1 Zenith No. SG2300
162-1		COIL-R.F. CHOKE: Same as ref. 162. (Deleted in some equipments.)	Speech amplifier cathode r-f choke		
162-2		COIL-R.F. CHOKE: Same as ref. 162. (Not in some equipments.)	Filament circuit r-f choke		
163	2C6525A/T2 —— 110M/2327	CLAMP-TUBE ASSEMBLY: Consists of 5/8" L-shaped spring clamp fastened to micalex trip 1/2" wide x 3" long x 5/8" high, with screw and nut.	For second harmonic amplifier	Bendix	Bendix No. AA102860-1 Zenith No. 83G323
164-1	2C6525A/T2/1 —— 110M/2322	BOARD-CLAMP: Micalex strip 2-3/8" x 1/2" x 1/8"; part of ref. 163.	Part of ref. 163	Bendix	Bendix No. A102452 Zenith No. 83G323
164-2		BOARD-CLAMP: Same as ref. 164-1.	Part of ref. 163		
165	2Z5799 —— 110M/1880	KNOB-BAR: Black bakelite; pointer line filled with white enamel.	Meter switch	Weston type J-10829 Chicago Die Mold type 86G60	Bendix No. A11357 Zenith No. 46G60
166	2C6525A/F1 —— 110L.6	SHIFTER UNIT-FREQUENCY: Transmitter; includes channel slides and tuning controls.	Transmitter channel selection	Bendix	Bendix No. AC57991-1 Zenith No. SG2231
167	2C6525A/S1 —— 110M/2318 ——	SHIELD ASSEMBLY: Plate with partition on rear; Dzus fasteners in each corner; plate 5-3/4" x 5" x 1/16"; partition 3-1/4" x 2-1/16" x 1/2"; at right angles to plate.	Power amplifier shield	Bendix	Bendix No. AC8596-1 Zenith No. SG2547
168	2C6525A/S2 —— 110H/930	CONNECTOR ASSEMBLY—FOR ANTENNA: 2-contact; 2-1/8" x 7/8" x 3/16" phenolic board.	Transmitter output	Bendix	Bendix No. AA102951-1 Zenith No. SG2254
169-1	3Z8654.7 —— 110H/935	SOCKET-TUBE: 8-contact; octal; with retainer ring.	For Tube JAN-6G6G, oscillator	Amphenol type S-S8TM Cinch type 9894	Bendix No. A104087-1 Zenith No. 78G72
169-2		SOCKET-TUBE: Same as ref. 169-1.	For Tube JAN-12A6, first harmonic amplifier		
169-3		SOCKET-TUBE: Same as ref. 169-1.	For Tube JAN-12A6, modulator		
169-4		SOCKET-TUBE: Same as ref. 169-1.	For Tube JAN-12A6, modulator		
169-5		SOCKET-TUBE: Same as ref. 169-1.	For Tube JAN-6SS7, speech amplifier		
170-1	2Z8663-1 —— 110H/940	SOCKET-TUBE: 7 contact; steatite; supplied with two clip and lead assemblies.	For Tube JAN-832, second harmonic amplifier	Johnson type 247 Ucinite	Bendix No. A31778 Zenith No. 78G71

170-2		SOCKET-TUBE: Same as ref. 170-1.	For Tube JAN-832, power amplifier		
171	2C6525A/S3 —— 110H/931	CONNECTOR-PLUG BOARD ASSEMBLY: 2-contact; male; 1/2" x 1/8" contact plugs.	D-C meter socket	Bendix	Bendix No. AA102954-1 Zenith No. SG2252
172	2Z7253 110A/433	BOARD ASSEMBLY-CRYSTAL: Consists of crystal board; 50,000 ohm ± 5%; 1/2 watt resistor; r-f reactor, 50 ohms d-c resistance; dimensions, 4-1/8" x 1-11/16" x 3/16" with spacer mountings 11/16" long.	For crystals	Bendix	Bendix No. AC58213-1 Zenith No. SG2242
173-1	6L6832-28RE —— 110M/2324	SCREW-MOUNTING: Cold-drawn steel; cadmium plated; 1-3/4" long over-all; painted red.	Mounting transmitter to rack	Bendix special Armstrong Crown Screw, Guthrie	Bendix No. A102735 Zenith No. 97G141
173-2		SCREW-MOUNTING: Same as ref. 173-1.	Mounting transmitter to rack		
173-3		SCREW-MOUNTING: Same as ref. 173-1.	Mounting transmitter to rack		
173-4		SCREW-MOUNTING: Same as ref. 173-1.	Mounting transmitter to rack		
174	6LK5033-2 —— 110M/2391	SCREW-THUMB: Head 1/2" dia. x 1/4" deep; diamond knurled brass.	For second harmonic amplifier tube clamp	Bendix	Bendix No. A102469 Zenith No. 112G622
175-1	2S522A/C2 —— 110M/2572	COLLAR-COUPLING ASSEMBLY: Consists of coupling stub, coupling collar, and coupling arm; over-all 1" x 3/4" x 1/2".	Capacitor side of oscillator tuning control	Bendix	Bendix No. AA106124-1 Zenith No. SG2216
175-2		COLLAR-COUPLING ASSEMBLY: Same as ref. 175-1.	Capacitor side of first harmonic amplifier tuning control		
175-3		COLLAR-COUPLING ASSEMBLY: Same as ref. 175-1.	Capacitor side of power amplifier tuning control		
176-1	2S522A/C3 —— 110M/2573 ——	COLLAR-COUPLING ASSEMBLY: Consists of coupling arm, coupling collar, coupling spring, and cadmium plated steel setscrews; over-all 1-1/8" x 7/8" x 7/16".	Shifter side of oscillator tuning control	Bendix	Bendix No. AA106125-1 Zenith No. SG2205
176-2		COLLAR-COUPLING ASSEMBLY: Same as ref. 176-1.	Shifter side of oscillator tuning confier tuning control		
176-3		COLLAR-COUPLING ASSEMBLY: Same as ref. 176-1.	Shifter side of power amplifier tuning control		
177	2ZK3303 —— 110M/2574	COUPLING AND SHAFT ASSEMBLY: Consists of 2 flexible shaft couplers joined together by a 2-3/4" x 5/16" dia. insulated shaft; over-all length 7-1/4".	Second harmonic amplifier tuning	Bendix	Bendix No. AC58647-1 Zenith No. SG2224
180		RESISTOR: Same as ref. 251 (Resistors 180 and 181 replace ref. 125 in some equipments.)	Audio gain		
181		RESISTOR: Same as ref. 262-1. (Resistors 180 and 181 replace ref. 125 in some equipments.)	Audio gain		
187	6LK77004 —— ——	WASHER "C"; 0.250" outside diameter x 0.125" inside diameter x 0.032" thick; 60-degree section cut out.		Bendix	Bendix No. A102179 Zenith No. 188G31
VT-118	2T118 2J832 —— 110E/183	TUBE JAN-832: Push-pull r-f beam power amplifier; type 832.	Second harmonic amplifier	RCA Kenrad	
VT-118	2T118 2J832 110E/183	TUBE JAN-832: Push-pull r-f beam power amplifier; type 832.	Power amplifier	RCA Kenrad	

TABLE OF REPLACEABLE PARTS

MODEL: RADIO SET SCR-624-A OR SCR-624-B — **MAJOR ASSEMBLY: RADIO TRANSMITTER BC-625-A AND BC-625-AM**

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*NAME OF PART and DESCRIPTION*	*FUNCTION*	*MFR. and DESIG. or AWS TYPE*	*CONT. or GOVT. DWG. or SPEC. No.*
VT-134	2T134 2J12A6	TUBE JAN-12A6: Beam power amplifier; type 12A6.	First harmonic amplifier	RCA Kenrad	
VT-134	2T134 2J12A6	TUBE JAN-12A6: Beam power amplifier; type 12A6.	Modulator	RCA Kenrad	
VT-134	2T134 2J12A6	TUBE JAN-12A6: Beam power amplifier; type 12A6.	Modulator	RCA Kenrad	
VT-198-A	2T198A 2J6G6G	TUBE JAN-6G6G: Power amplifier pentode; type 6G6G.	Oscillator	RCA Kenrad	
VT-199	2T199 2J6SS7	TUBE JAN-6SS7: Triple-grid, super-control amplifier; type 6SS7.	Speech amplifier	RCA Kenrad	
VT-199	2T199 2J6SS7	TUBE JAN-6SS7: Triple-grid, super-control amplifier; type 6SS7. (This tube deleted on later models of transmitter.)	R-F indicator diode	RCA Kenrad	

MODEL: RADIO SET SCR-624-A AND SCR-624-B — **MAJOR ASSEMBLY: RADIO RECEIVER BC-624-A AND BC-624-AM**

201	3D9010-19 —— 110C/2964	CAPACITOR: Fixed; 10 micromicrofarads ± 20%; 500 volts DCW; mica. or	R-F grid coupling	Aerovox type 1468 Micamold type OXM	Bendix No. C58469-100 Zenith No. 22G761
	3DK9010-45 —— ——	CAPACITOR: Fixed; 10 micromicrofarads ± 20%; 500 volts DCW; negative temperature coefficient; ceramic.	R-F grid coupling	Erie type N750K	Bendix No. C60329-100
202-1	3DK9680-5 —— 110C/2966	CAPACITOR: Fixed; 680 micromicrofarads ± 20%; volts DCW; mica or	R-F cathode bypass	Aerovox type 1468LST Cornell-Dubilier type 5WLST Micamold type OXM	Bendix No. C58479-681 Zenith No. 22G760 22G543
	3DK9680-6 —— ——	CAPACITOR: Fixed; 680 micromicrofarads ± 20%; 500 volts DCW; zero temperature coefficient ceramic or		Erie type NPOL	Bendix No. C60324-681
	3DK9680-7 —— ——	CAPACITOR: Fixed; 680 micromicrofarads ± 20%; 500 volts DCW; ceramic.		Muter Co. type BB-K1200	Bendix No. C60323-681
202-2		CAPACITOR: Same as ref. 202-1.	R-F AVC filter		
202-3		CAPACITOR: Same as ref. 202-1.	R-F screen bypass		
202-4		CAPACITOR: Same as ref. 202-1.	R-F plate bypass to cathode		
202-5		CAPACITOR: Same as ref. 202-1.	R-F plate bypass to ground		
202-6		CAPACITOR: Same as ref. 202-1.	Mixer cathode bypass		
202-7		CAPACITOR: Same as ref. 202-1.	Mixer screen bypass		
202-8		CAPACITOR: Same as ref. 202-1.	Harmonic amplifier B+ filter		
202-9		CAPACITOR: Same as ref. 202-1.	Harmonic amplifier plate bypass to cathode		

202-10		CAPACITOR: Same as ref. 202-1.	Harmonic amplifier plate bypass to ground		
202-11		CAPACITOR: Same as ref. 202-1.	Harmonic amplifier cathode bypass		
202-12		CAPACITOR: Same as ref. 202-1.	Harmonic amplifier screen bypass		
202-13		CAPACITOR: Same as ref. 202-1.	Harmonic generator plate bypass		
202-14		CAPACITOR: Same as ref. 202-1.	Harmonic generator plate bypass		
202-15		CAPACITOR: Same as ref. 202-1.	Harmonic generator cathode bypass		
202-16		CAPACITOR: Same as ref. 202-1.	R-F B+ filter		
202-17		CAPACITOR: Same as ref. 202-1.	Audio B+ filter		
202-18		CAPACITOR: Same as ref. 202-1.	R-F heater bypass		
202-19		CAPACITOR: Same as ref. 202-1.	Mixer heater bypass		
202-20		CAPACITOR: Same as ref. 202-1.	Mixer heater bypass		
202-21		CAPACITOR: Same as ref. 202-1.	Harmonic amplifier heater bypass		
202-22		CAPACITOR: Same as ref. 202-1.	Harmonic amplifier heater bypass		
202-23		CAPACITOR: Same as ref. 202-1.	Harmonic generator heater bypass		
202-24		CAPACITOR: Same as ref. 202-1.	First i-f suppressor bypass		
202-25		CAPACITOR: Same as ref. 202-1.	Second i-f suppressor bypass		
202-26		CAPACITOR: Same as ref. 202-1.	Third i-f suppressor bypass		
202-27		CAPACITOR: Same as ref. 202-1.	Oscillator plate coil bypass		
203-1	3DK9047-7 —— ——	CAPACITOR: Fixed; 47 micromicrofarads ± 20%; 500 volts DCW; mica or	Mixer grid coupling	Aerovox type 1468 Cornell-Dubilier type 5LS Micamold type OXM	Bendix No. C58469-470 Zenith No. 22G759
	3DK9047-10 —— ——	CAPACITOR: Fixed; 47 micromicrofarads ± 20%; 500 volts DCW; negative temperature coefficient; ceramic or		Erie type N7508	Bendix No. C60329-470
	3D9050-41 —— 110C/3742	CAPACITOR: Fixed; 50 micromicrofarads ± 20%; 500 volts DCW; mica.		Cornell-Dubilier type 5WLS	Bendix No. C-58469-500
203-2		CAPACITOR: Same as ref. 203-1.	Harmonic amplifier grid coupling		
203-3		CAPACITOR: Same as ref. 203-1.	AVC diode coupling		
203-4		CAPACITOR: Same as ref. 203-1.	First audio plate r-f bypass		
204	3D9015-8 —— 110C/2967	CAPACITOR: Fixed; 15 micromicrofarads ± 20%; 500 volts DCW; mica or	Oscillator plate resonator	Aerovox type 1468 Cornell-Dubilier type 5WLST Micamold type OXM	Bendix No. C58469-150 Zenith No. 22G757
	3DK9015-28 —— ——	CAPACITOR: Fixed; 15 micromicrofarads ± 20%; 500 volts DCW; negative temperature coefficient; ceramic		Erie type N750K	Bendix No. C60329-150

TABLE OF REPLACEABLE PARTS

MODEL: RADIO SET SCR-624-A AND SCR-624-B **MAJOR ASSEMBLY: RADIO RECEIVER BC-624-A AND BC-624-AM**

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*NAME OF PART and DESCRIPTION*	*FUNCTION*	*MFR. and DESIG. or AWS TYPE*	*CONT. or GOVT. DWG. or SPEC. No.*
205	3DK9220-3	CAPACITOR: Fixed; 220 micromicrofarads ± 20%; 500 volts DCW; mica	Harmonic generator grid	Aerovox type 1468 Micamold type OXM	Bendix No. C58469-22 Zenith No. 22G758
		or			
	3D9250-27 —— 110C/3726	CAPACITOR: Fixed; 250 micromicrofarads ± 20%; 500 volts DCW; mica.		Aerovox type 1468	Bendix No. C58469-251
206-1		CAPACITOR: Same as ref. 102-1.	Oscillator plate bypass		
206-2		CAPACITOR: Same as ref. 102-1.	Oscillator cathode bypass		
206-3		CAPACITOR: Same as ref. 102-1.	Mixer plate bypass		
206-4		CAPACITOR: Same as ref. 102-1.	First i-f AVC filter		
206-5		CAPACITOR: Same as ref. 102-1.	First i-f cathode bypass		
206-6		CAPACITOR: Same as ref. 102-1.	First i-f screen bypass		
206-7		CAPACITOR: Same as ref. 102-1.	First i-f plate bypass		
206-8		CAPACITOR: Same as ref. 102-1.	Second i-f AVC filter		
206-9		CAPACITOR: Same as ref. 102-1.	Second i-f cathode bypass		
206-10		CAPACITOR: Same as ref. 102-1.	Second i-f screen bypass		
206-11		CAPACITOR: Same as ref. 102-1.	Second i-f plate bypass		
206-12		CAPACITOR: Same as ref. 102-1.	Third i-f cathode bypass		
206-13		CAPACITOR: Same as ref. 102-1.	Third i-f screen bypass		
206-14		CAPACITOR: Same as ref. 102-1.	Third i-f plate bypass		
206-15		CAPACITOR: Same as ref. 102-1.	B+ bypass		
206-16		CAPACITOR: Same as ref. 102-1.	Audio squelch grid bypass		
206-17		CAPACITOR: Same as ref. 102-1. (Stock number 3DA6-23 not included.)	Audio coupling		
206-18		CAPACITOR: Same as ref. 102-1. (Stock number 3DA6-23 not included.)	Second audio grid coupling		
206-19		CAPACITOR: Same as ref. 102-1.	First i-f heater bypass		
206-20		CAPACITOR: Same as ref. 102-1.	Second i-f heater bypass		
206-21		CAPACITOR: Same as ref. 102-1.	Third i-f heater bypass		
206-22		CAPACITOR: Same as ref. 102-1.	Oscillator and audio squelch heater bypass		
†206-23		CAPACITOR: Same as ref. 102-1.	Third i-f grid bypass		
207-1	3D9060-1 —— 110C/2971	CAPACITOR: Fixed; 60 micromicrofarads ± 2%; 500 volts DCW; silver mica.	Mixer plate resonator Mixer plate resonator	Aerovox type 1469T F. W. Sickles Micamold type PO Cornell-Dubilier type 5R Electromotive type 603	Bendix No. C584950600 Zenith No. 22G754

†Parts which are applicable to Radio Receiver BC-624-A, only. Parts with no identification mark are applicable to both receivers.

207-2		CAPACITOR: Same as ref. 207-1.	First i-f grid resonator		
207-3		CAPACITOR: Same as ref. 207-1.	First i-f plate resonator		
207-4		CAPACITOR: Same as ref. 207-1.	Second i-f grid resonator		
207-5		CAPACITOR: Same as ref. 207-1.	Second i-f plate resonator		
207-6		CAPACITOR: Same as ref. 207-1.	Third i-f grid resonator		
207-7		CAPACITOR: Same as ref. 207-1.	Third i-f plate resonator		
207-8		CAPACITOR: Same as ref. 207-1.	Diode resonator		
208-1	3D9015-9	CAPACITOR: Fixed; 15 micromicrofarads ± 5%; 500 volts DCW; mica	Mixer plate resonator	Erie type N680K	Bendix No. A25715-15 Zenith No. 22G764
	110C/2950	or			
	3DK9015-29	CAPACITOR: Fixed; 15 micromicrofarads ± 5%; 500 volts DCW; negative temperature coefficient.		Centralab type 932-001	Zenith No. 22G764
208-2		CAPACITOR: Same as ref. 208-1.	First i-f grid resonator		
208-3		CAPACITOR: Same as ref. 208-1.	First i-f plate resonator		
208-4		CAPACITOR: Same as ref. 208-1.	Second i-f grid resonator		
208-5		CAPACITOR: Same as ref. 208-1.	Second i-f plate resonator		
208-6		CAPACITOR: Same as ref. 208-1.	Third i-f grid resonator		
208-7		CAPACITOR: Same as ref. 208-1.	Third i-f plate resonator		
208-8		CAPACITOR: Same as ref. 208-1.	Diode resonator		
†209	3D9100-56	CAPACITOR: Fixed; 100 micromicrofarads ± 20%; 500 volts DCW; mica	Audio diode bypass	Aerovox type 1468 Cornell-Dubilier type 5WLST Micamold type OXM	Bendix No. C58469-101 Zenith No. 22G762
	110C/2965	or			
	3DK9100-118	CAPACITOR: Fixed; 100 micromicrofarads ± 20%; 500 volts DCW; negative temperature coefficient; ceramic.		Erie type N750L	Bendix No. C60329-101
210	3D9330-4	CAPACITOR: Fixed; 330 micromicrofarads ± 20%; 500 volts DCW; mica	Audio diode bypass	Aerovox type 1468LST Cornell-Dubilier type 5WLST Micamold type OXM	Bendix No. C58469-331 Zenith No. 22G763
	110C/2969	or			
	3DK9330-7	CAPACITOR: Fixed; 330 micromicrofarads ± 20%; 500 volts DCW; zero temperature coefficient ceramic		Erie type NPOK	Bendix No. C60324-331
		or			
	3DK9330-8	CAPACITOR: Fixed; 330 micromicrofarads ± 20%; 500 volts DCW; ceramic.		Muter Co. type BB-K1200	Bendix No. C60323-331
†211A	3DA100-89	CAPACITOR: Fixed; 3-section; 100,000 micromicrofarads per section + 20% — 10%; 400 volts DCW; oil paper.	First audio cathode bypass	Aerovox type 30 Electrical Utilities type 10722-1 Cornell-Dubilier	Bendix No. A25096 A106175 Zenith No. 22G753
	110C/1618				
†211B		CAPACITOR: Part of 311A.	First audio screen bypass		
†211C		CAPACITOR: Part of 311A.	AVC filter		
*211-1A	3DA100-80	CAPACITOR: Fixed; 3-section; 100,000 micromicrofarads per section ± 15% — 12%; 400 volts DCW; oil paper; special.	First audio cathode	Aero Solar Mallory Electric Utilities	Bendix No. A25096
	110C/1618				
*211-1B		CAPACITOR: Part of ref. 211-1A.	First audio screen		
*211-1C		CAPACITOR: Part of ref. 211-1A.	AVC filter		

†Parts which are applicable to Radio Receiver BC-624-A, only. Parts with no identification mark are applicable to both receivers.

TABLE OF REPLACEABLE PARTS

MODEL: RADIO SET SCR-624-A AND SCR-624-B **MAJOR ASSEMBLY: RADIO RECEIVER BC-624-A AND BC-624-AM**

Reference Symbol	*Army Stock No.* / *Navy Stock No.* / *British Ref. No.*	*NAME OF PART and DESCRIPTION*	*FUNCTION*	*MFR. and DESIG. or AWS TYPE*	*CONT. or GOVT. DWG. or SPEC. No.*
*211-2A		CAPACITOR: Same as ref. 211-1A.	Limiter filter		
*211-2B		CAPACITOR: Same as ref. 211-1A.	Limiter filter		
*211-2C		CAPACITOR: Same as ref. 211-1A.	Second i-f grid bypass		
212A	3DB6-22 —— ——	CAPACITOR: Fixed; 4-section; section A, 1 microfarad + 100% — 10%; 400 volts DCW; section B, 6 microfarads + 100% — 10%; 400 volts DCW; section C, 1 microfarad + 100% — 10%; 50 volts DCW; section D, 2 microfarads + 100% — 10%; 50 volts DCW; oil filled paper; over-all 3-7/8" x 2-5/8" x 2-5/16" or	Audio B+ filter		Bendix No. L75638
	3DB10-25 —— 110C/2986	CAPACITOR: Fixed; 4-section; one section 10 microfarads ± 10%; 350 volts DCW; one section 20 microfarads ± 10%; 250 volts DCW; two sections 5 microfarads ± 10%; 150 volts DCW; electrolytic; 4 color coded solder lugs on bottom for positive leads, case common negative.		Aerovox type 4E Solar type DEM Cornell-Dubilier Special	Bendix No. L72948 AL74114-1 Zenith No. SG2365
212B		CAPACITOR: Part of ref. 212A.	Audio B+ filter		
212C		CAPACITOR: Part of ref. 212A.	Audio cathode bypass		
212D		CAPACITOR: Part of ref. 212A.	Second audio cathode bypass		
213	3DB1.484 —— 110C/3025	CAPACITOR: Fixed; 1 microfarad ± 10%; 100 volts DCW; oil paper; metal case; mounting brackets on each end.	R-F and mixer heater bypass	Aerovox type 30 Micamold type 306 Sprague type P-6751	Bendix No. A104484 Zenith No. 22G756
214	3D9082 —— 110C/2972	CAPACITOR: Fixed; 82 micromicrofarads ± 2%; 500 volts DCW; silver mica.	Bridge balancing	Aerovox type 1469 Micamold type PO Cornell-Dubilier type 5R	Bendix No. C58495-820 Zenith No. 22G755
216A	3D9036V —— 110C/2980	CAPACITOR: Variable; with trimmer; 3-section; each section 6 micromicrofarads minimum to 36 micromicrofarads maximum; 10 stator plates; 11 rotor plates; common shaft.	R-F grid tuning	Bendix	Bendix No. L72799-1
216B		CAPACITOR: Part of ref. 216A.	R-F plate tuning		
216C		CAPACITOR: Part of ref. 216A.	Mixer grid tuning		
217A	3D9036V-1 —— 110C/2979	CAPACITOR: Variable; with trimmer; 2-section; section 1, 6.5 micromicrofarads minimum to 39.6 microfarads maximum; 11 stator plates; 12 rotor plates; section 2, 6 micromicrofarads minimum to 36 microfarads maximum; 10 stator plates, 11 rotor plates; ganged on common shaft.	Harmonic amplifier plate tuning	Bendix	Bendix No. L72798-1
217B		CAPACITOR: Part of ref. 217A.	Harmonic generator plate tuning		

*Parts which are applicable to Radio Receiver BC-624-AM only.

*219	3DA1-55 —— 110/25	CAPACITOR: Fixed; 1000 micromicrofarads ± 10%; 500 volts DCW; mica.	Limiter cathode bypass	Cornell-Dubilier type SWL Aerovox type 1468	Bendix No. C56315-102
221	3C302C —— 110C/3022	COIL: Radio frequency; one turn No. 14 tinned copper wire.	Antenna coupling	Bendix	Bendix No. A104312 Zenith No. 20G46
222	3C1074-13 —— 110C/3019	COIL: Radio frequency; two turns No. 14 S. D. tinned copper wire; 23/64" I. D. x 1/4" long; with lead extending 23/32" and then dropping down parallel at right angles; one lead 11/16", other 1/2" from center coil.	Radio frequency grid resonator	Bendix	Bendix No. A104309 Zenith No. 20G41
223	3C1074-14 —— 110C/3018	COIL: Radio frequency; two turns No. 14 S. D. tinned copper wire; 23/64" I. D. x 1/4" long; with one lead brought down 1/2" from center of coil; then bent 45° for 5/16", then straight down 1/8"; other end brought down 1/8".	Radio frequency plate resonator	Bendix	Bendix No. A104308 Zenith No. 20G42
224	3C1074-15 —— 110C/3023	COIL: Radio frequency; two turns No. 14 S. D. tinned copper wire; 3/8" I. D.; one lead brought down 3/8" from center of coil, other lead brought down 31/32" from center of coil at approximately 40 degrees.	Mixer grid resonator	Bendix	Bendix No. A104313 Zenith No. 20G45
225	3C1074-10 —— 110C-3021	COIL: Radio frequency; one turn of No. 12 S. D. tinned copper wire.	Harmonic amplifier plate resonator	Bendix	Bendix No. A104311 Zenith No. 20G44
226	3C1074-17 —— 110C/3020	COIL: Radio frequency; two turns No. 14 S. D. tinned copper wire; 13/32" I. D. x 16" long; leads brought out horizontally 9/32" in opposite direction and extended 7/8" over-all.	Harmonic generator plate resonator	Bendix	Bendix No. A104310 Zenith No. 20G43
227-1	3C1074-18 —— 110C/3016	COIL: Radio frequency; 23 turns of No. 26 enameled wire; wound on a form 1-27/32" x 11/16" dia.	Oscillator plate resonator, channel A	Bendix	Bendix No. AA104225-1 Zenith No. SG2285
227-2		COIL: Same as ref. 227-1.	Oscillator plate resonator, channel B		
227-3		COIL: Same as ref. 227-1.	Oscillator plate resonator, channel C		
227-4		COIL: Same as ref. 227-1.	Oscillator plate resonator, channel D		
228-1	2C4424A/J8 —— 110C/3015	COIL: 10 turns No. 22 enameled wire; permeability tuned; threaded form; part of ref. 291.	Mixer plate resonator	Bendix	Bendix No. AA104206-1
228-2		COIL: Same as ref. 228-1; part of ref. 291.	First intermediate frequency grid resonator		
228-3		COIL: Same as ref. 228-1; part of ref. 292.	First intermediate plate resonator		
228-4		COIL: Same as ref. 228-1; part of ref. 292.	Second intermediate frequency grid resonator		
228-5		COIL: Same as ref. 228-1; part of ref. 293.	Second intermediate frequency plate resonator		
228-6		COIL: Same as ref. 228-1; part of ref. 293.	Third intermediate frequency grid resonator		

*Parts which are applicable to Radio Receiver BC-624-AM only.

TABLE OF REPLACEABLE PARTS

MODEL: RADIO SET SCR-624-A AND SCR-624-B **MAJOR ASSEMBLY: RADIO RECEIVER BC-624-A AND BC-624-AM**

Reference Symbol	*Army Stock No.* *Navy Stock No.* *British Ref. No.*	*NAME OF PART and DESCRIPTION*	*FUNCTION*	*MFR. and DESIG. or AWS TYPE*	*CONT. or GOVT. DWG. or SPEC. No.*
228-7		COIL: Same as ref. 228-1; part of ref. 294.	Third intermediate frequency plate resonator		
228-8		COIL: Same as ref. 228-1; part of ref. 294.	Audio diode resonator		
231	2Z7228.1 —— 110H/926	CONNECTOR: 10-contact; male; similar to type P-410-AB1/16 less angle brackets.	Receiver connector	Jones special	Bendix No. A102813 Zenith No. 58G64
232	2Z7253.2 —— 110H/234	CONNECTOR ASSEMBLY: 2-contact; antenna and ground; over-all dimensions 2-1/4" x 1-1/16" x 3/18".	Receiver input	Bendix	Bendix No. AA104203-1 Zenith No. SG2286
236	2Z2796-150M —— 110C/3007	POTENTIOMETER: 150,000 ohms; 1/2 watt; carbon; taper "C"; 1/4" diameter shaft 1/8" long; slotted for screw driver adjustment. or	"AUDIO" volume control	International Resistance type CS Stackpole Carbon Co. Chicago Tel. Supply type 35	Bendix No. A102991 Zenith No. 63G665
	2Z7271-72 —— ——	POTENTIOMETER: 150,000 ohms; 1/2 watt; carbon; taper "A"; 1/4" dia. shaft slotted for screw driver adjustment.		Chicago Tel. Supply type 35	Bendix No. A113191
237	2Z7296-2M.1 —— 110C/3008	POTENTIOMETER: 2000 ohms; 1/2 watt; carbon; taper "A"; 1/4" diameter shaft 1/8" long; slotted for screw driver. or	Audio squelch relay sensitivity control	Stackpole Carbon Chicago Tel. Supply type 35 International Resistance type CS	Bendix No. A102992 Zenith No. 63G666
	2Z7268.36	POTENTIOMETER: 2000 ohms; 1/2 watt; carbon; linear taper; 1/4" dia. shaft with diamond knurl; slotted for screw driver adjustment.		Chicago Tel. Supply type 35	Bendix No. A113190
241-1		COIL-R.F. CHOKE: Same as ref. 162.	First audio grid choke		
241-2		COIL-R.F. CHOKE: Same as ref. 162.	B + r-f choke		
241-3		COIL-R.F. CHOKE: Same as ref. 162.	B + r-f choke		
243-1		SOCKET-TUBE: Same as ref. 169-1.	For tube JAN-12AH7/GT, oscillator audio squelch		
243-2		SOCKET-TUBE: Same as ref. 169-1.	For Tube JAN12-SG7, first I-F		
243-3		SOCKET-TUBE: Same as ref. 169-1.	For Tube JAN-12SG7, second I-F		
243-4		SOCKET-TUBE: Same as ref. 169-1.	For Tube JAN-12SG7, third I-F		
243-5		SOCKET-TUBE: Same as ref. 169-1.	For Tube JAN-12C8, detector, AVC and first audio		
243-6		SOCKET-TUBE: Same as ref. 169-1.	For Tube JAN-12J5GT, second audio		
*243-7		SOCKET-TUBE: Same as ref. 169-1.	For Tube JAN-12H6, limiter, AVC delay		

*Parts which are applicable to Radio Receiver BC-624-AM only.

244-1	2Z8657-3 —— 110H/933	SOCKET-TUBE: 7-contact; with retainer ring.	For Tube JAN-9003, radio-frequency amplifier	Amphenol type 78-7PT Cinch type 9833	Bendix No. A102980 Zenith No. 78G73
244-2		SOCKET: Same as ref. 244-1.	For Tube JAN-9003, mixer		
244-3		SOCKET: Same as ref. 244-1.	For Tube JAN-9003, harmonic amplifier		
244-4		SOCKET: Same as ref. 244-1.	For Tube JAN-9002, harmonic generator		
245	2ZK7856.5 —— ——	RING: Socket retainer; formed with 3 crimps up, 3 crimps down; cadmium plated steel; over-all thickness 1/8".	For tube sockets	Amphenol type A Cinch type 8493	Bendix No. A107657 Zenith No. 188G32
246	2Z7642G —— 110F/504 110F/508	RELAY: Single pole, single throw; 5000 ohms d-c resistance coil ± 10%; over-all dimensions 1-7/8"; 4 milliamperes ± 1/2 milliampere; operates with current change of 0.2 milliamperes.	Squelch circuit	Sigma type 401 Allied type G	Bendix No. A102882 A106405 Zenith No. 193G48
248	2C4424A/F1 —— 110L/51	SHIFTER UNIT: Frequency; receiver, includes channel slides and tuning controls.	Channel selection	Bendix	Bendix No. AC57965-1 Zenith No. SG2275
249-1		SCREW-MOUNTING: Same as ref. 173-1.	Mounting receiver to rack		
249-2		SCREW-MOUNTING: Same as ref. 173-1.	Mounting receiver to rack		
249-3		SCREW-MOUNTING: Same as ref. 173-1.	Mounting receiver to rack		
249-4		SCREW-MOUNTING: Same as ref. 173-1.	Mounting receiver to rack		
250	2ZK8848-1 —— 110M/2376	SPRING: Phosphorous bronze; nickel plated; one end rounded 3/16" radius; other end rounded 11/32" radius; large end formed up 1/8" high with a 1/4" slot on side; small end has No. 20 hole in it.	For tube holder	Bendix Zenith	Bendix No. A103943 Zenith No. 80G161
251	3Z6747-15 —— 110C/3004	RESISTOR: Fixed; 470,000 ohms ± 5%; 1/2 watt; carbon or	R-F stage grid leak	Allen-Bradley type EB Speer type SI-1/2	Bendix No. A102975-474 Zenith No. 63G694
	3Z6747-15 —— ——	RESISTOR: Fixed; 470,000 ohms ± 20% 1/2 watt; carbon.		Allen-Bradley type EB	
252-1	3Z67007-7 —— 110C/2998	RESISTOR: Fixed; 100,000 ohms ± 5%; 1/2 watt; carbon or	R-F stage AVC filter	Allen-Bradley type EB Speer type SI-1/2	Bendix No. A102975-104 Zenith No. 63G698
	3Z6700-54 —— ——	RESISTOR: Fixed; 100,000 ohms ± 10%; 1/2 watt, carbon or		Speer type SI-1/2	
	3Z6700-71 —— ——	RESISTOR: Fixed; 100,000 ohms ± 20%; 1/2 watt, carbon.		Allen-Bradley type EB	
252-2†		RESISTOR: Same as ref. 252-1. (Does not include Stock No. 3Z6700-7-1.)	Audio diode load		
253-1	3Z6033-1 —— 110C/3002	RESISTOR: Fixed; 330 ohms ± 5%; 1/2 watt; carbon.	R-F stage cathode bias	Allen-Bradley type EB Speer type SI-1/2	Bendix No. A102975-331 Zenith No. 63G692
253-2		RESISTOR: Same as ref. 253-1.	Harmonic amplifier cathode bias		

TABLE OF REPLACEABLE PARTS

MODEL: RADIO SET SCR-624-A AND SCR-624-B **MAJOR ASSEMBLY: RADIO RECEIVER BC-624-A AND BC-624-AM**

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*NAME OF PART and DESCRIPTION*	*FUNCTION*	*MFR. and DESIG. or AWS TYPE*	*CONT. or GOVT. DWG. or SPEC. No.*
*253-3		RESISTOR: Same as ref. 253-1.	AVC delay		
254-1	3Z6568-3	RESISTOR: Fixed; 6800 ohms ± 5%; 1/2 watt; carbon	R-F stage plate filter	Allen-Bradley type EB	Bendix No. A102975-682
	——	or		Speer type SI-1/2	Zenith No. 63G696
	110C/3006				
	3Z6568-11	RESISTOR: Fixed; 6800 ohms ± 20%; 1/2 watt; carbon.		Allen-Bradley type EB	
254-2		RESISTOR: Same as ref. 254-1.	Harmonic amplifier plate filter		
*254-3		RESISTOR: Same as ref. 254-1. (Stock No. 3Z6568-11 not included.)	AVC delay		
255-1	3Z6801A8	RESISTOR: Fixed; 1.8 megohms ± 5%; 1/2 watt; carbon	Mixer grid leak	Allen-Bradley type EB	Bendix No. A102975-185
	——	or		Speer type SI-1/2	Zenith No. 63G690
	110C/3000				
	3Z6801A8-7	RESISTOR: Fixed; 1.8 megohms ± 20%; 1/2 watt; carbon.			
255-2		RESISTOR: Same as ref. 255-1.	Harmonic amplifier grid leak	Allen-Bradley type EB	
256	3Z6100-62	RESISTOR: Fixed; 1000 ohms ± 5%; 1/2 watt; carbon.	Mixer cathode bias	Allen-Bradley type EB	Bendix No. A102975-102
	——			Speer type SI-1/2	Zenith No. 63G687
	110C/2997				
257	3Z6733-3	RESISTOR: Fixed; 330,000 ohms ± 5%; 1/2 watt; carbon	Mixer screen dropping	Allen-Bradley type EB	Bendix No. A102975-334
	——	or		Speer type SI-1/2	Zenith No. 63G693
	110C/3003				
	3Z6733-2	RESISTOR: Fixed; 330,000 ohms ± 10%; 1/2 watt; carbon.		Allen-Bradley type EB Speer type SI-1/2	
258	3Z6768-13	RESISTOR: Fixed; 680,000 ohms ± 5%; 1 watt; carbon	Second audio grid leak	Erie type 505 Allen-Bradley type GB	Bendix No. A18004-684 Zenith No. 63G721
	——	or		Speer type SI-1	
	110C/2919				
	3RC31AE684M	RESISTOR: Fixed; 680,000 ohms ± 20%; 1 watt; carbon.		Erie type 505 Allen-Bradley type GB Speer type SI-1	
259	3ZK5997A5	RESISTOR: Fixed; 7.5 ohms ± 5%; 1/2 watt; carbon	Test meter shunt	Speer type SI-1/2	Bendix No. A32128
	110C/2996	or			
	2Z5997-13	RESISTOR: Fixed; 7.5 ohms ± 20%; 1/2 watt; carbon		Speer type SI-1/2	
	——	or			
	3ZK600E5-15	RESISTOR: Fixed; 15 ohms ± 5%; 1/2 watt; carbon.		Speer type SI-1/2	Bendix No. A102975-150
	——	(Note: This reference may use a 7.5 resistor or two			Zenith No. 63G697
	——	15-ohm resistors in parallel.)			
		or			
	RC20AE150M	RESISTOR: Fixed; 15 ohms ± 20%; 1/2 watt; carbon.		Speer type SI-1/2	
	——	(Note: This reference may use a 7.5 resistor or two			
	——	15-ohm resistors in parallel.)			

*Parts which are applicable to Radio Receiver BC-624-AM only.

260	3Z6627-5 —— 110C/3001	RESISTOR: Fixed; 27,000 ohms ± 5%; 1/2 watt; carbon or	Harmonic generator plate filter	Allen-Bradley type EB Speer type SI-1/2	Bendix No. A102975-273 Zenith No. 63G691
	3Z6627-14 —— ——	RESISTOR: Fixed; 27,000 ohms ± 20%; 1/2 watt; carbon.		Allen-Bradley type EB Speer type SI-1/2	
261	3Z6120-7 —— 110C/2999	RESISTOR: Fixed; 1200 ohms ± 5%; 1/2 watt; carbon.	Harmonic generator cathode bias	Allen-Bradley type EB Speer type SI-1/2	Bendix No. A102975-122 Zenith No. 63G689
262-1	3Z6756-3 —— 110C/3005	RESISTOR: Fixed; 560,000 ohms ± 5%; 1/2 watt; carbon or	Harmonic generator grid leak	Allen-Bradley type EB Speer type SI-1/2	Bendix No. A102975-564 Zenith No. 63G695
	3Z6756-5 —— ——	RESISTOR: Fixed; 560,000 ohms ± 10%; 1/2 watt; carbon.		Allen-Bradley type EB Speer type SI-1/2	
262-2		RESISTOR: Same as ref. 262-1.	First audio compensator		
263-1	3Z6470-5 —— 110C/2915 3Z6470-15	RESISTOR: Fixed; 4700 ohms ± 5%; 1 watt; carbon or	Mixer plate filter	Erie type 505 Allen-Bradley type GB Speer type SI-1 Allen-Bradley type GB	Bendix No. A1800-474 Zenith No. 63G717
263-2		RESISTOR: Same as ref. 263-1.	First i-f plate filter		
263-3		RESISTOR: Same as ref. 263-1.	Second i-f plate filter		
263-4		RESISTOR: Same as ref. 263-1.	Third i-f plate filter		
†264	3Z6610-50 —— 110C/2903	RESISTOR: Fixed; 10,000 ohms ± 5%; 1 watt; carbon.	Oscillator plate filter	Erie type 505 Allen-Bradley type GB-1035 Speer type SI-1	Bendix No. A18004-103
*264-1		RESISTOR: Same as ref. 264.	Oscillator plate filter		
*264-2		RESISTOR: Same as ref. 264.	Audio diode load		
265-1	3Z6270-1 —— 110C/2910	RESISTOR: Fixed; 2700 ohms ± 10%; 1 watt; carbon or	Oscillator cathode bias	Erie type 505 Speer type SI-1 Allen-Bradley type BG	Bendix No. A18004-272 Zenith No. 63G713
	3RC31AE272K	RESISTOR: Fixed; 2700 ohms ± 10%; 1 watt; carbon.		Erie type 505 Speer type SI-1	
265-2		RESISTOR: Same as ref. 265-1. (See ref. 282.)	Audio squelch cathode bias		
266-1	3Z6727-4 —— 110C/2911	RESISTOR: Fixed; 270,000 ohms ± 5%; 1 watt; carbon or	Oscillator grid leak	Erie type 505 Allen-Bradley type GB Speer type SI-1	Bendix No. A18004-274 Zenith No. 63G714
	3Z6727-10 —— ——	RESISTOR: Fixed 270,000 ohms ± 10%; 1 watt; carbon or		Speer type SI-1	
	2Z6727-27 —— ——	RESISTOR: Fixed; 270,000 ohms ± 20%; 1 watt; carbon.		Erie type 505 Allen-Bradley type GB Speer type SI-1	
266-2		RESISTOR: Same as ref. 266-1.	Automatic volume control filter		
266-3		RESISTOR: Same as ref. 266-1. (Does not include stock No. 2Z6727-27.)	First audio plate load		

TABLE OF REPLACEABLE PARTS

MODEL: RADIO SET SCR-624-A AND SCR-624-B **MAJOR ASSEMBLY: RADIO RECEIVER BC-624-A AND BC-624-AM**

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*NAME OF PART and DESCRIPTION*	*FUNCTION*	*MFR. and DESIG. or AWS TYPE*	*CONT. or GOVT. DWG. or SPEC. No.*
267-1	3Z6700-47 —— 110C/1667	RESISTOR: Fixed; 100,000 ohms ± 5%; 1 watt; carbon or	First i-f AVC filter	Erie type 505 Speer type SI-1	Bendix No. A18004-104 Zenith No. 63G704
	3Z6700-62 —— ——	RESISTOR: Fixed; 100,000 ohms ± 5%; 1 watt; carbon or		Allen-Bradley type GB	Zenith No. 63G704
	2Z6700-66 —— ——	RESISTOR: Fixed; 100,000 ohms ± 10%; 1 watt; carbon or		Erie type 505	
	3Z6700-74 —— ——	RESISTOR: Fixed; 100,000 ohms ± 10%; 1 watt; carbon.		Allen-Bradley type GB	
267-2		RESISTOR: Same as ref. 267-1. (Does not include stock No. 3Z6700-74.)	First i-f screen voltage divider		
267-3		RESISTOR: Same as ref. 267-1. (Does not include stock No. 3Z6700-74.)	First i-f screen voltage divider		
267-4		RESISTOR: Same as ref. 267-1.	Second i-f AVC filter		
267-5		RESISTOR: Same as ref. 267-1. (Does not include stock No. 3Z6700-74.)	Second i-f screen voltage divider		
267-6		RESISTOR: Same as ref. 267-1. (Does not include stock No. 3Z6700-74.)	Second i-f screen voltage divider		
267-7		RESISTOR: Same as ref. 267-1. (Does not include stock No. 3Z6700-74.)	Harmonic amplifier screen dropping		
267-8		RESISTOR: Same as ref. 267-1. (Does not include stock No. 3Z6700-74.)	R-F screen dropping		
268	3Z6039-2 —— 110C/2913	RESISTOR: Fixed; 390 ohms ± 5%; 1 watt; carbon.	First i-f cathode bias	Allen-Bradley type GB Speer type SI-1 Erie type 505	Bendix No. A18004-391 Zenith No. 63G715
269	3Z6027-3 —— 110C/2909	RESISTOR: Fixed; 270 ohms ± 5%; 1 watt; carbon.	Second i-f cathode bias	Allen-Bradley type GB Speer type SI-1 Erie type 505	Bendix No. A18004-271 Zenith No. 63G712
270	3Z6047-2 —— 110C/2914	RESISTOR: Fixed; 470 ohms ± 5%; 1 watt; carbon.	Third i-f cathode bias	Allen-Bradley type GB Erie type 505 Speer type SI-1	Bendix No. A18004-471 Zenith No. 63G716
†271	3Z6682-2 110C/2920 3Z6682-7 ——	RESISTOR: Fixed; 82,000 ohms ± 5%; 1 watt; carbon or RESISTOR: Fixed 82,000 ohms ± 10%; 1 watt; carbon.	Third i-f screen dropping	Allen-Bradley type GB Speer type SI-1 Erie type 505 Speer type SI-1	Bendix No. A18004-823 Zenith No. 63G722
*271-2		RESISTOR: Same as ref. 271. (Does not include stock No. 3Z6682-7.)	Limiter filter		

†Parts which are applicable to Radio Receiver BC-624-A only. Parts with no identification mark are applicable to both receivers.
*Parts which are applicable to Radio Receiver BC-624-AM only.

†272	3Z6712-17	RESISTOR: Fixed; 120,000 ohms ± 5%; 1 watt; carbon	Audio squelch compensating	Allen-Bradley type GB Erie type 505 Speer type SI-1	Bendix No. A18004-124 Zenith No. 63G706
	——	or			
	110C/2904				
	3Z6712-23	RESISTOR: Fixed; 120,000 ohms ± 20%; 1 watt; carbon.		Erie type 505 Allen-Bradley type GB Speer type SI-1	
	——				
	——				
*272-1		RESISTOR: Same as ref. 272.	Audio squelch compensating		
*272-2		RESISTOR: Same as ref. 272-1. (Does not include stock No. 3Z6712-23.)	Audio squelch compensating		
273	3Z6506-2	RESISTOR: Fixed; 5600 ohms ± 5%; 1 watt; carbon. (Deleted in later models.)	Audio squelch compensating	Erie Speer Allen-Bradley	Bendix No. A18004-562 Zenith No. 63G720
	——				
	110Z/2918				
274-1	3Z6802A2-1	RESISTOR: Fixed; 2.2 megohms ± 5%; 1 watt; carbon	Audio squelch coupling	Allen-Bradley type GB Erie type 505 Speer type SI-1	Bendix No. A18004-225 Zenith No. 63G711
	——	or			
	110C/2908				
	3Z68802A2-11	RESISTOR: Fixed; 2.2 megohms ± 10%; 1 watt; carbon		Speer type SI-1	
	——	or			
	——				
	3RC31AE225M	RESISTOR: Fixed; 2.2 megohms ± 20%; 1 watt; carbon.		Erie type 505 Allen-Bradley type GB	
	——				
	——				
274-2		RESISTOR: Same as ref. 274.1. (Does not include Stock No. 3RC31AE225M.)	First audio screen dropping		
275-1	3Z6747-7	RESISTOR: Fixed; 470,000 ohms ± 5%; 1 watt; carbon	AVC diode load	Allen-Bradley type GB Erie type 505 Speer type SI-1	Bendix No. A18004-474 Zenith No. 63G719
	——	or			
	110C/2917				
	3RC31AE474	RESISTOR: Fixed; 470,000 ohms ± 20%; 1 watt; carbon.		Erie type 505 Allen-Bradley type GB Speer type SI-1	
275-2		RESISTOR: Same as ref. 275-1.	First audio grid		
275-3		RESISTOR: Same as ref. 275-1. (Does not include stock No. 3RC31AE474.)	First audio grid		
†276	3Z6618-14	RESISTOR: Fixed; 18,000 ohms ± 5%; 1 watt; ceramic.	AVC delay	Allen-Bradley type GB-1835 Erie type 505 Speer type SI-1	Bendix No. A18004-183
	——				
	110C/2907				
*276-1		RESISTOR: Same as ref. 276.	AVC delay		
*276-2		RESISTOR: Same as ref. 276.	Audio diode load		
277	3Z6180-2	RESISTOR: Fixed; 1800 ohms ± 5%; 1 watt; carbon	First audio cathode bias	Allen-Bradley type GB Speer type SI-1 Erie type 505	Bendix No. A18004-182 Zenith No. 63G709
	——	or			
	110C/2906				
	3RC31AE1782K	RESISTOR: Fixed; 1800 ohms ± 10%; 1 watt; carbon.		Erie type 505 Speer type SI-1	
	——				
	——				
278	3Z6150-23	RESISTOR: Fixed; 1500 ohms ± 5%; 1 watt; carbon	Second audio cathode bias	Allen-Bradley type GB Erie type 505 Speer type SI-1	Bendix No. A18004-152 Zenith No. 63G707
	——	or			
	110C/2905				

TABLE OF REPLACEABLE PARTS

MODEL: RADIO SET SCR-624-A AND SCR-624-B **MAJOR ASSEMBLY: RADIO RECEIVER BC-624-A AND BC-624-AM**

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*NAME OF PART and DESCRIPTION*	*FUNCTION*	*MFR. and DESIG. or AWS TYPE*	*CONT. or GOVT. DWG. or SPEC. No.*
	3RC31AE182K —— ——	RESISTOR: Fixed; 1800 ohms ± 10%; 1 watt; carbon.		Erie type 505 Speer type SI-1	
279-1	3Z6647-6 —— 110C/2916	RESISTOR: Fixed; 47,000 ohms ± 5%; 1 watt; carbon or	Squelch cathode bleeder	Allen-Bradley type GB Speer type SI-1 Erie type 505	Bendix No. A18004-47 Zenith No. 63G748
	3Z6647-14 —— ——	RESISTOR: Fixed; 47,000 ohms ± 10%; 1 watt; carbon.		Speer type SI-1	
279-2		RESISTOR: Same as ref. 279-1.	Squelch cathode bleeder		
*279-3		RESISTOR: Same as ref. 279-1. (See ref. 281.)	Audio diode load		
*279-4		RESISTOR: Same as ref. 279-1.	Third i-f screen dropping		
†280		RESISTOR: Same as ref. 138-3.	Third i-f grid leak		
†281	3Z6715-15 —— 110C/1664	RESISTOR: Fixed; 150,000 ohms ± 5%; 1 watt; ceramic. (Replaced by 279-3, 4700 ohms, in later production.)	Audio diode filter	Allen-Bradley type GB-1545 Speer type SI-1	Bendix No. A18004-154 Zenith No. 63G708
282	3Z6330-2 —— 110C/2912	RESISTOR: 3300 ohms ± 5%; 1 watt; ceramic. (Replaced by 265-2, 2700 ohms, in later productions.)	Audio squelch cathode bias	Allen-Bradley type GB-3325 Speer type SI-1	Bendix No. A18004-332
286A	3Z9827.26 —— 110F501	SWITCH-ROTARY: Bakelite; wafer style; 4-section, each individually operated by attached lever; two 2-position switches on each section.	Channel "A" crystal and plate coil selector	Centralab crystal Oak special Yarley special	Bendix No. AA102802-1 Zenith No. SG2288
286B		SWITCH-ROTARY: Part of ref. 286A.	Channel "B" crystal and plate coil selector		
286C		SWITCH-ROTARY: Part of ref. 286A.	Channel "C" crystal and plate coil selector		
286D		SWITCH-ROTARY: Part of ref. 286A.	Channel "D" crystal and plate coil selector		
288		CONNECTOR-PLUG BOARD ASSEMBLY: Same as ref. 171.	Receiver test-milliammeter socket		
289	2C4424A/S2 —— 110H/912	CONNECTOR-PLUG BOARD ASSEMBLY: 12-contact for 4 plug-in crystals.	Crystal sockets	Bendix	Bendix No. AC58428-1 Zenith No. SG2293
291	2Z10001 —— 110K/704	TRANSFORMER-I.F.: 12 megacycles; permeability tuned.	Mixer to first i-f coupling	Bendix	Bendix No. AL73026-1 Zenith No. SG2195
292	2Z10001 —— 110K/705	TRANSFORMER-I.F.: 12 megacycles; permeability tuned.	First i-f to second i-f coupling	Bendix	Bendix No. AL73206-2 Zenith No. SG2196

*Parts which are applicable to Radio Receiver BC-624-AM only.
†Parts which are applicable to Radio Receiver BC-624-A only. Parts with no identification mark are applicable to both receivers.

293	2Z10001 —— 110K/706	TRANSFORMER-I.F.: 12 megacycles; permeability tuned.	Second i-f to third i-f coupling	Bendix	Bendix No. AL73026-3 Zenith No. SG2197
294	2Z10001.8 —— 110K/707	TRANSFORMER-I.F.: 12 megacycles; permeability tuned.	Third i-f to diode coupling	Bendix	Bendix No. AL73028-1 Zenith No. SG2198
295	2Z10000-22 —— 110K/712	TRANSFORMER: A.F..: Input No. 1 primary d-c resistance 920 ohms; No. 2 primary d-c resistance 6.9 ohms; secondary d-c resistance 2450 ohms.	Audio input	Langerin Company type L347 Rola Company type 95035	Bendix No. A103022 Zenith No. 95G35
296A 296B	2Z10000-24 —— 110C/3374	TRANSFORMER, ASSEMBLY: Consists of output transformer and reactor; primary d-c resistance 870 ohms; secondary d-c resistance 390 ohms; reactor d-c resistance 340 ohms; mounted in can.	Audio output and Audio B+ filter	Langerin Company type L348 Rola Company type 95G36	Bendix No. A103024 Zenith No. 95G36
297	2ZK11150-10 —— 110C/3374	ASSEMBLY, R.F. AND OSCILLATOR: Variable capacitor assembly and associated circuit components.		Bendix	Bendix No. AN90966-1 Zenith No. SG2192
299	2ZK3290-4 —— ——	COUPLING-SHAFT: Consists of 2 hub assemblies for 5/16" shafts with setscrews on opposite sides of coupling plate; nickel plated brass.		Bendix	Bendix No. AA103976-1 Zenith No. SG2277
VT-135	2T135 2J12J5GT —— 1102E/185	TUBE JAN-12J5GT: Detector amplifier diode; type 12J5GT.	Second audio	RCA Kenrad	
VT-169	2T169 2J12C8 —— 110E/186	TUBE JAN-17C8: Duplex-diode pentode; type 12C8.	Selector, AVC, and first audio	RCA Kenrad	
VT-202	2T202 2J9002 —— 110E/188	TUBE JAN-9002: Detector amplifier triode; type 9002.	Harmonic generator	RCA Kenrad	
VT-203	2T203 2J9003 —— 110E/189	TUBE JAN-9003: Super-control amplifier pentode; type 9003.	R-F amplifier	RCA Kenrad	
VT-203		TUBE JAN-9003: Same as VT-203 above.	R-F mixer		
VT-203		TUBE JAN-9003: Same as VT-203 above.	Harmonic amplifier		
VT-207	2T207 2J12AH7GT —— 110E/193	TUBE JAN-12AH7GT: Twin triode; type 12AH7GT.	Oscillator and audio squelch	RCA Kenrad	
VT-209	2T209 2J12SG7 —— 110E/191	TUBE JAN-12SG7: High frequency amplifier pentode; type 12SG7.	First i-f	RCA Kenrad	
VT-209		TUBE JAN-12SG7: Same as VT-209 above.	Second i-f		
*VT-214	2T214 2J12H6	TUBE JAN-12H6: Twine diode; type 12H6.	Noise limiter and AVC delay	RCA Kenrad	

TABLE OF REPLACEABLE PARTS

MODEL: RADIO SET SCR-624-A AND SCR-624-B **MAJOR ASSEMBLY: RACK FT-244-A**

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*NAME OF PART and DESCRIPTION*	*FUNCTION*	*MFR. and DESIG. or AWS TYPE*	*CONT. or GOVT. DWG. or SPEC. No.*
401	3DB2.816 —— 110C/2991	CAPACITOR: Fixed; 2 micromicrofarads + 0.5% microfarads — 0 microfarads; 25 volts DCW, 60 cycles; oil paper; in metal case.	Motor solenoid resonating	Cornell-Dubilier Aerovox	Bendix No. A102816 Zenith No. 22G779
402		CAPACITOR: Same as ref. 111.	HV bypass		
406	3H3112 —— 110K/699	MOTOR: Ratchet type; 12 volts at 1 ampere.	For automatic tuning	Bendix Colonial General Instrument	Bendix No. AC57992-1 Zenith No. SG2193
407	3H3112/A1 —— 110K/708	ARMATURE: Ratchet motor; includes pawl; part of ref. 406.	Motor armature	Colonial General Instrument	Bendix No. AC102 508-1 Zenith No. SG2202
408	3C1109-1 —— 110K/723	COIL: Relay; 975 turns No. 24 wire; 5.76 ohms ± 5% d-c resistance.	Solenoid for ref. 406	Colonial General Instrument	Bendix No. AA102536-1
409	3H3112/W1 —— 110M/2323	WHEEL: Ratchet; includes arm part of ref. 406.	Ratchet motor wheel	Colonial General Instrument	Bendix No. AA102519-1 AC 59900 Zenith No. GG2200
411-1	2Z7642AR —— 110F/502	RELAY: Motor control; single pole single throw; 2 solder terminals on end.	Locking relay	Allied	Bendix No. A102817 Zenith No. 195G51
411-2		RELAY: Same as ref. 411-1.	Motor control		
412	2Z650-A7374 —— 110F/494	RELAY: Antenna; combination double pole double throw and single pole, single throw.	Antenna changeover	Clare	Bendix No. C58180 Zenith No. 195G45
416	2Z8799-153 —— 110H/585	SOCKET SO-153: Female contact; 1-contact; coaxial cable connector.	Antenna connection	Amphenol	Bendix No. AC58136-1 Zenith No. 78G77
417	2Z8799-151 —— 110H/916	SOCKET SO-151: Male contact; 18-contact.	Control circuit	Amphenol type 46-R4-159	Bendix No. AA102 399-1 Zenith No. 78G78
418-1	2Z8639-3 —— 110H/925	CONNECTOR: Female contact; 8-contact; polarized.	Transmitter control circuit	Jones	Bendix A102812 Zenith No. 58G67
418-2		CONNECTOR: Same as ref. 418-1.	Power input to transmitter		
419	2Z8639-4 —— 110H/927	CONNECTOR: Female contact; 10-contact; polarized.	Receives connection	Jones	Bendix No. A102Z814 Zenith No. 58G66
420	2Z8799-147 —— 110H/922	CONNECTOR: Male contact; 10-contact; similar to type P-410-AB 1/16" less angle brackets.	Power input to rack	Amphenol	Bendix No. AA102437-1 Zenith No. 78G75
421	2Z7252 —— 110H/928	CONNECTOR: Male contact; banana plug; hex head 1/4" high; 5/16" across flats tapering to a 5/32" dia. circle; over-all length 1-5/16 inches.	Ground plug	General Radio	Bendix No. A102875-2 Zenith No. 58G69

422	2Z7380-244A/P1 —— 110H/923	CONNECTOR: Male contact; 2 banana pins; 7/8" long; 2 soldering lugs.	Antenna plug	Bendix	Bendix No. AA102718-1 Zenith No. SG2395
426	3Z9509-1 —— 110/491	SWITCH: Push; double pole, single throw.	Tuning release	Arrowhart and Hageman	Bendix No. A29843-1 Zenith No. 85G75
427A	3Z8313-2 —— 110F/50	SWITCH: Jack; 4-pole; single throw; normally closed; circuits individually actuated.	Motor positioning	Bendix	Bendix No. A102537-1 Zenith No. SG2201
427B		SWITCH: Jack; part of ref. 427A.	Motor positioning		
427C		SWITCH: Jack; part of ref. 427A.	Motor positioning		
427D		SWITCH: Jack; part of ref. 427A.	Motor positioning		
431-1	2Z7380-244A/S1 —— 110M/2325	SCREW: Machine, cold drawn steel; cadmium plated; head pointed black; slotted; 6-32 x 1/4" thread; over-all length 7/16".	Transmitter cover retaining	Bendix	Bendix No. A102741C
431-2		SCREW: Machine; same as ref. 431-1.	Transmitter cover retaining		
431-3		SCREW: Machine; same as ref. 431-1.	Transmitter cover retaining		
431-4		SCREW: Machine; same as ref. 431-1.	Transmitter cover retaining		

MODEL: RADIO SET SCR-522-A **MAJOR ASSEMBLY: CASE CS-80-A AND CASE CS-80-C**

	2Z1880A —— —— or	CASE: Case CS-80-A; a housing for Rack FT-244-A, Radio Receiver BC-624-A, BC-624-AM, or BC-624-C, and Radio Transmitter BC-625-A or BC-625-AM; equipped with 4 shockmounts and a ground strap	For housing rack and transmitter-receiver assembly		
	2Z1880C —— ——	CASE: Case CS-80-C; same as Case CS-80-A but with addition of a base plate for a quickly detachable mounting.	For housing rack and transmitter-receiver assembly		
1401-1	2Z8401-5PH12 —— 110M/125	MOUNT: Vibration; cadmium plated steel and rubber.	Shockmount for case	Lord type 150PH12	Bendix No. C56354-10 Zenith No. 77G8
1401-2		MOUNT: Same as ref. 1401-1.	Shockmount for case		
1401-3		MOUNT: Same as ref. 1401-1.	Shockmount for case		
1401-4		MOUNT: Same as ref. 1401-1.	Shockmount for case		
1402-1		SCREW: Cap; same as ref. 353-1.	Shockmount to case mounting		
1402-2		SCREW: Cap; same as ref. 353-1.	Shockmount to case mounting		
1402-3		SCREW: Cap; same as ref. 353-1.	Shockmount to case mounting		
1402-4		SCREW: Cap; same as ref. 353-1.	Shockmount to case mounting		
1403-1	6L4904.15 —— 110M/2329	SCREW: Cap; hex head 3/16" thick x 7/16" dia.; 1/4-26 thread full length; over-all dimensions 17/32" x 7/16" x 1/4".	Dynamotor unit to case mounting	Bendix	Bendix No. A102900-2 Zenith No. 112G680
1403-2		SCREW: Cap; same as ref. 1403-1.	Dynamotor unit to case mounting		
1403-3		SCREW: Cap; same as ref. 1403-1.	Dynamotor unit to case mounting		
1403-4		SCREW: Cap; same as ref. 1403-1.	Dynamotor unit to case mounting		

TABLE OF REPLACEABLE PARTS

MODEL: RADIO SET SCR-522-A — **MAJOR ASSEMBLY: CASE CS-80-A AND CASE CS-80-C**

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*NAME OF PART and DESCRIPTION*	*FUNCTION*	*MFR. and DESIG. or AWS TYPE*	*CONT. or GOVT. DWG. or SPEC. No.*
	2Z561	BASE-CASE: Consists of an upper base stamped from 0.064" thick sheet aluminum; over-all dimensions 0.0564" x 12-13/32" x 18-29/32"; 4 rubber shock-mounts spaced to fit the case; 3 each shakeproof fastener studs and cross pins assembled at one end to secure base assembly to Mounting FT-488.	Case base plate	Colonial	Colonial No. 48995
	2Z6721-488	MOUNTING FT-488: A formed sheet metal mount; over-all dimension 1/2" x 12-1/2" x 17".	For case CS-80-C	Bendix	Bendix No. OAL75224-1

MODEL: RADIO SET SCR-624-A — **MAJOR ASSEMBLY: CONTROL BOX 1176-A**

200	3Z9824-36	SWITCH: SPST; push-button type.	"RADIO PRESS TO TALK"	Bendix	AA110389-1
201-1	3Z737-4	POST: Binding; type Sergeant SS-14; 1/2" diameter; 3/4" long; No. 8/32" threads.	"TEL" connection to Telephone EE-8-A and EE-8-B	Eby	A110255
201-2		POST: Binding; same as ref. 201-1.	Same as 201-1		
201-3		POST: Binding; same as ref. 201-1.	"COM." connection to Control Box BC-1171-A		
201-4		POST: Binding; same as ref. 201-1.	"TEL" connection to Control Box BC-1171-A		
201-5		POST: Binding; same as ref. 201-1.	"K" connection to Control Box BC-1171-A		

MODEL: RADIO SET SCR-624-B — **MAJOR ASSEMBLY: CONTROL BOX BC-1313**

200	3Z9849.109	SWITCH: S.P.; 3-throw; Cat. No. 8815.	"Send-Rec." switch	Cuttler-Hammer	A113258
201-1	3Z737-4	POST: Binding; type No. Sergeant SS-14; 1/2" diameter; 3/4" long No. 8.32" x 1/2" threads.	"K" connection (to telephone line)	Eby	A110255
201-2		POST: Binding; same as ref. 201-1.	"C" connection (to telephone line)		
201-3		POST: Binding; same as ref. 201-1.	"T" connection (to telephone line)		

202	2Z8799-23	CONNECTOR: 4-contact socket; box mounting, amph No. 10H-395.	Connection to Telephone EE-8-A or EE-8-B	American Phenolic	A113244
203	——	RESISTOR: Variable; comp; 1000 ohms ± 20%; 2-1/4 watt; JAN "A" taper; 1/4" shaft; case 1-3/32" diameter x 9/16" thick; hexnut and flat washer or bushing.	Volume control	Allen Bradley JU1021/P2040	ERV30ERIU-102

MODEL: RADIO SET SCR-624-A AND SCR-624-B — **MAJOR ASSEMBLY: CONTROL BOX BC-1171-A**

210	3Z9824-36	SWITCH: SPST; push-button type.	"RADIO PRESS TO TALK"	Bendix	AA110389-1
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	——				
211	3Z9822-65.12	SWITCH: Rotary; S.P.; 4-position non-shorting switch equipped with dents and stops; bakelite wafer.	"CHANNEL" selector control	Oak	C60479
	——				
	——				
212	2Z8799-147	SOCKET: 12-contact; male and panel mounting type.	Receptacle for Cord CD-810-A	Bendix	AA102437-1
	——				
	——				
213-1	3Z737-4	POST: Binding; type No. Sergeant SS-14; 1/2" diameter 3/4" long; No. 8-32" x 1/2".	"TEL" connection to Telephone EE-8-A or EE-8-B	Eby	A110255
	——				
	——				
213-2		POST: Binding; same as ref. 213-1.	Same as 213-1		
213-3		POST: Binding; same as ref. 213-1.	"COM" connect to Control Box BC-1176-A		
213-4		POST: Binding; same as ref. 213-1.	"TEL" connection to Control Box BC-1176-A		
213-5		POST: Binding; same as ref. 213-1.	"K" connection to Control Box BC-1176-A		

MODEL: RADIO SET SCR624-B — **MAJOR ASSEMBLY: CONTROL BOX BC-1314**

210	3Z9849.109	SWITCH: S.P.; 3-throw; Cat. No. 8815.	"SEND-REC." switch	Cuttler-Hammer	A113258
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	——				
211	3ZK9825-65.12	SWITCH: S.P.; 4-position; non-shorting; 1-9/16" diameter x 7/16" deep; 1/4" shaft; oak type "H" special.	"CHANNEL" selector control	Oak	C60479
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	——				
212	2ZK7122.2	CONNECTOR: 12-contact; box mounting; fits PL-169.	Receptacle for Cord CD-810-A	Amphenol #10H-158P	AA102437-1
	——				
	——				
213-1	3Z737-4	POST: Binding; type No. Sergeant SS-14; 3 used, hexnut and lock washer.	"K" connection (to telephone line)	Eby #6639	OA110255
	——				
	——				
213-2		POST: Binding; same as ref. 213-1.	"C" connection (to telephone line)		
			"T" connection (to telephone		

TABLE OF REPLACEABLE PARTS

MODEL: RADIO SET SCR-624-B — **MAJOR ASSEMBLY: CONTROL BOX BC-1314**

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*NAME OF PART and DESCRIPTION*	*FUNCTION*	*MFR. and DESIG. or AWS TYPE*	*CONT. or GOVT. DWG. or SPEC. No.*
214		CONNECTOR: 4-socket contact; box mounting fits PL-169.	Connection to Cord CD-810-A	AN3102A-14S-2S	MIL-C-5015
215		RESISTOR: Variable; comp; 1000 ohms ±20%; 2-1/4" watt; JAN "A" taper; 1/4" shaft; case 1-3/32" diameter x 9/16" thick; hexnut flat washer on bushing.	Volume control	Allen Bradley JU1021/P2040	ERV30ER1U-102

MODEL: RADIO SET SCR-624-A — **MAJOR ASSEMBLY: CONTROL BOX BC-1175-A**

220	3Z9824-36	SWITCH: SPST; push-button type.	"RADIO PRESS TO TALK"	Bendix	AA-110389-1
221	2ZK7128.3	PLUG: 18-contact; male; with special locking ring.	Connection to Rack FT-244-A	Bendix	AC60490-1
222	2Z8799-147	SOCKET: 12-contact; male; panel mounting type.	Connection to Cord CD-951-A, to Cord CD-810-A, and to Control Box BC-1171-A	Bendix	AA102437-1
223	3Z9849.19	SWITCH: SPDT; toggle.	"LOCAL REMOTE" control	H and H	A4985-1
224	3ZK9822-65.12	SWITCH: 1-pole; 4-throw; rotary; non-shorting switch equipped with dents and stops; bakelite wafer.	"CHANNEL" selector control	Oak	C60479
225-1	3Z737-4.5	POST: Binding; type No. Sergeant SS-14; 1/2" diameter 3/4" long No. 8-32 x 1/2" threads.	"K" connection to Telephone EE-8-A or EE-8-B	Eby 6639	OA110255
225-2	3Z737-4.5	POST: Binding; same as ref. 225-1.	"COM" connection to Telephone EE-8-A or EE-8-B		
225-3	3Z737-4.5	POST: Binding; same as ref. 225-1.	"TEL" connection to Telephone EE-8-A or EE-8-B		
226-1	3ZK6008B2-6	RESISTOR: Fixed; 820 ohms; ±10%; 1 watt; carbon.	Microphone "T-PAD" attenuator	Erie	C60050-820
226-2	3ZK6008B2-6	RESISTOR: Same as ref. 226-1.	Same as 226-1		
227	3ZK5996H8-1	RESISTOR: Fixed; 6.8 ohm ±10%; 1 watt; carbon.	Microphone "T-PAD" attenuator	Erie	A18150-068

228	2ZK7658-19	RELAY: SPDT; SPST, normally closed; 12-volt; 300 ohm; solenoid.	Transmit-Receive switching	Bendix	A110288-1
229	3DA250-30	CAPACITOR: 0.25 microfarad; 400 volts d-c working voltage; type 430.	Coupling	Aero	A104561

MODEL: RADIO SET SCR-624-B — **MAJOR ASSEMBLY: CONTROL BOX BC-1312**

220	3Z9849.109	SWITCH: S.P.; 3-throw, Cat. No. 8815.	"SEND-REC." switch	Cuttler-Hammer	A113258
221	2ZK7128.3	CONNECTOR: 18-contact, socket type, zinc alloy shell	Connection to Rack FT-244-A	Amphenol 10H-161	AC60490-1
222	2ZK7122.2	CONNECTOR: 12-contacts; box mounting.	Connections to Cord CD-951-A, to Cord CD-810-A, and to Control Box BC-1314	Amphenol 10H-158P	AA102437-1
223	3Z9857-60	SWITCH: SPDT; toggle.	"LOCAL-REMOTE" control	H and H #21349-CS	A4985-1
224	3ZK9825-65.12	SWITCH: S.P.; 4-position; non-shorting; 1-9/16" diameter x 7/16" deep; 1/4" shaft; Oak type "H" special.	"CHANNEL" selector switch	Oak	C60479
225-1	3Z737-4.5	POST: Binding; type No. Sergeant SS-14; 1/2" diameter; 3/4" long; No. 8-32 x 1/2" threads.	"K" connection (to Loudspeaker LS-10-A)	Eby #6639	OA110255
225-2		POST: Binding; same as ref. 225-1.	"COM" connection (to Loudspeaker LS-10-A)		
225-3		POST: Binding; same as ref. 225-1.	"TEL" connection (to Loudspeaker LS-10A)		
226-1	3RC20BF820K	RESISTOR: Fixed; comp; 82 ohm ± 10%; 1/2 watt.	Microphone "T-PAD" attenuator	RC20BF820K	JAN-R-11
226-2		RESISTOR: Same as ref. 226-1.	Same as ref. 226-1		
227	3RC20BF100K	RESISTOR: Fixed; comp; 10 ohms; ± 10%; 1/2 watt.	Microphone "T-PAD" attenuator	RC20BF100K	JAN-R-11
228	2Z7588-57	RELAY: 1 SPDT; 1 SPST; normally closed; 12-volt; 300-ohm coil.	Transmit-Receive switching	Potter Brum #LT-S2	A110288-1
229	3DA250-30	CAPACITOR: 0.25 microfarad; 400-volt d-c working voltage type 430.	Coupling	Aero	A104561
230-1	2Z7585-74	RELAY: Coil 150 ohms; d-c nominal coil potential 12 volts; gives continuous service at 8-volt maximum.	Remote channel "D" control relay	Allied #TSX-13	A213316
230-2		RELAY: Same as ref. 230-1.	Remote channel "C" control relay		

TABLE OF REPLACEABLE PARTS

MODEL: RADIO SET SCR-624-B — **MAJOR ASSEMBLY: CONTROL BOX BC-1312**

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*NAME OF PART and DESCRIPTION*	*FUNCTION*	*MFR. and DESIG. or AWS TYPE*	*CONT. or GOVT. DWG. or SPEC. No.*
230-3		RELAY: Same as ref. 230-1.	Remote channel "B" control relay		
230-4		RELAY: Same as ref. 230-1.	Remote channel "A" control relay		
231	—— ——	CONNECTOR: 4-socket contacts.	Connection to Telephone EE-8-A, or EE-8-B	AN3102A-14S-2S	MIL-C-5015
232	—— —— ——	RESISTOR: Variable; comp; 1000 ohms ±20%; 2-1/4 watt; JAN "A" taper; 1/4" shaft; case 1-3/32" diameter x 9/16" thick, hexnut and flat washer on bushing.	Volume control	Allen Bradley JU1021/P2040	ERV30ER1U-102
233	3RC20BF220K	RESISTOR: Fixed; comp; 22 ohms ±10%; 1/2 watt.	Microphone "T-PAD" attenuator	RC20BF220K	JAN-R-11

MODEL: RADIO SET SCR-624-A OR SCR-624-B — **MAJOR ASSEMBLY: RECTIFIER RA-62-B-C**

C101	3DKB30-11 —— ——	CAPACITOR: Fixed; 30 microfarad; 450 volts DCW; dry electrolytic; aluminum can 1/2" x 4-3/8".	+310-volt output filter	P.R.M.	A110890
C102	3DKB30-12 —— ——	CAPACITOR: 3-section; 30-15-10 microfarad; 250 volts DCW; electrolytic; aluminum can 1-3/8" x 3-1/4".	150-volt output filter	P.R.M.	A110891
C103	3DKB6000 —— ——	CAPACITOR: 6000 microfarad; 15 volts d-c working voltage; Mallory Part No. B-94782-1.	+13-volt d-c output filter	P.R.M.	C60696
C104		CAPACITOR: Same as ref. C103.	+13-volt d-c output filter		
	2ZK2650-7 —— ——	CLAMP: Tube: 1-1/4" diameter; cadmium plated steel band; 9/16" wide x 1-1/4" dia.; 2 mounting feet; overall height 3/4".	Securing Tube JAN-6X5GT	P.R.M.	A110887-1
	2ZK2650-8 —— ——	CLAMP: Capacitor; cadmium plated steel band, 9/16" wide, 1-1/4" diameter.	For medium voltage supply capacitor	P.R.M.	A110887-2
	2ZK2650-3 —— ——	CLAMP: Capacitor; cadmium plated steel band; 9/16" wide, 1-1/2" diameter; 2 mounting feet; overall height 3/4".	For high-voltage supply capacitor	P.R.M.	A110887-3
	2ZK2626-4 —— —— ——	CLAMP: For capacitor; 1/32" cadmium plated steel, 3/4" wide, 2" diameter; adjusted by screw through ears on band; three mounting feet; 1-1/8" overall high.	Mounting capacitor for CDKB6000	P.R.M.	A110880
L102	3CK336-39 —— ——	COIL: A-F filter choke; 2 section; 250 ohms d-c per section; metal case; 2-9/16" x 3-1/16" x 3-1/8" high.	– 150 volts d-c output filter	P.R.M.	C60698
L103	3CK336-40 —— ——	COIL: A-F filter choke; .01 henry; .155 ohm d-c; ±8%; metal case; 2-5/16" x 3-3/16" x 3-1/4".	+13 volts d-c output filter	P.R.M.	C60697

L101	3CK336-38	COIL: Filter choke; 10 henry; 900 ohm ± 8%; A. P. Foster Co.; No. 1322; Mallory dwg. No. A-82263-1.	+ 310 volts d-c output filter	P.R.M.	L74487
	#	CORD: Line, Mallory part No. B84145125.	Line cord	P.R.M.	A115716
	3EK4301-9	*FORD: Line, 25 ft.	Line cord	P.R.M.	A110733
J102	2Z7138.1	*CONNECTOR: Male contact; amphenol No. 61-M10; 110 volts; 6-cycle; 2 recessed male prongs; steel shell.	A-C input	P.R.M.	A110882
	2ZK5854-2	KNOB: Bar type with pointer; Mallory part No. A-133575-1; 5/8" wide x 1-11/16" long x 3/4" high, black enamel finish; fits 1/4" shaft.	Voltage selector control	P.R.M.	A110878
K101	2ZK7684-5	RELAY: Plate voltage; SPST; normally open; 8000 ohm coil; over-all 2-3/16" x 1-1/2" x 1-5/8".			
K102	3H4845	RECTIFIER: Copper sulfide type IS36B7M; full wave; bridge; plate 2-1/2" square; stacked APP. 7-1/2" high.	+ 13 volts d-c supply	P.R.M.	C60683
R101	3ZK6615-73	RESISTOR: 15,000 ohms ± 5%; 20-watt; Cat. No. 2 HJ vitreous.	+ 310 volts d-c output	P.R.M.	A110885
R102	3ZK6250-43	RESISTOR: 2500 ohms ± 5%; 10 watts; vitreous.	Relay limiting	P.R.M.	A110884
R103	3ZK5993-9	RESISTOR: 30 ohms ± 10%; 80 watts; cathode No. 8HJ3; vitreous.	Regulator; carbon pile shunt	P.R.M.	A110886
R104	3HK4970-2	*REGULATOR: Voltage; Leland No. B-2386; carbon pile; solenoid actuated type; 2-13/16" diameter x 4-7/16" over-all.	+ 13 volts d-c output control	P.R.M.	C60695
R104	3HK4970-2	†REGULATOR: Voltage; Leland No. B-12-CK-177.	+ 13 volts d-c output control	Leland Electric	A115717
S101	3ZK9825-78	SWITCH: Rotary wafer; 3-section; 3-pole; 6-position.	Voltage selector	P.R.M.	C60694

*Used on Rectifier RA-62-B.
†Used as Rectifier RA-62-C.

MAJOR ASSEMBLY: ANTENNA MAST MA-7-A

	6QK9270	BLOCK AND TACKLE: One double sheath block, one triple sheath block, each with hook; 150 ft of rope.	Mast erection	Bendix	AC60947-1
	2AK3207-9	*SHACKLE: "U" shaped; steel plated; 5/16" dia.; screw with eyelet type head; working length 1-1/4".	Stays coupling	W.H.W.	A109833

TABLE OF REPLACEABLE PARTS

MAJOR ASSEMBLY: ANTENNA MAST MA-7-A

Reference Symbol	*Army Stock No.* *Navy Stock No.* *British Ref. No.*	*NAME OF PART and DESCRIPTION*	*FUNCTION*	*MFR. and DESIG. or AWS TYPE*	*CONT. or GOVT. DWG. or SPEC. No.*
	2AK3207-14.1	*SHACKLE: "U" shaped; steel plated; 5/16" dia.; screw with eyelet type head; working length 1-1/4".	Ring and chain coupling to anchor	W.H.W.	A109834
	#	SHACKLE: 3/8" screw shackle.	Stays coupling	W.H.W.	A109964
	2AK2085	BASE PLATE ASSEMBLY: Steel base plate, 8" square, 1/4" thick; two "U" shaped uprights.	Mast base support	Bendix	AN91523-1
	2AK2007A/B1	BOOM END: Steel; tubular; 3-1/16" O.D.; 2-1/8" I.D.; "U" shaped end plate; over-all length 11-7/8".	Boom coupling to stays, vangs and anchor	Bendix	AC74251-1
	6QK50200-5	HAMMER: Sledge; 6-pound; 22" handle.	Shake driving	L.A.B.	A109960
	6ZK1804-2	CHAIN WITH RING: Steel ring; 3" I.D.; 16-link chain.	Stays coupling to anchor	Bendix	C60350
	2AK3345.2	STAKE: 7/16" diameter, 12-1/4" long.	Base plate securing	Bendix	C60355
	2AK2007A/C1	CLAMP: Steel; 2 semi-circular sections; 3" wide 5-29/32" long, 1/16" thick; 6 bolts; notch in one section.	Mast to mast base securing	Bendix	C60362-1
	2Z2633-13	†Clamp: Coaxial cable.	Securing coaxial cable in mast	Bendix	A112325
	6RK57422	WRENCH: "T" shaped socket; steel; fits 11/16" hex nut.		B.G.I.	A109911
	6RK57022	WRENCH: 11/16" end wrench; 6-3/8" long.		L.A.B.	A110910
	6R57413-2	WRENCH: 7/16" socket wrench; Spintite.		Walden	A109910-1
	6R57413-4	WRENCH: 1/2" socket wrench; Spintite.		Walden	A109910-2
	2AK1359-3	*STAYS: 1/8"; 7-strand wire rope; 43'-6" long; two thimbles and turn buckle.	Mast guys (top)	Bendix	AL75132-1

*No longer supplied.
†One stay (black) and one say (orange) is equipped with two turn buckles, one on each end of stay.

	2AK1359-4	†STAYS: 1/8"; 7-strand wire rope; 23' long; two thimbles and turn buckle.	Mast guys (bottom)	Bendix	AL75132-2
	2AK2007A/R1	ROPE: Radius; 1/2"; 3-strand rope; 13' long.	Anchor location	Bendix	AC60330-1
	5BK182	ANCHOR: Screw type; 2-7/8" diameter; 30-3/4" long.	Mast guy securing	Bendix	C60357
	2AK2007A/C3	COUPLING: Sleeve; plywood tubing; 24" long; 3 clamps; without eyebolts.	Mast section coupling	Bendix	A174202-1
	2AK2007A/C2	COUPLING: Sleeve; plywood tubing; 24" long; 3 clamps; with eyebolts.	Mast section coupling and strays securing	Bendix	AL74247-1
		†STAYS: 1/8"; 7-strand wire rope; 43'-6" long; 1 turnbuckle; 1 snap fastener.	Mast guys	Bendix	AL75052-2
		†STAYS: 1/8"; 7-strand wire rope; 21'-7" long; 2 turnbuckles; 2 snap fasteners.	Mast guys	Bendix	AL75131-4
		†STAYS: 1/8"; 7-strand wire rope; 42' long; 2 turnbuckles; 2 snap fasteners.	Mast guys	Bendix	AL75131-5
		†GUY ROPE: Boom vang, 20 ft long.	Boom vang	Bendix	AC2165-1

†One stay (black) and one stay (orange) is equipped with two turn buckles, one on each end of stay.
‡Supplied with present masts, but not supplied with some previous masts.

MODEL: RADIO SET SCR-624-A AND SCR-624-B **MAJOR ASSEMBLY: LOUDSPEAKER LS-10-A**

C-101	3DB10-79	CAPACITOR, fixed: dry electrolytic; 10 mf; 50 vdcw.	Audio cathode bypass	Industrial Condenser Type 1-B-162	Oxford-Tartak P-2125
C-102	3DA10-314	CAPACITOR: oil filled in metal can; mfd ± 20%; 1000 vdcw.	Plate blocking	Industrial Condenser Type SC10BAT01	Oxford-Tartak P-2126
C-103	3DB20-78	CAPACITOR, fixed: dry electrolytic; 475 vdcw.	Screen bypass	Industrial Condenser Type 40B-269	Oxford-Tartak P-2124
E-101	321011	CLIP, fuse: 1 amp.	Holds fuse	Littelfuse Type 1011	Oxford-Tartak P-2139
E-101	3Z1964	FUSE, cartridge: 1 amp.	Line protection	Littelfuse Type 4AG	Oxford-Tartak P-2140
E-102	6Z4856-8	GROMMET, black rubber: 3/8" center hole, 1/2" metal clearance hole; 5/8" diam x 1/4" thk.	Shock absorber	Atlantic Rubber Type 230	Oxford-Tartak P-1905
E-103	6Z4858-3	GROMMET, black rubber: 3/16" center hole, 5/16" metal clearance hole 13/32", 7/32" thk.	Shock absorber	La Valle Rubber Type 903	Oxford-Tartak P-2143
E-104	6Z4913	GROMMET, black rubber: 5/16" center hole, 13/32" metal clearance hole, 5/8" diam x 1/4" thk.	Shock absorber	La Valle Rubber Type 909	Oxford-Tartak P-2144

TABLE OF REPLACEABLE PARTS

MODEL: RADIO SET SCR-624-A AND SCR-624-B **MAJOR ASSEMBLY: LOUDSPEAKER LS-10-A**

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*NAME OF PART and DESCRIPTION*	*FUNCTION*	*MFR. and DESIG. or AWS TYPE*	*CONT. or GOVT. DWG. or SPEC. No.*
E-105	3Z2880-8	HOLDER, fuse board assembly: to accommodate 2 No. P-2140 fuses; board marked 110 v and 220 v.	Holds fuse		Oxford-Tartak G-648
E-106	2Z5821-5	KNOB: bar pointer; black bakelite; for 1/4" shaft.	Volume control	Harry Daview Type 2150	Oxford-Tartak P-2146
E-107	2Z5883-235	LAMPHOLDER: less jewel bayonet socket.	Holds lamp	Drake Mfg. 10-G	Oxford-Tartak P-2136
H-101	2Z3021-23	PHONE TIP:	Input connection	America . Rodio Hardware 16	Oxford-Tartak P-2141
H-102	2Z9049.36	HANDLE, strap: dark brown sole leather; viscolized treated.	Carrying	L & N Specialty 333	Oxford-Tartak P-1488-2
I-101	2Z5952	LAMP, incandescent: pilot; bayonet base; 6 to 8 volts.		GE Mazda 47	Oxford-Tartak P-1785
J-101	2Z5534	JACK, telephone: US Army Spec No. 71-852.		Chicago Telephone JK-34-A	Oxford-Tartak P-2137
IS-101	6C37-6	LOUDSPEAKER: 5" diam, weather proof cone; plated and painted metal parts.	Produces sound		Oxford-Tartak PM5-3-4
P-101	2Z303-17	ADAPTER, plug: 110 v AC; receptacle and plug; consisting of Amphenol 61M plug, 3-14-D shell and 61F receptacle with No. P-2143 grommet.	Power connection		Oxford-Tartak P-2144
R-101	3Z6040-10	RESISTOR, fixed: 400 ohms ± 20%, 1 w; insulated composition.	Audio cathode bias	Stackpole Carbon CM-1	Oxford-Tartak P-2098
R-102	3Z7410-25	RESISTOR, fix variable: 10,000 ohms ± 20%; D taper.	Volume control	Chicago Telephone 45	Oxford-Tartak P-1984
S-101	3Z8130	SWITCH, toggle: Sig C Switch SW-130; DPST.	Opens and closes power line	AH & H 20902-N	Oxford-Tartak P-1542
T-101	2Z9632.361	TRANSFORMER: housed in metal can; wax filled primary impedance 6000 to 4 ohm load.	Output transformer	Illinois Transformer	Oxford-Tartak 2D-86-A
T-102	2Z9608-55	TRANSFORMER: 117 to 234 v AC; 40 to 60 cycles; secondary No. 1, 450 v center tapped, 35 ma; secondary No. 2, 6.30 v, .75 amp. secondary No. 3, 12.6 v, .15 amp.	Power transformer	Merit Transformer Corp.	Oxford-Tartak P-2001
X101	2Z8678.222	SOCKET, octal: black bakelite; 1-1/2" mtg/C.	Holds tube	Rohden Mfg. Co.	Oxford-Tartak P-2111

MODEL: RADIO SET SCR-624-A AND SCR-624-B — **MAJOR ASSEMBLY: LOUDSPEAKER LS-10-C**

C-1		CAPACITOR, fixed: paper dielectric: 10,000 mmf. ± 20%; 1,000 vdcw.	Plate blocking	JAN CN43R103M	Hallicrafters CN43R103M or Heyer 24287-1
C-2	3DB20-14	CAPACITOR, fixed: Dry electrolytic; 2 section; 20 mfd. ea.; 450 vdcw.	Audio cathode bypass, and filter	JAN CE32D200R	Hallicrafters 45B140 or Heyer 24287-2
E-1		HOLDER, fuse: extractor post type; one 3AG cartridge fuse.	Line protection	Littlefuse 1075	*Hallicrafters 6A053
E-2		KNOB, round: black general purpose phenolic; for .253/.255 diam shaft: single 6-32 set screw.	Volume control	Peerless Moulding	Hallicrafters 15A049
E-3		LIGHT, indicator: with brake lens 3/4" diam red faceted lens; for bayonet base Mazda 47 bulb, 150 ma. 6-8 V.; open frame.	Holds lamp	Drake 20	Hallicrafters 86A016 or Heyer 24287-3
E-4		GROMMET, black rubber: 1/4" I.D. x 1/4" thk; fits 3/8" dia chassis hole.	Insulation	Atlantic Rubber 763	Hallicrafters 16A002 or Heyer 24287-4
E-5		GROMMET, black rubber: 3/8" I.D. x 11/32" thk; fits 5/8" dia chassis hole.	Insulation	Atlantic Rubber 2281	Hallicrafters 16A019 or Heyer 24287-5
E-6		COVER, fuse: steel, marked "Fuse".	Line protection	Littlefuse, cover only for #351007	*Heyer 24287-21
F-1		FUSE, cartridge: 1 amp.	Line protection	Littlefuse, cover only for #351007	Hallicrafters 39A306 or Heyer 24287-6
H-1	2A3021-23	TERMINAL, lug: pin type; nickel plated brass; fits cordage CO-219.	Input connection	American Radio Hardware 16	Hallicrafters 10A306 or Heyer 24287-7
J-1		JACK, telephone: Type JJ-034; for 2 cond plug.	Headset Connection	Mallory JJ-034	Heyer 24287-8 or Hallicrafters 36A042
LM-1		LAMP, incandescent: 6-8 V, 150 ma; miniature bayonet base.	Pilot light	Mazda 47	Hallicrafters 39A004 or Heyer 24287-9
LS-1		SPEAKER, magnetic: 6C35-15.1; 5" diam cone; PM field; 3.5 W; voice coil impedance 3.2 ohms.	Produces sound	Jensen P5-V or Best Mfg. Co. #5P3	Hallicrafters 85B081 or Heyer 24287-10
P-1		CONNECTOR, male contact: polarized 2 flat parallel blades; 1-7/16" x 1"lg less contacts.	Power connection	Hubbel HB #1326	Hallicrafters 10A307
R-1		RESISTOR, variable: composition; 10,000 ohms ± 15%; 1/2W; 3 solder lugs; sliding brush type; Hallicrafters #9 curve, 625 ohms at 35% clockwise rotation, 1000 ohms at 50% rotation and 2375 ohms at 65% rotation.	Volume control	Chicago Telephone Supply Co. #35	Hallicrafters 25B805 or Heyer 24377
R-2		RESISTOR, fixed: composition; 390 ohms ±10%; 1 W.	Audio Cathode bias	JAN RC30BF391K	Hallicrafters 25B805 or Heyer 24287-12
R-3		RESISTOR, fixed: composition; 1 meg. ±10%; 1 W.	Bleeder	JAN RC30BF105K	Hallicrafters RC30BF-105K or Heyer 24287-13

TABLE OF REPLACEABLE PARTS

MODEL: RADIO SET-624-A AND SCR-624-B **MAJOR ASSEMBLY: LOUDSPEAKER LS-10-C**

Reference Symbol	*Army Stock No. Navy Stock No. British Ref. No.*	*NAME OF PART and DESCRIPTION*	*FUNCTION*	*MFR. and DESIG. or AWS TYPE*	*CONT. or GOVT. DWG. or SPEC. No.*
SW-1	3Z9863-22K	SWITCH, toggle: DPST; 15/32" sleeve lg.	Opens and closes power line	JAN ST 22-K	Hallicrafters 60A337 or Heyer 24287-14
SW-2	3Z9863-13D	SWITCH, toggle: SPST; ¼" sleeve lg.	Line voltage switch	JAN ST-13D	Hallicrafters 60A338
T-1	2Z9636-128	TRANSFORMER, AF: plate coupling type primary 7500 ohms impedance; secondary 3.5 ohms impedance; secondary 3/5 ohms impedance; 9.29 amps; potted; metal case, iron core.	Output transformer	Chicago Transformer Corp. #13215	Hallicrafters 55B118 or Heyer 24287-15
T-2	2Z9619-205	TRANSFORMER, power: filament and plate type; input 234 V. 40 to 60 cycles AC with tap at 117 V.; single ph; 2 output windings; sec. #1-260-V. at 35 ma CT; sec. #2—12.5 V. at .75 ma CT; potted; metal case.	Power transformer	Chicago Transformer Corp. #13235	Hallicrafters 52C172 or Heyer 24287-16
X-1	SOCKET, tube:	SOCKET, tube: octal; stainless steel mtg plates; two 5/32" diam holes on 1-1/2" mtg/C.	Holds tube	Amphenol MIP-STM	Hallicrafters 6A200 or Heyer 24287-17

**For, Detail, Refer to Figure 4-24 Loudspeaker LS-10-C Circuit Diagram*

SECTION VIII

DRAWINGS

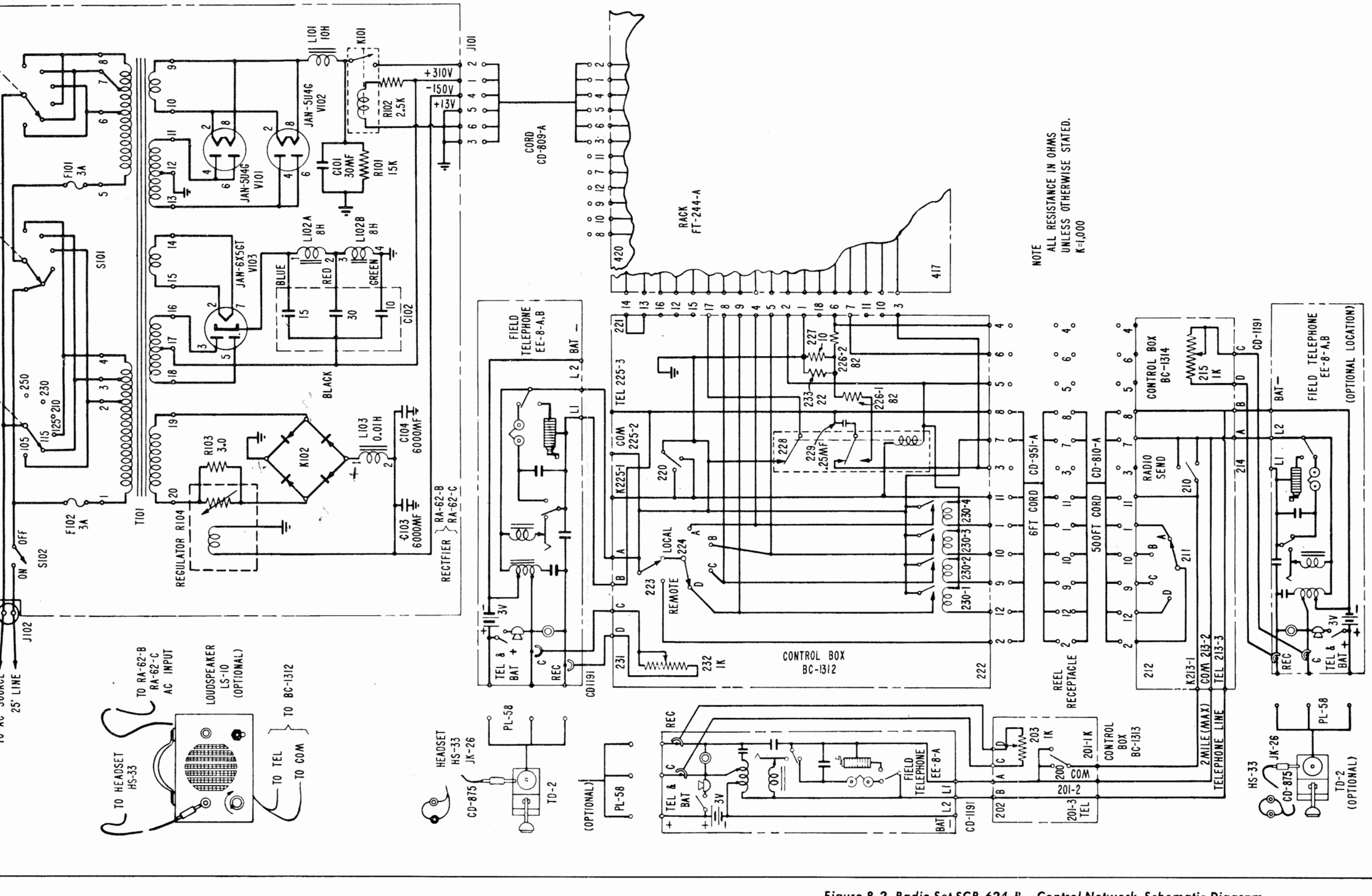


Figure 8-2. Radio Set SCR-624-B—Control Network, Schematic Diagram

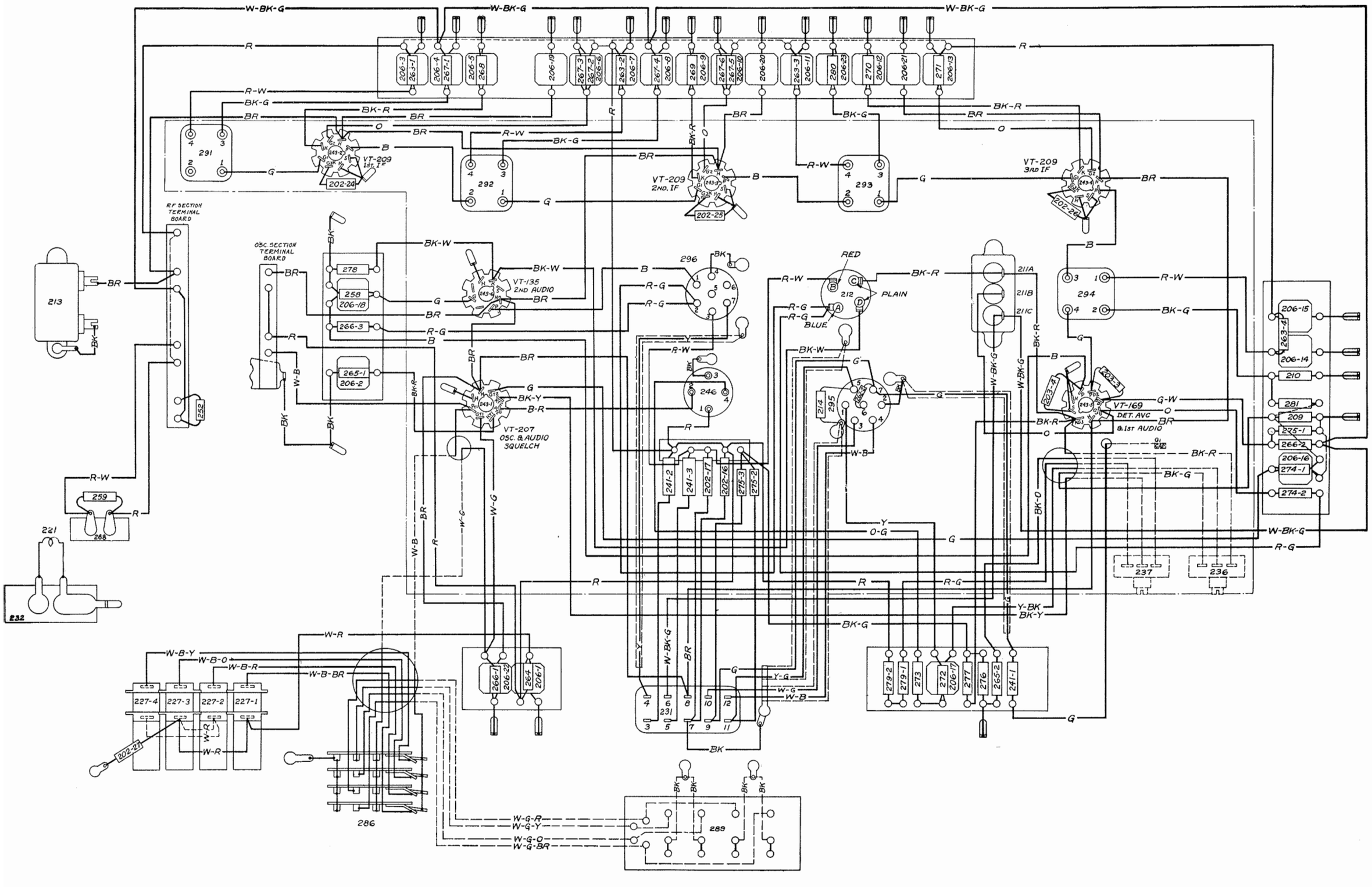
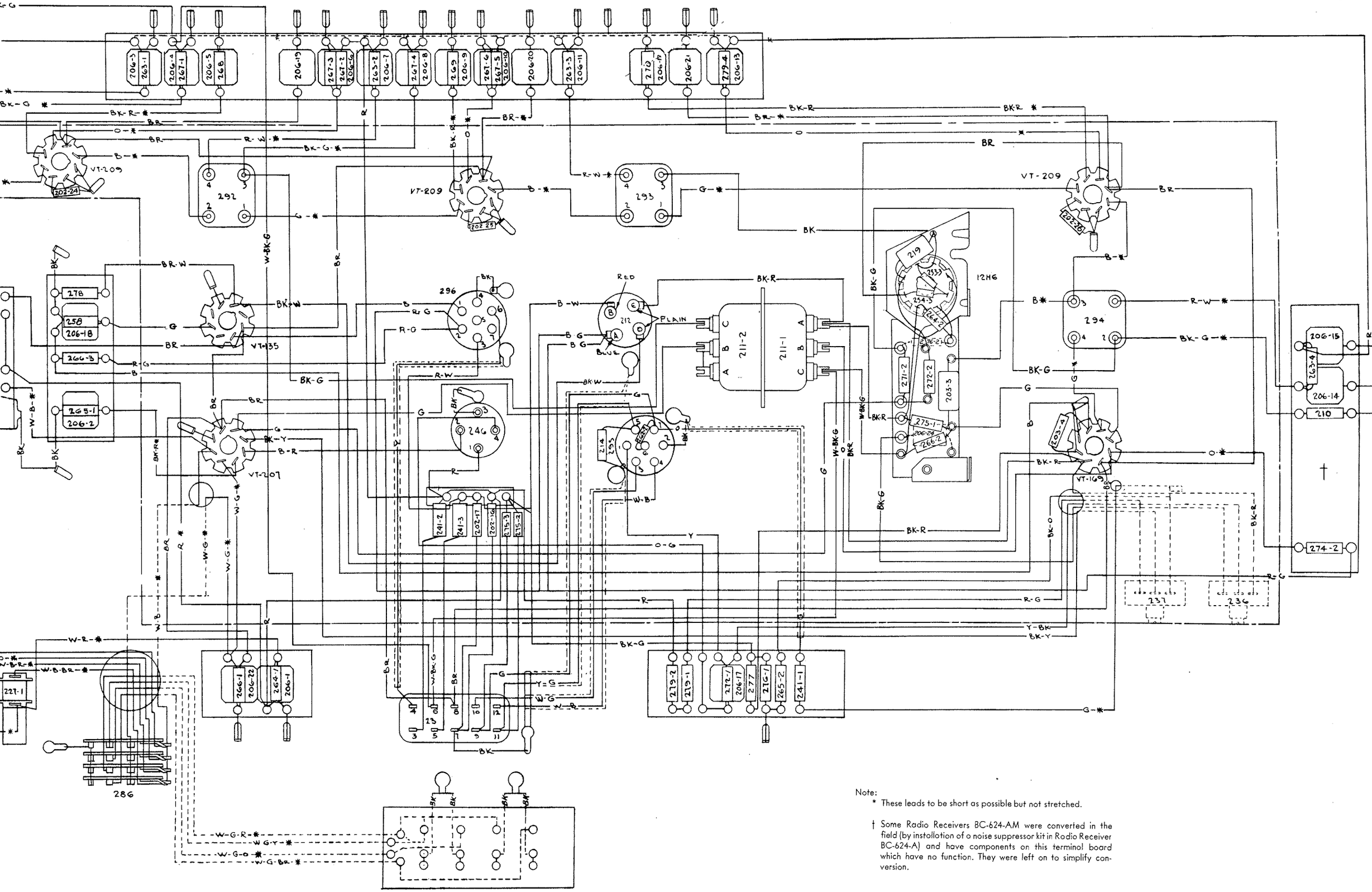


Figure 8-6. Radio Receiver BC-624-A—Wiring Diagram

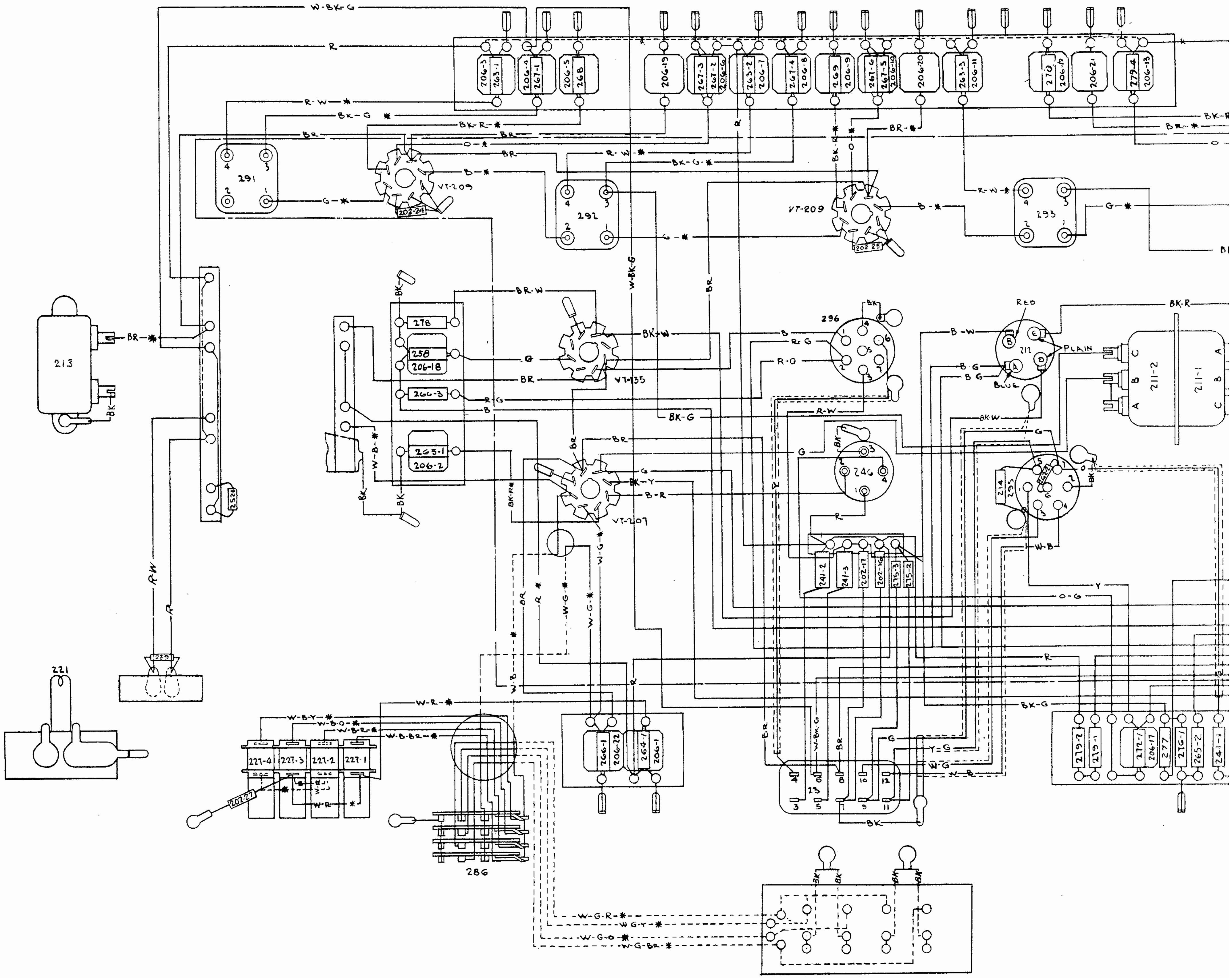


Note:

* These leads to be short as possible but not stretched.

† Some Radio Receivers BC-624-AM were converted in the field (by installation of a noise suppressor kit in Radio Receiver BC-624-A) and have components on this terminal board which have no function. They were left on to simplify conversion.

Figure 8-7. Radio Receiver BC-624-AM—Wiring Diagram



W-BK-G
R
R-W
BK-G
BK-R
BR
O
B
G
291
292
293
VT-209
202-24
202-25
206-3
263-1
206-4
267-1
206-5
268
206-19
267-3
267-2
263-2
206-7
267-4
206-8
269
206-9
261-6
267-5
206-20
263-3
206-11
270
206-21
279-4
206-13
213
252
278
258
206-18
266-3
265-1
206-2
BR-W
BK-W
VT-135
VT-207
R-G
B-R
BK-Y
W-B
W-G
296
246
212
RED
PLAIN
BLUE
211-2
211-1
214
295
241-2
241-3
202-17
202-16
275-3
275-2
O-G
Y
BK-G
23
279-2
279-1
272-1
277
206-17
276-1
265-2
241-1
221
239
RW
W-R
W-B-Y
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W-B-R
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227-1
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266-1
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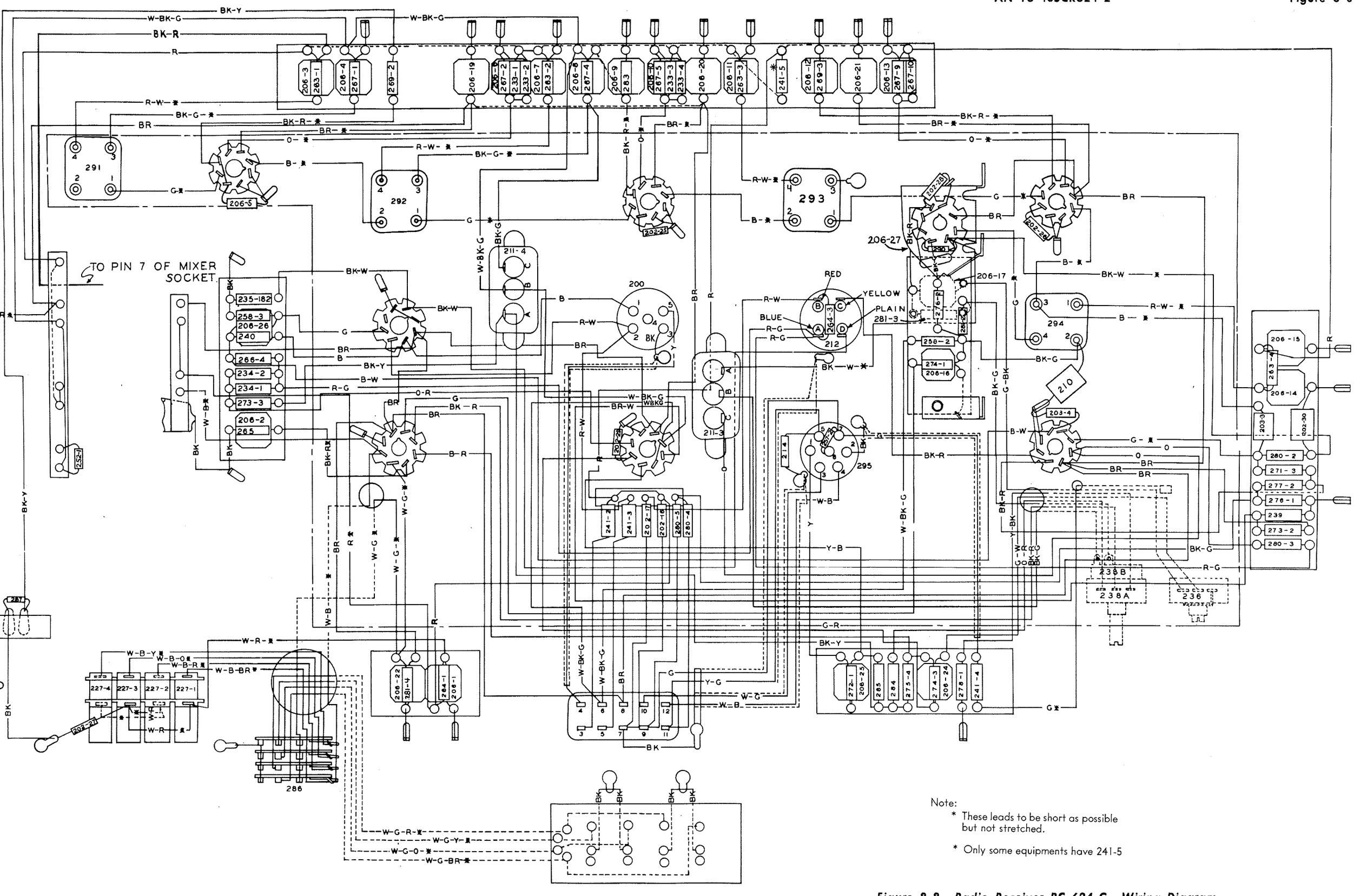
W-G

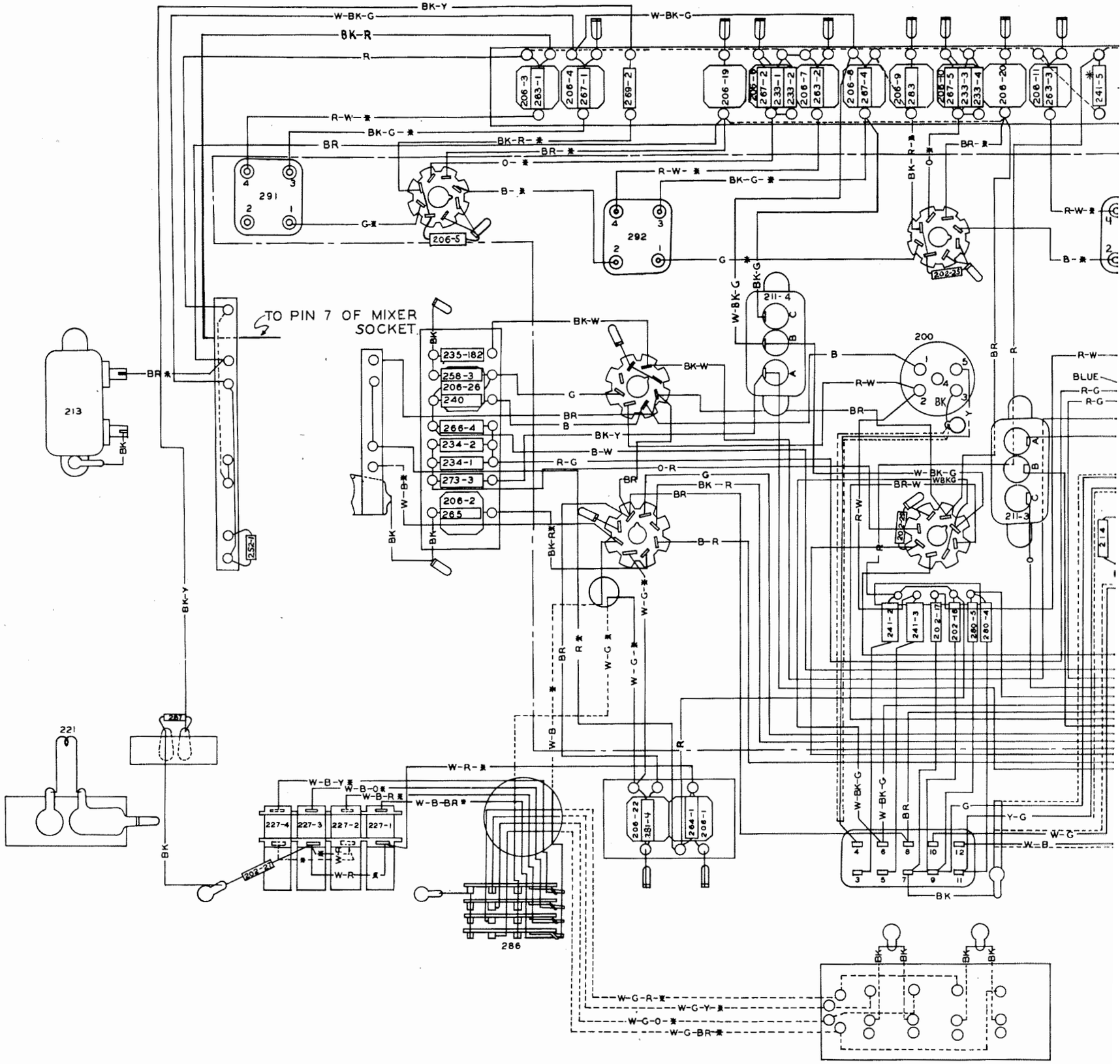


Note:

* These leads to be short as possible but not stretched.

* Only some equipments have 241-5

Figure 8-8. Radio Receiver BC-624-C—Wiring Diagram


TO PIN 7 OF MIXER SOCKET
291
292
213
221
286
200
BK-Y
W-BK-G
BK-R
R
BR
R-W
BK-G
BK-R
O
B
G
BK-W
B-W
R-G
O-R
B-R
W-G
W-R
W-B-Y
W-B-O
W-B-R
W-B-BR
W-G-R
W-G-Y
W-G-O
W-G-BR
BLUE
Y-G
W-B
206-3
263-1
206-4
267-1
269-2
206-19
206-5
267-2
233-1
233-2
206-7
263-2
206-8
267-4
206-9
283
206-10
267-5
233-3
233-4
206-20
206-11
263-3
241-5
206-5
202-23
211-4
211-3
235-182
258-3
206-26
240
266-4
234-2
234-1
273-3
206-2
265
252
287
227-4
227-3
227-2
227-1
202-21
206-22
281-4
264-1
206-1
241-2
241-3
202-17
202-16
280-5
280-4
BK

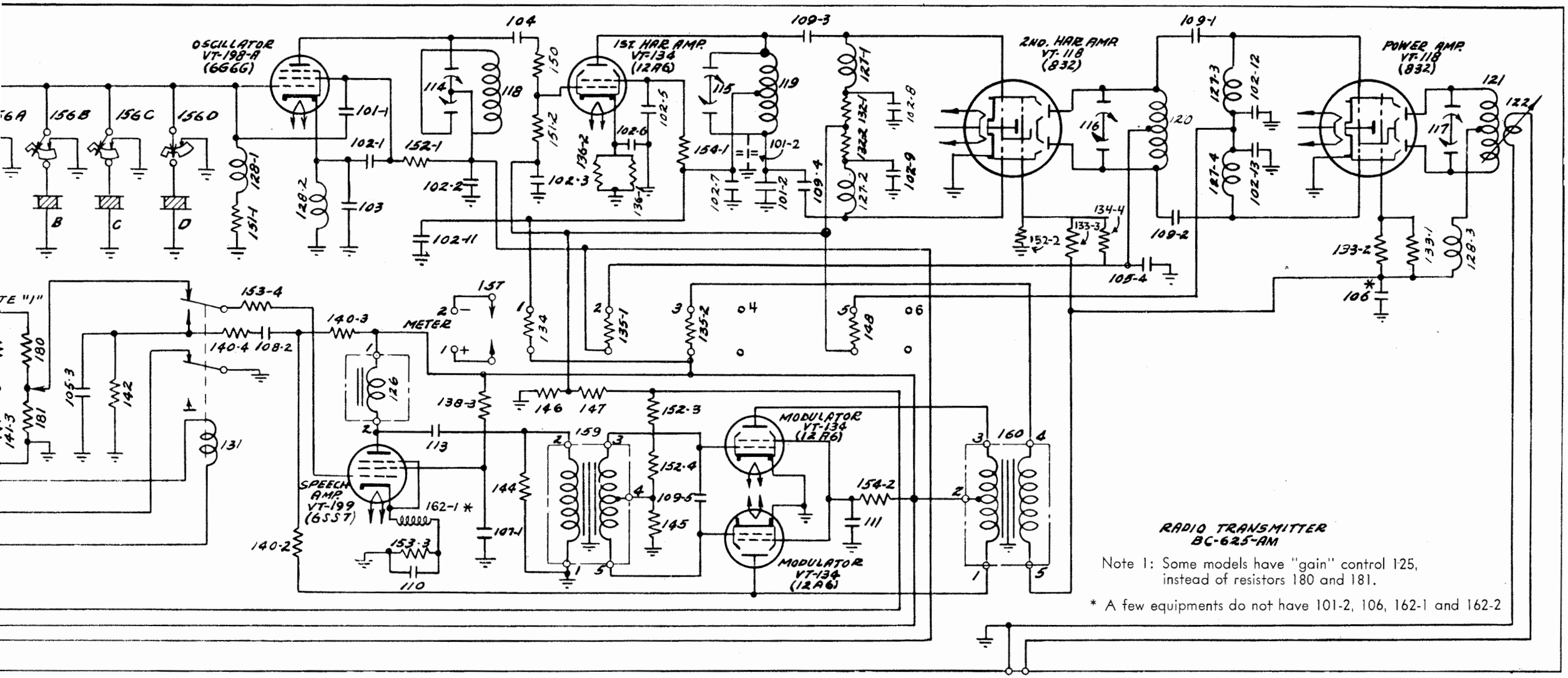
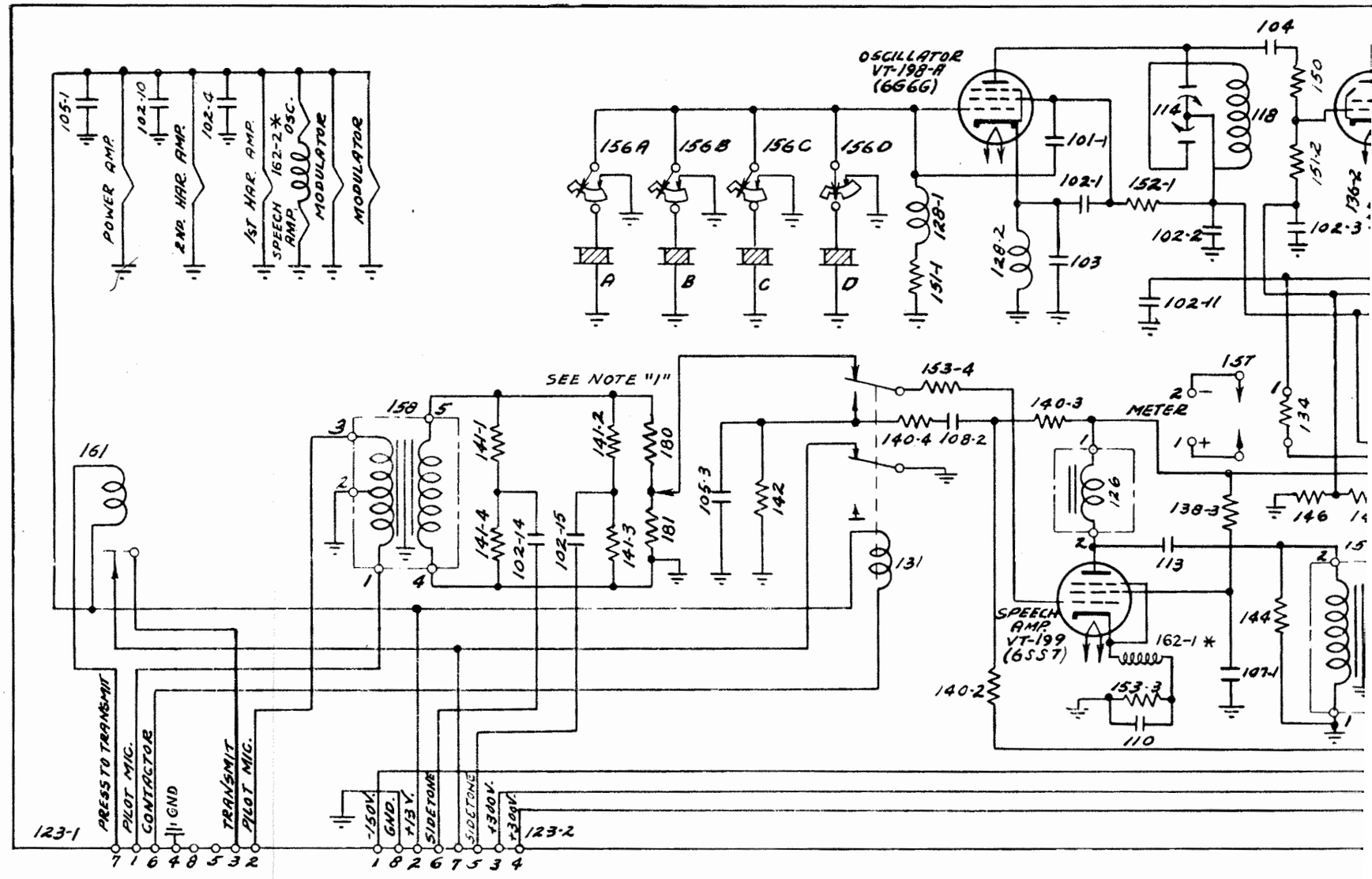


Figure 8-4. Radio Transmitter BC-625-AM—Schematic Diagram


105-1
POWER AMP.
102-10
2ND. HAR. AMP.
102-4
1ST HAR. AMP.
SPEECH AMP.
162-2 *
OSC.
MODULATOR
MODULATOR
OSCILLATOR VT-198-A (6666)
156A
156B
156C
156D
A
B
C
D
128-1
151-1
128-2
101-1
102-1
103
104
114
118
150
152-1
151-2
136-2
102-2
102-3
102-11
157
METER
134
SEE NOTE "1"
153-4
140-3
140-4
108-2
158
161
141-1
141-2
180
141-4
141-3
181
102-14
102-15
105-3
142
131
126
138-3
146
113
SPEECH AMP. VT-199 (6557)
162-1 *
144
107-1
140-2
153-3
110
PRESS TO TRANSMIT
PILOT MIC.
CONTACTOR
GND.
TRANSMIT
PILOT MIC.
-150V.
GND.
+13 V.
SIDETONE
SIDETONE
+300V.
+300V.
123-1
123-2
7 1 6 4 8 5 3 2
1 8 2 6 7 5 3 4

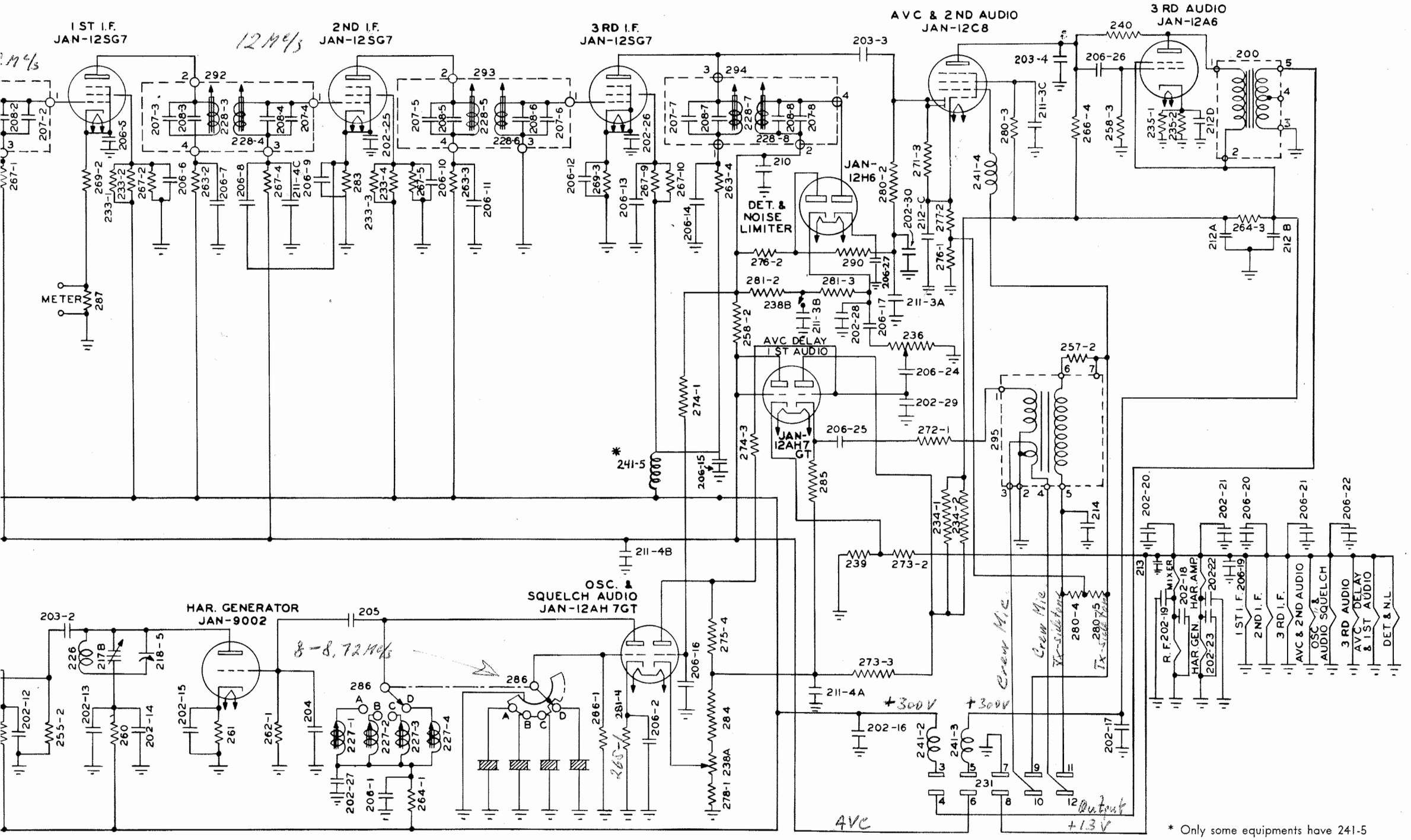
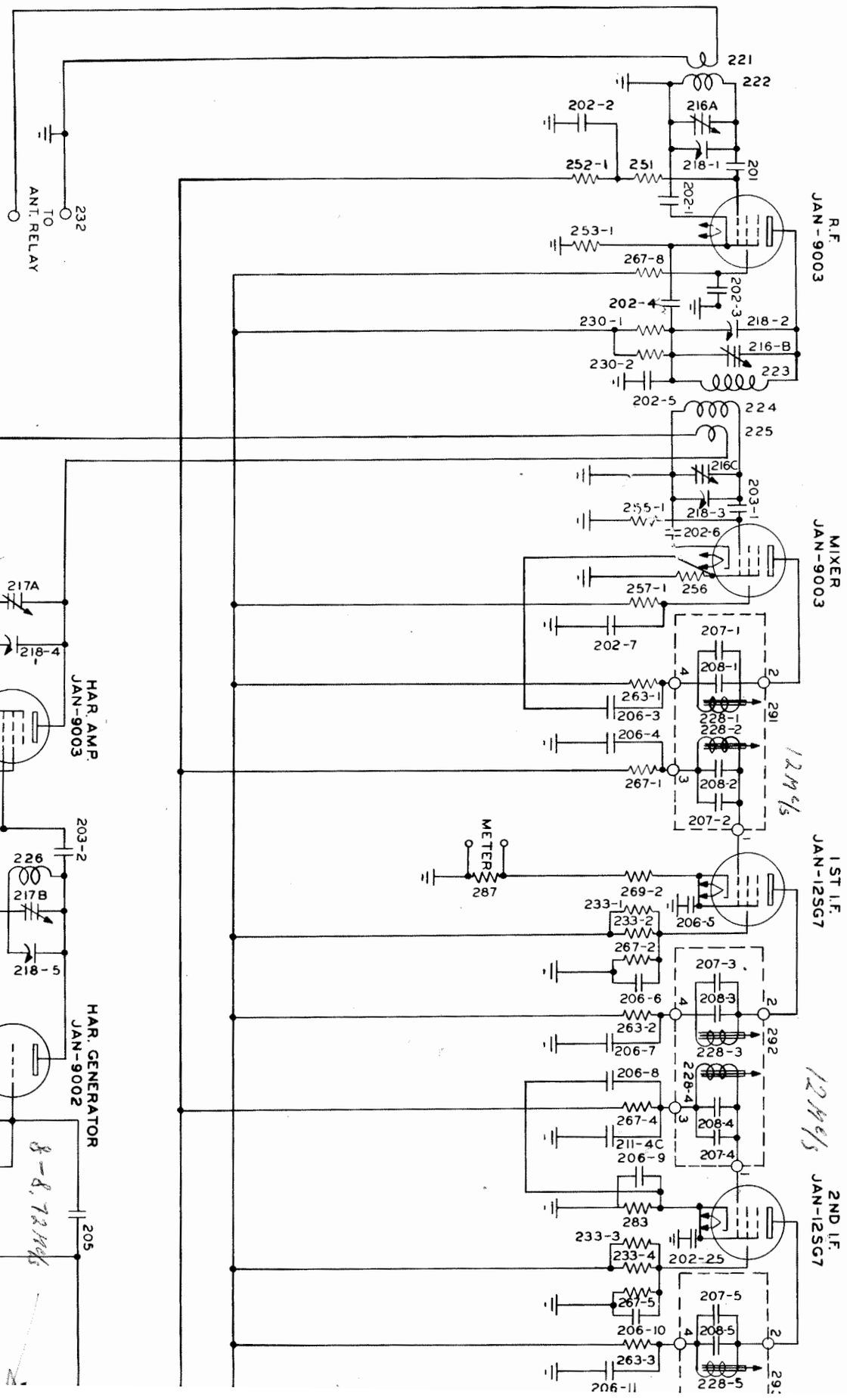


Figure 8-3. Radio Receiver BC-624-C—Schematic Diagram


TO ANT. RELAY
232
221
222
202-2
216A
252-1
251
218-1
201
202-1
R.F. JAN-9003
253-1
267-8
202-4
202-3
230-1
218-2
216-B
230-2
223
202-5
224
225
216C
203-1
255-1
218-3
202-6
MIXER JAN-9003
257-1
256
202-7
207-1
208-1
263-1
206-3
228-1
291
228-2
206-4
267-1
208-2
207-2
12 Mc/s
METER
287
I ST I.F. JAN-12SG7
269-2
233-1
233-2
206-5
267-2
207-3
206-6
208-3
263-2
206-7
228-3
292
206-8
228-4
267-4
208-4
211-4C
207-4
206-9
283
2ND I.F. JAN-12SG7
233-3
233-4
202-25
267-5
207-5
206-10
208-5
263-3
206-11
228-5
230-3
230-4
217A
202-8
202-10
218-4
202-9
HAR. AMP. JAN-9003
253-2
202-11
267-7
202-12
255-2
203-2
226
202-13
217B
260
202-14
218-5
202-15
HAR. GENERATOR JAN-9002
261
262-1
204
8-8.72 Mc/s
202-27
227-1
206-1
227-2
227-3
264-1
227-4
286
205

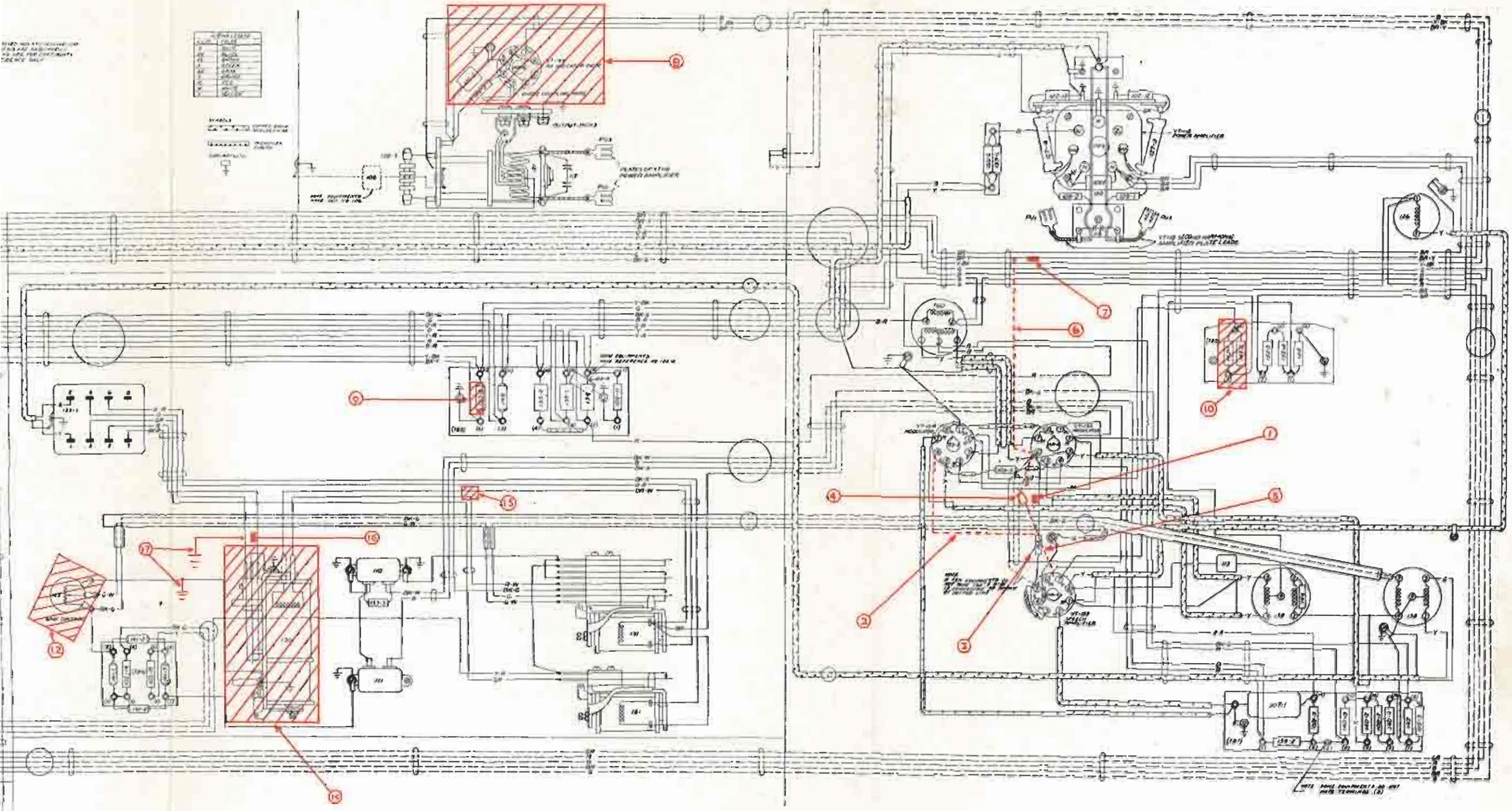


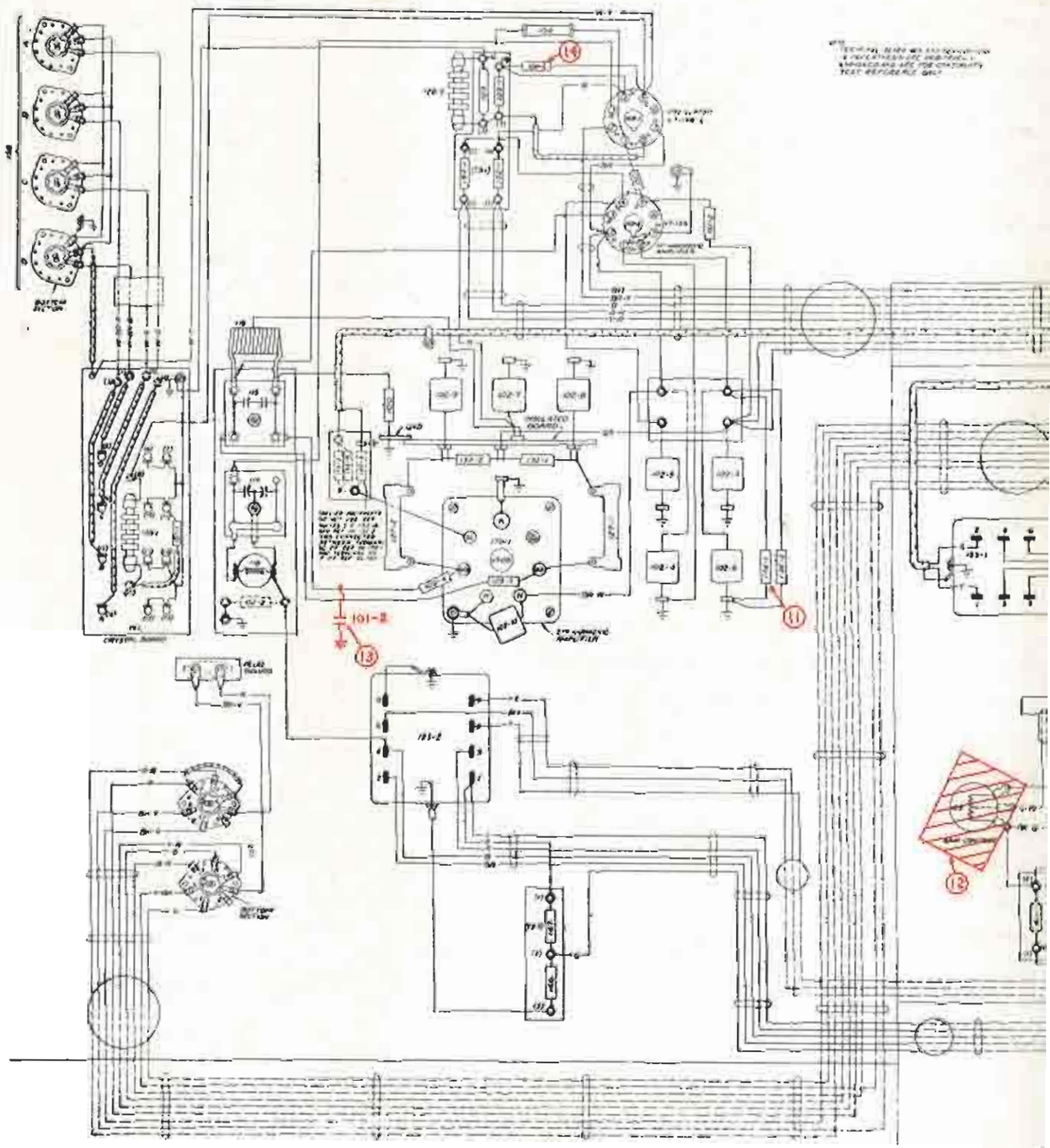
Figure 8-5. Radio Transmitter BC-625-A—Wiring Diagram

FACTORY MODIFICATIONS OF RADIO TRANSMITTER BC-625-A

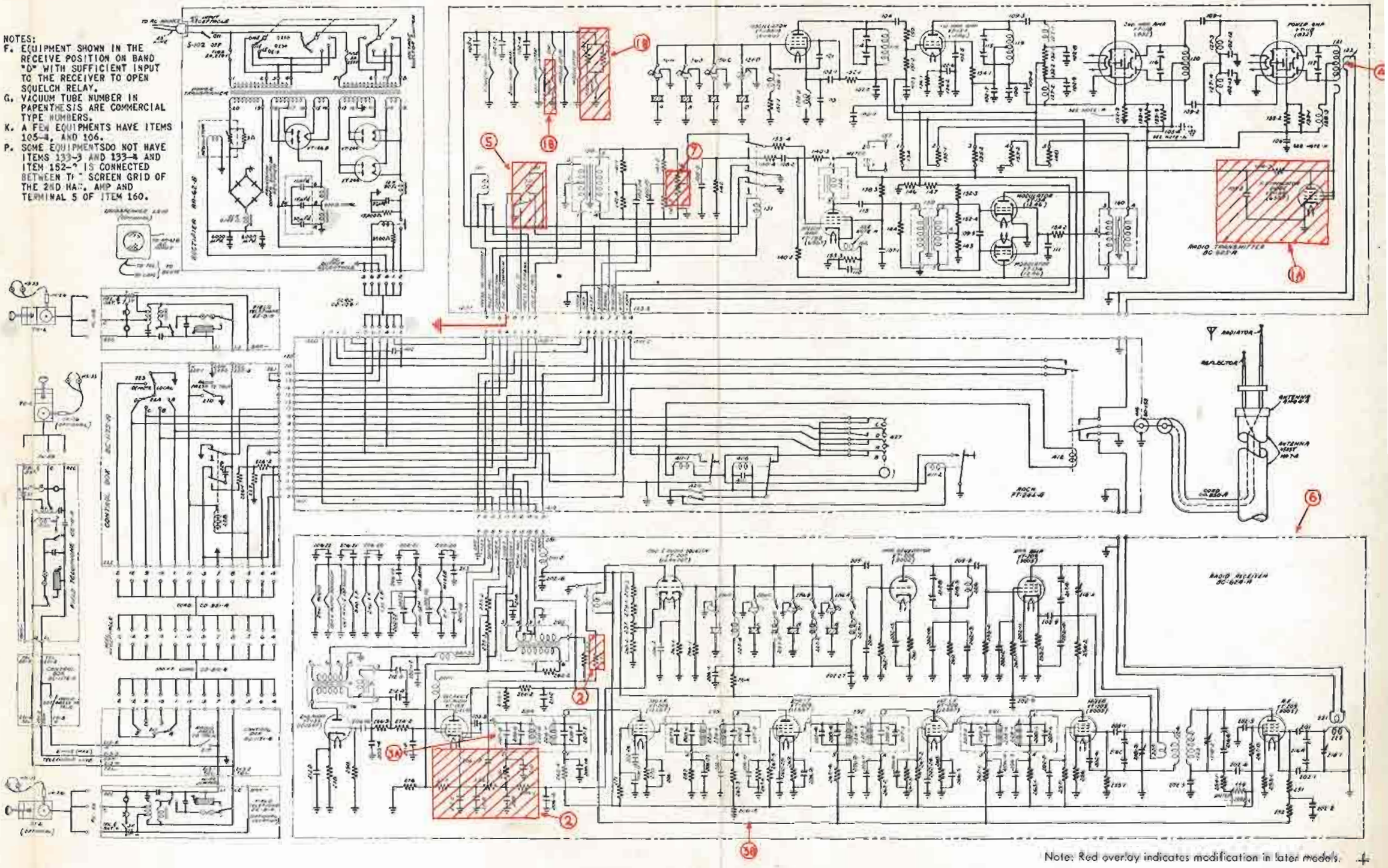
1. Wire removed from pin 6 of center modulator tube VT-134.
2. Connection made to pin 6 of adjacent modulator tube VT-134.
3. Reactor 162-1 (formerly 162) removed.
4. Reactor 162-2 inserted.
5. Connection made between pin 7 of speech amplifier tube VT-199 and pin 6 of center modulator tube VT-134 through reactor 162-2.
6. Connection made between pin 6 of center modulator and pin 2 of oscillator tube.
7. Wire removed.
8. R-F indicator diode and associated wiring and components removed.
9. Resistor 153-2 removed. (Position "4" of "Meter Switch" inoperative.)
10. Removal of resistors 143-1 and 143-2.
11. Replacement of resistor 153-1 by resistors 136-1 and 136-2.
12. Replacement of "Gain" control 125 by resistors 180 and 181.
13. Addition of capacitor 101-2.
14. Reference symbol changed to 101-1.

MODIFICATIONS RESULTING IN RADIO TRANSMITTER BC-625-AM

15. Wire removed.
16. Slow release relay 130 removed.
17. Wire grounded.



NOTES:
F. EQUIPMENT SHOWN IN THE RECEIVE POSITION ON BAND "D" WITH SUFFICIENT INPUT TO THE RECEIVER TO OPEN SQUELCH RELAY.
G. VACUUM TUBE NUMBER IN PAPENTHESIS ARE COMMERCIAL TYPE NUMBERS.
K. A FEW EQUIPMENTS HAVE ITEMS 105-4, AND 106.
P. SOME EQUIPMENTSDO NOT HAVE ITEMS 133-3 AND 133-4 AND ITEM 152-? IS CONNECTED BETWEEN TH SCREEN GRID OF THE 2ND HARM. AMP AND TERMINAL 5 OF ITEM 160.



Note: Red overlay indicates modification in later models.

Figure 8-1. Radio Set SCR-624-A—Complete Schematic Diagram

Reference	*Modification*	
1a	Removal of r-f indicator diode.	Painted black stripe by "METER SWITCH" position "4."
1b	Rewiring of oscillator tube JAN-6G6G (VT-198-A) and speech amplifier tube JAN-6SS7 (VT-199) filament circuits.	
2	Rewiring of squelch circuit.	Painted orange spot on relay 246.
3a	Addition of tube JAN-12H6 noise suppressor and AVC delay circuit (field modification).	Nameplates stenciled with 'M" after BC-624-A.
3b	Modification of i-f amplifier stages and addition of noise suppressor and AVC delay (factory modification).	Nameplate stamped: Radio Receiver BC-624-AM.
4	Modification of antenna coupling control.	Coupling control on meshed gears instead of adjustable in slot.
5	Removal of slow release relay 130 from transmitter; modification of contactor circuit.	Modified sets marked Radio Receiver BC-624-AM.
6	Production of Radio Receiver BC-624-C. (Modification receiver circuit.)	Modified sets marked Radio Receiver BC-624-C.
7	Transmitter "GAIN" control 125 replaced by fixed attenuator network (resistors 180 and 181).	Absence of transmitter "GAIN" control 125 on modified units.