RESTRICTED

TM 11-242 & suppl.

WAR DEPARTMENT

U.S. Dept of Army

TECHNICAL MANUAL

RADIO SET SCR-300-A

June 15, 1943

STOCK NO. 6D13059

WAR DEPARTMENT
Washington, June 15, 1943

This Technical Manual, published by Galvin Manufacturing Corporation, is furnished for the information and guidance of all concerned.

RESTRICTED

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SUPPLEMENT
July 30, 1943
TM 11-242

SUPPLEMENT

To

TECHNICAL MANUAL

Radio Set SCR-300-A

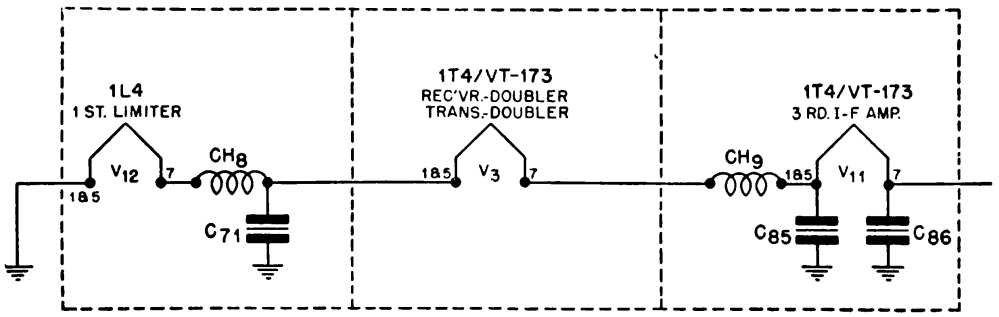
April 3, May 15, and June 15, 1943

The following supplementary information is published by Galvin Mfg. Corp. on Order 15025-Phila.-43, covering Radio Set SCR-300-A. The paragraphs and figure numbers used are a continuation of the sequence established in TM 11-242, April 3, May 15, and June 15, 1943.

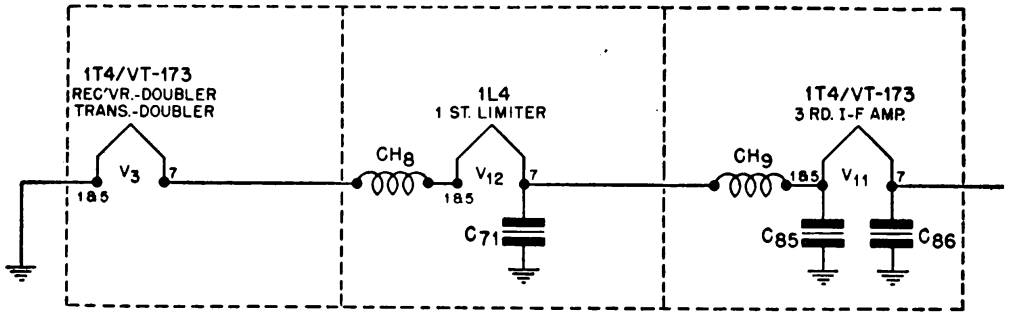
The entire Order 32870-Phila.43 has the changed filament string.

Effective after serial numbers 4775 thru 8824, and 9110 thru 14707, on Order 15025-Phila.-43.

The filament string for Tubes V_3, V_{11} and V_{12} is revised to put the filament of V_3 at the ground end of the string.



Filament String before change up to Serial Nos. 1 thru 4775 and 8825 thru 9110.



Filament String after change from Serial Nos. 4776 thru 8824 and 9111 thru 14707.

SUPPLEMENT 2

8 October 1943

TM 11-242

SUPPLEMENT

to

TECHNICAL MANUAL

Radio Set SCR-300-A

April 3, May 15, and June 15, 1943

The following supplementary information is published by Galvin Mfg. Corp. on Order Nos. 15025-Phila-43 and 32870-Phila-43, covering Radio Set SCR-300-A. The paragraphs and figure numbers conform with the sequence established in TM 11-242, April 3, May 15, and June 15, 1943.

Personnel using this equipment will enter suitable notations beside each changed paragraph of the TM to indicate the presence of supplementary information contained in this supplement.

Paragraph

2. Radio Set SCR-300-A, Components with Weights and Dimensions.

Quantity	Signal Corps Stock No.	Name of Component	Dimensions (Inches)					Unit Weight (in lbs.)
			Hgt.	Width	Depth	Lgth.	Diam.	
Add the following:								
1		Battery BA-80	5¼	10⁵⁄₁₆	4½			9.00

Paragraph

5. Power Source.

Add the following sentence: "Battery BA-80 is similar in all *these* respects to Battery BA-70."

Paragraph

9. Description of Main Components.

Change title of sub-paragraph *d. Battery BA-70*, to "*d. Battery BA-70 and Battery BA-80*", and change first sentence to read: "Battery BA-70 and Battery BA-80 each consist of three dry battery sections as follows:"

Paragraph

11. Installation.

Change the title of subparagraph *a. Installation of Battery BA-70, to "a. Installation of Battery BA-70 or Battery BA-80."*

Paragraph

12. Preparation for Use.

In sub-paragraph *b. Calibration*, insert the following between sub-paragraphs (1) and (2):

"Don't press the PRESS FOR DIAL LIGHT & CALIB. button of Radio Set SCR-300-A in the field any longer than is necessary UNLESS Antenna A-28-(*) (Phantom) is installed."

In sub-paragraph *f. Portable Use of Set*, add new sub-paragraph as follows:

(5) In case of emergency or when it is absolutely necessary to reduce weight as much as possible, you can sacrifice a waterproof condition to reduce the overall weight of Radio Set SCR-300-A to about 25 pounds by eliminating all components except those absolutely essential for operation. If they are already attached, remove Pad M-391-A, Harness ST-54-A, Strap ST-50-A, and Belt ST-55-A from the set. Then take Belt ST-55-A and use pieces of wire to attach its ends to the "D" rings located one on each side at the top of the chassis case. Release Case CS-128-A by unfastening the clip catches, and lift off the chassis case and attached battery. If Battery BA-70 is attached, stand the chassis case upside down, unfasten the battery retainer straps, and substitute Battery BA-80 for BA-70. Turn the set upright, screw Antenna AN-131-A into the antenna terminal, and plug in Handset TS-15-(*). Then lift the set and put the attached Belt ST-55-A over your shoulder, letting the set hang at your side, and you are equipped with a relatively light-weight portable set. The components that are dispensed with in this expediency are: Case, CS-128-A; Antenna AN-130-A; Headset HS-30-(*); Bag

BG-150-A; Pad M-391-A; Harness ST-54-A; Strap ST-50-A; and Battery BA-70.

"(*a*) A set stripped down as above (but without Belt ST-55-A fastened to the "D" rings) can be carried comfortably on your back by using a pack board. Improvise two wire hooks at the top of the pack board, and hang the set on these hooks by means of the brackets in which the snap hooks of Pad M-391-A normally fasten to the set. Hold the set down by fastening the battery strap through openings of the pack board."

Paragraph

14. General Operating Instructions and Precautions.

Change title of sub-paragraph *f. Battery BA-70 Life,* to "*f. Battery Life*" and make the following changes in the sub-paragraphs:

In sub-paragraph (1) add the sentence "A fresh Battery BA-80 will give about 10 to 12 hours service."

Change sub-paragraph (2) to read as follows:

"Check Battery BA-70 (or BA-80) periodically with a voltmeter shunted by a load resistor (specified below) for 15 seconds. Replace when the following end point voltages have been reached:

"New	*Load Resistor*	*End Point*
4.35 volts (filament)	8 ohms	3.6 volts
84 volts (plate)	1290 ohms	66 volts
54 volts (plate)	860 ohms	44 volts"

In sub-paragraph (3) make the sentence read "A weak Battery BA-70 or Battery BA-80 will seriously limit the transmitting range of the set."

Paragraph

20. Tube Replacement.

In sub-paragraph *d. Burned Out Tube Location Chart,* insert the following before sub-paragraph (1):

"Don't test filament continuity with an ohmmeter.

"Don't press calibrate button and transmitter switch at the same time."

Paragraph

22. Alignment.

In sub-paragraph *a. Equipment Required,* change first sub-paragraph to read as follows:

"(1) Maintenance Equipment ME-40-(*) and Maintenance Kit ME-53 (less replacement batteries for the Radio Set) contained in Chest CH-165 (alignment instructions when using ME-40 and ME-53 are given in paragraph 22*e.*), or:"

In sub-paragraph *c. Preliminary,* insert the following before sub-paragraph (1):

"Before attempting to align Radio Receiver and Transmitter BC-1000-(*), refer to the BURNED OUT TUBE LOCATION CHART on page 53 of this manual."

Change title of sub-paragraph *d. To Align Radio Receiver and Transmitter BC-1000-A, Perform the Following Operations In Order Listed,* to *"d. Alignment Procedure Using VTVM and a Signal Generator," and substitute the following data for the information given in sub-paragraph* (1)*:*

"(1) *Align the 4.3 megacycle crystal oscillator:*

"(*a*) Insert the VTVM probe into Pin No. 4 of the metering socket."

"(*b*) Screw L_3 adjustment all the way out (counter-clockwise)."

"(*c*) Push the PRESS FOR DIAL LIGHT & CALIB. button on the set and turn L_3 in (clockwise) until the VTVM indicates −30 volts; then back it off (counter-clockwise) ½ to ¾ turn and tighten locknut. (*Note: If reading does not quite reach −30 volts, tune to peak and back* L_3 *off ½ to ¾ turn and tighten locknut.*)"

Add a new sub-paragraph as follows:

"(12) Re-check the discriminator, as in (5) above."

Add a new sub-paragraph *e.* as follows:

"*e. Alignment Procedure Using Maintenance Equipment ME-40-*(*) *and Maintenance Kit ME-53.*

(1) *Preliminary Procedure.*

(*a*) Remove chassis of Radio Receiver and Transmitter BC-1000-(*) from chassis case and disconnect Battery BA-70 or Battery BA-80 from Case CS-128-(*).

(b) Before attempting to align Radio Receiver and Transmitter BC-1000-(*), refer to BURNED OUT TUBE LOCATION CHART on page 53 of this manual.

(*c*) Connect Radio Receiver and Transmitter BC-1000-(*) to Battery BA-70 or Battery BA-80 by using Cord #1X41796 (Galvin Part Number) furnished with Maintenance Equipment ME-40-(*).

(*d*) Plug in Handset TS-15-(*).

(*e*) Turn on Radio Receiver and Transmitter BC-1000-(*), and allow it to warm up for at least ten minutes.

(*f*) Check discriminator as described in paragraph 22*e*(12).

(*g*) Loosen locknuts L_3, L_{5-1}, L_{5-2}, L_{5-3}, L_{6-1}, L_{6-2}, L_{6-3}, L_7 and L_8. *These locknuts should be loosened just enough to leave some tension on the screw adjustment. Use Spintite wrench in Maintenance Equipment ME-40-(*).*

(*h*) Remove antenna from radio set if one is installed.

(*i*) Screw Antenna A-28-(*) (Phantom) into the antenna socket of Radio Receiver and Transmitter BC-1000-(*) and attach the ground lead to the GROUND FOR SHORT ANT. post of the radio set.

(*j*) Plug Alignment Indicator I-210-(*) (VTVI) into Battery BA-39.

(*k*) Turn the VTVI calibrate knob to open the shadow angle on indicator eye to 90° (−30 volt scale).

(2) *Aligning 4.3 Megacycle Crystal Oscillator.*

(*a*) Insert the test probe in metering socket Pin No. 4 of Radio Receiver and Transmitter BC-1000-(*) and connect the alligator clip to the chassis.

(*b*) Screw the adjustment of L_3 all the way out (counter-clockwise).

Note: Don't press the PRESS FOR DIAL LIGHT & CALIB. button on Radio Set SCR-300-(*) in the field unless Antenna A-28-(*) (Phantom) is installed.

(*c*) Press the PRESS FOR DIAL LIGHT & CALIB. button on Radio Receiver and Transmitter BC-1000-(*), and screw the adjustment of L_3 to the right (clockwise) until the shadow on the indicator eye becomes just a hairline, or exactly to minimum shadow if hairline indication cannot quite be obtained; then screw the adjustment screw to the left (counter-clockwise) ½ to ¾ turn and leave it there. Tighten locknut.

(3) *Aligning Discriminator and 2nd Limiter.*

(*a*) With the voltage selector switch in the 4.5V. position, short the test probe and alligator clip of VTVI and adjust the knob for a hairline shadow on the indicator eye.

(*b*) Insert the test probe in Pin No. 7 of metering socket.

(*c*) Press the PRESS FOR DIAL LIGHT & CALIB. button and adjust L_8 so that plus 0.5 volts (5° or 10° shadow angle) appears on the indicator eye.

NOTE: In adjusting coil L_8 it will be noted that there is a point where the indicator eye of the VTVI will be extremely active. At this point have the adjustment such that a shadow of approximately 5° or 10° appears on the indicator eye of the VTVI. REMEMBER AN INCREASE IN POSITIVE VOLTAGE TENDS TO CAUSE THE EYE TO OPEN, AND AN INCREASE IN NEGATIVE VOLTAGE CAUSES THE EYE TO CLOSE OR OVERLAP.

(*d*) After adjusting L_8 to plus 0.5 volts, adjust L_7 to a maximum shadow angle on the indicator eye of the VTVI. If the angle opens up too wide during this adjustment (85° to 90°), turn L_8 screw to the left (counter-clockwise) very slowly so the angle again reduces to 5° or 10° and readjust L_7 to maximum angle on the indicator eye, and tighten the locknut on L_7.

(*e*) With a very slight adjustment of the screw to the left (counter-clockwise) on coil L_8 the shadow angle on the indicator eye may be reduced to a hairline. Tighten the locknut on coil L_8, making sure it does not disturb the final setting of the screw. Check this by observing that the shadow angle remains a hairline after the locknut is tightened. **NOTE: The PRESS FOR DIAL LIGHT & CALIB. button must be pressed during this entire operation.**

(4) *Aligning I.F.*

(*a*) With the voltage selector switch set in the 4.5V. position, open the shadow angle of VTVI by adjusting the calibrate knob.

(*b*) Insert the test probe in Pin No. 2 of the metering socket.

(*c*) Connect Oscillator VO-6-(*) by taking the alligator clip on the flexible lead of the terminal box and attaching it to chassis or ground, and attach the other alligator clip to grid (Pin No. 6) of 1st mixer Tube 1L4, (V_7).

(*d*) Throw the switch of the oscillator terminal box (dummy load) to LO position.

(*e*) Turn the attenuation (INCREASE) control of the oscillator to the right (clockwise) just enough to show an indication or to vary the shadow of the VTVI eye. If there is no indication, leave the attenuation control on full, and throw switch to HI position. If there still is no indication disconnect Oscillator VO-6-(*), and set L_{5-1}, L_{5-2}, L_{5-3}, L_{6-1}, and L_{6-2} so that the adjusting screws are extended about ¼-inch, and then adjust them for maximum noise in Handset TS-15-(*). *Reconnect VO-6-(*) as before.*

(*f*) Adjust the input signal until a small indication is obtained on the indicator eye of VTVI, and adjust L_{5-1}, L_{5-2}, L_{5-3}, L_{6-1} and L_{6-2} to minimum shadow angle (negative volts). Tighten each locknut as you go, watching the indicator eye to insure that there is no misalignment.

(5) *Aligning 1st Limiter.*

(*a*) Set the VTVI voltage selector switch in the 30V. position.

(*b*) Insert the test probe in Pin No. 3 of metering socket and adjust L_{6-3} for minimum shadow angle. Turn off Oscillator VO-6-(*) by rotating the attenuation control to the extreme left (counterclockwise), and remove output leads of Oscillator VO-6-(*) from the radio set.

NOTE: Check to see that locknuts of L_3, L_{5-1}, L_{5-2}, L_{5-3}, L_{6-1}, L_{6-2}, L_{6-3}, L_7 and L_8 are snug. Be careful not to change the settings.

(6) *Checking Discriminator.*

(*a*) Set the VTVI voltage selector switch in the 4.5V. position, short the test probes and adjust the calibrate knob for a hairline shadow on the indicator eye.

(*b*) Insert the test probe in Pin No. 7 of metering socket. There should be no change in the shadow angle of the indicator tube from

the original hairline setting. If there is, a very slight readjustment of L_{5-1} or L_{5-2} should bring the indicator eye back to the hairline, with a slight flutter (due to r-f noise).

CAUTION: ALL FOLLOWING ADJUSTMENTS SHOULD BE MADE QUICKLY TO PREVENT DAMAGE TO OUTPUT TUBES.

(7) *Aligning Master Oscillator.*

(*a*) Use the INDICATOR ADJUSTMENT to center the dial line in the CHANNEL window.

(*b*) Turn TUNING knob until the calibrate line between channels 36 and 37 on the dial is under the indicator line. Press the switch on Handset TS-15-(*) and, with the receiver to your ear, *quickly* adjust trimmer C_{6G} for zero beat. Check calibration at channel 15.

(*c*) Bring dial of radio set to channel 20.

(8) *Aligning Doubler.*

(*a*) With the test probe free, set the voltage selector switch of VTVI in the 30V. position and, with adjustment of the calibrate knob, open the indicator eye to approximately 90°.

(*b*) Insert the test probe into Pin No. 5 of the metering socket.

(*c*) Press the switch on Handset TS-15-(*), and quickly adjust C_{6E} for minimum shadow on the indicator eye.

(*9*) *Aligning Transmitter Mixer.*

Press the switch on Handset TS-15-(*), and adjust C_{6C} for minimum shadow on the indicator eye.

(10) *Aligning Transmitter R-F Power Amplifier.*

Insert the test probe in Pin No. 6 of the metering socket and, with the switch of TS-15-(*) pressed, quickly adjust C_{6A} for a minimum shadow on the indicator eye (approximately -25 volts).

(11) *Aligning Receiver R-F Amplifier.*

Insert test probe into Pin No. 3 of the metering socket, and adjust C_{6K} for minimum shadow on the indicator eye. (Handset TS-15-(*) switch is not pressed for this step, and no signal is being received.)

(12) *Final Check of Discriminator.*

(*a*) Set the VTVI voltage selector switch in the 4.5V. position, short the test probe and alligator clip, and adjust the calibrate knob for a hairline shadow on the indicator eye.

(*b*) Insert the test probe into Pin No. 7 of metering socket. There should be no change in the shadow angle of the indicator eye from the original hairline setting. If there is, then a very slight re-adjustment of L_{5-1} or L_{5-2} should bring the indicator eye back to the hairline, with slight flutter (due to r-f noise).

Paragraph

28. Tabular List of Replaceable Parts for Radio Set SCR-300-A. **(see page 10 of this Supplement.)**

New Paragraph

"30. Changes During Manufacture.

"*a.* Effective with Radio Set SCR-300-A bearing serial No. 2601, and all sets *thereafter* on order No. 15025-Phila-43, and *all* sets on order No. 32870-Phila-43, capacitor C_{98} is added connected from the screen grid of the second mixer and crystal oscillator tube, V_{10}, to ground (see figure 34-A). Capacitor C_{98} is described in this Supplement in addition to paragraph **28, Tabular List of Replaceable Parts for Radio Set SCR-300-A.**

"*b.* Effective with Radio Set SCR-300-A bearing serial No. 4402, and all sets *thereafter* on order No. 15025-Phila-43, and *all* sets on order No. 32870-Phila-43, capacitor C_{22} is replaced by capacitor C_{99} (see figure 34-A). Capacitor C_{99} is described in this Supplement in the addition to paragraph **28, Tabular List of Replaceable Parts for Radio Set SCR-300-A.**

"*c.* Supplement 1, 30 July 1943, to this technical manual describes changes in the filament string for Tube V_3, V_{11} and V_{12}, as shown in figure 34-A."

28. TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A

Quantity ME-67	Quantity GK-178	Quantity In Set	Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfg. No. **	Galvin Part and Drawing No.
Add the following:									
		1	C98#		Capacitor	Same as C_4	2nd Mixer Xtal Oscillator V_{10}, screen grid by-pass.		
3	12	1	C99†		Capacitor	Fixed, ceramic; 11 $\mu\mu$f, $\pm$.5$\mu\mu$f, 500 w-v d-c. Negative temperature coefficient —.00075 $\mu\mu$f/$\mu\mu$f/°C. .375″ long x .171″ diameter. X-11 printed on body.	Trans. osc., transformer T_2 secondary shunt and compensator.	8	21A60709
						or:			
						Fixed, ceramic, 11 $\mu\mu$f $\pm$.5 $\mu\mu$f, 500 w-v d-c. Negative temperature coefficient —.00075 $\mu\mu$f/$\mu\mu$f/°C. Color coded: violet, brown, black, green. .460″ long x .225″ diameter.		6	21A60847

#C_{98} added on sets with serial Nos. 2601 through 14707 on order No. 15025-PHILA-43 and on all sets on order No. 32870-PHILA-43.
†C_{99} replaced C_{22} on sets with serial Nos. 4402 through 14707 on order No. 15025-PHILA-43 and on all sets on order No.32870-PHILA-43.

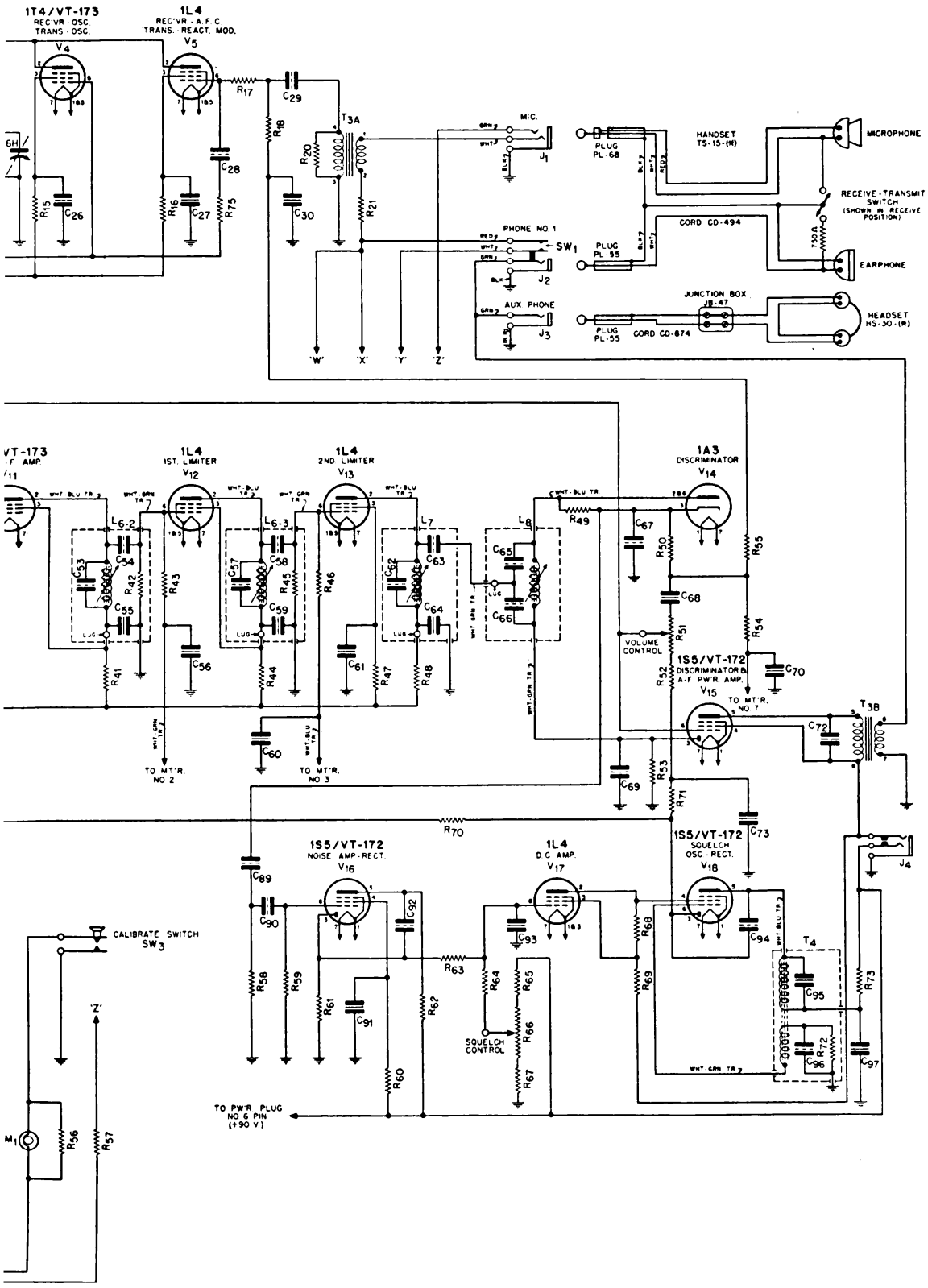


Fig. 34A. Radio Receiver and Transmitter BC-1000-A, Schematic Diagram. (See Par. 30).

SUPPLEMENT 3
11 December 1943
TM 11-242

SUPPLEMENT

to

TECHNICAL MANUAL

Radio Set SCR-300-A

April 3, May 15, and June 15, 1943

The following supplementary information is published by Galvin Mfg. Corp. on Order Nos. 15025-Phila.-43 and 32870-Phila.-43, covering Radio Set SCR-300-A. The paragraphs and figure numbers conform with the sequence established in TM 11-242, April 3, May 15, and June 15, 1943.

Personnel using this equipment will enter suitable notations beside each changed paragraph of the TM to indicate the presence of supplementary information contained in this supplement.

Figure
34A. Schematic Diagram, page 11 of Supplement 2.

Capacitor C_{98} (15$\mu\mu$f.) from V_{10}, screen grid to ground is removed. Resistor R_{36} (22,000 ohms) (Galvin part no. 6B6212) is replaced by Resistor R_{77} (Galvin part no. 6B6255, 10,000 ohms, same as R_9). Resistor R_{38} (39,000 ohms) (Galvin part no. 6B6355) is replaced by Resistor R_{78}, (Galvin part no. 6B6212, 22,000 ohms, same as R_{14}).

Paragraph
28. Tabular List of Replaceable Parts.
(Make note of the changes above)

The above changes are effective on some sets after Serial No. 8824 (approx) on Order No. 15025-Phila-43 and entire Order No. 32870-Phila-43.

RESTRICTED

TECHNICAL MANUAL
No. 11-242

WAR DEPARTMENT
Washington, June 15, 1943

RADIO SET SCR-300-A

This Technical Manual supersedes TM 11-242 dated April 3, and May 15, 1943.

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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.
BY:

1. Explosives, when provided.
2. Hammers, axes, sledges, or whatever heavy objects are readily available.
3. Burning with gasoline, oil, paper, or wood.
4. Grenades and shots from available arms.

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, connecting means and meters.
4. Rip out all wiring in electrical equipment. Smash gas and oil lines 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.

DISPOSAL:

1. Where possible, and when time permits, bury all debris or dispose of it in streams or other bodies of water.

SAFETY NOTICE

THERE IS NO DANGER OF AN ELECTRICAL SHOCK AT ANY POINT IN THIS SET WHEN IT IS IN OPERATION.

WHEN THE CHASSIS IS OUT OF THE CASE AND CONNECTED TO THE BATTERY, BE CAREFUL, AS HIGH VOLTAGES OF 90 AND 150 VOLTS ARE PRESENT AT MANY POINTS ON THE BOTTOM OF THE CHASSIS.

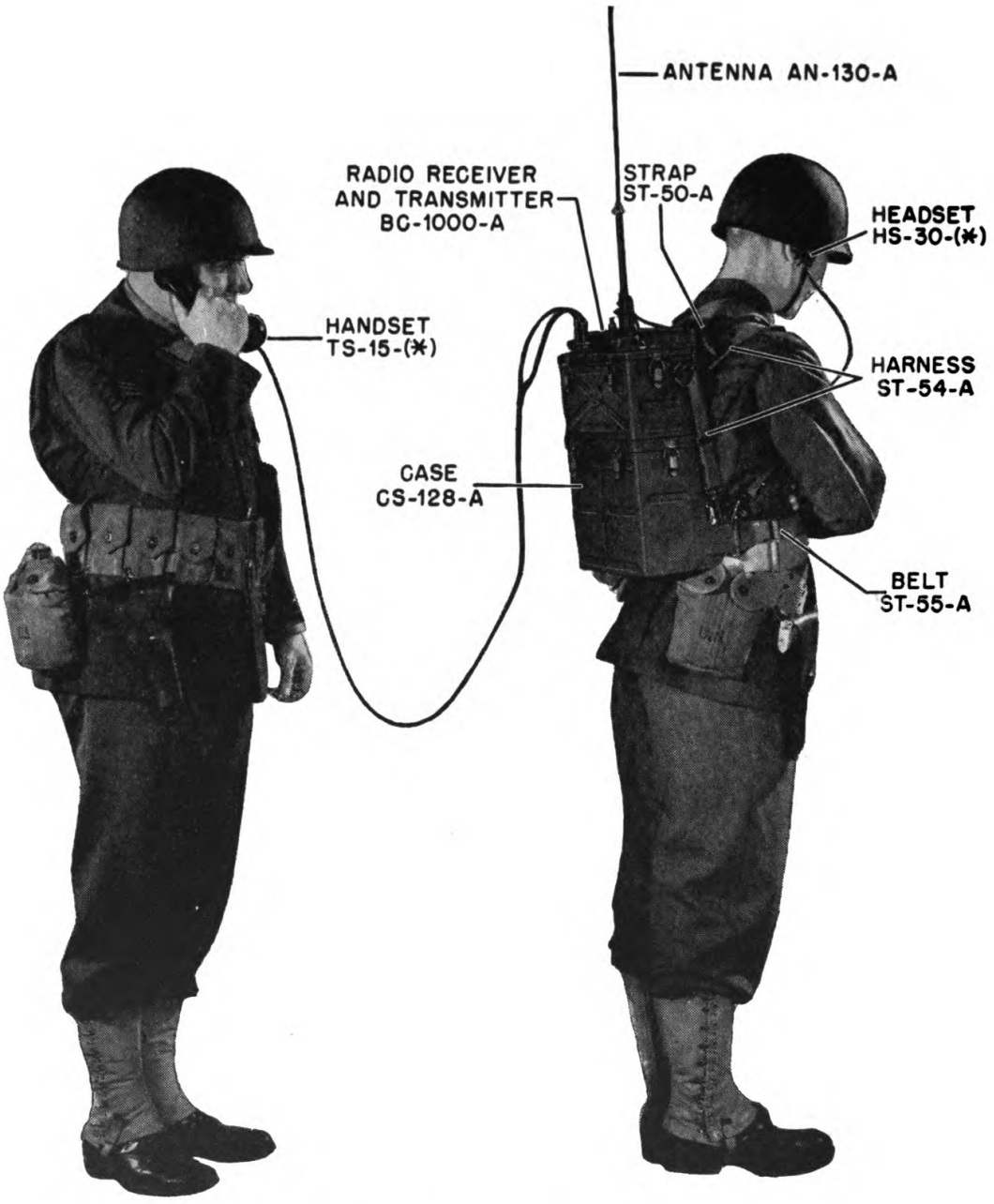


Figure 1. Radio Set SCR-300-A, In Use, Viewed From Right Side.

SECTION I—DESCRIPTION

1. General.

Radio Set SCR-300-A is a low power, portable, frequency modulated radio receiver and transmitter powered by dry batteries. The set is designed for two-way voice communication over short ranges and is designed primarily for use by combat troops on foot.

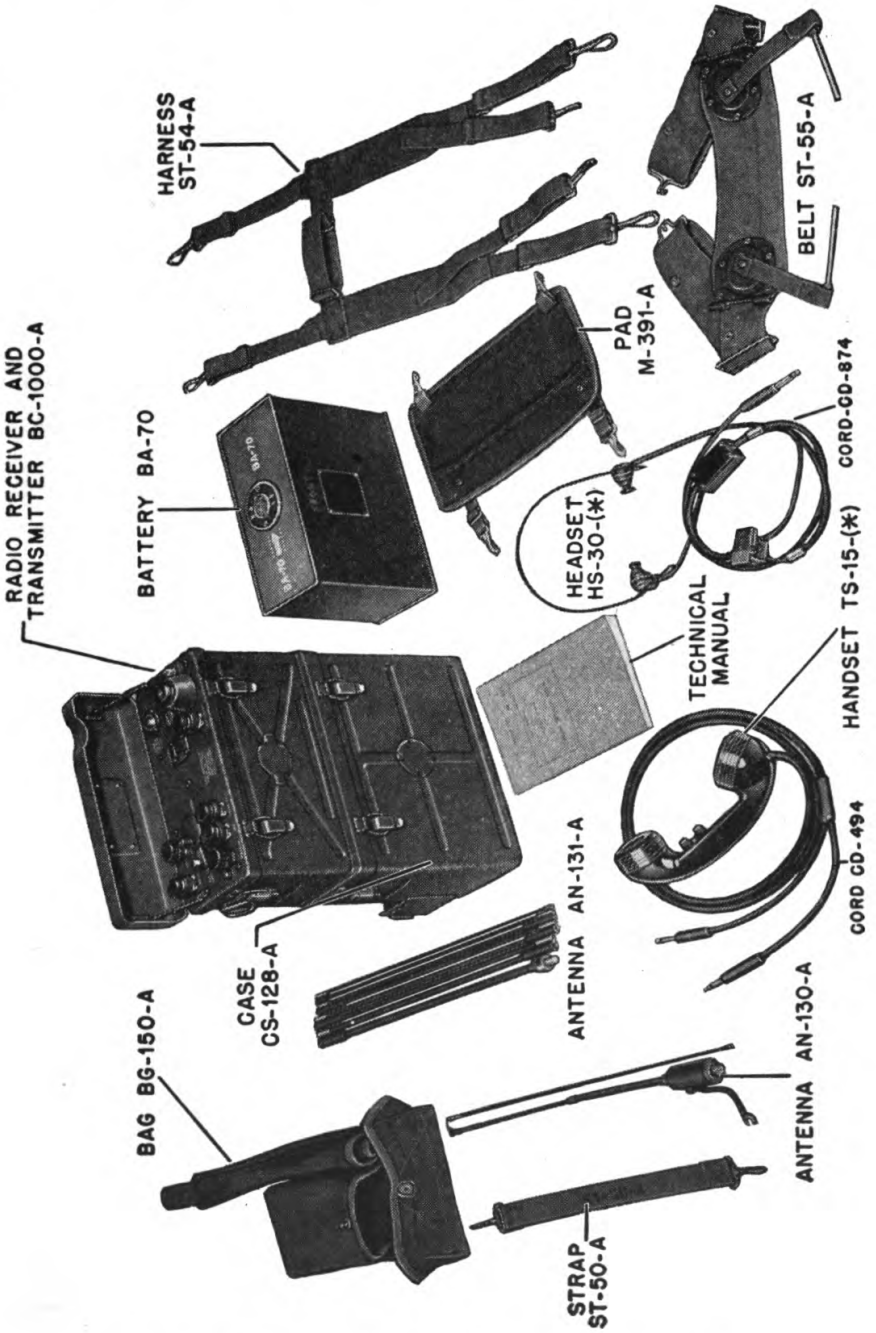


Figure 2. Radio Set SCR-300-A, Components.

2. Radio Set SCR-300-A, Components with Weights and Dimensions.

(See Figure 2 for illustrations.)

Quantity	Signal Corps Stock No.	Name of Component	Dimensions (Inches)					Unit Weight (In Lbs.)
			Height	Width	Depth	Length	Diameter	
1	2A275-130A	Antenna AN-130-A (2 section)	.....	.....	.....	33 (assembled) 17 (collapsed)	1 (max.)	.39
1	2A275-131A	Antenna AN-131-A (8 section)	.....	.....	.....	128 (assembled) 17 (collapsed)	21/32 (max.)	.93
1	2A550A	Bag BG-150-A (For 1 handset TS-15-(*), 1 Headset HS-30-(*), 1 Antenna AN-130-A, and 1 Antenna AN-131-A.)	.....	7¼	2⅞	17½	.....	.66 (empty)
1		Battery BA-70	7 23/32	10 5/16	4½	.....	.....	15.00
1		Belt ST-55-A	.....	3	.....	43 (extended)	.....	.75
1	26B615A	Handset TS-15-(*) (With Cord CD-494)	.....	.....	.....	.....	.....	1.80
1		Harness ST-54-A	.....	14¼ (extended)	.....	38¼ (extended)	.....	.72
1		Headset HS-30-(*) (With Cord CD-874)	.....	.....	.....	.....	.....	.57

1		Pad M-391-A	6½	11	.....	.....	.....	.40
1		Radio Receiver and Transmitter BC-1000-A.—Including the following: 1 Crystal holder FT-243 with 4300 kilocycle crystal 1 Crystal holder FT-243 with 6815 kilocycle crystal 1 Lamp LM-52 (Dial Light) 1 Set of Tubes consisting of:	6⅝	11 15/16	7⅛	.....	.....	13.00
	2T171	1 RMA 1R5/VT-171						
	2T172	3 RMA 1S5/VT-172						
	2T173	6 RMA 1T4/VT-173						
	2V1A3	1 RMA 1A3						
	2Y1L4	5 RMA 1L4						
	2V3A4	2 RMA 3A4						
		1 Chassis Case						
1		Case CS-128-A (For Battery BA-70. Clips to chassis case.)	9⅜	11 15/16	7 11/16	.....	.....	3.66
1	2A9050A	Strap ST-50-A (For carrying Radio Set SCR-300-A)	.....	1	.....	17½	.....	.10
2		Technical Manual TM 11-242 (For Radio Set SCR-300-A)	8½	5½	.....	.....	.....	.25

(*) The asterisk within parenthesis denotes the applicable issue letter.

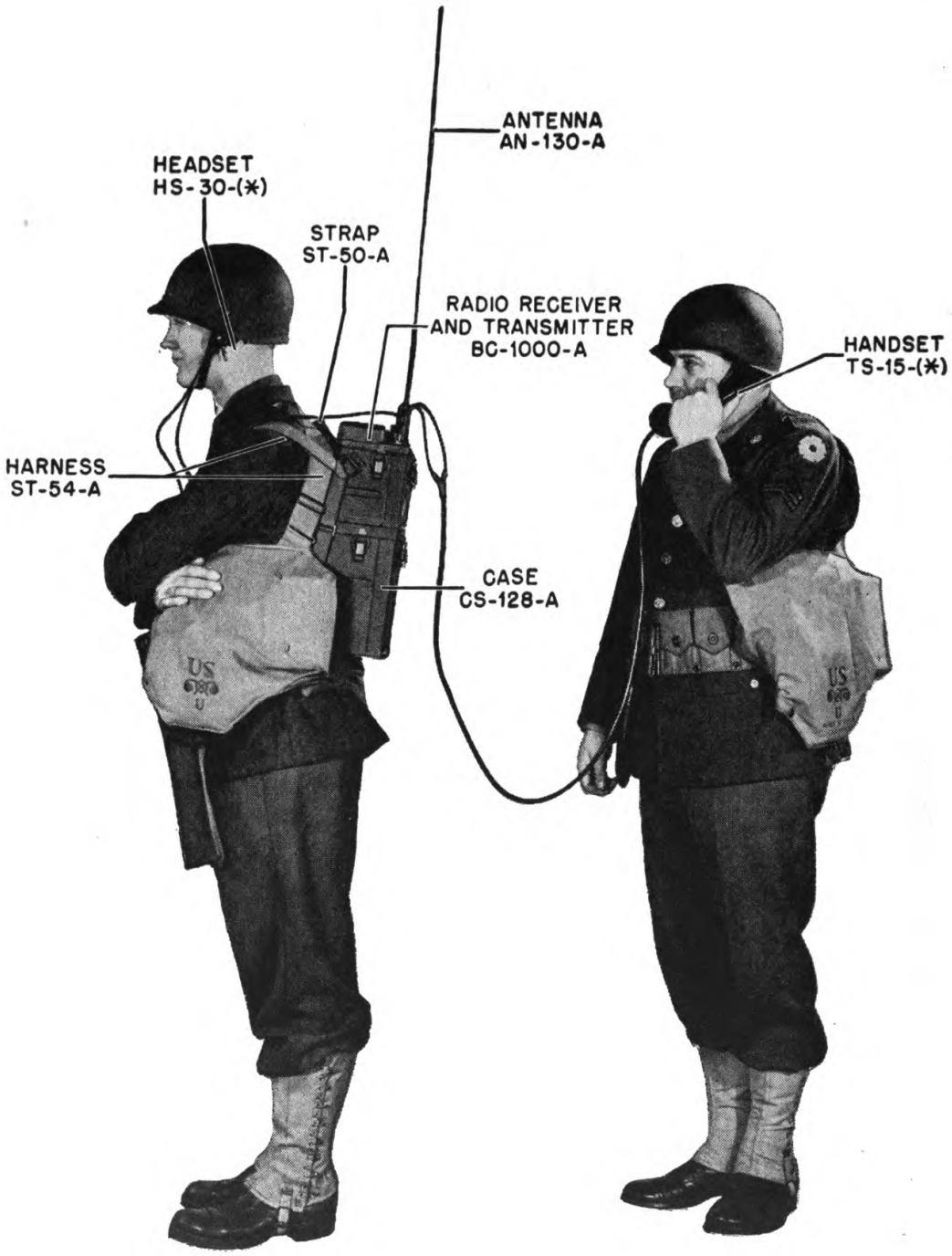


Figure 3. Radio Set SCR-300-A In Use, Viewed From Left Side.

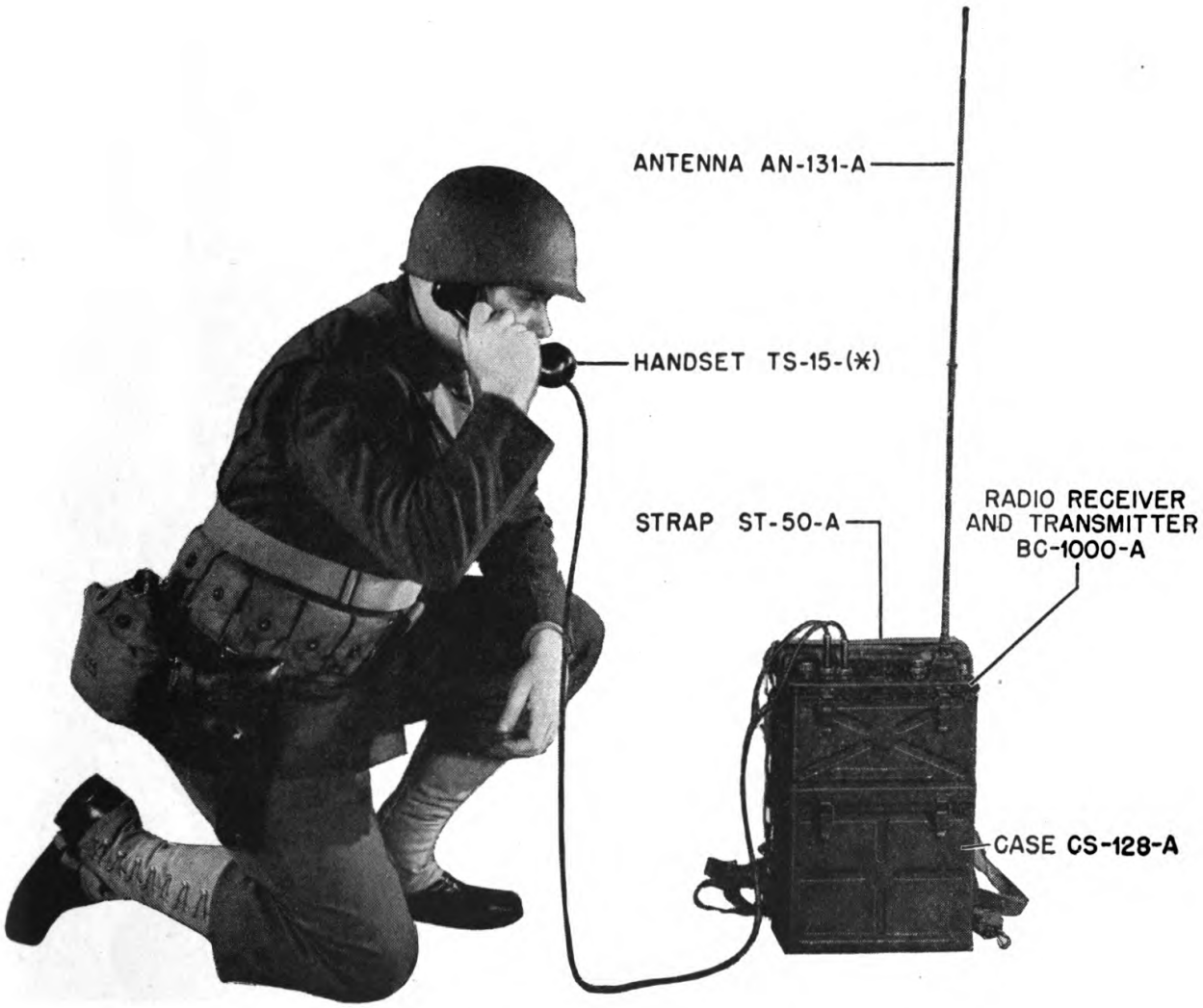


Figure 4. Radio Set SCR-300-A In Use, Showing Antenna AN-131-A.

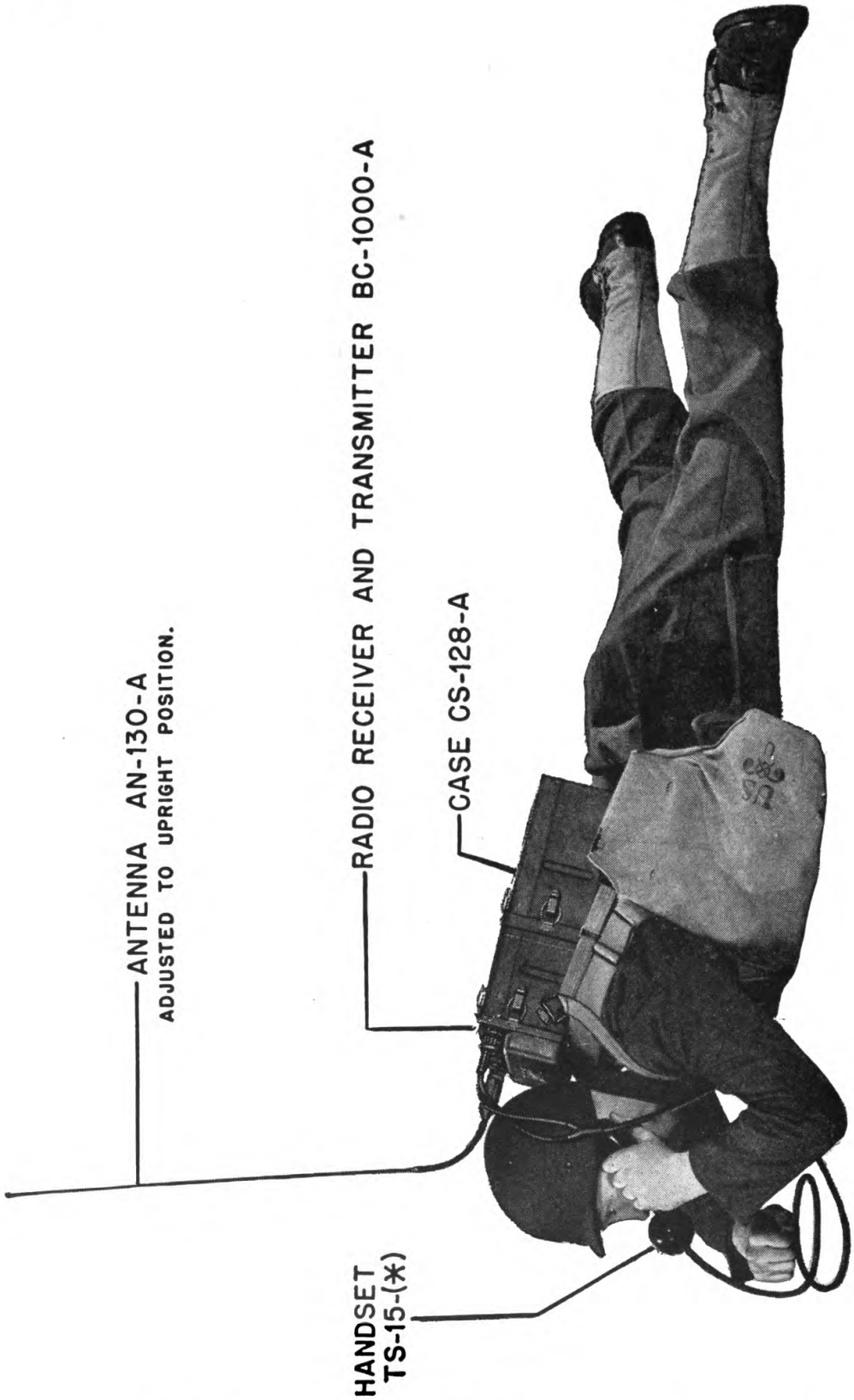


Figure 5. Radio Set SCR-300-A In Prone Use, Showing Adjustment of Antenna AN-130-A.

3. Range.

The normal operating range, using the *long* Antenna AN-131-A, is three miles or more, depending upon operating conditions. The range with the *short* Antenna AN-130-A will be slightly less.

4. Frequency Coverage.

The frequency range is continuously variable from 40.0-48.0 megacycles (40,000 to 48,000 kilocycles). The dial is calibrated in 40 channels separated by 200 kilocycles each, with "0" channel located at 40.0 megacycles, and with channel "40" at 48.0 megacycles. Each set is individually hand calibrated at the time of manufacture, thus assuring a high degree of accuracy.

5. Power Source.

Battery BA-70, consisting of three sections 4½ volts, 90 volts and 60 volts, furnishes power for filament and plate circuits of the receiver and transmitter.

6. Power Input.

Receiver:		
4.5 volts filament	at	.30 ampere
90 volts plate	at	25 milliamperes
150 volts plate		0
Transmitter:		
4.5 volts filament	at	.50 ampere
90 volts plate	at	25 milliamperes
150 volts plate	at	45 milliamperes
Total B (measured in — B)		70 milliamperes

7. Power Output.

Receiver	2 Milliwatts
Transmitter	.5 Watt

8. Weight.

Radio Set SCR-300-A complete weighs 38.23 pounds.

9. Description of Main Components.

(Refer to Figure 2 for illustrations.)

a. Antenna AN-130-A.

Antenna AN-130-A consists of two sections and is 33 inches in length when assembled. The two sections are held captive by means

of a kinkless, stainless steel cable, eliminating the possibility of losing a section and permitting rapid assembly of the antenna.

A flexible section near the base of antenna allows it to be bent at an angle so that the antenna can always be adjusted to a vertical position.

A bakelite shell at the base of the antenna houses a loading circuit for resonating the short antenna to Radio Receiver and Transmitter BC-1000-A. The flexible lead with spade lug attached to the bakelite shell must be connected to the binding post marked GROUND FOR SHORT ANTENNA (see Figure 6) of Radio Receiver and Transmitter Chassis BC-1000-A to complete the antenna resonating circuit. A threaded stud is provided at the base of the antenna to attach it to the antenna terminal of the set.

Antenna AN-130-A is carried in Bag BG-150-A, when not in use

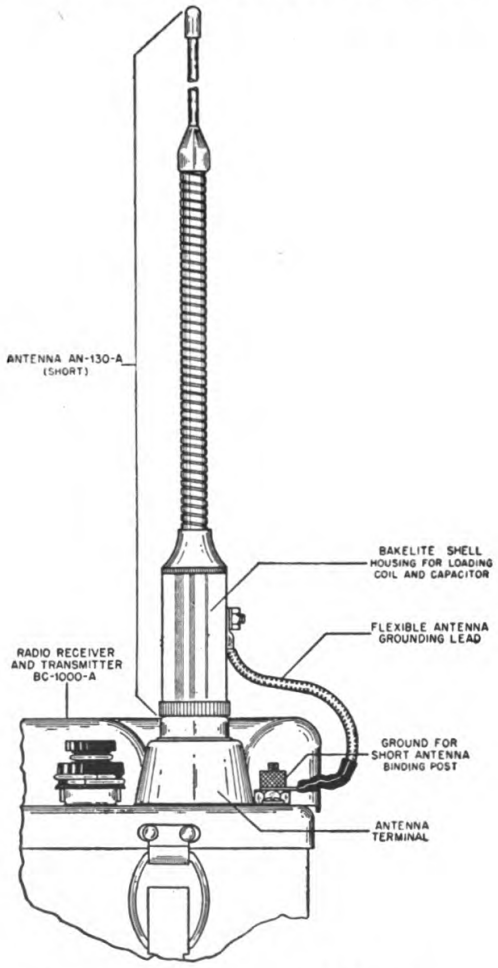


Figure 6. Antenna AN-130-A, Installation Detail.

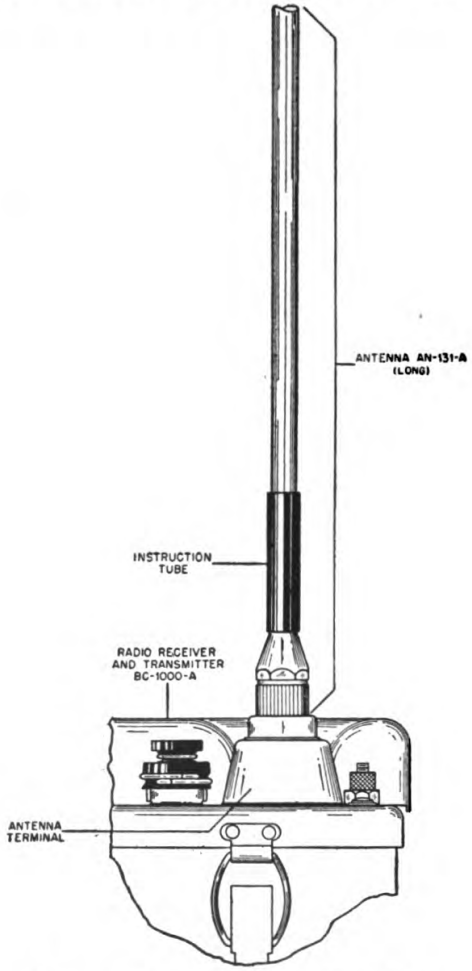


Figure 7. Antenna AN-131-A, Installation Detail.

b. Antenna AN-131-A.

Antenna AN-131-A is a lightweight tapered flexible antenna consisting of eight sections and is 10 feet 8 inches in length when assembled. The eight sections are held captive by means of a kinkless, stainless steel cable which runs the entire length of the antenna and is under spring tension. This cable eliminates the possibility of losing a section and permits rapid assembly of the antenna. A threaded stud is provided at the base of the antenna to attach it to the antenna terminal of the set. The GROUND FOR SHORT ANTENNA binding post is not used with Antenna AN-131-A, since no antenna matching circuit is required. (See Figure 7.) Antenna AN-131-A is designed for use in unobstructed areas only. Antenna AN-131-A is carried in Bag BG-150-A, when not in use.

c. Bag BG-150-A.

This is a canvas bag consisting of two compartments: one, for storing Antenna AN-130-A and Antenna AN-131-A. The other, for storing Handset TS-15-(*) and Headset HS-30-(*).

d. Battery BA-70.

Battery BA-70 consists of three dry battery sections as follows: 4½ volts (filament supply), 60 volts and 90 volts (plate supply). Battery connections are made by means of an 8-prong receptacle mounted on top of the battery.

The 90-volt and 60-volt sections are used in series in Radio Receiver and Transmitter BC-1000-A to provide 150 volts for the transmitter plate supply. The receiver operates on the 90-volt section.

e. Handset TS-15-(*).

Handset TS-15-A with Cord CD-494 terminates in Plug PL-55 (receiver unit) and Plug PL-68 (microphone). A send-receive switch is incorporated in the handle. The headphone unit of Handset TS-15-(*) has an impedance of approximately 250 ohms.

f. Headset HS-30-(*).

Headset HS-30-(*) is a light weight, close fitting headset. Special soft rubber pieces, fitted to the receivers of the headset are designed to fit lightly into the ear cavities and exclude outside noises. The headband is a thin band of steel that can be adjusted to fit the contour of the wearer's head. The clip, attached to the headset cord, can be attached to the operator's clothing to relieve pull and weight of the cord from the operator's ears.

For use with Radio Set SCR-300-A, Headset HS-30-(*) is supplied with Cord CD-874, which terminates in Plug PL-55. (See Figure 8.) The impedance of Headset HS-30-(*) with Cord CD-874 is approximately 250 ohms.

Figure 8. Headset HS-30-(*), In Use.

g. Strap ST-50-A.

Strap ST-50-A is a short webbed strap, with a snap-hook on each end, and is used as a handle to carry the set. The snap-hooks are attached to the "D" rings on the sides of the chassis case. (See Figure 9.)

h. Radio Receiver and Transmitter BC-1000-A, with Case CS-128-A.

The Radio Receiver and Transmitter BC-1000-A, consists of the radio chassis and the front panel of the set mounted in a metal chassis case. All the controls, jacks and terminals are mounted on the front panel; a hinged metal panel cover fits over some of the controls and jacks. (See Figure 9.)

Radio Receiver and Transmitter BC-1000-A is an 18 tube FM low power receiver and transmitter operating over a frequency range of 40 to 48 megacycles. The receiver employs a very high gain double

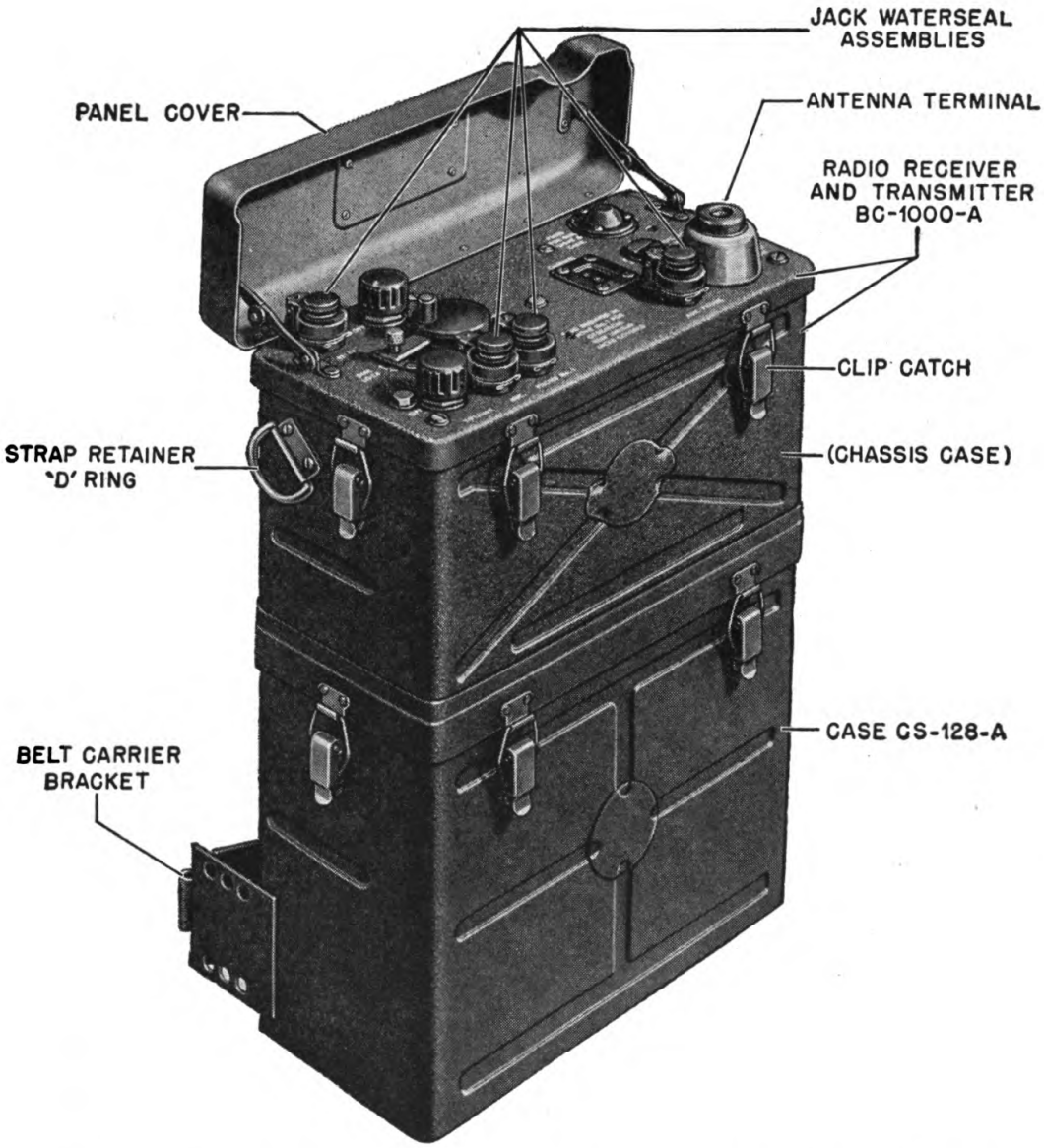


Figure 9. Radio Receiver and Transmitter BC-1000-A with Case CS-128-A, General View.

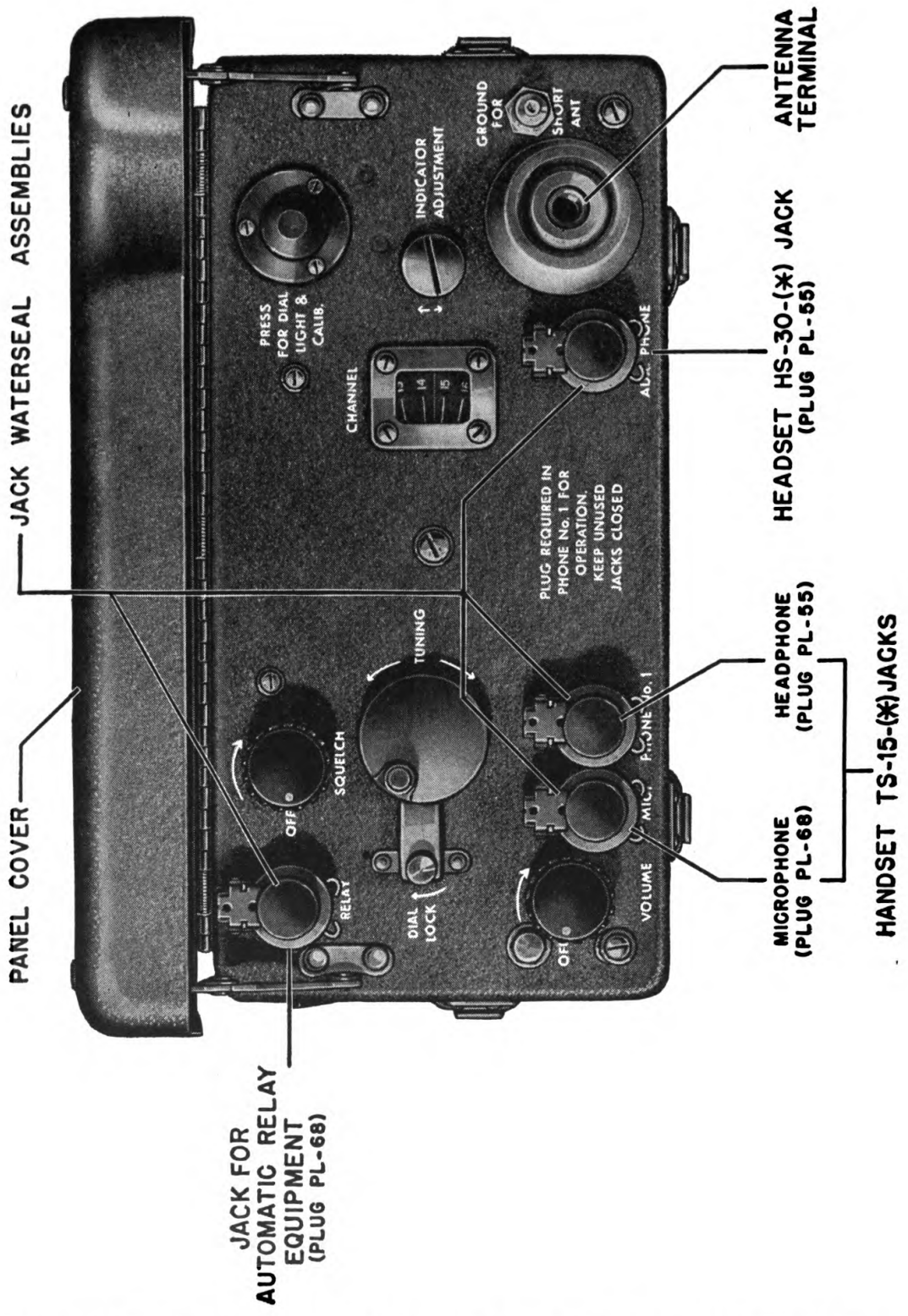


Figure 10 Radio Receiver and Transmitter BC-1000-A, Front Panel View.

superheterodyne circuit using 4.3 and 2.515 megacycles for intermediate frequencies. The master oscillator is common to both receiver and transmitter. Transmission is accomplished by merely operating the switch in Handset TS-15-(*), which turns on the transmitter tube filaments. A squelch circuit is provided to eliminate noise in the receiver when no signal is being received.

The case is divided into two individually waterproofed sections. The top section or the chassis case (part of Radio Receiver and Transmitter BC-1000-A) houses the radio chassis. A socket in the bottom of the chassis case provides for connection to Battery BA-70. A plug, located in one corner of the chassis, fits into the socket, when the chassis is assembled into the chassis case. Battery BA-70 is connected electrically to the chassis case by means of a flexible rubber covered cable and plug assembly, and is fastened to the chassis case by means of webbed straps. The bottom section or Case CS-128-A *covers and waterproofs but does not carry the weight* of Battery BA-70.

Radio Receiver and Transmitter BC-1000-A and Case CS-128-A are held together with clip catches. (See Figure 9.) The purpose of these catches is to hold the individual parts together, and waterproof the set by tightly compressing the waterseal gaskets between the radio set front panel and chassis case, and between the chassis case and Case CS-128-A.

The set is very carefully and completely waterproofed. Synthetic rubber gaskets are used to provide water seals at all points. Entrance of moisture into the set through the jacks is prevented by special jack waterseal assemblies. (See Figure 9.)

Harness ST-54-A, Belt ST-55-A and Pad M-391-A may be attached to the radio set and Case CS-128-A for carrying the set on a man's back, and Strap ST-50-A issued for lifting or carrying the set by hand. (See Figures 2 and 13.)

CONTROLS. (See Figure 10.)

(1) *Volume Control.*

The lower left hand knob controls the power switch and regulates the receiver volume. The volume control circuit is designed so that a signal will still be heard faintly with the volume control turned all the way down. Adjustment of the volume control has no effect on the transmitter. Turning the knob to the right, turns the power switch on; further movement increases the volume of the receiver. Turning the knob to the left, turns the power switch off.

NOTE: *Although the power switch is turned on, the set will not function until a headset or handset is plugged into the jack marked PHONE No. 1. The circuit is arranged in this manner so that leaving the set turned on will not discharge the battery as long as the headset or handset is not plugged in.*

(2) *Tuning.*

(*a*) The dial is calibrated in channels from 0 to 40 representing the range 40 to 48 megacycles. In order to obtain a high degree of accuracy, each set is individually hand calibrated at the time of manufacture.

(*b*) The set is tuned by turning the knob marked TUNING until the desired frequency (Channel) appears directly under the indicator line in the CHANNEL window.

(*c*) The TUNING knob is locked in position by the clamp marked DIAL LOCK.

(3) *MIC. JACK.*

Connection to the microphone of Handset TS-15-(*) (terminating in Plug PL-68) is provided by the MIC. jack.

(4) *PHONE No. 1 Jack.*

Connection to the receiver of Handset TS-15-(*) terminating in Plug PL-55) is provided by the PHONE No. 1 jack. This jack also contains a switch connected in series with the power switch on the volume control.

(5) *AUX. PHONE Jack.*

This jack provides connection for Headset HS-30-(*), and is connected in parallel with the jack marked PHONE No. 1.

(6) *RELAY Jack.*

This jack provides means for connection of the set to other equipment, for automatic reception and re-transmission of signals.

(7) *SQUELCH Control.*

This control regulates the action of the squelch that is built into this set. The purpose of the squelch is to prevent noise from being heard when no signal is being received. When the SQUELCH knob is at OFF (to the extreme left), the squelch tube filaments are turned off, and no squelch action takes place.

(8) *PRESS FOR DIAL LIGHT AND CALIBRATE Button.*

This button serves two purposes:

(*a*) To dimly illuminate the dial.

(*b*) To produce an audible tone when calibrating the set. Refer to Paragraph 12*b*.

(9) *Indicator Adjustment.*

The dial indicator line may be moved, as required, during calibration, by turning the slotted knob marked INDICATOR ADJUSTMENT. Refer to Paragraph 12*b*.

SECTION II—INSTALLATION AND OPERATION

10. Initial Procedure.

Unpack the equipment carefully to prevent loss or damage of components. Check against the List of Components in Paragraph 2. (See Figure 2.)

11. Installation.

Radio Receiver and Transmitter BC-1000-A is shipped with tubes and crystals installed, and with Case CS-128-A attached. Installation of Battery BA-70, Pad M-391-A, Harness ST-54-A, Belt ST-55-A, Strap ST-50-A, Antenna AN-130-A or Antenna AN-131-A, connection of Handset TS-15-(*) and Headset HS-30-(*), is required for a complete installation.

a. Installation of Battery BA-70.

(1) Release Case CS-128-A by unfastening the six lower clip catches. The top section of housing (Radio Receiver and Transmitter BC-1000-A with chassis case) can now be lifted off.

(2) Stand top section of housing upside down on bench or ground.

(3) Support the battery on the case as shown in Figure 11, and plug the rubber covered power cable plug into the battery socket so that the arrow on the plug points to the arrow on the battery.

(4) Lift the battery (with power cable attached) and gently lay it upside down in the bottom of the inverted chassis case. The battery cable must lie between the battery and the set case in one

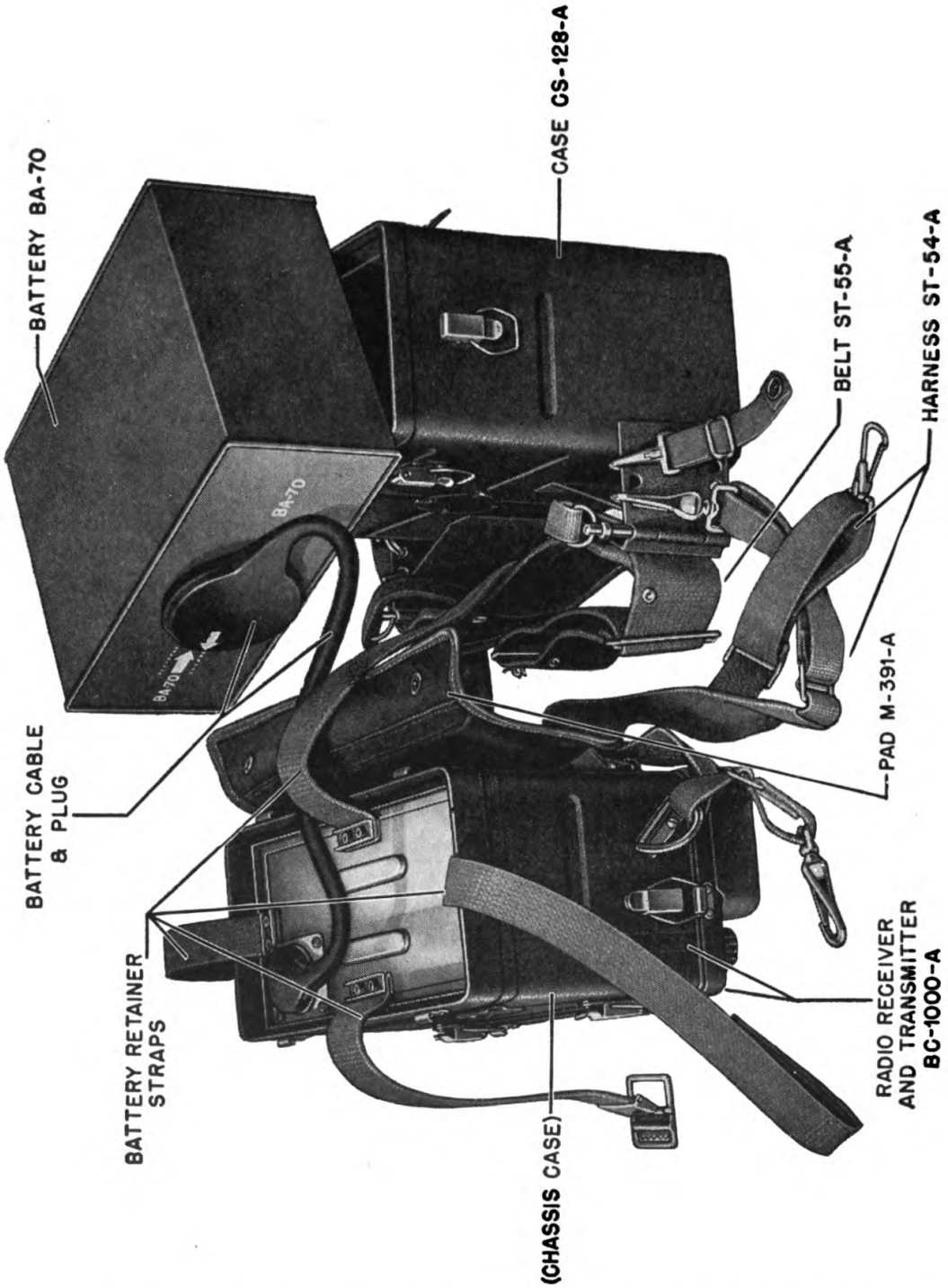


Figure 11. Disassembled View Showing Battery Cable Connected to Battery BA-70

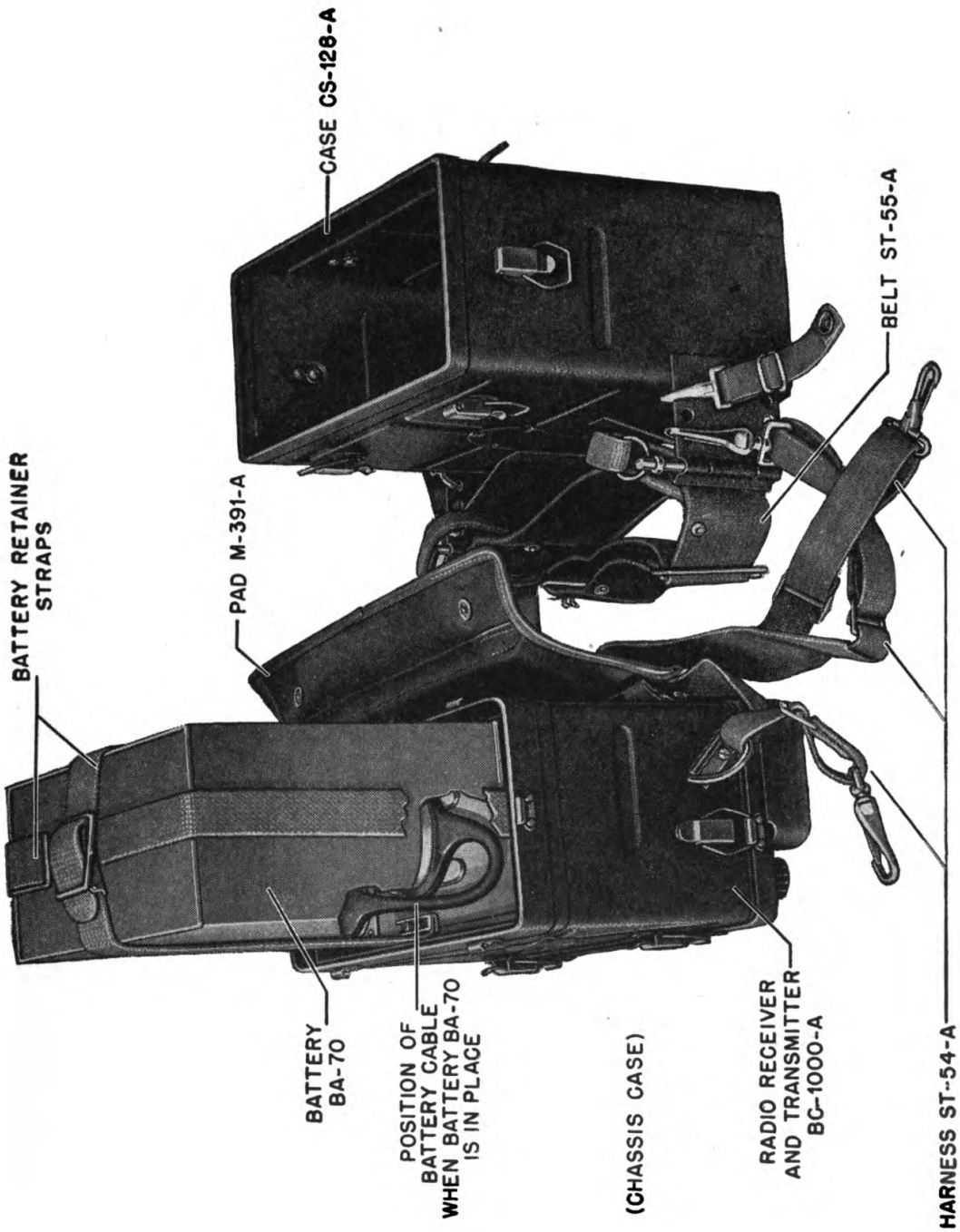


Figure 12. Disassembled View Showing Battery BA-70 In Place.

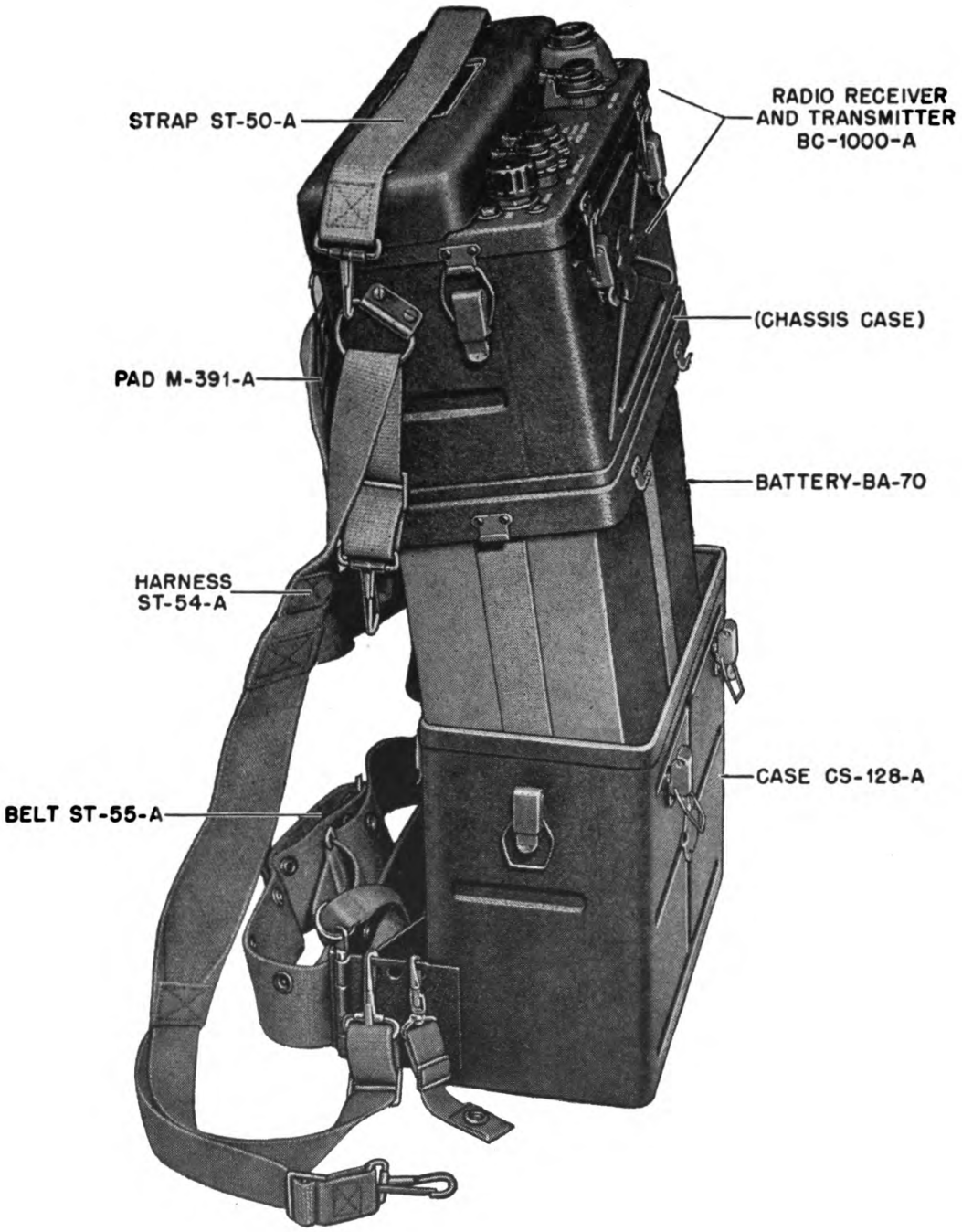


Figure 13. Radio Set Housing Assembly After Battery Installation.

large loop, as shown in Figure 12. The battery must be centered and aligned with set case. Avoid damage to the flange and gasket on the chassis case. *BE CAREFUL.*

(5) Securely fasten the battery to the chassis case with battery retainer straps, as shown in Figure 12.

(6) Lift the Radio Set with battery attached and lower the battery gently into the case. (See Figure 13).

(7) Fasten the battery case to chassis case with the six clip catches to complete installation of battery.

b. Assembly of Pad M-391-A, Belt ST-55-A, Harness ST-54-A and Strap ST-50-A to Set.

(1) *Pad M-391-A.* Clip Pad M-391-A to the set by means of the four attached snap hooks. The snap hooks, with the adjustable straps, are to be on the bottom and are to be clipped into the hook bracket holes that are nearest the case. Adjust pad bottom straps by means of the slide buckles so that pad lies flat against the back of set housing, as shown in Figure 14.

(2) *Belt ST-55-A.* Fasten Belt ST-55-A to the hook brackets by means of the two belt pins. The pins are permanently attached by means of short straps to the belt. The belt is to be attached so that the eyelet re-enforced holes are on top. (See Figure 14.)

(3) *Harness ST-54-A.* Slip the snap hooks (A) and straps (one each side) through the "D" rings (B) and clip to the center hole (C) of the belt carrier bracket. (See Figure 15.) Attach the other ends (D) of these same straps to the holes (E) of the belt carrier bracket farthest away from the set. Make sure that the straps are not twisted. The other two straps (F) with snap hooks are to be left free until the set is placed on operator's back. Slide buckles are provided on all the straps to provide length adjustments, as required, after set is placed on operator's back.

(4) *Strap ST-50-A.* Clip the strap by means of its two snap hooks to the two D rings (B). (See Figure 14.) When it is necessary to open panel cover, the strap is pushed out of the way toward the back of the set.

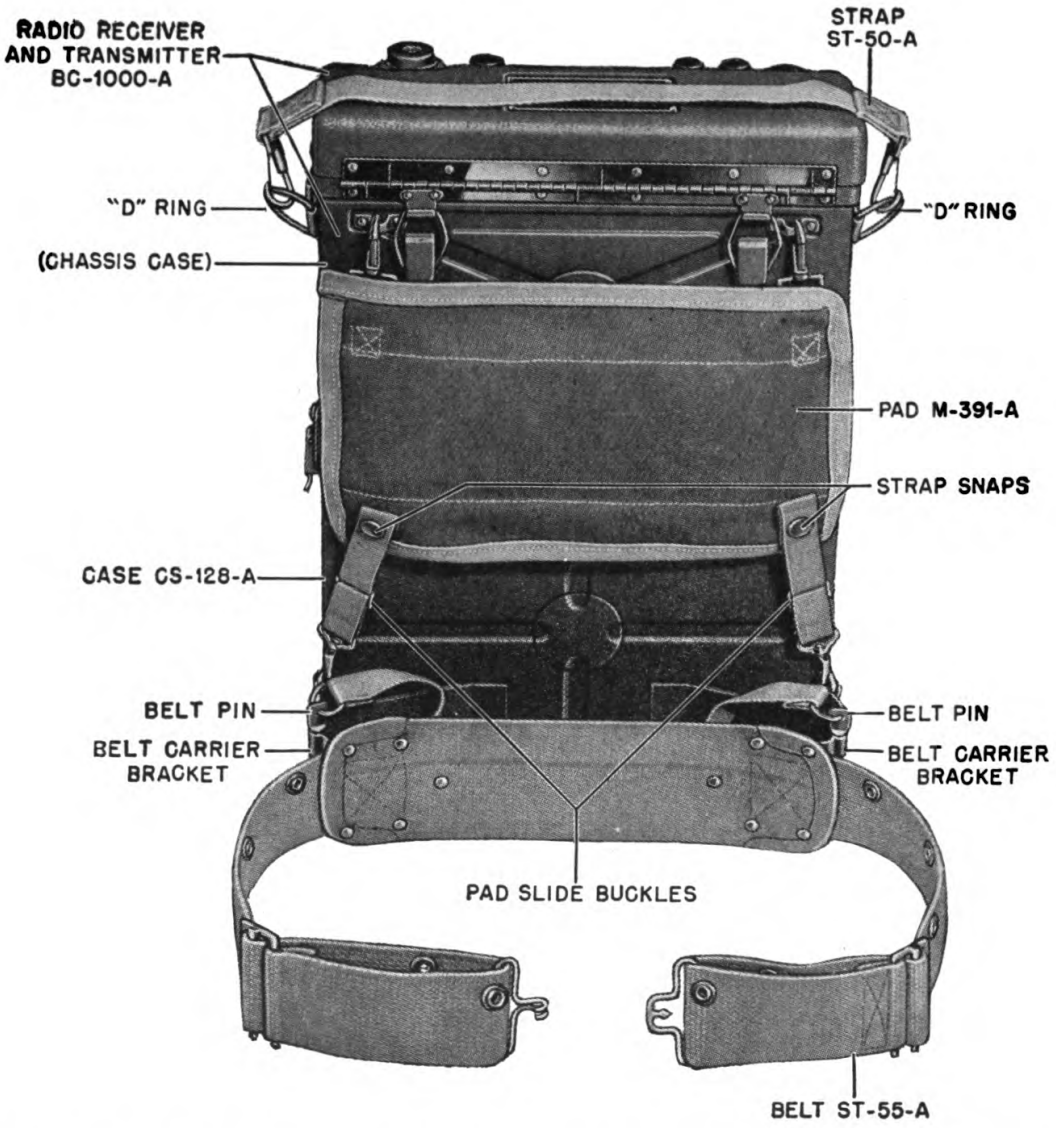


Figure 14. Radio Set Rear View Showing Assembly of Pad M-391-A, Belt ST-55-A and Strap ST-50-A.

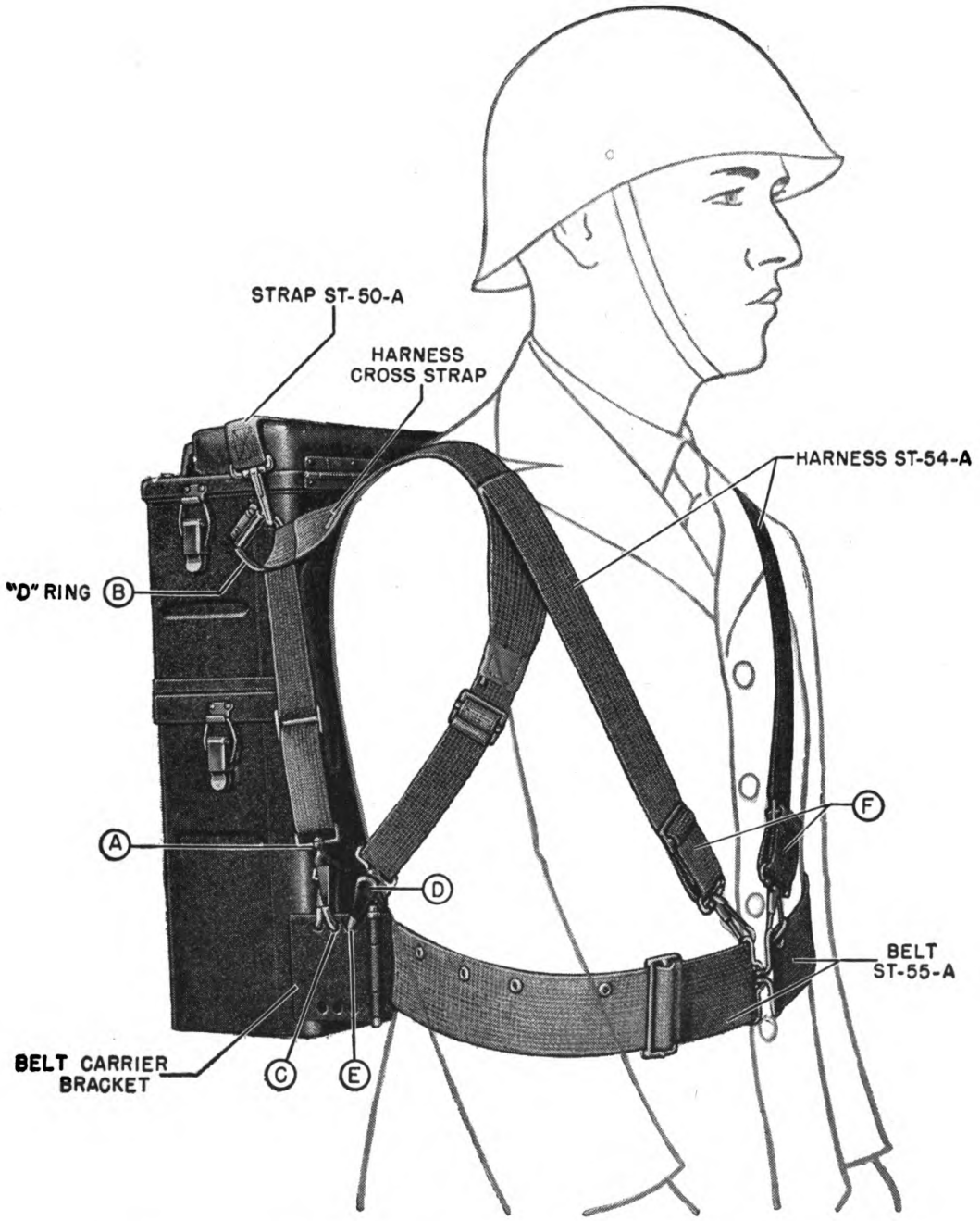


Figure 15. Harness ST-54-A and Belt ST-55-A, Installation Detail.

c. Antenna.

Two types of antennas are furnished with this equipment: Antenna AN-130-A, a short antenna for portable use in obstructed areas. Antenna AN-131-A, a long antenna for use in unobstructed areas. This is used mostly for fixed position work, although it may be used for portable operation in unobstructed areas where the antenna will not be damaged by overhanging branches or other obstacles.

Select the antenna for the use desired; assemble and install as follows:

(1) *Antenna AN-130-A.* Fit the upper section into the lower. Next, screw the assembled antenna into the antenna terminal of the set. (See Figure 6.) Approximately five turns are required to screw the antenna into the terminal; *Don't force it.* Connect the spade lug of the flexible antenna ground lead to the GROUND FOR SHORT ANTENNA terminal on the set front panel. *This ground connection is essential for proper operation.*

(2) *Antenna AN-131-A.* This is an 8-section antenna, the sections of which are folded back when not in use. Grasp the bottom or largest diameter section and toss the remaining sections out. Then gently whip the antenna a few times. This will allow the tension spring, that is located in the bottom section to pull all the sections together by means of the cable that runs throughout the length of the antenna. Screw the assembled antenna into the antenna terminal that is located near the lower right hand corner of the set front panel (See Figure 7.) Approximately five turns are required to screw the antenna into the terminal. *Don't use force.*

The antenna may also be assembled, if necessary, by unfolding the sections together manually one at a time, starting with the largest diameter sections and working toward the top. NOTE: *Antenna AN-131-A must always be disassembled by first pulling out and then folding up the sections, starting with the top section and working toward the base.*

d. Handset TS-15-(*) and Headset HS-30-(*).

(1) Install Handset TS-15-(*) by inserting Plug PL-68 into jack marked MIC. and Plug PL-55 into jack marked Phone No. 1.

CAUTION: DO NOT TURN TRANSMITTER ON BY PRESSING SWITCH IN HANDSET TS-15-(*) UNLESS AN ANTENNA IS INSTALLED IN THE SET.

(2) Install Headset HS-30-(*) by inserting Plug PL-55 into jack marked AUX. PHONE.

12. Preparation for Use.

a. Preliminary Preparations.

Having completed installation of the set as described in Paragraph 11, prepare the set for use as follows:

(1) Turn the SQUELCH control OFF (extreme left hand position of the knob).

(2) Turn the set on by rotating VOLUME control in a clockwise direction. A click will indicate that the set has been turned on. After a moment, a rushing sound will be heard, indicating that the receiver is operating.

(3) Allow set to warm up for at least ten minutes.

b. Calibration.

(1) Release the tuning knob marked TUNING by turning the knurled thumb screw marked DIAL LOCK about two turns to the left.

(2) Press the button marked PRESS FOR DIAL LIGHT AND CALIB. The dial will be dimly illuminated. While pressing button, turn TUNING knob until the calibration mark midway between channels 36 and 37 is visible through CHANNEL window. While *slowly* tuning through the calibration mark, a whistle will be heard. Further tuning will reduce the frequency of the whistle until a dead spot (zero beat) is noted. Continued tuning will cause whistle to reappear on the opposite side of the zero beat. Adjust the TUNING knob exactly to *zero beat*. With the dial in this position turn the INDICATOR ADJUSTMENT knob until dial indicator line is directly over the calibration mark. If the set is working properly, a zero beat will also be heard at the other calibration mark which is at channel 15. This completes calibration of set and channels may now be read directly on the dial.

c. Setting Up Channel.

Turn TUNING knob until desired channel is visible through the window marked CHANNEL. *The correct channel mark must be set exactly under the dial indicator line.* The frequency difference between dial calibrations is 0.2 megacycle (200 kilocycles). The range covered is 40.0 to 48.0 megacycles (40,000 to 48,000 kilocycles).

DIAL CALIBRATIONS VERSUS FREQUENCY

CHANNEL (Dial Marking)	FREQUENCY (In Megacycles)	CHANNEL (Dial Marking)	FREQUENCY (In Megacycles)
0	40.0	21	44.2
1	40.2	22	44.4
2	40.4	23	44.6
3	40.6	24	44.8
4	40.8	25	45.0
5	41.0	26	45.2
6	41.2	27	45.4
7	41.4	28	45.6
8	41.6	29	45.8
9	41.8	30	46.0
10	42.0	31	46.2
11	42.2	32	46.4
12	42.4	33	46.6
13	42.6	34	46.8
14	42.8	35	47.0
15-(Cal)	43.0	36	47.2
16	43.2	(Cal)	(47.3)
17	43.4	37	47.4
18	43.6	38	47.6
19	43.8	39	47.8
20	44.0	40	48.0

Lock the TUNING knob after selecting assigned channel by turning the knurled DIAL LOCK thumb screw to the right. Only very light pressure is necessary to securely lock the dial mechanism.

d. Checking Transmitter.

With one of the antennas properly installed in the set, turn on the transmitter by turning the switch in the handle of the handset. If the transmitter is operating, the rushing noise will cease.

e. Setting the Squelch.

If it is desired to use the squelch to eliminate noise when no signal is being received, set the squelch as follows:

(1) Turn the squelch control switch on by turning the knob marked SQUELCH to the right until a click is heard.

(2) Continue turning the knob until the noise is gone.

CAUTION: IF THE SQUELCH CONTROL IS TURNED TOO FAR BEYOND THE POINT WHERE NOISE IS ELIMINATED, THE WEAKER SIGNALS WILL NOT BE RECEIVED.

THE "SQUELCH" CONTROL AND HOW TO USE IT.

Your FM receiver in the 300 is a whole lot more sensitive than if AM were used, and ordinarily, if no signal were being received, your radio would pick up every random-noise on the air, and amplify it into a roar. However, on long periods of stand-by when you'll be listening or waiting for orders and instructions, this roar would be a strain; therefore your 300 has a "squelch" circuit built into it.

This knocks out or "squelches" this continuous noise. Then when the signal comes on, this circuit trips and lets the signal come through. The squelch control is just above the tuning control towards the back or top of the operating panel and you throw it on when you rotate the knob to the right. Essentially it's a Robot Telephone Operator which rings you only when a radio signal is on your channel, and gives you silence when there isn't.

But this "squelch" is something which should be adjusted with care and watched with an eagle eye for, carelessly and improperly used, it will reduce the sensitivity of your receiver and harmfully decrease its range.

The way to adjust this squelch is to carefully and slowly turn the control to the right (when no radio signals are on the air) until the noise just disappears. Not a hair more. Turn it further than that and you'll clip your range. Warning: you won't notice your range has been clipped when working a nearby set, but out-a-ways it'll make a whale of a difference and cause you to miss important calls.

Any time you make a call and get no answer, try again and this time be sure your squelch is "OFF"; any time a transmitter in your net is coming in with a weak signal—turn the Squelch OFF and leave it OFF.

Double-check this control. Play safe.

f. Portable Use of Set.

For portable use the set can be carried by Strap ST-50-A or mounted on a man's back as follows:

(1) Slip one arm through the shoulder strap and lift set on to back. Slip other arm through other shoulder strap. (This procedure is similar to putting on a coat.) (See Figures 1, 3 and 15.)

(2) Hook the two ends of Belt ST-55-A together by means of the buckle. It will be necessary at this point to adjust the strap lengths by means of the strap slide buckles, to assure correct fit. The cross strap just behind the shoulders should be adjusted so that the shoulder straps will not slip off the shoulders.

(3) Hook the straps that hang from the front of the shoulder straps to Belt ST-55-A or to the service belt. The snap hooks can be hooked, either to the eye-letted-holes or to the buckle. (See Figure 15.) Adjust the slide buckles so that set has no tendency to slip back away from the shoulders. In general, the set will carry most comfortably, if strap adjustments are made so that the top of the set is slightly above shoulder level and fits snugly against the shoulders. It will be necessary for each individual to experiment with strap adjustments to achieve the most comfortable carrying position.

(4) Attach Bag BG-150-A to the service belt.

g. Fixed Location Use of the Set.

If the set is not to be carried on a man's back, it may be set up as a fixed location station by mounting the set on a table, tree stump, rock or on the ground. For best all around performance mount the set as high and as clear of nearby obstructions as possible. Use the long Antenna AN-131-A and keep it vertical.

h. Use of Headset HS-30-(*).

Headset HS-30-(*) is used to monitor reception and transmission. It is usually worn by the man who carries the set when two men are using it for portable operation. (See Figure 1.)

Headset HS-30-(*) should be worn, as shown in Figure 8. The position of the phone units on the headband and the shape of the headband are adjustable. The tension of the headband should be adjusted to hold the soft rubber earpieces in the ear cavities. The clip provided on the cord should be fastened to the clothing to relieve the weight and pull of the cord from the operator's ears.

13. Operation.

Having prepared the equipment for use as outlined in Paragraph 12, it can now be put into operation. Actual operation is very simple, consisting of using the handset as you would an ordinary telephone, except that it is necessary to press the switch on the handset when you talk.

14. General Operating Instructions and Precautions.

In order that an operator may obtain the maximum performance of which the set is capable, certain general precautions and instructions must be observed and followed:

a. How to Listen and Receive Signals. (Use of squelch.)

(1) *Without Using Squelch.* (SQUELCH control turned *off*): When no signal is being received, a rushing noise will be heard in the headphones. *This noise is normal when squelch is not used, and indicates that the set is working properly.* When a signal is received, the noise will recede and the signals will be heard in the headphones. The stronger the signal, the more the noise will recede. With a moderate signal, the noise will completely disappear. The strength of the signal does not, however, affect the *loudness* of the received signal, but only

determines the reduction of the background noise. This is a characteristic of FM reception.

b. Using Squelch.

Use of the squelch eliminates the noise which is usually heard when no signal is being received. It has no effect whatever on the character of the received signal The squelch is essentially a switch which turns off the audio amplifier of the receiver when no signal is being received. If the received signal is weak, background noise will be heard just the same as if squelch were not used. A stronger signal will have less background noise, and with a moderate signal, the noise will not be present. When the received signal ceases, a short pulse of noise will be heard before the squelch takes hold.

The squelch is so sensitive that, if properly adjusted, it will *open* on a signal so weak as to be unreadable because of background noise. The SQUELCH control is properly adjusted when turned to the right just enough to eliminate the noise *when no signal is being received.* Turning the SQUELCH control too far will prevent weak stations from being heard.

c. How to Talk and Transmit.

CAUTION: DO NOT ATTEMPT TO TRANSMIT UNLESS ANTENNA AN-130-A,OR AN-131-A IS PROPERLY INSTALLED IN THE SET. See Paragraph 11 *c. Failure to heed this precaution will result in damage to the transmitter tubes.*

To transmit, press the switch on the handset and speak clearly and in a normal tone of voice into the microphone. Make sure that the handset PRESS-TO-TALK switch is pressed before starting to speak, and that it is released immediately upon completion of transmission. There is a natural tendency to hold the switch down after finishing transmission and to forget to press the switch before starting transmission. A little practice will eliminate this difficulty. It is good practice to pause for a moment after pressing the switch before speaking. *It is not necessary to shout.* Note: If squelch is not used in receiving, see Paragraph 14 *a,* the noise will disappear automatically when the transmitter is turned on.

d. Factors Influencing Range.

The useful range is the distance within which the signal is powerful enough to reduce the background noise sufficiently so that you can understand the communication.

(1) Transmissions at the frequencies used by your SCR-300-A act somewhat like light rays. Obstacles such as hills, tall buildings, trees, etc., between the points of transmission and reception tend to reduce the signal strength and thereby the effective range. It is therefore desirable to operate between points which are as high as possible in order to increase the effective line of sight range.

(2) It is further desirable to choose a location which is free of external man-made noise. Power equipment radiates noise which can make the reception of a signal difficult. Radiation from ignition systems of gasoline engines may also give trouble.

(3) The presence of nearby vertical objects such as trees, steel towers, poles, etc., may limit the effective operating range because of absorption of the signal. The distance between the set and these objects is critical in causing this effect, and moving the set only a few feet may increase the signal strength greatly.

(4) The range of the equipment is also dependent on the antenna used. In flat, level country the short Antenna AN-130-A will have slightly less range than the long Antenna AN-131-A. When operating in a depression or valley the long Antenna AN-131-A will have a much greater range advantage over the short antenna.

(5) A run down battery will seriously reduce operating range.

(6) The set is designed to minimize the effects of temperature and humidity changes. Extreme changes, however, may shift operating frequency sufficiently to decrease the range. It is well to check the calibration if there has been a marked change of temperature or humidity since the set was last calibrated.

e. General Operating Precautions.

(1) *Handle the set carefully.* Although built for rough usage, this set is essentially a precision instrument adjusted to a high degree of accuracy and should not be subjected to unnecessary abuse.

(2) Do not transmit unless an antenna is properly installed in the set! See Paragraph 11 *c*.

(3) Keep the antenna as near vertical as possible.

***Keep your antenna* VERTICAL**
or you won't get results!

(4) Turn the squelch control *off* if use of squelch is not desired. This will prolong the life of the battery.

(5) Adjust squelch control properly if squelch is used. See Paragraph 12 *e*.

(6) Keep jacks covered when not in use.

(7) Don't shout when transmitting. Talk directly into mouthpiece.

(8) Do not press the PRESS FOR DIAL LIGHT AND CALIB. button when transmitting.

f. Battery BA-70 Life.

(1) Under normal conditions, a fresh Battery BA-70 will give about 20 to 25 hours of service. Considerably shorter battery life should be expected if set is operated in extremely hot, cold or humid climates.

(2) Check Battery BA-70 periodically with a voltmeter. Replace if the following end point voltages have been reached:

New	*End Point*
4.5 volts (filament)	3.6 volts
90 volts (plate)	66 volts
60 volts (plate)	44 volts

(3) A weak Battery BA-70, will seriously limit the *transmitting range* of the set.

g. To Change Channels.

If it is necessary to change channels, follow the procedure outlined in Paragraph 12*c*.

h. Operation as Receiver Only.

If it is desired to use the set as a receiver with Headset HS-30-(*) only, plug the headset into PHONE No. 1 jack.

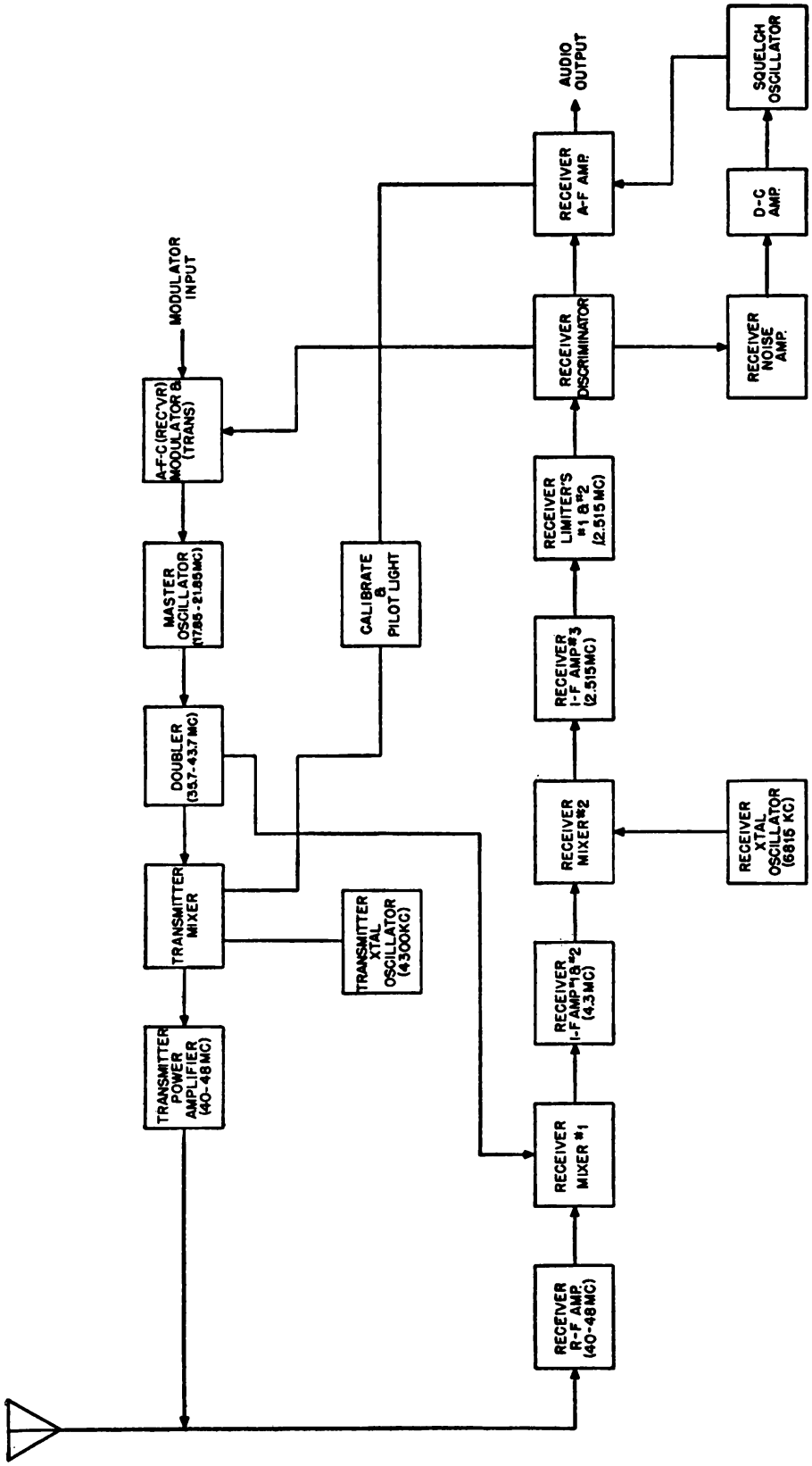


Figure 16. Radio Receiver and Transmitter BC-1000-A, Block Diagram.

REMEMBER THESE POINTS

1. The operation of your transmitter and receiver is basically simple. Practice it a few times and it will become second nature.

2. Speak up into your microphone in a clear voice close to it. Don't talk "across" your mike or away from it.

3. Keep your antenna vertical. It sends and receives better that way.

4. Listen for the weak calls. They may be for you.

5. Keep your transmissions short. The enemy may plot your location with a direction finder.

SECTION III—FUNCTIONING OF PARTS

15. Receiver.

The receiver employs a double superheterodyne circuit, designed for reception of frequency modulated signals in the band of 40 to 48 megacycles. Automatic frequency control (AFC) is incorporated to compensate for slight inaccuracies due to tuning or other factors. A sensitive squelch circuit is also provided to eliminate, if desired, the noise heard in the headphones when no signal is being received.

With the set in the receive position, the following sixteen tubes are used, stage by stage:

1. Receiver r-f amplifier stage using tube (V_6) IT4/VT-173.
2. Master oscillator stage using tube (V_4) IT4/VT-173.
3. Doubler stage using tube (V_3) IT4/VT-173.
4. Receiver 1st mixer stage using tube (V_7) 1L4.
5. 1st i-f amplifier stage (4.3 Mc) using tube (V_8) 1T4/VT-173.
6. 2nd i-f amplifier stage (4.3 Mc) using tube (V_9) 1T4/VT-173.
7. Receiver 2nd mixer and 6.815 Mc crystal oscillator stage using tube (V_{10}) 1R5/VT-171.
8. 3rd i-f amplifier stage (2.515 Mc) using tube (V_{11}) T4/VT-173.
9. 1st limiter stage (2.515 Mc) using tube (V_{12}) 1L4.

10. 2nd limiter stage (2.515 Mc) using tube (V_{13}) 1L4.
11. Discriminator stage using one tube (V_{14}) 1A3, and the diode section of tube (V_{15}) 1S5/VT-172.
12. AFC stage using tube (V_5) 1L4.
13. A-F power amplifier stage using tube (V_{15}) 1S5/VT-172.

Squelch circuit consists of:

14. Noise amplifier—rectifier stage using tube (V_{16}) 1S5/VT-172.
15. D-C amplifier stage using tube (V_{17}) 1L4.
16. Squelch oscillator-rectifier stage using tube (V_{18}) 1S5/VT-172.

The signal is picked up by antenna ANT_1 (40.0-48.0 megacycles), and coupled to antenna coil L_1 by capacitor C_1. Antenna coil L_1 is tuned by variable capacitor C_{6B} to the frequency of the incoming signal. The signal is then impressed on the control grid of the receiver r-f amplifier tube V_6 through capacitor C_2. In the r-f stage the signal is amplified, and coupled to the control grid of the 1st mixer tube V_7 through capacitor C_{35}. The output of the r-f amplifier tube V_6 is tuned by the receiver r-f plate coil L_4 and variable capacitor C_{6J}.

The master oscillator tube 1T4/VT-173 (V_4) is a tuned plate oscillator operating over a range of 17.85 to 21.85 megacycles. The frequency of the oscillator is determined by the tank circuit consisting of oscillator transformer T_2 and variable capacitor C_{6H}. The rectified grid voltage developed by the master oscillator tube (V_4) can be measured at pin No. 1 of the metering socket. The master oscillator output is coupled to the control grid of the doubler stage through capacitor C_{21}. In the doubler tube (V_3), the second harmonic of the master oscillator is selected by the plate circuit consisting of transformer T_1 and variable capacitor C_{6F}. The output of the doubler stage (35.7 to 43.7 megacycles) is loosely coupled into the cathode of the receiver 1st mixer tube (V_7) by the secondary winding of doubler plate transformer T_1. The frequency of this voltage applied to the mixer tube is always 4.3 megacycles below the frequency of the received signal and is the second harmonic of the master oscillator.

The receiver 1st mixer tube (V_7) combines the received signal with the second harmonic of the master oscillator and selects and amplifies the frequency difference between them (4.3 megacycles). The out-

put of the receiver 1st mixer tube (V_7) is tuned and coupled to the 1st i-f amplifier tube (V_8) by 1st mixer plate coil L_{5-1}.

The amplified output of the 1st i-f amplifier tube (V_8) is tuned and coupled to the 2nd i-f amplifier tube (V_9) by 1st i-f amplifier plate coil L_{5-2}.

The amplified output of the 2nd i-f amplifier tube (V_9) is tuned and coupled to the receiver 2nd mixer and crystal oscillator tube (V_{10}) by the 2nd i-f amplifier plate coil (L_{5-3}).

The receiver 2nd mixer and crystal oscillator tube (V_{10}) employs a 6.815 megacycle Pierce oscillator circuit. The 6.815 megacycle crystal ($XTAL_2$) is connected between oscillator grid and screen of tube (V_{10}.) It also combines this frequency (6.815 Mc) with the 4.3 megacycles output from the 2nd i-f amplifier tube (V_9). The difference between these two frequencies (2.515 megacycles) is the second intermediate frequency of the receiver. The output of the receiver 2nd mixer and crystal oscillator tube (V_{10}) 2.515 Mc is tuned and coupled to the 3rd i-f amplifier tube (V_{11}) by the 2nd mixer plate coil (L_{6-1}).

The amplified output of the 3rd i-f amplifier tube (V_{11}) is tuned and coupled to the 1st limiter tube (V_{12}) by the 3rd i-f amplifier plate coil (L_{6-2}).

The function of the limiter tubes (V_{12} and V_{13}) is to reduce the *amplitude* variations which are present in the output of the 3rd i-f amplifier stage. This limiting action takes place because the limiter tubes (V_{12} and V_{13}) are functioning as saturated amplifiers. Because of the amplification in the preceding stages, there is sufficient voltage applied to the grid of the 1st limiter tube (V_{12}) to cause it to draw current and rectify the applied voltage. The rectified grid voltage can be measured at pin No. 2 of the metering socket. This voltage measurement is used in alignment procedure. The output of the 1st limiter (V_{12}) is tuned and coupled to the 2nd limiter tube (V_{13}) by the 1st limiter plate coil (L_{6-3}). The rectified grid voltage of the 2nd limiter tube (V_{13}) can be measured at pin No. 3 of the metering socket. The output of the 2nd limiter tube (V_{13}) is substantially constant in *amplitude* but retains the frequency variations which are characteristic of a frequency modulated signal. The output of the 2nd limiter tube (V_{13}) is tuned and coupled to the discriminator network by the 2nd limiter plate coil (L_7).

The discriminator network consists of the discriminator coil (L_8), the discriminator tube (V_{14}), the diode section of the discriminator and a-f power amplifier tube (V_{15}) and their associated resistor and capacitor network. The discriminator network converts *frequency* variations into *voltage* variations. The output of the discriminator network depends on the frequency of the i-f signal. If the frequency of the i-f signal is exactly 2.515 megacycles (the nominal i-f of the receiver) the output voltages of the two diodes (V_{14} and V_{15}) cancel, and no voltage appears between the cathode of discriminator tube (V_{14}) and ground. Should the applied frequency differ from 2.515 megacycles because of inaccuracies in tuning, a d-c voltage will appear between the cathode of tube V_{14} and ground, being positive when the frequency (within the limits of the circuit) of the signal is higher, and negative when the frequency is lower. This voltage can be measured at pin No.7 of the metering socket. This voltage is passed through the low pass filter consisting of R_{50}, R_{55}, C_{30} and R_{18} and is used for automatic frequency control (AFC). When a frequency modulated signal is received, the voltage output of the diodes varies in accordance with the frequency variation, and an audio frequency signal is produced between the cathode of tube (V_{14}) and ground. The discriminator audio output is filtered by means of resistor R_{50} and coupled to the volume control (R_{51}) through capacitor C_{68}. The output of the discriminator is also coupled through the high pass filter consisting of C_{89}, R_{58}, C_{90} and R_{59} and is used for control of the squelch circuit.

The d-c voltage developed by the discriminator *due to inaccuracies in tuning* is passed through the filter (R_{50}, R_{55}, C_{30} and R_{18}) to remove audio components. It is then used to control the bias on the AFC tube (V_5). The AFC tube (V_5) is coupled directly to the master oscillator tube (V_4). A *negative* voltage applied to the grid of the AFC tube (V_5) *increases* the frequency of the master oscillator tube (V_4). This increase in frequency will automatically compensate for the mis-tuning which caused the negative voltage to appear at the discriminator, and will minimize the effect of mis-tuning. A *positive* voltage will *decrease* the frequency of the oscillator and will likewise automatically compensate for the mis-tuning which caused the positive voltage to appear at the discriminator. The AFC will minimize the effect of a tuning error up to about one quarter of a channel on the dial.

The audio voltage developed by the discriminator *due to the frequency modulation of the received signal* is coupled to the amplifier portion of the discriminator and a-f power amplifier tube V_{15} through R_{50}, C_{68}, and the volume control (R_{51}). The padding resistor (R_{52}), connected to the low end of the volume control (R_{51}), always keeps the receiver audio output audible regardless of volume control setting. The variable contact arm of the volume control (R_{51}) is connected directly to the control grid of a-f power amplifier tube V_{15}. Bias for the a-f power amplifier tube (V_{15}) is obtained by tapping a portion of the rectified grid voltage developed at the oscillator grid of the 2nd mixer and crystal oscillator tube (V_{10}). This voltage is obtained at the junction of grid resistors R_{36} and R_{37}, filtered at this point by capacitor C_{48}, and passed through series resistors R_{35} and R_{70}, filter resistor R_{71}, padding resistor R_{52}, and volume control R_{51} to the control grid of a-f power amplifier tube (V_{15}). The audio signal from the discriminator is amplified by the a-f power amplifier tube (V_{15}) and is coupled to the phone jacks (J_2 and J_3) through the output transformer (T_{3B}). The output transformer is designed to work with either one or two phone units of 250 ohms impedance each (Handset TS-15-(*) and one Headset HS-30-(*) with Cord CD-874). Switch SW_1, part of Jack J_2, is operated by the phone plug. The switch SW_1 is connected in series with the on-off (filament) switch SW_2 (on the volume control) to protect Battery BA-70 from being discharged should switch SW_2 be left *on* when set is not in use.

The output of the discriminator is coupled through the high pass filter consisting of C_{89}, R_{58}, C_{90} and R_{59} to the squelch circuit. A high pass filter is used so that the squelch circuit will be operated by *noise*, but not by *voice* frequencies. A characteristic of FM reception is the *reduction* of *noise* when a signal (however weak) is received. This characteristic is used to control the squelch circuits. When noise is present, the squelch circuit turns off the a-f amplifier tube (V_{15}) by imposing a high negative bias on the grid. When a signal is received, the noise is reduced and the squelch circuit turns on the a-f power amplifier tube (V_{15}) by restoring its grid to normal bias.

Noise voltages from the discriminator are filtered and applied to the grid of the noise amplifier-rectifier tube (V_{16}). The noise is amplified in the pentode section of V_{16} and coupled to the diode section of V_{16} by C_{92}. The amplified noise is rectified by the diode of V_{16} and the rectified (d-c) voltage appears across R_{61}. This negative

voltage is balanced by an adjustable positive voltage and applied to the grid of the d-c amplifier tube (V_{17}). The positive voltage is adjustable by means of the squelch control (R_{66}), and is obtained by bleeding 90 volts through R_{65}, R_{66} and R_{67} to ground. The negative rectified voltage is applied to the grid of the d-c amplifier (V_{17}) through R_{63} and the positive balancing voltage through R_{64}. Capacitor C_{93} filters these two voltages. When the voltage applied to the grid of V_{17} is negative, the plate current is very low. When this grid voltage is less negative, more plate current flows. The voltage at the plate then decreases because of the increased plate current flowing through R_{68} and R_{69}. The plate of R_{17} is connected directly to the screen of the squelch oscillator-rectifier tube (V_{18}) so that an *increase* of plate current in V_{17} *reduces* the screen voltage of V_{18} and a *decrease* in plate current in V_{17} *increases* the screen voltage of V_{18}. The variation of the screen voltage of V_{18} is used to start and stop oscillations in V_{18}. The oscillator-rectifier tube V_{18} and its associated transformer (T_4) oscillates at about 400 kilocycles. The output of V_{18} is coupled to the diode section of V_{18} by C_{94}. The diode section rectifies the output of the oscillator and the rectified voltage appears across R_{70}, R_{35} and R_{36} to ground. This rectified voltage is applied to the grid of the a-f power amplifier tube (V_{15}) through R_{71}, R_{52} and the volume control (R_{51}), biasing the a-f power amplifier (V_{15}) beyond cut-off so that it cannot amplify and the noise cannot be heard in the headphones. When the oscillator-rectifier tube (V_{18}) is not oscillating, no rectified voltage is present in the diode section of V_{18} and the grid of V_{15} is restored to normal bias and amplifies in a normal manner.

Here's how the Squelch works:

When no signal is being received:

Noise from the discriminator is amplified and rectified by V_{16}.

The rectified voltage from V_{16} causes low plate current in V_{17}, and high screen voltage on V_{18}.

V_{18} oscillates and places a high bias on V_{15} preventing noise from being heard in the headphones.

When a signal is received:

The noise is reduced.

The rectified voltage from V_{16} is lower.

The grid bias on V_{17} is less negative.

V_{17} plate current is higher.

The screen voltage of V_{18} is lower.

V_{18} stops oscillating.

No voltage is applied to V_{15}, and V_{15} amplifies normally.

Throughout the receiver, filament circuits, +B feeder circuits, grid circuits and meter circuits are suitably filtered and decoupled by r-f chokes, resistors and by-pass capacitors.

Provision is made for calibration of the set by means of a crystal oscillator which is part of the transmitter.

16. Transmitter.

The transmitter is frequency modulated and transmits over the frequency range of 40.0-48.0 megacycles. The transmitter automatically transmits on the same frequency that the receiver receives. When transmitting the receiver AFC tube (V_5), the receiver master oscillator (V_4) and the receiver doubler (V_3) are used as transmitter modulator, oscillator and doubler. In addition, a 4.3 megacycle crystal oscillator is mixed with the doubler output to obtain the desired frequency. The power amplifier is driven directly by the mixer and delivers approximately 0.5 watt to the antenna. Harmonics of the 4.3 megacycle crystal oscillator are used as reference frequencies for calibration purposes.

With the set in the transmit position the following five tubes are used, stage by stage.

1. Reactance modulator stage using tube (V_5) 1L4.
2. Master oscillator stage using tube (V_4) 1T4/VT-173.
3. Doubler stage using tube (V_3) 1T4/VT-173.
4. Transmitter crystal oscillator and mixer stage using tube (V_2) 3A4.
5. Transmitter r-f power amplifier stage using tube (V_1) 3A4.

Pressing the switch in Handset TS-15-A turns on the filaments of the transmitter r-f power amplifier tube (V_1) and the transmitter crystal oscillator and mixer tube (V_2) and energizes the microphone circuit.

The microphone is energized by the 4½ volt filament supply through resistor R_{21}. Speaking into the microphone produces an audio frequency voltage in the microphone circuit. This voltage is coupled to the grid of the reactance modulator tube (V_5) by the microphone transformer (T_{3A}). The grid circuit of the reactance modulator (V_5) is completed through R_{18}, R_{55}, R_{50}, R_{49}, coil L_8 and R_{53} to ground. The reactance modulator tube (V_5) is coupled directly to the master oscillator tube (V_4).

The frequency of the master oscillator (V_4) will vary in accordance with the audio voltage impressed on the grid of the reactance modulator (V_5). Frequency modulation of the oscillator is thus obtained. The normal frequency of the master oscillator (V_4) is controlled by the tank circuit consisting of master oscillator transformer T_2 and variable capacitor C_{6H}. The rectified grid voltage developed by the master oscillator tube (V_4) may be measured at pin No. 1 of the metering socket.

The output of the master oscillator (V_4) is coupled to the grid of the doubler stage through capacitor C_{21}. The second harmonic of the master oscillator is selected in the output of the doubler tube (V_3) by the plate circuit consisting of transformer T_1 and variable capacitor C_{6F}.

The output of the doubler is coupled to the grid of transmitter crystal oscillator and mixer tube (V_2) by capacitor C_{16} and crystal $XTAL_1$.

The control grid and screen grid of transmitter crystal oscillator and mixer tube (V_2) comprises a triode crystal oscillator. The screen grid is tuned by L_3 to the frequency of crystal $XTAL_1$ in the grid circuit. The rectified voltage in the grid circuit is measured at pin No. 4 of the metering socket. The oscillator generates a crystal controlled frequency of 4.3 megacycles (4300 kilocycles). The transmitter crystal oscillator and mixer tube (V_2) combines the output of doubler tube V_3 (35.7 to 43.7 megacycles) with the crystal controlled 4.3 megacycle signal. The output is tuned to the sum of these two

frequencies (40.0 to 48.0 megacycles) by the transmitter mixer plate coil L_2 and variable capacitor C_{6D}. By adding the 4.3 megacycle crystal controlled frequency to the doubler output frequency, the receiver and the transmitter frequencies are automatically made the same for any channel setting on the dial.

The output of the transmitter crystal oscillator and mixer tube (V_2) is coupled to the grid of the transmitter r-f power amplifier tube (V_1) by capacitor C_9. The transmitter r-f power amplifier tube (V_1) operates as a class C amplifier and the rectified grid voltage can be measured at pin No. 5 of the metering socket. The output of the transmitter r-f power amplifier tube (V_1) is tuned by the tank circuit consisting of coil L_1 and variable capacitor C_{6B} and is coupled to the antenna by capacitor C_1 from a tap on coil L_1. The coupling is adjusted to work properly with a half wave antenna. The output is also coupled to the receiver r-f amplifier tube (V_6) by capacitor C_2. The rectified voltage at the grid of V_6 can be measured at pin No. 6 of the metering socket when transmitting. During transmissions the receiver is operative and the presence of the 4.3 megacycle crystal controlled signal holds the discriminator at *zero voltage.*

Provision is made for calibrating the radio receiver and transmitter in the following manner: With the set operating as a receiver, pressing the PRESS FOR DIAL LIGHT AND CALIB. button turns on the pilot light and the filament of the transmitter crystal oscillator and mixer tube (V_2). The tenth and eleventh harmonics of the 4.3. megacycle crystal oscillator are used as reference points. Beat notes between these harmonics and the sum of the doubled master oscillator frequency plus 4.3 megacycles are heard at 43.0 megacycles and 47.3 megacycles (channel 15 and midway between channels 36 and 37) on the dial. These frequencies are present in the screen grid of the transmitter crystal oscillator and mixer tube (V_2) (which is the plate of the 4.3 megacycle crystal oscillator circuit). The audible beat note derived from these frequencies appears across resistor R_6 and is coupled to the grid of the discriminator and a-f power amplifier tube (V_{15}) by capacitor C_{15} so that it can be heard in the headphones.

Caution: Do not press the PRESS FOR DIAL LIGHT AND CALIB. button when the transmitter is turned on!

SECTION IV—MAINTENANCE

17. Operator's Trouble Chart.

When failure is encountered, check the items in the trouble chart before initiating a detailed examination.

TROUBLE CHART

Trouble	*Probable Causes*	*Remedy*
Receiver Dead	Power switch OFF.	Turn VOLUME control to the right. See Paragraph 12 *a* (2).
	No phone plug in PHONE No. 1 jack.	Plug phone into PHONE No 1 jack.
	Squelch control advanced too far.	Adjust squelch. See Paragraph 12 *e*.
	Open phone plug in RELAY jack.	With no automatic relay equipment connected to the set—no plug should be in RELAY jack.
	Set always in TRANSMIT position.	Replace handset, PRESS-TO-TALK switch defective.
	Off calibration.	Recalibrate. See Paragraph 12 *b*.
	Defective handset or headset.	Replace.
	Dead or low Battery BA-70.	Replace Battery BA-70. See Paragraphs 19 and 14 *f*.
	Antenna insulator shorted by water or dirt.	Wipe off insulator.
	Antenna touching metallic material or wet foliage.	Keep antenna clear.
	Defective or burned out tube.	Replace. See Paragraph 20.
	Defect in squelch circuit.	Turn squelch off.

TROUBLE CHART—(Continued)

Trouble	*Probable Causes*	*Remedy*
Weak Receiver	Receiver not tuned properly.	Reset dial. See Paragraph 12 *c*. Recalibration may also be necessary. See Paragraph 12 *b*.
	Off calibration.	Recalibrate. See Paragraph 12 *b*.
	Weak Battery BA-70.	Replace Battery BA-70. See Paragraphs 19 and 14 *f*.
	Antenna AN-130-A used without ground connection.	Check ground connection or replace. See Paragraph 9 *a*.
	Antenna insulation shorted by water or dirt.	Wipe off insulator.
	Defective antenna.	Replace antenna.
	Antenna touching metallic material or wet foliage.	Keep antenna clear.
	Out of range of transmitter.	Move closer to transmitter
	Defective Handset TS-15-A or Headset HS-30-(*).	Replace.
	Poor location.	Change locations. See Paragraph 14 *d*.
	Defective or burned out tube.	Replace tube. See Paragraph 20.
	Misalignment of receiver	Align receiver. See Paragraph 22.
Transmitter dead	Power switch OFF.	Turn VOLUME control to the right. See Paragraph 12 *a* (2).
	No phone plug in PHONE No. 1 jack.	Plug phone in PHONE No. 1 jack.
	Defective PRESS-TO-TALK switch to handset.	Replace handset.
	Defective handset.	Replace handset.

TROUBLE CHART—(Continued)

Trouble	*Probable Causes*	*Remedy*
Transmitter dead (Continued)	Antenna AN-130-A used without ground connection.	Check ground connection or replace. See Paragraph 9 *a*.
	Defective or broken antenna.	Replace.
	Off calibration.	Recalibrate. See Paragraph 12 *b*.
	Antenna insulator shorted by water or dirt.	Wipe off insulator.
	Antenna touching metallic material or wet foliage.	Keep antenna clear.
	Dead or low Battery BA-70.	Replace Battery BA-70. See Paragraphs 19 and 14 *f*.
	Defective or burned out tube.	Replace. See Paragraph 20.
	Misalignment of transmitter.	Realign transmitter. See Paragraph 22.
Transmitter weak.	Off calibration.	Recalibrate. See Paragraph 12 *b*.
	Antenna insulator shorted by water or dirt.	Wipe off insulator.
	Antenna touching metallic material or wet foliage.	Keep antenna clear.
	Low Battery BA-70.	Replace Battery BA-70. See Paragraphs 19 and 14 *f*.
	Weak Tube.	Replace tube.
	Defective or broken antenna.	Replace.
	Antenna AN-130-A used without ground connection.	Check ground connection or replace. See Paragraph 9 *a*

18. Battery Replacement.

a. Turn the set upside down and place on bench or ground.

b. Unsnap the two bottom back pad straps from Pad M-391-A.

c. Unhook Harness ST-54-A from the middle hole of the belt carrier bracket.

d. Release Case CS-128-A by un-snapping the six lower clip catches. Case CS-128-A can now be lifted off.

e. Remove the old battery by unbuckling the battery retainer straps and remove power cable plug from battery.

f. Support the new battery (Battery BA-70) on Case CS-128-A, as shown in Figure 11, and plug the rubber covered power cable plug into battery socket.

g. Lift Battery BA-70 with power cable attached, and gently lay upside down on the bottom of inverted chassis case. The battery cable must lie between the battery and the chassis case in one large loop, as shown in Figure 12. The battery must be centered and aligned with chassis case and care must be taken to avoid damage to the flange and gasket or the chassis case. Fasten securely with the two battery retainer straps, as shown in Figure 12.

h. Lift Radio Receiver and Transmitter BC-1000-A, with battery attached, and lower battery gently into Case CS-128-A, as shown in Figure 13.

i. Fasten Case CS-128-A to chassis case with the six clip catches.

j. Reassemble Pad M-391-A and Harness ST-54-A.

Battery replacement is now completed.

19. Servicing.

Be careful in maintaining and servicing this equipment. Operating personnel will make only such repairs or replacements as are indicated in Paragraphs 17, 18, 20, and 21. Servicing and repair is authorized only by competent personnel supplied with adequate tools and instruments. An inexperienced operator, in attempting to locate and repair troubles which a competent man could service in a few moments, may damage the equipment to such an extent as to require shipment to a depot for repair. This applies particularly to indiscriminate tube replacement and alignment.

20. Tube Replacement.

a. Remove Radio Receiver and Transmitter BC-1000-A from the chassis case by unfastening the six upper clip catches. The chassis can now be lifted out of the case.

b. To supply power to the set for test purposes while out of the case, plug the chassis directly into the battery receptacle, as shown in Figure 17.

c. Burned out tubes can be located by following instructions in Burned Out Tube Location Chart in this paragraph. *It is not necessary, nor is it* recommended that any but the defective tubes be replaced. If the defect cannot be located as a burned out or broken tube, as indicated by the tests in the chart, don't attempt further analysis unless complete test equipment is available. When replacing tubes, make sure that the proper type of tube is used. Check this by reading the type number of the tube removed from the socket, and also by comparing the new tube with the tube number stamped on the chassis. (Tube layout is shown in Figure 18).

To remove a tube shield, press down on shield, twist slightly to the left and lift it off. To replace a tube shield, place shield over tube, line up the slots, press the tube shield down and twist to the right to lock it in place. The tube shields must be replaced because they are used to hold the tubes in their sockets.

d. Burned Out Tube Location Chart.

The following chart has been prepared to assist the repairman to find burned out tubes in the set, without removing and checking of the tubes.

(1) First determine that Battery BA-70 is good. (See Paragraph 14 *f*).

(2) Plug in a good Handset TS-15-A and turn volume control power switch on. Connect Antenna A-28 (Phantom) to the antenna terminal. AN-130-A or AN-131-A may also be used in place of the phantom antenna.

(3) Turn squelch control *off* (to the extreme left).

(4) Where a voltage indication is to be obtained, use an electric-eye indicator or a vacuum tube voltmeter, connected between set chassis and metering socket pin terminals as indicated in chart below.

(5) Check the appearance of the tubes without removing tube shields. A milky appearance indicates that the glass is cracked. Replace any that have a milky appearance.

(6) If the set still does not operate, perform the following tests in the exact order listed. Failure to perform the tests in proper order will give erroneous results. Perform each test and if an okay indication is not obtained, proceed to the next test. If an okay indication is not obtained, change the tubes, one at a time, which are listed for the particular test. If the okay indication is then obtained, proceed with the next test. If changing tubes does not give an okay indication, the defect is not caused by tube failure. Analysis of the set with complete equipment will then be necessary.

BURNED OUT TUBE LOCATION CHART

Test No.	*Following Tube Filaments OK if Indication is Obtained*	*Metering Socket Connection*	*Press the Following*	*OK Indication Obtained*
1	V4, V5, V8	1		Voltage indication (on 6-volt scale).
2	V2 (also dial light).	4	PRESS FOR DIAL LIGHT AND CALIB. button.	Dial light lights dimly. Voltage indication (on 30-volt scale).
3	V1	4	Handset transmit switch	Voltage indication (on 30-volt scale).
4	V11, V12, V3	5	Handset transmit switch.	Voltage indication (on 30-volt scale).
5	V9, V10, V14	2	PRESS FOR DIAL LIGHT AND CALIB. button.	Voltage indication (on 30-volt scale).
6	V7, V13.	3	PRESS FOR DIAL LIGHT AND CALIB. button.	Voltage indication (on 30-volt scale).
7	V6, V15.	—	PRESS FOR DIAL LIGHT AND CALIB. button.	Hear signal at either one of calibration marks.
8	V16, V17, V18.	—	Turn SQUELCH control on and advance to the right. Tubes OK if noise disappears.	

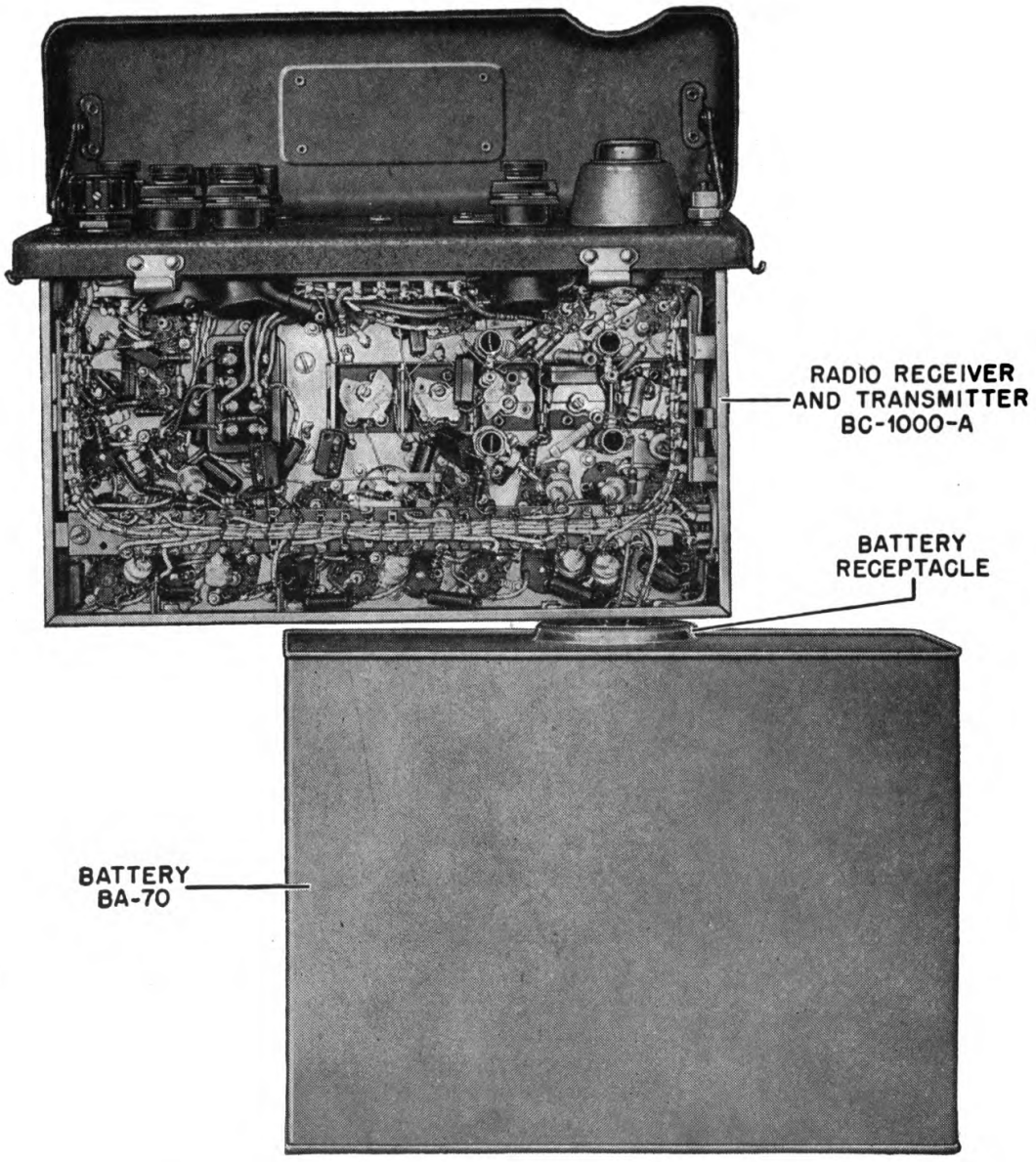


Figure 17. Method of Obtaining Power for Test Purposes.

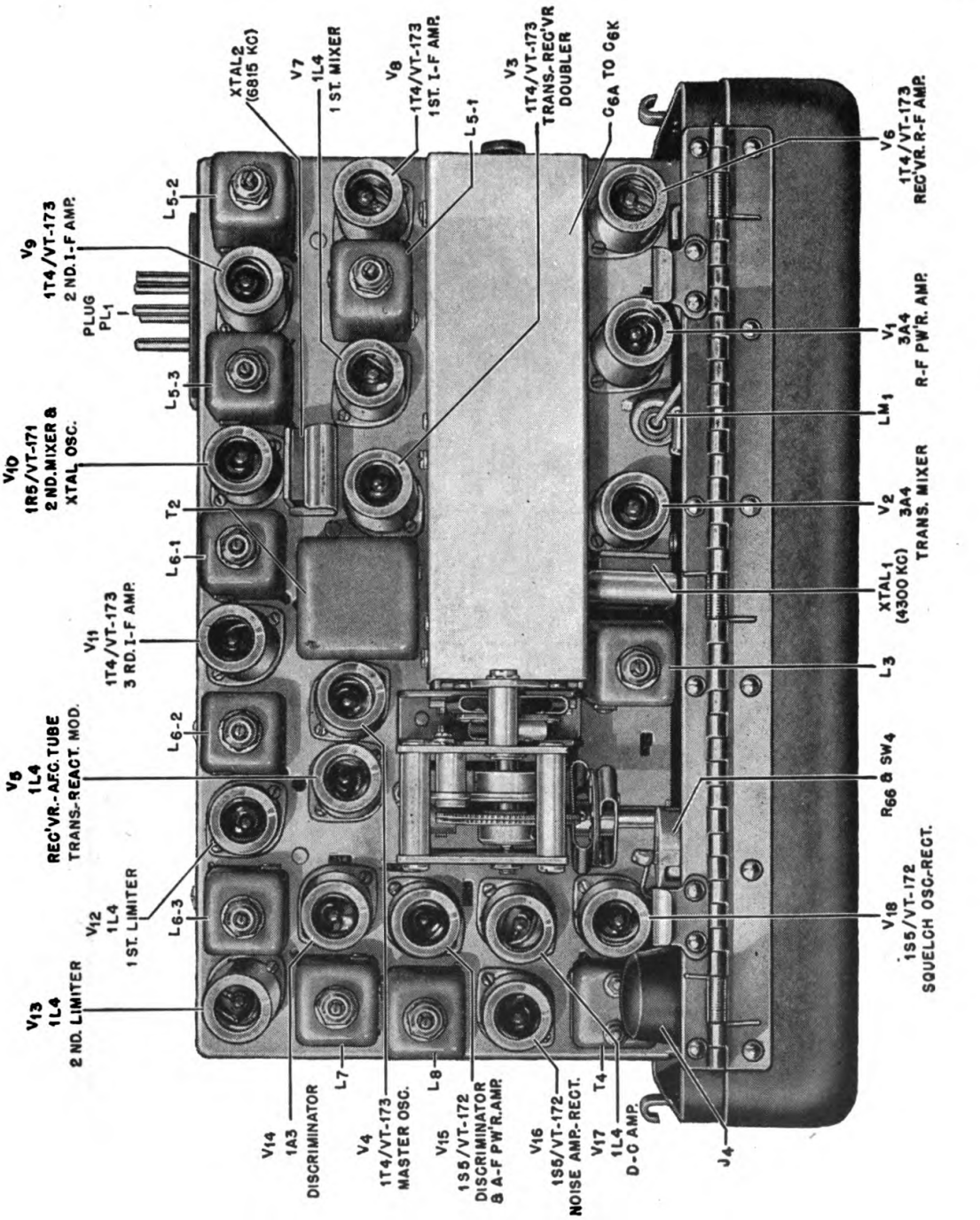


Figure 18. Radio Receiver and Transmitter BC-1000-A, Chassis Top View.

(7) If any of the tubes listed in the chart below are changed, realign set in accordance with the instructions given in this chart. Perform only the adjustment corresponding to the tube changed.

Tube Changed	*Adjustment To Be Made*	*Indicator Used*	*Connect Indicator To*	*Adjust For*	*Dial Setting*	*Press the Following*
V1	C6A	Antenna A-28 (Phantom)	Antenna terminal	Maximum brilliance of bulb.	Channel 39 (Check over complete range)	Transmit switch on handset.
		or: Alignment Indicator I-210-(*), 30 volt range, (with either short or long antenna installed in set).	Pin #6 of the metering socket	Maximum dark area		
V2	C6C C6E	I-210-(*) 30 V. range.	Pin #5 of metering socket.	Maximum dark area	Channel 39 (Check over complete range)	Transmit switch on handset
V3	C6E	I-210-(*) 30 V. range.	Pin #5 of metering socket.	Maximum dark area	Channel 39 (Check over complete range)	Transmit switch on handset
	C6G	Headset	PHONE No. 1 jack	Zero beat	Calibration mark, either at Channel 15 or between 36 and 37. (indicator must be centered on window before setting dial to calibration mark.	PRESS FOR DIAL LIGHT AND CALIB. button.
V4 V5	C6G	Headset.	PHONE No. 1 jack.	Zero beat	Calibration mark, either at Channel 15 or between 36 and 37. (Indicator must be centered in channel window before setting dial)	PRESS FOR DIAL LIGHT AND CALIB. button.
V14 or V15	L8	I-210-(*) 4.5 V. range. Adjusted to close at 0 volt.	Pin #7 of metering socket.	0 volt		PRESS FOR DIAL LIGHT AND CALIB. button.

21. Dial Light Replacement.

a. Remove the Radio Receiver and Transmitter BC-1000-A chassis from the chassis case by unfastening the six upper clip catches. The chassis can now be lifted out of the case.

b. Remove the dial light socket and bulb from the dial light bracket. The socket is removed from the dial light bracket by pulling it straight up.

c. Remove defective bulb and replace with a Mazda #47 bulb. (6-8 volts, 0.15 ampere, bayonet base). The bulb is held in the socket by means of pins, which engage bayonet slots in the socket. To remove, push bulb into socket and turn to the left; to replace, push bulb into socket and turn to the right to lock bulb in place.

d. Replace the dial light socket with bulb on the dial light bracket.

22. Alignment.

a. Equipment Required.

(1) Maintenance Equipment ME-40-(*) and Maintenance Kit ME-53 (less replacement batteries for the Radio Set) contained in chest CH-165 or:

(2) Direct current *vacuum tube* voltmeter (VTVM) for measuring voltages at the metering socket in Radio Receiver and Transmitter BC-1000-A:

(*a*) Battery operated electronic voltohmmeter: Voltohmmeter I-107-A or B (powered by plugging into one Battery BA-40) or:

(*b*) A-C operated electronic voltohmmeter: When only this type of instrument is available a source of 110 to 120 volts 60 cycle alternating current can be provided by connecting a 6 volt d-c to 110-120 volt a-c inverter to a 6-volt battery installed as follows:

Connect the inverter clip leads to a 6-volt storage battery.

Plug the a-c inverter into the receptacle on the inverter.

CAUTION: NEVER USE MORE THAN 6 VOLTS TO SUPPLY THESE INVERTERS.

The common lead of the meter is connected to the chassis of Radio Receiver and Transmitter BC-1000-A; the voltage lead is connected to the desired pin of the metering socket, as indicated in paragraph 22*b*.

(3) Any signal generator capable of being accurately adjusted to 4.3 megacycles at an output of 5 microvolts or less, and of holding its calibration over a reasonable period of time.

or: Frequency Meter SCR-211-(*), tuned to 4.3 megacycles, may be used.

(4) *A small non-metallic screw-driver* for making coil and trimmer adjustments.

(5) *A 3/8 inch wrench* for locking and unlocking coil adjustments.

(6) *Antenna A-28* (*Phantom*) for adjusting the transmitter.

b. Metering Socket.

A metering socket is provided on the chassis of radio set for metering the various circuits for alignment and test purposes. The pin jacks on this socket are numbered from 1 to 8 and are connected to the various parts of the circuit, so that when the common lead on the vacuum tube voltmeter is connected to the chassis of the set or to the pin jack #8 of the metering socket and the voltage probe of the vacuum tube voltmeter is inserted into the pin jack indicated in the following table, the corresponding voltage is indicated on the vacuum tube voltmeter.

Pin jack #1—Master oscillator grid voltage.

Pin jack #2—1st limiter grid voltage.

Pin jack #3—2nd limiter grid voltage.

Pin jack #4—Transmitter mixer grid voltage.

Pin jack #5—Transmitter r-f power amplifier grid voltage.

Pin jack #6—Receiver r-f amplifier grid.

Pin jack #7—Discriminator output voltage.

Pin jack #8—Ground.

c. Preliminary.

(1) Connect a fresh Battery BA-70 to the radio chassis. The chassis may be plugged directly into Battery BA-70, as shown in Figure 17.

(2) Connect Handset TS-15-A to the MIC. and PHONE No. 1 jacks on the set front panel.

(3) Turn on the 4.3 megacycle signal generator and allow it to warm up for at least 15 minutes.

(4) Turn the set *on* by means of the VOLUME control knob. Allow the set to warm up for at least ten minutes.

(5) Loosen the adjustment locknuts on coils L_3, L_{5-1}, L_{5-2}, L_{5-3}, L_{6-1}, L_{6-2}, L_{6-3}, L_7 and L_8. (See Figure 19 for all adjustment locations.) Loosen just enough to allow adjustment of screw.

d. To Align Radio Receiver and Transmitter BC-1000-A, Perform the Following Operations In Order Listed.

(See Figure 19 and 20 for all adjustment locations.)

(1) *Align the 4.3 megacycle crystal oscillator:*

Insert the VTVM probe into pin jack #4 of the metering socket.

Press the PRESS FOR DIAL LIGHT & CALIB. button on the set front panel and adjust L_3 for maximum deflection on the VTVM. This voltage should be at least —20 volts.

(2) *Align the discriminator and 2nd Limiter:*

Insert the VTVM probe into #7 jack of the metering socket. Press the PRESS FOR DIAL LIGHT & CALIB. button and adjust L_8 so that the VTVM reads approximately plus (+) 0.5 volt. Next adjust L_7 for maximum reading. Finally readjust L_8 until VTVM reads 0.

(3) *Align the i-f amplifiers and receiver mixers:*

(*a*) Loosely couple the 4.3 megacycles signal generator to the 1st mixer tube V_7. This can be done by placing a wire from the generator near the 1st mixer tube V_7. If greater coupling is necessary, connect directly to the grid (pin #6) through a small capacitor. (See Figure 20.) Insert the VTVM probe into pin jack #7 of the metering socket,

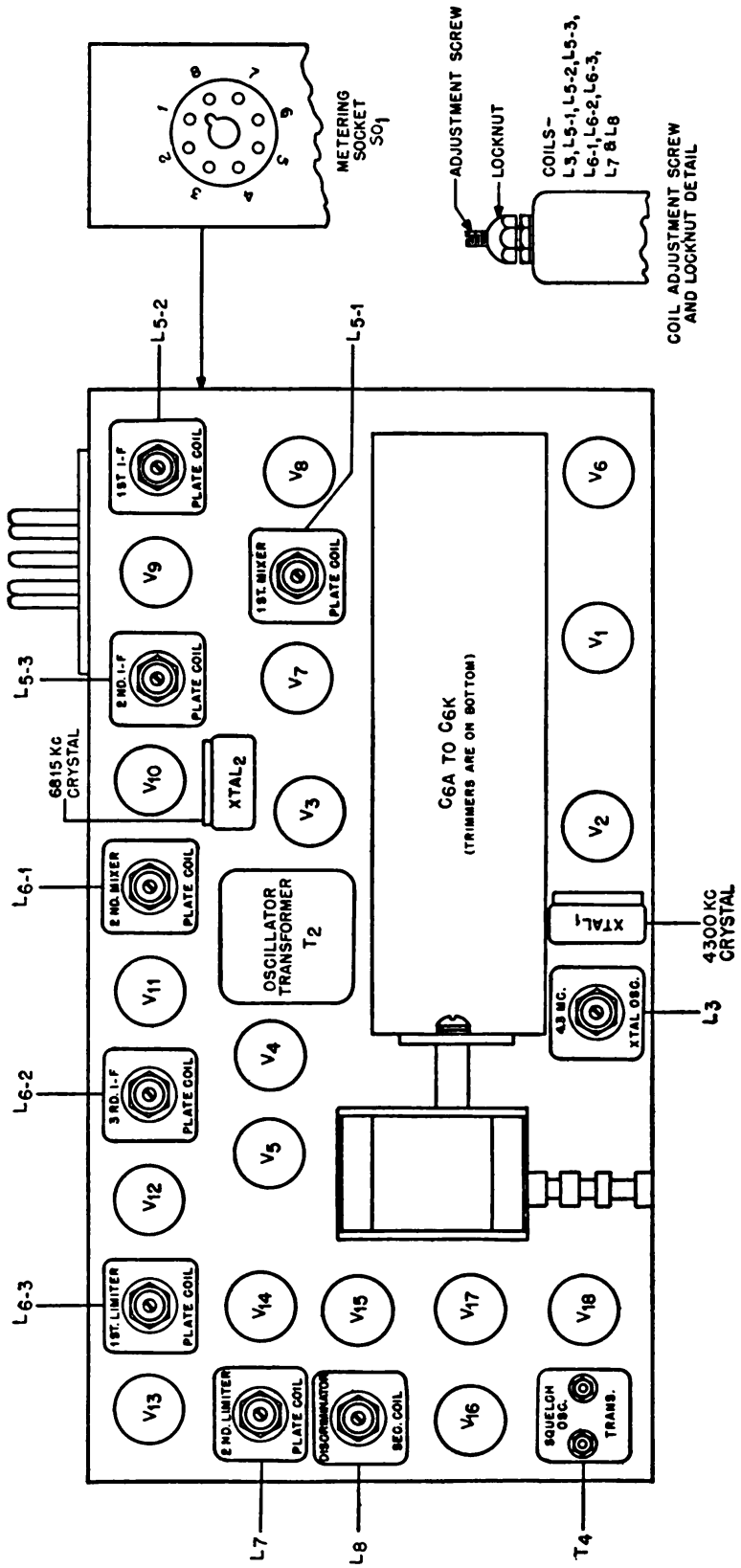


Figure 19. Radio Receiver and Transmitter BC-1000-A, Alignment Instruction Detail, Top View.

(8) *Align doubler:*

Connect the phantom Antenna A-28, Antenna AN-130-A or AN-131-A to the antenna terminal of the set. Set dial to Channel 39 for steps 8, 9 and 10. Insert VTVM probe into pin jack No. 5 of the metering socket. Press the transmit switch on the handset and *very quickly* adjust trimmer C_{6E} for maximum indication on VTVM.

(9) *Align transmitter mixer:*

With the VTVM connected as in above paragraph, press the transmit switch on the handset and *very quickly* adjust trimmer C_{6C} for maximum indication on VTVM. This voltage should be at least —10 volts.

(10) *Align transmitter r-f power amplifier:*

Press the transmit button on the handset and adjust trimmer C_{6A} for maximum voltage at pin jack No. 6 of the metering socket. This voltage should be at least —25 volts.

(11) *Align receiver r-f amplifier:*

Insert the VTVM probe into the #2 pin jack on the metering socket. Attach Antenna AN-130-A to set and connect the antenna ground lead to the GROUND FOR SHORT ANTENNA on the set front panel. Adjust trimmer C_{6K} for maximum reading on VTVM. *This adjustment must be made while no signal is being received.*

23. Adjustment of Replaced Coils.

Whenever coils or parts associated with coils are replaced, it is important that the original arrangement be preserved. Make all lead lengths and positions of leads and parts as nearly the same as before replacement.

Whenever coil L_1, L_2, L_4 or Transformer T_1 is replaced or repaired, it will be necessary to adjust the inductance of the coil to provide correct tracking. The top turn on the replacement coils is left uncemented purposely so that coil inductance may be adjusted after installation in the set. This turn is cemented down by the repairman after inductance adjustment is made.

a. Coil inductance Adjustment:

(1) The set should first be aligned as described in Paragraph 22. Make signal generator, VTVM, and phantom antenna connections as described in Paragraph 22.

(2) Turn dial to Channel 2.

(3) To determine if more or less inductance is required, use the trimmer capacitor shunting the replaced coil.

For Coil	Use Trimmer	VTVM at Meter Socket Pin Jack No.	Conditions
L_1	C_{6A}	6	Transmit
L_2	C_{6C}	5	Transmit
L_4	C_{6K}	2	Receive (no signal)
T_1	C_{6E}	5	Transmit

(4) Before removing trimmer, mark the position of the rotor. Adjust the trimmer for maximum deflection of the VTVM. If trimmer capacity has to be increased, more inductance is required; if trimmer capacity has to be decreased, less inductance is required.

(5) Coil inductance is increased by moving top turn nearer to coil; and decreased by moving top turn away from coil. Adjust coil inductance as described until output indication is maximum, *when trimmer is at original setting.*

(6) Turn dial back to Channel 39 and re-trim for maximum.

(7) Repeat steps 4, 5 and 6 until difference between trimmer setting at Channel 39 and Channel 1 is zero, or nearly so.

(8) Cement the top turn of the replaced coil in position.

IMPORTANT—*In making above adjustments, do not move any other trimmer than the one indicated in the above table.*

24. Replacement of Oscillator Coil T_2.

The replacement of the oscillator coil T_2 requires a very careful and accurate adjustment of the oscillator circuit inductance. When this adjustment is correct, the same calibration will hold for both of the two calibration marks on the dial. To make this adjustment, proceed as follows after replacing the coil.

a. Adjust indicator line to the center of the window.

b. Set the calibration marks between Channels 36 and 37 directly under the indicator line.

c. Press the PRESS FOR DIAL LIGHT AND CALIB. button and adjust trimmer C_{6G} for zero beat in the headphones.

d. Turn dial to the calibrate mark at Channel 15 and locate the zero beat by tuning dial back and forth until zero beat is obtained. If the indicator line is on the lower channel side of the calibrate mark, the circuit inductance must be increased. If the indicator is on the higher channel side of the calibrate mark, the circuit inductance must be decreased.

e. The inductance is adjusted by lengthening or shortening the connection between the gang condenser section C_{6G} and the oscillator coil. A solid bare wire connects the oscillator coil T_2 to the plate terminal (No. 2 pin) of the master oscillator tube (V_4) socket. The lead from the trimmer C_{6G} is connected to this wire. The point at which this connection is made controls the circuit inductance of the oscillator circuit. Unsoldering and moving this point of connection closer to the tube socket will increase the inductance.

f. This point of connection should be adjusted so that the trimmer C_{6G} can be adjusted for the calibrate mark between Channels 36 and 37 and the zero beat will be heard at Channel 15 calibrate mark when the mark is directly under the indicator line.

25. Crystal Replacement.

CRYSTAL REPLACEMENT SHOULD ONLY BE MADE IF CRYSTAL IS DEFINITELY KNOWN TO BE BAD.

If the 6,815 kilocycle crystal ($XTAL_2$) is replaced, it will be necessary to realign the discriminator. See Paragraph 22 *d* (2).

If the 4,300 kilocycle crystal ($XTAL_1$) is replaced, the absolute calibration accuracy of the set may be impaired because the calibration points at Channel 15 and between Channels 36 and 37 are hand calibrated to the harmonics of the *crystal which was originally issued with the set.* The error caused by changing this crystal, however, will not seriously impair the normal use of the set.

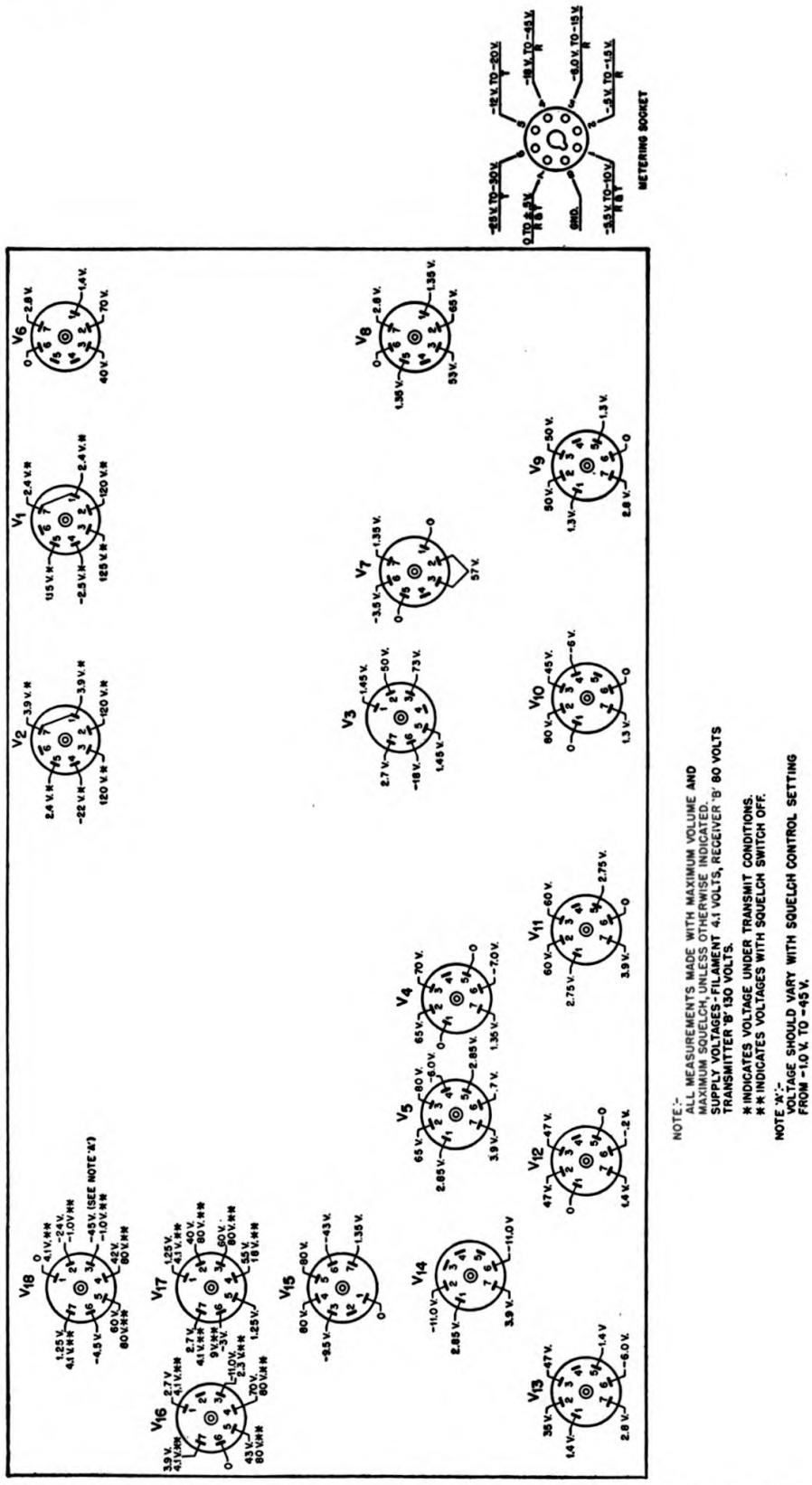


Figure 21. Radio Receiver and Transmitter BC-1000-A, Chassis Tube Socket Voltage Diagram.

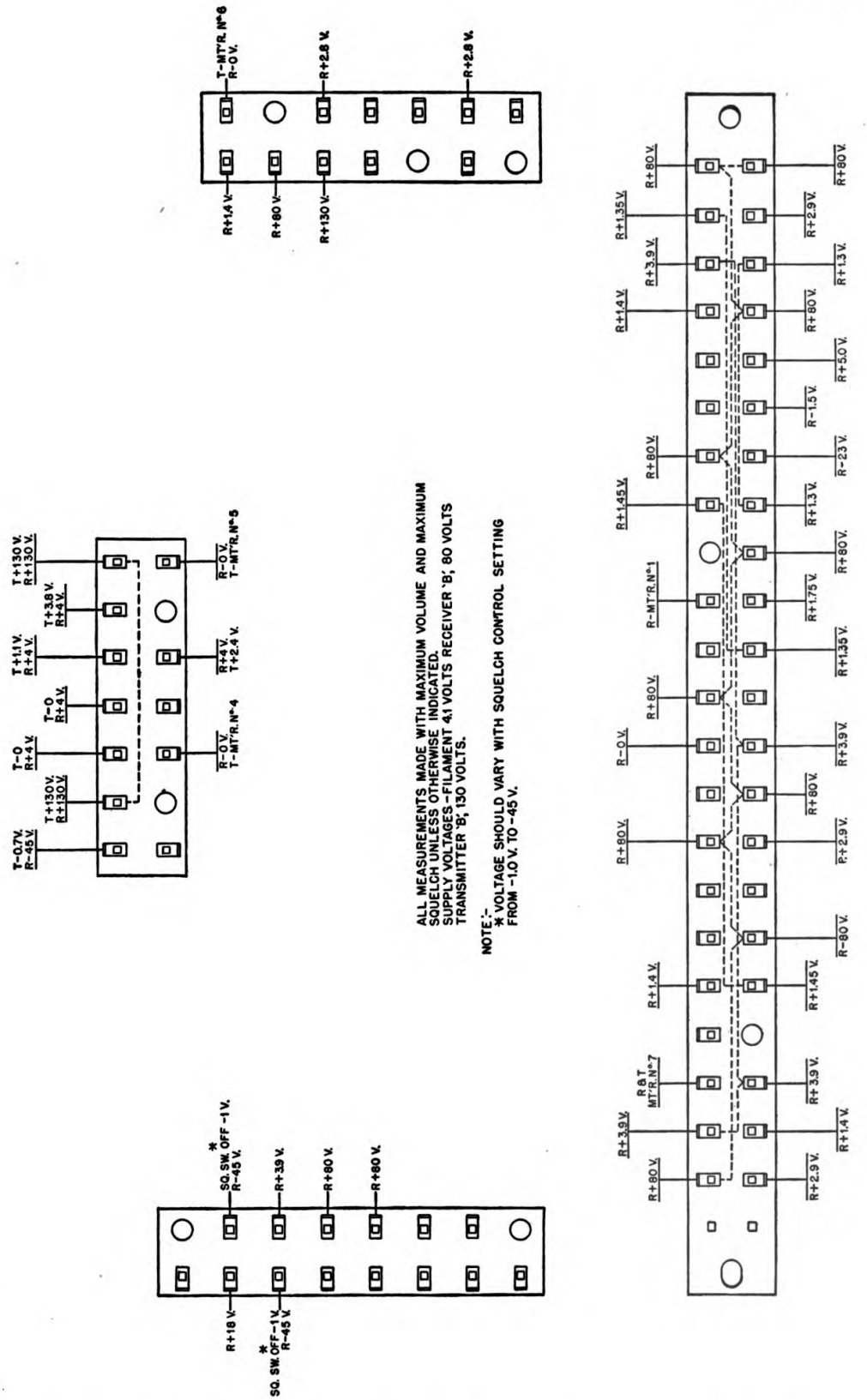


Figure 22. Radio Receiver and Transmitter BC-1000-A, Terminal Board Voltage Diagram.

26. Normal Voltage and Resistance Readings.

The tube socket layout diagrams showing voltages and resistance to ground (Figures 21 and 23), are furnished for the information and guidance of servicing personnel. In addition, terminal strip layout diagrams showing voltages and resistances to ground are shown in Figures 22 and 24. The values are approximate and will vary slightly with different units and different measuring equipment. The voltage readings represent those to be found in normal operation; the resistance values represent measurements to ground with Battery BA-70 disconnected.

The use of this data, combined with a logical circuit analysis, will usually disclose the source of trouble, should improper performance be encountered.

There is no substitute for patience, common sense and thoroughness in overcoming any trouble-shooting problem. In general, the first step is to locate the region where the trouble exists. Next determine the circuit at fault within this region; and finally by painstaking use of a test meter, a logical process of elimination will lead to the part causing the trouble.

SECTION V—SUPPLEMENTARY DATA

27. Parts Location Details.

Figures 25, 26, 27, 28, 31, 32 and 33 have been prepared to assist in locating and replacement of mechanical and electrical parts. The reference numbers tie in with the reference numbers in the Tabular List of Replaceable Parts (Paragraph 28).

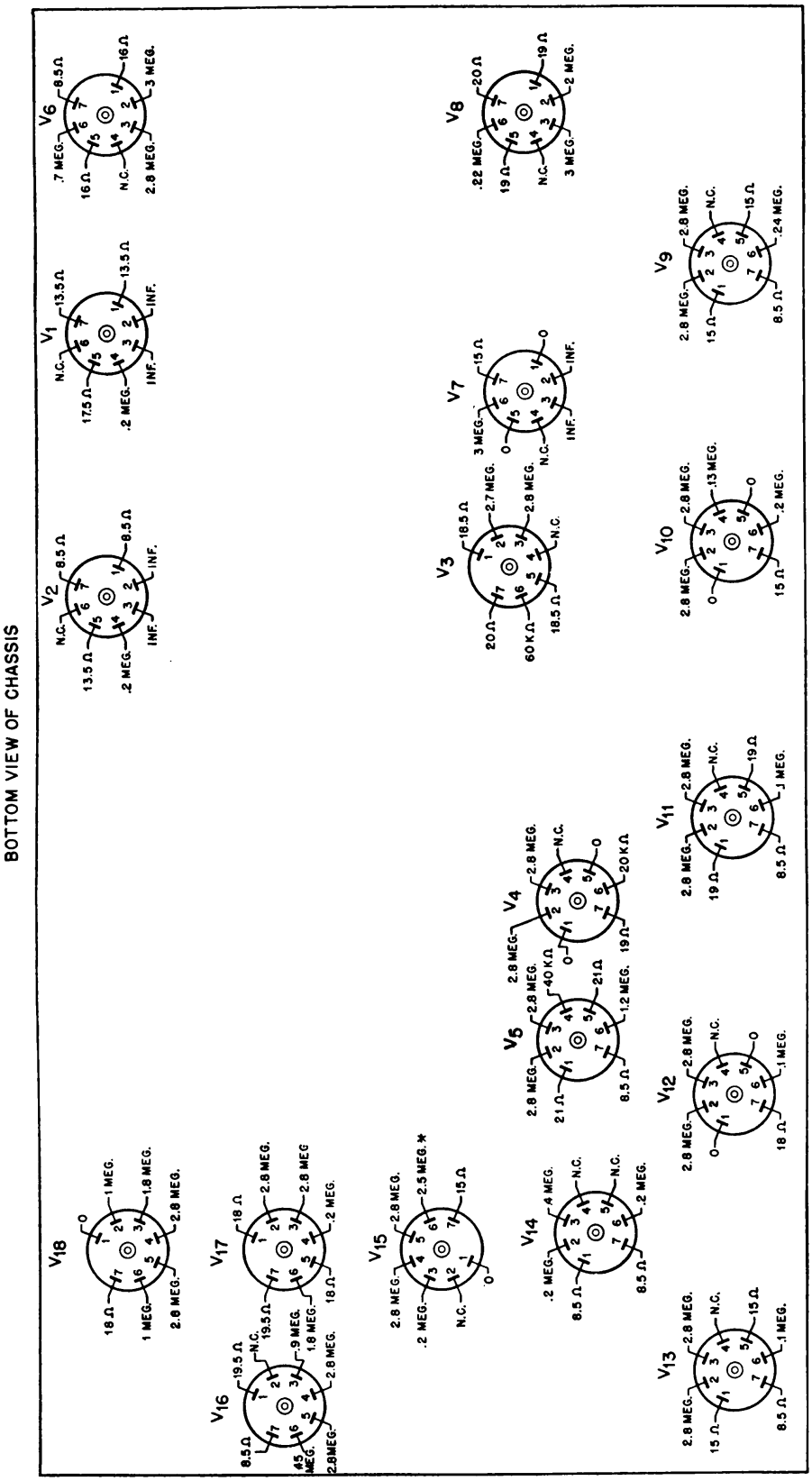


Figure 23. Radio Receiver and Transmitter BC-1000-A, Chassis Tube Socket Resistance Diagram.

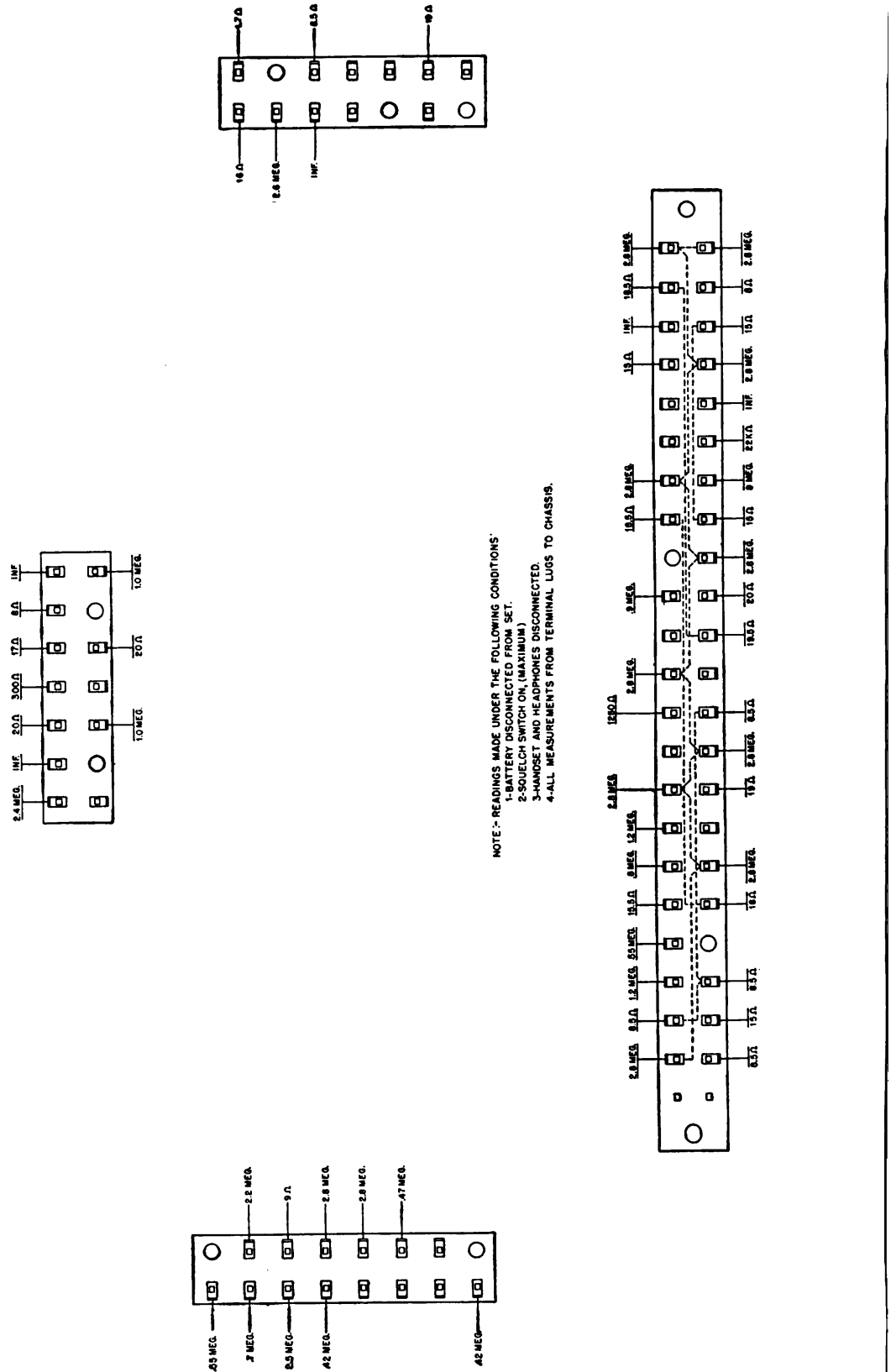
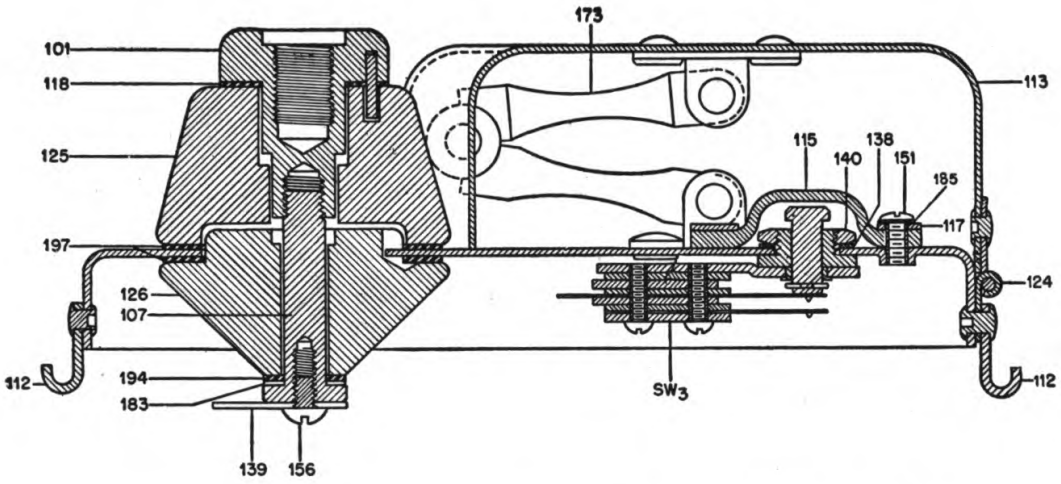
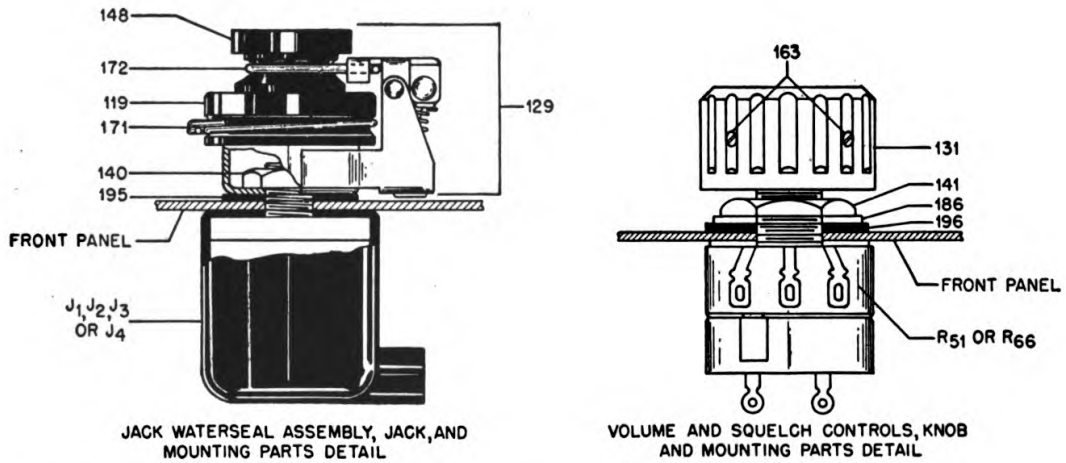


Figure 24. Radio Receiver and Transmitter BC-1000-A, Terminal Board Resistance Diagram.



SECTIONAL VIEW OF FRONT PANEL, SHOWING ANTENNA INSULATOR AND CALIBRATION SWITCH PARTS

Figure 25. Radio Receiver and Transmitter BC-1000-A, Parts Location Diagram Showing Antenna Insulator and Calibration Switch Parts.



JACK WATERSEAL ASSEMBLY, JACK, AND MOUNTING PARTS DETAIL

VOLUME AND SQUELCH CONTROLS, KNOB AND MOUNTING PARTS DETAIL

Figure 26. Radio Receiver and Transmitter BC-1000-A, Parts Location Detail, Showing Jack Waterseal Assembly, Volume and Squelch Controls.

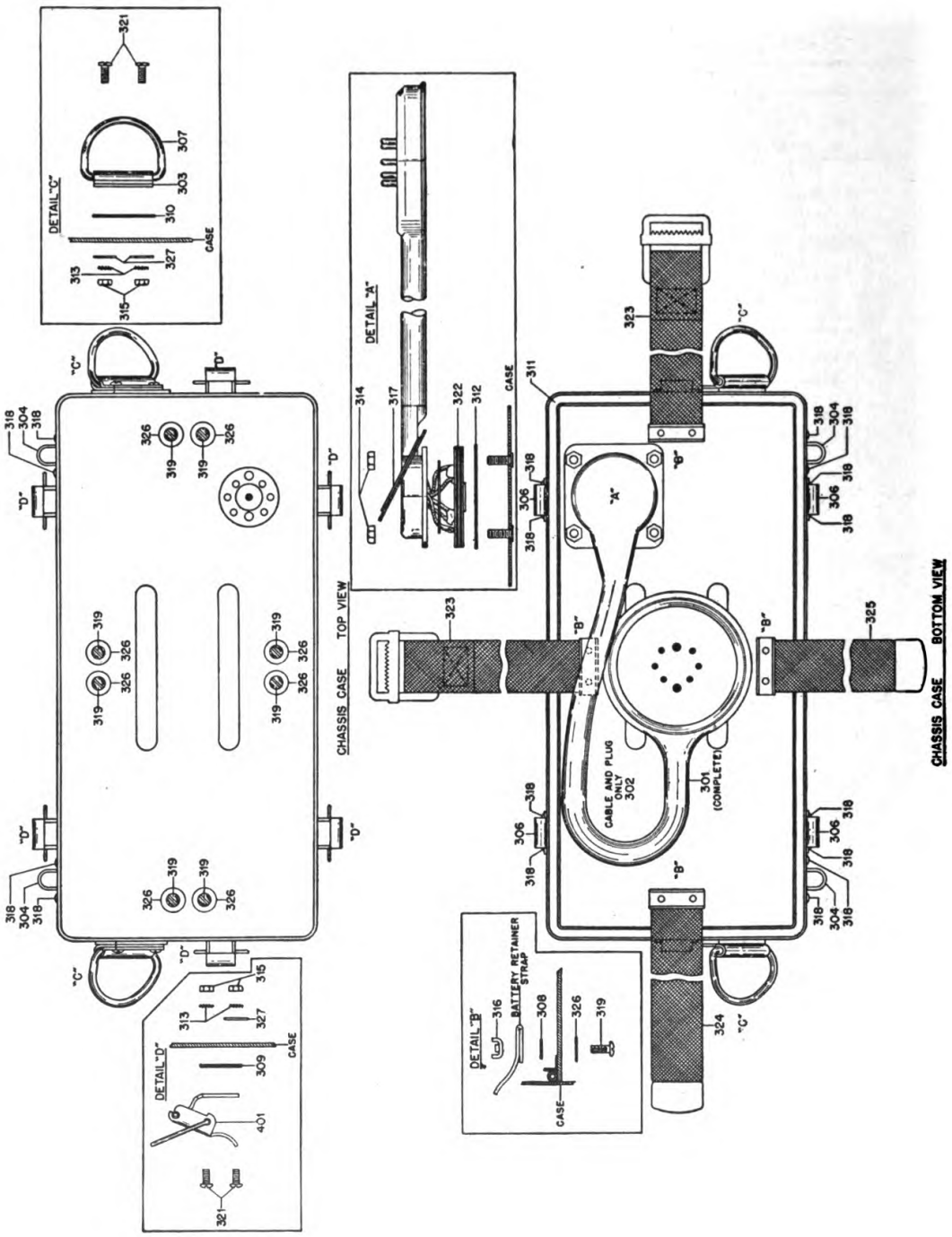


Figure 27. Case CS-128-A, Parts Location Detail.

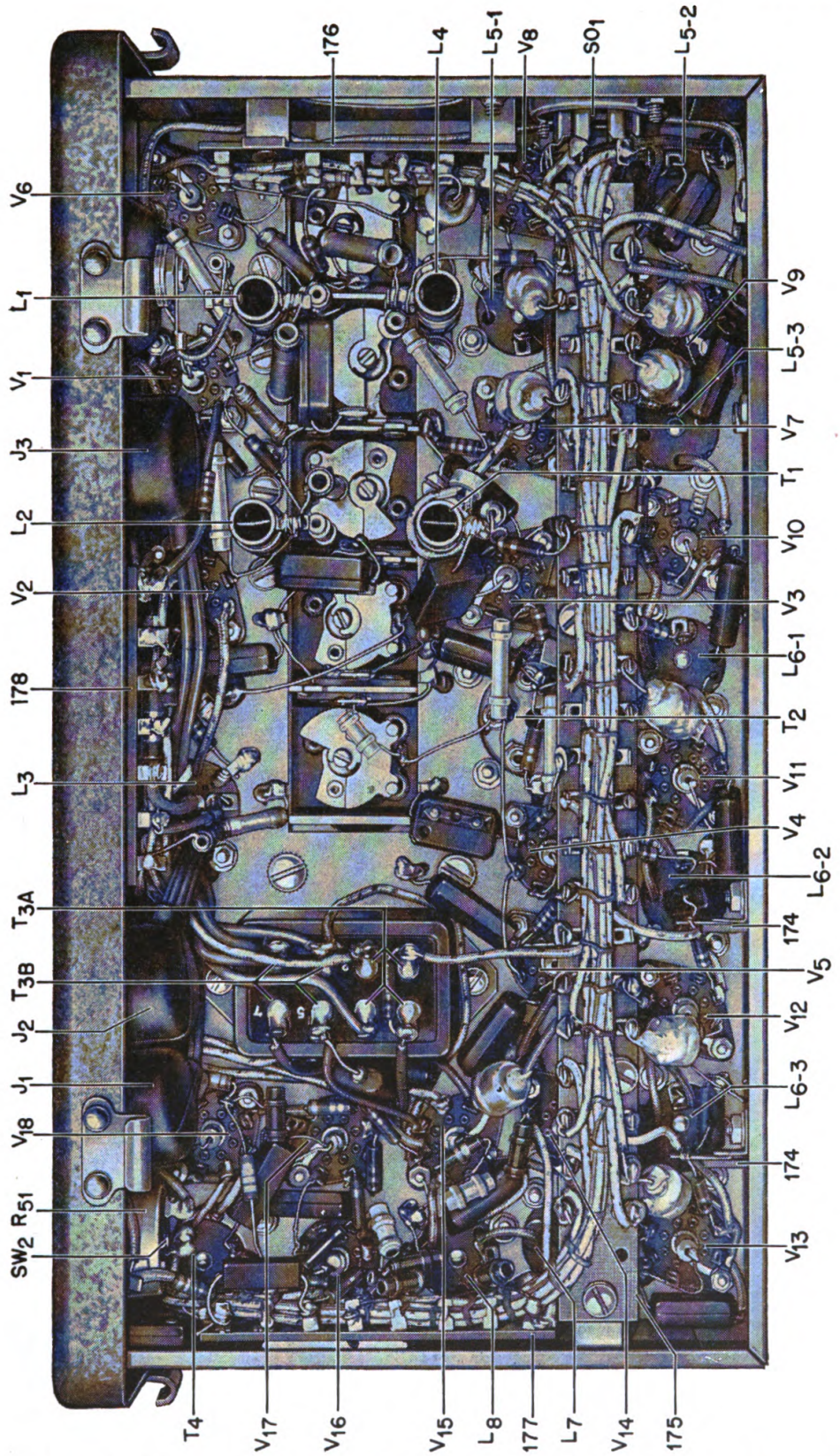


Figure 28. Radio Receiver and Transmitter BC-1000-A, Chassis Bottom View Showing Location of Major Parts.

SECTION V—SUPPLEMENTARY DATA

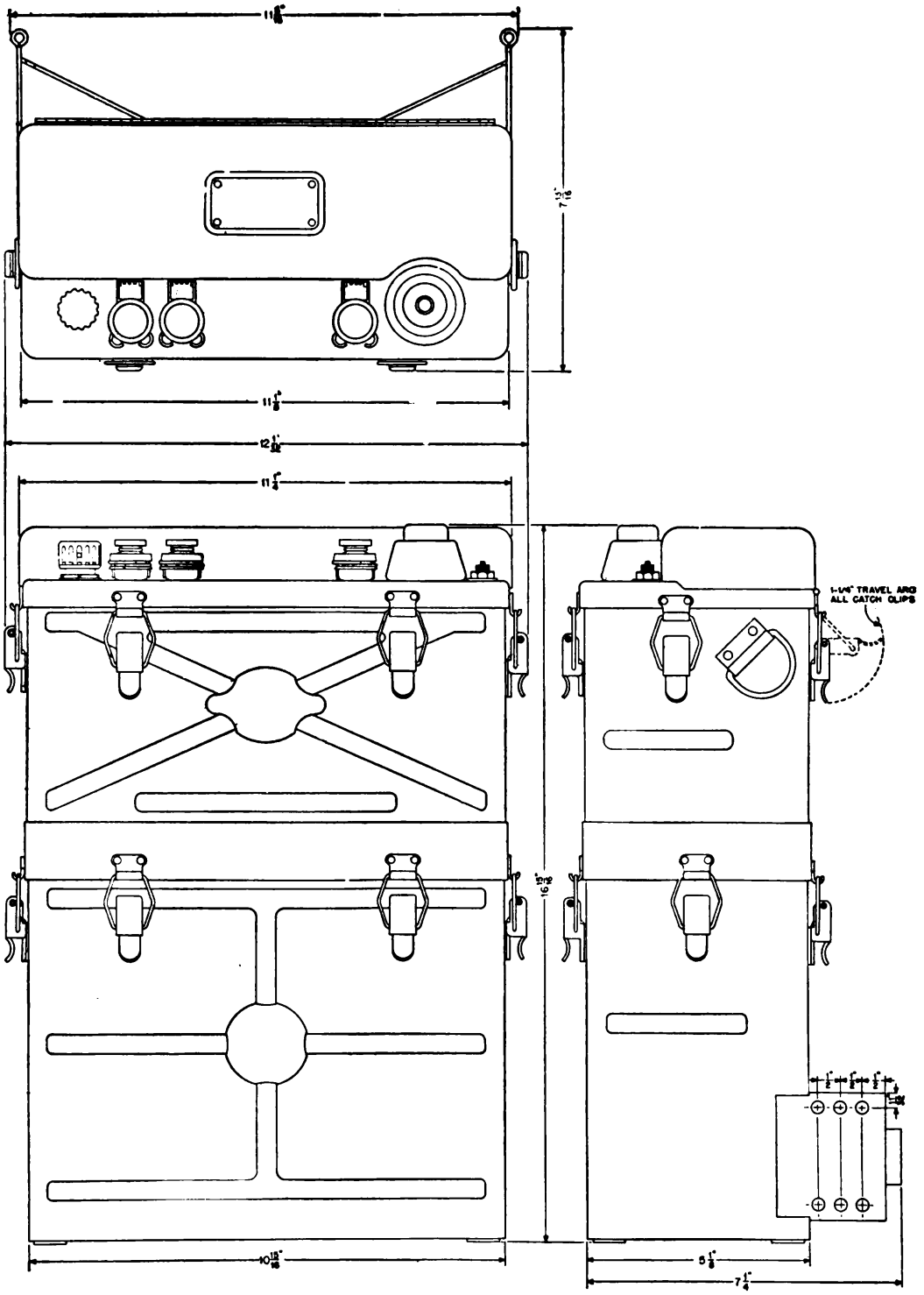


Figure 29. Outline Dimensional Detail.

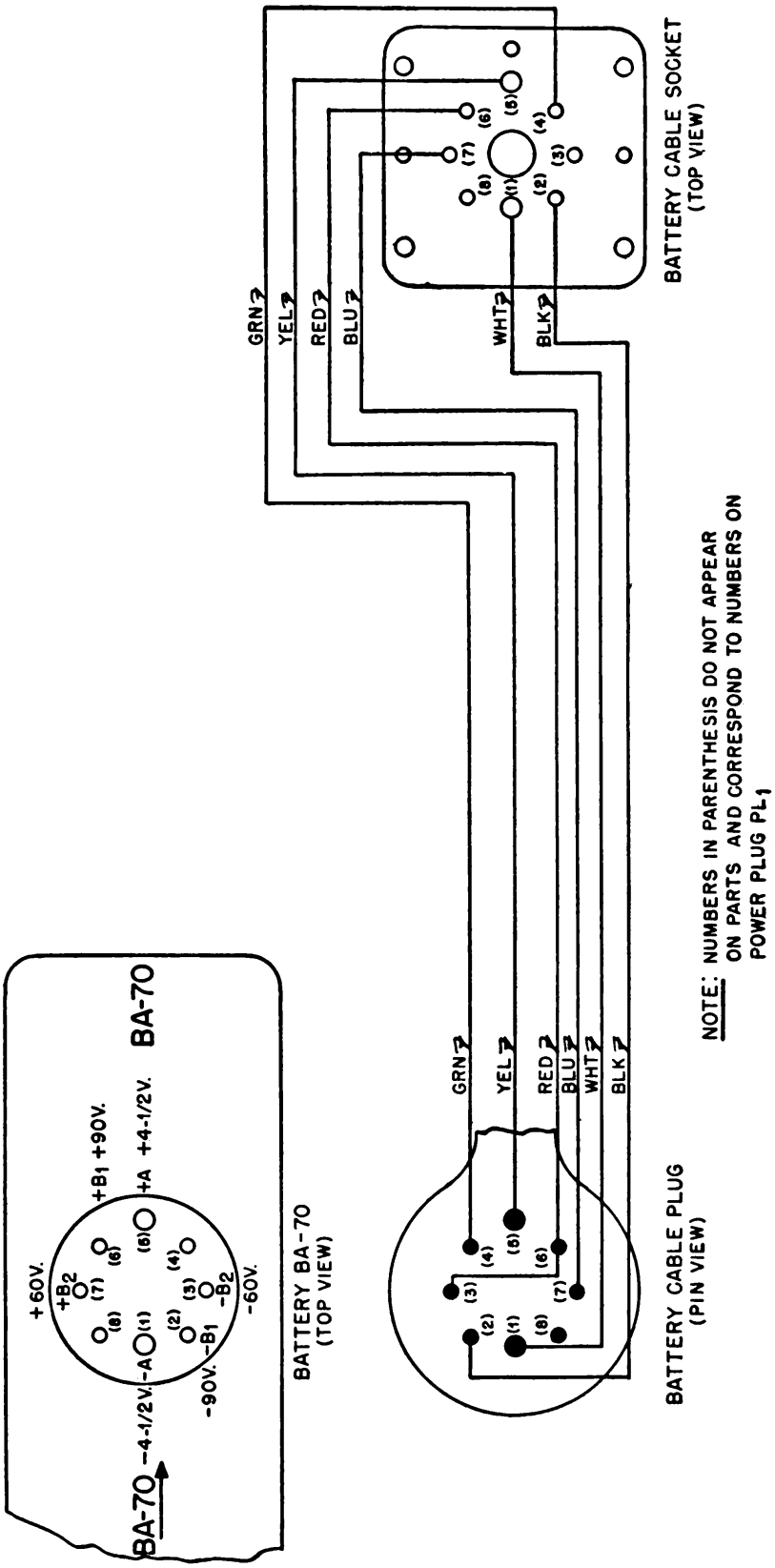


Figure 30. Battery Cable Wiring Diagram.

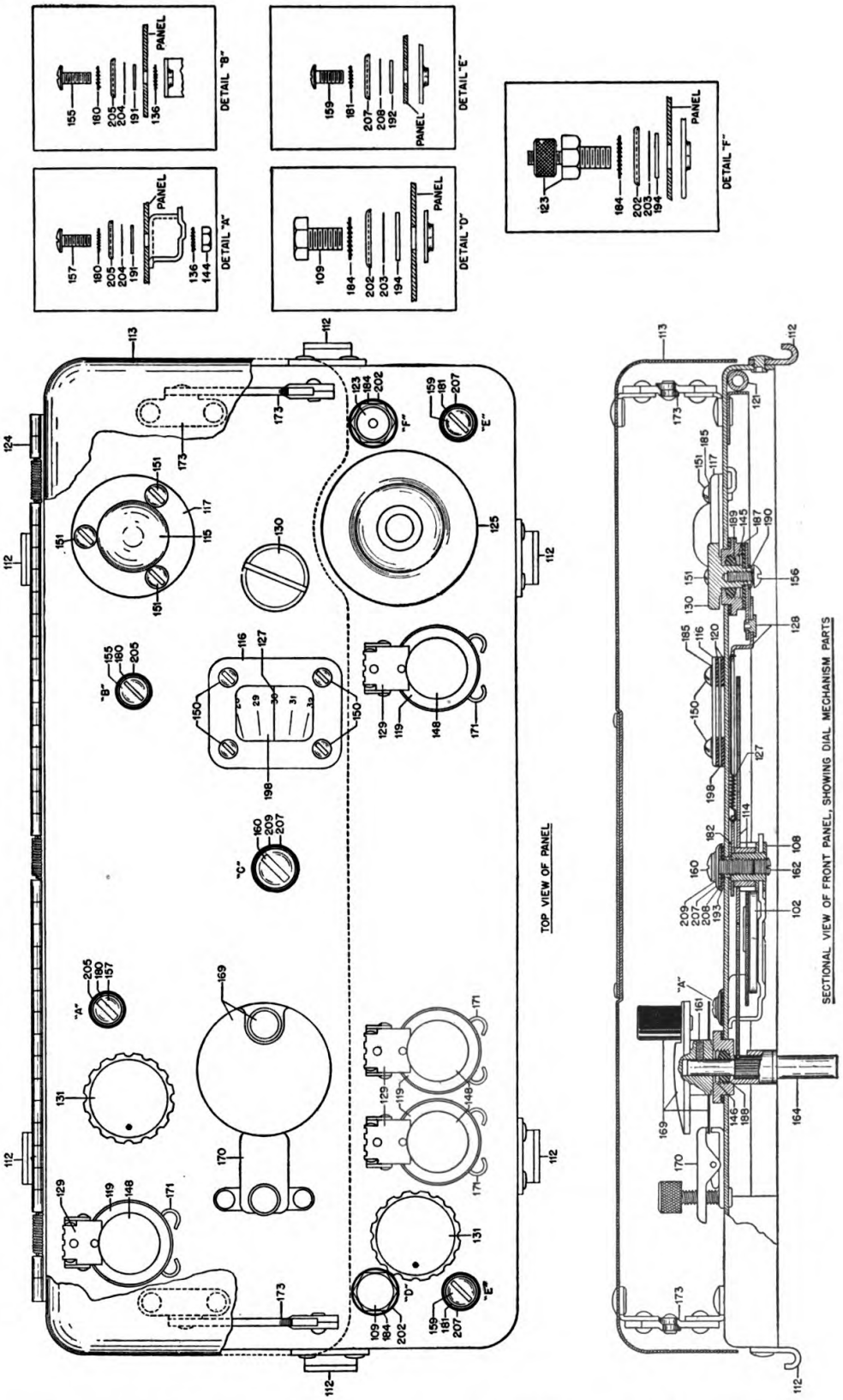


Figure 31. Radio Receiver and Transmitter BC-1000-A, Parts Location Diagram Showing Dial Mechanism Parts.

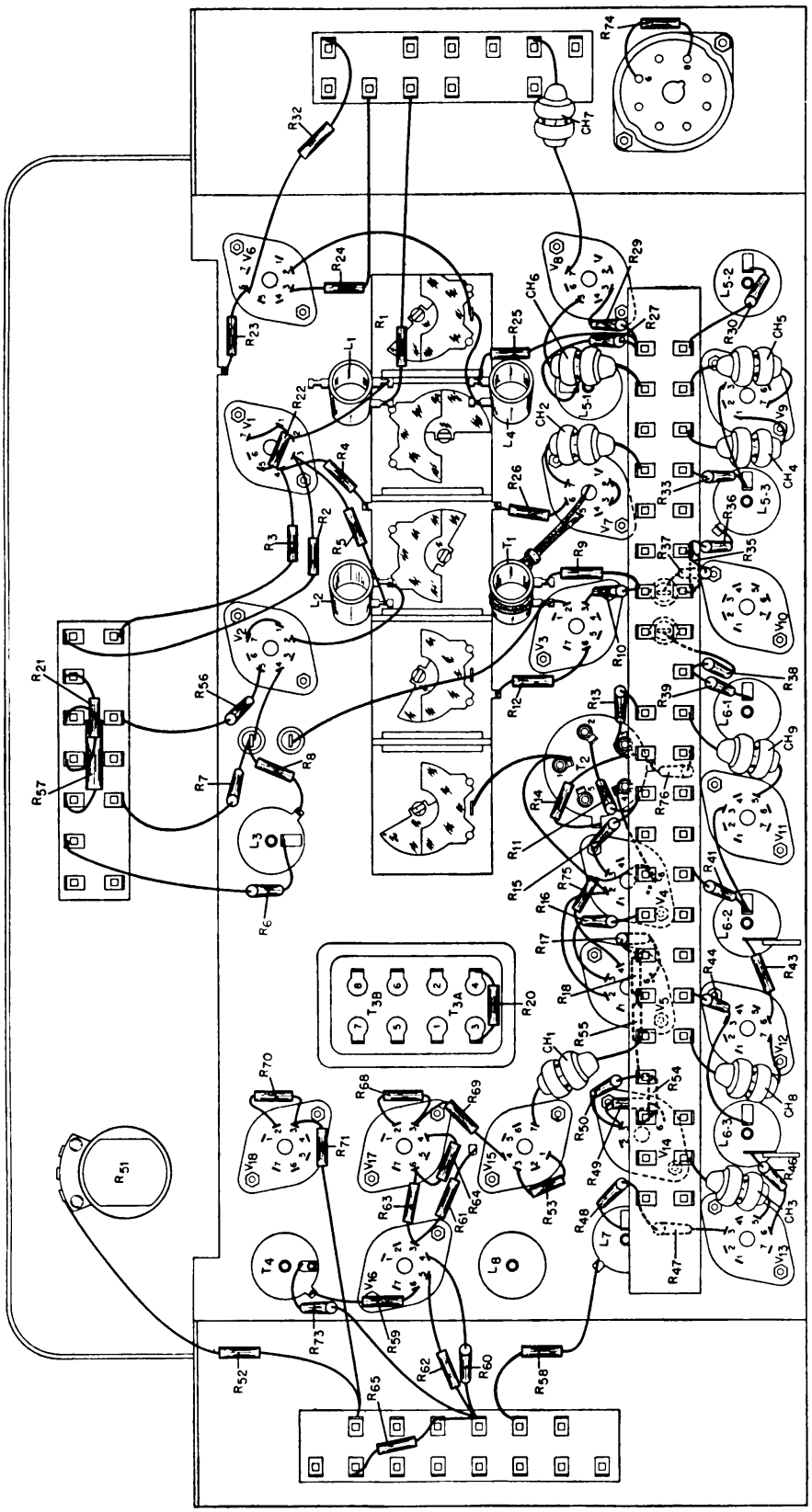


Figure 32. Radio Receiver and Transmitter BC-1000-A, Pictorial Wiring Diagram, Showing Location of Resistors and Chokes

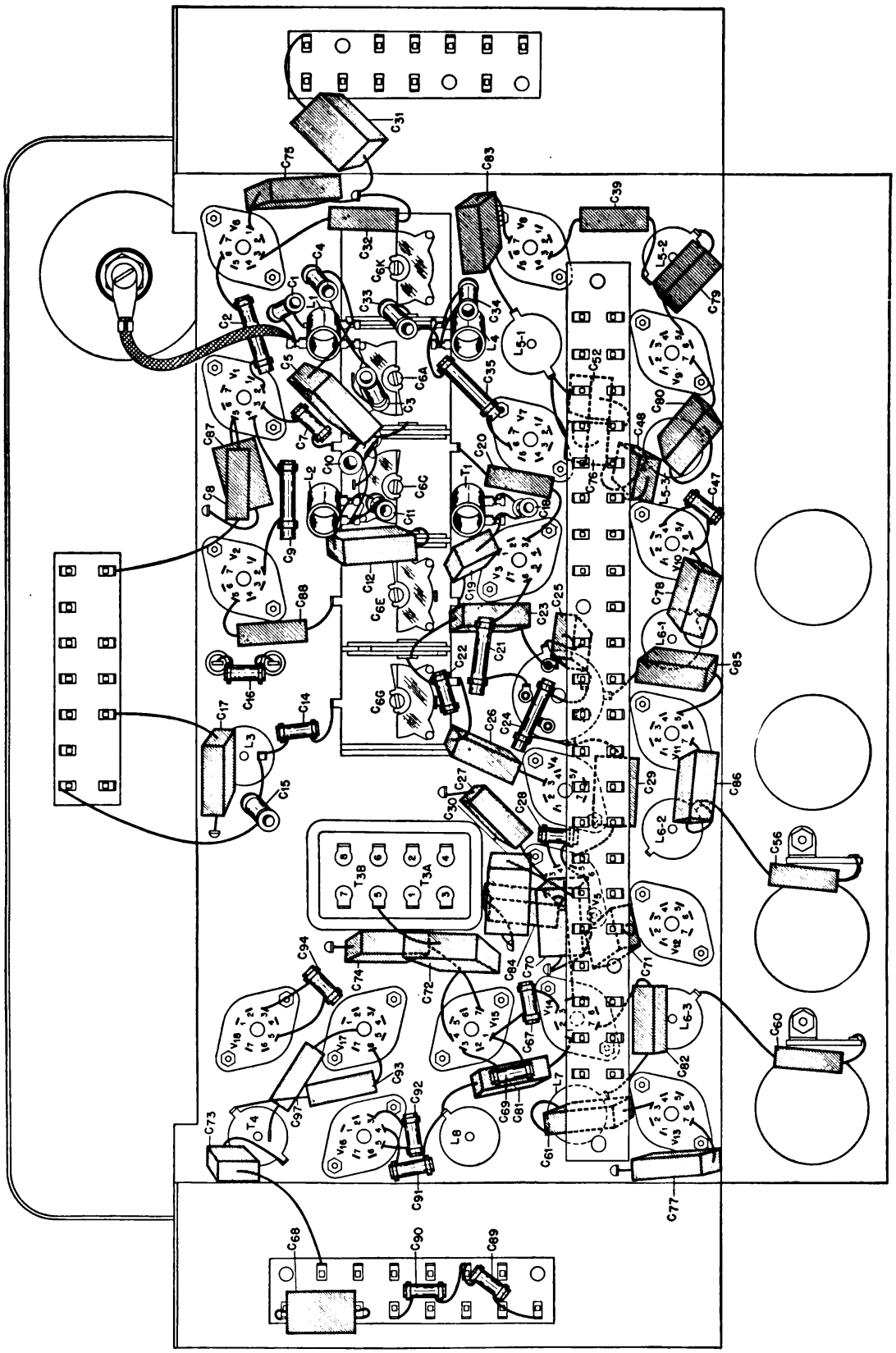


Figure 33. Radio Receiver and Transmitter BC-1000-A, Pictorial Wiring Diagram, Showing Location of Capacitors

TABULAR LIST OF REPLACEABLE PARTS

28. TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A

NOTE: The first Quantity column, ME-67, lists parts for mobile field repair station (3rd echelon) and carries sufficient parts to service ten Radio Sets SCR-300-A for a period of approx. four months.

The second Quantity column, GK-178, lists depot stock parts (4th echelon). This kit carries sufficient parts to service and replace used parts in ME-67 for 100 Radio Sets SCR-300-A over a period of approx. one year.

The third Quantity column, In Set, lists total quantity of each replaceable part found in set. Component parts of assemblies (such as capacitors and resistors found inside coil assemblies) are not included, as such parts are not considered as being replaceable separately.

Quantity			Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfr. No. **	Galvin Part and Drawing No.
ME-67	GK-178	In Set							
0	0	1	100	2C5395-1000A	Radio Receiver and Transmitter BC-1000-A		Receiver and Transmitter.	1	1X40701
12	48	4	C1*	3D9500-78	Capacitor	Fixed, ceramic; 500 $\mu\mu$f, $\pm$20%, 500 w-v d-c. Coded: 500. 5/8" long, 1/8" diameter. —Muter Type 500 (Also C7, C14, C15)	Antenna coupling capacitor.	8	21A83112

15	60	5	C2*	3D9100-57	Capacitor	Fixed, ceramic; 100 μμf, ±5%, 500 w-v d-c. Temperature coefficient 0. Color coded: black, brown, black, brown, green. 55/64" long, 5/32" diameter. —Centralab Type C (Also C9, C21, C24, C35, C37, C41, C45, C50, C54, C58)	Receiver input coupling capacitor.	6	21A38227
9	36	3	C3*	3D9200-41	Capacitor	Fixed, ceramic; 200 μμf, ±5%, 300 w-v d-c. Temperature coefficient: —.000750 μμf/μμf/°C. Coded: X-200 and green dot. 15/64" long, 3/16" diameter. —Muter Type X-200 (Also C10, C33)	Series capacitor.	8	21A41683
						or:			
						Fixed, ceramic; 200 μμf, ±5%, 500 w-v d-c. Temperature coefficient: —.000750 μμf/μμf/°C. Color coded: violet, red, black, brown, green. 55/64" long, 5/32" diameter. —Centralab Type C		6	21A41554

*Spare Parts furnished with equipment.
**Manufacturer's names and addresses, follow Tabular List of Replaceable Parts.

TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A (Cont'd)

Quantity			Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfr. No. **	Galvin Part and Drawing No.
ME-67	GK-178	In Set							
9	36	3	C_4*	3D9015-7	Capacitor	Fixed, ceramic; 15 $\mu\mu$f, ±5%, 500 w-v d-c. Temperature coefficient 0. Color coded: black, brown, green, black, green. 15/32" long, 5/32" diameter. —Centralab Type D or: Fixed, ceramic; 15 $\mu\mu$f, ±5%, 300 w-v. Temperature coefficient 0. Coded: D-15. 7/16" long x 11/64" diameter. —Muter Type D-15 (Also C_{16}, C_{47})	L_1 shunt capacitor.	6	21A41867 21A47294
4	20	2	C_5*	3DA10-159	Capacitor	Fixed, paper; 10,000 $\mu\mu$f (.01 μf), +60% —20%, 400 w-v d-c. Black molded bakelite case. Color coded: brown, black, orange, yellow. 13/16" long, 13/16" wide, 9/32" thick. —Cornell-Dubilier Type 1-D-M-4S1. (Also C_{12})	R-F power amp., V_1, plate by-pass.	5	8A41696

0	0	1	C6	3D9030V-2	Gang Capacitor and Drive Assembly	5 gang; ceramic insulation; ball bearing shaft. Right angle drive through attached 36 to 1 ratio gear box; flexible coupling on drive shaft. Each section 11.5 to 30 μμf; capacity increasing with counter-clockwise rotation; straight line capacity. Air trimmers shunt each section; trimmer adjustments accessible from bottom. Metal cover over all gang sections. Dimensions: 8" long x 2⅞" high x 2$\frac{1}{32}$" wide. —Special	See C6A to C6K.	1	51C41038
			C6A			Part of C6.	Trimmer across C6B.		
			C6B			Part of C6.	L1 tuning capacitor.		
			C6C			Part of C6.	Trimmer across C6D.		
			C6D			Part of C6.	L2 tuning capacitor.		
			C6E			Part of C6.	Trimmer across C6F.		

*Spare Parts furnished with equipment.
**Manufacturer's names and addresses, follow Tabular List of Replaceable Parts.

TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A (Cont'd)

Quantity			Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfr. No. **	Galvin Part and Drawing No.
ME-67	GK-178	In Set							
			C_{6F}			Part of C_6.	T_1 tuning capacitor.		
			C_{6G}			Part of C_6.	Trimmer across C_{6H}.		
			C_{6H}			Part of C_6.	T_2 tuning capacitor.		
			C_{6J}			Part of C_6.	L_4 tuning capacitor.		
			C_{6K}			Part of C_6.	Trimmer across C_{6J}.		
			C_7		Capacitor	Same as C_1.	R-F power amp., V_1, screen grid by-pass.		
80	400	46	C_8*	3DA10-160	Capacitor	Fixed, paper; 10,000 $\mu\mu$f (.01 μf), +60%, —20%, 120 w-v d-c. Black molded bakelite case. Color coded: brown, black, orange. $51/64$" long, $15/32$" wide. $7/32$" thick. —Micamold Type 338	R-F power amp., V_1, control grid metering lead by-pass.	9	8A41695
						or:			
						Fixed, paper; 10,000 $\mu\mu$f (.01 μf),		86	8A47292

					+60%—20%, 120 w-v d-c. .730″ long x .462″ wide x ¼″ thick. Low loss black bakelite case. —Coronet Type SW or:			
					Fixed, paper; 10,000 μμf (.01 μf). +60%—20%, 120 w-v d-c. 23/32″ long x 15/32″ wide x 7/32″ thick. Low loss black bakelite case. —Fast Type A7590 or:		3	8A47293
					Fixed, paper; 10,000 μμf (.01 μf) +60% —20%, 120 w-v d-c. Black molded bakelite case. .725″ long, 15/32″ wide, 7/32″ thick. Guthman Type 1 (Also C17, C19, C20, C23, C25, C26, C27, C29, C30, C31, C32, C38, C39, C42, C46, C48, C51, C52, C55, C56, C59, C60, C61, C64, C68, C70, C71, C73, C74, C75, C76, C77, C78, C79, C80, C81, C82, C83, C84, C85, C86, C87, C88, C93, C97.)		101	8A47555

*Spare Parts furnished with equipment.
**Manufacturer's names and addresses, follow Tabular List of Replaceable Parts.

TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A (Cont'd)

Quantity			Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfr. No. **	Galvin Part and Drawing No.
ME-67	GK-178	In Set							
			C_9		Capacitor	Same as C_2.	R-F power amp., V_1, control grid coupling capacitor.		
			C_{10}		Capacitor	Same as C_3.	Series capacitor.		
9	36	3	C_{11}*	3D9020-11	Capacitor	Fixed, ceramic; 20 $\mu\mu$f, ±5%, 500 w-v d-c. Temperature coefficient: —.00010 $\mu\mu$f/$\mu\mu$f/°C. Color coded: red, red, black, black, green. $1\frac{5}{32}$" long, $\frac{5}{32}$" diameter. —Centralab Type D	L_2 shunt capacitor.	6	21A31492
						or:			
					Capacitor	Fixed, ceramic; 20 $\mu\mu$f, ±5%, 300 w-v d-c. Temperature coefficient: —.00010 $\mu\mu$f/$\mu\mu$f/°C. Coded: F-20. $\frac{5}{8}$" long x $1\frac{1}{64}$" diameter. —Muter Type F-20 (Also C_{18}, C_{34})		8	21A47295
			C_{12}		Capacitor	Same as C_5.	Trans. mixer, V_2, plate by-pass.		

		C13		Capacitor	Same as C28 except inside and part of L3.	Crystal osc. coil, L3, shunt capacitor.		
		C14		Capacitor	Same as C1.	Trans. mixer, V2, osc. plate by-pass.		
		C15		Capacitor	Same as C1.	Coupling capacitor for calibrate circuit.		
		C16		Capacitor	Same as C4.	Doubler, V3, to trans. mixer, V2, coupling capacitor.		
		C17		Capacitor	Same as C8.	Trans. mixer, V2, control grid metering lead by-pass.		
		C18		Capacitor	Same as C11.	T1 shunt capacitor.		
		C19		Capacitor	Same as C8.	Doubler, V3, plate by-pass.		
		C20		Capacitor	Same as C8.	Doubler, V3, screen grid by-pass.		
		C21		Capacitor	Same as C2.	Doubler, V3, control grid coupling capacitor.		

*Spare Parts furnished with equipment.
**Manufacturer's names and addresses, follow Tabular List of Replaceable Parts.

TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A (Cont'd)

Quantity			Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfr. No. **	Galvin Part and Drawing No.
ME-67	GK-178	In Set							
3	12	1	C22*	3D9008E 5.4	Capacitor	Fixed, ceramic; 8.5 μμf, ±.5 μμf, 500-w-v d-c. Temperature coefficient: —.00075 μμf/μμf/°C. Color coded: violet, gray, green, green, blue. 15/32" long, 5/32" diameter. Centralab Type D.	Trans. osc, Transformer, T2, secondary shunt and compensator.	6	21A41684
						or:			
						Fixed, ceramic; 8.5 μμf, ±.5 μμf, 300 w-v. Temperature coefficient: —.00075 μμf/μμf/°C. -Coded: X-8½. 3/8" long x 11/64" -diameter. Muter Type X-8½.		8	21A47291
			C23		Capacitor	Same as C8.	Master oscillator, V4, plate by-pass.		
			C24		Capacitor	Same as C2.	Master oscillator, V4, grid resistor by-pass.		

			C25		Capacitor	Same as C8.	Master oscillator, V4, control grid metering lead by-pass.		
			C26		Capacitor	Same as C8.	Master oscillator, V4, screen grid by-pass.		
			C27		Capacitor	Same as C8.	A.F.C. and react. mod., V5, screen grid by-pass.		
3	12	1	C28*	3D9025-38	Capacitor	Fixed, ceramic; 25 μμf, ± 5%, 500 w-v d-c. Temperature coefficient 0. Color coded: black, red, green, black, green. 15/32" long, 7/32" diameter. —Centralab Type D.	Part of reactance modulator, V5, phase shift network.	6	21A38932
						or: Fixed, ceramic; 25μμf, ±5%, 300 w-v d-c. Temperature coefficient 0. Coded: D-25. 5/8" long x 11/64" diameter. —Muter Type D-25.		8	21A47296
			C29		Capacitor	Same as C8.	Audio coupling.		

*Spare Parts furnished with equipment.
**Manufacturer's names and addresses, follow Tabular List of Replaceable Parts.

TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A (Cont'd)

Quantity			Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfr. No. **	Galvin Part and Drawing No.
ME-67	GK-178	In Set							
			C30		Capacitor	Same as C8.	A.F.C. control voltage filter.		
			C31		Capacitor	Same as C8.	Receiver r-f amp., V6, control grid metering lead by-pass.		
			C32		Capacitor	Same as C8.	R-F amp., V6, screen grid by-pass.		
			C33		Capacitor	Same as C3.	Padder.		
			C34		Capacitor	Same as C11.	R-F amp. plate coil, L4, shunt capacitor.		
			C35		Capacitor	Same as C2.	1st mixer, V7, control grid coupling capacitor.		
			C36		Capacitor	Same as C28 except inside and part of L5-1.	1st mixer plate coil, L5-1, shunt capacitor.		

	C_{37}	Capacitor	Same as C_2 except inside and part of L_{5-1}.	1st i-f amp., V_8, control grid coupling capacitor.	
	C_{38}	Capacitor	Same as C_8 except inside and part of L_{5-1}.	1st mixer, V_7, plate by-pass.	
	C_{39}	Capacitor	Same as C_8.	1st i-f amp., V_8, screen grid by-pass.	
	C_{40}	Capacitor	Same as C_{28} except inside and part of L_{5-2}.	1st i-f amp., plate coil, L_{5-2}, shunt capacitor.	
	C_{41}	Capacitor	Same as C_2 except inside and part of L_{5-2}.	2nd i-f amp., V_9, control grid coupling capacitor.	
	C_{42}	Capacitor	Same as C_8 except inside and part of L_{5-2}.	1st i-f amp., V_8, plate by-pass.	
	C_{44}	Capacitor	Same as C_{28} except inside and part of L_{5-3}.	2nd i-f amp., plate coil, L_{5-3}, shunt capacitor.	

*Spare Parts furnished with equipment.
**Manufacturer's names and addresses, follow Tabular List of Replaceable Parts.

TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A (Cont'd)

Quantity			Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfr. No. **	Galvin Part and Drawing No.
ME-67	GK-178	In Set							
			C45		Capacitor	Same as C2 except inside and part of L5-3.	2nd mixer, V10, control grid coupling capacitor.		
			C46		Capacitor	Same as C8 except inside and part of L5-3.	2nd i-f amp., V9, plate by-pass.		
			C47		Capacitor	Same as C4.	2nd mixer-osc., V10, osc. grid capacitor.		
			C48		Capacitor	Same as C8.	Power amp., V15, control grid bias filter.		
			C49		Capacitor	Same as C28 except inside and part of L6-1.	2nd mixer plate coil, L6-1, shunt capacitor.		
			C50		Capacitor	Same as C2 except inside and part of L6-1.	3rd i-f amp., V11, control grid coupling capacitor.		
			C51		Capacitor	Same as C8 except inside and part of L6-1.	2nd mixer, V10, plate by-pass.		

C52	Capacitor	Same as C8.	B+ by-pass.		
C53	Capacitor	Same as C28 except inside and part of L6-2.	3rd i-f amp., plate coil, L6-2, shunt capacitor.		
C54	Capacitor	Same as C2 except inside and part of L6-2.	1st limiter, V12, control grid coupling capacitor.		
C55	Capacitor	Same as C8 except inside and part of L6-2.	3rd i-f amp., V11, plate by-pass.		
C56	Capacitor	Same as C8.	1st limiter, V12, control grid metering lead by-pass.		
C57	Capacitor	Same as C28 except inside and part of L6-3.	1st limiter plate coil, L6-3, shunt capacitor.		
C58	Capacitor	Same as C2 except inside and part of L6-3.	2nd limiter, V13, control grid coupling capacitor.		
C59	Capacitor	Same as C8 except inside and part of L6-3	1st limiter, V12, plate by-pass.		

*Spare Parts furnished with equipment.
**Manufacturer's names and addresses, follow Tabular List of Replaceable Parts.

TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A (Cont'd)

Quantity			Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfr. No. **	Galvin Part and Drawing No.
ME-67	GK-178	In Set							
			C60		Capacitor	Same as C8.	2nd limiter, V13, grid metering lead by-pass.		
			C61		Capacitor	Same as C8.	2nd limiter, V13, screen grid by-pass.		
			C62		Capacitor	Same as C28 except inside and part of L7.	2nd limiter plate coil, L7, shunt capacitor.		
			C63		Capacitor	Same as C92 except inside and part of L7.	Couples 2nd limiter plate coil, L7, to discriminator coil L8.		
			C64		Capacitor	Same as C8 except inside and part of L7.	2nd limiter, V13, plate by-pass.		
			C65		Capacitor	Fixed, ceramic; 100 $\mu\mu$f, $\pm$2%, 500 w-v d-c. Temperature coefficient: —.000030 $\pm$.00001 $\mu\mu$f/$\mu\mu$f/°C. Color coded: (blank), brown, black, brown,	Discriminator secondary coil, L8, shunt capacitor and compensator.	6	21A41685

					red. 55/64" long, 5/32" diameter. —Centralab Type C.		
					or:		
			C66	Capacitor	Fixed, ceramic; 100μμf, ±2%, 300 w-v d-c. Temperature coefficient —.000030 ±.00001 μμf/μμf/°C. Coded: E 100 and red dot. 3/4" long, 1/8" diameter. —Muter Type E 100. Inside of L8 (Also C66)	8	21A41686
					Same as C65.	Discriminator coil, L8, shunt capacitor and compensator.	
					or:		
					Same as C65. Inside of L8.		

*Spare Parts furnished with equipment.
**Manufacturer's names and addresses, follow Tabular List of Replaceable Parts.

TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A (Cont'd)

Quantity			Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfr No. **	Galvin Part and Drawing No.
ME-67	GK-178	In Set							
15	60	5	C67*	3D9100-65	Capacitor	Fixed, ceramic; 100 μμf, ±10%, 500 w-v d-c. Temperature coefficient —.00075 μμf/μμf/°C, ±15%. Color coded: violet, brown, black, brown, white. 15/32" long, 5/32" diameter. —Centralab Type D (Also C89, C90, C91, C94, C95, C96)	Discriminator output by-pass.	6	21A38224
			C68		Capacitor	Same as C8.	A-F power amp., V15, control grid coupling.		
3	12	1	C69*	3D9010-33	Capacitor	Fixed, ceramic; 10 μμf, ±10%, 500 w-v d-c. Negative temperature coefficient: —.00003 μμf/μμf/°C. Color coded: brown, brown, black, black, white. 15/32" long, 5/32" diameter. —Centralab Type D	Discriminator coupling.	6	21A41346

						or:			
						Fixed, ceramic; 10 μμf, ±10%. 300 w-v d-c. Temperature coefficient 0. Coded: D-10. 3/8" long x 11/64" diameter. Muter Type D-10		8	21A47297
			C70		Capacitor	Same as C8	Discriminator output metering lead by-pass.		
			C71		Capacitor	Same as C8	First Limiter, V12, filament by-pass		
2	10	1	C72*	3DA6-48	Capacitor	Fixed, paper; 6,000 μμf (.006 μf), +60% —20%, 400 w-v d-c. Black molded bakelite case. Color coded: blue, black, red, yellow. 13/16" long, 13/16" wide, 9/32" thick. —Cornell Dubilier —Type 1-D-M-4S1	Output transformer, T36, primary shunt capacitor.	5	8K41697
			C73		Capacitor	Same as C8.	A-F power amp., V15, control grid bias filter.		

*Spare Parts furnished with equipment.
**Manufacturer's names and addresses, follow Tabular List of Replaceable Parts.

TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A (Cont'd)

Quantity			Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfr. No. **	Galvin Part and Drawing No.
ME-67	GK-178	In Set							
			C74		Capacitor	Same as C8.	Discriminator and a-f pwr. amp., V15, filament by-pass.		
			C75		Capacitor	Same as C8.	R-F amp., V6 filament by-pass.		
			C76		Capacitor	Same as C8.	1st mixer, V7, filament by-pass.		
			C77		Capacitor	Same as C8.	2nd limiter, V13, filament by-pass.		
			C78		Capacitor	Same as C8.	2nd mixer, V10, filament by-pass.		
			C79		Capacitor	Same as C8.	1st i-f amp., V9, filament by-pass.		
			C80		Capacitor	Same as C8.	1st i-f amp., V9, filament by-pass.		
			C81		Capacitor	Same as C8.	Discriminator, V14, filament by-pass.		

	C_{82}	Capacitor	Same as C_8.	Discriminator, V_{14}, filament by-pass.	
	C_{83}	Capacitor	Same as C_8.	1st i-f amp., V_8, filament by-pass.	
	C_{84}	Capacitor	Same as C_8.	A.F.C. react. mod., V_5, filament by-pass.	
	C_{85}	Capacitor	Same as C_8.	3rd i-f amp., V_{11}, filament by-pass.	
	C_{86}	Capacitor	Same as C_8.	3rd i-f amp., V_{11}, filament by-pass.	
	C_{87}	Capacitor	Same as C_8.	Trans. r-f power amp., V_1, filament by-pass.	
	C_{88}	Capacitor	Same as C_8.	Trans. mixer, V_2, filament by-pass.	
	C_{89}	Capacitor	Same as C_{67}.	Noise amp., V_{16}, coupling capacitor.	

*Spare Parts furnished with equipment.
**Manufacturer's names and addresses, follow Tabular List of Replaceable Parts.

TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A (Cont'd)

Quantity			Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfr. No. **	Galvin Part and Drawing No.
ME-67	GK-178	In Set							
			C90		Capacitor	Same as C67.	Part of high-pass R-C filter of squelch system.		
			C91		Capacitor	Same as C67.	Noise amp., V16, screen grid by-pass.		
3	12	1	C92*	3D9050-70	Capacitor	Fixed, ceramic; 50$\mu\mu$f, $\pm$10%, 500 w-v d-c. Temperature coefficient O. Color coded: black, green, black, black, white. 15/32" long, 5/32" diameter. —Centralab Type D. (Also C63)	Coupling noise react. to noise amp.	6	21A35392
			C93		Capacitor	Same as C8.	D-C amp., V17, control grid by-pass.		
			C94		Capacitor	Same as C67.	Coupling osc. react. to squelch osc.		

			C_{95}		Capacitor	Same as C_{67} except inside and part of T_4.	Squelch osc. transformer, T_4, secondary shunt.		
			C_{96}		Capacitor	Same as C_{67} except inside and part of T_4.	Squelch osc., V_{18}, control grid bias resistor by-pass.		
			C_{97}		Capacitor	Same as C_8.	Squelch osc., V_{18}, plate by-pass.		
18	90	9	CH_1*	3C362-18	Choke, Filament	2 pie, wound on 5/8" long, 3/16" diameter dummy resistor core. Each pie consists of 40 turns of #30 double silk enameled wire. Coated with "O" Max. cement and dipped in white Hallowax. Inductance =25 μh $\pm$10% @ 1000 C.P.S. D-C resistance = .7 ohm. —Special (Also CH_2, CH_3, CH_4, CH_5, CH_6, CH_7, CH_8, CH_9)	Discriminator and a-f power amp., V_{15}, filament r-f choke.	1	24A41698
			CH_2		Choke, Filament	Same as CH_1.	1st mixer, V_7, filament r-f choke.		

*Spare Parts furnished with equipment.
**Manufacturer's names and addresses, follow Tabular List of Replaceable Parts.

TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A (Cont'd)

Quantity			Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfr. No. **	Galvin Part and Drawing No.
ME-67	GK-178	In Set							
			CH3		Choke, Filament	Same as CH1.	2nd limiter, V13, filament r-f choke.		
			CH4		Choke, Filament	Same as CH1.	2nd i-f amp., V9, filament r-f choke.		
			CH5		Choke, Filament	Same as CH1.	2nd i-f amp., V9, filament r-f choke.		
			CH6		Choke, Filament	Same as CH1.	1st i-f amp., V8, filament r-f choke.		
			CH7		Choke, Filament	Same as CH1.	1st i-f amp., V8, filament r-f choke.		
			CH8		Choke, Filament	Same as CH1.	1st limiter; V12, filament r-f choke.		
			CH9		Choke, Filament	Same as CH1.	3rd i-f amp., V11, filament r-f choke.		
1	5	1	J1*	2Z5595-2	Microphone Jack and Leads Assembly	3 contact jack, with white, green and black rubber covered leads. Enclosed in 1″ diameter x 1 3/32″ long black synthetic rub-	MIC. jack.	1	1X41851

						ber jack cover. 3/8-32 thread on jack mounting bushing. —Special			
1	5	1	J2*	2Z5595-4	Phone Jack and Leads Assembly	2 contact jack with single-pole, single-throw switch (SW1). Switch closes when a plug is inserted into jack. Has red, white, green and black leads. Enclosed in 1" diameter x 1 3/32" long black synthetic rubber jack cover. 3/8-32 thread on jack mounting bushing. —Special	PHONE No. 1 jack and filament control.	1	1X41852
1	5	1	J3*	2Z5595-6	Auxilliary Phone Jack and Leads Assembly	2 contact jack, with black and green rubber covered leads. Enclosed in 1" diameter x 1 3/32" long black synthetic rubber jack cover. 3/8-32 thread on jack mounting bushing. —Special	AUX. phone jack.	1	1X41853
1	5	1	J4*	2Z5595-8	Relay Jack and Leads Assembly	2 contact, closed circuit type; has red and black rubber covered leads. Enclosed in 1" diameter x 1 3/32" long black synthetic rubber jack cover. 3/8-32 thread on jack mounting bushing. —Special	RELAY jack.	1	1X41854

*Spare Parts furnished with equipment.
**Manufacturer's names and addresses, follow Tabular List of Replaceable Parts.

TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A (Cont'd)

Quantity			Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfr. No. **	Galvin Part and Drawing No.
ME-67	GK-178	In Set							
2	10	1	L_1*	3C1084B	Coil, Antenna	6 turns of #22 bare tinned copper wire wound on $\frac{3}{8}$" diameter, $1\frac{3}{8}$" high grooved coil form. Has 2 terminal lugs, one dummy lug and metal tap sleeve, located $2\frac{1}{2}$ turns from bottom end, for connection to antenna coupling capacitor. Mounts by means of a removable bracket. —Special	Tank coil for transmitter, antenna coil for receiver.	1	24K41455
2	10	1	L_2*	3C1084B-1	Coil, Transmitter Mixer Plate	$5\frac{1}{2}$ turns of #22 bare tinned copper wire wound on $\frac{3}{8}$" diameter, $1\frac{3}{8}$" high, grooved coil form. Has 2 terminal lugs. Mounts by means of a removable bracket. —Special	Transmitter mixer, V_2, plate coil.	1	24B41333
2	10	1	L_3*	3C4053-1	Coil and Shield Assembly, 4.3 Mc. Crystal Oscillator	Shielded; midget size, $2\frac{1}{64}$" high, $\frac{57}{64}$" square. Mounts by means of 2 attached spade bolts (4-40 thread). Variable iron core tuning adjustment, with locknut. Includes capacitor C_{13}. —Special	4.3 Mc. crystal oscillator inductance.	1	24B41828

2	10	1	L_4*	3C1084B-2	Coil, Receiver R-F Plate	6 turns of #22 bare tinned copper wire wound on 3/8" diameter, 1 3/8" high, grooved coil form. Has 2 terminal lugs. Mounts by means of a removable bracket. —Special	R-f amp., V_6, plate coil.	1	24K41334
3	30	3	L_{5-1}*	2Z9643.6	Coil and Shield Assembly, 1st Mixer Plate	Shielded; midget size, 2 1/64" high, 57/64" square. Mounts by means of 2 attached spade bolts (4-40 thread). Variable iron core tuning adjustment, with locknut. Includes capacitors C_{36}, C_{37}, C_{38} and resistor R_{28}. Operates at 4.3 megacycles (4,300 kilocycles). —Special (Also L_{5-2}, L_{5-3})	1st mixer, V_7, to 1st i-f amp., V_8, coupling.	1	24B41837
			L_{5-2}		Coil and Shield Assembly, 1st I-F Amplifier Plate	Same as L_{5-1}. Includes capacitors C_{40}, C_{41}, C_{42} and resistor R_{31}; (parts identical with L_{5-1} except for reference numbers).	1st i-f amp., V_8, to 2nd i-f amp., V_9, coupling.		
			L_{5-3}		Coil and Shield Assembly, 2nd I-F Amplifier Plate	Same as L_{5-1}. Includes capacitors C_{44}, C_{45}, C_{46} and resistor R_{34}; (parts identical with L_{5-1} except for reference numbers).	2nd i-f amp., V_9, to 2nd mixer, V_{10}, coupling.		

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**Manufacturer's names and addresses, follow Tabular List of Replaceable Parts.

TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A (Cont'd)

Quantity			Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfr. No. **	Galvin Part and Drawing No.
ME-67	GK-178	In Set							
3	30	3	L6-1*	2Z9642.2	Coil and Shield Assembly, 2nd Mixer Plate	Shielded; midget size, 2 1/64" high. 57/64" square. Mounts by means of 2 attached spade bolts (4-40 thread). Variable iron core tuning adjustment with locknut. Includes capacitors C49, C50, C51 and resistor R40. Operates at 2.515 megacycles. (2,515 kilocycles). —Special (Also L6-2, L6-3)	2nd mixer, V10, to 3rd i-f amp., V11, coupling.	1	24B41838
			L6-2		Coil and Shield Assembly, 3rd I-F Amplifier Plate	Same as L6-1. Includes capacitors C53, C54, C55 and resistor R42 (parts identical with L6-1 except for reference numbers).	3rd i-f amp., V11, to 1st limiter, V12, coupling.		
			L6-3		Coil and Shield Assembly, 1st Limiter Plate	Same as L6-1. Includes capacitors C57, C58, C59, and resistor R45 (parts identical with L6-1 except for reference numbers).	1st limiter, V12, to 2nd limiter, V13, coupling.		
2	10	1	L7*	2Z9642-1	Coil and Shield Assembly, 2nd Limiter Plate	Shielded, midget size, 2 1/64" high, 57/64" square. Mounts by means of 2 attached spade bolts (4-40 thread). Variable iron core tun-	2nd limiter, V13, plate coil.	1	24B41835

						ing adjustment with locknut. Includes capacitors C62, C63 and C64. Operates at 2,515 megacycles (2,515 kilocycles). —Special			
2	10	1	L8*	2Z9642.5	Coil and Shield Assembly, 2.515 Mc. Discriminator	Shielded; midget size, 2 1/64" high, 57/64" square. Mounts by means of 2 attached spade bolts (4-40 thread). Variable iron core tuning adjustments with locknut. Includes C65 and C66. Operates at 2.515 megacycles (2,515 kilocycles). —Special	Discriminator coil.	1	24B41833
10	50	1	LM1*	2Z5952	Dial Light Bulb LM-52	6-8 volt, 0.15 ampere (brown bead). Tubular bulb, bayonet type base. Mazda #47.	Dial light and filament resistor for trans. mixer V2, when in calibrate position.	53	65X11854

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TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A (Cont'd)

Quantity			Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfr. No. **	Galvin Part and Drawing No.
ME-67	GK-178	In Set							
4	20	1	PL1*	2Z7117.8	Power Plug and Leads Assembly	7 prong chassis plug with 5 wire leads and 2 jumpers soldered to it. Plug has five 1/8" diameter pins and two 5/32" diameter pins; one of the 5/32" diameter pins is off-set; pins are numbered 1 to 7. Insulator is 2 1/4" long x 1 5/16" wide x 5/64" thick bakelite; has four 5/32" diameter countersunk mounting holes; one mounting hole is off-set to prevent wrong positioning of plug on chassis. —Special	Power plug.	1	1X41198
6	30	3	R1*	3Z6022-15	Resistor	Fixed, carbon; 220 ohms, ±20%, 1/3 watt, insulated. 3/8" long, 9/64" diameter. Allen-Bradley Type EB Ins., Stackpole Type MB 1/3 Ins., I.R.C. Type BT 1/4 Ins. (Also R2, R5)	R-F power amp., V1, plate filter resistor.	14 45 61	6B5637
			R2		Resistor	Same as R1.	R-F power amp., V1, screen grid voltage dropping.		

22	110	11	R3*	3Z6801-29	Resistor	Fixed, carbon; 1 megohm, ±20%. 1/3 watt, insulated. 3/8" long, 9/64" diameter. Allen-Bradley Type EB Ins., Stackpole Type MB 1/3 Ins., I.R.C. Type BT 1/4 Ins. (Also R7, R13, R32, R35, R43, R46, R54, R61, R70, R74)	R-F power amp., V1, control grid metering lead filter.	14 45 61	6B6159
8	40	4	R4*	3Z6722-18	Resistor	Fixed, carbon; 220,000 ohms, ±20%, 1/3 watt, insulated. 3/8" long, 9/64" diameter. Allen-Bradley Type EB Ins., Stackpole Type MB 1/3 Ins., I.R.C. Type BT 1/4 Ins. (Also R8, R49, R53)	R-F power amp., V1, control grid resistor	14 45 61	6B6204
			R5		Resistor	Same as R1.	Trans. mixer, V2, plate filter resistor.		
4	20	2	R6*	3Z6220-13	Resistor	Fixed, carbon; 2,200 ohms, ±20%, 1/3 watt, insulated. 3/8" long, 9/64" diameter. Allen-Bradley Type EB Ins., Stackpole Type MB 1/3 Ins., I.R.C. Type BT 1/4 Ins. (Also R16)	Trans. mixer, V2, screen grid voltage dropping.	14 45 61	6B6240

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TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A (Cont'd)

Quantity			Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfr. No. **	Galvin Part and Drawing No.
ME-67	GK-178	In Set							
			R7		Resistor	Same as R3.	Trans. mixer, V2, control grid metering lead filter.		
			R8		Resistor	Same as R4.	Trans. mixer, V2, control grid resistor.		
8	40	4	R9*	3Z6610-79	Resistor	Fixed, carbon; 10,000 ohms, ±20%, 1/3 watt, insulated. 3/8" long, 9/64" diameter. Allen-Bradley Type EB Ins., Stackpole Type MB 1/3 Ins., I.R.C. Type BT 1/4 Ins. (Also R25, R30, R39)	Doubler, V3, plate filter resistor.	14 45 61	6B6255
6	30	3	R10*	3Z6506.7	Resistor	Fixed, carbon; 5,600 ohms, ±20%, 1/3 watt, insulated. 3/8" long, 9/64" diameter. Allen-Bradley Type EB Ins., Stackpole Type MB 1/3 Ins., I.R.C. Type BT 1/4 Ins.	Doubler, V3, screen grid voltage dropping resistor.	14 45 61	6B6371

						(Also R11, R15)			
			R11		Resistor	Same as R10.	Master oscillator, V4, plate filter resistor.		
8	40	4	R12*	3Z6668-13	Resistor	Fixed, carbon; 68,000 ohms, ±20%, 1/3 watt, insulated. 3/8" long, 9/64" diameter. Allen-Bradley Type EB Ins., Stackpole Type MB 1/3 Ins., I.R.C. Type BT 1/4 Ins. (Also R47, R60, R73)	Doubler, V3, control grid resistor.	14 45 61	6B6256
			R13		Resistor	Same as R3.	Master oscillator, V4, control grid metering lead filter resistor.		
14	70	7	R14*	3Z6622-18	Resistor	Fixed, carbon; 22,000 ohms, ±20%, 1/3 watt, insulated. 3/8" long, 9/64" diameter. Allen-Bradley Type EB Ins., Stackpole Type MB 1/3 Ins., I.R.C. Type BT 1/4 Ins. (Also R20, R27, R33, R36, R41, R44)	Master oscillator, V4, control grid resistor.	14 45 61	6B6212

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TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A (Cont'd)

Quantity			Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfr. No. **	Galvin Part and Drawing No.
ME-67	GK-178	In Set							
			R15		Resistor	Same as R10.	Master oscillator, V4, screen grid voltage dropping resistor.		
			R16		Resistor	Same as R6.	A.F.C. and reactance modulator, V5, screen grid voltage dropping resistor.		
10	50	5	R17*	3Z6700-83	Resistor	Fixed, carbon; 100,000 ohms, ±20%, 1/3 watt, insulated. 3/8" long, 9/64" diameter. Allen-Bradley Type EB Ins., Stackpole Type MB 1/3 Ins., I.R.C. Type BT 1/4 Ins. (Also R24, R37, R50, R62, R72)	A.F.C. and reactance modulator, V5, control grid resistor.	14 45 61	6B6165
10	50	5	R18*	3Z6747-18	Resistor	Fixed, carbon; 470,000 ohms, ±20%, 1/3 watt, insulated. 3/8" long, 9/64" diameter. Allen-Bradley Type EB Ins., Stackpole	A.F.C. voltage filter resistor.	14 45 61	6B6160

						Type MB ⅓ Ins., I.R.C. Type BT ¼ Ins. (Also R55, R58, R59, R71)			
2	10	1	R19*†	3Z6622-3	Resistor	Fixed, carbon; 22,000 ohms, ±10%, ⅓ watt, insulated. ⅜" long, 9/64" diameter. Allen-Bradley Type EB Ins., Stackpole Type MB ⅓ Ins., I.R.C. Type BT ¼ Ins.	A.F.C. and reactance modulator, V5, control grid resistor.	14 45 61	6B6370
			R20		Resistor	Same as R14.	Microphone transformer, T3A secondary shunt resistor.		
2	10	1	R21*	3Z6033-10	Resistor	Fixed, carbon; 330 ohms, ±20%, ⅓ watt, insulated. ⅜" long, 9/64" diameter. Allen-Bradley Type EB Ins., Stackpole Type MB ⅓ Ins., I.R.C. Type BT ¼ Ins.	Microphone transformer, T3A, series resistor.	14 45 61	6B6494
2	10	1	R22*	3Z6003J1-6	Resistor	Fixed, carbon; 39 ohms, ±10%, ⅓ watt, insulated. ⅜" long, 9/64" diameter. Allen-Bradley Type EB Ins., Stackpole Type MB ⅓ Ins., I.R.C. Type BT ¼ Ins.	R-F power amp., V1, filament shunt.	14 45 61	6B6375

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**Manufacturer's names and addresses, follow Tabular List of Replaceable Parts.
†R19 is omitted, replace with R75.*

TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A (Cont'd)

Quantity			Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfr. No. **	Galvin Part and Drawing No.
ME-67	GK-178	In Set							
2	10	1	R23*	3Z6768-7	Resistor	Fixed, carbon; 680,000 ohms, ±20%, 1/3 watt, insulated. 3/8" long, 9/64" diameter. Allen-Bradley Type EB Ins., Stackpole Type MB 1/3 Ins., I.R.C. Type BT 1/4 Ins.	Receiver r-f amp., V6, control grid resistor.	14 45 61	6B6324
			R24		Resistor	Same as R17.	Receiver r-f amp., V6, screen grid voltage dropping resistor.		
			R25		Resistor	Same as R9.	Receiver r-f amp., V6, plate filter resistor.		
6	30	3	R26*	3Z6803A3-5	Resistor	Fixed, carbon; 3.3 megohms, ±10%, 1/3 watt, insulated. 3/8" long, 9/64" diameter. Allen-Bradley Type EB Ins., Stackpole Type MB 1/3 Ins., I.R.C. Type BT 1/4 Ins. (Also R63, R64)	1st mixer, V7, control grid resistor.	14 45 61	6B6364

			R27		Resistor	Same as R14.	1st mixer, V7, plate filter resistor.		
			R28		Resistor	Same as R67 except inside and part of L5-1	1st i-f amp., V8, control grid resistor.		
6	30	3	R29*	3Z6639-8	Resistor	Fixed, carbon; 39,000 ohms, ±20%, 1/3 watt, insulated. 3/8" long, 9/64" diameter. Allen-Bradley Type EB Ins., Stackpole Type MB 1/3 Ins., I.R.C. Type BT 1/4 Ins. (Also R38, R52)	1st i-f amp., V8, screen grid voltage dropping resistor.	14 45 61	6B6355
			R30		Resistor	Same as R9.	1st i-f amp., V8, plate filter resistor.		
			R31		Resistor	Same as R67 except inside and part of L5-2.	2nd i-f amp., V9, control grid resistor.		
			R32		Resistor	Same as R3.	Receiver r-f amp., V6, control grid metering lead filter.		
			R33		Resistor	Same as R14.	2nd i-f amp., V9, plate filter resistor.		

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TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A (Cont'd)

Quantity			Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfr. No. **	Galvin Part and Drawing No.
ME-67	GK-178	In Set							
			R34		Resistor	Same as R67 except inside and part of L5-3.	2nd mixer, V10, control grid resistor.		
			R35		Resistor	Same as R3.	A-F amp., V15, control grid bias filter resistor.		
			R36		Resistor	Same as R14.	2nd mixer, V10, oscillator grid resistor.		
			R37		Resistor	Same as R17.	2nd mixer, V10, oscillator grid resistor.		
			R38		Resistor	Same as R29.	2nd mixer, V10, screen grid voltage dropping resistor.		
			R39		Resistor	Same as R9.	2nd mixer, V10, plate filter resistor.		

			R40*		Resistor	Fixed, carbon; 100,000 ohms, ±10%, 1/3 watt, insulated. 3/8" long, 9/64" diameter. Inside, and part of L6-1. Allen-Bradley Type EB Ins., Stackpole Type MB 1/3 Ins., I.R.C. Type BT 1/4 Ins. (Also R42, R45)	3rd i-f amp., V11, control grid resistor.	14 45 61	6B6369
			R41		Resistor	Same as R14.	3rd i-f amp., V11, plate and screen grid voltage dropping resistor.		
			R42		Resistor	Same as R40 except inside and part of L6-2.	1st limiter, V12, control grid resistor.		
			R43		Resistor	Same as R3.	1st limiter, V12, control grid metering lead filter resistor.		
			R44		Resistor	Same as R14.	1st limiter, V12, plate and screen grid voltage dropping resistor.		

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TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A (Cont'd)

Quantity			Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfr. No. **	Galvin Part and Drawing No.
ME-67	GK-178	In Set							
			R45		Resistor	Same as R40 except inside and part of L6-3.	2nd limiter, V13, control grid resistor		
			R46		Resistor	Same as R3.	2nd limiter, V13, control grid metering lead filter resistor.		
			R47		Resistor	Same as R12.	2nd limiter, V13, screen grid voltage dropping resistor.		
2	10	1	R48*	3Z6647-16	Resistor	Fixed, carbon; 47,000 ohms, ±20%, 1/3 watt, insulated. 3/8" long, 9/64" diameter. Allen-Bradley Type EB Ins., Stackpole Type MB 1/3 Ins., I.R.C. Type BT 1/4 Ins.	2nd limiter, V13, plate filter resistor	14 45 61	6B6321
			R49		Resistor	Same as R4.	Discriminator load resistor.		
			R50		Resistor	Same as R17.	Discriminator filter resistor.		

2	10	2	R51*	2Z7272	Potentiometer	Variable;500,000 ohms, ±20%. linear curve. Contact arm insulated from shaft, neoprene water-seal between shaft and mounting bushing; mounting bushing 11/32" long, 1/2-28 thread; 1/4" diameter shaft, 13/32" long. Overall size 1 17/32" x 1 1/8". Has single-pole single-throw switch, (SW2) on back; switch is operated by volume control shaft. Chicago Telephone Supply Co., Part No. A-8267. (Also R66)	Volume control.	16	18A41537
			R52		Resistor	Same as R29.	Audio padding resistor.		
			R53		Resistor	Same as R4.	Discriminator, V15, load.		
			R54		Resistor	Same as R3.	Discriminator, output metering lead filter resistor.		
			R55		Resistor	Same as R18.	A.F.C. control voltage filter resistor.		

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TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A (Cont'd)

Quantity			Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfr. No. **	Galvin Part and Drawing No.
ME-67	GK-178	In Set							
2	10	1	R56*	3Z6002B2-4	Resistor	Fixed, carbon; 22 ohms, ±10%, 1/3 watt, insulated. 3/8" long, 9/64" diameter. Allen-Bradley Type EB Ins., Stackpole Type MB 1/3 Ins.	Pilot light shunt resistor.	14 45	6B6356
2	10	1	R57*	3Z5994-8	Resistor	Fixed, carbon; 4.7 ohms, ±5%, 1/2 watt, insulated. 13/32" long, 7/32" diameter. Stackpole Type MB 1/2 Ins., Erie Type 504 Ins.	Transmitter filament voltage dropping resistor.	45	6B5650
			R58		Resistor	Same as R18.	Part of high-pass R-C filter network of squelch system.		
			R59		Resistor	Same as R18.	Noise amp.-rect., V16, control grid resistor, and part of high-pass filter network of squelch system.		

			R60		Resistor	Same as R12.	Noise amp.-rect., V15, screen grid voltage dropping resistor.		
			R61		Resistor	Same as R3.	Noise amp.-rect., V16, diode load resistor.		
			R62		Resistor	Same as R17.	Noise amp.-rect., V16, plate filter resistor.		
			R63		Resistor	Same as R26.	D-C amp., V17, control grid resistor.		
			R64		Resistor	Same as R26.	D-C amp., V17, control grid resistor.		
2	10	1	R65*	3Z6802A2-12	Resistor	Fixed, carbon; 2.2 megohms, ±10%, 1/3 watt, insulated. 3/8" long, 9/64" diameter. Allen-Bradley Type EB Ins., Stackpole Type MB 1/3 Ins., I.R.C. Type BT 1/4 Ins.	Series resistor.	14 45 61	6B6365
			R66		Potentiometer	Same as R51 except switch is SW4.	Squelch control.		

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TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A (Cont'd)

Quantity			Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfr. No. **	Galvin Part and Drawing No.
ME-67	GK-178	In Set							
2	10	1	R67*	3Z6733-9	Resistor	Fixed, carbon; 220,000 ohms, ±10%, 1/3 watt, insulated. 3/8" long, 9/64" diameter. Allen-Bradley Type EB Ins., Stackpole Type MB 1/3 Ins., I.R.C. Type BT 1/4 Ins. (Also R28, R31, R34)	Series resistor.	14 45 61	6B6349
4	20	2	R68*	3Z6668-12	Resistor	Fixed, carbon; 68,000 ohms, ±10%, 1/3 watt, insulated. 3/8" long, 9/64" diameter. Allen-Bradley Type EB Ins., Stackpole Type MB 1/3 Ins., I.R.C. Type BT 1/4 Ins. (Also R69)	D-C amp., V17, plate resistor.	14 45 61	6B6304
			R69		Resistor	Same as R68.	D-C amp., V17, plate and screen dropping resistor.		
			R70		Resistor	Same as R3.	Squelch oscillator, V18, load resistor.		

			R71		Resistor	Same as R18.	Squelch oscillator, V18, voltage filter to a-f pwr. amp., V15, control grid.		
			R72		Resistor	Same as R17 except inside and part of T4.	Squelch osc.-rect., V18, control grid resistor.		
			R73		Resistor	Same as R12.	Squelch oscillator, V18, plate filter resistor.		
			R74		Resistor	Same as R3.	R-F Amp. grid-to-ground voltage divider.		
2	10	1	R75*†		Resistor	Fixed, carbon; 15,000 ohms, ±10%, ⅓ watt, insulated. ⅜" long x .140" diameter. Allen Bradley Type EB Ins. IRC Type BT ¼ Ins. Stackpole MB ⅓ Ins.	A.F.C. and reactance modulator, V5, control grid resistor	14 45 61	6B6422
2	10	1	R76*		Resistor	Fixed, carbon; 270 ohms, ±10%, ⅓ watt, insulated. ⅜" long x .140" diameter. Allen Bradley Type EB Ins. Stackpole Type MB ⅓ Ins.	Receiver and Transmitter osc., V4, filament shunt.	14 45	6B6272
1	10	1	SO1	2Z8678.2	Socket Meter	8 prong (saddle octal type). 1 5/16" mounting centers. Cinch #2104-W1.	Metering socket.	23	9A41264

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**Manufacturer's names and addresses, follow Tabular List of Replaceable Parts.
†R75 formerly R19 in TM 11-242, dated April 3, 1943.

TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A (Cont'd)

Quantity			Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfr. No. **	Galvin Part and Drawing No.
ME-67	GK-178	In Set							
			SW1		Switch	Part of J2. Single-pole, single-throw. Closes when a plug is inserted into J2.	Filament control.		Part of 1X41852
			SW2		Switch	Part of R51. Single-pole, single-throw. Operated by volume R51, shaft.	Filament on-off switch (Power).		Part of 18A41537
1	10	1	SW3*	3Z9824-30	Switch Calibration	Single-pole, single-throw, momentary push-button type. Mounting bushing has 3/8-32 thread. Same as Chicago Telephone Supply Co.'s. Type PS-200 except for changes made per Galvin Sample No. A8369.	Dial light and calibration switch.	16	40A41438
			SW4		Switch	Part of R66. Single-pole, single-throw. Operated by squelch control, R66, shaft.	Squelch circuit on-off switch.		Part of 18A41537
2	10	1	T1*	3C1084B-3	Transformer, Doubler Plate	Primary: 6 turns #22 bare tinned copper wire, wound on a 3/8" diameter, 1 3/8" high, grooved coil form. Has 2 terminal lugs. Mounts by means of a removable bracket.	Doubler, V3, plate coil, and 1st mixer, V7, coupling coil.	1	24K41456

						Secondary: 2 turns of #22 stranded "Spi-glass" insulated wire, wound at cold end of primary. A ceramic bead holds secondary in position over primary; ends of coil are soldered directly to mixer-tube socket. Secondary is wound in same direction as primary. —Special			
0	10	1	T_2*	3C1084B-4	Transformer, Oscillator	Consists of 2 steatite forms assembled together. Primary (plate coil) is wound on inner form; secondary (grid coil) wound on outer form. Coil leads terminate at lugs in bottom. Overall dimensions, 2″ high, $1\frac{9}{16}$″ x $1\frac{7}{64}$″. Primary: $16\frac{1}{2}$ turns #20 tinned copper wire. Secondary: 8 turns #30 enameled copper wire. Wax impregnated after assembly. (Shield is not part of this transformer). Fits into $2\frac{3}{8}$″ high, x $1\frac{5}{16}$″ square shield can. —Special	Master oscillator, V_4, tuning inductance.	1	25B41839

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TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A (Cont'd)

Quantity			Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfr. No. **	Galvin Part and Drawing No.
ME-67	GK-178	In Set							
2	10	1	T3*	2Z9639	Transformer, Microphone and Output	Microphone (T3-A) and output (T3-B) transformers are mounted in a single metal case. Overall dimensions, 2⅝" long, 1 3/16" wide, 1⅜" high. Connections brought out to terminal lugs on top. Case filled with potting compound. —Special	See T3-A and T3-B.	1	25B41445
			(T3-A)			Microphone transformer-(T3-A) Primary: 300 turns #35 plain enameled wire. D-C resistance: 11.5 ohms Terminals #1 (microphone—) and #2 (microphone+). Secondary: 4250 turns #42 plain enameled wire. D-C resistance: 1250 ohms Terminals #3 (ground) and #4 (grid). Core: #29 gauge Radio #6AAS iron, ¼" stack.	Modulator input transformer.		

				(T3-B)			Output transformer-(T3-B) Primary: 1650 turns #40 plain enameled copper wire. D-C resistance: 200 ohms Terminals #5 (plate) and #6 (B+). Secondary: 130 turns #36 plain enameled copper wire. D-C resistance: 8.5 ohms Terminals #7 (ground) and #8 (phone). Core: #29 gauge Radio #6AAS iron, ¼" stack.	Receiver audio output transformer.		
	2	10	1	T4*	2Z9642.3	Transformer and Shield, Squelch Oscillator	Shielded; midget size, 1 5/8" high, 57/64" square. Mounts by means of 2 attached spade bolts (4-40 thread). Iron core type. —Special	Squelch oscillator, V18, inductance.	1	25B41823
			2	V1	2V3A4	Tube 3A4	RMA type 3A4. (Also V2)	R-F power amp.	21 65 99	
				V2	2V3A4	Tube 3A4	RMA type 3A4.	Trans. mixer.	21 65 99	

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TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A (Cont'd)

Quantity			Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfr. No. **	Galvin Part and Drawing No.
ME-67	GK-178	In Set							
		6	V3	2T173	Tube 1T4/VT-173	RMA type 1T4. (Also V4, V6, V8, V9, V11)	Transmitter—receiver doubler.	21 65 99	
			V4	2T173	Tube 1T4/VT-173	RMA type 1T4.	Transmitter—receiver master oscillator.	21 65 99	
		5	V5	2V1L4	Tube 1L4	RMA type 1L4. (Also V7, V12, V13, V17)	Receiver A.F.C. control. Transmitter reactance modulator.	21 65 99	
			V6	2T173	Tube 1T4/VT-173	RMA type 1T4.	Receiver r-f amplifier.	21 65 99	
			V7	2V1L4	Tube 1L4	RMA type 1L4.	1st mixer.	21 65 99	
			V8	2T173	Tube 1T4/VT-173	RMA type 1T4.	1st i-f amplifier.	21 65 99	

			V9	2T173	Tube 1T4/VT-173	RMA type 1T4.	2nd i-f amplifier.	21 65 99
		1	V10	2T171	Tube 1R5/VT-171	RMA type 1R5.	2nd mixer and crystal oscillator.	21 65 99
			V11	2T173	Tube 1T4/VT-173	RMA type 1T4.	3rd i-f amplifier.	21 65 99
			V12	2V1L4	Tube 1L4	RMA type 1L4.	1st limiter.	21 65 99
			V13	2V1L4	Tube 1L4	RMA type 1L4.	2nd limiter.	21 65 99
		1	V14	2V1A3	Tube 1A3	RMA type 1A3.	Discriminator.	21 65 99
		3	V15	2T172	Tube 1S5/VT-172	RMA type 1S5. (Also V16, V18)	Discriminator and a-f power amplifier.	21 65 99

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TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A (Cont'd)

Quantity			Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfr. No. **	Galvin Part and Drawing No.
ME-67	GK-178	In Set							
			V_{16}	2T172	Tube 1S5/VT-172	RMA type 1S5.	Noise amplifier—rectifier.	21 65 99	
			V_{17}	2V1L4	Tube 1L4	RMA type 1L4.	D-C amplifier.	21 65 99	
			V_{18}	2T172	Tube 1S5/VT-172	RMA type 1S5.	Squelch oscillator-rectifier.	21 65 99	
1	3	1	$XTAL_1$	2Z3543-4300	Crystal and Holder, Transmitter	Crystal Holder FT-243 with 4,300 kc. crystal. Approximate crystal size: $^{15}/_{32}$" x $^{9}/_{16}$" x required thickness.	Transmitter mixer oscillator and calibrator.	1	48C41371
1	3	1	$XTAL_2$	2Z3543-6815	Crystal and Holder, Receiver	Crystal Holder FT-243 with 6,815 kc. crystal. Approximate crystal size: $^{15}/_{32}$" x $^{9}/_{16}$" x required thickness.	Receiver second mixer oscillator.	1	48C41372

2	10	1	101*	2Z1406	Bushing, Antenna Mounting Bolt and Pin Assembly	1″ diameter x 1⅛″ high. ⅜-24, ⅜″ full thread in top center hole; ¼-20, ¼″ full thread in bottom center hole. Has a 1/16″ diameter locking pin. Bolt is brass, black nickel plated; pin is cold rolled steel, zinc plated. —Special	Antenna terminal.	1	1X41966
0	10	1	102*	2Z4870-4	Anti-Backlash Assembly	Assembly consists of anti-backlash bracket with shoulder rivet spacer, gear and flat spiral spring. —Special	Removes dial backlash.	1	1X41848
4	120	18	103*	2Z1234	Base, Tube Shield	Cold rolled steel, hot tin dipped. ⅞″ mounting centers, ¼″ high; has ears for engaging into bayonet lock slots of tube shield. —Cinch #1006	Holds tube shields in position.	23	42A41276
1	5	1	104*	2Z1235	Bracket, Dial Light	"U" shaped; one side has an extruded and 6-32 tapped hole, other side has embossing (.135″ diameter, .020″ high) for holding dial light socket clip. —Special	Dial light support.	1	7A41199

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TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A (Cont'd)

Quantity			Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfr. No. **	Galvin Part and Drawing No.
ME-67	GK-178	In Set							
4	20	4	105*	2Z2652	Bracket, High Frequency Coil	$31\frac{1}{32}$" long overall x $11\frac{1}{64}$" high; $23\frac{3}{32}$" mounting centers. Split coil clamping ring, $\frac{3}{8}$" inside diameter. .020" cold rolled steel, zinc plated. —Special	Bracket for mounting coils L1, L2, L4 and transformer T1.	1	7A40607
0	10	1	106*	2Z1239.2	Bracket, Terminal Strip Mounting	"L" shaped, $\frac{7}{16}$" x $1\frac{9}{32}$" x .043" thick. Has two extruded 6-32 tapped holes. Cold rolled steel, electro zinc plated. —Special	Support for one end of 42 lug terminal strip.	1	7A41258
2	10	1	107*	6L421-4.1N	Bolt, Antenna Fastening	$1\frac{5}{16}$" long x $\frac{1}{4}$" diameter, $\frac{7}{16}$" hexagonal head. $\frac{1}{4}$-20 thread in bolt head. Brass, white nickel plated. —Special	Holds antenna insulator assembly together and antenna connector.	1	3A41546
0	10	1	108*	2Z1406-2	Bushing, Dial Gear	$\frac{9}{16}$" at maximum diameter x .396" long. Hole through center is tapped 10-32. Bearing surface for dial gear is .3090" diameter x .2745" long. Cold rolled steel, nickel plated. —Special	Dial gear bushing.	1	43A41171

0	0	1	109		Capscrew	¼-20 thread, ½″ long; hexagonal head. Cold rolled steel, black zinc finish.	Holds front panel to chassis.	26	3S6916
1	5	1	110*	2Z2646	Clamp, Crystal (4300 kc)	Spring steel, .020″ thick; electro zinc plated. Has white filled 4300 kc. and arrow markings on top —Special	Keeps 4300 kc. crystal from falling out of socket.	1	42B40614
1	5	1	111*	2Z2646.1	Clamp, Crystal (6815 kc.)	Same as above except frequency marking is 6815 kc. —Special	Keeps 6815 kc crystal from falling out of socket.	1	42K40616
		12	112		Clip, Hold Down	Hook shaped; ⅞″ x 9/16″ x ¼″. 17/32″ mounting hole centers; mounting holes ⅛″ diameter. Cold rolled steel, smooth olive drab paint finish. (Also 306) —Special	Clip for clip catches.	1	55K34338
0	0	1	113		Cover, Panel	11 15/64″ long x 3 11/32″ wide x 1⅜″ high. Cold rolled steel, olive drab wrinkle finish. —Special	Panel cover.	1	15D41273
0	0	1	114		Dial Gear and Pinion Assembly	Consists of a 4⅜″ uncalibrated dial gear, with a 24 tooth brass pinion staked to it. Has channel numbers. —Special	Dial.	1	1X41847

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TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A (Cont'd)

Quantity			Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfr. No. **	Galvin Part and Drawing No.
ME-67	GK-178	In Set							
2	10	1	115*	2Z3405-1	Diaphragm, Waterseal	1⅜" diameter, x 11/32" high. Dome shaped. Has three equally spaced .106" diameter holes in flange. Black synthetic rubber. —Special	Waterproof cover over calibrate switch push button.	1	32A41180
1	5	1	116*	2Z4600	Escutcheon, Indicator Window	Outside dimensions; 1½" long x 1¼" wide x 1/16" thick; opening dimensions; ⅞" long x ⅝" wide. Brass, black nickel finish. —Special	Holds down indicator window.	1	13A41034
1	5	1	117*	2Z2652-2	Flange, Diaphragm	Outside dimensions: 1⅜" diameter x 1/16" thick; inside dimension: 13/16" diameter. Has three equally spaced .106" diameter holes. Brass, black nickel finish. —Special	Holds down waterseal diaphragm over calibrate switch.	1	7A41181
4	20	1	118*	2Z4868.2	Gasket, Antenna Insulator	1" outside diameter x ½" inside diameter x 1/32" thick. Has hole for pin. Black synthetic rubber. —Special	Waterseal gasket between antenna mounting bolt and pin assembly and female antenna insulator.	1	32A41552

40	200	4	119*	2Z4866.10	Gasket, Jack Waterseal	$61/64''$ diameter x $19/64''$ high x $13/32''$ hole in center. Has groove on outside for gasket retainer spring. Black synthetic rubber. —Special	Jack waterseal plunger gasket.	1	32A41934
4	20	2	120*	2Z4868	Gasket, Indicator Window	Outside dimensions: $17/16''$ long x $13/16''$ wide x $1/32''$ thick; opening dimensions: $29/32''$ long x $21/32''$ wide. Has four .106″ diameter holes; all corners are rounded. Black synthetic rubber. —Special	Indicator window waterseal gaskets; one used on each side of window.	1	32A41032
4	12	1	121*	2Z4866.12	Gasket, Panel and Housing	$1/4''$ diameter black synthetic rubber tubing forming a circle having a circumference of $30\,1/2''$. Tube is airtight. Gasket is cemented to back of front panel of Radio Receiver and Transmitter BC-1000-A. (Also 311) —Special	Watersealing gasket between Radio Receiver and Transmitter BC-1000-A and Chassis Case.	1	32B41858
0	10	1	122*	6Z4920-6	Grommet, Capacitor Mounting	$1/2''$ diameter x $5/16''$ thick; has $3/64''$ wide groove $7/64''$ from one end. Black synthetic rubber. —Special	Supports and cushions one end of variable capacitor C6.	1	37A41201

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TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A (Cont'd)

Quantity			Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfr. No. **	Galvin Part and Drawing No.
ME-67	GK-178	In Set							
2	20	1	123*	3Z12085	Ground Terminal Stud and Nut Assembly	Stud is 15/16" long; one end has 1/4-20 thread, other end has 8-32 thread; hexagonal shaped in center. A 27/64" diameter knurled nut is screwed over 8-32 tapped end and stud is flared over to prevent nut from coming off. Pieces made of brass and black nickel plated. —Special	Antenna AN-130-A ground terminal, and also holds front panel to chassis.	1	1X41967
0	0	1	124		Hinge, Front Cover	10" long x 7/8" wide; spring loaded. Brass, with black nickel plated finish. —Special	Front cover hinge.	1	55B41202
4	20	1	125*	3G112-60F	Insulator, Antenna (Female)	Ceramic; olive drab wrinkle finish. Maximum overall dimensions: 1 3/4" diameter x 15/16" high. Has 13/32" diameter hole in center. —Special	Top insulator of antenna insulator assembly.	1	67A41562
4	20	1	126*	3G112-56M	Insulator, Antenna (Male)	Ceramic; olive drab wrinkle finish. Maximum overall dimensions: 1 3/4" diameter x 7/8" high. Has 9/32" diameter hole in center. —Special	Bottom insulator of antenna insulator assembly.	1	67A41561

0	0	1	127		Indicator, Dial Spring	.013″ diameter music wire with 15½ turns 1/16″ diameter spring formed near one end; overall length is 1¾″. Hooks formed at each end. The long straight end is painted bright red.—Special	Dial indicator (pointer).	1	41A41618
0	0	1	128		Indicator Frame and Disc Assembly	Consists of an indicator frame, indicator dial spring, friction stop disc and shoulder rivet. All parts electro zinc plated; indicator dial spring is painted bright red. —Special	Adjustable indicator frame and indicator (pointer).	1	1X41846
10	40	4	129*	2Z3403.10	Jack Waterseal Assembly	Assembly consists of cup and bracket, bushing, spring, lid, pin, jack waterseal plunger and plunger retainer spring. All metal parts black nickel plated; plunger is black bakelite. —Special	External jack waterseals.	1	1X41849
0	0	1	130		Knob, Indicator Adjustment	¾″ diameter, with knurled edge and screw-driver slot. ¼″ diameter x 11/32″ long shaft is part of knob. End of shaft has two flats and a 6-32 tapped hole. Cold rolled steel, black zinc plated. —Special	Indicator adjustment knob.	1	36A41163

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0	0	2	137		Lockwasher	#8 internal, 21/64" outside diameter. Spring steel, white cadmium finish. Shakeproof #1208.	Used under gang capacitor mounting screw heads.	70	4S7651
1	10	1	138*	6L72220	Lockwasher	3/8" thin internal; 11/16" outside diameter. Spring steel, white cadmium finish. Shakeproof #1220-2.	Keeps calibration switch mounting nut tight.	70	4S7691
0	0	1	139		Lug, Soldering	Lock-clamping type. Phosphor bronze, hot tin dipped. Shakeproof #2108-6.	Antenna insulator terminal lug.	70	29B5213
11	50	5	140*	6L3508-32.5	Nut	3/8-32 thread; 1/2" hexagonal. Cold rolled steel, cadmium finish.	Jack and jack waterseal assembly mounting nuts; calibration switch mounting nut.	26	2S7018
2	10	2	141*	6L3508-28.4	Nut	1/2-28 thread; 5/8" hexagonal. Cold rolled steel, electro-zinc finish.	Squelch and volume controls mounting nuts.	26	2S8397
0	0	36	142		Nut	2-56 thread; 3/16" hexagonal. Cold rolled steel, white cadmium finish.	Nut for #2 screws.	26	2S7041
0	0	31	143		Nut	4-40 thread; 3/16" hexagonal. Brass, white nickel finish.	Nut for #4 screws (general).	26	2S8376

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TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A (Cont'd)

Quantity			Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfr. No. **	Galvin Part and Drawing No.
ME-67	GK-178	In Set							
0	0	33	144		Nut	6-32 thread x ¼" hexagonal. Cold rolled steel, white cadmium finish. (Also 315, 404).	Nut for #6 screw.	26	2S7005
0	0	1	145		Nut, Packing (Indicator Adjustment)	½-27 thread on outside; .253" hole through center. Has screwdriver slot on one side. Brass, white nickel plated. —Special	Keeps indicator adjustment knob packing washer in position.	1	2A41176
0	0	1	146		Nut, Packing (Spinner)	⅜-32 thread on outside; .193" hole through center. Has screwdriver slot on one side. Brass, white nickel plated. —Special	Keeps tuning and pinion shaft packing in position.	1	2A40688
10	40	4	148*	2Z3403.10/1	Plunger, (only) Jack Waterseal	Black, molded bakelite; 19/32" high x 11/16" diameter at largest point. Used in jack waterseal assembly. —Special	Plugs jack opening when jack is not in use.	1	46A41649
0	0	36	149		Screw	2-56 thread x 5/16" long, slotted round head, machine screw. Cold rolled steel, white cadmium finish.	Tube socket and tube shield base mounting screws.	26	3S6959

0	0	4	150		Screw	4-40 thread x ¼" long, slotted binderhead machine screw. Cold rolled steel, black nickel finish.	Indicator window escutcheon mounting screw.	26	3S9679
0	0	3	151		Screw	4-40 thread x 5/16" long, slotted round head machine screw. Cold rolled steel, black nickel finish.	Diaphragm flange mounting screws.	26	3S9678
0	0	2	152		Screw	4-40 thread x ½" long, slotted round head machine screw. Cold rolled steel, white nickel finish.	Crystal socket mounting screws.	26	3S8080
0	0	10	153		Screw	6-32 thread x 3/16" long, slotted binderhead machine screw. Cold rolled steel, white cadmium finish.	Holds high frequency coil mounting brackets to chassis, holds 12 lug terminal strip assembly to chassis.	26	3S7156
0	0	7	154		Screw	6-32 thread x ¼" long, slotted flat head machine screw Cold rolled steel, white cadmium finish.	Mounting screws for terminal strip, chassis plug and terminal strip mounting bracket.	26	3S7292
0	0	1	155		Screw	6-32 thread x 5/16" long, slotted binderhead machine screw Cold rolled steel, black nickel finish.	Dial light bracket mounting screw.	26	3S9674

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TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A (Cont'd)

Quantity			Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfr. No. **	Galvin Part and Drawing No.
ME-67	GK-178	In Set							
0	0	8	156		Screw	6-32 thread x ¼" long, slotted binderhead machine screw. Cold rolled steel, white cadmium finish.	Holds antenna insulator terminal lug to antenna fastening bolt; mounts T3 and indicator adjustment knob fastening screw.	26	3S7164
0	0	1	157		Screw	6-32 thread x ⅜" long, slotted binderhead machine screw. Cold rolled steel, black nickel finish.	Anti-backlash assembly mounting screw.		3S9677
0	0	2	158		Screw	8-32 thread x ¼" long, slotted binderhead machine screw. Cold rolled steel, white cadmium finish.	Gang capacitor and drive mounting screws.	26	3S7154
0	0	2	159		Screw	8-32 thread x 5/16" long, slotted binderhead machine screw. Cold rolled steel, black nickel finish.	Mounts front panel to chassis.	26	3S8076
0	0	1	160		Screw	10-32 thread x ⅜" long, slotted binderhead machine screw. Cold rolled steel, black nickel finish.	Dial gear bushing mounting screw.		3S9675

0	0	2	161		Setscrew	6-32 thread x 3/16" long, Allen-head, cup point. Case hardened steel, black zinc finish.	Spinner knob setscrew.		3S7147
0	0	1	162		Setscrew	10-32 thread x 3/16" long, slotted headless, cup point. Case hardened steel, white nickel finish.	Locks dial gear bushing mounting screw.		3S7142
4	20	4	163*		Setscrew	8-32 thread x 5/16" long, slotted headless cup point. Case hardened steel, black nickel finish.	Volume and squelch control knob setscrew.		3S7146
0	0	1	164		Shaft, Tuning and Pinion	1 47/64" long; one end 1/4" diameter (for tuning knob), other end is .179" diameter. A 15 tooth pinion is cut into shaft near the 1/4" diameter end. Cold rolled steel, white nickel plated. —Special	Tuning and dial drive shaft.	1	44B40711
0	10	1	165*	2Z8306	Shield Assembly (Oscillator Transformer)	2 3/8" high x 1 21/32" square; mounts by two attached spade bolts. Spade bolts have 4-40 thread. Aluminum, sandblasted and lacquered. —Special	T2 shield.	1	1X40795

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TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A (Cont'd)

Quantity			Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfr. No. **	Galvin Part and Drawing No.
ME-67	GK-178	In Set							
2	10	1	166*	2Z5991-2	Socket, Clip and Leads	Miniature bayonet type socket with white, yellow and white, red leads and mounting clip. Socket is insulated from mounting clip; insulating shell around socket. —Special	Dial light socket and connecting leads.	1	60A41444
1	20	2	167*	2Z8672.8	Socket, Crystal	For single crystal. Made of tan mica filled bakelite. Overall dimensions: 51/64" long x 5/16" wide x 35/64" high. Silver plated beryllium copper contacts. Has .120" diameter hole in center for mounting screw. Cinch #9816.	Crystal sockets.	23	9A40050
10	170	18	168*	2Z8677	Socket, Tube	7 prong; XXXP natural bakelite, wax impregnated insulation. 7/8" mounting centers. Cinch #2543.	Tube Sockets.	23	9A40536
2	10	1	169*	2Z3407.4	Spinner Knob Assembly	Consists of a 1½" diameter die cast spinner knob and handle with a 1½" diameter spinner knob disc staked to it. Spinner knob is painted smooth olive	Tuning knob.	1	1X41845

						drab; spinner knob disc is black nickel plated. Knob has two 6-32x3/16" long Allen head setscrews. —Special			
0	0	1	170		Spinner Lock Assembly	Consists of: spinner lock bracket, spinner knob clamp, 9/16" x .062" pin, spinner lock spring, and spinner clamp thumbscrew. Above parts are assembled together. Black nickel finished. —Special	Dial lock assembly.	1	1X41844
40	200	4	171*	2Z8877.8	Spring, Gasket Retainer	.043" diameter stainless steel wire formed into 49/64" diameter circle with small loops (finger grips) formed on each end. —Special	Jack waterseal gasket retainer.	1	41A41932
10	40	4	172*	2Z8877.10	Spring, Plunger Retainer	Made of 1/16" diameter stainless steel wire; "U" shaped. —Special	Holds jack waterseal plunger to jack waterseal assembly.	1	41A41672
0	0	2	173		Support, Cover	Hinged in middle, and has hinged end plates for attachment to front cover and panel cover. 5/32" holes in end plates. Brass, black nickel finish. —Special	Front cover supports.	1	7B41268

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TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A (Cont'd)

Quantity			Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfr. No. **	Galvin Part and Drawing No.
ME-67	GK-178	In Set							
4	20	2	174*	2Z9482-1	Terminal Strip (1 lug)	1 insulated lug and 1 mounting lug mounted on, $2\frac{5}{32}$" long bakelite strip. Cinch #6203W.	Tie point.	23	31A31216
0	10	1	175*	2Z9440-2	Terminal Strip Assembly (42 lug)	42 terminal lugs mounted on a 9" long x $1\frac{1}{16}$" wide x $\frac{1}{16}$" thick, wax impregnated bakelite strip. Has wire jumpers on back. —Special	Terminal board.	1	1X41389
0	10	1	176*	2Z9411	Terminal Strip and Bracket Assembly (10 lug)	10 terminal lugs mounted on a $2\frac{5}{8}$" long x $1\frac{1}{16}$" wide x $\frac{1}{16}$" thick, wax impregnated bakelite strip. Has two 6-32 tapped mounting brackets riveted to strip. —Special	Terminal board.	1	1X41484
0	10	1	177*	2Z9414.2	Terminal Strip and Bracket Assembly (14 lug)	14 terminal lugs mounted on a $2\frac{5}{8}$" long x $1\frac{1}{16}$" wide x $\frac{1}{16}$" thick, wax impregnated bakelite strip. Has two 6-32 tapped mounting brackets riveted to strip. —Special	Terminal board.	1	1X41602

0	10	1	178*	2Z9412.6	Terminal Strip and Mounting Plates Assembly (12 lug)	12 terminal lugs mounted on a 2 5/8" long x 1 1/16" wide x 1/16" thick, wax impregnated bakelite strip. Has two 6-32 tapped mounting plates riveted to strip, and necessary wire jumper on back. —Special	Terminal board.	1	1X40707
18	90	18	179*	2Z11102	Tube Shield and Spring Assembly	1 3/4" high x 51/64" diameter; has compression type conical spring in top. Bottom of shield has two bayonet lock slots. Cold rolled steel, hot tin dipped or zinc plated. —Special	Tube shields.	1	1X41980
0	0	2	180		Lockwasher	#8 internal, 9/32" outside diameter. Spring steel, black nickel finish. Shakeproof #1206.	Used under head of anti-backlash mounting screw; also under head of dial light bracket mounting screw.	70	4S8410
0	0	2	181		Lockwasher	#6 internal, 21/64" diameter. Spring steel, black nickel finish. Shakeproof #2108.	Used under binder-head screws that mount front panel to chassis.	70	4S8411

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TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A (Cont'd)

Quantity			Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfr. No. **	Galvin Part and Drawing No.
ME-67	GK-178	In Set							
0	0	1	182		Washer	½" outside diameter x 7/32" inside diameter x .032" thick. Cold rolled steel, white cadmium finish.	Used under dial gear bushing.	13	4S7630
0	0	1	183		Washer	½" outside diameter x 9/32" inside diameter x.032" thick.Cold rolled steel, electro zinc plated finish.	Used under antenna fastening bolt head.	13	4S8244
0	0	2	184		Lockwasher	¼" internal, 15/32" outside diameter. Spring steel, black nickel finish. Shakeproof #1214.	Used under head of panel mounting capscrew and ground terminal stud and nut assembly.	13	4S8419
0	0	1	185		Washer	#4 internal, 17/64" outside diameter. Spring steel, black nickel finish. Shakeproof #1204.	Used under heads of waterseal diaphragm and indicator window escutcheon mounting screws.	13	4S8414

0	0	2	186		Washer	7/8" outside diameter x .515" inside diameter x .032" thick. Cold rolled steel, black nickel finish.	Used under squelch and volume control mounting nut.	13	4S8236
0	0	1	187		Washer, Friction	3/4" outside diameter x 17/64" inside diameter x 1/32" thick. Black fibre. —Special	Provides necessary friction to keep indicator adjustment knob in set position.	1	4A41048
0	0	1	188		Washer, Packing	5/16" outside diameter x .185" inside diameter x 1/8" thick. Plastic graphite type. "John Crane" Plastic Style 172R.	Tuning and pinion shaft waterseal.	100	4K41577
0	0	1	189		Washer, Packing	7/16" outside diameter x .255" inside diameter x 1/8" thick. Plastic graphite type. "John Crane" Plastic Style 172R.	Indicator adjustment knob waterseal.	100	4A41576
0	0	1	190		Washer, Spring	1/2" outside diameter x .150" inside diameter x .015" thick. Spring steel. —Special	Keeps indicator adjustment knob under tension.	1	4A47684

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TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A (Cont'd)

Quantity			Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfr. No. **	Galvin Part and Drawing No.
ME-67	GK-178	In Set							
4	30	2	191*		Washer, Waterseal	5/16" outside diameter x 1/8" inside diameter x 1/32" thick. Black synthetic rubber. —Special	Anti-backlash mounting screw waterseal washer; dial light bracket mounting screw waterseal washer.	1	4K41624
2	10	2	192*	6L54006	Washer, Waterseal	3/8" outside diameter x 5/32" inside diameter x 1/32" thick. Black synthetic rubber. —Special	Waterseal under binderhead screws that mount panel to chassis.	1	4K41626
0	10	1	193*	6L54007	Washer, Waterseal	13/32" outside diameter x 3/16" inside diameter x 1/32" thick. Black synthetic rubber. —Special	Dial gear bushing waterseal.	1	4K41628
4	20	3	194*	6L54008	Washer, Waterseal	1/2" outside diameter x 7/32" inside diameter x 1/32" thick. Black synthetic rubber. —Special	Waterseal at head of antenna fastening bolt; and waterseals under heads of front panel mounting capscrew and ground terminal stud and nut assembly.	1	4K41625

10	40	4	195*	6L54012	Washer, Waterseal	¾″ outside diameter, x 23/64″ inside diameter x 1/32″ thick. Black synthetic rubber. —Special	Waterseal washer between jack waterseal assembly and front panel.	1	4K41623
2	10	2	196*	6L54014	Washer, Waterseal	7/8″ outside diameter x 15/32″ inside diameter x 1/16″ thick. Black synthetic rubber. —Special	Squelch and volume control mounting nuts waterseal washers.	1	4K41175
8	40	2	197*	6L54026	Washer, Waterseal	1⅝″ outside diameter x 1 3/16″ inside diameter x 1/32″ thick. Black synthetic rubber. —Special	Waterseals between antenna insulators and front panel.	1	4K41627
1	10	1	198*	2Z4880	Window, Indicator	1 13/32″ long x 15/32″ wide x .020″ thick. Has four ⅛″ diameter holes. Clear plastic. —Special	Dial window.	1	61A41033
0	0	3	199		Support Terminal Strip	15/32″ long x ¼″ diameter, both ends drilled and tapped for 6-32 screw. Cold rolled steel, electrozinc plated. —Special	Support for 42 lug terminal strip.	1	46A41184
0	0	3	200		Screw	6-32 thread x ⅜″ long, slotted binderhead machine screw. Cold rolled steel, white cadmium plated.	Mount terminal strip supports to chassis.		3S7229

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TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A (Cont'd)

Quantity			Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfr. No. **	Galvin Part and Drawing No.
ME-67	GK-178	In Set							
2	10	2	202*		Cupwasher	5/8" outside diameter x 17/64" inside diameter. Brass, black nickel finish. —Special	Provide waterseal control	1	4K47678
2	10	2	203*		Washer	.552" outside diameter x 17/64" inside diameter x .005" thick. Brass. —Special	Anti-friction washer.	1	4K47683
2	10	2	204*		Washer	.365" outside diameter x .144" inside diameter x .005" thick. Brass. —Special	Anti-friction washer.	1	4A47681
2	10	2	205*		Cupwasher	7/16" outside diameter x .144" inside diameter. Brass, black nickel finish. —Special	Provide waterseal control	1	4A47674
3	15	3	207*		Cupwasher	1/2" outside diameter x .195" inside diameter. Brass, black nickel finish. —Special	Provide waterseal control	1	4K47676
3	15	3	208*		Washer	.427" outside diameter x .195" inside diameter x .005" thick. Brass. —Special	Anti-friction washer	1	4K47682

0	10	2	209*	2Z3269-8	Coupling, Drive. (flexible)	1/16" natural phenolic insulated disc, wax impregnated. Phosphor bronze springs riveted to insulated disc. Overall, 17/32" long x 1 1/4" diameter. —Special	Flexible coupling to C6	1	58B41187
0	40	2	210*	6L7955-3.41W	Setscrew	6-32 thread x 3/16" long. Allen-head, cup point. Case hardened steel, white cadmium finish.	Fastening Drive Coupling to C6 shaft and control shaft.	1	3S9700
0	0	1	300		Main Housing	Chassis case complete. Wrinkle olive drab finish. 6 5/8" high x 11 15/16" wide x 6 1/8" deep.	Housing for Radio Receiver and Transmitter BC-1000-A.	1	15D40462
2	20	1	301*	3E4300-2	Battery Cable Assembly (Complete)	Consists of a six conductor rubber covered battery cable with an 8 prong plug, 8 prong socket, and socket housing plate. Battery cable and plug is a single piece molding, and is soldered to the eight prong socket. Battery conductor leads are rubber covered and coded white, black, green, yellow, red, and blue, and connect to pins 1, 2, 4, 5, 6 and 7, respectively, of the molded plug. Each conductor is 17 strands #30 copper wire (equivalent to #18 solid). —Special	Connector between Battery BA-70 and Radio Receiver and Transmitter BC-1000-A.	1	1X41976

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TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A (Cont'd)

Quantity			Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfr. No. **	Galvin Part and Drawing No.
ME-67	GK-178	In Set							
3	30	1	302*	3E4300-3	Battery Cable and Plug (Only)	12″ six conductor rubber covered cable with a molded 8 prong plug. Conductor leads are rubber covered and coded white, black, green, yellow, red, and blue, and connect to pins 1, 2, 4, 5, 6, and 7, respectively, of the molded plug. Each conductor is 17 strands of #30 copper wire (equivalent to #18 solid). —Special	Connector between Battery BA-70 and chassis case socket.	1	30C41914
0	20	2	303*	6Z1056	Bracket, "D" Ring Retainer	1 3/16″ long x 5/8″ wide. Has a 11/64″ diameter hole for D ring, along one edge, when clamped together. Made of .043″ cold rolled steel; black nickel finish. —Special	Holds D ring to chassis case.	1	7A41662
0	0	2	304		Bracket, Snap	U shaped; 3/4″ mounting centers, .136″ diameter mounting holes. 1/16″ brass, black nickel finish. —Special	Back pad snap brackets.	1	7A41657

40	200	12	305*	6Z1747-3	Catch, Hold Down Clip	Metal; olive drab paint finish. (Also 401) —Special	Clip catches for holding chassis case to set chassis.	1	55A41977
			306		Clip, Hold Down	Same as 112.	Clip for clip catches.		
0	20	2	307*	6Z7857	"D" Ring, Strap Retainer	5/32" diameter wire formed into D shape; 1½"x1⅛" inside dimensions. Cold rolled steel, black nickel finish. G.E. Prentice Co. #3196.	Carrying harness straps retainer rings.	95	47A41707
8	40	4	308*	6Z4174-1	Gasket, Battery Strap	1¼" long x ⅜" wide x 1/32" thick. Has two ⅛" diameter holes, ⅝" between centers. Black synthetic rubber. —Special	Waterseal at point where battery retainer straps are fastened to chassis case.	1	32A41913
40	200	12	309*	6Z4174-2	Gasket, Clip	27/32" long x 7/16" wide x 1/16" thick; one end is rounded. Has two .128" diameter holes, 7/16" between centers. Black synthetic rubber. —Special (Also 402)	Waterseal between hold down clip catches and chassis case.	1	32A41816

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TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A (Cont'd)

Quantity			Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfr. No. **	Galvin Part and Drawing No.
ME-67	GK-178	In Set							
0	20	2	310*	6Z4174-3	Gasket, "D" Ring Retainer Bracket	1 3/16" long x 17/32" wide x 1/32" thick. Has two .128" diameter holes, 3/4" between centers. Holes are 3/16" from long side. Black synthetic rubber. —Special	Used as waterseal between retainer ring ("D" ring) bracket and chassis case.	1	32A41709
			311		Gasket, Panel and Housing	Same as 121.	Watersealing gasket between chassis case and battery case.		
3	30	1	312*	2Z4866.14	Gasket, Socket	2 3/32" x 2" x 1/32" thick; 1 5/8" diameter hole in center. Has four 3/16" diameter holes, one in each corner. Black synthetic rubber. —Special	Waterseal between battery cable socket and chassis case.	1	32A41616
			313		Lockwasher	#6 internal. (Same as 136).	Used with #6 screws (general).		
0	0	4	314		Nut	8-32 thread x 1/4" hexagonal. Cold rolled steel, white cadmium finish.	Fastens battery cable to chassis case.	26	2S7007
			315		Nut	6-32 thread. (Same as 144).			

8	40	4	316*	2Z7091-2	Plate, Battery Strap	Channel shaped; 1¼″ long x ⅜″ wide, sides are 3/16″ high. Has two extruded and 6-32 tapped holes, spaced ⅝″ apart in bottom of channel. .046″ cold rolled steel, zinc electro plated. —Special	Holds battery retainer straps to chassis case.	1	64A41911
3	30	1	317*	2Z7096-2	Plate, Socket Housing	2 3/32″x2″; 1 11/16″ diameter center hole. 3/32″ high shoulder around center hole. .041″ cold rolled steel, zinc electro plated. —Special	Fastens battery cable to chassis case.	1	64A41909
0	0	16	318		Rivet	5/32″ long x .122″ diameter. Cold rolled steel, black nickel finish.	Holds down clip mounting; snap bracket mounting.	12	5S8469
0	0	8	319		Screw	6-32 thread x ⅜″ long, slotted binderhead machine screw. Cold rolled steel.	Fastens battery retainer straps to chassis case.	26	3S7229
3	30	1	320*		Insulator	Phenolic disc. —Special	Spacer and insulator for battery cable leads.	1	14A47539

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TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A (Cont'd)

Quantity			Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfr. No. **	Galvin Part and Drawing No.
ME-67	GK-178	In Set							
0	0	28	321		Screw	6-32 thread x 5/16" long, slotted binderhead machine screw. Cold rolled steel, black nickel finish.—(Also 405)	Mounts hold down clip catches and "D" ring retainer brackets.	26	3S8049
3	30	1	322*	2Z8678.6	Socket, Battery Cable	8 prong socket, 2 3/32"x2". Socket is constructed of three sheets of bakelite insulation and has synthetic rubber waterproofing gasket between layers. Four 13/64" diameter mounting holes. —Special	Socket for Radio Receiver and Transmitter BC-1000-A power plug.	1	9B41679
4	20	2	323*	2Z9047-6	Strap, Battery Retainer	10½" long x 1" wide. Olive drab cotton webbing, one end has release buckle, other end is stiffened with cement and has two 5/32" holes punched 3/16" from end. —Special	Battery retainer strap and buckle.	1	35B41963
2	10	1	324*	2Z9047-4	Strap, Battery Retainer	20¼" long x 1" wide. Olive drab cotton webbing, one end is metal tipped, other end is stiffened with cement and has two 5/32" holes punched 3/16" from end.	Long battery retainer strap.	1	35B41964

2	10	1	325*	2Z9047-8	Strap, Battery Retainer	Same as 324 except 14¼″ long. —Special	Short battery retainer strap.	1	35K41965
0	0	26	327		Washer	½″ outside diameter x 9/64″ inside diameter x .032″ thick. Cold rolled steel, white nickel finish. (Also 406)	Reinforcement under catch clips and "D" ring retainer bracket mounting screws; reinforcement for battery retainer straps mounting screws.	13	4S8230
0	0	1	400		Case CS-128-A	Battery case complete. Wrinkle olive drab finish. —Special	Battery case.	1	1X47314
			401		Catch, Hold Down Clip	Same as 305.	Clip catches for holding battery case to chassis case.		
			402		Gasket, Clip	Same as 309.	Waterseal between hold down clip catches and battery case.		
			403		Lockwasher	Same as 136.	Lockwasher for 6-32 screws.		

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TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A (Cont'd)

Quantity			Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfr. No. **	Galvin Part and Drawing No.
ME-67	GK-178	In Set							
			404		Nut	Same as 144.	Nuts for 6-32 screws.		
			405		Screw	Same as 321.	Mounts hold down clip catches.		
			406		Washer	Same as 327.	Reinforcement under catch clip mounting screws.		
5	75	1	500*	2A275-130A	Antenna AN-130-A (Short)	2 section; 33" long overall, 17" long when collapsed. Sections are held together with a non-kink stainless steel cable. A 6" piece of flexible tubing located near base, permits antenna adjustment to a maximum of 90° in any direction. A bakelite shell at the base of the antenna houses a loading circuit, consisting of a coil and capacitor, for resonating antenna to Radio Receiver and Transmitter BC-1000-A. The evading circuit ground lead is brought out	Short antenna for receiver and transmitter.	1	51C41815

						through a screw terminal, and terminates in a grounding lead. Antenna has 3/8-24 threaded mounting bushing. Steel, smooth olive drab finish. —Special			
0	0	1	501		Lead, Antenna Grounding	5½″ long flexible insulated lead with a spade lug on one end, and a plain terminal lug on other end. —Special	Ground lead for antenna matching circuit.	1	30A41694
5	100	1	550*	2A275-131A	Antenna AN-131-A (Long)	A lightweight tapered flexible antenna consisting of eight sections. 128″ long when assembled; 17″ long collapsed. The eight sections are held captive by means of a kinkless, stainless steel cable that runs the entire length of the antenna and is under spring tension; this cable eliminates the possibility of losing a section and permits rapid assembly of antenna. A 3/8-24 threaded stud is provided at the base of the antenna to attach it to the terminal of the set. Steel, smooth olive drab finish. —Special	Long antenna for receiver and transmitter.	1	51D41600

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TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A (Cont'd)

Quantity			Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfr. No. **	Galvin Part and Drawing No.
ME-67	GK-178	In Set							
1	10	1	551*		Cable and Spring Assembly	Consists of 11 foot stainless steel cable; 17½" long (at rest), .277" diameter stainless steel compression spring; small brass cup and washer, and a 4½" long x .140" diameter cold rolled steel antenna spring stop. —Special	Holds sections of long antenna together.	1	1X47580
1	10	1	552*		Bushing, Adaptor	⅝-18 inside thread; ⅜-24 thread on stud. Brass, lusterless olive drab finish. —Special	Antenna mounting stud.	1	43A47564
1	10	1	553*		Cap, Antenna	Knurled; ¼" diameter x ½" long. 12-24 thread; closed at one end. Brass, lusterless olive drab finish. —Special	Antenna tip.	1	47A47566
0	20	1	600*	2Z6910	Pad M-391-A	11" wide x 6½" high x ¾" thick in pad area. Made of olive drab cotton webbing. Has two snap hooks on top and two adjustable straps (Part No. 35K41920) with snap hooks on bottom.	Back pad.	1	35D41918

							Adjustable straps are attached to back pad with snap buttons. All metal parts have black nickel finish. —Special		
	0	0	2	601		Straps, Adjustable (Pad M-391-A)	¾″ wide strap with swivel eye snap hook on one end and snap button on other end; has slide buckle for adjusting strap length. 5½″ overall extended length. Strap is made of olive drab cotton webbing. Metal parts have black nickel finish. —Special	Hold bottom of back pad to set.	1	35K41920
	0	20	1	650*	2Z550-A	Bag BG-150-A	17½″ long x 7¼″ wide x 2⅞″ deep. Made of olive drab #8 duck canvas. Interior is divided into three compartments. Has waterproof cover with snap button. —Special	Holds Antenna AN-130-A, Antenna AN-131-A, Handset TS-15-A and Headset HS-30-( ) when not in use.	1	51D41864
			1	700	3A70	Battery BA-70	7¾″ high x 10⁵⁄₁₆″ wide x 4½″ deep. Metal case. Consists of 3 battery sections: 4½ volts (filament supply), 60 and 90 volts (plate supply). Connections are brought out through an 8 prong receptacle on top of the battery.	Supplies filament and plate power for Radio Receiver and Transmitter BC-1000-A.		

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TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A (Cont'd)

Quantity			Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfr. No. **	Galvin Part and Drawing No.
ME-67	GK-178	In Set							
0	20	1	750*	2Z9053-54A	Harness ST-54-A	Medium heavyweight olive drab cotton webbing straps with snap hooks on ends, and slide buckles for length adjustments. Approximately 38¼" long x 14¼" wide (when fully extended). —Special	Carrying harness.	1	35D41661
0	80	1	800*	4B1115A	Handset TS-15-A	Handset TS-15-A with Cord CD-494. A send-receive switch is incorporated in the handle. Headphone unit has an impedance of approximately 250 ohms. The receiver terminates in Plug PL-55; the microphone terminates in Plug PL-68.	Handset.		51C41578
0	0	1	850	2B930 ( )	Headset HS-30-( ) and Cord CD-874	A light-weight, close fitting headset. Special rubber pieces fitted to the receivers are designed to fit lightly into the ear cavities and exclude outside noises. The head band is a thin band of steel that can be adjusted to fit the contour of the	Headset and Cord.		Signal Corps Spec. 271-1518 Drawing SC-A-8000

						wearer's head. For use with Radio Set SCR-300-A, the headset is supplied with Cord CD-874 which terminates in Plug PL-55. The impedance of Headset HS-30-( ) with Cord CD-874 is approximately 250 ohms.		
0	100	1	900*	2Z9050-A	Strap ST-50-A	17½″ length overall, 1″ wide olive drab cotton webbing with a snap hook on each end. Snap hooks have black nickel finish. —Special	Hand carrying strap.	1	35B41682
0	20	1	950*	2Z9053-55A	Belt ST-55-A	2″ wide olive drab cotton webbing strap with two slide buckles and hook and clasp on ends; two brackets and belt strap pin located near center of belt provide means for attachment of belt to set. Pins are fastened to belt by means of short pin straps. Extended length of belt 43″; minimum length 28″. —Special	Waist belt.	1	51D41917

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TABULAR LIST OF REPLACEABLE PARTS FOR RADIO SET SCR-300-A (Cont'd)

Quantity			Ref. No.	Signal Corps Stock No.	Name of Part	Description	Function	Mfr. No. **	Galvin Part and Drawing No.
ME-67	GK-178	In Set							
0	0	2	951		Pin, Belt	3½" long x ¼" diameter; ⅝" long section of pin is flattened and has a ⅛" diameter hole. Brass, black nickel finish. (Attaches to belt). —Special	Attaches belt to set.	1	47A41810
0	0	2	952		Ring, Belt	3/32" diameter spring steel wire bent to "D" shape; ⅛" opening between ends of wire. ¾" x ½" inside dimensions of ring. Black nickel finish. —Special	Attaches belt pin to pin strap.	1	55A41944

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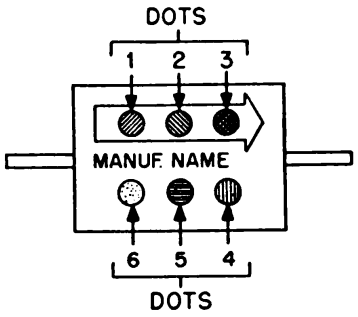
**Manufacturer's names and addresses, follow Tabular List of Replaceable Parts.

MANUFACTURER'S NAMES AND ADDRESSES

Mfr. No.	*Name*	*Street Address*	*City*	*State*
1	Galvin Mfg. Corporation	4545 W. Augusta Blvd	Chicago	Illinois
3	John E. Fast & Company	3101 N. Pulaski Road	Chicago	Illinois
5	Cornell Dubilier Company	1000 Hamilton	South Plainfield	New Jersey
6	Centralab	900 E. Keefe Ave.	Milwaukee	Wisconsin
8	Muter Company	1255 S. Michigan Ave	Chicago	Illinois
9	Micamold Corporation	1087 Flushing Ave	Brooklyn	New York
12	J. L. Thompson Mfg. Company	17 N. Loomis St.	Chicago	Illinois
13	Gates Washer Company	2949 N. Elston Ave	Chicago	Illinois
14	Allen Bradley Company		Milwaukee	Wisconsin
16	Chicago Telephone Supply		Elkhart	Indiana
21	Tung Sol Radio Tube	95 8th Ave	Newark	New Jersey
23	Cinch Manufacturing Company	2339 W. Van Buren St	Chicago	Illinois
26	United Screw & Bolt Company	2513 W. Cullerton St	Chicago	Illinois
45	Stackpole Carbon Company	Elk County	St. Mary's	Pennsylvania
53	General Electric	215 W. 3rd St.	Cincinnati	Ohio
61	International Resistance Co.	18 W. Chelton	Philadelphia	Pennsylvania
65	R. C. A. Manufacturing Co.		Camden	New Jersey
70	Shakeproof, Inc.	2501 N. Keeler Ave	Chicago	Illinois
86	Coronet Electric Company	646 N. Michigan Ave	Chicago	Illinois
94	Midwest Molding Company	319 N. Whipple St.	Chicago	Illinois
95	G. E. Prentice Company.		New Briton	Connecticut
98	Sylvania Electric Products, Inc.		Emporium	Pennsylvania
99	National Union Company.	1181 McCarter Highway	Newark	New Jersey
100	Crane Packing Company	1801 W. Belle Plaine St	Chicago	Illinois
101	E. I. Guthman Company	15 S. Throop St.	Chicago	Illinois

AMERICAN WAR STANDARD 6-DOT COLOR CODE CHART

For Capacitors (Molded Mica)

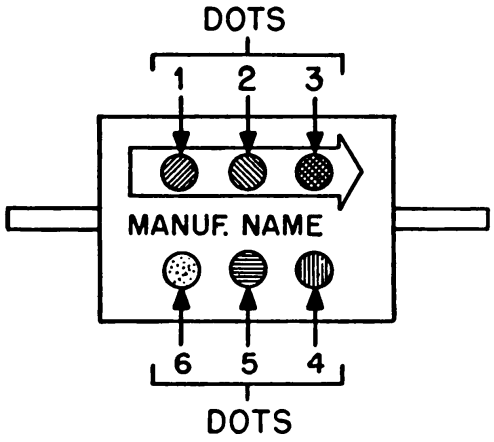


Color	1st Dot	2nd Dot	3rd Dot	4th Dot	5th Dot	6th Dot
	1st Digit	*2nd Digit*	*3rd Digit*	*Decimal Multiplier*	*Tolerance*	*Characteristics*
Black	0	0	0	1	±20%	*A
Brown	1	1	1	10		B
Red	2	2	2	100	± 2%	C
Orange	3	3	3	1,000		D
Yellow	4	4	4	10,000		E
Green	5	5	5	100,000		F
Blue	6	6	6	1,000,000		G
Violet	7	7	7	10,000,000		
Gray	8	8	8	100,000,000		
White	9	9	9	1,000,000,000		
Gold	. . .	. . .	. . .	0.1	± 5%	
Silver	. . .	. . .	. . .	0.01	±10%	

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

RMA STANDARD 6-DOT COLOR CODE CHART

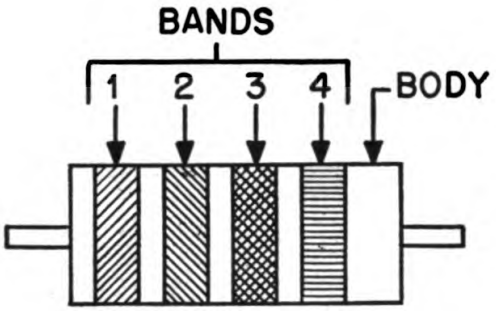
For Capacitors (Molded Mica)



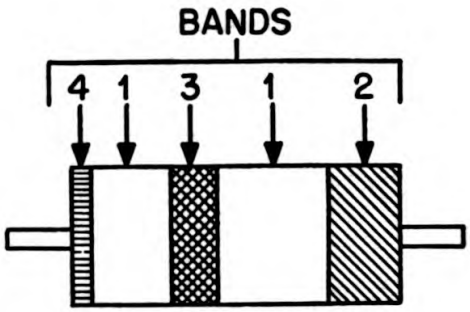
Color	1st Dot	2nd Dot	3rd Dot	4th Dot	5th Dot	6th Dot
	1st Digit	*2nd Digit*	*3rd Digit*	*Decimal Multiplier*	*Tolerance*	*Voltage*
Black	0	0	0	1	....	....
Brown	1	1	1	10	1%	100v.
Red	2	2	2	100	2%	200v.
Orange	3	3	3	1,000	3%	300v.
Yellow	4	4	4	10,000	4%	400v.
Green	5	5	5	100,000	5%	500v.
Blue	6	6	6	1,000,000	6%	600v.
Violet	7	7	7	10,000,000	7%	700v.
Gray	8	8	8	100,000,000	8%	800v.
White	9	9	9	1,000,000,000	9%	900v.
Gold	...	...	...	0.1		1,000v.
Silver	...	...	...	0.01	10%	2,000v.
Body	...	...	...	.....	20%	500v.

RMA STANDARD COLOR CODE CHART

For Resistors



METHOD 1

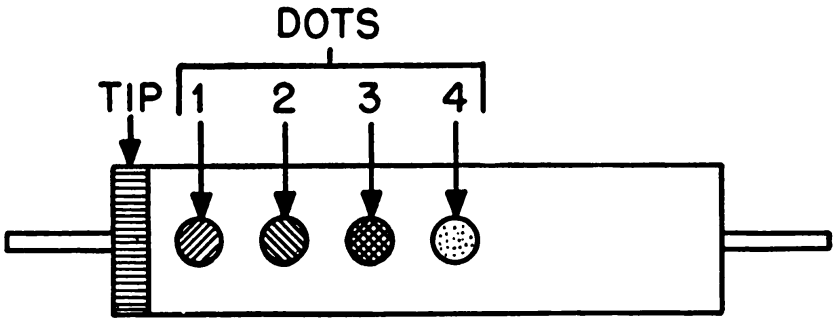


METHOD 2

COLOR	1st Band	2nd Band	3rd Band	4th Band
	1st Digit	*2nd Digit*	*Decimal Multiplier*	*Tolerance*
Black	0	0	1	
Brown	1	1	10	
Red	2	2	100	
Orange	3	3	1,000	
Yellow	4	4	10,000	
Green	5	5	100,000	
Blue	6	6	1,000,000	
Violet	7	7	10,000,000	
Gray	8	8	100,000,000	
White	9	9	1,000,000,000	
Gold	...	...	.....	± 5%
Silver	...	...	.....	±10%
No Color	...	...	.....	±20%

COLOR CODE CHART

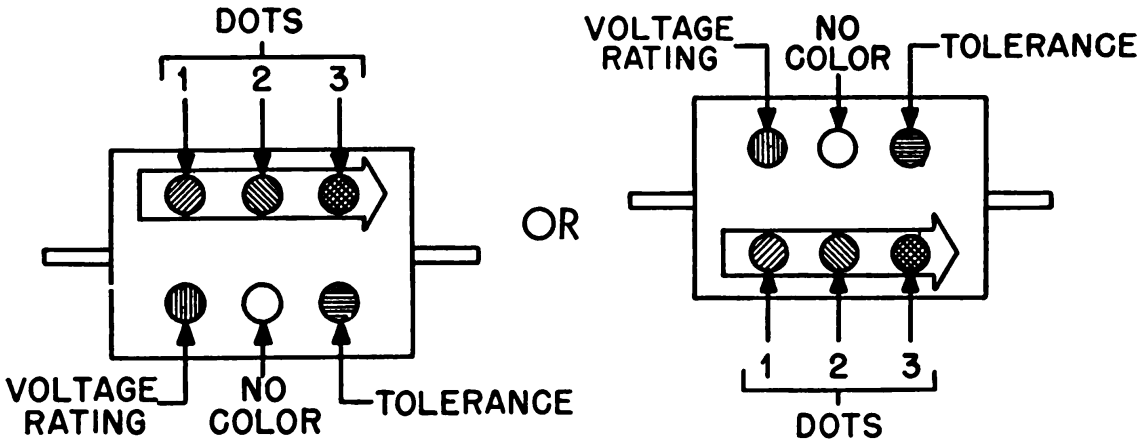
For Capacitors (Tubular Ceramic)



Color	Tip	1st Dot	2nd Dot	3rd Dot	4th Dot
	Temperature Coefficient	*1st Digit*	*2nd Digit*	*Decimal Multiplier*	*Tolerance*
Black	0	0	0	1	. . .
Brown	.00003 Neg.	1	1	10	1%
Red	.00008 "	2	2	100	2%
Orange	.00015 "	3	3	1,000	3%
Yellow	.00022 "	4	4	10,000	4%
Green	.00033 "	5	5	100,000	5%
Blue	.00047 "	6	6	1,000,000	6%
Violet	.00075 "	7	7	10,000,000	7%
Gray		8	8	0.1	
White		9	9	0.01	10%

3-DOT COLOR CODE CHART

For Capacitors



COLOR	1st Dot	2nd Dot	3rd Dot	*Tolerance*	*Voltage Rating*
	1st Digit	*2nd Digit*	*Decimal Multiplier*		
Black	0	0	1		
Brown	1	1	10	1%	100v.
Red	2	2	100	2%	200v.
Orange	3	3	1,000	3%	300v.
Yellow	4	4	10,000	4%	400v.
Green	5	5	100,000	5%	500v.
Blue	6	6	1,000,000	6%	600v.
Violet	7	7	10,000,000	7%	700v.
Gray	8	8	100,000,000	8%	800v.
White	9	9	1,000,000,000	9%	900v.
Gold	. . .	. . .	0.1		1000v.
Silver	. . .	. . .	0.01	10%	2000v.
Body	. . .	. . .	. . . . .	20%	*

*When no Color is indicated the Voltage Rating may be as low as 300 volts.

[A.G. 062.11 (10-31-42)]

By Order of the Secretary of War:

G. C. MARSHALL,
Chief of Staff.

OFFICIAL:
J. A. ULIO,
Major General,
The Adjutant General

DISTRIBUTION:

X

(For explanation of symbols, see FM 21-6)