

TECHNICAL MANUAL
RADIO SET SCR-694-C

CHANGES
No. 1

DEPARTMENT OF THE ARMY
WASHINGTON 25, D. C., 26 November 1947

TM 11-230C, 15 August 1944, is changed as follows:

2. Range

b. FREQUENCY RANGE. (Superseded.) Radio Set SCR-694-C covers the frequency range 3,800 to 6,500 kilocycles (kc) on master-oscillator operation. The frequency range on crystal operation is 3,800 to 6,490 kc when the crystals of Crystal Kit MC-537 are available. Crystals used in the transmitter operate at one-half of the transmitting frequency.

c. CRYSTAL KIT MC-535 (Added). Crystal Kit MC-535 consists of three Cases CS-140, each containing 900 Crystal Holders FT-243 with crystals to provide crystal control. The total of 2,700 crystals provides 10 identical crystals on each of 270 channels between 3,800 kc and 6,490 kc inclusive for use with Radio Receiver and Transmitter BC-1306. The 270 channels are covered in 5-kc steps. Signal Corps stock numbers for the crystals are identified by the figures 2Z3543- followed by the frequencies of the units in kilocycles. The actual frequency of transmission is equal to twice the crystal frequency. Thus a crystal cut to produce an oscillating frequency of 1,920 kc would have a Signal Corps stock No. of 2Z3543-1920 and the frequency of transmission would be 3,840 kc, while a crystal cut to produce an oscillating frequency of 3,000 kc would have a Signal Corps stock No. of 2Z3543-3000 and the frequency of transmission would be 6,000 kc. Crystal Kit MC-535 is intended for use as a crystal pool for the Infantry Division and units of similar size.

d. CRYSTAL KIT MC-537 (Added). Crystal Kit MC-537 consists of two Cases CS-137, each containing 100 Crystal Holders FT-243 with crystals.

The total of 200 crystals provides 10 identical crystals on each of 20 channels between 3,830 kc and 6,430 kc inclusive for use with Radio Receiver and Transmitter BC-1306. The frequencies in kilocycles of the crystals supplied with Crystal Kit MC-537 are:

1,915	1,965	2,125	2,390	2,750
1,930	1,980	2,140	2,430	2,940
1,940	1,995	2,155	2,480	3,110
1,950	2,065	2,320	2,605	3,215

Signal Corps stock numbers for these crystal units are determined exactly the same as the Signal Corps stock numbers for the crystal units of Crystal Kit MC-535, described above. Crystal Kit MC-537 is intended for use at schools and training centers.

4. Components

a. Radio Set SCR-694-C includes the following items:

- * * * * *
- 1 Receiver and Transmitter BC-1306, including:
1 Crystal Holder FT-241 or CR-2B/U with 200-kc crystal.
1 Set of tubes as follows:

* * * * *

b. The following items taken from a complete Radio Set SCR-694-C constitute the equipment for field use:

- * * * * *
- 1 Receiver and Transmitter BC-1306, including:
1 Crystal Holder FT-241 or CR-2B/U with 200 kc crystal.
1 set of Tubes as follows:

* * * * *

*This change supersedes TB 11-230 C-1, 27 April 1945, and TB 11-230 C-2, 1 April 1946.

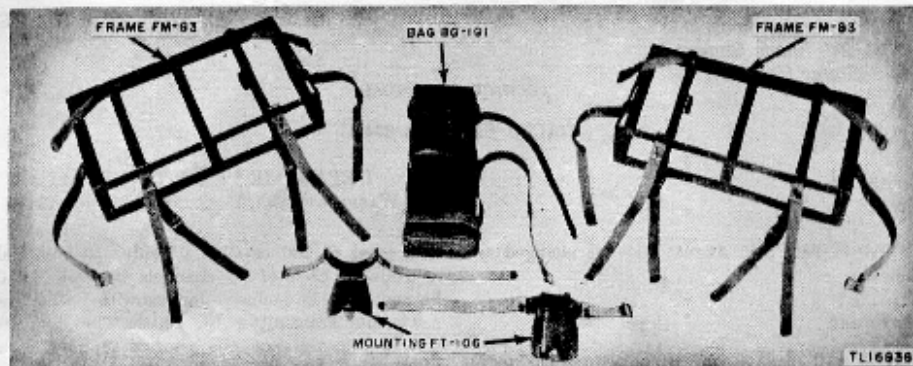


Figure 8.1 Pack Equipment CR-13.

7. Radio Receiver and Transmitter BC-1306

This component, shown in figure 2, is a complete receiver and transmitter, operating in the frequency range of 3,800 kc to 6,500 kc for master-oscillator operation. The frequency range for crystal operation is described in paragraph 2. It obtains its * * * and 6,500 kc.

14.1 Pack Equipment CE-13 (Added)

a. GENERAL. Pack Equipment CE-13 is provided for use with the Phillips pack saddle to transport Radio Set SCR-694-C. The pack equipment is constructed so that the radio set can be quickly withdrawn as soon as the animal halts.

b. LIST OF COMPONENTS. Pack Equipment CE-13 (fig. 8.1) consists of the following components:

Quantity	Item	Dimensions (in.)	Weight (lb.)	Volume (cu ft.)
1	Frame FM-83.	18½ x 20½ x 5.	11.00 ea.	0.7
2	Mounting FT-106.	6 x 21 x 2½.	1.88 ea.	0.825
1	Bag BG-191.		0.63 ea.	

c. DESCRIPTION. (1) *Frame FM-83.* The frame is constructed of angle and strap iron. There are two hooks at the bottom of the frame and two web straps at the bottom for fastening the frame to the saddle.

(2) *Mounting FT-106.* The two mountings are made of aluminum castings and fasten on top of the saddle.

(3) *Bag BG-191.* Bag BG-191 is made of canvas. In order to balance the load, two Batteries BA-48 are carried in Bag BG-191 instead of the normal position in Bag BG-172.

15.1 Mounting Pack Equipment CE-13 (fig. 9.1) (Added)

a. MOUNTING FT-106. Bolt the two mountings on the top of the Phillips saddle. Bolts and nuts are provided as part of Mounting FT-106.

b. FRAME FM-83. Place the frames (one on each side of the saddle) with the hooks up and resting on the bar across the top edge of the saddle. Fasten the two web straps at the bottom of the frames through the loops on the saddle.

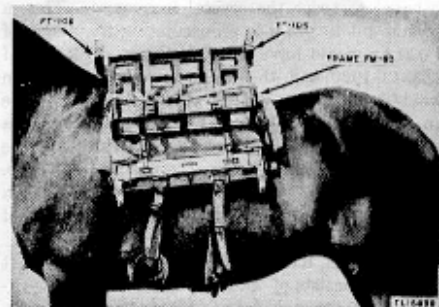


Figure 9.1 Frames FM-83 and Mountings FT-106 installed on the Phillips saddle.

17.1 Packing Radio Set SCR-694-C on Pack Equipment (Added)

Strap the components of the radio set securely to the frame as shown in figures 11.1 and 11.2. To balance the load, components are divided as follows:

a. **SIDE LOAD 1, TOTAL WEIGHT 53.5 POUNDS** (fig. 11.1). Side load 1 consists of Frame FM-83 and Bags BG-173 and BG-191 and their components.

(1) Bag BG-173 and the following components (weight 31.5 pounds):

- 1 Battery BA-48.
- 1 Panel Cover M-404.
- 1 Radio Receiver and Transmitter BC-1306.

(2) Bag BG-191 and the following contents (weight 11 pounds):

- 2 Batteries BA-48.

b. **SIDE LOAD 2, TOTAL WEIGHT 56.75 POUNDS** (fig. 11.2). Side load 2 consists of Frame FM-83 and Bags BG-175 and BG-172 and their contents.

(1) Bag BG-175 and the following contents (weight 24 pounds):

- 1 Generator GN-58.

(2) Bag BG-172 and the following contents (weight 21.75 pounds):

- 1 Antenna AN-160 on Reel RL-29.
- 1 Box BX-53-A with spare tubes and lamps.
- 2 Cords CD-604.
- 2 Cords CD-307-A.
- 1 Cord CD-1119.
- 1 Counterpoise CP-13 on Reel RL-29.
- 1 Counterpoise CP-13 on Reel RL-29.
- 1 Guy GY-12.
- 1 Guy GY-42.
- 1 Halyard M-378.
- 1 Halyard M-379.
- 2 Headsets HS-30.
- 1 Key J-45 with Cord CD-201.
- 1 Microphone T-17.
- 1 Microphone T-45 with Cord CD-318-A.
- 2 TM 11-230C.
- 5 feet of Wire W-128.

c. **TOP LOAD, TOTAL WEIGHT 20.8 POUNDS** (figs. 11.1 and 11.2). The top load consists of Mounting FT-106 and Roll BG-174 with contents.

Roll BG-174 and contents (weight 19 pounds):

- 1 Leg LG-2-A.
- 2 Cranks GC-7.

- 2 Legs LG-3.
- 6 Mast Sections MS-118-A.
- 2 Mast Sections MS-117-A.
- 2 Mast Sections MS-118-A.
- 4 Stakes GP-27-A.
- 1 Cord CD-1086 (7 feet long).
- 1 Insulator IN-127.

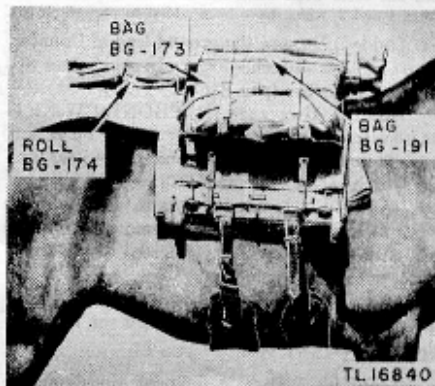


Figure 11.1 Pack Equipment CR-12, side load 1 and top load.

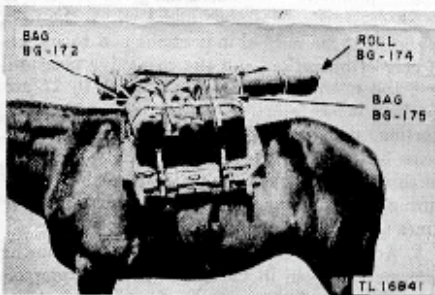


Figure 11.2 Pack Equipment CR-12, side load 2 and top load.

17.2 Unpacking Radio Set SCR-694-C from Pack Equipment (Added)

a. **SIDE LOAD 1.** Unfasten the three crossed web straps and remove the equipment.

b. **SIDE LOAD 2.** Unfasten the three crossed web straps and remove the equipment.

c. **TOP LOAD.** Unfasten the straps on each Mounting FT-106 and remove Roll BG-174.

38 Precautions During Operation

* * * * *

k. Always wait approximately * * * transmitter is functioning.

Note. (Added) In a few cases, INDICATOR GLOW does not occur even when the antenna is loaded. See Notes 1 and 2, which have been added to paragraph 81j.

i. (Added) Be sure the ground lead of Counterpoise CP-12 is 11 inches long. In some cases this lead was 45 inches (par. 81o).

j. (Added) Always set the PHONE-CW-NET-CAL switch at PHONE or CW during operation. It is not possible to modulate the transmitter with this switch set at CAL or NET.

k. (Added) It is not possible to modulate the transmitter with the receiver removed from the case unless the receiver is connected to the transmitter with a test cable.

43.1 Purpose and Use of Equipment Performance Check List (Added)

a. GENERAL. The equipment performance check list (par. 43.2) will help the operator to determine whether Radio Set SCR-694-C is functioning properly. The check list gives the item to be checked, the conditions under which the item is checked, the normal indications and tolerances of correct operation, and the corrective measures that the operator can take. Items 1 to 17 are checked before starting, items 18 to 20 when starting, items 21 to 33 during operation, and items 34 and 35 when stopping. Items 21 to 33 on this check list should be checked at least once during a normal operating period or at least four times a day during continuous operation.

b. ACTION OR CONDITION. For some items the information given in the action or condition column consists of the settings of various switches and controls under which the item is to be checked. For other items it represents an action that must be taken in order to check the normal indication given in the normal indication column.

c. NORMAL INDICATIONS. The normal indications listed include the visible and audible signs

that the operator should perceive when he checks the items. If the indications are not normal, the operator should apply the recommended corrective measures.

d. CORRECTIVE MEASURES. The corrective measures listed are those that the operator can make without turning the equipment in for repairs. A reference to section IV in the table indicates that the correction of the trouble cannot be effected during operation and that trouble shooting by an experienced repairman is required. If the set is completely inoperative or if the recommended corrective measures do not yield results, trouble shooting is also necessary. However, if the tactical situation requires that communication be maintained and if the set is not completely inoperative, the operator must maintain the set in operation as long as possible.

e. ITEMS 1 TO 20. Items 1 to 20 should be checked each time the equipment is put into operation.

f. ITEMS 21 TO 26. The operator should familiarize himself with the operation of Radio Receiver and Transmitter BC-1306 so that he knows the characteristics of its reception of normal signals. By becoming familiar with the operation of the receiver, the operator will know the normal position of the VOLUME control. This will aid in determining the sensitivity and amplification of the receiver. The crystal frequency calibrator unit may be checked periodically against the receiver dial calibrations (par. 25).

g. ITEMS 27 TO 33. These items represent general operating characteristics of the transmitter. The operator must become familiar with the characteristics of the set during normal operation in order to be able to recognize changes in the audible and visible indications, such as the sound of the vibrator power unit, sidetone, etc., when the set is not operating properly.

A. ITEMS 34 AND 35. Items 34 and 35 are checked whenever the station is taken out of operation. Any abnormal indications at this time are probably caused by trouble in the set and should be corrected before the next expected period of operation.

43.2 Equipment Performance Check List (Added) a. RECEIVER OF RADIO RECEIVER AND TRANSMITTER BC-1306.

Item No.	Item	Action or condition	Normal indications	Corrective measures
P R E P A R A T O R Y	1	Cord CD-1119.	When using radio set with Battery BA-48, connect cord to BATTERY receptacle on transmitter. (Not connected when using radio set with vibrator power supply.)	
	2	Headset HS-30.	Headset plugged in PHONE jack.	
	3	Ground wire or counterpoise lead.	Connected to GND post on receiver.	
	4	PHONE-CW-NET-CAL switch.	Set to PHONE or CW.	
	5	TUNING dial.	Set at correct frequency.	

b. TRANSMITTER OF RADIO RECEIVER AND TRANSMITTER BC-1306.

Item No.	Item	Action or condition	Normal indications	Corrective measures
P R E P A R A T O R Y	6	Key J-45, microphone T-17 or T 45.	Key plugged into key jack. Microphone plugged into microphone jack.	
	7	Antenna.	Lead-in wire connected. Insulator clean and not cracked.	
	8	SEND-STANDBY-OFF switch.	Switch set at SEND or STANDBY.	
	9	Cord CD-1086.	Connected between power receptacle and power source.	
	10	ANT. SELECTOR.	Set for antenna used.	
	11	CW - M CW - PHONE switch.	Set for type of operation.	
	12	CRYSTALS switch.	Set to CRYSTAL A, CRYSTAL B, or MO.	
	13	POWER switch.	Set to HIGH.	

c. VIBRATOR POWER UNIT PE-237.

	Item No.	Item	Action or condition	Normal indications	Corrective measures
PREPARATORY	14	ON-OFF button.	Press OFF button.		
	15	VOLTAGE CHANGE SWITCH (inside the power unit case).	Set to correct voltage position.	Correct voltage will appear through indicating window.	
	16	Cord CD-1086.	Connected to power receptacle.		
	17	Battery cables.	Connected to storage battery (observe polarity).		
START	18	ON-OFF button.	Press ON button.	Vibrator starts and operates.	Check cord connections; retaining rings must be tight.

d. TRANSMITTER OF RADIO RECEIVER AND TRANSMITTER BC-1306.

	Item No.	Item	Action or condition	Normal indications	Corrective measures
START	19	SEND-STANDBY-OFF switch.	Turn to SEND when using transmitter section.	Dial lamp lights when DIAL LIGHT button is pushed. Loud vibrator buzz heard from vibrator power unit.	

e. RECEIVER OF RADIO RECEIVER AND TRANSMITTER BC-1306.

	Item No.	Item	Action or condition	Normal indications	Corrective measures
START	20	SEND-STANDBY-OFF switch.	Switch at STANDBY.	Dial lamp lights when DIAL LIGHT button is pushed. Buzz from vibrator power supply decreases in intensity.	
EQUIPMENT PERFORMANCE	21	PHONE - CW - NET - CAL switch.	-----	Snaps into place at PHONE - CW - NET - CAL.	
	22	VOLUME control.	When control is rotated clockwise.	Increased output will be heard in headset.	Refer to section IV.
	23	SENSITIVITY switch.	When switch is rotated during reception.	Sensitivity of receiver changes.	Refer to section IV.
	24	Crystal calibrator.	Receiver tuned while set for calibrating.	Crystal check points received.	Try new 200-ke crystal. Refer to section IV.
	25	TUNING control.	Set to desired frequency.	Dial scale turns except when locked.	Release dial lock.
	26	DIAL LIGHT.	Press button.	Light glows.	Check bulb.

f. TRANSMITTER OF RADIO RECEIVER AND TRANSMITTER BC-1306.

Item No.	Item	Action or condition	Normal indications	Corrective measure	
EQUIPMENT PERFORMANCE	27	FREQ. CONTROL.	Set to proper frequency.	Will not turn when locked.	Release dial lock.
	28	ANTENNA TUNING control.	Adjust for maximum glow of INDICATOR. Key down.	INDICATOR glows.	Line up two dots.
	29	Master-oscillator operation.	Transmitter set for master-oscillator operation.	Transmitter can be modulated or keyed.	Refer to section IV.
	30	Crystal operation.	Transmitter set for CRYSTAL A or CRYSTAL B operation.	Transmitter can be modulated or keyed on either crystal frequency.	Substitute new crystal. Refer to section IV.
	31	Key J 45.	When keying on CW or MCW.	Relay clicks and sidetone is heard.	Check power cable connections. Check key. Refer to section IV.
	32	Microphone T-17 or T-45.	Microphone switch closed.	Relay click is heard and vibrator sound is louder.	Check power supply connections. Check microphone. Refer to section IV.
	33	DIAL LIGHT.	Press button.	Light glows when switch is at SEND or STANDBY.	Check for defective bulb.

g. RADIO RECEIVER AND TRANSMITTER BC-1306.

Item No.	Item	Action or condition	Normal indications	Corrective measure	
STOP	34	OFF-SEND-STANDBY switch.	Switch at OFF.	Vibrator in Vibrator Power Unit PE-237 stops.	

h. VIBRATOR POWER UNIT PE-237.

Item No.	Item	Action or condition	Normal indications	Corrective measure	
STOP	35	ON-OFF button.	When vibrator is operating, press OFF button.	Vibrator will stop operating.	

60. Modulator

Note 1. (Added.) It is not possible to modulate the transmitter if the PHONE-CW-NET-CAL switch is in either the NET or CAL position.

Note 2. (Added.) It is not possible to modulate the transmitter if the receiver is removed from the case and is not connected to the transmitter by a test cable.

a. The modulator circuit * * * or mcw operation.

73.1 Cords and Multiple Connectors (Added)

The terminals for the sockets and connectors as shown in their respective diagrams do not all use the same terminal numbers. Cords CD-1086 and Radio Receiver and Transmitter BC-1306 use the same terminal numbers, but they are different from the numbers used for Vibrator Power Unit PE-237 and Generator GN-58. To aid in tracing connections between units, refer to charts added to figures 60 and 61 by this Change.

76.1 Replacing Oscillator Padder Capacitor (Added)

The high-frequency oscillator padder capacitor (reference symbol 7) is changed from 600 mmf to 1,000 mmf in the receiver of Radio Sets SCR-694-C above serial No. 1080. Both capacitors are molded mica, and either one may be used as an emergency replacement. It is necessary, however, to adjust the iron core in the oscillator coil (reference symbol 42) when a capacitor is changed from one of these values to another. Adjust the iron core in accordance with information in paragraph 78g.

78. Receiver Alignment Procedure

g. Connect the hot * * * (par. 77 above).

Note. (Added.) If the high-frequency oscillator padder capacitor has just been replaced with a different value (par. 76.1), it is necessary to readjust the inductance of the oscillator coil (reference symbol 42) and the settings of the r-f and avarenna trimmers. To do this, set the signal generator and the receiver dial to indicate exactly 3.8 mc. instead of 6.2 mc. Adjust the inductance of the iron core for maximum indication on the output meter. Reset the signal generator to 6.2 mc and perform all remaining operations in this paragraph.

81. Transmitter Failure

j. When operated with * * * adjust the knob.

Note 1. (Added.) The INDICATOR may, in a few cases, fail to glow when operating with any of the power sources even though the transmitter is actually working. This is probably due to insufficient capacity to ground in this circuit. When INDICATOR GLOW is not obtained, remove the INDICATOR from the socket and obtain glow by holding the INDICATOR by its glass with the INDICATOR base against the ANT. post.

Note 2. (Added.) When the INDICATOR will not glow at the proper ANT. SELECTOR switch setting, but will glow at two other settings of this switch, proceed as in note 1 above.

c. (Added.) The ground lead of Counterpoise CP-12 should be 11 inches long to provide satisfactory performance of Radio Set SCR-694-C. In some cases a 48-inch lead was supplied with the counterpoise; this should be cut down to 11 inches.

The table below figure 39, page 54, is changed as follows:

Terminal number	Voltage to chassis
20	6.3
21	105
23	1.4
24	Chassis
32	425
34	6.3

Note. Above voltages are measured in chassis at full load.

Note. Terminals on terminal * * * has no connection.

The legend for figure 41, pages 56 and 57, is changed as follows:

Figure 41. Voltage chart, Vibrator Power Unit PE-237.

Note: Voltages listed are approximate and may vary with changes of vibrators, tubes, and circuit components.

92. Moistureproofing and Fungiproofing

c. STEP-BY-STEP INSTRUCTIONS FOR TREATING RADIO RECEIVER AND TRANSMITTER BC-1306.

(10) REASSEMBLY.

(c) Mark MFP with date of treatment directly above both transmitter and receiver nameplates.

d. STEP-BY-STEP INSTRUCTIONS FOR TREATING VIBRATOR POWER UNIT PE-237.

(7) REASSEMBLY.

(e) Mark MFP with date of treatment **directly above the nameplate of the vibrator power unit.**

e. STEP-BY-STEP INSTRUCTIONS FOR TREATING GENERATOR GN-58.

(6) REASSEMBLY.

(b) Mark generator MFP with date of treatment **directly above the nameplate.**

92.1 Unsatisfactory Equipment Report (Added)

a. WD AGO FORM 468 (WAR DEPARTMENT UNSATISFACTORY EQUIPMENT REPORT) FOR EQUIPMENT USED BY ARMY GROUND FORCES AND TECHNICAL SERVICES. WD AGO Form 468 will be filled out and forwarded through channels to the Office of the Chief Signal Officer, Washington 25, D. C., when trouble occurs more often than is normal, as determined by qualified repair personnel.

b. AAF Form 54 (UNSATISFACTORY REPORT) FOR EQUIPMENT USED BY ARMY AIR FORCES. AAF Form 54 will be filled out and forwarded to Commanding General, Air Materiel Command, Wright Field, Dayton, Ohio, in accordance with AAF Regulation 15-54.

The following note is added to the parts identification list in figure 58, page 73:

Note. Changes of parts in receivers on Order No. 22375-Philco-44-08 are as follows:

- Capacitor 7 is changed to 1,000 mmf.
- Resistor 33 is changed to 1.2 megohm. This resistor is not replaceable and is part of transformer 45.
- Resistor 37 is changed to 510,000 ohms.

Figure 60 is changed as follows:

PARTS IDENTIFICATION, VIBRATOR POWER UNIT PE-237.

- 700-1 to 700-5 Transformer-Transmitter power.
- 701 Transformer-Transmitter filament.
- 702-1 Transformer-Receiver power.

AGO 687A

Cross reference chart of terminal numbers (added)

Terminal No. Vibrator Power Unit PE-237 diagram	Corresponding terminals on--	
	Cord CD-1060 diagram (Fig. 30)	Transmitter diagram (Fig. 46)
34	45	45
23	46	46
32	47	47
24	53	53
20	54	54
35	55	55
22	56	56
21	57	57
33	58	58

Note. (Added.) Figure 60 is applicable to Vibrator Power Units PE-237 with serial numbers above 1,000.

Figure 61 is changed as follows:

REGULATOR ADJUSTMENT

ADJUST "A" TO * * * SHOWN ON NAMEPLATE. REGULATOR ADJUSTMENTS MUST BE MADE UNDER FULL LOAD.

DO NOT ATTEMPT READJUSTMENT UNLESS ABSOLUTELY NECESSARY

Voltage chart

Terminal	Voltage	Circuit
20	6.3	TRANSMITTER FILAMENTS.
21	105	REC. AND TRANS.—105 V.
22		
23	1.4	REC. FILAMENT—1.4 V.
24	NEG.	GROUND.
*	*	* " "

VOLTAGE CHART MEASUREMENTS MADE TO CHASSIS AT FULL LOAD.

Cross reference chart of terminal numbers (added)

Terminal No. Generator GN-58 diagram	Corresponding terminals on--	
	Cord CD-1060 diagram (Fig. 30)	Transmitter diagram (Fig. 46)
34	45	45
23	46	46
32	47	47
24	53	53
20	54	54
35	55	55
22	56	56
21	57	57
33	58	58

SECTION V
SUPPLEMENTARY DATA

92.2 Army Supply Catalog Pamphlets (Added.)

The appropriate pamphlets in the Signal part of the Army Supply Catalog for Radio Set SCR-694 C are:

a. ORGANIZATIONAL SPARE PARTS:

SIG 7-SCR-694

b. HIGHER ECHELON SPARE PARTS:

SIG 8-SCR-694

SIG 8-BC-1136

SIG 8-GN-53

SIG 8-PE-156

SIG 8-GN-58

SIG 8-BC-1306

SIG 8-PE-237

c. ORGANIZATIONAL AND HIGHER ECHELON SPARE PARTS:

SIG 7 & 8 HS-30

SIG 7 & 8 MP-57

SIG 7 & 8 T-17

d. For an index of available catalog pamphlets, see the latest issue of Department of the Army Supply Catalog SIG 1 & 2, Introduction and Index.

APPENDIX I (Added)

LUBRICATION

1. Recommended Lubricants

The following table lists the lubricating and cleaning materials necessary in servicing the equipment:

Symbol	Standard nomenclature
M-51-A.....	Compound, Bearing.
CG-1.....	Grease, General Purpose.
GM.....	Grease, Special, High Temperature.
AN-G-5.....	Grease, High Temperature, Water-resistant.
OE.....	Oil, Engine.
DA.....	Oil, Fuel, Diesel.
PL-SPECIAL.....	Oil, Lubricating, Preservative, Special.
SD.....	Solvent, Dry Cleaning.

Note. Bearing compound (M-51-A) is packed in 1-pound metal containers, and is the preferred lubricant for Generator GN-58. General purpose grease (CG-1), special high temperature grease (GM), and high temperature, water-resistant grease (AN-G-5) are recommended substitutes, listed in the order of preference.

2. Instructions for Lubrication of Radio Set SCR-694-C

a. RADIO RECEIVER AND TRANSMITTER BC-1306. Clean the teeth of the antenna gear tuning slug (131) with solvent (SD), and coat sparingly with grease (GM) or grease (CG-1) every 3

months under severe operating conditions, and whenever the units are overhauled.

b. GENERATOR GN-58. (1) Apply a few drops of oil (OE) or oil (PL-SPECIAL) to hand crank bearings at each end of the case every 3 months or at shorter intervals under extreme conditions.

Caution: Do not remove any of the sealed screws penetrating the outer case.

(2) When the generator is returned to a station for overhaul or repair, apply compound (M-51-A) as follows:

(a) Remove the outer half of the chain housing and wipe off accessible old grease. Coat the chain and sprockets and pack the chain recesses with grease. Spread the grease evenly and avoid an excess of lubricant which cannot be expected to adhere to the mechanism. Also pack a small amount of grease around the exposed bearing surfaces.

(b) Remove the diamond-shaped plate which covers the armature bearing at the other end of the generator. Clean out old grease and knead fresh lubricant into the recess between the races. Pack about two-thirds full.

(c) If solvent (SD) or oil (DA) is used for removal of the old lubricant, be sure to invert the generator to prevent flow of the fluid onto the commutator or armature windings.

(3) When reassembling the unit, use a sealing compound around the heads of any machine screws penetrating the outer case.

APPENDIX II (Added) PHANTOM ANTENNA A-34

1. Description

Phantom Antenna A-34 is designed for use with Radio Set SCR-694-C. When necessary to adjust or test the transmitter of the radio set during periods of radio silence, the phantom antenna can be used in place of the regular antenna. The phantom antenna (fig. 63) is self-contained in a metal box which measures approximately 6½ inches by 3 inches by 2 inches.

2. Installation and Operation

When the phantom antenna is to be used, proceed as follows:

a. Remove the calibration chart (fig. 2) from the front panel of the transmitter and slide it into position on the front of the phantom antenna.

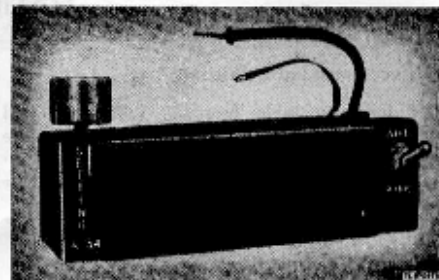


Figure 63. (Added.) Phantom Antenna A-34, front view.

b. Slide the phantom antenna into the position formerly occupied by the calibration chart on the panel of the transmitter.

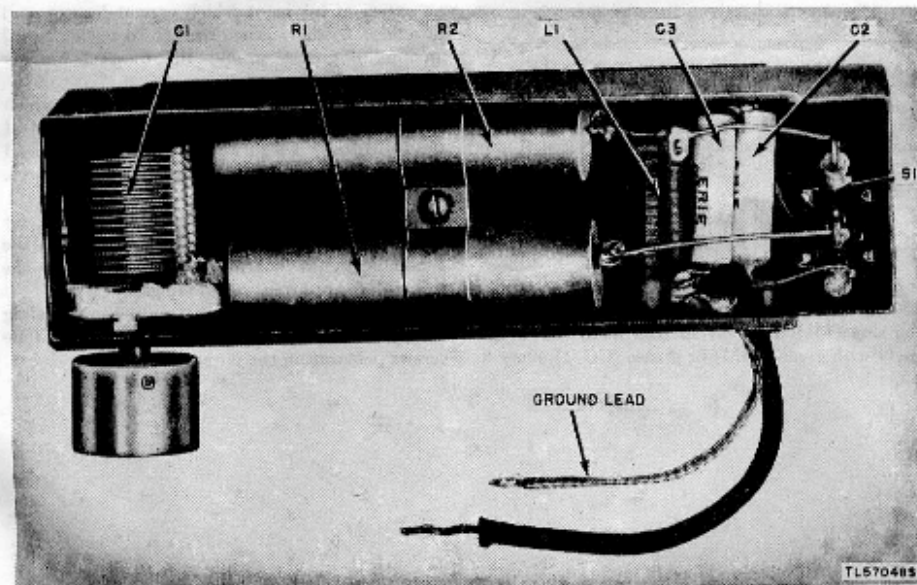


Figure 64. (Added.) Phantom Antenna A-34, inside view.

e. Connect the ground lead of the phantom antenna (braided conductor in fig. 63) to the frame of the radio set. This can be done by removing one of the mounting screws above the crystal cover (fig. 2), passing the screw through the lug on the end of the ground lead, and then replacing and tightening the screw.

d. Disconnect the antenna from the ANT. jack and insert the tinned end of the black lead of the phantom antenna into the jack.

e. Turn on and make adjustments to the transmitter, following the procedures given in section II of this manual, except that the WIRE-WHIP switch and the SETTING control of the phantom

antenna are used instead of the ANT SELECTOR switch and ANTENNA TUNING control.

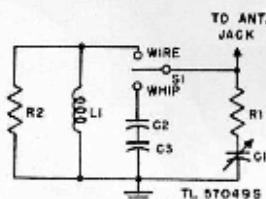


Figure 66. (Adapt.) Phantom Antenna A-54, schematic diagram.

[AG 300.7 (8 Oct 47)]

By ORDER OF THE SECRETARY OF THE ARMY:

OFFICIAL:

EDWARD F. WITSELL
Major General
The Adjutant General

DWIGHT D. EISENHOWER
Chief of Staff, United States Army

DISTRIBUTION:

USAF (10); AGF (5); T (5); Dept (2); Base Comd (2); MDW (6); Def Comd (2); USAF Maj Comd (15); Arm & Sv Bd (1); AGF Bd (ca Sv Test Sec) (1); Tech Sv (2); FC (2); Class III Instls (3); PE (10); Dep 11 (5); except Baltimore (21); Sacramento (17); USMA (2); Tng Ctr (2); 4th & 5th Ech Maint Shops 11 (2); A (ZI) (20), (Overseas) (5); CHQ (2); Two (2) copies to each of the following T/O & E's: 1-317; 1-452; 1-600, GB; 1-987; 2-2; 2-12; 2-77T; 3-26; 3-27; 5-116; 9-192; 5-226T; 5-297; 5-416; 5-417; 5-512T; 5-516T; 5-517T; 5-526T; 6-10-1; 6-12; 6-20-1; 6-26; 6-36; 6-46; 6-50-1; 6-56; 6-76; 6-77; 6-86; 6-110-1; 6-200T; 6-216T; 6-226T; 7-1; 7-12; 7-14; 7-16; 7-19; 7-52T; 7-56T; 11-7; 11-16; 11-95; 11-107; 11-127; 11-147; 11-500, IU, SG, SJ; 11-537T; 11-587; 11-597; 19-56; 19-57; 19-500, GB, GC.

For explanation of distribution formula, see TM 38-405.