

TM 11-349

WAR DEPARTMENT

TECHNICAL MANUAL



MAINTENANCE EQUIPMENT ME-22

14 August 1943

Orders No. 28501-PHILA-43 and 18038-PHILA-43

DESTRUCTION NOTICE

WHY — To prevent the enemy from using or salvaging this equipment for his benefit.

WHEN — When ordered by your Commander, or when you are in immediate danger of capture.

HOW — 1. Smash — Use Sledges, Axes, Hand-Axes, Pick-Axes, Hammers, Crowbars, Heavy Tools, Etc.

2. Cut — Use Axes, Hand-Axes, Machetes, Etc.

3. Burn — Use Gasoline, Kerosene, Oil, Flame-Throwers, Incendiary Grenades, Etc.

4. Explosives — Use Firearms, Grenades, TNT, Etc.

5. Disposal — Bury in Slit Trenches, Fox-Holes, Other Holes. Throw in Streams. Scatter.

6. USE ANYTHING IMMEDIATELY AVAILABLE FOR DESTRUCTION OF THIS EQUIPMENT.

WHAT — 1. Smash — Handset Capsules and Switches, Generators, Ringers, Lever-Switches, Capacitors, Coils.

2. Cut — Cords, Leather Case, Straps.

3. Break — Handset Mouldings, Jack Assemblies, Wooden Case.

4. Burn — Wooden Case, Technical Manuals, Coils, Capacitors.

5. Bury or Scatter — All of the above pieces after breaking. Also contents of Envelopes.

DESTROY EVERYTHING

MAINTENANCE EQUIPMENT ME-22*

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*This Technical Manual supersedes TM 11-349, dated May 10, 1943.

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SECTION I

INTRODUCTION

1. Purpose.—Maintenance Equipment ME-22 is a kit of the component parts of Telephones EE-8-(*) which it is considered practical to replace in 3rd echelon Maintenance.

Technical Manual TM 11-333 covering Telephones EE-8-(*) contains essential information which the repairman must have to properly test the operation of the telephones before and after making repairs. The repairman should obtain a copy of Technical Manual TM 11-333 and keep it along with this manual in the compartment provided for Instructional Literature in Case CS-112.

2. Description.—Maintenance Equipment ME-22 is packed in a rugged plywood Case CS-112, 25 $\frac{3}{8}$ " long, 14 $\frac{1}{2}$ " wide and 11" deep, divided horizontally into two sections as shown in figure 1. The component parts are packed in cardboard boxes or manila envelopes which are, in turn, packed in their respective compartments within the drawers of the case. The top drawer is divided into 4 sections. The left section is used for the case assembly, straps and cords. The two center sections are for generators. The right section contains a tray which is sub-divided into 12 sections for various parts packed in cardboard boxes. Beneath the tray is a compartment containing the technical manuals and a label showing the location of the component parts in the case(†). The lower drawer is divided into 4 sections. The large left section is felt-lined and is used for the handsets. There are two sections at the right for envelopes containing screws, nuts, washers and other small parts. The fourth section is a spare compartment. See figure 4. The total weight of this equipment when packed for transportation is approximately 50 lbs.

Note: (*) indicates applicable suffix letter.

(†) on some equipments the label will be found on the bottom of the left section of the top drawer.



FIGURE 1 — Maintenance Equipment ME-22

SECTION II

LIST OF PARTS

3. **Introduction.**—On the following pages appear a list of the parts contained in Maintenance Equipment ME-22. An explanation of the columns in the list is as follows:

a. Reference Number.—These numbers are used to identify the items as they appear on the various photographs (See figures 2a to 2d), and reference is made to the items by such numbers throughout the text of this manual.

b. Stock Numbers and Description.—The data in these columns is to be used in requisitioning the items as replacements are needed.

c. Quantity.—This column indicates the quantity of each item contained in Maintenance Equipment ME-22 when issued.

d. Minimum Quantity.—This column indicates the recommended minimum quantity of each item which should be kept in Case CS-112 at all times. When the quantity of an item falls to or below this minimum figure the repairman should requisition the item in an amount sufficient to bring it up to the initial quantity.

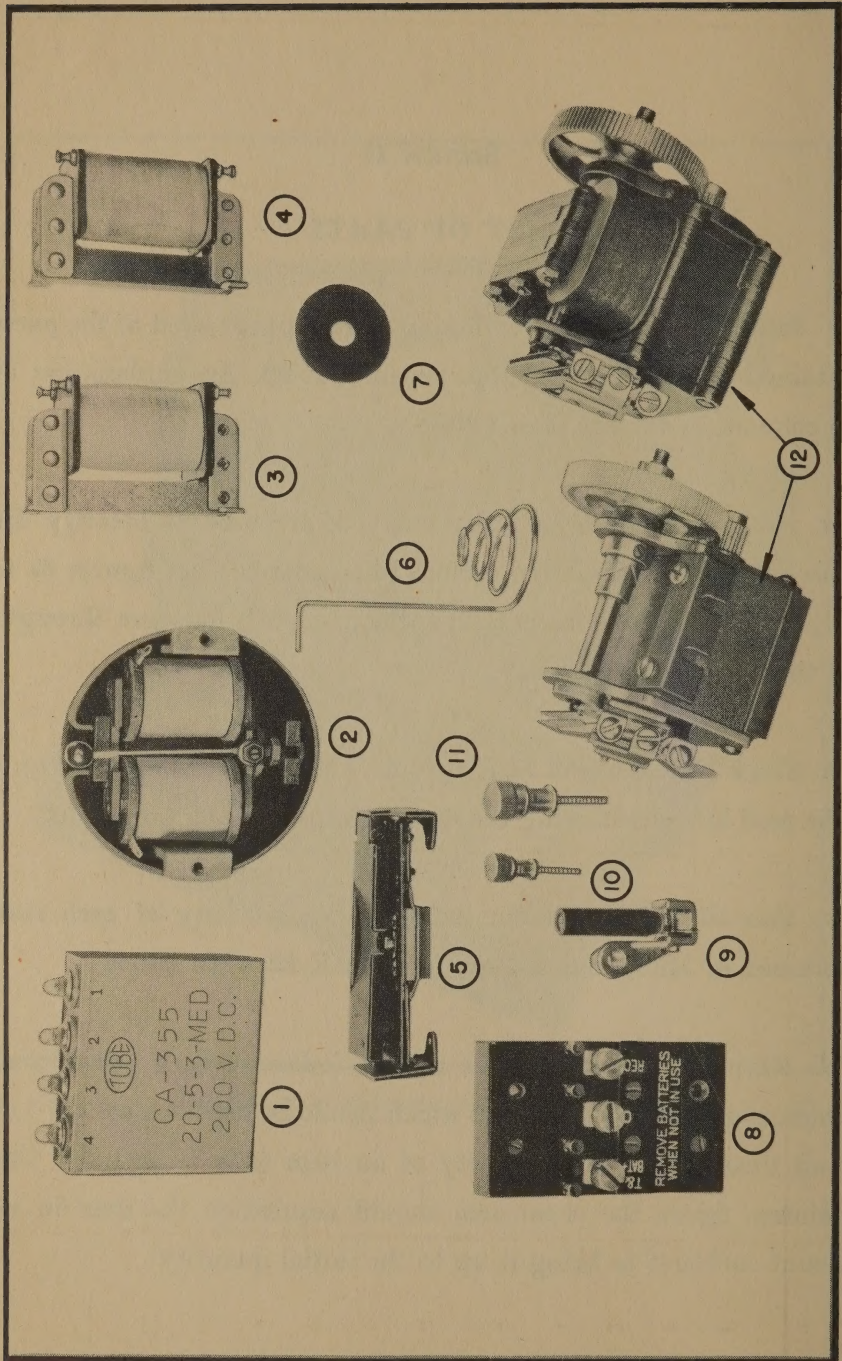


FIGURE 2a — Component Parts (Item 1-12)

Ref. No.	Signal Corps Stock No.	Quan.	Min. Quan.	Description
1	3D355	2	2	Capacitor CA-355
2	4B3371	2	2	Ringer MC-131
3	3C105	1	1	Coil C-105 (Induction)
4	3C158	1	1	Coil C-158 (Holding)
5	4B5008A/51 & 4B5008A/50	3	2	Lever Switch complete with Screw Switch
6	4B5008/47	2	1	Battery Contact Spring
7	4B838/D1	5	3	Disc
8	4B5008A/20	1	1	Jack Assembly
9	4B454	10	5	Crank GC-9
10	3Z315	4	2	Binding Post TM-215
11	3Z314	4	2	Binding Post TM-214
12	4B838B or 4B838A	2	2	Generator GN-38-B or GN-38-A

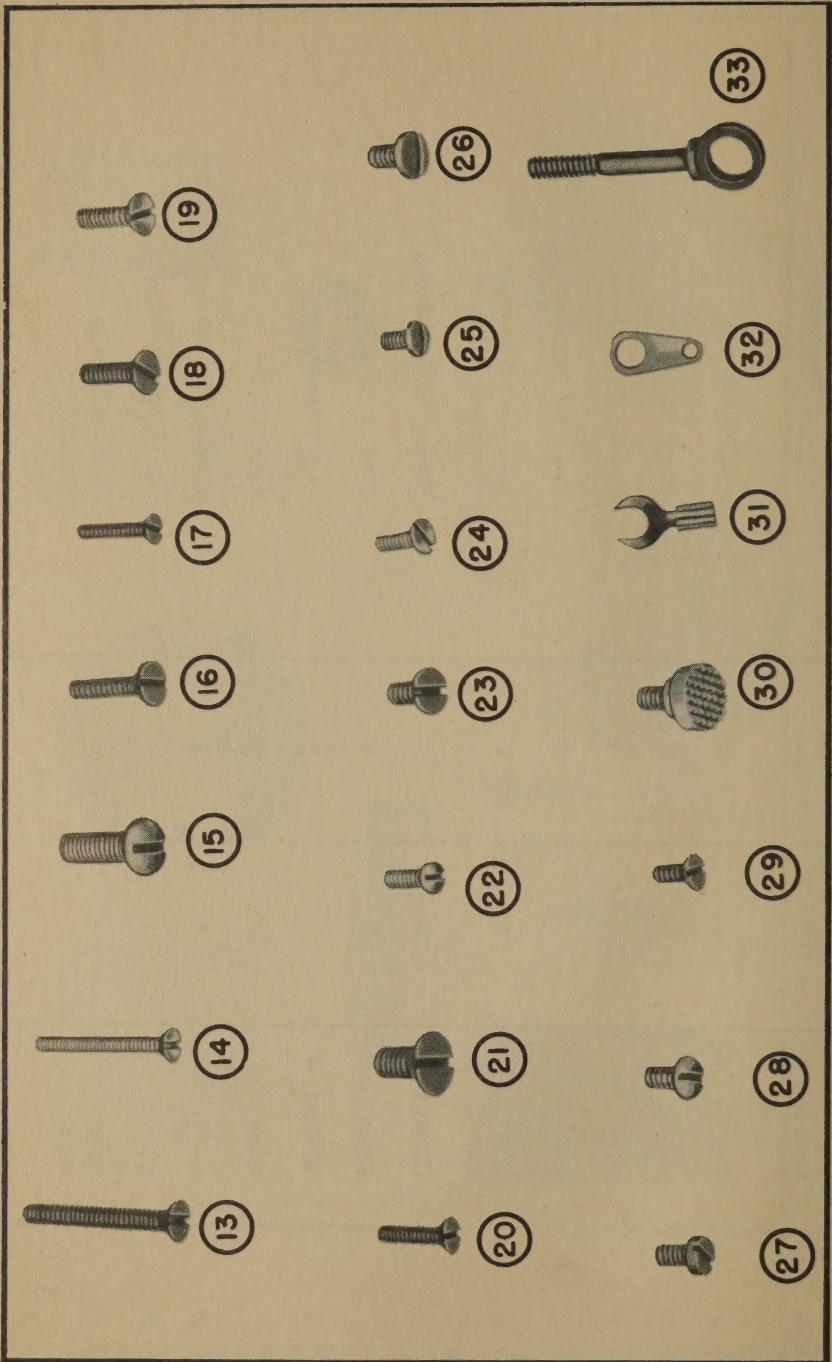


FIGURE 2b — Component Parts (Item 13 to 33)

Ref. No.	Signal Corps Stock No.	Quan.	Min. Quan.	Description
13	6L6632-16SE	12	6	Screw, machine, No. 6-32x1" Flat Head
14	6L6440-14SE	12	6	Screw, machine, No. 4-40x7/8" Flat Head
15	6L7032-8.1SE	12	6	Screw, machine, No. 10-32x1/2" Round Head
16	6L6632-8.8SE	12	6	Screw, machine, No. 6-32x1/2" Binding Head
17	6L6948-8.48S	12	6	Screw, machine, No. 3-48x1/2" Flat Head
18	6L6632-7SE	20	10	Screw, machine, No. 6-32x7/16" Flat Head
19	6L6632-7	12	6	Screw, machine, No. 6-32x7/16" Flat Head
20	6L6440-7E	24	12	Screw, machine, No. 4-40x7/16" Flat Head
21	6L7032-6.7S	12	6	Screw, machine, No. 10-32x3/8" Flat Head
22	6L6440-5.5	12	6	Screw, machine, No. 4-40x5/16" Round Head
23	6L6632-5SE	32	16	Screw, machine, No. 6-32x5/16" Flat Head
24	6L6440-5.59	18	9	Screw, machine, No. 4-40x5/16" Flat Head
25	6L6440-4.8	12	6	Screw, machine, No. 4-40x1/4" Binding Head
26	6L6632-4.9S	12	6	Screw, machine, No. 6-32x1/4" Binding Head
27	6L6632-3-1.10	12	6	Screw, machine, No. 6-32x7/32" Flat Filister Head
28	6L6632-3-1.15P	12	6	Screw, machine, No. 6-32x7/32" Round Head
29	6L6440-4SE	12	6	Screw, machine, No. 4-40x1/4" Flat Head
30	4B5008A/C10	2	1	Contact, Battery
31	3Z10156	6	3	Terminal TM-156
32	3Z11007	6	3	Terminal, Patton-MacGuire Co. #4007
33	6L21006-32	12	6	Screw, Eye No. 6-32 thd. 15/16" long

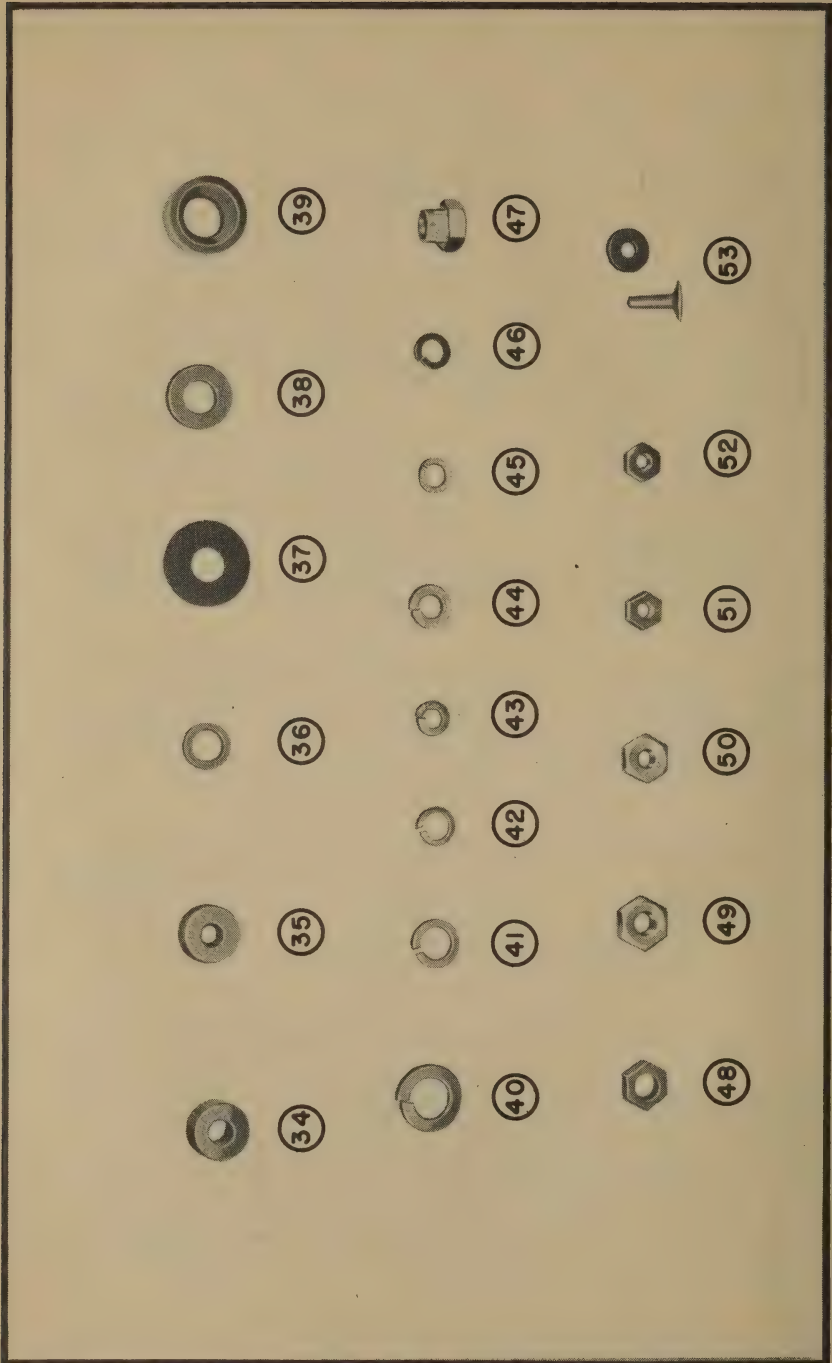


FIGURE 2c — Component Parts (Item 34-53)

Ref. No.	Signal Corps Stock No.	Quan.	Min. Quan.	Description
34	4B5008A/31	6	3	Spacer, "LE" Black Phenolic Rod $\frac{3}{8}$ " diameter, $\frac{1}{4}$ " long
35	4B5008A/30	6	3	Spacer, "LE" Black Phenolic Rod $\frac{3}{8}$ " diameter, $3/16$ " long
36	4B1922/J2	8	4	Insulator "LE" Black Phenolic Rod
37	4B1922/J1	8	4	Insulator "LE" Black Phenolic Plate
38	6L73010-1E	12	6	Washer, standard for #10 Screw
39	4B1922/J3	8	4	Insulator, Black Phenolic Tubing
40	6L73025E	12	6	Washer, SAE Reg. for $\frac{1}{4}$ " Screw split spring
41	6L73010	12	6	Washer, SAE Reg. for #10 Screw split spring
42	6L73008	12	6	Washer, SAE Reg. for #8 Screw split spring
43	6L73004	20	10	Washer, SAE Reg. for #4 Screw split spring
44	6L73006	20	10	Washer, SAE Reg. for #6 Screw split spring
45	6L73006-1	12	6	Washer, for #6 Screw split spring
46	6L73006-2	12	6	Washer, standard for #6 Screw split spring
47	4B1922/NI	12	6	Nut #6-32 clinch
48	6L3110-1-3	12	6	Nut for #10-32 Screw $7/64$ " thick
49	6L3108-32	12	6	Nut for #8-32 Screw Hex.
50	6L3106-32	12	6	Nut for #6-32 Screw Hex.
51	6L3104-48S	12	6	Nut for #4-48 Screw Hex.
52	6L3104-40B	12	6	Nut, #4-40, Hex.
53	6L4115-35P	12	6	Rivet, Flat Head $3/32$ " x $\frac{3}{8}$ " long complete with Burr

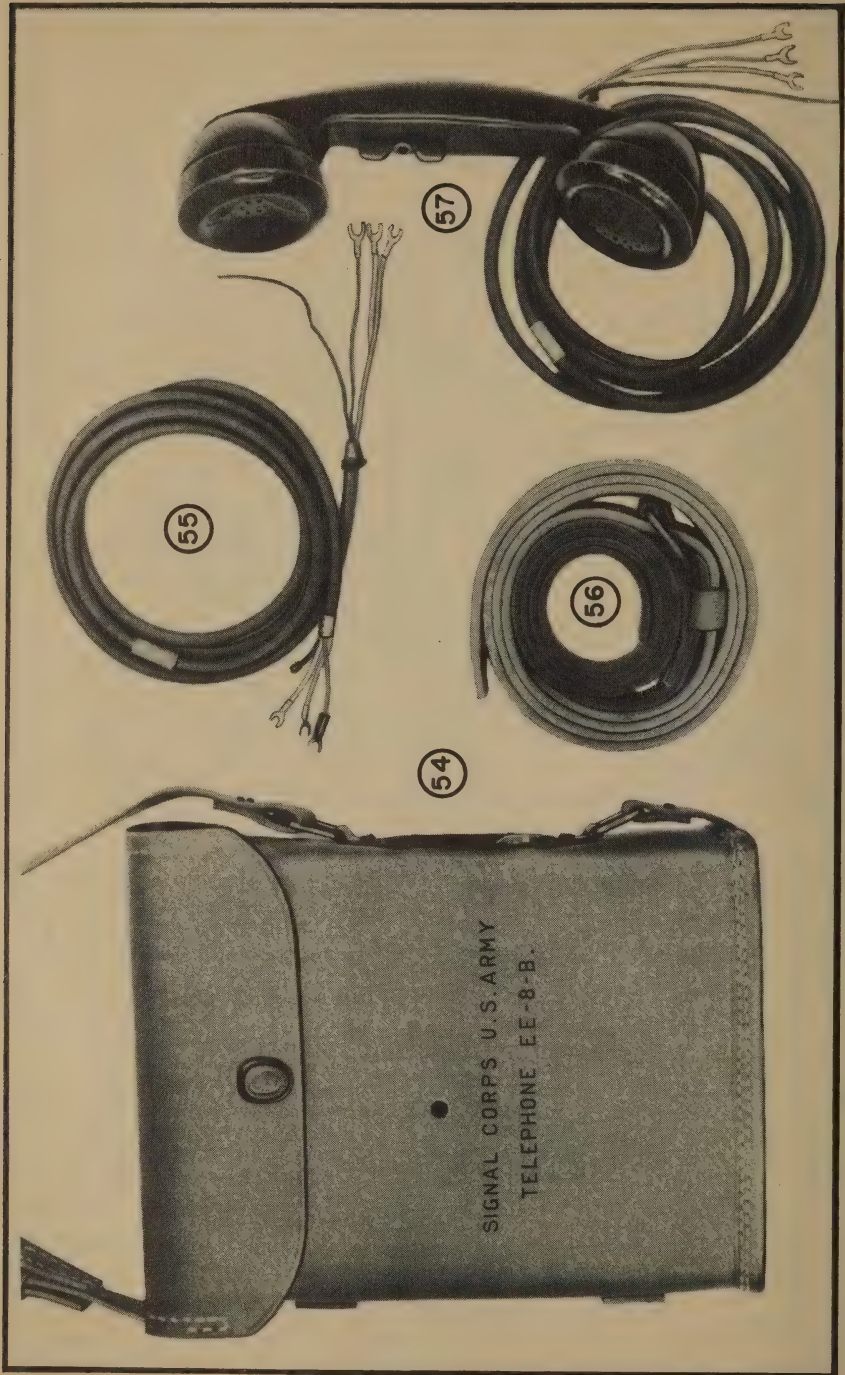


FIGURE 2d — Component Parts (Item 54 to 57)

Ref. No.	Signal Corps Stock No.	Quan.	Min. Quan.	Description
54	4B5008A/10	1	1	Case Assembly (complete with Strap)
55	3E333	6	3	Cord CC-333
56	4B5008/12.1	4	2	Strap Assembly, Leather Carrying
57	4B1109(*)	4	2	Handset TS-9-(*)
58	6D12011-349	2	1	Technical Manual TM 11-349
59	4B414-112	1	1	Case CS-112

SECTION III

UPKEEP OF MAINTENANCE EQUIPMENT

4. **Position of Parts in Case CS-112.**—Illustration 4 shows the location within Case CS-112 of the parts contained in Maintenance Equipment ME-22. The reference numbers correspond to the reference numbers in Section II and figures 3 and 5. Keep the original location of parts and check the quantity on hand periodically to make certain that at least the minimum quantity is available. Keep Maintenance Equipment ME-22 completely stocked by requisitioning individual parts contained in it. It should never be necessary to requisition a complete Maintenance Equipment ME-22 after it is once issued. Requisition parts through the established channels using stock number, description and quantity needed to bring stock up to maximum quantities. State on the requisition that material is needed to replenish Maintenance Equipment ME-22. If conditions warrant, parts should be replaced after each service trip.

5. **Inspection.**—Inspect Maintenance Equipment ME-22 often to see that it is kept in a neat and orderly fashion, that all parts are in their proper places and that no deterioration has taken place due to exposure, corrosion, etc. The envelopes containing small parts are to be kept in numerical order by stock numbers. If for any reason Maintenance Equipment ME-22 is found unsatisfactory forward comment and recommendations to the Signal Corps Ground Maintenance Agency, Signal Corps Eastern Signal Service, Philadelphia, Pennsylvania.

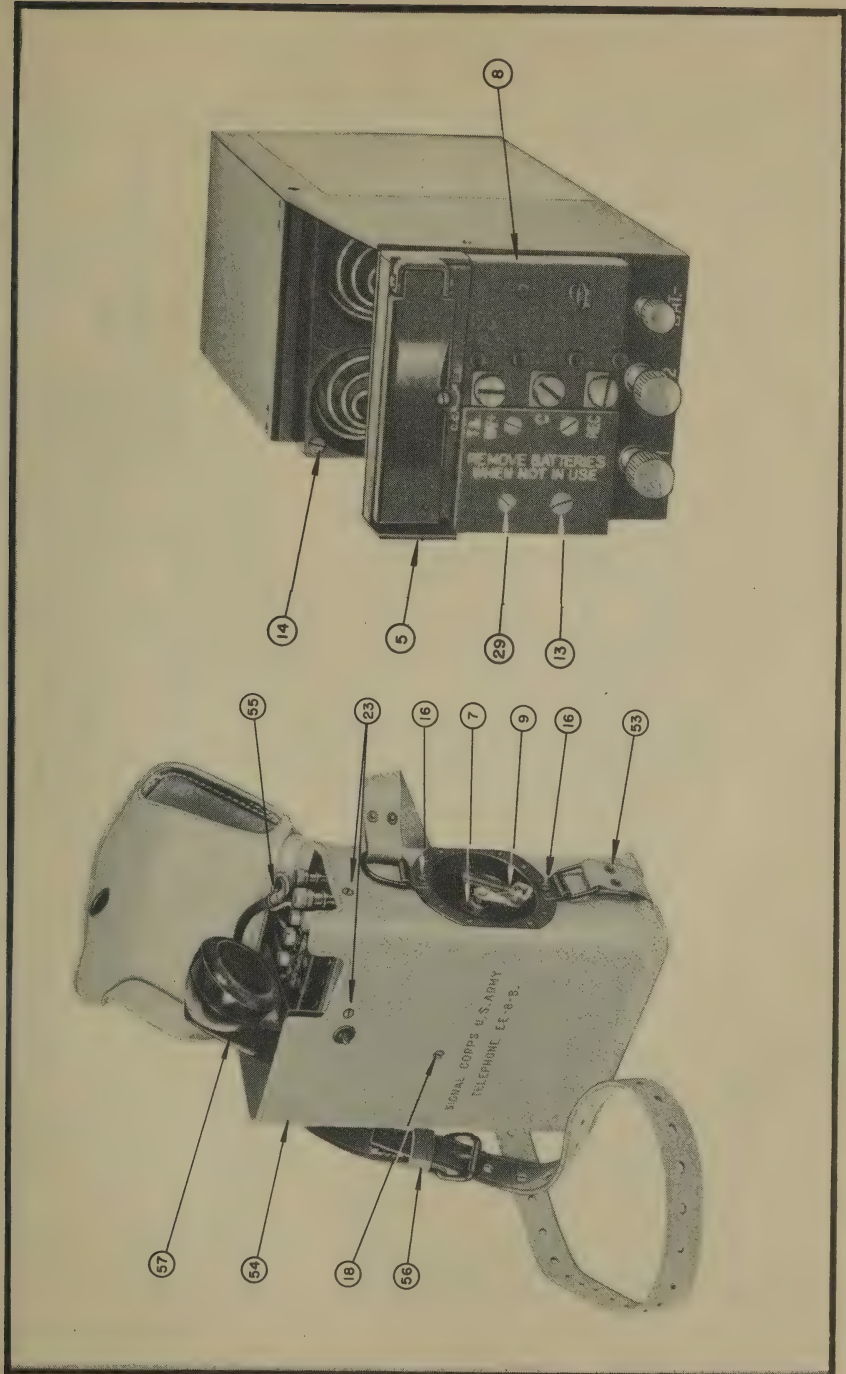


FIGURE 3 — Telephone EE-8-B in Leather Case
and Top View of Telephone EE-8-B

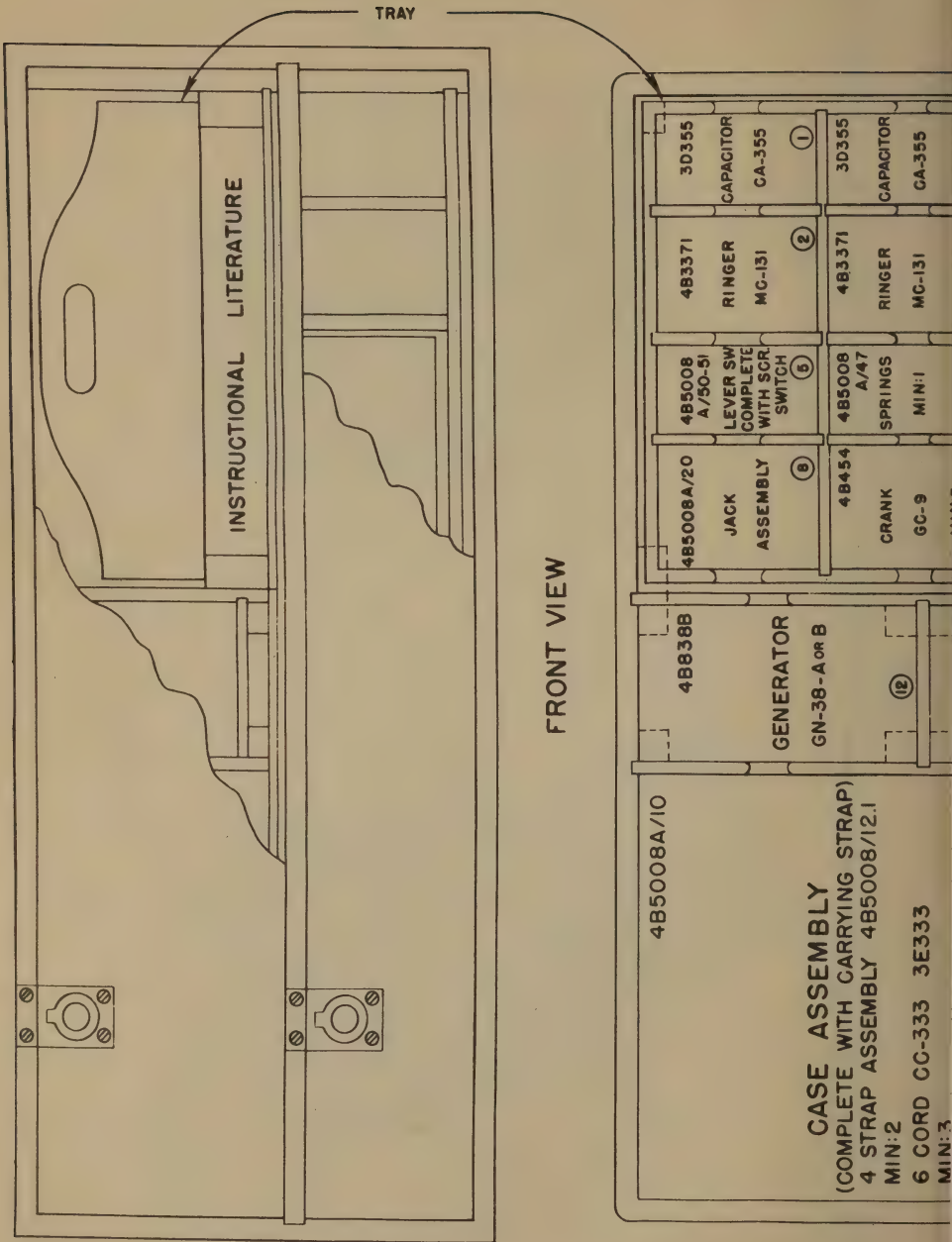
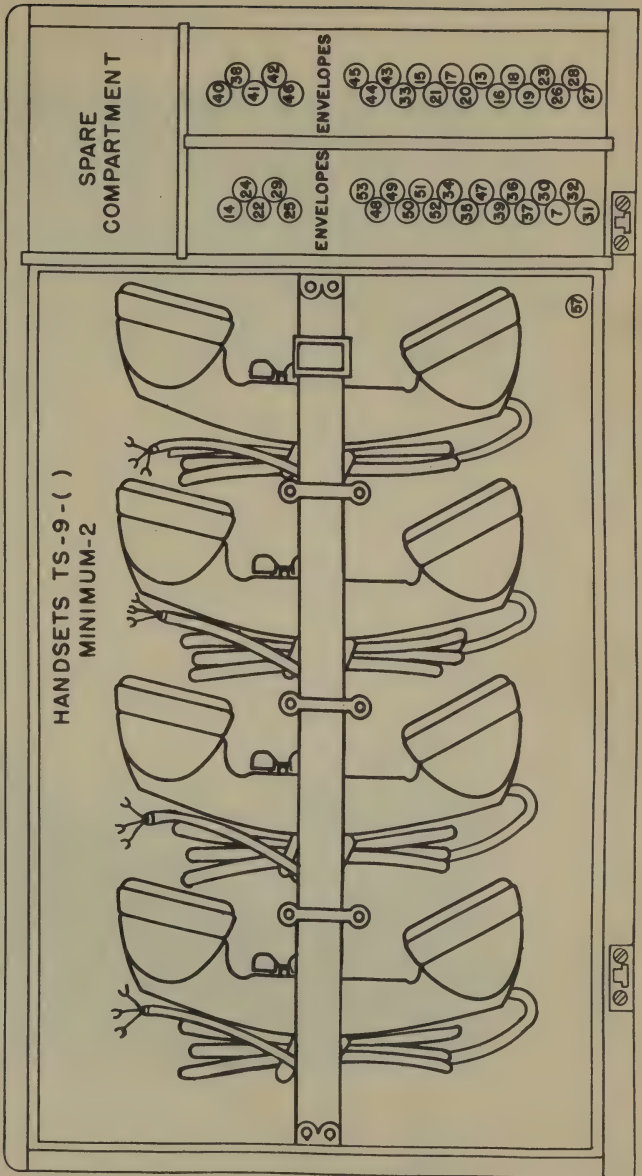
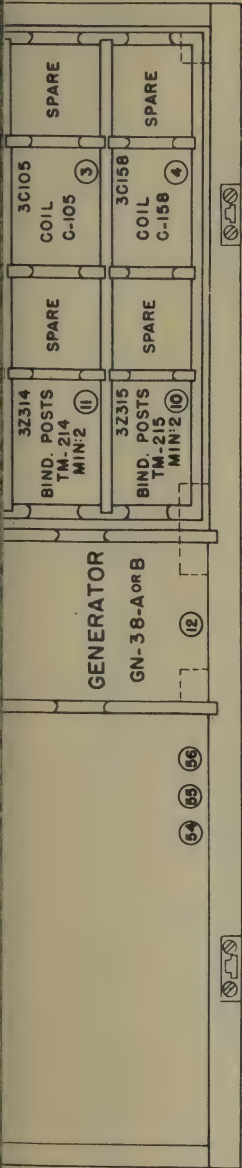


FIGURE 4 — Location of C



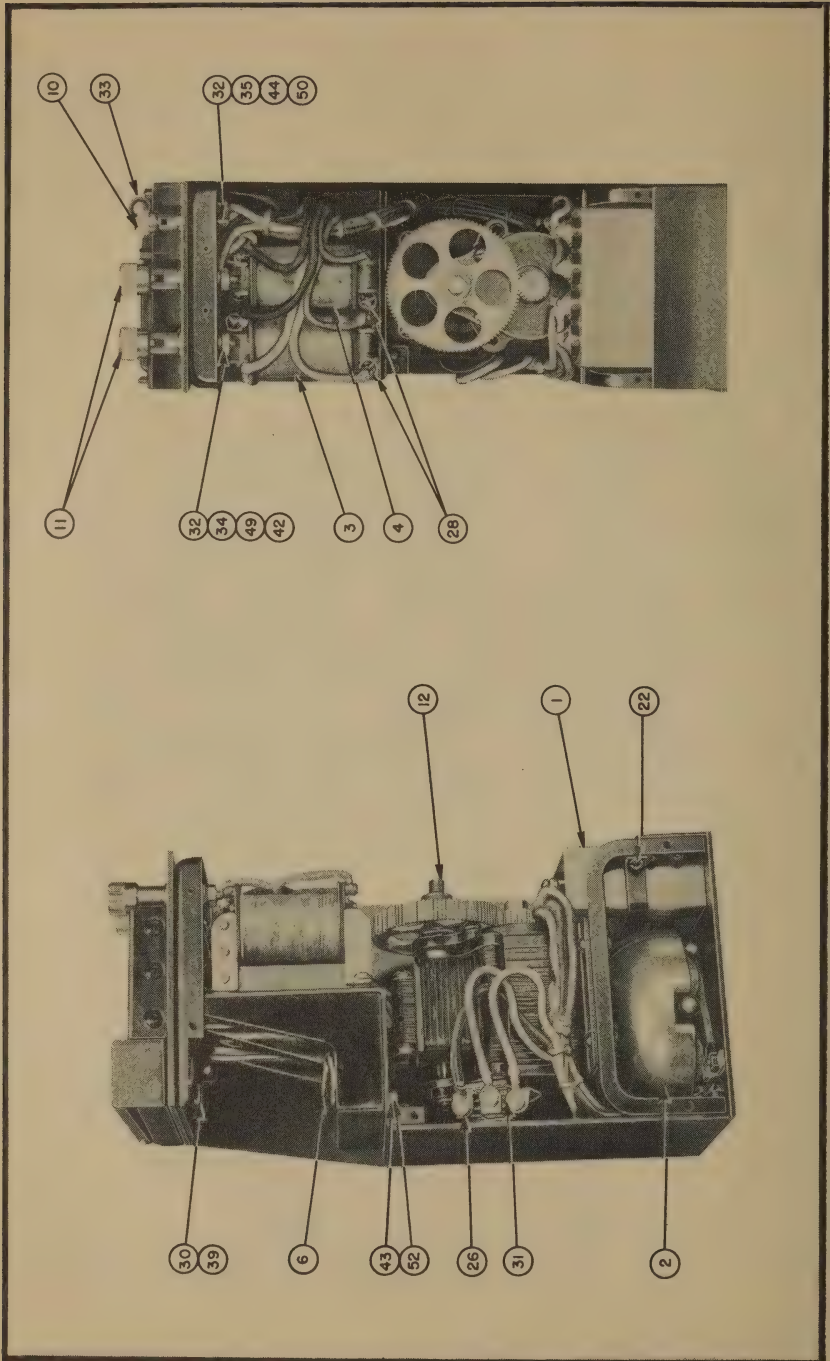


FIG. 5a — Two Views of Telephone with Front Wall, Side Wall and Crank Removed (model equipped with Generator GN-38-A).

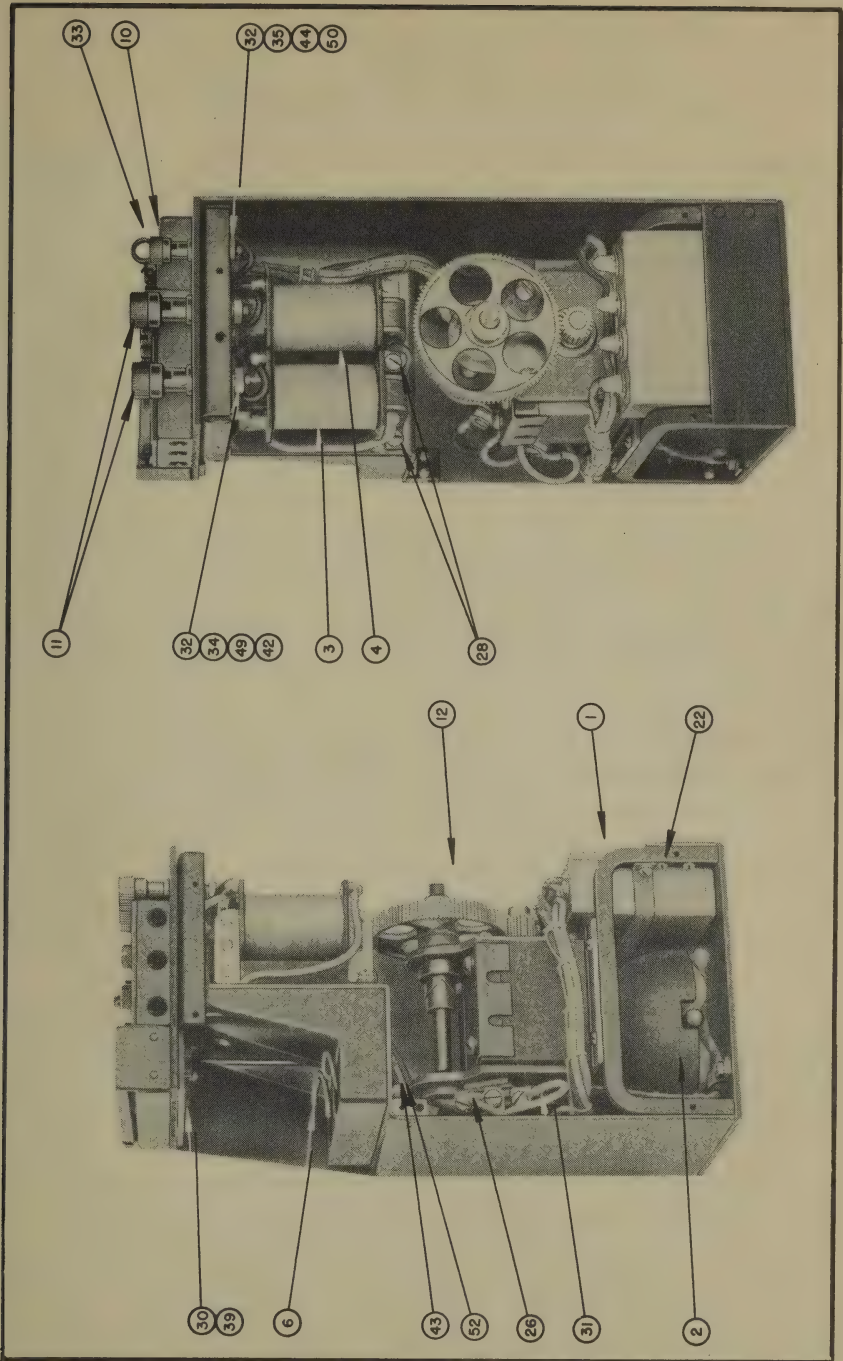


FIG. 5b — Two Views of Telephone with Front Wall, Side Wall and Crank Removed (model equipped with Generator GN-38-B).

SECTION IV

USE OF MAINTENANCE EQUIPMENT

6. Replacement of Parts.—*a. General.*—When parts are replaced they will be installed as shown in figures 3, 5a & 5b. Those parts of replaced units which can be salvaged will be retained by the repairman for his own use, or, if the repairman has no need for them, they will be disposed of thru the established channels for salvage. The repairman will find it particularly advantageous to retain parts of replaced generators and handsets as these units vary in design when produced by different manufacturers and possession of such parts may enable the repairman to make emergency repairs which would be impossible otherwise. Spare compartments will be found in Case CS-112 which may be used for keeping salvaged parts.

To replace parts within the telephones, take the body assembly out of the leather case by removing two screws (16), three screws (18), and two screws (23), and lifting the body assembly out of the leather case. All of the aforementioned screws appear on figure 3 except two screws (18) which will be found on the back of the leather case.

b. Crank GC-9—(Item 9).—To remove crank, pull on handle and turn counter-clockwise (to the left) off shaft. To replace with new crank, pry out disc (7) on shaft behind side wall. Be sure that lock-washer (40) on shaft behind disc does not fall inside chassis. Force hub on arm of crank through hole in disc. Screw crank clockwise (to the right) on shaft. Poke disc through hole in side wall. It is not necessary to remove the telephone from the leather case to replace crank.

c. Capacitor CA-355—(Item 1).—To change capacitor, remove body assembly from case as directed in paragraph *a*. Remove crank. Remove side wall by taking out three screws (25). Remove front wall by taking out five screws (25). Remove bottom plate by taking out four corner screws (24). Unsolder four leads on capacitor by placing hot soldering iron on top of lugs and pull wires out of lugs. Slip capacitor down through capacitor strap. It may be necessary to loosen outside screw (22) on strap to free capacitor. Slip in new capacitor so that terminal 1 (stamped on capacitor) is to the left. Tighten screw on strap if necessary. Replace wires in terminal lugs and press lugs down. Replace wires in the following color code: (See wiring diagrams, figures 7a, 7b or 7c.)

Red-blue and blue-black to terminal 1
 Orange and yellow-red to terminal 2
 Blue to terminal 3
 Yellow to terminal 4

Replace bottom plate. **BE SURE CAPACITOR RESTS ON BOTTOM PLATE.** Replace front wall. If front wall does not fit easily, loosen two screws (24) on bottom plate, screw on side wall and tighten bottom plate. Replace side wall. **BE SURE LOCK-WASHER (40) IS ON GENERATOR SHAFT.** Replace crank assembly and screw telephone into place in leather case.

d. Generator GN-38-A or GN-38-B—(Item 12).—To change generators, remove body assembly from leather case as directed in paragraph *a.* Remove crank (9), disc (7), side wall, front wall and bottom plate as directed in paragraph *c.* Loosen three terminal screws (26) on back of generator (See figs. 5a and 5b). Remove wires. Take out four screws (15), under base plate. Push capacitor down to allow clearance for removal of generator; pull generator out over capacitor. Slide new generator in place. **BE SURE THAT INSULATING PLATE BETWEEN GENERATOR AND BASE PLATE IS IN PLACE.** Line up holes in base plate, insulating plate and bottom of generator. Assemble washers on screws (15) as follows: lockwasher (41), washer (38), insulating washer (37), insulating bushing (36), (See figure 6.) Screw this assembly through base

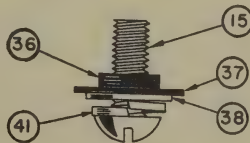


FIGURE 6 — Sketch of Screw Assembly for Generator

plate into generator. **BE SURE BUSHING (36) GOES INTO HOLE IN BASE PLATE.** Replace bottom plate. Put three wire terminals (31) on generator terminal screws (26) in the following color code: (See wiring diagrams, figures 7a, 7b or 7c.)

Black to top terminal
 Orange to center terminal
 White to bottom terminal

Tighten terminal screws (26). **BE SURE LUGS DO NOT TOUCH GENERATOR FRAME.** Replace lockwasher (40) on generator shaft. Replace front wall, side wall, crank assembly

and screw telephone into place in leather case. Either Generator GN-38-A or GN-38-B may be used to repair Telephones EE-8, EE-8-A, or EE-8-B but it is not advisable to replace the generator in Telephone EE-8-B with a Generator GN-38 which has been removed from an old field telephone because of the lower output of Generator GN-38 when placed in the steel chassis of a Telephone EE-8-B.

e. Lever Switch Complete with Screw Switch—(Item 5).—To change lever and screw switch assembly, remove body assembly from case. Remove eye screw (33) and remove large screw (13) opposite eye screw on jack assembly. Take out two screws (23) on top of battery compartment next to battery contacts. Unsolder three leads on screw switch and two on lever switch. To replace switches, put new assembly in place. Push white wire up through two lugs on right of lever switch. Solder to each lug. **BE CAREFUL THAT SOLDER DOES NOT RUN DOWN TO LEVER SWITCH.** Push red-blue wire through hole in other lever switch terminal and solder. Bend the terminal lugs down slightly on right of screw switch. Push blue-black wire through upper right terminal from top down. Turn end of wire over and solder. Push terminal up. Push white wire up through lower right terminal on screw switch. Turn wire end over and solder. Push red wire through lug on left side of screw switch. Turn end of wire over and solder. Screw the switches on chassis with the two screws (23) in battery compartment. **CHECK TO BE SURE LOWER RIGHT TERMINAL ON SCREW SWITCH DOES NOT TOUCH UPPER TERMINAL OR NUT ON TERMINAL BOARD.** Equalize clearance by forcing screw driver between the contacts. **BE SURE LEFT TERMINAL DOES NOT TOUCH NUT ON TERMINAL BOARD.** Lay red and yellow wires on terminal board so that they run to and around in front of screw switch to allow for clearance of wires under jack block. Replace jack block and screw telephone into place in leather case.

f. Ringer MC-131—(Item 2).—To change ringer, remove body assembly from case as directed in paragraph *a*. Remove bottom plate and front wall as directed in paragraph *c*. Take out two screws (23) holding ringer on bottom plate. Unsolder the two wires on coils. Remove ringer. Solder wires on new ringer so that the black lead is on left coil terminal lug and red-blue wire on right lug on coil with clapper facing you. Screw into place on bottom

plate. Screw bottom plate on chassis. Push wires against battery plate away from ringer. If wires touch, they will deaden sound of ringer. Replace front wall and screw telephone into place in leather case.

g. Jack Assembly—(Item 8).—To change jack assembly, remove eye screw (33) and screw (13) opposite eye screw (See figure 3.) Unsolder the three wires on the bottom of jack assembly. Solder wires back on new jack assembly in the following color code, (See wiring diagrams, figures 7a, 7b or 7c.)

Yellow wire to T&BAT+

Red-green wire to COM.

Blue wire to REC.

Replace jack assembly on terminal board with eye screw (33) and screw (13).

h. Induction Coil C-105—(Item 3).—To replace induction coil, remove body assembly from case as directed in paragraph *a*. Remove crank (9), disc (7), side wall and front wall as directed in paragraph *c*. Unsolder four terminals on induction coil by placing hot soldering iron on terminals. Remove two screws (28) and washers (44) that hold coil in place. Install new coil by placing top screw and washer in hole in coil, hold in place with screw driver, guide into place and tighten screw. Put in bottom screw and washer. Twist wires around terminals in the following color code and solder: (See wiring diagrams, figures 7a, 7b or 7c).

White Wire to Terminal 1

Black Wire to Terminal 2

Red-green Wire to Terminal 3

Yellow Wire to Terminal 4

Terminal numbers are stamped on ends of coils near terminals. Replace front wall, side wall and crank. Screw telephone into place in leather case.

i. Holding Coil C-105—(Item 4).—To replace holding coil, remove body assembly from leather case as directed in paragraph *a*. Remove crank (9), disc (7), side wall and front wall as directed in paragraph *c*. Take out the two screws (28) on induction coil (3) making it possible to work on Holding Coil C-105. Unsolder the two wires on holding coil (4). Remove the two mounting screws (28) on holding coil. Install new holding coil by placing top screw (28) and washer (44) in hole in coil. Hold in place with screw driver. Guide into place and tighten screw. Replace bottom screw

(28) and washer (44). Twist wires around terminals and solder in the following color code: (See wiring diagrams, figures 7a, 7b or 7c.)

Black-red wire to Terminal 1

Red-blue wire to Terminal 2

Replace induction coil (3) (paragraph h.) Replace front wall, side wall, crank (9), disc (7). Screw telephone into place in leather case.

j. Binding Post TM-214—(Item 11).—Remove body assembly from leather case as directed in paragraph *a*. Unscrew jack assembly (8). Unscrew lever switch assembly (5). Lift up terminal board. Take nuts (49), terminals (32), lockwasher (42), washer, and spacer (34) off binding post. Hold head of binding post in place with pliers or pin inserted through hole in head of post while taking off nuts. To replace with new binding post, put post in hole in terminal board, replace spacer (34), washer, lockwasher (42), nut (49), terminal lugs (32) on ends of wires, and nut (49). Replace wires in the following color code: (See wiring diagrams, figures 7a, 7b or 7c).

Black-red wire and 2 white wires to Post L1

Yellow-red wire and red wire to Post L2

Replace lever switch (5), jack assembly (8), and screw telephone into place in leather case.

k. Binding Post TM-215—(Item 10).—Remove body assembly from leather case as directed in paragraph *a*. Unscrew jack assembly (8) and lever switch assembly (5) as directed in paragraph *e*. Lift up terminal board. Take nuts (50), terminals (32), lockwasher (44), washer and spacer (35) off binding post. Hold head of binding post in place with pliers or pin inserted through hole in head of post while taking off nuts. To replace with new binding post, put in hole in terminal board. Replace spacer (35), washer, lockwasher (44), nut (50), terminal lugs (32) on ends of wires, and nut (50). Replace wires in the following color code: (See wiring diagrams, figures 7a, 7b or 7c).

Two black wires to Post BAT.—

l. Battery Contact—(Item 30).—To change battery contact remove body assembly from leather case as directed in paragraph *a*. Remove jack assembly (8) and lever switch assembly (5) as directed in paragraph *e*. Remove nut (50) on contact by holding insulator (39) tight with pliers and unscrewing nut. To replace, insert con-

tact through insulator (39). Put up through hole in terminal board. Put on terminal lug (32), lockwasher (44), nut (50) and tighten. Replace lever switch assembly and jack assembly. Screw telephone into place in leather case.

m. Battery Contact Spring—(Item 6).—Remove telephone from leather case as directed in paragraph *a*. Remove front wall, crank (9) and side wall. Remove coils (3) and (4) as directed in paragraphs *h* & *i*. Unsolder lead wire from end of spring. Remove spring by pulling offset out of battery block. To replace, put bottom of spring in seat in battery block, and with pliers force offset into hole in top of battery block. **BE CAREFUL NOT TO BEND SPRING.** Twist lead wire around end of spring on the inside of the chassis and solder yellow-red wire on outside spring and black wire on inside spring. (See wiring diagrams, figures 7a, 7b or 7c.) Don't let solder run down wire. When soldering, keep wire as close to end of spring as possible. Place small amount of solder on the soldering iron and hold on end of spring and wire for a few seconds. Replace coils, front wall, side wall and crank. Screw telephone into place in leather case.

n. Handset TS-9-()—(Item 57).*—A repairman should not try to repair a damaged Handset TS-9-(*) unless the trouble is found in Cord CC-333, which may be replaced, or unless he has available salvaged parts which he is sure are suitable. In this regard it is pointed out that the handset switch assemblies are interchangeable on all Handsets TS-9-(*). Also, if the letter replacing the parentheses in Handset TS-9-(*) is the same on two handsets, then all corresponding parts on the two handsets are interchangeable. For instance, all the parts on a Handset TS-9-C are interchangeable with the corresponding parts on any other Handset TS-9-C. To change Handset TS-9-(*), loosen the three handset terminal screws on jack block and pull terminal lugs from under screw heads. Untie loop of tie cord on eye screw (33); use thin nose pliers. Take the handset out of the case. To replace handset, put tie cord through eye screw, loop around, and put through eye again. Pull tight. Tie onto connecting cord. Put handset terminal lugs under terminal screw heads and tighten screws. Color code of wires for handset is:

Black wire to T & BAT+

Red wire to COM.

White wire to REC.

(See wiring diagrams, figures 7a, 7b or 7c).

o. Cord CC-333—(Item 55).—To replace Cord CC-333 in Handset TS-9-(*), remove transmitter cover from handle by unscrewing counter-clockwise. Drop transmitter out into your hand. Loosen screws on red, white and black wires. Remove screw through stay cord or clamp hook. Pull cord out of handset. To replace with new cord, push cord through hole in back of handset (terminals first). Be sure terminals come up into transmitter housing. Replace screw through stay cord or clamp hook. Connect wires as shown in diagram (figure 9). Put transmitter into cap and screw cap on handle. **BE SURE SPRING CONTACTS ARE NOT PUSHED DOWN.** Cords CC-333 are provided with both a metal clamp hook and a looped stay cord one of which [depending upon the design of Handset TS-9-(*)] will be used to take any strain which may be placed upon Cord CC-333 rather than have such strain fall upon the conductors. The hook or stay cord, whichever is not used, should be cut off at the time the Cord CC-333 is installed. The arrangement of the screws within the transmitter housing will be different from that shown in figure 9 for some designs of Handset TS-9-(*). The only sure guide to follow is to connect the new cord in exactly the same manner as the old cord was connected.

p. Leather Straps—(Item 56).—To replace leather straps, cut the old strap between the rivets and the end of the loop near the D ring or the square ring. Insert new strap through the ring. Loop over. Push rivets (53) through holes provided, heads of rivets on inside or short end of strap. Put burrs on rivets and head over end of rivets with a hammer.

7. Miscellaneous Items.—Several miscellaneous screws, nuts, and washers (Items 17, 19, 21, 27, 46, 47, 48, and 51) are provided for replacement purposes on various components of the telephones. The screw (17) is to be used as a replacement on the screw switch assembly (5). The screw (19) is to be used as a replacement on the jack assembly (8). The screws and nuts (21, 27, 48, and 50) are to be used as replacements on Ringer MC-131. The washer (46) is to be used as a replacement on Generator GN-38, GN-38-A, or GN-38-B. The clinch nut (47) is to be used as a replacement on the chassis. It will be found that on some telephones this clinch nut is not used, but a nut welded to the chassis is used instead. To replace the clinch nut, first remove the old clinch nut with a chisel and punch or by drilling. Insert the new clinch nut, and peen over. The clinch nut should be swaged if tools are available.

8. **Cleaning.**—Before replacing any parts, be sure that they are thoroughly cleaned and that all moving parts are lubricated.

9. **Lubrication.**—Lubricate all moving parts in the telephone being repaired, with a good grade of oil or grease having lubricating properties over a temperature range from -40° to $+150^{\circ}$ F. "Teleo AA" oil as manufactured by the Standard Oil Company of New Jersey, Beacon Lubricant M-285 or equivalent are recommended.

SECTION V

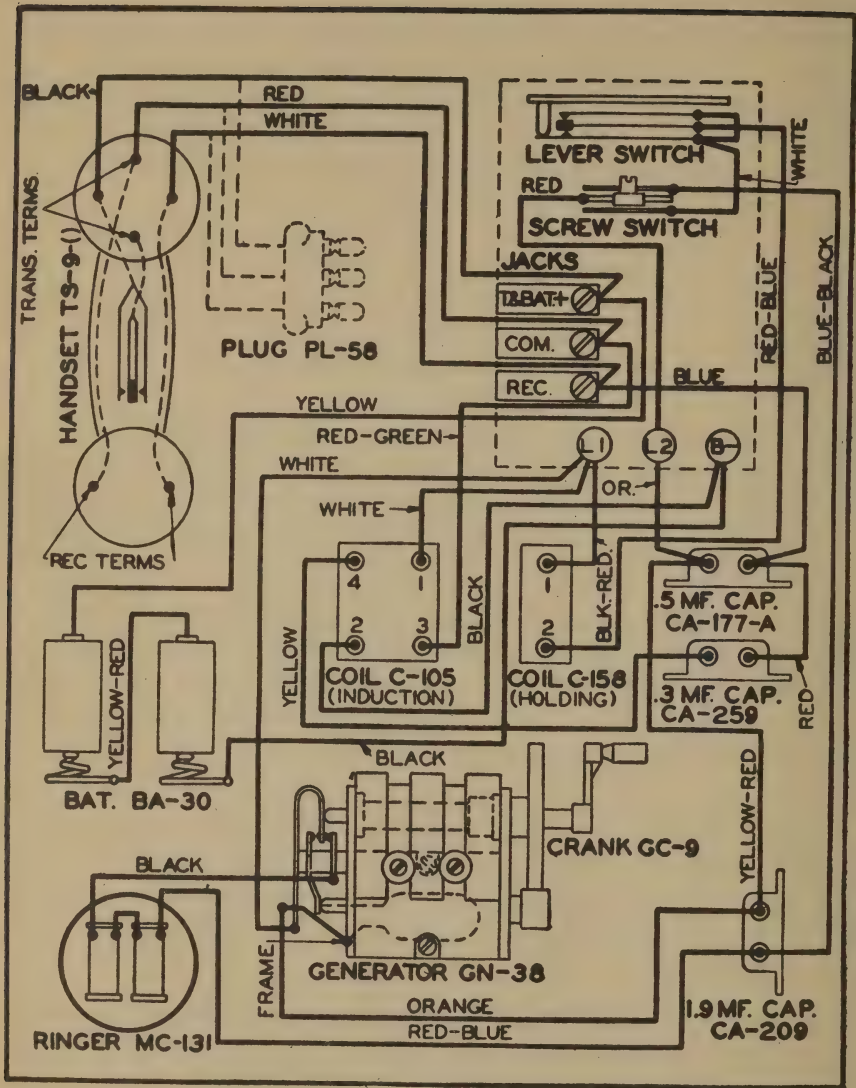
SUPPLEMENTARY DATA

10. **Wiring Diagrams.**—The wiring diagrams of Telephones EE-8, EE-8-A and EE-8-B are shown in figures 7a, 7b and 7c. The schematic diagrams for the three telephones are shown in figures 8a and 8b. Typical wiring diagrams for Handset TS-9-(*) are shown in figure 9.

11. **Parts Not Included in Maintenance Equipment ME-22—**
a. Because of the number of different designs of the generator and handset in the field, it is not considered practical to attempt to furnish repair parts for these items and, therefore, the suggestion contained in paragraph 6a should be followed.

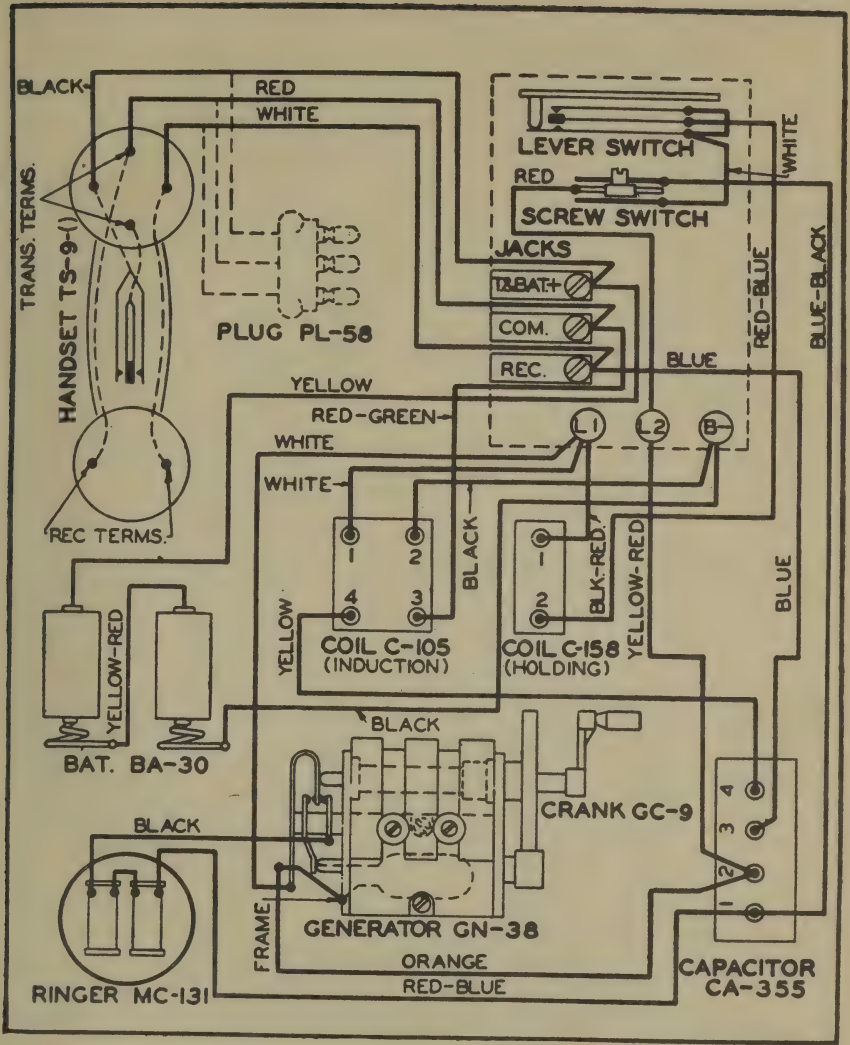
b. Since the design known as Telephone EE-8 has been discontinued, no capacitors for that design are included in Maintenance Equipment ME-22. If it is necessary to replace a capacitor in Telephone EE-8, the needed Capacitor CA-209, CA-177-A or CA-259 (See TM 11-333) will have to be obtained from salvaged parts or by requisitioning.

c. A stock of the individual parts of such components as handsets and generators are kept in the larger Signal Depots. When it is desired to requisition such parts reference should be made to the Signal Corps General Catalog.



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FIGURE 7a — Wiring Diagram for Telephone EE-8



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FIGURE 7b — Wiring Diagram for Telephone EE-8-A

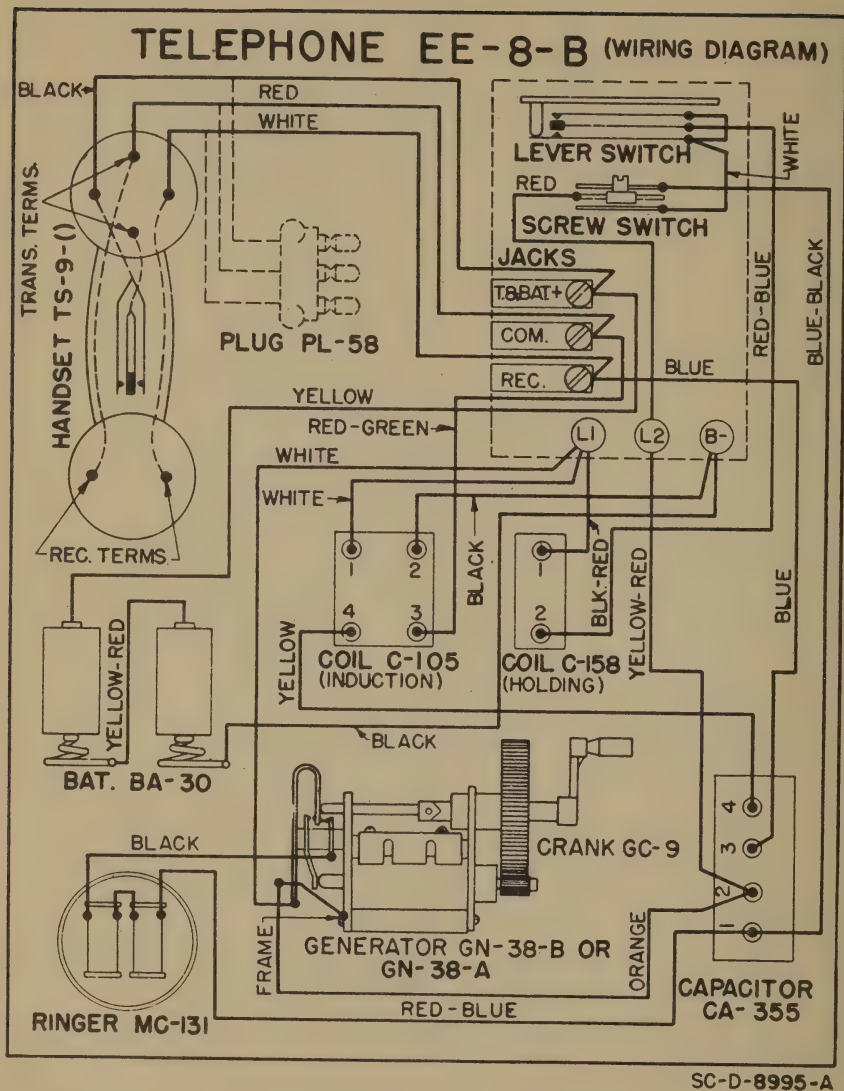
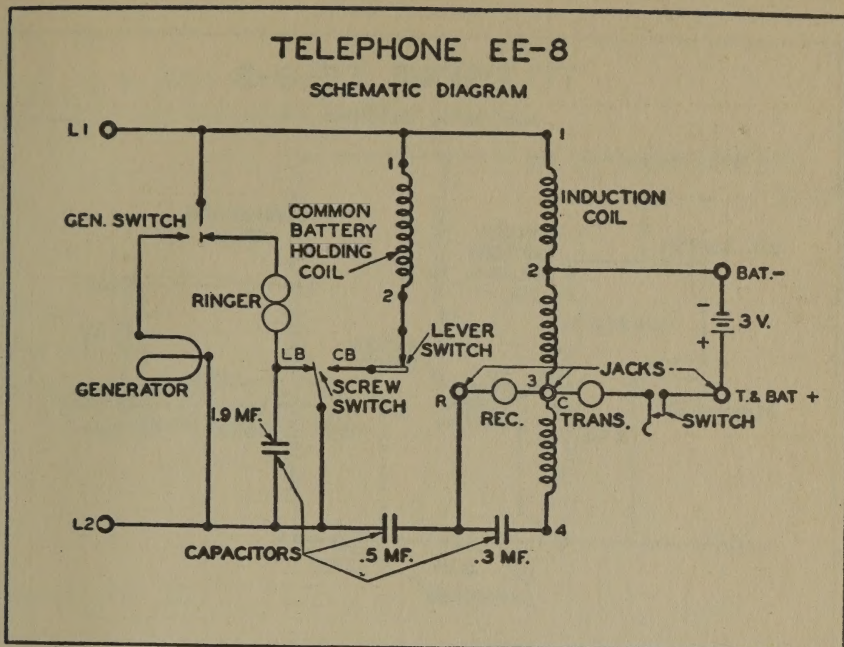
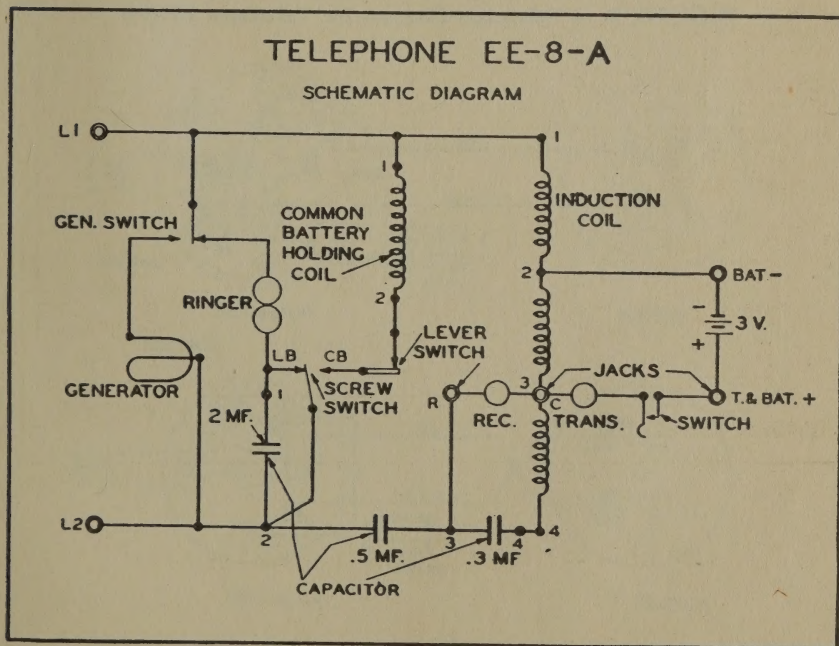


FIGURE 7c — Wiring Diagram for Telephone EE-8-B

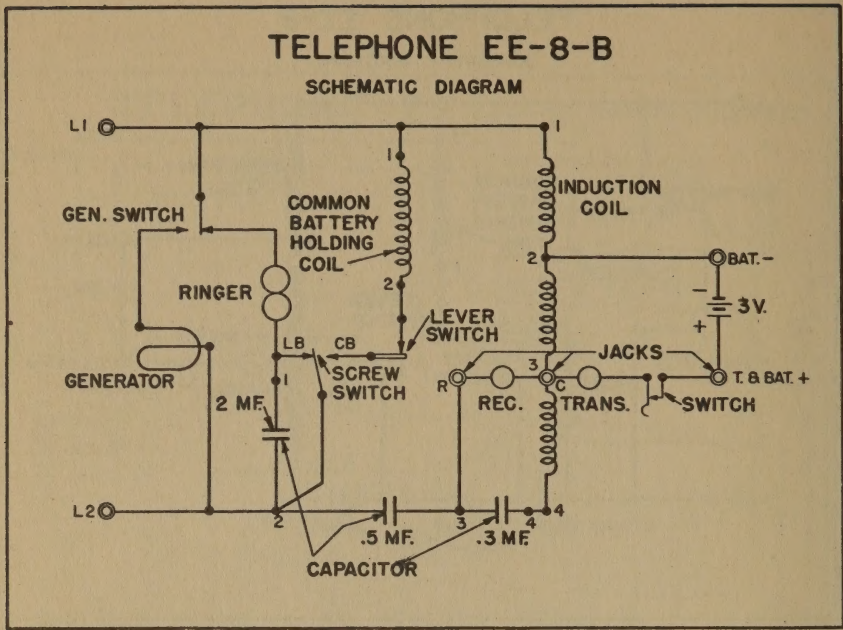


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FIGURE 8a — Schematic Diagram for Telephones EE-8 and EE-8-A



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FIGURE 8b — Schematic Diagram for Telephone EE-8-B

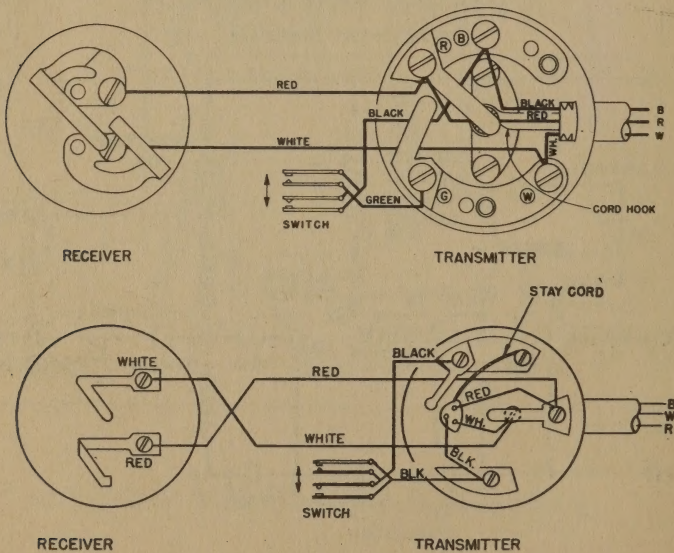


FIGURE 9 — Typical Wiring Diagrams of Handset TS-9(*)

(A. G. 062.11 (4-8-43).)

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.)

14 September 1948 (4600)