

UNITED STATES MARINE CORPS
School of Infantry
Training Command
PSC Box 20161
Camp Lejeune, North Carolina 28542-0161

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STUDENT HANDOUT

FIELD TELEPHONE

Learning Objectives

Terminal Learning Objective

a. Given a SL-3 complete TA-312/PT or TA-1/PT field telephone and batteries, communicate using a field telephone by transmitting a formatted message. (MCCS.19.01)

Enabling Learning Objective

b. Given a SL-3 complete TA-312/PT or TA-1/PT, batteries, and field wire connected to a distant station, prepare a field telephone for operation in accordance with TM 11-5805-201-12 or TM 11-5805-243-13-40. (MCCS.19.01e)

1. Purpose and Uses of Field Telephones. Field telephones are sound or low-voltage powered telephones interconnected by field wire and switchboards to provide a communications network in forward areas. Field telephones are more secure than radios and provide effective communications when operating in permanent or semi-permanent positions, such as a defensive position or in a listening or observation post. Field telephones are susceptible to wiretap or sabotage, and are not a viable means of communications for units on the move. The Marine Corps employs two types of field telephones, the TA-1/PT telephone set and the TA-312/PT telephone set. The first field telephone that we will discuss in detail is the TA-1/PT telephone set.

2. Characteristics of a TA-1/PT Field Telephone. Telephone set TA-1/PT is a hand-held, light weight, sound powered field telephone used with a field wire network in forward areas. It can be used for communication with other field telephones or with a local battery switchboard.

(1) Voice and signal range is 4 miles.

(2) Sound powered. No local or external power source is required. The human voice provides the power to operate the phone.

(3) Frequency range is 300 to 4000 Hertz.

3. Controls and Functions of a TA-1/PT Field Telephone.

(a) Receiver. Provides an earpiece for hearing in-coming calls.

(b) Visual signal indicator. Indicates the presents of an in-coming call by illuminating.

(c) Transmitter. Provides a mouthpiece for communicating out-going calls.

(d) Generator lever. Signals the distant party of your intent to transmit a message.

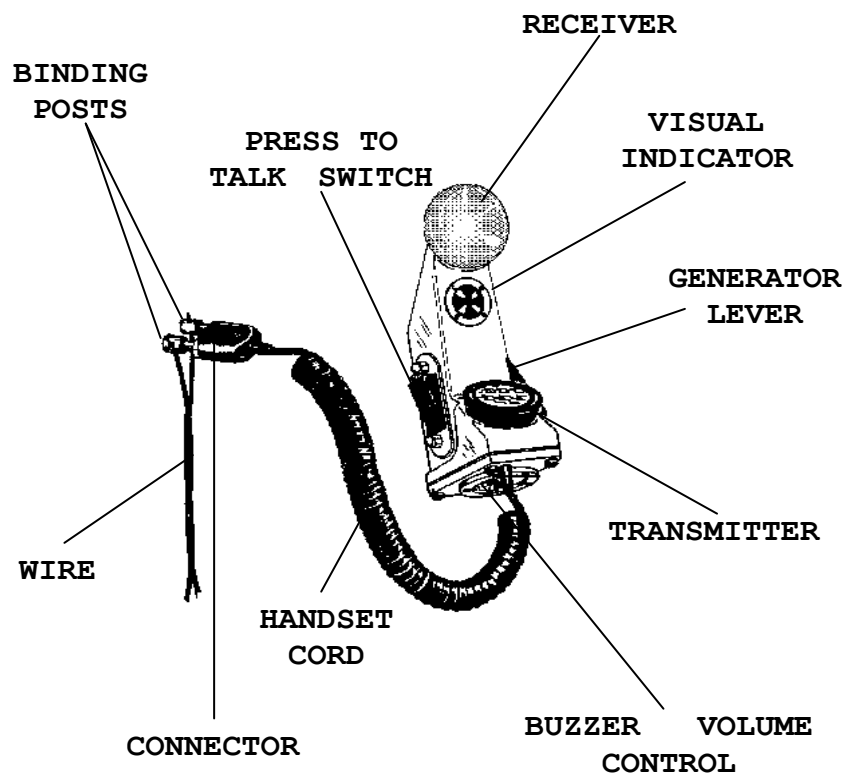
(e) Buzzer volume control. Adjust the volume of the in-coming call, audible signal produced by the distant party when the hand generator lever is depressed.

(f) Binding posts. Rubber covered, spring loaded. Provides manual, press to open and release to close field wire connection to the telephone set.

(g) Connector. Contains the binding posts and retains the handset cord.

(h) Handset cord. Provides flexible contact between the handset and the field wire.

(i) Press to talk switch. Opens the transmission circuit. Press to talk and release to listen.



4. Set Up and Operate a TA-1/PT Field Telephone.

(1) Remove $\frac{1}{2}$ inch of insulation from each wire tip and twist the wire tightly.

(2) Press down on the spring-loaded binding post to insert the bare end of the wire into the opened slot. Repeat the process for the second binding post.

(3) Maintain noise discipline, as required, by adjusting the buzzer volume control knob to an appropriate level. This is extremely important when operating in a concealed position such as a listening or observation post.

(4) Press the generator lever four or five times to signal the distant party.

(5) When the distant party answers, press the press-to-talk switch and speak directly into the transmitter.

(6) Release the press-to-talk switch to listen to the distant party.

(7) When the buzzer sounds, or when the visual indicator turns white, press the press-to-talk switch and speak directly into the transmitter.

(8) Release the press-to-talk switch to listen to the distant party.

5. Maintaining a TA-1/PT Field Telephone Set is a simple process and consists of performing the following steps:

a. Inspect the external surfaces for cracks.

b. Inspect the cord for cuts, cracks, or dry rot.

c. Wipe down the external surfaces with a cloth or brush.

d. Apply a small amount of silicone lubricant to the rubber boots and cord to prevent dry rot. Wipe away excess lubricant.

6. Characteristics of a TA-312/PT Field Telephone Set. The TA-312/PT field telephone set is a two-wire, battery-operated field telephone. It may be used in a simple point to point voice frequency wire communication link or in any two wire ring-down subscriber position of a telephone communications system.

(1) Maximum range during wet conditions is 14 miles.

(2) Maximum range during dry conditions is 22 miles.

(3) Weight is 9 ½ pounds.

(4) Requires a 3 volt DC power source.

(5) Frequency range is 300 to 3,200 Hertz.

(6) Desktop or hung configuration.

7. Components of a TA-312/PT Field Telephone.

(1) Carrying case (CY-1277/PT) and strap.

(2) The Panel and Housing assembly encloses all the electrical components.

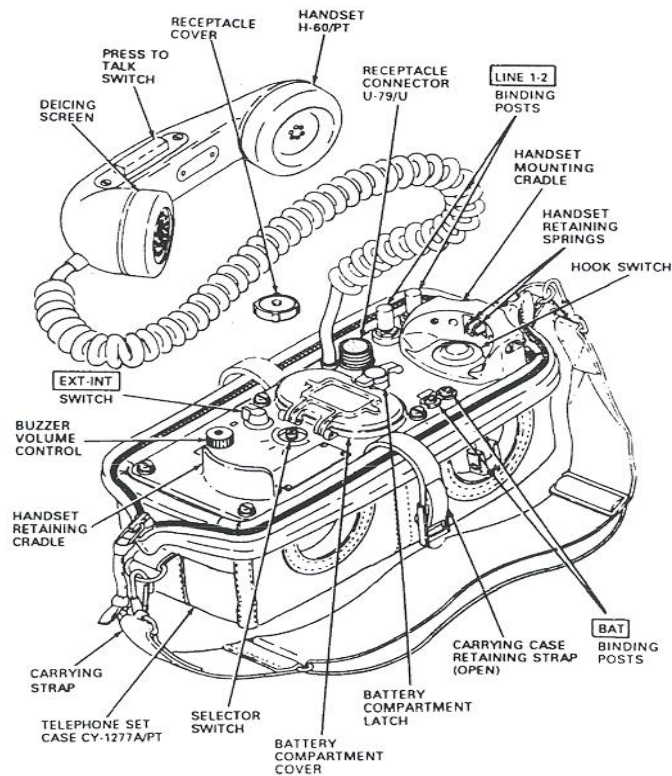
(3) Hand-set H-60/PT houses the transmitter, receiver and the press-to-talk switch.

8. Controls and Functions of a TA-312/PT Field Telephone.

(1) Battery compartment. The battery compartment houses two BA-30's with one positive end up and one positive end down.

(2) External battery terminals. Allows for connection of an external three-volt battery source to the TA-312/PT telephone set.

(3) Binding posts. Two spring loaded binding posts allow for the connection of field wire to the telephone set.



(4) Headset Receptacle. Used to connect any compatible headset.

(5) Internal/External switch. Switch is set to INT when using a handset and EXT when using a headset.

(6) Buzzer volume control. Controls the volume of the ringer.

(7) Selector Switch. Allows selection for LB-Local Battery, CB-Common Battery, or CBS-Common Battery Signaling

(8) Buzzer. Provides audible indication of an in-coming call.

(9) Hand Generator. (Ringer) Used to signal a distant party that you are attempting to transmit a message by turning rapidly in a clockwise motion.

9. Set Up and Operate a TA-312/PT Field Telephone. The TA-312/PT telephone set may be installed as a desktop phone or hung from a tree or post. The following procedure is used to set up and operate the TA-312/PT field telephone set for normal operation:

(1) Set the selector switch to LB using a flat blade screwdriver or a dime.

(2) Remove the H-60/PT from the retaining cradle, and open the carrying case retaining strap.

(3) Rotate the battery compartment cover latch clockwise until the cover is released. Lift the cover to expose the battery compartment.

(4) Insert two batteries, BA-30, in the battery compartment, one with the positive terminal up, the other with the positive terminal down. The phone will not operate without the batteries installed correctly.

(5) Close the cover (hold the cover firmly) and turn the cover latch counterclockwise to lock.

(6) Refasten the carrying case retaining strap over the battery compartment if the telephone set is to be used in the case.

(7) Reposition the H-60/PT in the retaining cradle, ensuring that the receiver end depresses the hook switch.

(8) Strip about 1 inch of insulation from the ends of the two wires of the line to be connected, and scrape the skinned portion clean.

(9) Fold back the skinned portion of each wire about 1/2 inch.

(10) Tie the wire to the upper ring on the carrying case.

(11) Push down one of the line binding posts. Insert the bare end of one wire into the binding post slot, and release the post. Check to see that the wire is securely clamped. Repeat the procedure with the other wire in the other binding post.

(12) If no buzzer sound is desired (noise discipline), fully rotate buzzer volume control to the counterclockwise (low) position.

(13) With the H-60/PT in the cradle, turn the hand crank.

(14) Remove the H-60/PT and listen for the called party.

(15) Push the press-to-talk switch to talk; release to listen.

10. Maintaining a TA-312/PT Field Telephone Set is a simple process and consists of performing the following steps:

- a. Inspect the telephone for cracks or broken components.
- b. Inspect the cord for cuts, cracks, or dry rot.
- c. Inspect the battery compartment for damage or corrosion.
- d. Check all controls, switches, and the hand crank for proper mechanical operation.
- e. Wipe down the external surfaces with a cloth or brush.
- f. Apply silicone lubricant to rubber parts and the cord to prevent dry rot.

References:

1. TM 11-5805-201-12, Operator's and Unit Maintenance Manual for Telephone Sets TA-312/PT and TA-312A/PT, pages 2-3 through 2-5 and 3-1 through 4-3
2. TM 11-5805-243-13, Operator's, Unit and Intermediate Direct Support Maintenance Manual for Telephone Set TA-1/PT, Pages 1-2 through 2-9