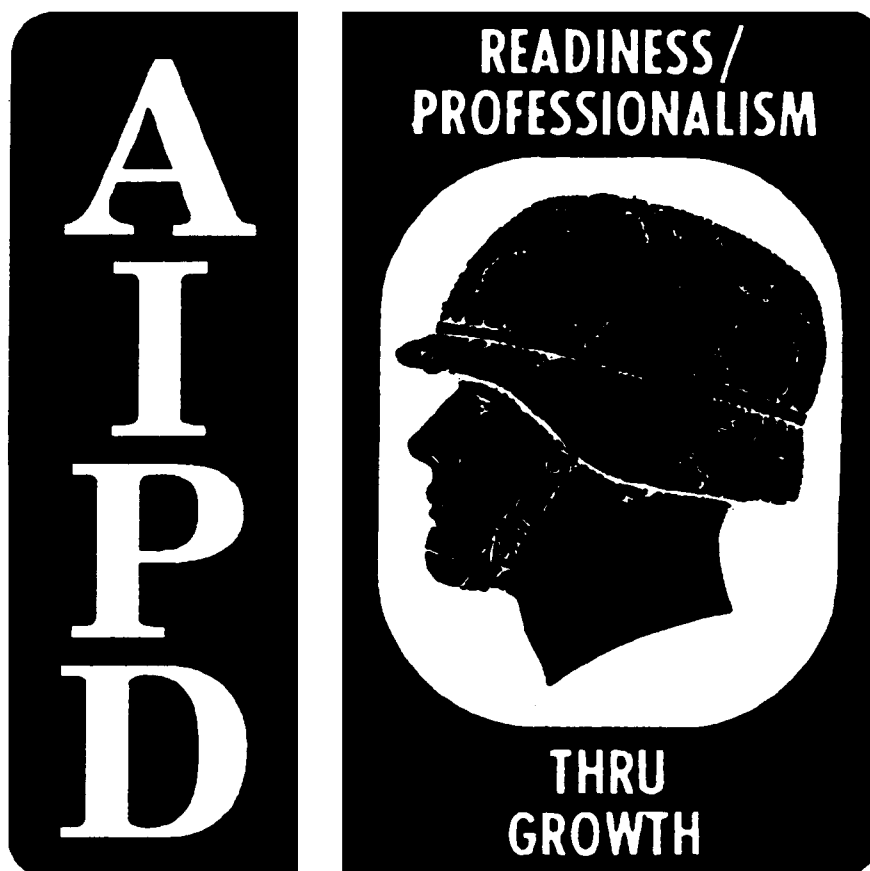
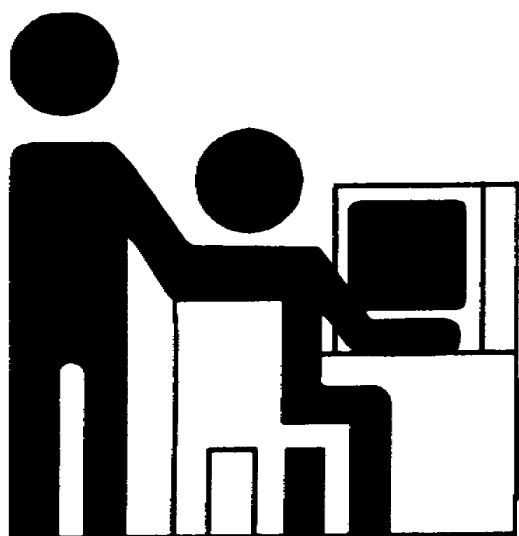

TROUBLESHOOTING AND FINAL TESTING OF THE
TA-312/PT TELEPHONE (MOS 29N)



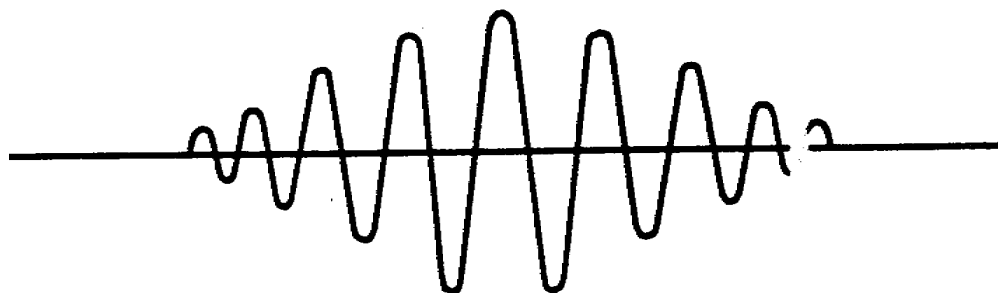
THE ARMY INSTITUTE FOR PROFESSIONAL DEVELOPMENT
ARMY CORRESPONDENCE COURSE PROGRAM



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US ARMY TELEPHONE CENTRAL OFFICE REPAIR
MOS 29N SKILL LEVELS 1 AND 2

TROUBLESHOOTING AND FINAL TESTING OF THE
TA-312/PT TELEPHONE SET
(Development Date: 30 September 1988)

SUBCOURSE NO: MM0411-8

EDITION 8
2 CREDIT HOURS
NEW: 1988

This subcourse is designed to provide you with the knowledge, skills, and abilities necessary for performing tasks related to troubleshooting and final testing of the TA-312/PT Telephone Set. This will be done using tactical scenario narrations and discussions. The subcourse is presented in three lessons; each lesson corresponding to a terminal objective as indicated below.

Lesson 1: INSTALLATION, CONTROL AND DATA OF THE TA-312/PT

TASK: Install TA-312/PT.

CONDITIONS:

1. PERFORMANCE. Given a TA-312/PT, TM 11-5805-201-12 extracts, flat-tip screwdriver, wire cutters, batteries BA-30 (2 ea), 3-volt battery (1 ea), commo wire, and a qualified supervisor/OJT monitor.
2. PERFORMANCE-ORIENTED. Lesson 1 material, pencil, paper, TM 11-5805-201-12 Extracts, and without supervision.

Whenever pronouns or other references denoting gender appear in this document, they are written to refer to either male or female unless otherwise indicated.

STANDARDS:

1. PERFORMANCE. Demonstrate competency of task skills and knowledge by correctly installing and identifying error free, within one out of two attempts, all the controls on the TA-312/PT telephone set within 10 minutes.
2. PERFORMANCE-ORIENTED. Demonstrate competency of the task skills and knowledge by correctly responding to 70 percent of the multiple-choice Lesson 1 exercise covering installation, controls, and data of the TA-312/PT telephone set.

(This objective supports SM task numbers and titles 113-600-0002, Troubleshoot Telephone Assembly TA-312/PT; and 113-600-3016, Final Test Telephone Assembly TA-312/PT to IGS Level.)

Lesson 2: CIRCUITRY OF THE TA-312/PT

TASK: Identify schematic components.

CONDITIONS:

1. PERFORMANCE. Given a TA-312/PT schematic, TM 11-5805-201-35 extracts, Theory of operation extract, and a qualified OJT monitor/supervisor.
2. PERFORMANCE-ORIENTED. Lesson 2 material, pencil, paper, TM 11-5805-201-35 extracts, Theory of Operation extract, and without supervision.

STANDARDS:

1. PERFORMANCE. Demonstrate competency of task skills and knowledge by correctly identifying within one out of two attempts, four out of five components on the schematic within a time limit of 5 minutes.
2. PERFORMANCE-ORIENTED. Demonstrate competency of the task skills and knowledge by correctly responding to 70 percent of the multiple choice Lesson 2 exercise covering circuitry of the TA-312/PT.

(This objective supports SM task numbers and titles 113-600-0002, Troubleshoot Telephone Assembly TA-312/PT; and 113-600-3016, Final Test Telephone Assembly TA-312/PT to IGS Level.)

Lesson 3: TROUBLESHOOTING AND FINAL TESTING OF THE TA-312/PT

TASK: Restore to operational order TA-312/PT.

CONDITIONS:

1. PERFORMANCE. Given two TA-312/PT, multimeter, TS-352 (or equivalent), batteries BA-30 (4 ea), commo wire, TM 11-5805-201-35 extract, flat-tip screwdriver, wire cutters, and a qualified supervisor/OJT monitor.
2. PERFORMANCE-ORIENTED. Lesson 3 material, pencil, paper, TM 11-5805-201-35 extract, and without supervision.

STANDARDS:

1. PERFORMANCE. Demonstrate competency of task skills and knowledge by correctly troubleshooting and testing, one error minimum, within one out of two attempts, the TA-312/PT telephone set within 20 minutes.
2. PERFORMANCE-ORIENTED. Demonstrate competency of the task skills and knowledge by correctly responding to 70 percent of the multiple choice Lesson 3 exercise covering troubleshooting and final testing of the TA-312/PT.

(This objective supports SM task numbers and titles 113-600-0002, Troubleshoot Telephone Assembly TA-312/PT; and 113-600-3016, Final Test Telephone Assembly TA-312/PT to IGS Level.)

**The proponency for this subcourse has
changed from Signal School (SS) to
Missile & Munitions (MM).
See address on Student inquiry page and
Phone Number on inside front cover.**

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INTRODUCTION

1. Telephone communications are of utmost importance to any commander in peacetime or combat for the accomplishment of their unit mission. To be able to "shoot and communicate," is the difference between success and failure. The TA-312/PT is a 2-wire, battery operated field telephone. It may be utilized in a point-to-point wire system or in any 2-wire ring-down subscriber position of a telephone communications system.

2. As a 29N telephone central office repairer, you must acquaint yourself with the local battery/common telephone set TA-312/PT. After you have completed this subcourse, you will be able to identify the controls/indicators, perform installation procedures, identify circuits/circuit components and perform troubleshooting and final testing procedures on the TA-312/PT.

3. This subcourse consists of three lessons, and a performance (hands-on w/equipment) end-of-subcourse practice exercise, which are all related to the following terminal learning objectives.

Performance (Hands-on with equipment) Terminal Learning Objective.

TASK. Install, identify controls/circuit components, troubleshoot and final test the TA-312/PT telephone set.

CONDITIONS. Given two TA-312/PTs, TM 11-5805-201-12, TM 11-5805-201-35 Theory of Operation Extracts, flat-tip screwdriver, wire cutters, batteries, BA-30s (4 ea), 3 volt battery (1 ea), commo wire, multimeter, TS-352 (or equivalent), using tactical scenario narrations and discussions with a qualified supervisor/OJT monitor's assistance.

STANDARDS. Correctly install, identify controls/circuit components, troubleshoot and final test, four errors minimum, within one of two attempts, the TA-312/PT telephone set within a time limit of 35 minutes.

Performance-Oriented (Multiple-choice).

TASK. Install, identify controls/circuit components, troubleshoot and final test the TA-312/PT telephone set.

CONDITIONS. Given Lessons 1, 2, and 3 materials, pencil, paper, TM extracts, and without supervision.

STANDARDS. Demonstrate competency of the task skills and knowledge by correctly responding to 70 percent of the multiple-choice test covering troubleshooting and final testing of the TA-312/PT telephone.

LESSON 1

INSTALLATION, CONTROLS, AND DATA OF THE TA-312/PT

TASK: Install TA-312/PT.

CONDITIONS:

1. PERFORMANCE. Given a TA-312/PT, TM 11-5805-201-12 extract, flat-tip screwdriver, wire cutters, batteries BA-30 (2 ea), 3 volt battery (1 ea), commo wire, using tactical scenario narrations and discussions, and qualified supervisory OJT monitor's assistance.
2. PERFORMANCE-ORIENTED. Given Lesson 1 material, TM 11-5805-201-12 extract, pencil, paper, and without supervision.

STANDARDS:

1. PERFORMANCE. Demonstrate competency of task skills and knowledge by correctly installing and identifying, error free, within one out of two attempts, all the controls on the TA-312/PT telephone set within 10 minutes.
2. PERFORMANCE-ORIENTED. Demonstrate competency of the task skills and knowledge by correctly responding to 70 percent of the multiple-choice Lesson 1 exercise covering installation, controls, and data of the TA-312/PT telephone set.

REFERENCES

TM 11-5805-201-12 extract

Learning Event 1:

CONTROLS AND DATA OF THE TA-312/PT

1. Situation: Tactical scenario environmental condition. The soldier is working at an intermediate general support maintenance facility in support of a NATO exercise. The unit has received a priority DA Form 2407, Maintenance Request, to fix a TA-312/PT. The unit maintenance facility had to direct exchange its last working TA-312/PT; therefore, at present there is no back-up support if failure of another TA-312/PT occurs. Under these stressful tactical conditions, the soldier must be able to perform measures to restore the TA-312/PT to operational order and return it to the unit as quickly as possible.
2. The TA-312/PT handset H-60 contains a PUSH-TO-TALK switch which connects power for talking. The TA-312/PT has a built-in receptacle connector U-79/U for use with a headset, and an associated EXT-INT switch.

Lesson 1/Learning Event 2

3. The MODE switch is a three-position switch which will place the TA-312/PT into the correct network configuration depending upon signaling and transmission power.

a. Common battery (CB) -Voice transmission and signaling power supplied by a switchboard.

b. Local battery (LB) -Voice transmission power supplied by the telephone (two BA-30 batteries); signaling power is supplied by hand-crank generator on the telephone.

c. Common battery signaling (CBS) -Signaling power supplied by the switchboard; voice transmission power by the telephone (BA-30s).

Learning Event 2: INSTALLATION

1. The TA-312/PT may be used as a desk phone or may be mounted vertically on a tree, pole, or other support.

2. The first step in repairing the TA-312/PT is to verify the trouble symptom on the DA Form 2407, Maintenance Request. To accomplish that you must correctly install the TA-312/PT and make an operational check, making a visual inspection as you complete these actions. Common problems include terminal connections, batteries, and MODE switch setting.

LESSON 1
PRACTICE EXERCISE
(PERFORMANCE/HANDS-ON WITH EQUIPMENT)

TASK: Install TA-312/PT.

CONDITIONS: Given a TA-312/PT, TM 11-5805-201-12 extracts, flat-tip screwdriver, wire cutters, batteries (2 ea) BA-30s, 1 (ea) 3-volt battery, commo wire, using tactical scenario narrations and discussions, and qualified supervisor/OJT monitor's assistance.

STANDARD: Correctly install and identify, error free, within one out of two attempts, all the controls on the TA-312/PT telephone set within a time limit of 10 minutes.

INSTRUCTIONS: When you feel you are ready to perform the performance (hands-on w/equipment) practice exercise for this lesson, inform your SOJT monitor. You are reminded not to attempt to perform the above task without the assistance of an assigned SOJT monitor.

	1ST ATTEMPT			2D ATTEMPT		
	GO	NO-GO	SOJT MONITOR'S INITIALS	GO	NO-GO	SOJT MONITOR'S INITIALS

1. Prepare TA-312/PT for desk phone installation.

- - - - - -

2. Set TA-312/PT for local battery operation.

- - - - - -

3. Operate hookswitch.

- - - - - -

4. Install batteries.

- - - - - -

5. Connect line to TA-312/PT.

- - - - - -

6. Connect external battery.

- - - - - -

Lesson I/Learning Event 2

LESSON 1
PRACTICE EXERCISE (CONT)
(PERFORMANCE/HANDS-ON WITH EQUIPMENT)

	1ST ATTEMPT			2D ATTEMPT		
	GO	NO- GO	SOJT MONITOR'S INITIALS	GO	NO- GO	SOJT MONITOR'S INITIALS
7. Install deicing screen.	-	---	-----	-	---	-----
8. Remove deicing screen.	-	---	-----	-	---	-----
9. Adjust audible signal to full volume.	-	---	-----	-	---	-----
10. Initiate a call in LB mode with handset.	-	---	-----	-	---	-----

LESSON 1
PRACTICAL EXERCISE
(PERFORMANCE-ORIENTED/MULTIPLE CHOICE)

TASK: Installation, Controls, and Data of the TA-312/PT.

CONDITIONS: Given Lesson 1 material, pencil, paper, TM extracts, and without supervision.

STANDARDS: Demonstrate competency of the task skills and knowledge by correctly responding to 70 percent of the multiple-choice test covering installation, controls, and data of the TA-312/PT telephone set.

INSTRUCTIONS: In each of the following questions, SELECT the one answer which BEST completes the statement or answers the question. Indicate your response by circling the correct letter.

1. Voltage requirement for the TA-312/PT is _____ volts DC.
 - a. 6
 - b. 3
 - c. 20
 - d. 90

2. For _____ operation, it is not necessary to operate the PRESS-TO-TALK switch to transmit.
 - a. CBS
 - b. LB
 - c. CB
 - d. external battery

Lesson I/Learning Event 2

LESSON 1 PRACTICE EXERCISE (CONT) (PERFORMANCE-ORIENTED/MULTIPLE CHOICE)

3. The deicing screen protects the _____ .
 - a. transmitter.
 - b. receiver.
 - c. batteries.
 - d. complete instrument.

4. During CB and CBS operation using an operator headset, what switch must be used to initiate and terminate a call?
 - a. VOLUME CONTROL.
 - b. PUSH-TO-TALK.
 - c. SELECTOR.
 - d. INT-EXT.

5. To increase transmission on a long CB circuit _____ .
 - a. use the headset and EXTERNAL switch.
 - b. install batteries and place the SELECTOR switch to the CBS position.
 - c. install batteries and place the SELECTOR switch to the LB position.
 - d. install batteries and "A" above.

LESSON 2
CIRCUITRY OF THE TA-312/PT

TASK: Identify schematic components.

CONDITIONS:

1. PERFORMANCE. Given a TA-312/PT schematic diagram, TM 11-5805-201-35 extract, theory of operation extract, and a qualified supervisor/OJT monitor's assistance.
2. PERFORMANCE-ORIENTED. Given Lesson 2 material, TM 11-5805-201-35 extract, theory of operation extract, pencil, paper, and without supervision.

STANDARDS:

1. PERFORMANCE. Demonstrate competency of task skills and knowledge by correctly identifying, within one of two attempts, four out of five components on the schematic diagram within a time limit of 5 minutes.
2. PERFORMANCE-ORIENTED. Demonstrate competency of the task skills and knowledge by correctly responding to 70 percent of the multiple choice Lesson 2 exercise covering circuitry of the TA-312/PT.

REFERENCES

TM 11-5805-201-35 Extract w/schematic
Theory of Operation Extract

Learning Event 1:
CIRCUITRY OF THE TA-312/PT.

1. Situation: The soldier is working at an intermediate general support maintenance facility, has made a visual inspection, operational check, and verified the fault on the DA Form 2407, Maintenance Request. However, before he opens the TA-312/PT for troubleshooting the fault, he must assure himself of the various circuits/components found within the TA-312/PT.
2. The student will become familiar with the components of the TA-312/PT as they appear on the schematic diagram and be able to trace/describe the outgoing/incoming signal, transmission, and reception circuits of the TA-312/PT telephone in the CB, LB, and CBS modes of operation. The theory of operation extract has a much easier to understand description of circuits than the TM 11-5805-201-35 extract although both extracts should be used for this learning event.

Lesson 2/Learning Event 1

LESSON 2 PRACTICE EXERCISE (PERFORMANCE/HANDS-ON WITH EQUIPMENT)

TASK: Identify schematic components.

CONDITIONS: Given a TA-312/PT schematic, TM 11-5805-201-35 Extract, theory of operation extract, narrations and discussions with a qualified supervisor/OJT monitor's assistance.

STANDARDS: Correctly identify, within one out of two attempts, four out of five components on the TA-312/PT schematic diagram within a time limit of 5 minutes.

INSTRUCTIONS: When you feel you are ready to perform the performance (hands-on w/equipment) practice exercise for this lesson, inform your SOJT monitor. You are reminded not to attempt to perform the above task without the assistance of an assigned SOJT monitor.

	1ST ATTEMPT			2D ATTEMPT		
	GO	NO- GO	SOJT MONITOR'S INITIALS	GO	NO- GO	SOJT MONITOR'S INITIALS

1. Identify varistors.

— ————— —————

2. Identify induction coils.

— ————— —————

3. Identify hook switch contacts.

— ————— —————

4. Identify handset press-to-talk contacts.

— ————— —————

5. Identify VOLUME CONTROL switch.

— ————— —————

LESSON 2
PRACTICAL EXERCISE
(PERFORMANCE-ORIENTED/MULTIPLE CHOICE)

TASK: Identify schematic components.

CONDITIONS: Given Lesson 2 material, pencil, paper, TM extracts, and without supervision.

STANDARDS: Demonstrate competency of the task skills and knowledge by correctly responding to 70 percent of the multiple-choice test covering circuitry of the TA-312/PT telephone.

INSTRUCTIONS:

In each of the following questions, SELECT the one answer which BEST completes the statement or answers the question. Indicate your response by circling the correct letter.

1. The majority of circuits in the TA-312/PT are contained in the _____ .

- a. headset-handset.
- b. impedance matching network.
- c. generator.
- d. handset.

2. The antisidetone circuit is made up of the _____ windings in the induction coil.

- a. J, H, A
- b. C, E, J
- c. A, C, H
- d. A, J, H

Lesson 2/Learning Event 1

LESSON 2 PRACTICAL EXERCISE (CONT) (PERFORMANCE-ORIENTED/MULTIPLE CHOICE)

3. The _____ circuit is the same in all mode of operations for the TA-312/PT.
- a. power
 - b. transmission
 - c. outgoing signal
 - d. receiver
4. When signaling in the LB mode, _____ prevents ringing current from flowing through the local telephone.
- a. capacitor M
 - b. lineswitch contacts 3 and 4 (hookswitch)
 - c. varistor CR2
 - d. lineswitch contacts 1 and 2 (hookswitch)
5. If the operator at the CB switchboard does not receive a signal, _____ in the local telephone is at fault.
- a. capacitor M shorted
 - b. resistor B open
 - c. resistor L shorted
 - d. resistor L open

LESSON 3
TROUBLESHOOTING AND FINAL TESTING OF THE TA-312/PT

TASK: Troubleshooting and Final Testing of the TA-312/PT.

CONDITIONS:

1. PERFORMANCE. Given two TA-312/PTs, multimeter TS-352 (or equivalent), batteries BA-30 (4 ea), commo wire, flat-tip screwdriver, wire cutters, TM 11-5805-201-35 extract, and a qualified supervisor/OJT monitor's assistance.
2. PERFORMANCE-ORIENTED. Given Lesson 3 material, pencil, paper, TM 11-5805-201-35 extract, and without supervision.

STANDARDS:

1. PERFORMANCE. Demonstrate competency of task skills and knowledge by correctly troubleshooting and testing, one error minimum, within one out two attempts, the TA-312/PT telephone set within 20 minutes.
2. PERFORMANCE-ORIENTED. Demonstrate competency of the task skills and knowledge by correctly responding to 70 percent of the multiple-choice Lesson 3 exercise covering troubleshooting and final testing of the TA-312/PT.

REFERENCE

TM 11-5805-201-35 Extract

Learning Event 1:
TROUBLESHOOTING THE TA-312/PT

1. Situation: The soldier has verified the symptom on DA Form 2407, Maintenance Request, and familiarized himself with the circuitry and circuit components of the TA-312/PT. Now he must find the cause of the problem, using test equipment, and restore the instrument to operational order.
2. The student will use a multimeter for resistance checks of the components and wiring within the TA-312/PT. If not familiar with the multimeter, most operation instructions are normally posted on the meter or meter cover. Student will need to use both the wiring diagram and schematic diagram found in TM 11-5805-201-35 extract along with the troubleshooting chart to find the problem(s).

Lesson 3/Learning Event 2

Learning Event 2:

FINAL TESTING OF THE TA-312/PT

1. Once the problem has been repaired, a final test must be conducted before returning the instrument to the owning unit.
2. Not all general support/depot maintenance facilities will have the test set, telephone TS-716/U (TM 11-6625-596-12). You will read over the procedures in TM 11-5805-201-35 extract on how to test the TA-312/PT using the TS-716/U; however, for the performance exercise, a complete operational check in all modes, will suffice for the final testing of the TA-312/PT telephone set.

LESSON 3
PRACTICE EXERCISE
(PERFORMANCE/HAND-ON WITH EQUIPMENT)

TASK: Troubleshooting and Final Testing the TA-312/PT.

CONDITIONS: Given two TA-312/PTs, multimeter TS-352 (or equivalent), batteries BA-30 (4 ea), commo wire, flat-tip screwdriver, wire cutters, TM 11-5805-201-35 Extract, using tactical scenario narrations, and discussions with a qualified supervisor/OJT monitor's assistance.

STANDARDS: Correctly troubleshoot and test, one error minimum, within one out of two attempts, the TA-312/PT telephone set within a time limit of 20 minutes.

INSTRUCTIONS: When you feel you are ready to perform the performance (hands-on w/equipment) practice exercise for this lesson, inform your SOJT monitor. You are reminded not to attempt to perform the above task without the assistance of an assign SOJT monitor.

	1ST ATTEMPT			2D ATTEMPT		
	GO	NO-GO	SOJT MONITOR'S INITIALS	GO	NO-GO	SOJT MONITOR'S INITIALS

1. Prepare TA-312/PT for troubleshooting

- - - - - -

2. Perform mechanical inspection.

- - - - - -

 a. Panel and housing assembly.

- - - - - -

 b. Generator.

- - - - - -

 c. Handset.

- - - - - -

3. Perform resistance measurements.

- - - - - -

Lesson 3/Learning Event 2

LESSON 3
PRACTICE EXERCISE (CONT)

(PERFORMANCE/HAND-ON WITH EQUIPMENT)

	1ST ATTEMPT			2D ATTEMPT		
	GO	NO- GO	SOJT MONITOR'S INITIALS	GO	NO- GO	SOJT MONITOR'S INITIALS
a. Prepare multi-meter for resistance measurements.	—	—	—	—	—	—
b. Resistor L.	—	—	—	—	—	—
c. G-42A/PT.	—	—	—	—	—	—
d. BZ-23/PT.	—	—	—	—	—	—
4. Troubleshooting symptom: cannot receive.	—	—	—	—	—	—
5. Final testing. LB transmission and signaling.	—	—	—	—	—	—
6. Alternate check of CBS operation.	—	—	—	—	—	—

LESSON 3
PRACTICE EXERCISE
(PERFORMANCE-ORIENTED/MULTIPLE CHOICE)

TASK: Troubleshooting and Final Testing of TA-312/PT.

CONDITIONS: Given Lesson 3 material, pencil, paper, TM extracts, and without supervision.

STANDARDS: Demonstrate competency of the task skills and knowledge by correctly responding to 70 percent of the multiple-choice test covering circuitry of the TA-312/PT telephone.

INSTRUCTIONS: In each of the following questions, SELECT the one answer which BEST completes the statement or answers the question. Indicate your response by circling the correct letter.

1. Probable cause of trouble symptom "cannot transmit or receive in the CB mode" is _____ ?

- a. defective batteries.
- b. defective SELECTOR switch contact 9.
- c. defective handset cord.
- d. defective SELECTOR switch contact 1.

2. The only terminal on the U-79/U receptacle with no wire termination is the _____ terminal.

- a. A
- b. E
- c. J
- d. L

Lesson 3/Learning Event 2

LESSON 3 PRACTICE EXERCISE (CONT) (PERFORMANCE-ORIENTED/MULTIPLE CHOICE)

3. When making a continuity check of the buzzer circuit, you must go to the selector switch.
 - a. True.
 - b. False.

4. When performing testing at a general support/depot maintenance shop, a test set _____ is utilized to check the TA-312/PT.
 - a. AN/USM-181
 - b. TS-1775/U
 - c. TS-716/U
 - d. AN/USM 181

5. A transmitter efficiency test reading of 76 indicates the transmitter in the _____ mode is functioning properly.
 - a. CBS
 - b. LB
 - c. CB
 - d. All of the above

ANSWERS TO PRACTICE EXERCISE Performance-Oriented

Answers

Reference

(Learning Event _____, paragraph _____,
page, _____)

Lesson 1:

TM 11-5805-201-12 Extract

1. b LE1 , paragraph 1-5, page 21.
2. c LE1 , paragraph 3-3 A(2), page 37.
3. a LE1 , paragraph 2-3, g(1), page 29.
4. d LE2 , paragraph 3-2B, page 36.
5. b LE2 , paragraph 3-4E, page 40.

Lesson 2:

(1) TM 11-5805-201-35 Extract
(2) Theory of Operation Extract

1. b LE1 , (1) paragraph 2-1, page 50.
2. c LE1 , (2) paragraph 4A, page 73.
(1) Diagram, page 69.
3. d LE1 , (2) paragraph 3-c, page 73.
4. b LE1 , (2) paragraph 2-D, page 71.
(1) Diagram, page 69.
5. d LE1 , (2) paragraph 2-B, page 71.
(1) Diagram, page 69.

Lesson 3:

TM 11-5805-201-35 Extract

1. d LE1 , paragraph 3-4 (3), page 55.
2. d LE1 , figure 3-2 , page 58.
3. a LE1 , figure 3-2 , page 58.
Diagram , page 69.
4. c LE2 , paragraph 4-2b, page 59%
5. b LE2 , paragraph 4-7c, page 65.

US ARMY SIGNAL CENTER AND FORT GORDON
 FORT GORDON, GEORGIA 30905

END-OF-SUBCOURSE PRACTICE EXERCISE
 (PERFORMANCE/HANDS-ON WITH THE EQUIPMENT)

SUBCOURSE NUMBER/TITLE: SS-0411-8, Troubleshooting and Final
 Testing of the TA-312/PT Telephone
 (MOS 29N)

Terminal Learning Objective (Performance: Hands-On W/Equipment):

TASK: Install, identify controls/circuit components, troubleshoot and final test the TA-312/PT telephone set.

CONDITIONS: Given two TA-312/PTs, TM 11-5805-201-12, TM 11-5805-201-35, Theory of Operation Extracts, flat-tip screwdriver, wire cutters, batteries, BA-30s (4 ea), 3-volt battery (1 ea), commo wire, multimeter, TS-352 (or equivalent), using tactical scenario narrations and discussions with a qualified supervisor/OJT monitor's assistance.

STANDARDS: Correctly install, identify controls/circuit components, troubleshoot and final test, four errors minimum, within one of two attempts, the TA-312/PT telephone set within a time limit of 35 minutes.

INSTRUCTIONS: When you feel you are ready to perform the performance (hands-on w/equipment) end-of-subcourse practice exercise for this subcourse, inform your SOJT monitor. You are reminded not to attempt to perform the above task without the assistance of an assigned SOJT monitor.

	1ST ATTEMPT			2D ATTEMPT		
	GO	NO- GO	SOJT MONITOR'S INITIALS	GO	NO- GO	SOJT MONITOR'S INITIALS

1. Installation, controls and data.

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a. Prepare TA-312/PT for desk phone installation.

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b. Set TA-312/PT for local battery operation.

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END-OF-SUBCOURSE PRACTICE EXERCISE (CONT)
(PERFORMANCE/HANDS-ON WITH EQUIPMENT)

	1ST ATTEMPT			2D ATTEMPT		
	GO	NO- GO	SOJT MONITOR'S INITIALS	GO	NO- GO	SOJT MONITOR'S INITIALS
c. Operate hook-switch.	-	---	-----	-	---	-----
d. Install batteries.	-	---	-----	-	---	-----
e. Connect line to TA-312/PT.	-	---	-----	-	---	-----
f. Connect external battery.	-	---	-----	-	---	-----
g. Install deicing screen.	-	---	-----	-	---	-----
h. Remove deicing screen.	-	---	-----	-	---	-----
i. Adjust audible signal to full volume.	-	---	-----	-	---	-----
j. Initiate a call in LB mode with handset.	-	---	-----	-	---	-----
2. Circuitry.						
a. Identify varistors.	-	---	-----	-	---	-----
b. Identify induction coils.	-	---	-----	-	---	-----
c. Identify hook-switch contacts.	-	---	-----	-	---	-----
d. Identify handset press to talk contacts.	-	---	-----	-	---	-----
e. Identify volume control switch.	-	---	-----	-	---	-----

END-OF-SUBCOURSE PRACTICE EXERCISE (CONT)
(PERFORMANCE/HANDS-ON WITH EQUIPMENT)

	1ST ATTEMPT			2D ATTEMPT		
	GO	NO- GO	SOJT MONITOR'S INITIALS	GO	NO- GO	SOJT MONITOR'S INITIALS
3. Troubleshooting and final testing.	-	-	-	-	-	-
a. Prepare TA-312/PT for troubleshooting.	-	-	-	-	-	-
b. Perform mechanical inspection.	-	-	-	-	-	-
(1) Panel and housing assembly.	-	-	-	-	-	-
(2) Generator.	-	-	-	-	-	-
(3) Handset.	-	-	-	-	-	-
4. Perform resistance measurements.	-	-	-	-	-	-
a. Prepare multimeter for resistance measurements.	-	-	-	-	-	-
b. Resistor L.	-	-	-	-	-	-
c. G-42A/PT.	-	-	-	-	-	-
d. BZ-23/PT.	-	-	-	-	-	-
5. Troubleshooting symptom: Cannot receive.	-	-	-	-	-	-
6. Final testing.	-	-	-	-	-	-
a. LB transmission and signaling.	-	-	-	-	-	-
b. Alternate check of CBS operation.	-	-	-	-	-	-