

CRM LESSON PLAN REPORT

PERFORM MAINTENANCE ON LONG RANGE SNIPER RIFLE (LRSR), M107
101-92Y10D07 / 05.0 ©

Approved
06 Sep 2016

Effective Date: 06 Sep 2016

SCOPE:

None

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Foreign Disclosure: FD1 - This training product has been reviewed by the training developers in coordination with the Fort Lee, Virginia foreign disclosure officer. This training product can be used to instruct international military students from all approved countries without restrictions.

SECTION I. ADMINISTRATIVE DATA

All Course Masters/POIs Including This Lesson

Courses				
<u>Course Number</u>	<u>Version</u>	<u>Title</u>	<u>Phase</u>	<u>Status</u>
551-92Y10	05.0	Unit Supply Specialist	N/A	Analysis

POIs				
<u>POI Number</u>	<u>Version</u>	<u>Title</u>	<u>Phase</u>	<u>Status</u>
551-92Y10	05.0 ©	Unit Supply Specialist	0	Analysis

Task(s) Taught(*) or Supported

<u>Task Number</u>	<u>Task Title</u>	<u>Status</u>
Individual		
101-92Y-1409 (*)	Perform Organizational (Unit) Maintenance on Small Arms	Approved

Reinforced Task(s)

<u>Task Number</u>	<u>Task Title</u>	<u>Status</u>
101-92Y-1013	Maintain Unit Supply Files	Approved
101-92Y-1301	Control Weapons and Ammunition in the Arms Room	Approved

Knowledge

<u>Knowledge Id</u>	<u>Title</u>	<u>Taught</u>	<u>Required</u>
None			

Skill

<u>Skill Id</u>	<u>Title</u>	<u>Taught</u>	<u>Required</u>
None			

Administrative/ Academic Hours

The administrative/academic (50 min) hours required to teach this lesson are as follows:

<u>Academic</u>	<u>Resident Hours / Methods</u>		
Yes	1 hr	0 mins	Hardware-Oriented Test
Yes	1 hr	35 mins	Demonstration
Yes	0 hrs	10 mins	Reflective Discussion
Yes	0 hrs	30 mins	Practical Exercise (Hands-On/Written)
Yes	0 hrs	25 mins	Discussion (Small or Large Group)
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Total Hours(50 min):	4 hrs	0 mins	

Instructor Action Hours

The instructor action (60 min) hours required to teach this lesson are as follows:

<u>Hours/Actions</u>		
0 hrs	15 mins	Classroom Breakdown
0 hrs	15 mins	Classroom Setup
1 hrs	0 mins	Logistics Support – Weapon
0 hrs	25 mins	Student Counseling
1 hrs	0 mins	Student Re-test
0 hrs	25 mins	Student Re-train
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Total Hours (60 min):	3 hrs	20 mins

Test Lesson(s)

<u>Hours</u>	<u>Lesson Number Version</u>	<u>Lesson Title</u>
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None

Prerequisite Lesson(s)

<u>Hours</u>	<u>Lesson Number Version</u>	<u>Lesson Title</u>
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None

Training Material Classification

Security Level: This course/lesson will present information that has a Security Classification of: U - Unclassified.

Foreign Disclosure Restrictions

FD1. This training product has been reviewed by the training developers in coordination with the Fort Lee, Virginia foreign disclosure officer. This training product can be used to instruct international military students from all approved countries without restrictions.

References

<u>Number</u>	<u>Title</u>	<u>Date</u>
AR 25-400-2	THE ARMY RECORDS INFORMATION MANAGEMENT SYSTEM (ARIMS)	02 Oct 2007
DA PAM 750-8	The Army Maintenance Management System (TAMMS) Users Manual	22 Aug 2005
TM 9-1005-239-10	OPERATOR'S MANUAL LONG RANGE SNIPER RIFLE (LRSR), CALIBER .50, M107	30 Nov 2010
TM 9-1005-239-23&P	UNIT AND DIRECT SUPPORT MAINTENANCE MANUAL (INCLUDING REPAIR PARTS	30 Sep 2010

Student Study Assignment

None

Instructor Requirements

Primary Instructor and Assistant Instructor(s)

Support Personnel RequirementsArmorer
Computer System Analyst**Additional Support Personnel Requirements**

<u>Name</u>	<u>Student Ratio</u>	<u>Qty</u>	<u>Man Hours</u>
Armorer	0:0	1	1.0
Computer System Analyst	0:0	1	8.0

Equipment Required for Instruction

<u>ID - Name</u>	<u>Student Ratio</u>	<u>Instructor Ratio</u>	<u>Spt</u>	<u>Qty</u>	<u>Exp</u>
1005-01-469-2133 - Rifle, Sniper: M107	1:1	0:0	No	1	No
5180-00-357-7770 - Tool Kit, Repairman's, Small Arms	1:10	0:0	No	1	No
7021-01-C14-3190 - Computer, Micro Lap-Top Portable AC: M4500 Dell	0:0	0:0	No	2	No
7021-01-D01-0269 - PC Tablet, Data Entry: IPAD 2 WIFI 64GB Apple	1:1	0:0	No	1	No
7025-01-C11-4208 - Printer, Daisy Wheel/Dot Matrix/:2335DN MFP Dell	0:0	0:0	No	1	No
7050-01-C14-4309 - Interactive Pen Display: ID422W Smart	0:0	0:0	No	1	No
7490-01-T00-0291 - Card Programmer: RFC-03G Turning Technologies	1:1	0:0	No	0	No
7490-01-T00-0292 - Card Programmer: XRC-R02 Turning Technologies	1:30	0:0	No	0	No

(Note: Asterisk before ID indicates a TADSS.)

Materials Required

Instructor Materials:

- a. Lesson Plan.
- b. Practical Exercise (PE)
- c. Practical Exercise Solution.
- d. Required publications.

Student Materials:

- a. Student Handout.
- b. Practical Exercise.
- c. Required Publications.
- d. Pen or pencil.

Classroom, Training Area, and Range Requirements

<u>ID - Name</u>	<u>Quantity</u>	<u>Student Ratio</u>	<u>Setup Mins</u>	<u>Cleanup Mins</u>
17135-3000 Laboratory Instructional Building, 3000 Square Foot		1:30	20	30

Ammunition Requirements

<u>DODIC - Name</u>	<u>Exp</u>	<u>Student Ratio</u>	<u>Instruct Ratio</u>	<u>Spt Qty</u>
AB48 - Dummy .50 Caliber (Not Linked)	N	10:1	10:3	

Instructional Guidance/Conduct of Lesson

NOTE: Before presenting this lesson, instructors must thoroughly prepare by studying this lesson and identified reference material.

NOTE: Instructor/Facilitator will ensure to incorporate ALM 2015 and OE experiences.

Army Learning Model

All instructors/facilitators will facilitate training using the Army Learning Model. Ensuring training is based on quality, relevance and effectiveness of face-to-face learning experiences through outcome-oriented instructional strategies. This type of instruction will foster critical thinking, initiative and operational relevance in context.

OE Integration

Instructors/Facilitators will facilitate conversations from students and relate this lesson to current operational environments (OE) using personal experiences and/or examples obtained from the Center of Army Lessons Learned (CALL). Instructors/facilitators should provide sufficient OE variables and scenarios to produce the desired soldier training outcome for this lesson.

NOTE: Verify that training data is loaded and operational on the system before beginning the lesson.

Proponent Lesson Plan Approvals

<u>Name</u>	<u>Rank</u>	<u>Position</u>	<u>Date</u>
romulo.santos	Not available	Approver	06 Sep 2016

SECTION II. INTRODUCTION

Method of Instruction: Discussion (Small or Large Group)
Mode of Delivery: Resident Instruction
Instr Type (I:S Ratio): Military - ICH, (1:30)
Time of Instruction: 10 mins

Motivator

INSTRUCTOR NOTE: Have Soldiers draw weapons from the armsroom.

SLIDE 92Y10D07-1 (ON)

The Commander has designated you as his unit armorer, responsible for the unit maintenance of small arms. The unit armorer is an important job and requires attention to detail. You must have the skills and ability to perform all operator and organizational maintenance tasks. As a unit armorer, you will also prepare, maintain, submit and file all maintenance documentation for the unit's weapons. If the M107 Long Range Sniper Rifle is not maintained to the highest standard, the weapon may not operate, could cause accident or injury, unit readiness will be degraded, and your unit may not be prepared to perform its mission.

Introduce the lesson to the students

SLIDE 92Y10D07-1 (OFF)

SLIDE 92Y10D07-2 (ON)

Review the Terminal Learning Objective with the students.

SLIDE 92Y10D07-2 (OFF)

Terminal Learning Objective

NOTE. Inform the students of the following Terminal Learning Objective requirements.

At the completion of this lesson, you [the student] will:

Action:	Perform Preventive Maintenance on the Long Range Sniper Rifle (LRSR) .50 cal, M107 with equipment.
Conditions:	In a classroom environment, given the requirement to perform preventive maintenance on the M107 Sniper Rifle. Given TM 9-1005-239-10, TM 9-1005-239-23&P, DA Pam 750-8, a DA Form 5988-E, DA Form 5990-E, dummy rounds, armorer toolkit, safety equipment, and a M107 Sniper Rifle.
Standards:	The student will perform preventive maintenance on the M107 Sniper Rifle in accordance with TM 9-1005-239-10, TM 9-1005-239-23&P and DA Pam 750-8, finding all deficiencies without losing accountability.
Learning Domain - Level:	None assigned
No JPME Learning Areas Supported:	None

Safety Requirements

General classroom, weapon and electrical equipment safety procedures will be followed.

Before starting an inspection and/or performing any maintenance procedures, be sure to clear the weapon. During the clearing procedure always keep the weapon pointed in a safe direction.

A potential safety hazard exists if the weapon is assembled or disassembled incorrectly.

Do not attempt to disassemble or assemble this weapon until the Instructor tells you to do so, nor should you attempt to adjust or remove the sight from this weapon unless specifically directed by the Instructor in the classroom.

Students will ensure that safety goggles are worn at all times during the disassembly and assembly of this weapon.

Risk Assessment Level

Medium - Back Plate/Buffer/Spring

Assessment:

During assembly/disassembly of the back plate; the buffer and buffer spring are under heavy tension, injury may result if spring is released suddenly

Controls:

Additional instructor(s) and increased supervision; ensure bolt is in the forward position; ensure proper placement of hand. Pull bolt carrier rearward and insert rear lock pin through the middle part of the buffer spring, gently releasing.

Leader Actions:

1. Primary Instructor will utilize "stop-go" method when training. Students will not proceed until told to do so. Instructor will spot check each weapon.
2. When possible, additional instructor(s) qualified with weapons will assist the primary instructor during the block of instruction.
3. Continually emphasize safety. Let students know what the outcome will be if procedures are not followed exactly as described.

Medium - Barrel/Barrel Springs

Assessment:

During assembly/disassembly of the barrel; the barrel springs are under heavy tension of up to 70 pounds of pressure, injury may result if springs are released suddenly.

Controls:

Additional instruction and increased supervision: ensure proper placement of hand. Gently work the barrel key spring yolk from side to side until gently released. When reattaching firmly grasp barrel key when placing into forward slot.

Leader Actions:

1. Primary Instructor will utilize "stop-go" method when training. Students will not proceed until told to do so. Instructor will spot check each weapon.
2. When possible, additional instructor(s) qualified with weapons will assist the primary instructor during the block of instruction.
3. Continually emphasize safety. Let students know what the outcome will be if procedures are not followed exactly as described.

Low - Bolt/Extractor/Plunger spring

Assessment: During assembly/disassembly of the bolt always point the bolt away from face and eyes to avoid injury if parts fly free.

Controls:

Additional instruction and increased supervision: safety goggle usage; ensure proper placement of hand; cover plunger spring with thumb while sliding extractor out of slot or into slot.

Leader Actions:

1. Primary Instructor will utilize "stop-go" method when training. Students will not proceed until told to do so. Instructor will spot check each weapon.
2. When possible, additional instructor(s) qualified with weapons will assist the primary instructor during the block of instruction.
3. Continually emphasize safety. Let students know what the outcome will be if procedures are not followed exactly as described.

Environmental Considerations

NOTE: Instructor should conduct a risk assessment to include environmental considerations IAW the current environmental considerations publication, and ensure students are briefed on hazards and control measures..

NOTE: It is the responsibility of all Soldiers, DA Civilians, and Contractors to protect the environment from damage.

NOTE: Have dirty rags turned in to the supply room and cleaned on a weekly basis.

Instructional Lead-in

Explain to the Soldier that performing organizational maintenance on small arms is similar to performing maintenance on a car. It is important to keep your car in good running condition so you can get back and forth to work. In the U.S. Army, weapons must be maintained to specified standards so the unit can successfully perform its mission.

SECTION III. PRESENTATION

TLO - LSA 1. Learning Step / Activity TLO - LSA 1. Identify the Characteristics, Capabilities and Features, and Major Components of the M107 Sniper Rifle.

Method of Instruction: Discussion (Small or Large Group)

Mode of Delivery: Resident Instruction

Instr Type (I:S Ratio): Military - ICH, (1:10)*

Time of Instruction: 15 mins

Media Type: Actual Equipment / PowerPoint Presentation

Other Media: Unassigned

Security Classification: This course/lesson will present information that has a Security Classification of: U - Unclassified.

Note: Marked as (*) is derived from the parent learning object

SLIDE 92Y10D07-3 (ON)

a. M107 Equipment Characteristics, Capabilities, and Features.

INSTRUCTOR NOTE: Refer students to TM 9-1005-239-23&P, WP 0002-1 or TM 9-1005-239-10, WP 0002-1.

1) **Characteristics:** The basic M107 Sniper Rifle is equipped with bipod, muzzle brake, carrying handle, and 10-round removable magazine. The M107 system is composed of the rifle and a sniper scope, plus spare magazines. The rifle is also supplied with fitted carrying case, the requisite cleaning kit, drag bag, cleaning equipment, and the telescope adjustment tools. The M107 is a semi-automatic, air-cooled, box magazine-fed rifle chambered for .50 caliber ammunition, This rifle operates by means of the short recoil principle, rather than gas.

2) **Capabilities:** The M107 is a long-range sniper weapon system which utilizes standard .50 caliber ammunition. The M107 is a man-portable, direct line-of-sight system capable of providing precision fire on targets at distances up to 2000 yards (1,830 meters).

b. Location and description of major components:

INSTRUCTOR NOTE: Inform students on the location and description of major components. Refer students to TM 9-1005-239-23&P, WP 0002-2.

1) **Upper Receiver Assembly:** Includes the front sight, accessory base, carrying handle, muzzle brake, and barrel.

2) **Rail:** Used to attach the scope, the carrying handle and accessory optic sights.

3) **Carrying Handle:** Steel stock with hard plastic handle.

4) **Front Sight:** A 0.075 in. (0.19 cm) post.

5) **Muzzle Brake:** Critical to the functioning of the weapon; absorbs approximately 70% of the recoil.

6) **Barrel:** Length is 29 in. with 8 lands and grooves, in a uniform right hand twist, one turn in 15 in. Muzzle end is threaded to accept a muzzle brake; breech end has a

barrel extension integral to the locking function.

7) **Bolt Assembly:** Houses the firing pin, extractor, and ejector.

8) **Bolt and Carrier Assembly:** Consists of the bolt, firing pin, all extraction and ejection mechanisms, cocking lever, and sear.

9) **Bipod Assembly:** Detachable forward support system composed of retractable legs and extending foot pads.

10) **Lower Receiver Assembly:** Includes detachable bipod assembly, buffer assembly, midlock pin, and trigger mechanism.

c. M107 LRSR Equipment Data. The M107 Sniper Rifle System comprises the rifle with a fixed variable 4.5 x 14 power sniper scope, and six magazines. Also supplied are a fitted dirt-tight and watertight carrying case, cleaning kit, and telescope adjustment tools.

INSTRUCTOR NOTE: Refer students to TM 9-1005-239-23&P, WP 0002-4. Click on the picture to hear some of the specifications of the weapon.

INSTRUCTOR NOTE: Refer students to TM 9-1005-239-10, WP 0019-3

d. Compatible ammunition includes:

1) MK211 Mod 0, Caliber .50 API (Armor Piercing Incendiary) Cartridge.

2) M33, Caliber .50 Ball Cartridge.

3) M17, Caliber .50 Tracer Cartridge.

4) M8, Caliber .50 API Cartridge.

5) M20, Caliber .50 APIT (Armor-Piercing Incendiary Tracer) Cartridge.

6) M1A1, Caliber .50 Blank Cartridge.

e. A toolkit and special tools included with the weapon system are the only tools applicable for performing the maintenance as indicated in the TM. Follow the instructions in the TM 9-1005-239-23&P for the correct tool to use for each procedure described. Use only the right tool for the job. Otherwise, you may cause damage to the weapon that will render it unsafe or unserviceable!

SLIDE 92Y10D07-3 (OFF)

SLIDE 92Y10D07-4 (ON)

f. Cycle of Operation. The cycle of operation for the M107 Rifle is broken down into eight basic steps (more than one step may occur at the same time).

INSTRUCTOR NOTE: Refer students to TM 9-1005-239-23&P, WP 0003-1.

1) Feeding. The force of the mainspring pushes the bolt forward toward the barrel extension, stripping a cartridge from the magazine and loading it into the chamber (by hand when first loading, by semiautomatic action afterwards.)

2) Chambering. The bolt forces the round fully into the firing chamber, and the extractor snaps over the case rim. Blockages (dirt or debris) can prevent full chambering, as can dirty, bent, dented, or otherwise faulty ammunition.

3) Locking. During chambering the bolt enters the barrel extension, and the bolt latch engages the bolt latch trip (inside top of the upper receiver, just behind barrel extension). The bolt latch is then depressed, allowing the bolt to retract into the bolt carrier. The bolt, in turn, rotates due to the cam slot and is locked when its three locking lugs rotate into place in the barrel extension, closing the firing chamber.

4) Firing. Pulling the trigger pivots it on the trigger housing pin and presses on the transfer bar, causing the bar to rise. The transfer bar engages the sear (housed in the bolt carrier), forcing it upward and out of engagement with the firing pin extension. The firing pin extension, under spring power, forces the firing pin forward to strike the primer of the cartridge.

5) Unlocking. When the cartridge is fired, gas pressure exerts a thrust on the bolt face via the case head. The bolt carrier carries the bolt and barrel extension to the rear until the accelerator, protruding beneath the bolt carrier, contacts a shoulder in the trigger housing area. The accelerator is then pivoted up, causing the accelerator rod to be pushed out of the bolt carrier. As it protrudes from the front of the bolt carrier, it separates the bolt carrier from the barrel extension. Because of the cam slot in the side of the bolt, the bolt rotates as it is pulled and unlocks from the barrel extension.

6) Cocking. As the bolt recoils to the rear, the cocking lever "rides" the transfer bar back and down, causing it to disconnect from the trigger. The transfer bar is held down in this position by the disconnect and is not released until pressure is released from the trigger. After disconnection, the cocking lever swings on its pin and overrides the transfer bar. The other end of the cocking lever protrudes into the bolt carrier and into the firing pin extension. As the cocking lever pivots, it withdraws the firing pin and compresses the firing pin extension spring. The firing pin extension then catches the sear.

7) Extraction. As the bolt locking lugs rotate away from the barrel extension, the bolt withdraws from the barrel and the bolt latch locks the bolt in its extended position. The extractor, located on the bolt face and hooked over the rim of the fired case, pulls the case from the firing chamber.

8) Ejection. As soon as the fired case has been extracted and has cleared the rear of the barrel extension, it is expelled from the rifle by the spring-powered ejector.

SLIDE 92Y10D07-4 (OFF)

Check on Learning:

Question: What major component consists of the bolt, firing pin, all extraction and ejection mechanisms, cocking lever and sear.

Answer: Bolt and Carrier Assembly.

Question: How many types of ammunition will this weapon

system accommodate?

Answer: Six (6).

Review Summary:

Conduct a Review/Summary of the information presented in the Learning Step

TLO - LSA 2. Learning Step / Activity TLO - LSA 2. Unload and Clear the M107 Sniper Rifle.

Method of Instruction: Demonstration

Mode of Delivery: Resident Instruction

Instr Type (I:S Ratio): Military - ICH, (1:10)*

Time of Instruction: 5 mins

Media Type: Actual Equipment

Other Media: Unassigned

Security Classification: This course/lesson will present information that has a Security Classification of: U - Unclassified.

Note: Marked as (*) is derived from the parent learning object

SLIDE 92Y10D07-5 (ON) Click on picture to begin video. Be prepared to pause video at 0:40.

INSTRUCTOR NOTE: Before starting an inspection, and/or performing any maintenance procedures, be sure to clear the weapon. Inform the students **not** to squeeze the trigger until the weapon has been cleared.

INSTRUCTOR NOTE: Refer students to TM 9-1005-239-10, WP 0005-13.

a. Unloading the M107 Sniper Rifle.

WARNING: The bolt does not automatically remain to the rear when the rifle or magazine is empty. After the rifle is unloaded, and with the charging handle to the rear, always physically check the chamber to ensure that the rifle is empty.

- 1) Put on your safety goggles.
- 2) Point weapon in a safe direction.
- 3) Place the weapon safety on "Safe". Press the magazine catch forward towards the magazine and remove the magazine.

NOTE: Remember that the bolt does NOT automatically remain to the rear when the rifle or magazine is empty.

4) Pull the charging handle to the rear, which will eject any cartridge still chambered.

5) After the rifle is unloaded, and with the charging handle to the rear, look into the chamber to make certain the breech area and chamber are empty

b. Clearing

Caution: Whenever it is necessary to insert cleaning rods or other devices through the muzzle end of the barrel, be especially careful not to damage the muzzle's crown, since it could affect the accuracy of the rifle.

Caution: Do not leave rounds in the magazine for extended periods of time since this

will cause the spring to lose tension and may cause a malfunction.

Check on Learning: Determine if the students have learned the material presented by soliciting student questions and explanations. Ask the students questions and correct misunderstandings.

Question: True or False. The bolt of the M107 will remain locked to the rear when the magazine or the rifle is empty.

Answer: False

Review Summary: Conduct a Review/Summary of the information presented in the Learning Step.

TLO - LSA 3. Learning Step / Activity TLO - LSA 3. Disassemble and Troubleshoot the M107 Sniper Rifle.

Method of Instruction: Demonstration

Mode of Delivery: Resident Instruction

Instr Type (I:S Ratio): Military - ICH, (1:10)*

Time of Instruction: 25 mins

Media Type: Actual Equipment

Other Media: Unassigned

Security Classification: This course/lesson will present information that has a Security Classification of: U - Unclassified.

Note: Marked as (*) is derived from the parent learning object

INSTRUCTOR NOTE: Click the video to start the video section on disassembly of the M107.

a. Disassembly of the M107 Sniper Rifle. I will now demonstrate how to disassemble the M107 Sniper Rifle. You will perform each task as I describe the sequence.

INSTRUCTOR NOTE: Refer students to TM 9-1005-239-10, WP 0013-1.

NOTE: Unless there is something wrong with the telescope, it will not be removed for normal field stripping.

1) The following procedures will illustrate field stripping the M107 Sniper Rifle disassembly into the four major components: upper receiver assembly, lower receiver assembly, bolt and carrier assemblies and the telescopic sight assembly.

WARNING: Ensure that the weapon is unloaded and on SAFE before performing these procedures.

- a) Remove rear lock and mid-lock pins.
- b) Grasp charging handle on the bolt carrier assembly and pull to the rear (**2-3 inches**) until the bolt clears the barrel extension.
- c) While holding the charging handle to the rear (**2-3 inches**), lift the back end of the upper receiver assembly until it clears the bolt. Allow the bolt carrier assembly to return to its forward position **slowly**.

d) Disengage front hook from the front hook pin on the lower receiver and lift upper receiver assembly clear of lower receiver assembly.

WARNING: Exercise extreme caution Buffer and buffer spring are under heavy spring tension. DO NOT release springs suddenly. Failure to comply may result in personal injury. Ensure all students are wearing safety goggles and keep their faces away from the buffer assembly to avoid injury!

e) Pull the bolt carrier rearward and insert the rear lock pin through the buffer and buffer spring.

CAUTION: Remove the bolt carrier from the lower receiver and ensure carrier is completely forward of the housing before lifting bolt. Failure to comply may result in weapon damage.

f) Pull the bolt carrier assembly forward gently and lift out of the lower receiver assembly

INSTRUCTOR NOTE: The M107 Sniper Rifle is now separated into the four major components, the upper receiver assembly with the telescopic sight assembly attached, lower receiver assembly, the bolt, and carrier assemblies. Are there any questions on the disassembly (field stripping) of this weapon?

INSTRUCTOR NOTE: Refer students to TM 9-1005-239-23&P, WP 0016 00-1. Inform students that further disassembly is authorized at unit level although it may not be performed in the classroom.

2) Disassembly of the Lower Receiver and Trigger Assembly:

INSTRUCTOR NOTE: Restate the safety measures and protection required when removing the mainspring buffer. Failure to follow instructor directions could result in serious injury. Ensure each student has the bolt carrier removed by having students raise it in the air before proceeding to the next step.

WARNING: Mainspring buffer and mainspring are under heavy spring tension. Stand to one side to avoid flying parts. Wear eye protection and heavy work gloves. Failure to comply may result in injury.

WARNING: Wear eye protection during removal of mainspring or mainspring buffer in case of improper release. Failure to comply may result in personal injury.

a) Ensure that bolt carrier has been removed. Push (e.g., using a screwdriver) mainspring buffer manually to rear and place rear lock pin or a 1/8 inch punch through coils of mainspring and ports in lower receiver. This will relieve some of the pressure on the buffer as it is removed.

WARNING: Ensure the rear lock pin is inserted to secure the mainspring buffer and mainspring. Failure to comply may result in personnel injury.

b) Place fingertip into slot on mainspring buffer, and turn buffer so that groove in

its flange lines up with buffer stop on lower receiver.

- c) Remove the rear lock pin.
- d) Remove mainspring buffer and mainspring slowly and carefully.
- e) Remove lock knob from left rear handgrip. Remove monopod assembly carefully from lower receiver.
- f) Use a T-25 T-handle Torx screwdriver to remove two rear hand grip screws, two rear hand grip nuts, right rear hand grip, and left rear hand grip.

INSTRUCTOR NOTE: Instructor will now direct the students to visually inspect (most common type of inspection) each part of the weapon that has been disassembled. Inspection should include observations of cracks stripped screws/nuts, excessive wear, and overall general cleanliness of the weapon. The Instructors will emphasize the importance of maintaining the weapon to fully mission capable condition and impacts on unit readiness. Reinforce use of Technical Manual/Maintenance Allocation Code to determine if repair and request of items is authorized at unit/organizational level

3) Disassembly of the Carrying Handle.

INSTRUCTOR NOTE: Refer students to TM 9-1005-239-23&P, WP 0020-1.

- a) Loosen carrying handle nut by turning counterclockwise.
- b) Slide carrying handle clamp away from body of carrying handle assembly and lift handle from rail.

INSTRUCTOR NOTE: Repeat the inspection process.

3) Lower barrel.

CAUTION: Do not pull on barrel springs to remove the barrel key assembly. doing so may damage the springs. Failure to comply may result in equipment damage.

- a) Turn upper receiver upside down and remove barrel key.
- b) Slide barrel back into receiver and rotate 1/2 turn.

b. Troubleshoot the M107 Sniper Rifle.

INSTRUCTOR NOTE: Refer students to TM 9-1005-239-23&P, WP 0004-1/2. Review the Troubleshooting Introduction.

INSTRUCTOR NOTE: Refer students to TM 9-1005-239-23&P, WP 0005. Select one of the Troubleshooting Malfunction/Symptom and walk students through determining the corrective actions listed in WP 0006.

SLIDE 92Y10D07-5 (OFF)

Check on Learning:

Determine if the students have learned the material presented by soliciting student questions and explanations.

Ask the students questions and correct misunderstandings.

Question: What should be done with the rear lock down pin during disassembly of the weapon?

Answer: It will be reinserted into the buffer and buffer spring.

Question: What adjustments are made to the telescopic sight when the weapon is field stripped.

Answer: None.

Question: What is the most common type of inspection conducted by the unit armorer?

Answer: Visual.

Review Summary:

Conduct a Review/Summary of the information presented in the Learning Step.

TLO - LSA 4. Learning Step / Activity TLO - LSA 4. Reassemble the M107 Sniper Rifle.

Method of Instruction: Demonstration

Mode of Delivery: Resident Instruction

Instr Type (I:S Ratio): Military - ICH, (1:10)*

Time of Instruction: 20 mins

Media Type: Actual Equipment

Other Media: Unassigned

Security Classification: This course/lesson will present information that has a Security Classification of: U - Unclassified.

Note: Marked as (*) is derived from the parent learning object

SLIDE 92Y10D07-6 (ON) Click on the picture to begin the video. Be prepared to pause video at 3:17.

a. Reassemble the M107 Sniper Rifle and components.

1) Extend the barrel.

INSTRUCTOR NOTE: Refer students to TM 9-1005-239-23&P, WP 0013-5.

a) Pick up upper receiver assembly carefully. Barrel will be nested inside it for compact storage. Move bumper rings into position on either side of receiver's central barrel bushing so that they rest snugly against bushing. Align barrel so that its feed ramp (slanted entry to firing chamber) is to bottom. Keep fingers away from barrel, hold upper receiver horizontally, and then tilt in direction of muzzle. Barrel should fall into place, at its full forward extension in receiver.

WARNING: The tension on the barrel springs is about 70 lb (31.8 kg), which may cause the springs to release suddenly. Failure to comply may result in personnel injury.

WARNING: Avoid incomplete or improper assembly. Failure to comply may

result in personnel injury.

b) Barrel springs in upper receiver are held in place by a spring yoke, the barrel key.

c) Maintain the downward tilt of upper receiver (to keep barrel in place), firmly grasp barrel key, not springs, and pull it into place on forward slot of barrel.

d) Work key from side to side until it is firmly seated in barrel slot.

3) Reassemble the Carrying Handle Assembly.

INSTRUCTOR NOTE: Refer student to TM 9-1005-239-23&P, WP 0021-4.

a) With carrying handle nut loosened, position carrying handle assembly on rail. Align carrying handle clamp with handle mount of carrying handle assembly.

b) Tighten the carrying handle nut until the assembly is firmly secured on the mounting rail.

4) Reassemble the Lower Receiver Assembly.

INSTRUCTOR NOTE: Refer student to TM 9-1005-239-23&P, WP 0016-12.

a) Align right rear hand grip and left rear hand grip on lower receiver.

b) Using T-25 T—handle Torx screwdriver to install two rear hand grip screws and two rear hand grip nuts.

c) Slide Monopod assembly into lower receiver and secure with lock knob.

d) Slide mainspring into lower receiver.

WARNING: Mainspring buffer and mainspring are under heavy spring tension. Stand to one side to avoid flying parts. Wear eye protection and heavy work gloves. Failure to comply may result in injury.

e) Place mainspring buffer on end of mainspring. Guide mainspring into housing until buffer is even with housing.

f) Place the end of a screwdriver into slot on mainspring buffer, and turn buffer so that groove in its flange lines up with buffer stop on lower receiver.

g) Push mainspring buffer to rear after mainspring has passed buffer stop

WARNING: Ensure the rear lock pin is inserted to secure the mainspring buffer and mainspring. Failure to comply may result in personnel injury.

h) Turn screwdriver so that groove in mainspring buffer and buffer stop are no longer in line. Insert rear lock pin through mainspring for safety.

i) Ease off pressure applied to screwdriver until mainspring buffer stops on buffer stop.

5) Reassemble the M107 Semi-Automatic Sniper system.

INSTRUCTOR NOTE: Refer student to TM 9-1005-239-23&P, WP 0015-4.

a) Place bolt and carrier assembly into forward part of lower receiver assembly.

WARNING: Mainspring buffer and mainspring are under heavy spring tension. Stand to one side to avoid flying parts. wear eye protection and heavy work gloves. failure to comply may result in injury.

b) Pull bolt and carrier assembly rearward and carefully remove rear lock pin from mainspring and mainspring buffer.

c) Align front hook of upper receiver assembly with front hook pin on lower receiver assembly.

d) With upper receiver assembly in position on lower receiver assembly, secure with rear lock pin and midblock pin.

Check on Learning: Determine if the students have learned the material presented by soliciting student questions and explanations. Ask the students questions and correct misunderstandings.

Review Summary: Conduct a Review/Summary of the information presented in the Learning Step.

TLO - LSA 5. Learning Step / Activity TLO - LSA 5. Conduct Functional Check on the M107 Sniper Rifle.

Method of Instruction: Demonstration

Mode of Delivery: Resident Instruction

Instr Type (I:S Ratio): Military - ICH, (1:10)*

Time of Instruction: 5 mins

Media Type: Actual Equipment

Other Media: Unassigned

Security Classification: This course/lesson will present information that has a Security Classification of: U - Unclassified.

Note: Marked as (*) is derived from the parent learning object

INSTRUCTOR NOTE: Refer students to TM 9-1005-239-23&P, WP 0034.

Whenever the weapon is disassembled beyond normal fieldstripping, perform a functional check when the weapon is reassembled. This quick check indicates whether or not the weapon has been properly assembled with all of its components. A functional check can also reveal the more obvious malfunctions that occur between interactive components of the weapon. To complete a functional check, perform the following procedure:

- 1) Load ten .50 caliber dummy rounds in magazine.
- 2) Insert the magazine into the weapon.
- 3) Retract bolt fully to rear and release to chamber the first round.
- 4) With the safety selector switch set to SAFE, attempt to fire the weapon. The weapon should not fire.
- 5) With the safety selector switch set to FIRE, attempt to fire the weapon. The weapon should fire.
- 6) While holding the trigger to the rear, pull the bolt all the way to the rear and release the bolt.
- 7) Release the trigger. A click should be heard and the weapon should fire.

- 8) Repeat steps 6 and 7 at least three times to ensure proper functioning.
- 9) Cycle the bolt through the remaining rounds to ensure proper feeding, chambering, extracting, and ejecting.

Check on Learning: Determine if the students have learned the material presented by soliciting student questions and explanations. Ask the students questions and correct misunderstandings.

Review Summary: Conduct a Review/Summary of the information presented in the Learning Step.

TLO - LSA 6. Learning Step / Activity TLO - LSA 6. Perform Preventive Maintenance on the M107 LRSR.

Method of Instruction: Demonstration

Mode of Delivery: Resident Instruction

Instr Type (I:S Ratio): Military - ICH, (1:10)*

Time of Instruction: 25 mins

Media Type: Actual Equipment / PowerPoint Presentation

Other Media: Unassigned

Security Classification: This course/lesson will present information that has a Security Classification of: U - Unclassified.

Note: Marked as (*) is derived from the parent learning object

SLIDE 92Y10D07-7 (ON)

INSTRUCTOR NOTE: Provide a scenario for the students involving a quarterly service being conducted. You will perform a walk-thru exercise to complete filling out the DA Form 5988-E using the bipod as the maintenance fault. Instructor can pick additional faults to ensure students understand how to identify and document faults.

INSTRUCTOR NOTE: Provide student with a blank DA Form 5988-E from the student handout.

a. Verify the administrative information on the DA Form 5988-E.

- 1) Verify the DODAAC is WBAKT0.
- 2) Verify the organization is HHC, 13th Military Police Battalion.
- 3) Verify ADMIN NUM and SERIAL NUMBER of the weapon.

INSTRUCTOR NOTE: Have student enter the serial number of the weapon that they are going to PMCS in the serial number .

- 4) Verify M107 is listed as the EQUIP MODEL.
- 5) Verify Long Range Sniper Rifle is listed as the EQUIP NOUN.
- 6) Verify Quarterly is listed as the TYPE INSPECTION.
- 7) Verify the EQUIP NSN is 1005-01-469-2133.
- 8) Verify the TMs being used.

INSTRUCTOR NOTE: Refer students to TM 9-1005-239-23&P, WP 0009-1. Review the PMCS procedures with the students.

b. Perform inspection of the weapon and record all deficiencies on the DA Form 5988-E during the inspection. Refer students to DA Pam 750-8, Figure 3-24.

INSTRUCTOR NOTE: See Preventive Maintenance Checks and Services (PMCS), including lubrication instructions in WP 0010 of the TM. Organizational PMCS table can be found at WP 0010-1.

NOTE: Always keep live ammunition far from work/maintenance area.

1) M107 - Be sure to clear weapon before disassembling, cleaning, inspecting, transporting, or storing. Clearing consists of unloading the weapon and visually inspecting weapon and chamber to ensure all rounds have been removed. Do not release the bolt or press the trigger.

2) M107 - Hand function the weapon to ensure it is functional. Visually check the exterior of the weapon and components for rust or damage. Check components for cracks, breaks, and damage.

3) M107 - Clean exterior of weapon to remove dirt and debris.

4) Muzzle Brake - Check to see that both muzzle brake screws are secured to the muzzle brake. Ports are at the 3 and 9 o'clock positions.

5) Barrel Assembly - Check to ensure bore is free of obstructions and not bulged. Check for excess lubrication in bore area. Swab dry.

6) Barrel Assembly - Clean chamber.

7) Scope Mounting Hardware - Check to see that all hardware is tight and that scope is secured to weapon.

INSTRUCTOR NOTE: If the scope is loose or hardware is missing, it will cause the weapon to be not ready/available. Notify Support Maintenance immediately.

8) Lower Receiver Assembly - Check to see that rear and midlock pins are installed so that retaining bearing is visible on opposite side of receiver.

9) Cartridge Magazine - Ensure that magazine has free travel of magazine follower and that magazine tube is not damaged (bent or cracked)

WARNING: Avoid injury to eyes. Use care when removing and installing spring loaded parts. Failure to comply may result in personnel injury.

10) M107 - Fieldstrip weapon. Refer to TM 9-1005-239-10. Inspect all assemblies for missing, broken, or loose parts. Inspect all parts for cracks, dents, burrs, excessive wear, rust, or corrosion.

c. Annotate the deficiency on the DA Form 5988-E.

INSTRUCTOR NOTE: Walk students through posting the deficiency on the DA Form 5988-E.

1) Enter **[10]** in column a, for the TM item number.

2) Enter the date the fault was discovered, which will be the date of the PMCS.

INSTRUCTOR NOTE: Explain to the students how to determine the status symbol

that applies.

3) Enter **[X]** in the FAULT STATUS as the status symbol.

4) Enter **[Left Bipod Leg does not extend]** in the FAULT DESCRIPTION column as a brief description of the uncorrected faults.

INSTRUCTOR NOTE: Explain to the students how to determine corrective action. Have students refer to TM 9-1005-239-23&P WP 0050 to determine the level of maintenance that is required. The SMR Code PAFZZ would indicate that support maintenance should replace the bipod.

5) Enter **[DA Form 5990-E (SPT MNT)]** in column d for corrective action taken.

6) Student will place their LICENSE NUMBER on the DA Form 5988-E.

SLIDE 92Y10D07-7 (OFF)

Check on Learning: Determine if the students have learned the material presented by soliciting student questions and explanations. Ask the students questions and correct misunderstandings.

Review Summary: Conduct a Review/Summary of the information presented in the Learning Step.

TLO - LSA 7. Learning Step / Activity TLO - LSA 7. Verify the DA Form 5990-E for the M107 Sniper Rifle.

Method of Instruction: Demonstration

Mode of Delivery: Resident Instruction

Instr Type (I:S Ratio): Military - ICH, (1:10)*

Time of Instruction: 5 mins

Media Type: Actual Equipment / PowerPoint Presentation

Other Media: Unassigned

Security Classification: This course/lesson will present information that has a Security Classification of: U - Unclassified.

Note: Marked as (*) is derived from the parent learning object

SLIDE 92Y10D07-8 (ON)

a. Now that a fault that requires a higher level of maintenance is identified, the DA Form 5990-E, Maintenance Request Form, must be prepared. The SAMS-E operator will take the required information from the DA Form 5988-E or DA Form 2404. You will need to verify the information is accurate before taking the DA Form 5990-E and the weapon to the next level of maintenance for repair.

INSTRUCTOR NOTE: Remind students that a manual form DA 2407 can also be used as a Maintenance Request Form.

SECTION I - CUSTOMER DATA

- 1) Verify **WBAKT0** is entered as the UIC.
- 2) Verify **HHC, 13th MP BN** is entered as the unit.
- 3) Verify **(804) 765-8591** is entered as the phone number.
- 4) Verify **0** is entered as the UTIL CODE. Refer to DA Pam 750-8, App B, Table B-6 for applicable utilization codes.

SECTION II - ACTIVITY DATA

- 5) Verify the support agency information is accurate.

SECTION III - EQUIPMENT DATA

- 6) Verify **1** is entered in the TYPE MNT REQ location. Refer to DA Pam 750-8, App B, Table B-20 for available codes.
- 7) Verify **A** is entered in the ID location.
- 8) Verify **1005014692133** is entered in the NSN location.
- 9) Verify **M107** is entered in the MODEL location.
- 10) Verify **LRSR, Cal.50** is entered in the NOUN location.
- 11) Verify the serial number matches the serial number on the DA Form 5988-E.
- 12) Verify **00001** is entered as the QTY.
- 13) Verify a work order number is entered. This number will be generated by the SAMS-E System.
- 14) Verify **05** is entered as the PRIORITY.
- 15) Verify **A** is entered in the FAILURE DETECTED location. Refer to DA Pam 750-8, App B, Table B-3 for available codes.
- 16) Verify **F** is entered as the LEVEL OF WORK.
- 17) Verify ADMIN NUM is entered.
- 18) Verify **Left bipod leg does not extend** is entered as the deficiency. The deficiency should match the deficiency listed on the DA Form 5988-E/DA Form 2404.
- 19) Obtain signature in the PD AUTHENTICATING SIGNATURE if required. Signature of commander or commander's designated representative is required for all 01 through 10 Priority requests.

SECTION IV - SIGNATURE DATA - Can be completed when weapon is turned in at support maintenance for repair.

b. Attach DA Form 2404/DA Form 5988-E to the DA Form 5990-E.

c. Submit all copies of the Maintenance Request Form to Support Maintenance with the weapons.

SLIDE 92Y10D07-8 (OFF)

Check on Learning:

Determine if the students have learned the material presented by soliciting student questions and explanations. Ask the students questions and correct misunderstandings.

Review Summary:

Conduct a Review/Summary of the information presented in the Learning Step.

TLO - LSA 8. Learning Step / Activity TLO - LSA 8. Practical Exercise - Perform Preventive Maintenance on the M107 LRSR Practical Exercise.

Method of Instruction: Practical Exercise (Hands-On/Written)

Mode of Delivery: Resident Instruction

Instr Type (I:S Ratio): Military - ICH, (1:10)*

Time of Instruction: 30 mins

Media Type: Actual Equipment / Practical Exercise

Other Media: Unassigned

Security Classification: This course/lesson will present information that has a Security Classification of: U - Unclassified.

Note: Marked as (*) is derived from the parent learning object

Complete the practical exercise included with this lesson.

- a. Give the students time to complete the practical exercise for this lesson.
- b. Assist the students as needed during the practical exercise to ensure material is understood.
- c. Review the practical exercise with the students and answer any questions the students may have.

Check on Learning:

Determine if the students have learned the material presented by soliciting student questions and explanations. Ask the students questions and correct misunderstandings.

Review Summary:

Review the practical exercise with the students. Review the questions and clear up any misunderstandings that the students may have.

TLO - LSA 9. Learning Step / Activity TLO - LSA 9. Conduct Performance Exam on the Long Range Sniper Rifle (LRSR), M107.

Method of Instruction: Hardware-Oriented Test

Mode of Delivery: Resident Instruction

Instr Type (I:S Ratio): Military - ICH, (1:10)*

Time of Instruction: 1 hr

Media Type: Actual Equipment

Other Media: Unassigned

Security Classification: This course/lesson will present information that has a Security Classification of: U - Unclassified.

Note: Marked as (*) is derived from the parent learning object

The soldier will complete hands on performance based examination covering the materials presented in this lesson. The exam will be graded on a GO/NO-GO basis. Student must receive a GO to be considered successful.

Check on Learning:

Determine if the students have learned the material presented by soliciting student questions and explanations. Ask the students questions and correct misunderstandings.

Review Summary:

- a. Conduct a Test Review/Analysis with the students.
- b. Review any questions and clear up any misunderstandings that the students may have.
- c. Ensure all test material is gathered from the students.

Secure all test material until it can be secured.

SECTION IV. SUMMARY

Method of Instruction:	Reflective Discussion
Mode of Delivery:	Resident Instruction
Instr Type(I:S Ratio):	Military - ICH, (1:30)
Time of Instruction:	10 mins

Check on Learning

Determine if the students have learned the material presented by soliciting student questions and explanations. Ask the students questions and correct misunderstandings.

Question: What WP Sequence number lists of items used to perform PMCS on the M107?

Answer: Sequence number 00060 00.

Question: What are the M107 Sniper Rifle's major external components?

Answer: Upper Receiver Assembly, Rail, Carrying Handle, Front Sight, Muzzle Brake, Barrel, Bolt Assembly, Bolt and Carrier Assembly, Bipod Assembly, and the Lower Receiver Assembly.

Question: What section in TM 9-1005-239-23&P covers unit troubleshooting instructions?

Answer: Section 0005.

Question: What position should the safety lever be in prior to performing a function check?

Answer: In the "SAFE" position"

Review/ Summary

SLIDE 92Y10D07-9 (ON)

During this lesson we discussed the following topics:

- a. Identify the Characteristics, Capabilities and Features, and Major Components of the M107 Sniper Rifle.
- b. Unload and Clear the M107 Sniper Rifle.
- c. Disassemble and Troubleshoot the M107 Sniper Rifle.
- d. Reassemble the M107 Sniper Rifle.
- e. Perform Function Check on the M107 Snipe Rifle.
- f. Perform Preventive Maintenance on the M107 Sniper Rifle.
- e. Verify the DA Form 5990-E on the M107 Sniper Rifle.

SLIDE 92Y10D07-9 (OFF)

SECTION V. STUDENT EVALUATION

Testing Requirements

The soldier will complete hands on performance based examination covering the materials presented in this lesson. The exam will be graded on a GO/NO-GO basis. Student must receive a GO to be considered successful.

Feedback Requirements

NOTE: Feedback is essential to improving training, always encourage students to provide comments and ensure to complete the Module AAR.

NOTE: Review the completed practical exercise with the students. Ensure lesson is understood by asking questions and receiving feedback from the students. Clear up any misunderstandings.

Appendix A - Viewgraph Masters

**Perform Maintenance on Long Range Sniper Rifle (LRSR), M107
101-92Y10D07 / Version 05.0 ©**

Sequence	Media Name	Media Type
1	92Y10D07 Ver3 Classroom Presentation	PPTX
2	M107 Intro	MP3
3	M107 Disassembly	MP3
4	M107 Reassembly	MP3

Appendix B - Assessment Statement and Assessment Plan

Assessment Statement: None.

Assessment Plan: None.

Appendix C - Practical Exercises and Solutions

PRACTICAL EXERCISE(S)/SOLUTION(S) FOR LESSON 101-92Y10D07 Version 05.0 ©

Appendix D - Student Handouts

**Perform Maintenance on Long Range Sniper Rifle (LRSR), M107
101-92Y10D07 / Version 05.0 ©**

Sequence	Media Name	Media Type
10	92Y10D07 Ver3 Student Handout	DOCX
20	92Y10D07 Ver3 Practical Exercise	DOCX
21	92Y10D07 Ver3 Practical Exercise Solution	DOCX