CRM LESSON PLAN REPORT

Perform Field Maintenance on the Machine Gun 5.56mm M249
101-92Y10D06 / 01.0 ©

Approved
28 Jun 2023

Effective Date: 28 Jun 2023

SCOPE:
This lesson introduces the newly designated unit armorer on how to perform Field Maintenance on the M249 Saw. The expected learning outcomes is for the student to be able to perform Field Maintenance on the M249 Saw in accordance with TM 9-1005-201-10, TM 9-1005-201-23&P and DA Pam 750-8, finding all deficiencies without error. This lesson supports the Army Learning Area (ALA) of professional competence, and General Learning Outcome (GLO) 14, Soldiers and Civilians are technically and tactically competent. The goal of this lesson is to provide the Student with the knowledge and skills to perform Field Maintenance on the M249 Saw without supervision and to the standards outlined in TM 9-1005-201-10, TM 9-1005-201-23&P, DA Pam 750-8 and ARIMS User Guide.

SECTION I. ADMINISTRATIVE DATA

All Course Masters /POIs Including This Lesson

Courses

Course Number	Version	Title	Phase	Status
None				

POIs

Course Number	Version	Title	Phase	Status
None				

Task(s) Taught(*) or Supported

Task Number	Task Title	Status
Individual		
101-92Y-1409 (*)	Perform Unit Level PMCS on Small Arms	Approved
Collective		
None		

Reinforced Task(s)

Task Number	Task Title	Status
None		

Knowledge

Knowledge ID	Title	Taught	Required
K22092	Understand general PMCS principles and procedures	Yes	Yes

Skill

Skill ID	Title	Taught	Required
101-S-M014	Ability to perform PMCS on equipment used.	Yes	Yes

Administrative/ Academic Hours

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

Academic	Resident Hours / Methods		
Yes	3 hrs	45 mins	Demonstration
Yes	0 hrs	30 mins	Discussion (Small or Large Group)
Yes	1 hr	30 mins	Hardware-Oriented Test
Yes	1 hr	30 mins	Practical Exercise (Hands-On/Written)
Yes	0 hrs	15 mins	Reflective Discussion
Total Hours (50 min):	8 hrs	0 mins	

Instructor Action Hours

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

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

Test Lesson(s)

Hours	Lesson Number Version	Lesson Title
None		

Prerequisite Lesson (s)

Hours	Lesson Number Version	Lesson Title
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 Gregg-Adams foreign disclosure officer. This training product can be used to instruct international military students from all approved countries without restrictions.

References

Number	Title	Date
ARIMS User Guide	Army Records Information Management System (ARIMS) User Guide	04 Aug 2022
DA PAM 750-8	The Army Maintenance Management System (TAMMS) Users Manual	22 Aug 2005
TM 9-1005-201-10	OPERATOR MANUAL FOR MACHINE GUN, 5.56MM, M249 W/EQUIP (NSN 1005-01-127-7510) (EIC: 4BG) (AR ROLE) (NSN 1005-01-451-6769) (EIC: 4BK) (LMG ROLE)	31 May 2019
TM 9-1005-201-23&P	ELD MAINTENANCE MANUAL (INCLUDING REPAIR PARTS ANDSPECIAL TOOLS LIST) FOR MACHINE GUN, 5.56 MM, M249 W /EQUIPMENT (AR ROLE) NSN1005-01-127-7510 (EIC 4BG) MACHINE GUN, 5.56 MM, M249 W/EQUIPMENT (LMG ROLE)NSN 1005-01-451-6769 (EIC 4BK)	15 Oct 2014

Student Study Assignment

None

Instructor Requirements

Primary Instructor and Assistant Instructor(s)

Support Personnel Requirements

Armorer
Computer System Analyst

Additional Support Personnel Requirements

Name	Student Ratio	Qty	Man Hours
Armorer Remarks: Armorer required to issue and receive weapons from the armsroom and to be on standby to assist with weapons.	0:0	1	1.0
Computer System Analyst Remarks:	0:0	1	8.0

Equipment Required for Instruction

ID - Name	Student Ratio	Instructor Ratio	Spt	Qty	Exp
1005-01-127-7510 - Machine Gun, 5.56 Millimeter: M249 Remarks:	1:1	0:0	No	1	No
1005-01-503-0141 - Mount, Machine Gun: M192					

ID - Name	Student Ratio	Instructor Ratio	Spt	Qty	Exp
Remarks:	1:6	0:0	No	1	No
4240-01-504-0052 - GOGGLES, INDUSTRIAL Remarks:	1:1	1:1	No	0	No
5180-00-357-7770 - Tool Kit, Repairman's, Small Arms Remarks:	1:10	0:0	No	1	No
7021-01-C14-3190 - Computer, Micro Lap-Top Portable AC: M4500 Dell Remarks: 1 Required for Instructor 1 Required at Monitor's Table	0:0	0:0	No	2	No
7021-01-D01-0269 - PC Tablet, Data Entry: IPAD 2 WIFI 64GB Apple Remarks:	1:1	0:0	No	1	No
7025-01-C11-4208 - Printer, Daisy Wheel /Dot Matrix/:2335DN MFP Dell Remarks:	0:0	0:0	No	1	No
7050-01-C14-4309 - Interactive Pen Display: ID422W Smart Remarks:	0:0	0:0	No	1	No
7490-01-T00-0291 - Card Programmer: RFC-03G Turning Technologies Remarks:	1:1	0:0	No	0	No
7490-01-T00-0292 - Card Programmer: XRC-R02 Turning Technologies Remarks:	1:30	0:0	No	0	No

(Note: Asterisk before ID indicates a TADSS.)

Materials Required

Instructor Materials:
1. Lesson Plan
2. Practical Exercise (PE)
3. Practical Exercise Solution
4. Required publications.
5. Safety Goggles.

Student Materials:
1. Student Handout.
2. Practical Exercise.
3. Required publications.
4. Pen or pencil.
5. Safety Goggles.

Classroom Training Area, and Range Requirements

ID - Name	Quantity	Student Ratio	Setup Mins	Cleanup Mins
17135-3000				

ID - Name	Quantity	Student Ratio	Setup Mins	Cleanup Mins
Laboratory Instructional Building 3000 Square Foot Remarks:		1:30	20	30

Ammunition Requirements

DODIC - Name	Exp	Student Ratio	Instruct Ratio	Spt Qty
AB46 - Dummy Cartridge, 5.56 Millimeter Remarks:	N	5:1	5:1	

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 OE Experiences.

ARMY LEARNING MODEL

All instructors/facilitators will facilitate training under 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 on the system before beginning this lesson.

Proponent Lesson Plan Approvals

Name	Rank	Position	Date
hugo.feliciano	Not Available	Approver	28 Jun 2023

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:	15 mins

Motivator

Instructor Note: Have class draw weapons from the arms room.

SLIDE 92Y10D06-1 (ON)

You are the Unit Armorer responsible for the field maintenance of small arms. The unit armorer is an important job requiring strict attention to detail and you must have the skills and the ability to perform all field maintenance tasks. You will also prepare, maintain, submit, and file all maintenance requirements for the unit's organizational weapons. If the M249 machine gun is not maintained to required standards, the weapon may not operate, accident or injury could result, unit readiness will be degraded, and your unit will not be prepared to perform its wartime mission.

Introduce the lesson to the students.

SLIDE 92Y10D06-1 (OFF)
SLIDE 92Y10D06-2 (ON)

Review the lesson terminal learning objective with the students.

SLIDE 92Y10D06-2 (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 Field Maintenance on the Machine Gun, 5.56mm, M249.
Conditions:	In a classroom environment, given the requirement to perform field maintenance on the M249 SAW. Given TM 9-1005-201-10, TM 9-1005-201-23&P, DA Pam 750-8. blank DA Form 2404, blank DA Form 2407, armorer toolkit, safety equipment, CLP/LSA, pen or pencil, M199A1 dummy rounds, and a M249 SAW.
Standards:	Perform field maintenance on the M249 Saw in accordance with TM 9-1005-201-10, TM 9-1005-201-23&P and DA Pam 750-8, finding all deficiencies without error.
Learning Domain - Level:	Psychomotor - Precision
No JPME Learning Areas Supported	This lesson supports the Army Learning Area (ALA) of professional competence, and General Learning Outcome (GLO) 14, Soldiers and Civilians are technically and tactically competent.

Safety Requirements

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

Before starting and 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.

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

Risk Assessment Level

Low - Return Rod and Transfer Mechanism
Assessment: If not removed properly, the return rod and transfer mechnaism can expel causing injury.
Controls: 1. Incorporate procedures and warnings as described in TM 9-1005-201-23&P. 2. Additional instruction and supervision. 3. Ensure bolt is forward. 4. Wear Safety Googles. 5. Step by Step procedures for disassembly/assembly.

Leader Actions: 1. When possible, additional instructor will assist the primary instructor during the block of instruction. 2. Primary Instructor will utilize "stop-go" method when training. Student will notproceed until told to do so. Instructor will spot-check each weapon. 3. Continually emphasize safety to the students. Let students know what the outcome will be if procedures are not followed exactly as prescribed.

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 and cleaned on a weekly basis.

Instructional Lead-in

Explain to the soldier that performing field 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 in peacetime and war.

SECTION III. PRESENTATION

TLO - LSA 1. Learning Step / Activity TLO - LSA 1. Demonstrate knowledge of equipment Characteristics, Capabilities, Features, and Major Components of the M249.

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

INSTRUCTOR NOTE: Refer students to TM 9-1005-201-10, Page 1-5.

SLIDE 92Y10D06-3 (ON): Click on picture to start the video.

a. CHARACTERISTICS: The M249 machine gun is belt-fed, gas-operated, air cooled and fires from the open bolt position. The old style barrel has a regulator for selecting normal and adverse rates of fire in the event that the weapon firing rate slows down (weapon becomes sluggish). It also has a 30 round magazine feeding capability for emergency firing procedures and is fielded with two barrel assemblies.

b. CAPABILITIES: The M249 machine gun can be used as a Squad Automatic Weapon (SAW) or, as a Light Machine Gun (LMG). It can be fired from the shoulder or hand-held position, bipod steadied position, the tripod mounted machine gun position, or from the pedestal or ring mount position. It has two barrel assemblies to extend the life of the barrels, retain accuracy and allow for continuous firing over long periods of time.

c. FEATURES: The quick-change barrel is air-cooled and has a fixed headspace. the bolt is a multiple-lug type which rotates into a positive locked position in the barrel extension prior to firing. Gas is taken from the barrel acting on a piston directly fixed to the bolt carrier (slide). The gas pressure on the old style barrel is based on the gas exhaust system and is controlled by a two position regulator; one for normal conditions, the other delivering additional power for adverse conditions. the new style barrel has a preset gas orifice and rotation of the regulator has no effect on its operation. The new barrel also has a folding carrying handle. The M249 is equipped with a spare barrel in addition to the weapon barrel assembly.

INSTRUCTOR NOTE: Show students' location of major components as they are discussed.

d. DESCRIPTION OF MAJOR COMPONENTS:

1) Barrel Assembly: Houses cartridge for firing, directs projectile, and supports fixed front sight. (Old style barrel to be replaced with new style barrel by attrition.)

2) Heatshield Assembly: Provides protection for the operator's hand from a hot barrel.

3) Receiver Assembly: Serves as a support for all major components. Houses action of weapon and through a series of guide rails, controls functioning of weapon.

4) Rear Sight Assembly: Rear sight is adjustable for both windage and elevation.

5) Cover and Feed Mechanism Assembly: Provides support for rear sight and means for gaining access to feed tray. By means of cam and lever action, feeds linked belt ammunition and holds cartridges in position for stripping, feeding, and chambering.

6) Feed Pawl Assembly: Feeds linked belt ammunition, positions and holds cartridges in position for stripping, feeding and chambering.

7) Feed Tray Assembly: Serves as a guide for positioning cartridges, to assist in chambering.

8) Cocking Handle Assembly: Pulls the moving parts rearward. Moves in a guide rail fixed to the right side of the receiver.

9) Buttstock and Buffer Assembly: Serves as a shoulder support for aiming and firing machine gun. Contains a folding shoulder rest and a hydraulic buffer. Old style buttstock does not contain a hydraulic buffer.

10) Bolt Assembly: Provides stripping, cambering, firing, and extraction, using the propellant gases and recoil spring for power.

11) Slide Assembly: Houses the bolt assembly, firing pin and roller assembly and cams bolt assembly to lock and unlock.

12) Piston Assembly: Transfers power from propelling gases to bolt and slide assemblies to function the machine gun (move recoiling-parts rearward).

13) Spring, Helical Compression: Provides power to the piston assembly for moving slide and bolt

assemblies forward during weapon functiong.

14) Return Rod and Transfer Mechanism Assembly or Rod Assembly Operating: Absorbs recoil from bolt, slide, and piston assemblies at the end of recoil movement, and transfers recoil pressure to the buffer in the buttstock.

15) Trigger Mechanism Assembly: Houses the trigger, sear and safety, and controls the firing of the machine gun.

16) Hand Guard Assembly: Provides thermal insulation to protect the opeator's hands from heat, and houses cleaning equipment.

17) Sling and Snap Hook Assembly: Provides a means of carrying the weapon.

18) Bipod, Assembly: Supports machine gun in prone/sitting position. The telescopic legs can be individually adjusted to three different lengths.

19) Gas Cylinder Assembly: Locks bipod in place on receiver and provides passageway for operating gases.

SLIDE 92Y10D06-3 (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 2. Learning Step / Activity TLO - LSA 2. Clear the M249 Machine Gun.

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 92Y10D06-4 (ON): Click on the picture for the video to play. Be prepared to pause video at 0:57

INSTRUCTOR NOTE: Refer students to TM 9-1005-201-10, Page 2-16.

a. Charge weapon (pulling cocking handle rearward).
b. Be sure bolt is locked in rear position.
c. Push charging handle forward until you hear it click.
d. Push safety to right (RED BAND not visible).
e. If belt feed is used, squeeze latches to open cover assembly. Remove ammunition belt and loose links. If magazine feed is being used, push down on magazine release tab and pull out magazine. Raise cover assembly

NOTE: A cleaning rod may be used to ensure barrel and chamber are cleared.

e. Raise feed tray assembly.
f. Look into chamber.
g. If chamber is clear, lower the feed tray assembly.
h. Close cover assembly, ensuring that it locks shut.
i. Push safety to left (RED BAND visible).
j. Hold cocking handle to rear, pull trigger, and ride bolt forward to close and lock.

INSTRUCTOR NOTE: Have students practice the clearing procedure to ensure understanding.

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 3. Learning Step / Activity TLO - LSA 3. Disassemble the M249 Machine Gun.

Method of Instruction:	Demonstration

Mode of Delivery:	Resident Instruction
Instr Type (I:S Ratio):	Military - ICH (1:10)*
Time of Instruction:	1 hr 30 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 92Y10D06-4: Click the video to play the disassembly portion of the video.

INSTRUCTOR NOTE: Refer students to TM 9-1005-201-10, Page 3-18.

a. Disassemble the M249 Machine Gun.

1) Clear the weapon.

a) Charge weapon (pull cocking handle rearward). Be sure bolt is locked to the rear position. Push charging handle forward until you hear it click.

b) Push safety to right (RED BAND **not** visible).

c) If belt feed is used, squeeze latches to open cover assembly. Remove ammunition belt and loose links. If magazine is used, push magazine release catch and remove the magazine.

d) Raise feed tray assembly. Look into chamber.

e) If magazine well/receiver/chamber is empty, lower feed tray assembly. Close cover assembly. Make sure it locks shut.

f) Push safety to left (RED BAND visible). Hold cocking handle rear, pull trigger, and ride bolt forward to close and lock.

2) Drive spring and Return rod and Transfer Mechanism Assembly removal.

WARNING: Be sure bolt is in forward position before removing return rod and transfer mechanism assembly and spring.

a) If the moving parts are situated at the rear, push safety to left (RED BAND visible), hold the cocking handle with one hand, press trigger and with hand on cocking lever, ride the moving parts slowly forward.

b) Raise cover assembly. Pull the upper retaining pin at the rear of the receiver to the left. Let the buttstock and buffer assembly pivot downward so that the rear opening on receiver is completely free.

c) By holding weapon with one hand on the buttstock, simultaneously push in and upward on the rear end of return rod and transfer mechanism assembly with thumb of other hand. The return rod and transfer mechanism assembly is now released from positioning groove inside receiver. Withdraw the return rod and transfer mechanism assembly and spring.

d) Separate spring from return rod and transfer mechanism assembly.

3) Moving Parts (Operating Rod, Slide Assembly and Bolt Assembly) removal.

a) Pull the cocking handle rearward.

b) Slide the moving parts out the rear of the receiver.

c) Rotate the bolt clockwise to disengage the lug and pull it out of the slide assembly.

d) To separate slide assembly from the piston assembly, press the retaining pin to the left, using a cleaning rod section and lift off the slide assembly.

4) Heat Shield removal.

a) While holding weapon, grasp the heatshield just forward of the barrel handle and lift it off the barrel.

5) Barrel removal.

a) Close cover.

b) Assure folding handle on new style barrel is in carrying (up) position.

c) Depress the locking lever of the barrel with left hand.

d) Hold the carrying handle with the right hand, lift it up and push the barrel forward.

6) Handguard removal.

a) Push handguard retaining pin to the left using cleaning rod section, then remove handguard downward.

7) Gas Regulator removal.

a) Position the gas collar to allow the scraper assembly to be installed.

b) Place the tip (guide) of scraper assembly into the notch in the front left of gas block and hold guide firmly in notch.

c) Holding the scraper assembly in position, turn the collar counterclockwise until the collar can be removed.

NOTE: Position hand to prevent gas regulator from falling out.

d) Remove the gas regulator from the gas block.

8) Buttstock and Buffer Assembly removal.

a) Using cleaning rod section, push lower most retaining pin to the left.

b) Remove buttstock and buffer assembly pulling it rearward while supporting trigger mechanism.

9) Trigger Mechanism removal.

WARNING: Never remove trigger mechanism before weapon is cleared. Removal of the trigger mechanism from a loaded weapon will cause a runaway.

a) Remove trigger mechanism rearward and down.

10) Gas Cylinder removal.

a) Turn gas cylinder to the left or right to release the locking spring, then pull out.

11) Bipod removal.

a) After removal of gas cylinder, the bipod can be separated from the receiver.

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 4. Learning Step / Activity TLO - LSA 4. Troubleshoot the M249 Machine Gun

Method of Instruction:	Demonstration
Mode of Delivery:	Resident Instruction
Instr Type (I:S Ratio):	Military - ICH (1:10)*
Time of Instruction:	
Media Type:	Unassigned
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 92Y10D06-4 (OFF)

SLIDE 92Y10D06-5 (ON) - Click on center to view video. Explain how the cycle of function relates to troubleshooting.

b. Troubleshoot the M249 Machine Gun

INSTRUCTOR NOTE: Refer students to TM 9-1005-201-23&P, Para 2-8, Page 2-11. Review the Troubleshooting section with the students. Choose a malfunction, explain the test or inspection steps and how to determine corrective action.

SLIDE 92Y10D06-5 (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.
Review Summary:	Conduct a Review/Summary of the information presented in the Learning Step

TLO - LSA 5. Learning Step / Activity TLO - LSA 5. Assemble the M249 Machine Gun.

Method of Instruction:	Demonstration
Mode of Delivery:	Resident Instruction
Instr Type (I:S Ratio):	Military - ICH (1:10)*
Time of Instruction:	15 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 92Y10D06-6 (ON): Click on picture to start video. Be prepared to stop video at 4:00

INSTRUCTOR NOTE: Refer students to TM 9-1005-201-10, Page 3-49.

a. Bipod and Gas Cylinder.

1) Place the bipod on the receiver.

2) Push the gas cylinder through the bipod yoke into the receiver.

3) Push the cylinder to the rear while countering the pressure of the locking spring and guiding the end of the cylinder into the receiver with the other hand applying downward pressure.

4) Position recess in cylinder near spring.

5) Turn the cylinder until the spring clicks into the recess at the rear of the gas cylinder.

b. Handguard.

1) Replace all cleaning equipment removed from stowage area.

2) Place the handguard on the receiver and slide it backwards until it stops.

3) With the help of a cleaning rod section, push the handguard retaining pin to the right.

4) Pull downward on the handguard to check if it is secure (assembled correctly).

c. Gas Regulator.

1) Holding barrel in one hand with muzzle up, insert gas regulator into lower end of gas block hole being careful to aline notch on regulator body with notch in gas block.

2) With gas regulator installed and supported on firm surface, place the gas collar on the protruding end of the gas regulator and rotate the collar until it slips into place.

3) Press in and rotate to lock in place.

d. Barrel.

1) Depress the locking lever with left hand.

2) Holding the carrying handle with the right hand, pull the barrel rearward, push downward and lock by releasing barrel locking lever.

e. Trigger Mechanism.

1) Ensure retaining pin is to the left.

2) Install trigger mechanism.

3) Hold in place by pushing the retaining pin into the right side hole of the trigger mechanism assembly.

f. Buttstock and Shoulder Assembly.

WARNING: When the retention (pivot) pin is not positively retained it can work loose during firing. If it works completely out, the trigger mechanism can separate from the weapon. Separation of the trigger mechanism when the weapon is loaded will create a runaway.

1) Supporting trigger mechanism with left hand, Align lower hole in buttstock and buffer assembly with rear hole in trigger mechanism and push lower retaining pin to right.

2) If positive retention does not exist with both grooves of the retention (pivot) pin, notify sustainment maintenance activity.

g. Moving Parts Mechanism.

1) Assemble the slide assembly to the piston, and secure by pushing retaining pin from left to right.

NOTE: Be sure firing pin spring is on firing pin.

2) Put the bolt assembly into the slide assembly. Press in to compress the firing pin, rotate the bolt and hook its driving lug into the slide assembly.

3) Put the moving parts into the receiver with the feed cover open.

4) Locate the bolt lugs and slide cutouts carefully on the rails.

5) At the same time locate the piston into the rear of the gas cylinder.

6) Press the trigger with the forefinger of the other hand so that the sear does not prevent the moving parts from going forward.

h. Spring and Return Rod and Transfer Mechanism Assembly.

CAUTION: Improper assembly of the transfer mechanism can cause damage to the receiver and/or the assembly itself. If the horizontal pins of the transfer assembly are not placed in the hooks, inside the receiver, when the buttstock is pivoted in the up position for pinning, the receiver hooks can be bent. If the horizontal pins of the transfer assembly are rotated to a vertical position and the bottom pin is hooded into the lightening hole in the bottom of the receiver, the pin can be sheared, damaged or lost when the weapon is fired.

1) While rotating in either direction, slide spring on return rod and transfer mechanism assembly.

NOTE: Assure that the headed end of the vertical pin, in the transfer mechanism assembly, is up (on top).

2) Hold the pistol grip with one hand and push the return rod and transfer mechanism assembly into its housing in the rear of the piston with the other.

3) With the thumb of that hand press in and down on the rear of the assembly until its two lugs are positioned in the receiver grooves.

4) Pivot the buttstock and buffer assembly upward into position and push the upper retaining pin to the right.

5) Close the cover assembly.

i Heatshield Installation.

1) Hook the metal extensions of the heat shield assembly under the front sight pins (new style barrel) with the spring clips down on top of barrel.

2) Using care not to pinch yourself, apply downward pressure and snap heatshield onto the barrel.

j. Sling and Snap Hook Assembly installation.

1) Squeeze the latch on the snaphook and place hook in buttstock loop and hole in receiver fore end (either side). Assure sling is not twisted.

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 a Function Check on the M249 Machine Gun.

Method of Instruction:	Demonstration
Mode of Delivery:	Resident Instruction
Instr Type (I:S Ratio):	Military - ICH (1:10)*
Time of Instruction:	15 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 92Y10D06-6 (VIDEO): Click the pause/play button to complete viewing of the video.

INSTRUCTOR NOTE: Refer students to TM 9-1005-201-10, Page 3-65.

a. Assure the safety is to the left (RED BAND visible) and charge the weapon by pulling the cocking handle to the rear to lock the bolt (cock the weapon).
b. Push cocking handle forward until you hear it click.
c. Push safety to the right (RED BAND not visible).
d. Open cover assembly and place link belt of several rounds of M199A1 dummy ammunition on feed tray with first round against cartridge stop, hold in position, and close the cover assembly.
e. Pull the trigger nothing should happen.
f. Push safety to the left (RED BAND visible) and pull the trigger. The bolt assembly should move forward, stripping, feeding, and locking a dummy round (M199A1) in the chamber.
g. Pull cocking handle to rear. Dummy round (M199A1) should extract and eject, and the bolt assembly should remain to rear.
h. Repeat the cycle several times. Each time the cycle is repeated, a link should exit the cover assembly.
i. With bolt assembly held to the rear, check for clear weapon.
j. Hold cocking handle to rear, pull trigger and ride the bolt assembly forward to close and lock on empty chamber.
k. If for any reason the weapon fails the function test, check for missing or improperly assembled components.

SLIDE 92Y10D06-6 (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. Perform preventive maintenance on the M249 Machine Gun.

Method of Instruction:	Demonstration
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

SLIDE 92Y10D06-7 (ON)

INSTRUCTOR NOTE: Have students power up their computer systems and have them access the forms

program. Have students open a DA Form 2404. Check all computer screens to ensure students have a DA Form 2404 displayed. If a computer is not available or not used, have students refer to the DA Form 2404 in the student handout.

INSTRUCTOR NOTE: Instructor can use additional faults to ensure the students are understanding how to complete the DA Form 2404 properly as well as the technical manual.

a. Prepare the header of the DA Form 2404
   1) Enter [**HHC, 13th Military Police Battalion**] in block 1.
   2) Enter [**Machine Gun 5.56mm, M249**] in block 2.

INSTRUCTOR NOTE: Have student enter the serial number from the weapon that they are conducting maintenance on in block 3.

   3) Enter **[84152]** in block 3.
   4) Enter [**28 February XX**] in block 5.
   5) Enter [**Quarterly**] in block 6.
   6) Enter [**TM 9-1005-201-23&P W/C 6**] and **[14 December 1990]** in block 7.

INSTRUCTOR NOTE: Refer students to TM 9-1005-201-23&P, Page 2-3. Review the PMCS procedures with the students.

b. Perform Preventive Maintenance Checks and Services for the M249.
   1) Machine Gun.
      a) Field strip weapon in accordance with TM 9-1005-201-10.

NOTE: Prior to field stripping barrel assembly, check Collar for looseness.

      b) Check for compliance with annual gaging requirements (headspace as minimum). Notify Direct Support Maintenance for scheduling of annual gaging.

NOTE: Weapon is not fully mission capable if annual gaging has not been performed on spare barrel.

   2) Barrel Assembly and Spare Barrel Assembly
      a) Check Barrel for bulges, cracks, bends, burrs, obstructions or pits in chamber and bore, and loose front sights.
      b) Inspect Collar and Gas Regulator for cracks or burrs.

INSTRUCTOR NOTE: Inform the students that the Collar has a chunk missing from it. Walk the students through entering the needed information on the DA Form 2404/5988-E.

      c) Make sure Flash Suppressor/Compensator is not cracked and fastened securely.
      d) Grip should not be cracked or missing.
      e) Handle should not be bent.
      f) Pull back on Handle (New Style Only) to make sure spring is not missing or weak.
   3) Heatshield Assembly
      a) Check heatshield for bent, broken or missing components.

NOTE: Some heat distortion or charring may be observed on the outer non-metallic portion of the heatshield assembly and is not cause for replacement.

   4a) Buttstock/Buffer Assembly.
      a) Check Buttstock and Buffer Assembly for cracks, breaks, or missing components.
      b) Ensure Shoulder Rest locks in both positions.
      c) Push in on Buffer Plunger to make sure spring is not broken or weak.
      d) Check for oil leaks on face of backplate.
   4b) Buttstock and Shoulder Assembly.
      a) Check Buttstock for cracks and missing components.
      b) Ensure Shoulder Rest locks in both positions.
      c) Check for rotational movement between Backplate and Buttstock Tubes.
   5a) Return Rod and Transfer Mechanism Assembly.
      a) Inspect Guide Rod for cracks, breaks or bends.
      b) Ensure two Pins are not missing or broken.
   5b) Rod Assembly, Operating.
      a) Inspect Guide Rod for cracks, breaks or missing Tip.
      b) Check Buffer Spring for breaks.
      c) Insure Pin protrudes equally on both sides from the Buffer Spacer.
   6) Spring Helical, Compression.
      a) Check spring for kinks, damaged or broken strands.
      b) Spring should not have more than one broken strand on the same coil, or more than two broken strands, regardless of location on entire spring.
   7) Bolt and Slide Assembly.
      a) Check Cartridge Extractor for cracks or weak Extractor Spring.

NOTE: A chipped/broken Extractor Claw, weak Extractor Spring or impeded Extractor can cause a

weapon stoppage, more commonly referred to as a failure to extract malfunction.

b) Check Firing Pin for straightness and make sure the Tip is completely rounded.

c) Check Feed Roller for spring tension when compressed.

d) Check Firing Pin Spring for kinks, breaks and retention capability. Inspect for pits on bolt face. Make sure that Firing Pin Hole is round and not elongated.

e) Check for bulges on the top of slide assembly by placing a straight edge (such as a six inch steel rule) on the top and sighting across. If light is detected between the top of the slide assembly and the straight edge a bulge exists.

8) Piston Assembly

a) Inspect Piston Rod for bends, breaks, burrs, or cracks.

b) Inspect Tower Portion and Tube Portion for looseness.

c) Inspect Hole for cracks.

INSTRUCTOR NOTE: Inform the students that the Piston Rod is bent. Walk the students through entering the needed information on the DA Form 2404/5988-E.

NOTE: Looseness between Tower Portion and Tube Portion can cause sluggish operation and contribute to malfunctions.

9) Trigger Mechanism Assembly.

a) Inspect Tripping Lever and Sear for burrs on edges or shoulders.

b) Push back on Tripping Lever to raise Sear. Place Safety in SAFE position (RED BAND not visible). Pull Trigger, Sear should not drop down far enough to lock in the downward position. Place Safety in FIRE position (RED BAND visible). Pull Trigger, Sear should drop down and lock in the downward position.

c) Check Grip Assembly for cracks, and looseness between Pistol Grip and Housing.

d) Plate Assembly should be present and functional.

e) Check Sear Spring to ensure the leg of spring is behind Trigger Pin and not between the Trigger and the Trigger Pin.

NOTE: A bent or improperly installed Sear Spring can cause the Trigger to be extremely hard to pull. If this happens, the Sear does not release the piston assembly and causes a weapon stoppage, more commonly referred to as a failure to fire malfunction. If the Sear Spring is not bent or broken and is properly installed, but the Trigger is hard to pull, the Tripping Lever may be worn out.

10) Cover and Feed Mechanism Assembly.

a) Move Feed Lever back and forth to make sure the feed mechanism operates smoothly without binding.

b) Push in on the two Cover Latches to make sure Retaining Clip is not weak or missing and the Cover Latches do not bind in Cover Assembly.

c) Push on two Cartridge Guides and two Feed Pawls to make sure the springs are not weak, missing or improperly installed.

NOTE: Weak or improperly installed springs under the feed pawls can allow the bolt to underride the cartridge base and cause a weapon stoppage, more commonly referred to as a failure to feed/strip malfunction.

NOTE: Weak or improperly installed springs under the cartridge guides, can allow uncontrolled/loose rounds in the receiver mechanism during the feeding cycle and cause a weapon stoppage, more commonly referred to as a failure to chamber.

d) Ensure cover fully opens under spring tension.

NOTE: It is extremely important that the Cover Spring fully opens the cover and maintains it in the fully open position. This assures sufficient access to the feed tray during loading and clearing operations.

e) Ensure two Pins are in place and that Cover, Cocking Channel functions properly under spring tension.

f) Ensure Hinge Pin Retaining Pin is not bent. This can be checked by rotating the Hinge Pin Retaining Pin and observing any change in the parallel gap between the Cartridge Guides during the rotation of the pin. It is not necessary to disassemble the cartridge guides and hinge pin retaining pin to perform this check.

NOTE: Bent hinge pins can allow a spreading of the cartridge guides and cause a weapon stoppage, more commonly referred to as a failure to chamber malfunction.

11) Feed Tray.

a) Check Feed Tray for cracks, deformation, and two rivets for looseness.

b) Check for gouges just below the depressions of the Link Locators.

NOTE: Severe gouges can catch the link ends which can contribute to feeding malfunctions.

12) Rear Sight Assembly.

a) Assure Rear Sight is securely attached to Cover.

b) check Windage Knob and Elevation Knob, for looseness, binding, or slippage. Ensure Windage Scale is readable, not bent or missing.

c) Ensure Peep sight is not bent or damaged.

13) Bipod Assembly

a) Check both Bipod Legs for cracked, twisted or incomplete assembly.

b) Press in on Leg Latch and move Inner Leg until it locks in the next slot. Inner Leg must not bind.

c) Inspect Bipod Legs to ensure they remain spread apart under spring tension.

NOTE: Spring Pins protrude on inside of Bipod Legs.

14) Handguard Assembly.

a) Check Handguard for cracks; two missing or broken Retaining Pins or Retaining Clips.

NOTE: Some heat distribution or charring may be observed on Handguard and is not cause for replacement.

15) Receiver Assembly.

a) Check Cocking Handle for cracks or distortions, and make sure when handle is pushed all the way forward, that the detent secures it in the groove of the New style Cocking Handle Stop or behind the Old Style Pin Stop.

b) Push in on the Barrel Locking Lever to make sure the lever spring is not missing or weak.

c) Check the Magazine Cover for spring tension, it should return to the closed position when pushed in.

d) check the Ejection Port Cover for spring tension and latching function.

e) Check the Ejector for chipped, distorted, or rounded tip.

NOTE: A chipped, distorted or rounded tip on the Ejector can cause a weapon stoppage, more commonly referred to as a failure to eject.

f) Check Ejector Clip for tension.

g) Ensure Pins are securely held in receiver when pushed fully to the left.

h) Check Receiver for presence of black surface finish and make sure surfaces do not reflect light

16) Gas Cylinder Assembly.

a) Inspect Gas Cylinder Assembly for cracks or distortions, or for gas leakage (white deposit) between Cylinder and Knurled Head.

NOTE: Gas leakage between the Cylinder and Knurled Head can cause sluggish operation and contribute to malfunctions.

17) Machine Gun M249.

a) Assemble weapon in accordance with TM 9-1005-201-23&P.

b) Ensure parts are in good working condition.

c) Assure cocking handle assembly charges the weapon without overriding the slide assembly.

d) Check weapon functioning using linked DUMMY ammunition.

18) Machine Gun M249.

a) Ensure annual headspace gagging and inspection has been done and that the next gagging and inspection is scheduled. As a minimum requirement, the M249 headspace for both weapon and spare barrel assembly should be verified annually by Direct Support Maintenance. This requirement could be increased to four times a year, or after each training cycle, depending on usage factors.

SLIDE 92Y10D06-7 (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 8. Learning Step / Activity TLO - LSA 8. Prepare DA Form 2407 on the M249 Machine Gun.

Method of Instruction:	Demonstration
Mode of Delivery:	Resident Instruction
Instr Type (I:S Ratio):	Military - ICH (1:10)*
Time of Instruction:	15 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 92Y10D06-8 (ON)

a. Now that a fault that requires a higher level of maintenance is identified, you must prepare a DA Form 2407, Maintenance Request Form.

INSTRUCTOR NOTE: Remind students that an automated form DA 5990-E can also be used as a Maintenance Request Form.

1) Enter [**1**] in page number block
2) Enter [**1**] in number of pages block.

3) Enter [**WBAKT0**] in block 1a as the UIC.
4) Enter [**HHC, 13th MP Bn**] in block 1b as the unit and**[765-3132**] in block 1c as the phone number.
5) Block 2a leave blank.
6) Enter [**0**] in block 2b. Obtained from DA Pam 750-8, App B, Table B-6.
7) Block 2c leave blank.

SECTION III - Equipment Data

8) Enter [**1**] in Block 5. Obtained from DA Pam 750-8, App B, Table B-20
9) Enter [**A**] in block 6
10) Enter [**1005-01-127-7510**] in block 7.
11) Enter [**M249**] in block 8.
12) Enter [**Machine Gun 5.56mm**] in block 9.
13) Block 10a leave blank.
14) Enter [**4BG**] in block 10b.
15) Enter the serial number of the weapon needing to be turned in.
16) Enter [**00001**] in block 12.
17) Enter [**12**] in block 13.
18) Block 14 leave blank.
19) Enter [**N**] in Block 19.
20) Enter the Admin number from the weapon.
21) Enter [**F**] in block 22 as the level of work.
22) Enter **[Piston Rod Bent**] in block 24
23) The person submitting the form will sign. Student will sign the SUBMITTED BY block.
21) Enter [**XX060**] in block 34b for the date.

b. Attach DA Form 2404/DA Form 5988-E to the DA Form 2407/DA Form 5990-E.

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

SLIDE 92Y10D06-8 (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 9. Learning Step / Activity TLO - LSA 9. Complete the Perform Maintenance on a Machine Gun, 5.56mm, M249 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:	1 hr 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 10. Learning Step / Activity TLO - LSA 10. Complete the Performance Exam on the Machine Gun, 5.56mm, M249.

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 30 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

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:	15 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 is the SMR Code for Part Number 9348220?
Answer: PAFZZ.

Question: What is the first step before disassembling a weapon?
Answer: Clear the weapon.

Question: What chapter in TM 9-1005-201-23&P covers field maintenance instructions?
Answer: Chapter 2.

Question: Which TM covers function checks?
Answer: TM 9-1005-201-10.

Review/Summary

SLIDE 92Y10D06-9 (ON)

During this lesson, we discussed the following areas:

a. Identified the characteristics, capabilities and features, and major components of the M249.
b. Unloaded and cleared the M249.
c. Disassembled and troubleshot the M249.
d. Reassembled the M249.
e. Performed maintenance on the M249.
f. Prepared the DA Form 2407.

SLIDE 92Y10D06-9 (OFF)

SECTION V. STUDENT EVALUATION

Testing Requirements	The student will be evaluated on disassembly/assembly procedures and conducting field maintenance on a GO/NO-GO basis. Student must receive a GO to be 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 Field Maintenance on the Machine Gun 5.56mm M249
101-92Y10D06 / Version 01.0 ©

Sequence	Media Name	Media Type
1	Classroom Presentation	PPTX

Appendix B - Assessment Statement and Assessment Plan

Assessment Statement: None.

Assessment Plan: None.

PRACTICE EXERCISE(S)/SOLUTIONS(S) FOR LESSON 101-92Y10D06 Version 01.0 ©

Appendix D - Student Handouts

Perform Field Maintenance on the Machine Gun 5.56mm M249
101-92Y10D06 / Version 01.0 ©

Sequence	Media Name	Media Type
2	Student Handout	DOCX
3	Practical Exercise	DOCX