M2 .50 Caliber Machine Gun
071-SAWE01 / Version 1.0
Effective Date 08 Mar 2013

SECTION I. ADMINISTRATIVE DATA

All Courses Including This Lesson

Course Number	Version	Course Title
None		

Task(s) Taught(*) or Supported

Task Number	Task Title
Individual	
071-022-0001 (*)	Maintain a Caliber .50 M2 Machine Gun
071-022-0003 (*)	Load a Caliber .50 M2 Machine Gun
071-022-0004 (*)	Unload a Caliber .50 M2 Machine Gun
071-022-0005 (*)	Correct Malfunctions of a Caliber .50 M2 Machine Gun
071-022-0010 (*)	Mount a Caliber .50 M2 Machine Gun on an M3 Tripod
071-022-0011 (*)	Dismount a Caliber .50 M2 Machine Gun from an M3 Tripod
071-313-3454 (*)	Engage Targets with a Caliber .50 M2 Machine Gun
071-313-3455 (*)	Set Headspace and Timing on a Caliber .50 M2 Machine Gun

Reinforced Task(s)

Task Number	Task Title
None	

Knowledge

Knowledge Id	Title	Taught	Required
071-MNT-0002	Demonstrate Knowledge of Maintenance Procedures	Yes	No
071-WPN-0059	Identity and Location of Parts of Infantry Weapons	Yes	No
071-WPN-0060	Weapons Assembly and Disassembly	Yes	No
071-WPN-0061	Weapons Maintenance	Yes	No
071-WPN-0062	Infantry Weapons Ammunition	Yes	No
071-WPN-0063	Weapons Functions	Yes	No
071-WPN-0064	Target Detection Techniques	No	Yes
071-WPN-0065	Range Estimation Techniques	No	Yes
071-WPN-0067	Firing Positions	Yes	No
071-WPN-0069	Zeroing Techniques	Yes	No
071-WPN-0070	Functioning of the Traversing & Elevation Mechanism	Yes	No
071-WPN-0071	Misfire Procedures	Yes	No
071-WPN-0072	Mounting Machine Guns Tripods	Yes	No
071-WPN-0080	Weapon Capabilities	Yes	No
071-WPN-0082	Methods used for Determining extent of Grazing Fire and Dead Space	No	Yes
071-WPN-0083	Traversing and Elevation Mechanism	Yes	No
071-WPN-0085	Methods of Determining Width and Depth of a Target	No	Yes
071-WPN-0094	Headspace and Timing Procedures	Yes	No

Skill

Skill Id	Title	Taught	Required
071-WPN-0008	Correct Weapons Malfunctions	Yes	No
071-WPN-0007	Detect Weapon Malfunctions	Yes	No
071-WPN-0013	Assemble Parts	Yes	No
071-WPN-0006	Clear Infantry Weapons	Yes	No
071-WPN-0035	Dismount Infantry Weapons from Vehicles	Yes	No
071-WPN-0034	Mount Infantry Weapons on Vehicles	Yes	No
071-WPN-0036	Perform Misfire Procedures	Yes	No
071-WPN-0040	Read MILS on a Traversing Bar	Yes	No
071-WPN-0011	Identify Operational Parts	Yes	No
071-WPN-0004	Identify Types of Ammunition	Yes	No
071-WPN-0019	Identify Unserviceable Ammunition	No	Yes
071-WPN-0005	Ability to Load and Unload Infantry Weapons	Yes	No
071-WPN-0015	Apply Lubricants	Yes	No
071-WPN-0033	Load and Unload Infantry Weapons	Yes	No
071-WPN-0031	Mount a Machine Gun on a Tripod with T&E Mechanism	Yes	No
071-WPN-0025	Mount Night Vision Devices to Infantry Weapons	Yes	No
071-WPN-0010	Perform a Function Check on Infantry Weapons	Yes	No
071-MNT-0001	Interpret a Technical Manual	No	Yes
071-WPN-0023	Engage Targets with Infantry Weapons	Yes	No
071-WPN-0016	Identify Unserviceable Parts	Yes	No
071-WPN-0014	Use Cleaning Materials	No	Yes
071-WPN-0009	Zero Infantry Weapons	Yes	No
071-WPN-0029	Maintain Infantry Weapons	Yes	No
071-WPN-0027	Zero Night Vision Devices to Infantry Weapons	Yes	No
071-WPN-0024	Follow Safety Procedures	No	Yes
071-WPN-0026	Assume Firing Positions	Yes	No
071-WPN-0020	Clean Ammunition	No	Yes
071-WPN-0022	Detect Targets	No	Yes

071-WPN-0041	Identify Elevation Readings from the Vertical Scale of the T&E Mechanism	Yes	No
071-WPN-0012	Remove Parts	Yes	No
071-WPN-0032	Use a Traversing and Elevation Mechanism	Yes	No

Administrative/ Academic Hours

The administrative/academic hours required to teach this lesson are as follows:

Academic	Resident Hours / Methods		
Yes	3 hrs	47 mins	Conference/Demonstration
Yes	11 hrs	0 mins	Practical Exercise (Hands-On)
Yes	0 hrs	10 mins	Conference/Discussion
Yes	0 hrs	0 mins	Test Review
Yes	0 hrs	0 mins	Test
Total Hours:	15 hrs	7 mins	

Test Lesson Number

Hours	Lesson Number

None

Prerequisite Lesson(s)

Lesson Number	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

FD7. This product/publication has been reviewed by the training/educational developers in coordination with the DOTD, MCoE, Ft Benning, GA 31905 FD authority. This product is NOT releasable to students from foreign countries.

References

Number	Title	Date	Additional Information
FM 3-22.65	Browning Machine Gun, Caliber .50 HB, M2	03 Mar 2005	
FM 5-19	COMPOSITE RISK MANAGEMENT	21 Aug 2006	
TM 9-1005-213-10	Operator's Manual for Machine Guns, Caliber .50; M2, Heavy Barrel Flexible, W/E, M48 Turret Type, Soft Mount, (Navy) Fixed Type Right Hand Feed, (Navy) Fixed Type Left Hand Feed (Navy) {TM 02498A-10/2; To 11W2-6-3-161; SW361-AB-MMO-010}	12 Feb 2010	
TM 9-1005-213-23&P	UNIT AND DIRECT SUPPORT MAINTENANCE MANUAL (INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST) FOR MACHINE GUNS, CALIBER .50: M2, HEAVY BARREL FLEXIBLE, W/E (NSN 1005-00-322-9715) (EIC: 4AG) M48 TURRET TYPE (	15 Mar 2002	
TM 9-1005-245-13&P	OPERATORS, UNIT, AND DIRECT SUPPORT MAINTENANCE MANUAL WITH REPAIR PARTS AND SPECIAL TOOLS LIST (RPSTL) FOR MACHINE GUN MOUNTS AND COMBINATIONS FOR TACTICAL/ARMORED VEHICLES AND GROUND MOUNTING M122 MACH	17 Apr 2005	
TM 9-2350-255-10-2	OPERATORS MANUAL FOR OPERATION UNDER UNUSUAL CONDITIONS, MAINTENANCE, AND AMMUNITION VOL 2 OF 2 TANK, COMBAT, FULL TRACKED: 105-MM GUN, M1 (NSN 2350-01-061-2445) TANK, COMBAT, FULL TRACKED: 105-MM GUN, I	28 Dec 1990	
TM 9-2350-264-10-2	Operator's Manual for Tank, Combat, Full-Tracked: 120-MM Gun, M1A1 (NSN: 2350-01-087-1095) (EIC:AAB) General Abrams Volume 2 of 3	07 Sep 2011	

Student Study Assignment

NONE.

Instructor Requirements

Complete a risk management worksheet. It is recommended that you use the ground risk assessment tools provided by the US ARMY COMBAT READINESS/SAFETY CENTER at https://grat.safety.army.mil/ako_auth/grat/default.aspx

Additional Support Personnel Requirements

Name	Student Ratio	Qty	Man Hours
Combat Lifesaver	1:16		12.8
Range Safety Officer	1:32		3.2
Ammunition NCO	1:32		3.2
Driver	1:4		12.8
NCOIC			3.2

Equipment Required for Instruction

ID - Name	Student Ratio	Instructor Ratio	Spt	Qty	Exp
1005-00-288-3565 - SWAB,SMALL ARMS CLEANING	1:8	0:0	No	0	Yes
1005-00-322-9715 - MACHINE GUN,CALIBER .50	1:8	0:0	No	0	No
1005-00-322-9716 - MOUNT,TRIPOD,MACHINE GUN	1:8	0:0	No	0	No
1005-00-556-4102 - ROD,CLEANING,SMALL ARMS	1:8	0:0	No	0	No
1005-00-726-6131 - BARREL,MACHINE GUN	1:8	0:0	No	0	No
1005-01-526-7354 - CLEANING KIT,GUN	1:8	0:0	No	0	No
1010-00-557-4621 - ELEVATION MECHANISM	1:8	0:0	No	0	No
1010-01-151-6227 - ELEVATING MECHANISM,MORTAR	4:32	0:0	No	0	No
1010-01-151-6229 - PINTLE ADAPTER ASSE	1:8	0:0	No	0	No
1010-01-151-6229 - PINTLE ADAPTER ASSE	4:32	0:0	No	0	No
1010-01-180-9319 - MOUNT,GUN	4:32	0:0	No	0	No
1010-01-180-9319 - MOUNT,GUN	1:8	0:0	No	0	No
2320-01-413-3739 - Truck Utility: Expanded Capacity Up Armored HMMWV 4x4 W/E: M1114	1:8	0:0	Yes	4	No
2330-00-141-8049 - TRAILER,TANK	1:32	0:0	No	0	No
4933-00-535-1217 - Gage, Headspace	1:8	0:0	No	0	No
4933-00-716-0041 - EXTRACTOR,RUPTURED CARTRIDGE CAS	1:8	0:0	No	0	No
5220-00-535-1217 - GAGE,HEADSPACE	4:32	0:0	No	0	No
5830-00-164-6622 - Public Address Set: AN/TIQ-2	1:32	0:0	No	0	No
6515-00-137-6345 - Plug Ear Universal Size 400S	1:1	0:0	No	0	No
6530-00-783-7510 - LITTER,NONRIGID,POLELESS	1:32	0:0	No	0	No
6530-01-260-1222 - RESCUE AND TRANSPORT SYSTEM,PATI	1:32	0:0	No	0	No
6545-01-254-9551 - MES,COMBAT LIFESAVER-1999	1:16	0:0	No	0	No
6665-01-381-3023 - Wet Bulb-Globe Temperature Kit	1:32	0:0	No	0	No
6850-00-224-6657 - CLEANING COMPOUND,RIFLE BORE	1:8	0:0	No	0	Yes
6920-00-071-4780 - Target, Silhouette	4:32	0:0	No	0	No

6920-00-078-5123 - TARGET,MACHINE GUN	1:1	0:0	No	0	Yes
6920-01-167-1392 - Target, Silhouette: 25 Meter Zero Target	4:32	0:0	No	0	No
7240-00-089-3827 - Can, Military	1:8	0:0	No	0	No
7920-00-205-1711 - RAG,WIPING	2:8	0:0	No	0	Yes
8415-01-092-0039 - MITTEN,HEAT PROTECTIVE	1:4	0:0	No	0	No
9150-00-889-3522 - LUBRICATING OIL,SEMIFLUID	1:8	0:0	No	0	Yes
9150-01-079-6124 - CLEANER,LUBRICANT AND PRESERVATI	1:8	0:0	No	0	Yes

(Note: Asterisk before ID indicates a TADSS.)

Materials Required

Instructor Materials:

FM 3-22.65 BROWNING MACHINE GUN, CALIBER .50 HB, M2

TM 9-1005-347-10 Operators Manual M2 Machine Gun

FM 5-19 Risk Management

Student Materials:

Note taking material.

Field Uniform.

Classroom, Training Area, and Range Requirements

ID - Name	Quantity	Student Ratio	Setup Mins	Cleanup Mins
17120 General Instruction Building		1:32	25	25
17832 Range, Machine Gun Field Fire		1:32	10	10

Ammunition Requirements

DODIC - Name	Exp	Student Ratio	Instruct Ratio	Spt Qty
AB36 - Cartridge, .50 Cal Linked Dummy M2 (Linked)	N	6:8	1:4	30
A529 - .50 4 Ball-1 Tracer	Y	150:1		

Instructional Guidance

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

Before presenting this lesson:

1. Have on hand identified reference material linked to the lesson plan.
2. Review presentation and develop a list of questions to use during class.
3. Review and prepare conference / discussion material presented.
4. Ensure all equipment listed for this lesson plan (LP) is present, operable, and set up for use before class.
5. Refer to the practical exercise of this lesson plan. When necessary develop additional situations to use during the practical exercise.
6. PowerPoint users: Ensure the SLI file you are using has been called up using Microsoft PowerPoint Viewer and SLI / slide 1 is showing on the screen before class.
7. Whenever noted, slides are available to assist in explanation of task steps. Use slides as needed during class or practical exercise to reinforce training. The instructor may choose to use / not use the LP SLIs as developed, modify the existing SLIs content / order or insert new material as is necessary based on audience analysis to assist in Soldier learning. Changes must be annotated as a pen / ink change on the vault file master LP, VIP LP, and instructor LP. Changes must be approved through Senior Instructor and TDCD 183rd RTI Development Team notified.
8. Whenever necessary, ask leading questions of Soldiers in order to prompt Soldier discussion.
9. Encourage Soldiers to relate their first hand experiences during the activities.
10. Facilitate this lesson using Instructor methodologies.
11. Control group activities using Instructor techniques.

Proponent Lesson Plan Approvals

Name	Rank	Position	Date
Robert Padin	Not available	Approver	08 Mar 2013

SECTION II. INTRODUCTION

Method of Instruction: Conference/Discussion
Instr Type(I:S Ratio/Qty): instructor (4:32/0)
Time of Instruction: 5 mins
Instructional Strategy: Large Group Instruction

Motivator

Today we will cover operating and maintenance procedures for the caliber .50 M2 machine gun. Your proficiency with this weapon could mean the difference between life and death for your Unit.

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:	Engage targets with the .50 cal M2 Machine Gun.
Conditions:	On a live fire range, during daylight hours; given a HMMWV and tripod mounted M2 machine gun, 25 rounds of live linked .50cal ammunition, an assigned sector of fire, while wearing combat equipment and PPE.
Standards:	Clear the weapon, perform a function check to ensure the weapon is operational, load the weapon, engage targets in an assigned sector of fire, correct simulated/actual weapons malfunctions and clear the weapon in accordance with TM 9-1005-313-10 and FM 3-22.68, while adhering to prescribed safety guidelines and procedures.

Safety Requirements

Safety Requirements in a Classroom Setting:
Safety is of the utmost importance in any training environment. During the training process, commanders will utilize the 5-Step Risk Management process to determine the safest and most complete method to train. Every precaution will be taken during the conduct of training.
Safety is everyone's responsibility to recognize, mitigate, and report hazardous conditions.
Instructor note: The instructor will brief the students on the unit/facility SOP for classroom contingencies i.e. what doors will be used to exit the classroom, rally points, severe weather, WBGT/Kestrel set up, etc.

Safety Requirements other than Classroom Settings:
Safety must be paramount in the complex outdoor environment. During the training process, commanders will utilize the 5-Step Risk Management process to determine the safest and most complete method to train. Every precaution will be taken while replicating realistic battlefield conditions.
Safety is everyone's responsibility to recognize, mitigate, and report hazardous conditions.
Instructor note: The instructor will brief the unit/site SOP and Risk Management Worksheet for all potential contingencies encountered during that training period/event i.e. WBGT/Kestrel set up, trail vehicles for PT/foot marches, severe weather, fire, evacuation routes, muzzle awareness, range safety briefs, required medical FLA with driver and medics with emergency equipment, student injury procedures, and rally points etc.

Risk Assessment Level

Moderate - All Army Instructors will conduct a Risk Assessment Worksheet (DA Form 7566, CRM Worksheet, Apr 05) prior to training and brief Soldiers on identified hazards and required controls.

Assessment: The operations officer, in cooperation with the principal instructor, will prepare a risk assessment using the before, during, and after checklist and the risk assessment matrixes contained in Risk Management FM 5-19.

Controls: See Attached DA Form 7566.

Leader Actions: See Attached DA Form 7566.

Environmental Considerations

NOTE: Instructor should conduct a Risk Assessment to include Environmental Considerations IAW FM 3-34.5, Environmental Considerations {MCRP 4-11B}, and ensure students are briefed on hazards and control measures.

Users must comply with all local environmental regulations and guidance while conducting training.

Evaluation

Soldiers will be evaluated by task performance measures.

Instructional Lead-in

Today, you, the gunner, will learn the fundamentals of basic marksmanship with the caliber .50 M2 machine gun. You will perform operator maintenance on and operate the machine gun. Also, you will need to manipulate the T&E mechanism and set headspace and timing.

SECTION III. PRESENTATION

NOTE: Inform the students of the Enabling Learning Objective requirements.

A. ENABLING LEARNING OBJECTIVE

ACTION:	Maintain a Caliber .50 M2 Machine Gun.
CONDITIONS:	As a Gunner given a .50 Caliber M2 machine gun, M3 tripod, MK64 gun cradle mount, pintle, traversing and elevating (T&E) mechanism, linked caliber .50 ammunition, headspace and timing gauge, cleaner lubricant and preservative (CLP), rifle bore cleaner (RBC), Lubricant, Semifluid, Automatic Weapons (LSA), carbon removing compound, bore brush, wiping rags, M4 cleaning rod, small- arms (2-inch) cleaning swabs, and a wooden block.
STANDARDS:	Clear, disassemble, clean, inspect, lubricate, assemble and perform a function check on the .50 Caliber M2 Machine Gun. Turn in an unserviceable weapon, weapon parts, or ammunition. Assemble the gun so that it is operational with no damage or injury to personnel.

ELO A - LSA 1. Learning Step / Activity ELO A - LSA 1. Clear the machine gun.

Method of Instruction: Conference/Demonstration
Instr Type(I:S Ratio/Qty): instructor(4:32/0)
Time of Instruction: 0 hrs 10 mins
Instructional Strategy: Large Group Instruction
Media Type: Actual Equipment
Security Classification: This course/lesson will present information that has a Security Classification of: U - Unclassified.

a. Ensure weapon is in the singleshot mode.
b. Place trigger block on S (safe).
c. Unlock the bolt latch release.
d. Raise the cover.
e. Lift the cartridge extractor.
f. Remove the ammunition belt from the feedway.
g. Place cartridge extractor down.
h. Close the cover.
i. Pull and lock the bolt to the rear, leaving the retracting slide handle to the rear.
j. Move M10 lock selector to the rear (for the Fixed M48 turret and fixed type only).
k. Charge the weapon (for the Fixed M48 turret and fixed type only).
l. Open the cover.
m. Inspect the chamber and T-slot for rounds.
n. Press the bolt latch release.
o. Ease the bolt forward with retracting slide handle.
p. Move the M10 lock selector forward and pull back on the charging handle until a click is heard, then ease the bolt forward (for the Fixed M48 turret and fixed type only).
q. Close the cover.

Check on Learning: Conduct a check on learning and correct any student misunderstandings.

Review Summary: Summarize the learning objective.

ELO A - LSA 2. Learning Step / Activity ELO A - LSA 2. Disassemble the machine gun.

Method of Instruction: Conference/Demonstration
Instr Type(I:S Ratio/Qty): instructor(4:32/0)
Time of Instruction: 0 hrs 15 mins
Instructional Strategy: Large Group Instruction
Media Type: Actual Equipment
Security Classification: This course/lesson will present information that has a Security Classification of: U - Unclassified.

a. Remove the barrel assembly.

(1) Raise the cover group.

(2) Pull the bolt to the rear until the barrel locking spring lug aligns with the 3/8-inch hole in the right side plate of the receiver.

(3) Unscrew the barrel from the receiver.

(4) Remove barrel from receiver.

WARNING

Do not remove the backplate unless the bolt is in the forward position.

b. Remove the backplate assembly.

WARNING

Do not stand behind machine gun while removing backplate or serious injury may result.

(1) Ensure both latch release is in unlocked (single shot) position (flexible type and soft mount type only).

(2) Pull backplate latch lock straight back, while lifting up on backplate latch.

(3) Raise backplate assembly straight up and remove from receiver.

c. Remove the driving spring rod assembly.

(1) Push rear of driving spring rod assembly forward and to the left until free from the side of receiver.

(2) Remove driving spring rod assembly out of the receiver.

d. Remove the bolt assembly.

(1) Remove M10 charger cover(Fixed M48 turret type only).

Note: The bolt stud is removed from the right side of the receiver for the flex and from the left side of the receiver for the Fixed M48 turret type.

NOTE: Bolt latch cannot be pushed up until step 2d is completed.

(2) Retract bolt assembly far enough to align bolt stud with (enlarged) bolt stud hole in receiver

Note: For flex type, bolt latch must be pushed up to remove bolt.

NOTE: If you accidentally move the bolt all the way to the rear, the bolt latch will engage in the bolt latch notches in the top of the bolt. If this occurs, raise the bolt latch and push the bolt forward to align the bolt stud with the clearance hole.
(3) Remove the bolt stud.
(4) Remove bolt assembly from receiver.
5) Disassemble the bolt.
(a) Rotate cartridge extractor upward and remove from left side of bolt.
(b) Remove bolt switch by lifting straight up from bolt.
(c) Place the cocking lever in its rearmost position.
(d) Release firing pin spring by pressing down on sear with swab holder.
(e) Using swab holder section, remove cocking lever pin and cocking lever.
(f) Using thin edge of cocking lever, rotate accelerator stop lock to center of recess in bolt. Pry up accelerator stop lock and remove.
(g) Using thin edge of cocking lever, press accelerator stop from bolt.
(h) Turn bolt over and use thin end of cocking lever to pry accelerator stop from bottom of bolt.
(i) Depress sear and remove sear slide.
(j) Remove sear and sear spring.
(k) Tip the front end of the bolt upward and remove firing pin extension assembly.
(l) Remove firing pin from firing pin extension assembly.
e. Remove the barrel buffer and barrel extension.
(1) Insert pointed end of M4 cleaning rod into hole in receiver and depress buffer body lock while applying rearward pressure on barrel extension assembly.
(2) Remove barrel buffer assembly and barrel extension assembly together.
(3) Separate the assemblies by pushing forward on tips of buffer accelerator.
(4) Disassemble the barrel buffer assembly.
(a) Remove buffer assembly by pushing it out rear of barrel buffer body. Drive accelerator pin assembly from barrel buffer body with swab holder. Remove buffer accelerator.
(b) Use pointed end of M4 cleaning rod to remove breech lock pin assembly and breech lock from barrel extension assembly.
f. Disassemble receiver assembly.
(1) Remove belt holding pawl pin attaching front cartridge stop and rear cartridge stop assembly toc receiver.
(2) Remove front cartridge stop and rear cartridge stop assembly.
(3) Remove bolt holding pawl, belt holding pawl assembly, and two springs.
Note: Hold down on belt holding pawl assembly to prevent loss of springs.
(4) Raise loop of trigger lever pin and rotate pin until loop is in vertical position.
(5) Reach inside receiver and hold trigger lever while removing trigger lever pin assembly.
(6) Remove trigger lever.

Check on Learning:	Conduct a check on learning and correct any student misunderstandings.

Review Summary: Summarize the learning objective.

ELO A - LSA 3. Learning Step / Activity ELO A - LSA 3. Clean machine gun and components.

Method of Instruction:	Conference/Demonstration
Instr Type(I:S Ratio/Qty):	instructor(4:32/0)
Time of Instruction:	0 hrs 10 mins
Instructional Strategy:	Large Group Instruction
Media Type:	Actual Equipment
Security Classification:	This course/lesson will present information that has a Security Classification of: U - Unclassified.

3. Clean machine gun and components.

CAUTION

Do not reverse direction of bore brush while in bore in order to prevent damage to the bore brush and bore.

a. Clean barrel assembly.

(1) Dip bore brush in RBC and run through chamber of barrel.

(2) Unscrew bore brush from cleaning rods once it presents itself at other end.

(3) Remove rods from bore.

(4) Rescrew brush to rods and repeat process until clean.

(5) Dip chamber brush in RBC and clean chamber using clockwise twisting motion.

(6) Unscrew chamber brush from cleaning rods.

(7) Remove rods from bore.

(8) Rescrew chamber brush to rods, and repeat process until clean.

(9) Remove chamber brush from swab holder section.

(10) Insert a cleaning swab in slot.

(11) Run clean swab through bore from chamber end and back.

(12) Repeat until clean swab is obtained.

(13) Clean outside surface of barrel with carbon removing compound.

(14) Wipe all surfaces dry with clean wiping rags.

b. Clean backplate assembly.

Note: Do not submerge backplate assembly in any fluid.

(1) Use clean wiping rags.

(2) Remove foreign matter from backplate assembly.

c. Clean bolt and rod assembly.

(1) Clean all parts of bolt assembly with a cleaning swab saturated with carbon removing compound.

(2) Clean the face of the bolt with a cleaning swab soaked in RBC.

(3) Wipe all parts dry with clean wiping rags.

d. Clean barrel buffer assembly.

(1) Clean all parts of barrel buffer assembly with a cleaning swab saturated with carbon removing compound.

(2) Wipe all parts dry with clean wiping rag.

e. Clean barrel extension assembly.

(1) Clean all parts of barrel extension assembly with a cleaning swab saturated with

carbon removing compound.

(2) Wipe all parts dry with clean wiping rag.

(3) Ensure locking pins are in place.

(4) Check trigger for proper functioning.

(5) Check bolt latch release for proper functioning (flex type only).

f. Clean components.

(1) Clean T&E mechanism.

(a) Remove foreign matter with a clean dry rag.

(b) Use a small-arms cleaning brush to clean numbers on the scale.

(2) Clean M3 tripod, MK64 gun cradle mount, and pintle.

(a) Use a swab saturated with cleaning compound.

(b) Wipe all parts dry with clean rags.

g. Clean ammunition.

(1) Remove foreign matter.

(2) Wipe with clean dry rag.

Check on Learning: Conduct a check on learning and correct any student misunderstandings.

Review Summary: Summarize the learning objective.

ELO A - LSA 4. Learning Step / Activity ELO A - LSA 4. Inspect for serviceability.

Method of Instruction:	Conference/Demonstration
Instr Type(I:S Ratio/Qty):	instructor(4:32/0)
Time of Instruction:	0 hrs 10 mins
Instructional Strategy:	Large Group Instruction
Media Type:	Actual Equipment
Security Classification:	This course/lesson will present information that has a Security Classification of: U - Unclassified.

4. Inspect for serviceability.

a. Inspect bolt and rod assembly.

(1) Inspect driving spring rod assembly for flat spots and cracks on springs.

(2) Ensure that springs operate freely and that rod and pin are not cracked, bent or broken.

(3) Check movement of cartridge extractor in bolt. Cartridge extractor should raise and lower without binding.

(4) Check movement of cartridge ejector.

(5) Inspect for cracks and burrs.

(6) Inspect bolt switch, cocking lever pin, cocking lever, accelerator stop lock, accelerator stop, and sear slide for cracks, bends, and burrs.

(7) Inspect sear for cracks and burrs, and inspect sear notch for wear, chips, or burrs.

(8) Inspect sear spring for breaks of lack of tension.

(9) Inspect firing pin for cracks and chipped or sharp tip.

Note: Tip should be smooth and well-rounded.

(10) Check firing pin extension for cracks, burrs, and free movement in bolt.

(11) Ensure shoulder that engages sear has a sharp angle and is free of chips and burrs.
(12) Ensure bolt is free of burrs and cracks.
b. Inspect barrel buffer assembly.
(1) Inspect buffer body lock for tension, staking, and retention in barrel buffer body.
(2) Inspect buffer accelerator for broken claws or chipped tips.
(3) Inspect accelerator pin assembly for broken or missing spring.
(4) Inspect buffer spring for cracks or breaks.
(5) Inspect breech lock depressors. They must have slight vertical (up and down) movement but should have no lateral (side to side) movement.
c. Inspect barrel extension assembly.
(1) Make sure barrel extension assembly is not bent and that the bolt guideways are smooth and free of burrs.
(2) Inspect threads of barrel extension assembly for damage.
(3) Ensure barrel locking spring is staked and fully seated in its groove.
(4) Ensure the locking end of the spring has good tension and the lug is not damaged.
(5) Check breech block for smooth movement in guideways of barrel extension assembly.
Note: If breech lock exhibits excessive wear (bolt locking surface and/or mating surfaces appears rounded and/or metal displacement appears cupped), replace breech lock.
d. Inspect retracting slide handle.
(1) Inspect for cracks or other visible damage.
(2) Inspect for weak or broken retracting springs.
(3) Ensure cotter pins are present and in good condition
(4) Ensure safety wire is in place and properly laced.
e. Inspect M10 Manual Charger.
(1) Inspect charger cable for fraying or kinks.
(2) Inspect all surfaces for any other visible damage.
(3) All other deficiencies noted should be reported to field maintenance.
f. Inspect receiver assembly.
(1) Ensure feedway is clear of obstructions.
(2) Inspect belt holding pawl brackets for looseness, bends, or cracks
(3) Inspect side plates for bends that would affect movement of any internal components.
(4) Inspect for cracks and burrs at backplate grooves.
(5) Check operation of rear sight (flexible type only).
(6) Ensure windage screw and elevation screw function without binding.
(7) Ensure sight assembly is secured tightly to receiver.
(8) Ensure trigger lever moves freely without binding.
(9) Ensure trigger lever pin locks in place.
(10) Ensure cotter pin is in place on extractor switch.
g. Inspect components.
(1) Inspect T&E mechanism.

(a) Inspect hand wheels and threads for burrs and rust.

(b) Check hand wheels for smooth operation.

(c) Ensure traversing slide lock lever has spring action.

(d) Ensure elevating mechanism sleeve fits on traversing bar and clamps firmly.

(e) Check traversing and elevating scales for legibility.

(f) Inspect quick-release pin and chain for burrs and rust.

(g) Check quick-release pin for presence of spring loaded balls.

(2) Inspect M3 tripod.

(a) Check for completeness of tripod.

(b) Ensure all nuts and bolts are tightly secured.

(c) Check for visible cracks on legs and tripod head.

(d) Check for missing, broken, or inoperative sleeve lock latch.

(e) Check pintle lock assembly. Check surfaces of pintle, bolt, and nut for burrs and rust.

(f) Ensure cotter pin is present and in good condition.

(g) Check locking action of front leg clamping assembly.

(h) Check that rear legs lock in the open position.

(i) Ensure sleeve latch notch and right leg slide notch engage completely.

(j) Ensure latch spring has good tension.

(k) Check telescoping, indexing, and locking action of rear legs and front leg clamping assembly.

(3) Inspect MK64 gun cradle mount.

(a) Check for missing or damaged parts.

(b) Check for rust, cracks, and burrs.

(c) Check pintle lock assembly for proper operation.

(d) Check surfaces of pintle, bolt, and nut for burrs and rust.

(e) Ensure cotter pin is present and in good condition.

(4) Inspect ammunition.

(a) Check for damage or corroded rounds.

(b) Turn in damaged or corroded rounds.

Check on Learning: Conduct a check on learning and correct any student misunderstandings.

Review Summary: Summarize the learning objective.

ELO A - LSA 5. Learning Step / Activity ELO A - LSA 5. Lubricate the machine gun.

Method of Instruction:	Conference/Demonstration
Instr Type(I:S Ratio/Qty):	instructor(4:32/0)
Time of Instruction:	0 hrs 5 mins
Instructional Strategy:	Large Group Instruction
Media Type:	Actual Equipment
Security Classification:	This course/lesson will present information that has a Security Classification of: U - Unclassified.

5. Lubricate the machine gun.

a. Lubricate the barrel assembly.

(1) Place a clean cleaning swab in swab holder.

(2) Dip swab in lubricating oil and run through chamber and bore of barrel.

b. Lubricate backplate assembly.

(1) Use a clean rag saturated with lubricating oil.

(2) Lubricate exterior of backplate assembly very lightly.

c. Lubricate bolt and rod assembly.

(1) Use a clean rag saturated with lubricating oil.

(2) Apply light coat of lubricating oil.

d. Lubricate barrel buffer assembly.

(1) Use a clean rag saturated with lubricating oil.

(2) Apply light coat of lubricating oil.

e. Lubricate barrel extension assembly.

(1) Use a clean rag saturated with lubricating oil.

(2) Apply light coat of lubricating oil.

f. Lubricate retracting slide handle.

(1) Use a clean rag saturated with lubricating oil.

(2) Apply light coat of lubricating oil.

g. Lubricate M10 manual charger.

(1) Use a clean rag saturated with lubricating oil.

(2) Apply light coat of lubricating oil.

h. Lubricate receiver assembly.

(1) Use a clean wiping rag saturated with lubricating oil.

(2) Apply light coat of lubricating oil.

Check on Learning: Conduct a check on learning and correct any student misunderstandings.

Review Summary: Summarize the learning objective.

ELO A - LSA 6. Learning Step / Activity ELO A - LSA 6. Assemble the machine gun.

Method of Instruction: Conference/Demonstration
Instr Type(I:S Ratio/Qty): instructor(4:32/0)
Time of Instruction: 0 hrs 15 mins
Instructional Strategy: Large Group Instruction
Media Type: Actual Equipment
Security Classification: This course/lesson will present information that has a Security Classification of: U - Unclassified.

6. Assemble the machine gun.

a. Install trigger lever.

Note: Ensure trigger lever bar is aligned directly under timing nut.

(1) Align hole in trigger lever bar with mounting hole in receiver.

(2) Place trigger lever pin assembly, loop end vertical, in assembly hole on left side plate of receiver.

(3) Match key on trigger lever pin assembly with keyway inside plate of receiver and

install pin completely.
(4) Rotate trigger lever pin assembly 90 degrees to lock securely in place, and fold down out of the way.
(5) Check that trigger lever bar moves freely.
Note: Determine direction of feed before proceeding. Left hand feed is shown
b. Install receiver assembly.
(1) Place right hand rear cartridge stop assembly and front cartridge stop on belt holding pawl bracket.
(2) Install belt holding pawl pin with hooked end to rear.
Note: For the remainder of substeps refer to.
(3) Seat belt holding pawl springs in place on belt holding pawl bracket.
(4) Place belt holding pawl assembly on belt holding pawl springs. Compress springs and insert belt holding pawl pin.
(5) Install lock pin on belt holding pawl pin.
c. Install barrel extension assembly.
(1) Install breech lock in barrel extension assembly with double beveled edge up and to the front of barrel extension assembly.
(2) Install breech lock pin assembly in barrel extension assembly. Ensure both ends of breech lock pin assembly are flush with sides of barrel extension assembly.
d. Install barrel buffer assembly.
(1) Place buffer accelerator (tips up) into barrel buffer body, aligning mounting holes.
(2) Install barrel buffer pin assembly. Ensure both ends of the barrel buffer pin assembly are flush with the sides of the barrel buffer body.
(3) Align key on barrel buffer assembly with key slot in barrel buffer body, and slide barrel buffer assembly into barrel buffer body.
(4) Hold barrel buffer assembly with buffer accelerator up and engage notch on shank of barrel extension assembly with cross groove in piston rod of barrel buffer assembly.

CAUTION

While installing barrel buffer assembly and barrel extension assembly into receiver, maintain thumb pressure on buffer accelerator. Align breech lock depressors in grooves of barrel extension assembly and push barrel buffer assembly forward.
(6) Install barrel buffer assembly and barrel extension assembly in receiver.
e. Install bolt assembly.
(1) Attach firing pin to firing pin extension assembly.
(2) Place firing pin extension assembly into bolt with notch of firing pin extension assembly down.
(3) Slide firing pin extension assembly forward so the tip of firing pin protrudes from face of bolt.
(4) Place sear spring in recess on bolt. Ensure sear spring is installed correctly.
(5) Slide sear down into vertical grooves at rear of bolt with wedge shaped lug pointed outward and upward.
Note: Ensure that sear and sear spring engage properly. Sear also has a recess for sear spring.

(6) Compress sear spring by pressing down on sear. Install sear slide from left side of bolt in grooves of bolt with V notch down.
(7) Insert pin end of accelerator stop (26) through bottom of bolt.
(8) Turn bolt over and place forked end of accelerator stop lock on notched end of accelerator stop.
Note: Base end of accelerator stop should be installed with long end forward so beveled edges match.
(9) Using the wedge-shaped end of the cocking lever, press down on the flat end of the accelerator stop lock, and move the cocking lever into the groove on the left side of the bolt.
(10) Insert cocking lever, with rounded nose on lower end of lever to rear, into slot in top of bolt.
(11) Align hole in cocking lever with holes in the bolt. Insert cocking lever pin from left side.

WARNING

Do not attempt to release the firing pin with cocking lever forward. The cocking lever could spring back forcibly and cause serious injury to the hand.
(12) Push cocking lever forward to charge firing pin then return cocking lever to rearward position.
(13) Trip firing pin by depressing top of sear (24) with a swab holder section.
Note: A sharp metallic sound indicates firing pin spring is in good condition.
(14) Place cocking lever in forward position after testing firing pin release.
Note: Determine direction of feed before installing bolt switch left or right. Left hand feed is illustrated below.
(15) Place bolt switch in position so that the feed groove is continuous for feed direction selected.
(16) Hold cartridge extractor in vertical position. Insert shank end of cartridge extractor into left side of bolt.
Note: Ensure cartridge extractor fits into bolt as far as possible, with no visible cracks in bolt or extractor.
(17) Rotate cartridge extractor downward to full horizontal position.
(18) Check that flange on bottom of cartridge extractor has engaged shoulder on bolt.
(19) Ensure flange is not cracked.

CAUTION

When installling the bolt assembly, do not trip buffer accelerator.
(
20) Push bolt assembly forward into receiver until bolt latch engages notches in top of bolt assembly.
Note: Ensure cocking lever is forward before installing bolt assembly into receiver.
(21) Remove barrel extension and buffer assembly from the receiver.
(22) Install bolt assembly into barrel extension and buffer assembly.
(23) Install into the receiver.
(24) Raise bolt latch and push bolt assembly into receiver.

(25) Align hole in bolt assembly with stud assembly hole in receiver and install bolt stud in hole in bolt assembly.

Note: The bolt stud is installed in the right side of the receiver and bolt for the flex and in the left side of the receiver and bolt for the Fixed M48 turret type.

(26) Place bolt in forward position.

(27) Replace M10 charger cover (Fixed M48 turret type and fixed type only).

f. Install drive spring rod assembly.

(1) Install driving spring rod assembly in upper right hand corner of bolt.

(2) Push forward and to the right until driving spring rod assembly engages in hole in side plate of receiver and not in the groove for the backplate.

g. Install backplate assembly.

(1) Install backplate assembly in receiver grooves.

(2) Pull backplate latch lock while lifting up on backplate latch.

(3) Lower backplate assembly down until engaged in receiver.

h. Install barrel assembly.

(1) Retract bolt far enough for barrel locking spring lug to center in barrel locking spring hole on right hand side of receiver.

(2) Install and screw barrel assembly completely into receiver.

(3) Ensure barrel is completely installed.

(4) Unscrew barrel assembly until two clicks are heard and adjust headspace.

Note: During headspacing, while inserting the barrel, the charging handle must be retracted rearward to center the square on the barrel-locking spring in the 3/8 inch hole on the right side of the receiver. Ensure the firing pin is retracted before attempting to insert gage. Once headspace is set, check barrel to ensure it is locked with the bolt in the forward position. Attempt to turn in either direction. Barrel should not turn. If barrel does turn, stop here. Do not attempt to fire the gun. Notify the unit armor and/or evacuate weapon to support maintenance.

Check on Learning:	Conduct a check on learning and correct any student misunderstandings.
Review Summary:	Summarize the learning objective.

ELO A - LSA 7. Learning Step / Activity ELO A - LSA 7. Perform a function check.

Method of Instruction:	Conference/Demonstration
Instr Type(I:S Ratio/Qty):	instructor(4:32/0)
Time of Instruction:	0 hrs 5 mins
Instructional Strategy:	Large Group Instruction
Media Type:	Actual Equipment
Security Classification:	This course/lesson will present information that has a Security Classification of: U - Unclassified.

7. Perform a function check.

a. Place the weapon in the single-shot mode.

Note: Bolt should lock to rear in single-shot mode.

b. Open the cover and pull the retracting slide handle to the rear.

c. Hold the retracting slide handle to the rear; depress bolt latch release and ease the bolt forward.

d. Press trigger; weapon should fire.

e. Place the weapon in the automatic-fire mode.

f. Pull the retracting slide handle to the rear and hold. Bolt should not lock to rear in automatic-fire mode.

g. Release pressure on the retracting slide handle and ease the bolt forward.

h. Press trigger; weapon should fire.

Check on Learning: Conduct a check on learning and correct any student misunderstandings.

Review Summary: Summarize the learning objective.

CHECK ON LEARNING (ELO A): Conduct a check on learning and correct any student misunderstandings.

REVIEW SUMMARY(ELO A): Summarize the learning objective.

B. ENABLING LEARNING OBJECTIVE

ACTION:	Set Headspace and Timing on a Caliber .50 M2 Machine Gun
CONDITIONS:	As a gunner, given a caliber .50 machine gun (tripod or cupola mounted), a headspace and timing gage, and an assistant gunner. You have been directed to set head space and timing on the weapon.
STANDARDS:	Set headspace to ensure the GO end of the headspace gage will enter the "T"-slot and the NO GO end will not. Set timing for the weapon to fire when recoiling parts are between 0.020 and 0.116 inch out of battery.

ELO B - LSA 1. Learning Step / Activity ELO B - LSA 1. Clear the weapon.

Method of Instruction: Conference/Demonstration
Instr Type(I:S Ratio/Qty): instructor(4:32/0)
Time of Instruction: 0 hrs 5 mins
Instructional Strategy: Large Group Instruction
Media Type: Actual Equipment
Security Classification: This course/lesson will present information that has a Security Classification of: U - Unclassified.

1. Clear the machine gun.

a. Ensure weapon is in the singleshot mode.

b. Place trigger block on S (safe).

c. Unlock the bolt latch release.

d. Raise the cover.

e. Lift the cartridge extractor.

f. Remove the ammunition belt from the feedway.

g. Place cartridge extractor down.

h. Close the cover.

i. Pull and lock the bolt to the rear, leaving the retracting slide handle to the rear.

j. Move M10 lock selector to the rear (for the Fixed M48 turret and fixed type only).

k. Charge the weapon (for the Fixed M48 turret and fixed type only).

l. Open the cover.

m. Inspect the chamber and T-slot for rounds.

n. Press the bolt latch release.

o. Ease the bolt forward with retracting slide handle.

p. Move the M10 lock selector forward and pull back on the charging handle until a click is heard, then ease the bolt forward (for the Fixed M48 turret and fixed type only).

q. Close the cover.

WARNING

Heat protective mitten should be used when barrel is hot.

Check on Learning:	Conduct a check on learning and correct any student misunderstandings.
Review Summary:	Summarize the learning objective.

ELO B - LSA 2. Learning Step / Activity ELO B - LSA 2. Adjust headspace.

Method of Instruction:	Conference/Demonstration
Instr Type(I:S Ratio/Qty):	instructor(4:32/0)
Time of Instruction:	0 hrs 15 mins
Instructional Strategy:	Large Group Instruction
Media Type:	Actual Equipment
Security Classification:	This course/lesson will present information that has a Security Classification of: U - Unclassified.

2. Adjust headspace.

DANGER

Weapon will explode if this step is not followed. Ensure retracting slide handle is retracted while inserting barrel.

a. Raise top cover all the way up.

CAUTION

Be careful not to depress the trigger, since this causes the firing pin to release. The firing pin should never be released with the gage in the T-slot, as this could damage the firing pin and gage.

b. Grasp retracting slide handle and retract bolt to align barrel locking spring lug with the 3/8 inch hole in the right side of receiver while inserting barrel (Figure 1).

c. Holding bolt in the retracted position, screw the barrel fully into the barrel extension.

d. With bolt still retracted, unscrew barrel two notches (clicks).

WARNING

Check barrel to ensure it is locked with the bolt in the forward position. Attempt to turn barrel in either direction; barrel should not turn. If barrel does turn, stop here; do not attempt to fire the gun. Notify field maintenance.

e. Release retracting slide handle and allow bolt to go forward.

f. Pull bolt to rear with retracting slide handle and hold(withdraws firing pin into bolt).

Otherwise headspace gage won't fit at all.

g. Single shot mode.

Note: Steps 2h, 2i and 2j are for Fixed M48 turret type and fixed type only.

(1) Hold retracting slide handle.

(2) Push the bolt latch release.

(3) Slowly return bolt forward.

Note: Do not slam bolt forward.

h. Move M10 lock selector to rearward position. Charge weapon locking bolt to rear (Figure 3).

i. Move M10 lock selector to forward position.

Note: Do not insert any objects such as coins and feeler gages between the barrel extension and trunnion block while retracting the bolt to verify or adjust headspace. Placing an object between the barrel extension and trunnion can cause excessive headspace adjustment.

j. Pull on the retracting slide handle until a click is heard, then ease bolt forward.

Note: Do not allow bolt to slam forward.

k. Remove slack in the bolt and barrel extension by retracting the retracting slide handle until the barrel extension begins to separate (but not more than 1/16 inch) from the trunnion block (10) (Figure 4).

Note: Ensure GO/NO GO gage does not have any broken, bent, rusted, or pitted areas or other forms of mutilation that could affect dimensional tolerances. When the charging handle is retracted a rearward pressure is placed on the bolt, breech lock, and barrel extension. It is at this point the distance between the bolt face and the end of the barrel reflects a correct headspace.

l. While maintaining 1/16 inch separation, raise cartridge extractor and attempt to insert the GO end of the GO/NO GO headspace gage (12) in the T slot between the face of the bolt (13) and the rear of barrel (14) all the way to the ring (15), then attempt to insert the NO GO end of the GO/NO GO headspace gage.

(1) If GO end of headspace gage enters freely all the way to the ring and NO GO end does not enter, headspace is correct. Proceed to Adjust Timing.

(2) If GO end of headspace gage does not enter T-slot freely, headspace is too tight. Proceed to Step 2l(2)(a).

(a) If GO end of headspace gage will not enter T-slot, retract bolt so you can see barrel locking spring lug in center of 3/8 inch hole on right side of receiver.

(b) Unscrew barrel one notch (click).

WARNING

Check barrel to ensure it is locked with the bolt in the forward position. Attempt to turn barrel in either direction; barrel should not turn. If barrel does turn, stop here, do not attempt to fire the gun. Notify field maintenance.

CAUTION

Do not unscrew barrel more than a total of five notches (clicks) beyond the first setting of two clicks for a total of seven. If this condition occurs, turn in machine gun to field maintenance for inspection.

(c) Repeat steps 2l(2)(a) and 2l(2)(b) above until NO GO end of headspace gage does

not enter and GO end of headspace gage enters, if necessary.

Check on Learning: Conduct a check on learning and correct any student misunderstandings.

Review Summary: Summarize the learning objective.

ELO B - LSA 3. Learning Step / Activity ELO B - LSA 3. Adjust Timing.

Method of Instruction: Conference/Demonstration
Instr Type(I:S Ratio/Qty): instructor(4:32/0)
Time of Instruction: 0 hrs 10 mins
Instructional Strategy: Large Group Instruction
Media Type: Actual Equipment
Security Classification: This course/lesson will present information that has a Security Classification of: U - Unclassified.

3. Adjust Timing.

a. Ensure proper headspace before adjusting timing.

b. Pull bolt to rear with retracting slide handle to cock machine gun; while holding handle, depress the bolt latch release and slowly return bolt forward. Do not press trigger.

c. Move M10 lock selector to rearward position. Charge the weapon, locking bolt to rear.

(1) Charge the weapon.

(2) Lock bolt to the rear.

d. Move M10 lock selector to the forward position.

e. Pull on retracting slide handle until a click is heard, then ease the bolt forward.

Note: Do not allow bolt to slam forward.

f. Place safety on fire position.

WARNING

Never charge gun with backplate off. Do not stand directly behind gun while removing backplate.

g. Grasp retracting slide handle and retract bolt just enough to insert FIRE gage (3) with beveled edge against barrel notches between barrel extension and trunnion block. Release retracting slide handle slowly. Insert FIRE Gage.

h. Remove backplate assembly.

WARNING

Failure to reinstall the backplate may lead to inconsistent timing adjustment and lead to weapon stoppage or explosion. Do not attempt to fire the gun by pushing up on the trigger bar with the backplate assembly removed.

i. Screw timing adjustment nut clockwise all the way down (Nut should turn hard).

j. Remove FIRE gage.

(1) Reinstall backplate assembly.

(2) Reinsert FIRE gauge.

k. Remove backplate assembly.

l. Screw timing adjustment nut up counter clockwise one click.

m. Remove FIRE gage.

n. Reinstall backplate assembly, and reinsert FIRE gage.

o. Attempt to fire by depressing trigger.

Note: Repeat, turning timing adjustment nut up one click at a time, until gun fires.

p. Remove backplate assembly and turn timing adjustment nut two more clicks up (to the right).

Note: Do not turn the timing adjustment nut any more.

q. Remove FIRE gage.

r. Install backplate assembly.

Note: After setting headspace and timing, complete a "function check" for flex and soft mount machine guns.

Check on Learning:	Conduct a check on learning and correct any student misunderstandings.
Review Summary:	Summarize the learning objective.

ELO B - LSA 4. Learning Step / Activity ELO B - LSA 4. Perform Function Check.

Method of Instruction:	Conference/Demonstration
Instr Type(I:S Ratio/Qty):	instructor(4:32/0)
Time of Instruction:	0 hrs 5 mins
Instructional Strategy:	Large Group Instruction
Media Type:	Actual Equipment
Security Classification:	This course/lesson will present information that has a Security Classification of: U - Unclassified.

4. Perform Function Check.

a. Pull retracting slide handle to rear to charge machine gun.

b. Depress bolt latch release and slowly ease bolt forward with retracting slide handle.

c. Grasp retracting slide handle and retract bolt just enough to insert NO FIRE gage with beveled edge against barrel notches between barrel extension and trunnion block.

d. Release retracting slide handle slowly.

e. Depress trigger, gun should NOT fire.

Note: If machine gun does fire, it has early timing. Re-adjust timing or notify field maintenance.

f. Retract bolt just enough to remove NO FIRE gage and insert FIRE gage with beveled edge against barrel notches between barrel extension and trunnion block.

g. Release retracting slide handle slowly.

h. Depress trigger; machine gun should fire. Timing is now complete.

i. Re-adjust timing or notify field maintenance,If machine gun does not fire.

j. Repeat steps 4a through 4h with both FIRE and NO FIRE gages two more times to ensure that adjustment is correct.

Note: Steps k through p are for Fixed M48 turret type, flex type, and fixed type only.

k. Remove FIRE gage.

l. Move M10 lock selector to rearward position.

m. Charge weapon locking bolt to rear.

n. Move M10 lock selector to forward position.

o. Pull on charging handle until a click is heard, then ease bolt forward.

p. Verify timing two more times.

q. Perform Safety/Function check for Fixed M48 turret type, flex type, and fixed type.

(1) Place safety to "S" (safe) position.

(2) Move M10 lock selector to the rear.

(3) Charge weapon.

(4) Move M10 lock selector forward.

(5) Pull charging handle until a click is heard, then ease bolt forward.

(6) Press trigger. Weapon should not fire.

(7) Place safety to "F" (fire) position.

(8) Press trigger. Weapon should fire.

Check on Learning: Conduct a check on learning and correct any student misunderstandings.

Review Summary: Summarize the learning objective.

CHECK ON LEARNING (ELO B): Conduct a check on learning and correct any student misunderstandings.

REVIEW SUMMARY(ELO B): Summarize the learning objective.

C. ENABLING LEARNING OBJECTIVE

ACTION:	Load a Caliber .50 M2 Machine Gun.
CONDITIONS:	As a gunner, given a .50 caliber M2 machine gun, mounted on a tripod or cupola, linked .50 caliber ammunition. You have been directed to load the .50 caliber M2 machine gun.
STANDARDS:	Clear the .50 caliber machine gun, load the linked ammunition in the feed tray groove, ensure the cover is closed, a round remains in the tray groove, and the ammunition feeds correctly.

ELO C - LSA 1. Learning Step / Activity ELO C - LSA 1. Load ammunition.

Method of Instruction: Conference/Demonstration
Instr Type(I:S Ratio/Qty): instructor(4:32/0)
Time of Instruction: 0 hrs 10 mins
Instructional Strategy: Large Group Instruction
Media Type: Actual Equipment
Security Classification: This course/lesson will present information that has a Security Classification of: U - Unclassified.

1. Clear the .50 caliber M2 machine gun.

2. Load ammunition.

a. Ensure the bolt is forward.

b. Ensure the correct front cartridge stop is installed.

c. Open the cover.

CAUTION

Do not close cover when bolt is held rearward as damage may occur when bolt goes forward.

d. Insert the double-loop end of the belt in the feed tray until the belt-holding pawl engages the first round.

e. Close the cover.

f. Pull the retracting slide handle rearward, retracting the bolt all the way to the rear.

g. Release handle.

Note: If the .50 caliber M2 machine gun is set for single shot fire, the bolt will remain in the rearward position.

(1) Move the retracting slide handle forward.

(2) Release the bolt with the bolt latch release.

Note: If the .50 caliber M2 machine gun is set for automatic fire, the retracting slide handle will go forward with the bolt when released.

Check on Learning: Conduct a check on learning and correct any student misunderstandings.

Review Summary: Summarize the learning objective.

CHECK ON LEARNING (ELO C): Conduct a check on learning and correct any student misunderstandings.

REVIEW SUMMARY(ELO C): Summarize the learning objective.

D. ENABLING LEARNING OBJECTIVE

ACTION:	Unload a Caliber .50 M2 Machine Gun
CONDITIONS:	As a gunner, given a .50 caliber M2 machine gun mounted on a tripod or cupola, loaded with linked .50 caliber ammunition. You have been directed to unload the .50 caliber M2 machine gun.
STANDARDS:	Remove all ammunition and links from the .50 caliber M2 machine gun. Correctly clear the weapon, and verify the chamber is empty.

ELO D - LSA 1. Learning Step / Activity ELO D - LSA 1. Unload an .50 caliber M2 machine gun.

Method of Instruction: Conference/Demonstration
Instr Type(I:S Ratio/Qty): instructor(4:32/0)
Time of Instruction: 0 hrs 5 mins
Instructional Strategy: Large Group Instruction
Media Type: Actual Equipment
Security Classification: This course/lesson will present information that has a Security Classification of: U - Unclassified.

1. Remove all ammunition and links from .50 caliber M2 machine gun.

a. Ensure weapon is in the single-shot mode.

b. Place trigger block on S (safe).

c. Unlock the bolt latch release.

d. Raise the cover.

e. Lift the cartridge extractor.

f. Remove the ammunition belt from the feed way.

DANGER

Round may fall to surface and possibly explode.

g. Place cartridge extractor down.

h. Close the cover.

2. Clear the .50 caliber M2 machine gun.

a. Open the cover.

WARNING

Chamber may be hot. Use caution while inspecting the T-slot.

b. Visually inspect the chamber and T-slot for rounds.

c. Press the bolt latch release.

d. Ease the bolt forward with retracting slide handle.

e. Close the cover.

3. Verify the chamber is empty.

Check on Learning: Conduct a check on learning and correct any student misunderstandings.

Review Summary: Summarize the learning objective.

CHECK ON LEARNING (ELO D): Conduct a check on learning and correct any student misunderstandings.

REVIEW SUMMARY(ELO D): Summarize the learning objective.

E. ENABLING LEARNING OBJECTIVE

ACTION:	Correct Malfunctions of a Caliber .50 M2 Machine Gun
CONDITIONS:	As a gunner, given a loaded Caliber .50 M2 machine gun mounted on a tripod or cupola, a sector of fire, an assistant gunner, linked caliber .50 ammunition, a ruptured cartridge extractor, a cleaning rod, cleaner, lubricant, preservative (CLP), lubricating oil, Arctic weather (LAW), cleaning swabs, and a headspace and timing gauge. You have been directed to correct malfunctions on the weapon.
STANDARDS:	Correct all malfunctions to return the weapon to service, apply remedial action, apply intermediate action to stop uncontrolled automatic fire, and correct a

	sluggishly operating weapon.

ELO E - LSA 1. Learning Step / Activity ELO E - LSA 1. Correct malfunction to return the weapon to service.

Method of Instruction: Conference/Demonstration
Instr Type(I:S Ratio/Qty): instructor(4:32/0)
Time of Instruction: 0 hrs 5 mins
Instructional Strategy: Large Group Instruction
Media Type: Actual Equipment
Security Classification: This course/lesson will present information that has a Security Classification of: U - Unclassified.

WARNING

Do not open cover while performing immediate action. Keep the weapon pointed down range. Never remove the backplate assembly until the chamber has been cleared. Depending on climate condition, do not leave live rounds laying on top of hot expended brass.

1. Correct malfunction to return the weapon to service.
a. On a cool weapon (fired less than 200 rounds in 2 minutes).
(1) Hold the weapon on target.
(2) Wait 10 seconds in case the weapon has a hang fire.
(3) Pull the retracting handle to the rear.
(4) Return the retracting slide handle to its forward position.
(5) If the bolt locks to the rear, depress the bolt latch to the return bolt to the forward position.
(6) Try to fire. If weapon fires, you have corrected the stoppage.
(7) If the weapon fails to fire, wait 10 seconds, pull retacting slide handle to the rear, and lock it in the rearward position(engage with bolt latch).
(8) Return the retracting slide to its forward position.

WARNING

The climatic temperature of various global regions will make a difference as to what constitutes a hot gun. A cook-off can occur within 50 rounds when the weapon and ammunition have been exposed for a prolonged period in the sun.
b. Take action within 10 seconds on a hot weapon (fired 200 or more rounds in 2 minutes) that stops firing.
(1) Hold the weapon on target.
(2) Pull the retracting slide handle to the rear.
(3) Observe if the round or fired case is ejected, release retracting slide handle, and attempt to fire again.
(4) If the weapon fails to fire place the bolt in the forward position and place the weapon in single action mode.
(5) Evacuate immediate area and wait 30 minutes before proceeding to Step 1b(6).
(6) If immediate action fails to correct stoppage, apply remedial action after the

weapon has cooled sufficiently.

DANGER

Never open the cover assembly on a hot weapon. An open cover cook - off could damage the weapon and could result in serious injury or death.

Check on Learning: Conduct a check on learning and correct any student misunderstandings.

Review Summary: Summarize the learning objective.

ELO E - LSA 2. Learning Step / Activity ELO E - LSA 2. Apply remedial action.

Method of Instruction: Conference/Demonstration
Instr Type(I:S Ratio/Qty): instructor(4:32/0)
Time of Instruction: 0 hrs 5 mins
Instructional Strategy: Large Group Instruction
Media Type: Actual Equipment
Security Classification: This course/lesson will present information that has a Security Classification of: U - Unclassified.

2. Apply remedial action.

a. Open the cover assembly and remove ammunition belt.

(1) Check for faulty ammuntion.

(2) Check for an obstruction in the barrel assembly and chamber.

b. Pull the retracting slide handle to the rear.

c. If a round is not ejected lock the bolt to the rear, if applicable, return retracting slide handle forward.

d. If a round is present in the chamber, direct the assistant gunner to stand to the side of the weapon.

(1) Insert cleaning rod into muzzle end of machine gun.

(2) Gently tap the round/case from chamber.

e. The weapon is now clear.

f. Return the bolt to the forward position.

g. Reload and continue to fire.

Check on Learning: Conduct a check on learning and correct any student misunderstandings.

Review Summary: Summarize the learning objective.

ELO E - LSA 3. Learning Step / Activity ELO E - LSA 3. Apply immediate action to stop uncontrolled automatic fire (runaway gun).

Method of Instruction: Conference/Demonstration
Instr Type(I:S Ratio/Qty): instructor(4:32/0)
Time of Instruction: 0 hrs 5 mins
Instructional Strategy: Large Group Instruction
Media Type: Actual Equipment

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

3. Apply immediate action to stop uncontrolled automatic fire (runaway gun).

a. Perform one of three actions:

(1) Keep the gun laid on target.

(2) Twist the belt,causing the gun to jam.

(3) Wait 5 minutes to guard against cook off.

(4) Clear the weapon, repalce broken worn, or burred parts.

(5) Check the sideplate trigger and trigger control mechanism, when applicable.

WARNING

Never reload a runaway weapon until it is repaired. Be sure weapon is cleared.

b. Check to ensure the weapon is clear and go to Step 3c, if you have fired all your ammunition.

(1) Check to see if the weapon is hot (fired more than 150 rounds in less than 2 minutes).

(2) keep the cover assembly closed, wait 15 minutes, then proceed to Step 3c, if the weapon is hot.

c. Disassemble the weapon and inspect for defective parts.

d. Clean the weapon, remove obstructions, replace defective parts, lubricate, and assemble the weapon.

e. Check headspace and timing and adjust, if necessary.

f. If the weapon still fails to fire properly, notify your supervisor.

g. Check the sideplate trigger control mechanism, when applicable.

Check on Learning: Conduct a check on learning and correct any student misunderstandings.

Review Summary: Summarize the learning objective.

ELO E - LSA 4. Learning Step / Activity ELO E - LSA 4. Correct a sluggishly operating weapon.

Method of Instruction: Conference/Demonstration
Instr Type(I:S Ratio/Qty): instructor(4:32/0)*
Time of Instruction: 0 hrs 5 mins
Instructional Strategy: Large Group Instruction
Media Type: Actual Equipment
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

4. Correct a sluggishly operating weapon.

a. Clear the weapon.

b. Disassemble, clean, and lubricate the weapon.

c. Assemble the weapon.

d. Set headspace and timing.

Check on Learning: Conduct a check on learning and correct any student

misunderstandings.

Review Summary: Summarize the learning objective.

CHECK ON LEARNING (ELO E): Conduct a check on learning and correct any student misunderstandings.

REVIEW SUMMARY(ELO E): Summarize the learning objective.

F. ENABLING LEARNING OBJECTIVE

ACTION:	Mount a Caliber .50 M2 Machine Gun on an M3 Tripod
CONDITIONS:	As a Gunner given a caliber .50 M2 machine gun, an M3 tripod, a pintle assembly, and traversing and elevation (T&E) mechanism. You have been directed to mount a caliber .50 M2 machine gun on an M3 tripod.
STANDARDS:	Clear the caliber .50 M2 machine gun, set up the M3 tripod, and secure the caliber .50 M2 machine gun to the M3 tripod.

ELO F - LSA 1. Learning Step / Activity ELO F - LSA 1. Set up M3 tripod.

Method of Instruction: Conference/Demonstration
Instr Type(I:S Ratio/Qty): instructor(4:32/0)
Time of Instruction: 0 hrs 5 mins
Instructional Strategy: Large Group Instruction
Media Type: Actual Equipment
Security Classification: This course/lesson will present information that has a Security Classification of: U - Unclassified.

2. Set up M3 tripod.
a. Unscrew the leg-clamping handle.
(1) press down on the indexing lever, and extend the leg to desired length.
(2) Align the indexing lever stud with one of the holes in the tripod extention.
(3) Release the pressure on the indexing lever, allowing the stud to fit the desired hole.
(4) Tighten the leg-clamping handle.
(a) Adjust the length of any leg by loosening the manual control handle.
(b) Apply pressure to the manual control lever, extending the leg to the desired length.
(c) Align the hole between the upper and lower leg section.
(d) Release the manual control lever allowing the stud on the lever to lock leg sections together.
(e) Tighten manual control handle.
(5) Secure the tripod in position by stomping the legs into the ground or placing a heavy object (such as a sandbag) over each leg.
(6) Turn the front leg clamp counterclockwise to loosen the front leg.
(7) Adjust the leg to desired angle and tighten the front leg clamp.
(8) To secure the tripod legs, stamp the metal shoe on each leg into the ground.
(9) Sandbag each leg to stablize the caliber .50 M2 machine gun for firing.
b. Install the Pintle Assembly.
(1) Secure the pintle assembly to the tripod.

(a) Disengage the pintle lock.

(b) Insert the pintle.

(c) Re-engage the pintle lock.

(2) Pull up on the pintle to ensure it is securely locked in place.

c. Install the Traversing and Elevating (T&E) Mechanism.

(1) Center the T&E Mechanism by turning the elevating knob and the traversing knob until the each appear to be centered.

(2) Secure the T&E mechanism to the traverse bar.

(a) Lower the T&E sleeve over the traverse bar.

(b) Ensure the traverse lever is to the rear.

(c) Tighten the traverse lever.

Check on Learning: Conduct a check on learning and correct any student misunderstandings.

Review Summary: Summarize the learning objective.

ELO F - LSA 2. Learning Step / Activity ELO F - LSA 2. Secure the caliber .50 M2 machine gun to the M3 tripod.

Method of Instruction:	Conference/Demonstration
Instr Type(I:S Ratio/Qty):	instructor(4:32/0)
Time of Instruction:	0 hrs 5 mins
Instructional Strategy:	Large Group Instruction
Media Type:	Actual Equipment
Security Classification:	This course/lesson will present information that has a Security Classification of: U - Unclassified.

3. Secure the caliber .50 M2 machine gun to the M3 tripod.

a. Secure the caliber .50 M2 machine gun to the pintle on the M3 tripod.

(1) Remove the bolt,nut,and cotter pin from the pintle.

(2) Lower the machine gun onto the pintle.

(3) Insert bolt through both the pintle and the machine gun.

(a) Align the front mounting holes of the machine gun with the holes in pintle.

(b) Slide the bolt through both.

(4) Attach nut aligning locking holes in nut with holes in bolt.

(5) Secure nut to bolt by inserting cotter pin and bending pin legs around nut.

b. Secure the caliber .50 M2 machine gun to the T&E mechanism on the M3 tripod.

Note: The gun is fired as a 'free gun" if not connected to the T&E mechanism.

(1) Open the quick release pin on the T&E mechanism.

(2) Lower the rear of the machine gun onto the T&E mechanism.

(3) Insert the quick release pin.

(a) Align the holes on the M2 with the quick release pin.

(b) Close the quick release pin.

Check on Learning: Conduct a check on learning and correct any student misunderstandings.

Review Summary: Summarize the learning objective.

CHECK ON LEARNING (ELO F): Conduct a check on learning and correct any student misunderstandings.

REVIEW SUMMARY(ELO F): Summarize the learning objective.

G. ENABLING LEARNING OBJECTIVE

ACTION:	Engage Targets with a Caliber .50 M2 Machine Gun.
CONDITIONS:	You are a member of an infantry platoon and are given a zeroed caliber .50 M2 machine gun, a tripod or vehicle, linked caliber .50 ammunition, and a sector of fire with engageable targets. You have identified a moving or stationary target.
STANDARDS:	Fire the caliber .50 M2 machine gun to engage targets in your assigned sector of fire. Apply the correct target-engagement techniques so that all targets are destroyed, suppressed, or a cease fire has been given.

ELO G - LSA 1. Learning Step / Activity ELO G - LSA 1. Select a suitable firing position.

Method of Instruction: Conference/Demonstration
Instr Type(I:S Ratio/Qty): instructor(4:32/0)
Time of Instruction: 0 hrs 10 mins
Instructional Strategy: Large Group Instruction
Media Type: Actual Equipment
Security Classification: This course/lesson will present information that has a Security Classification of: U - Unclassified.

1. Select a suitable firing position.

Note: Based on your situation, assume a firing position that will allow you to observe and engage targets and reduce your exposure to enemy fire.

a. Prone position.

Note: The prone position is used when firing from a tripod that is set in a low position.

(1) Spread legs to a comfortable distance apart with toes turned outward.

(2) Rest the left elbow on the ground and use the left hand to grasp the elevating handwheel of the traverse and elevation (T&E) mechanism.

(3) Use the right hand to lightly grasp the right spade grip and place the right thumb in a position to press the trigger.

(4) Position the firing eye in alignment with the sights of the weapon.

Note: The position of the body can then be adjusted.

b. Sitting position.

Note: The sitting position can be used when the tripod is set in a high or low position.

(1) Sit directly behind the gun between the legs of the tripod.

Note: The gunner may extend his legs under the tripod or cross them depending on his physique.

(2) Place both elbows on the inside of the thighs to get the best support.

(3) Grasp the elevating handwheel of the T&E mechanism with the left hand.

(4) Lightly grasp the right spade grip with the right hand.

(5) Ensure that the right thumb is in position to press the trigger.

c. Standing position.

Note: The standing position is used when the gunner is firing from a fighting position.

1) Stand directly behind the gun with feet spread a comfortable distance apart.

(2) Grasp the elevating handwheel of the T&E mechanism with the left hand.

(3) Lightly grasp the right spade grip with the right hand ensuring that the right thumb is in a position to press the trigger.

(4) Adjust the body in order to align the firing eye with the sights on the weapon.

d. Standing position for cupola-mounted gun.

e. Standing position for a high-mobility multipurpose wheeled vehicle (HMMWV) mounted gun.

Check on Learning: Conduct a check on learning and correct any student misunderstandings.

Review Summary: Summarize the learning objective.

ELO G - LSA 2. Learning Step / Activity ELO G - LSA 2. Obtain the correct sight picture.

Method of Instruction:	Conference/Demonstration
Instr Type(I:S Ratio/Qty):	instructor(4:32/0)
Time of Instruction:	0 hrs 10 mins
Instructional Strategy:	Large Group Instruction
Media Type:	Actual Equipment
Security Classification:	This course/lesson will present information that has a Security Classification of: U - Unclassified.

2. Obtain the correct sight picture.

a. Center the front sight post in the peep sight to obtain the correct sight alignment.

b. Place the top center of the front sight blade at the bottom center of the intended target to obtain a correct sight picture.

Check on Learning: Conduct a check on learning and correct any student misunderstandings.

Review Summary: Summarize the learning objective.

ELO G - LSA 3. Learning Step / Activity ELO G - LSA 3. Apply the correct engagement technique based on the target type.

Method of Instruction:	Conference/Demonstration
Instr Type(I:S Ratio/Qty):	instructor(4:32/0)
Time of Instruction:	0 hrs 10 mins
Instructional Strategy:	Large Group Instruction
Media Type:	Actual Equipment
Security Classification:	This course/lesson will present information that has a Security Classification of: U - Unclassified.

3. Apply the correct engagement technique based on the target type.

a. Select the correct gun manipulation technique.

(1) Use the fixed fire technique against a point target.

Note: Only one aiming point is necessary for fixed fire, and there is little or no manipulation of the gun required.

(2) Use the traverse fire technique against a wide target requiring successive changes in gun direction.

Note: To distribute fire laterally, the T&E mechanism is used to traverse the gun left or right.

(3) Use the search fire technique against a deep target or a linear target with depth by successively changing elevation.

Note: To distribute fire in depth, the T&E mechanism is used to move the muzzle of the weapon up or down.

(4) Use traverse and search fire technique against a target whose long axis is oblique to the direction of fire.

Note: Traverse and search fire is delivered in width and depth by successive changes in direction and elevation.

(5) Use the swinging traverse technique against targets that require major changes in direction, but little or no change in elevation.

Note: The traversing slide lock must be loosened enough to swing the gun laterally.

(6) Use the free gun technique against moving targets that must be rapidly engaged with fast changes in direction and elevation.

Note: To fire free gun, the T&E mechanism is removed.

b. Apply the correct firing technique to engage specific targets.

(1) Engage point targets with fixed fire using a single aiming point.

(2) Engage a linear target.

(a) Aim at the midpoint of the target initially.

(b) Traverse fire to one flank, then to the other to cover the entire target.

(3) Engage a linear target with depth.

(a) Aim at the midpoint of the target initially, unless another portion of the target is more critical or presents a greater threat.

(b) Traverse and search to the flank closest to your position then back to the other flank so that you cover the entire target.

(4) Engage a deep target.

(a) Aim at the midpoint of the target initially, unless another portion of the target is more critical or presents a greater threat.

(b) Search down to the near end, then search up to the far end.

(5) Engage an area target.

(a) Aim at midpoint of the target area initially.

(b) Traverse and search to either flank, then traverse and search to the opposite flank.

Check on Learning: Conduct a check on learning and correct any student misunderstandings.

Review Summary: Summarize the learning objective.

ELO G - LSA 4. Learning Step / Activity ELO G - LSA 4. Adjust the aiming point to place effective fire on the target.

Method of Instruction: Conference/Demonstration
Instr Type(I:S Ratio/Qty): instructor(4:32/0)
Time of Instruction: 0 hrs 5 mins

Instructional Strategy: Large Group Instruction
Media Type: Actual Equipment
Security Classification: This course/lesson will present information that has a Security Classification of: U - Unclassified.

4. Adjust the aiming point to place effective fire on the target.

a. Observe bursts of fire by noting tracers in flight or the strike of the rounds in the target area.

b. Adjust fire quickly without adjusting the sight.

c. Fire a burst.

Note: If the initial burst misses the target, rapidly select a new aiming point the same distance from the center of impact of the initial burst, but in the opposite direction.

d. Fire a second burst.

Check on Learning: Conduct a check on learning and correct any student misunderstandings.

Review Summary: Summarize the learning objective.

ELO G - LSA 5. Learning Step / Activity ELO G - LSA 5. Fire on the targets until they are all destroyed, suppressed, or until an order to cease fire is received.

Method of Instruction: Conference/Demonstration
Instr Type(I:S Ratio/Qty): instructor(4:32/0)
Time of Instruction: 0 hrs 5 mins
Instructional Strategy: Large Group Instruction
Media Type: Actual Equipment
Security Classification: This course/lesson will present information that has a Security Classification of: U - Unclassified.

5. Fire on the targets until they are all destroyed, suppressed, or until an order to cease fire is received.

Check on Learning: Conduct a check on learning and correct any student misunderstandings.

Review Summary: Summarize the learning objective.

CHECK ON LEARNING (ELO G): Conduct a check on learning and correct any student misunderstandings.

REVIEW SUMMARY(ELO G): Summarize the learning objective.

H. ENABLING LEARNING OBJECTIVE

ACTION:	Dismount a Caliber .50 M2 Machine Gun from an M3 Tripod.
CONDITIONS:	As a Gunner given a caliber .50 M2 machine gun mounted on an M3 tripod with pintle and traversing and elevation (T&E) mechanism, and a storage bag. You have been directed to dismount the machine gun from the tripod.
STANDARDS:	Clear the caliber .50 M2 Machine gun, remove from the M3 tripod, collapse the

	tripod, remove and store the pintle and traversing and elevation (T&E) mechanism, and store the tripod.

ELO H - LSA 1. Learning Step / Activity ELO H - LSA 1. Dismount the M2 machine gun from the M3 tripod and prepare it for storage.

Method of Instruction: Conference/Demonstration
Instr Type(I:S Ratio/Qty): instructor(4:32/0)
Time of Instruction: 0 hrs 10 mins
Instructional Strategy: Large Group Instruction
Media Type: Actual Equipment
Security Classification: This course/lesson will present information that has a Security Classification of: U - Unclassified.

1. Clear the caliber .50 M2 machine gun.

2. Remove the caliber .50 M2 machine gun from the M3 tripod.
a. Disconnect the machine gun from the T&E mechanism.
(1) Remove the quick release pin on the T&E mechanism.
(2) Lift the machine gun up far enough to clear the T&E mechanism.
(3) Replace the quick release pin on the T&E mechanism.
b. Disconnect the machine gun from the pintle on the M3 tripod.
(1) Remove the cotter pin that secures the nut to the bolt.
(2) Remove the nut from the bolt.
(3) Slide the bolt out of the mounting holes on both the machine gun and the pintle.
(4) Lift the machine gun up far enough to clear the pintle mounting holes.
(5) Replace the bolt, nut, and cotter pin into the pintle.
c. Lift the machine gun off the tripod.

3. Collapse the M3 tripod.
a. Remove the (T&E) Mechanism.
(1) Loosen the traverse lever.
(2) Lift the T&E sleeve from the traverse bar.
b. Remove the pintle assembly.
(1) Disengage the pintle lock.
(2) Lift the pintle up.
(3) Reengage the pintle lock.
c. Collapse the tripod.
(1) Press the sleeve latch lock inward and push the legs together.
(2) Rotate the front leg fully backward.

4. Store the pintle and T&E mechanism in the storage bag.

5. Store the tripod.

Check on Learning: Conduct a check on learning and correct any student

misunderstandings.

Review Summary: Summarize the learning objective.

CHECK ON LEARNING (ELO H): Conduct a check on learning and correct any student misunderstandings.

REVIEW SUMMARY(ELO H): Summarize the learning objective.

SECTION IV. SUMMARY

Method of Instruction:	Conference/Discussion
Instr Type(I:S Ratio/Qty):	instructor(4:32/0)
Time of Instruction:	5 mins
Instructional Strategy:	Large Group Instruction

Check on Learning

QUESTION:What is the maximum effective range of the caliber .50 M2 machine gun? ANSWER:The maximum effective range is approximately 2,000 yards (1,830 meters). QUESTION:Approximately, how much does the caliber .50 MG weigh? ANSWER:The caliber .50 MG approximately weighs 84 pounds. QUESTION:How do you secure the tripod legs? ANSWER:To secure the tripod legs, stamp the metal shoe on each tripod leg into the ground. QUESTION:Normally, who is responsible for dismounting the gun and who folds the tripod? ANSWER:The gunner and ammunition bearer dismount the gun from the tripod and the assistant gunner folds the tripod. QUESTION:Why should you never attempt to cock the gun while the backplate is off and the driving spring assembly is in place? ANSWER:If the backplate is off and the driving spring assembly is compressed, the retaining pin on the driving spring rod can slip from its seat in the sideplate and could cause serious injury to anyone behind the gun. QUESTION:What mode does the weapon need to be placed in to perform a function check? ANSWER:Place the weapon in the single-shot mode to perform a function check. QUESTION:When setting headspace, if you have to unscrew the barrel more than five clicks beyond the first setting of two clicks, what must you do? ANSWER:If this condition occurs, turn in the machine gun to your unit armorer for inspection. QUESTION:If the gun fires with the no-fire gauge between the barrel extension and the trunnion block, what type of timing has occurred? ANSWER:If the gun does fire, you have early timing. QUESTION:Which mode allows the gunner to deliver well-aimed fire on the target at ranges greater than 1,100 meters? ANSWER:At ranges greater than 1,100 meters, using the single-shot mode (firing one round at a time) allows the gunner to deliver well-aimed fire on the target. QUESTION:When removing a cartridge from the T-slot, if the cartridge does not fall out, what can be used to push it out? ANSWER:Use a screwdriver to push the cartridge out the bottom of the receiver. QUESTION:What mode must the MG be in to unload? ANSWER:Ensure that the weapon is in the single-shot mode for unloading. QUESTION:Is the traversing bar graduated in 1-mil or 5-mil increments? ANSWER:The traversing bar is graduated in 5-mil increments and the elevating handwheel is graduated in 1-mil increments. QUESTION:What position does the rear sight need to be in when mounting the bracket? ANSWER:To mount the bracket, the gunner must ensure that the rear sight is in the down position. QUESTION:What is the first step in dismounting the sight? ANSWER:The gunner dismounts the sight from the bracket first by loosening the lever screws.

Review/ Summary

During the last 5 hours you have performed operator maintenance on and operated the caliber .50 M2 machine gun. You have mounted and dismounted the weapon using the M3 tripod, set headspace and timing and manipulated the T&E mechanism. As you continue in your career as a Soldier, you should continue to train with this secondary weapon to gain and maintain proficiency.

SECTION V. STUDENT EVALUATION

Testing Requirements	Soldiers will be evaluated by task performance measures.
Feedback Requirements	Feedback is essential to effective learning. Schedule and provide feedback on the assessment and any information to help answer Soldiers' questions about the training exercise.

Appendix A - Viewgraph Masters

M2 .50 Caliber Machine Gun
071-SAWE01 / Version 1.0

Sequence	Media Name	Media Type
None		

Appendix B - Test(s) and Test Solution(s)

PRACTICAL EXERCISE(S)/SOLUTION(S) FOR LESSON 071-SAWE01 Version 1.0

PRACTICAL EXERCISE SHEET 071-SAWE01 PE1

Title

Maintain a M2 machine gun.

Lesson Number/Title

071-SAWE01 Version 1.0 / M2 .50 Caliber Machine Gun

Security Classification

Unclassified

Introduction

BRIEF THE SOLDIER: Tell the Soldier what is expected of him by reviewing the task standards. Stress to the Soldier the importance of observing all cautions, warnings, and dangers to avoid injury to personnel and, if applicable, damage to equipment.

Motivator

You must be able to maintain a M2 machine gun in order to effectively utilize it to engage targets.

Enabling Learning Objective

NOTE. The instructor should inform the students of the following Enabling Learning Objective covered by this practical exercise. (ELO ELO A)

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

Action:	Maintain a Caliber .50 M2 Machine Gun.
Conditions:	As a Gunner given a .50 Caliber M2 machine gun, M3 tripod, MK64 gun cradle mount, pintle, traversing and elevating (T&E) mechanism, linked caliber .50 ammunition, headspace and timing gauge, cleaner lubricant and preservative (CLP), rifle bore cleaner (RBC), Lubricant, Semifluid, Automatic Weapons (LSA), carbon removing compound, bore brush, wiping rags, M4 cleaning rod, small- arms (2-inch) cleaning swabs, and a wooden block.
Standards:	Clear, disassemble, clean, inspect, lubricate, assemble and perform a function check on the .50 Caliber M2 Machine Gun. Turn in an unserviceable weapon, weapon parts, or ammunition. Assemble the gun so that it is operational with no damage or injury to personnel.

Safety Requirements

Safety: In a training environment, leaders must perform a risk assessment in accordance with FM 5-19, Composite Risk Management. Leaders will complete a DA Form 7566 COMPOSITE RISK MANAGEMENT WORKSHEET during the planning and completion of each task and sub-task by assessing mission, enemy, terrain and weather, troops and support available-time available and civil considerations, (METT-TC). Note: During MOPP training, leaders must ensure personnel are monitored for potential heat injury. Local policies and procedures must be followed during times of increased heat category in order to avoid heat related injury. Consider the MOPP work/rest cycles and water replacement guidelines IAW FM 3-11.4, NBC Protection, FM 3-11.5, CBRN Decontamination. Everyone is responsible for safety. A thorough risk assessment must be completed prior to every mission or operation.

Risk Assessment Level	None
Environmental Considerations	**NOTE:** Instructor should conduct a Risk Assessment to include Environmental Considerations IAW FM 3-100.4, Environmental Considerations in Military Operations, Appendix G, and ensure students are briefed on hazards and control measures. Environment: Environmental protection is not just the law but the right thing to do. It is a continual process and starts with deliberate planning. Always be alert to ways to protect our environment during training and missions. In doing so, you will contribute to the sustainment of our training resources while protecting people and the environment from harmful effects.
Evaluation	Evaluation: Students will be evaluated on their ability to accomplish the task. They will be graded as a "go" or "no-go". Retrain and re-test students until they achieve a "go".
Instructional Lead-in	You must clear, disassemble, clean, inspect, lubricate, assemble and perform a function check on the .50 Caliber M2 Machine Gun. Turn in an unserviceable weapon, weapon parts, or ammunition. Assemble the gun so that it is operational with no damage or injury to personnel.
Resource Requirements	*Instructor Materials:* See the Lesson Resources. *Student Materials:* See the Lesson Resources.
Special Instructions	Students will be broken down into 8 man groups and cover down on a machine gun. Students will be graded individually on the weapon.
Procedures	SETUP: Provide the Soldier with the equipment and/or materials described in the conditions statement.
Feedback Requirements	Feedback is essential to effective learning. Schedule and provide feedback on the assessment and any information to help answer Soldiers' questions about the training exercise.

SOLUTION FOR
PRACTICAL EXERCISE 071-SAWE01 PE1

PERFORMANCE MEASURES

1. Cleared the machine gun.
2. Disassembled the machine gun.
3. Cleaned machine gun and components.
4. Inspected for serviceability.
5. Lubricated the machine gun.
6. Assembled weapon in correct sequence without damaging any parts.
7. Performed a function check.

PRACTICAL EXERCISE SHEET 071-SAWE01 PE2

Title

Set headspace and timing a M2 machine gun.

Lesson Number/Title

071-SAWE01 Version 1.0 / M2 .50 Caliber Machine Gun

Security Classification

Unclassified

Introduction

BRIEF THE SOLDIER: Tell the Soldier what is expected of him by reviewing the task standards. Stress to the Soldier the importance of observing all cautions, warnings, and dangers to avoid injury to personnel and, if applicable, damage to equipment.

Motivator

You must be able to effectively set the headspace and timing of the M2 in order to effectively engage targets with the machine gun.

Enabling Learning Objective

NOTE. The instructor should inform the students of the following Enabling Learning Objective covered by this practical exercise. (ELO ELO B)

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

Action:	Set Headspace and Timing on a Caliber .50 M2 Machine Gun
Conditions:	As a gunner, given a caliber .50 machine gun (tripod or cupola mounted), a headspace and timing gage, and an assistant gunner. You have been directed to set head space and timing on the weapon.
Standards:	Set headspace to ensure the GO end of the headspace gage will enter the "T"-slot and the NO GO end will not. Set timing for the weapon to fire when recoiling parts are between 0.020 and 0.116 inch out of battery.

Safety Requirements

Safety: In a training environment, leaders must perform a risk assessment in accordance with FM 5-19, Composite Risk Management. Leaders will complete a DA Form 7566 COMPOSITE RISK MANAGEMENT WORKSHEET during the planning and completion of each task and sub-task by assessing mission, enemy, terrain and weather, troops and support available-time available and civil considerations, (METT-TC). Note: During MOPP training, leaders must ensure personnel are monitored for potential heat injury. Local policies and procedures must be followed during times of increased heat category in order to avoid heat related injury. Consider the MOPP work/rest cycles and water replacement guidelines IAW FM 3-11.4, NBC Protection, FM 3-11.5, CBRN Decontamination. Everyone is responsible for safety. A thorough risk assessment must be completed prior to every mission or operation.

Risk Assessment Level

None

Environmental Considerations

NOTE: Instructor should conduct a Risk Assessment to include Environmental Considerations IAW FM 3-100.4, Environmental Considerations in Military Operations, Appendix G, and ensure students are briefed on hazards and control measures.

Environment: Environmental protection is not just the law but the right thing to do. It is a continual process and starts with deliberate planning. Always be alert to ways to protect our environment during training and missions. In doing so, you will contribute to the sustainment of

	our training resources while protecting people and the environment from harmful effects.
Evaluation	
	Evaluation: Students will be evaluated on their ability to accomplish the task. They will be graded as a "go" or "no-go". Retrain and re-test students until they achieve a "go".
Instructional Lead-in	BRIEF THE SOLDIER: Tell the Soldier what is expected of him by reviewing the task standards. Stress to the Soldier the importance of observing all cautions, warnings, and dangers to avoid injury to personnel and, if applicable, damage to equipment.
Resource Requirements	*Instructor Materials:* See the lesson plan resources. *Student Materials:* See the lesson plan resources.
Special Instructions	Break the students down into 8 man groups, have each group cover down on one machine gun. One Instructor will grade each student individually.
Procedures	SETUP: Provide the Soldier with the equipment and/or materials described in the conditions statement.
Feedback Requirements	Feedback is essential to effective learning. Schedule and provide feedback on the assessment and any information to help answer Soldiers' questions about the training exercise.

SOLUTION FOR
PRACTICAL EXERCISE 071-SAWE01 PE2

PERFORMANCE MEASURES

1. Cleared the weapon.
2. Adjusted headspace.
3. Adjusted timing.
4. Performed function check.

PRACTICAL EXERCISE SHEET 071-SAWE01 PE3

Title

Load a .50 caliber M2 machine gun.

Lesson Number/Title

071-SAWE01 Version 1.0 / M2 .50 Caliber Machine Gun

Security Classification

Unclassified

Introduction

BRIEF THE SOLDIER: Tell the Soldier what is expected of him by reviewing the task standards. Stress to the Soldier the importance of observing all cautions, warnings, and dangers to avoid injury to personnel and, if applicable, damage to equipment.

Motivator

You must be able to quickly load the M2 machine gun in any condition day or night in order to engage targets rapidly and effectively.

Enabling Learning Objective

NOTE. The instructor should inform the students of the following Enabling Learning Objective covered by this practical exercise. (ELO ELO C)

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

Action:	Load a Caliber .50 M2 Machine Gun.
Conditions:	As a gunner, given a .50 caliber M2 machine gun, mounted on a tripod or cupola, linked .50 caliber ammunition. You have been directed to load the .50 caliber M2 machine gun.
Standards:	Clear the .50 caliber machine gun, load the linked ammunition in the feed tray groove, ensure the cover is closed, a round remains in the tray groove, and the ammunition feeds correctly.

Safety Requirements

Safety: In a training environment, leaders must perform a risk assessment in accordance with FM 5-19, Composite Risk Management. Leaders will complete a DA Form 7566 COMPOSITE RISK MANAGEMENT WORKSHEET during the planning and completion of each task and sub-task by assessing mission, enemy, terrain and weather, troops and support available-time available and civil considerations, (METT-TC). Note: During MOPP training, leaders must ensure personnel are monitored for potential heat injury. Local policies and procedures must be followed during times of increased heat category in order to avoid heat related injury. Consider the MOPP work/rest cycles and water replacement guidelines IAW FM 3-11.4, NBC Protection, FM 3-11.5, CBRN Decontamination. Everyone is responsible for safety. A thorough risk assessment must be completed prior to every mission or operation.

Risk Assessment Level

None

Environmental Considerations

NOTE: Instructor should conduct a Risk Assessment to include Environmental Considerations IAW FM 3-100.4, Environmental Considerations in Military Operations, Appendix G, and ensure students are briefed on hazards and control measures.

Environment: Environmental protection is not just the law but the right thing to do. It is a continual process and starts with deliberate planning. Always be alert to ways to protect our environment during training and missions. In doing so, you will contribute to the sustainment of

	our training resources while protecting people and the environment from harmful effects.
Evaluation	Students will be evaluated on their ability to accomplish the task. They will be graded as a "go" or "no-go". Retrain and re-test students until they achieve a "go".
Instructional Lead-in	Tell the Soldier what is expected of him by reviewing the task standards. Stress to the Soldier the importance of observing all cautions, warnings, and dangers to avoid injury to personnel and, if applicable, damage to equipment.
Resource Requirements	*Instructor Materials:* See the lesson plan resources. *Student Materials:* See the lesson plan resources.
Special Instructions	Break the students down into 8 man groups, have each group cover down on one machine gun. One Instructor will grade each student individually.
Procedures	SETUP: Provide the Soldier with the equipment and/or materials described in the conditions statement.
Feedback Requirements	Feedback is essential to effective learning. Schedule and provide feedback on the assessment and any information to help answer Soldiers' questions about the training exercise.

SOLUTION FOR
PRACTICAL EXERCISE 071-SAWE01 PE3

PERFORMANCE MEASURES

1. Cleared the .50 caliber M2 machine gun.
2. Loaded ammunition.

PRACTICAL EXERCISE SHEET 071-SAWE01 PE4

Title

Unload the .50 caliber M2 machine gun.

Lesson Number/Title

071-SAWE01 Version 1.0 / M2 .50 Caliber Machine Gun

Security Classification

Unclassified

Introduction

Tell the Soldier what is expected of him by reviewing the task standards. Stress to the Soldier the importance of observing all cautions, warnings, and dangers to avoid injury to personnel and, if applicable, damage to equipment.

Motivator

You must be able to safely unload the machine gun.

Enabling Learning Objective

NOTE. The instructor should inform the students of the following Enabling Learning Objective covered by this practical exercise. (ELO ELO D)

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

Action:	Unload a Caliber .50 M2 Machine Gun
Conditions:	As a gunner, given a .50 caliber M2 machine gun mounted on a tripod or cupola, loaded with linked .50 caliber ammunition. You have been directed to unload the .50 caliber M2 machine gun.
Standards:	Remove all ammunition and links from the .50 caliber M2 machine gun. Correctly clear the weapon, and verify the chamber is empty.

Safety Requirements

Safety: In a training environment, leaders must perform a risk assessment in accordance with FM 5-19, Composite Risk Management. Leaders will complete a DA Form 7566 COMPOSITE RISK MANAGEMENT WORKSHEET during the planning and completion of each task and sub-task by assessing mission, enemy, terrain and weather, troops and support available-time available and civil considerations, (METT-TC). Note: During MOPP training, leaders must ensure personnel are monitored for potential heat injury. Local policies and procedures must be followed during times of increased heat category in order to avoid heat related injury. Consider the MOPP work/rest cycles and water replacement guidelines IAW FM 3-11.4, NBC Protection, FM 3-11.5, CBRN Decontamination. Everyone is responsible for safety. A thorough risk assessment must be completed prior to every mission or operation.

Risk Assessment Level

None

Environmental Considerations

NOTE: Instructor should conduct a Risk Assessment to include Environmental Considerations IAW FM 3-100.4, Environmental Considerations in Military Operations, Appendix G, and ensure students are briefed on hazards and control measures.

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Evaluation

Students will be evaluated on their ability to accomplish the task. They will be graded as a "go"

or "no-go". Retrain and re-test students until they achieve a "go".

Instructional Lead-in

Tell the Soldier what is expected of him by reviewing the task standards. Stress to the Soldier the importance of observing all cautions, warnings, and dangers to avoid injury to personnel and, if applicable, damage to equipment.

Resource Requirements

Instructor Materials:
See the lesson plan resources.

Student Materials:
See the lesson plan resources.

Special Instructions

Break the students down into 8 man groups, have each group cover down on one machine gun. One Instructor will grade each student individually.

Procedures

Provide the Soldier with the equipment and/or materials described in the conditions statement.

Feedback Requirements

Feedback is essential to effective learning. Schedule and provide feedback on the assessment and any information to help answer Soldiers' questions about the training exercise.

SOLUTION FOR
PRACTICAL EXERCISE 071-SAWE01 PE4

PERFORMANCE MEASURES

1. Removed all ammunition and links from the .50 caliber M2 machine gun.
2. Cleared the .50 caliber M2 machine gun.
3. Verified the chamber was empty.

PRACTICAL EXERCISE SHEET 071-SAWE01 PE5

Title

Correct a malfunction of a caliber .50 M2 machine gun.

Lesson Number/Title

071-SAWE01 Version 1.0 / M2 .50 Caliber Machine Gun

Security Classification

Unclassified

Introduction

Tell the Soldier what is expected of him by reviewing the task standards. Stress to the Soldier the importance of observing all cautions, warnings, and dangers to avoid injury to personnel and, if applicable, damage to equipment.

Motivator

You must be able to quickly correct any malfunctions in order to continue to engage enemy targets and provid fires.

Enabling Learning Objective

NOTE. The instructor should inform the students of the following Enabling Learning Objective covered by this practical exercise. (ELO ELO E)

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

Action:	Correct Malfunctions of a Caliber .50 M2 Machine Gun
Conditions:	As a gunner, given a loaded Caliber .50 M2 machine gun mounted on a tripod or cupola, a sector of fire, an assistant gunner, linked caliber .50 ammunition, a ruptured cartridge extractor, a cleaning rod, cleaner, lubricant, preservative (CLP), lubricating oil, Arctic weather (LAW), cleaning swabs, and a headspace and timing gauge. You have been directed to correct malfunctions on the weapon.
Standards:	Correct all malfunctions to return the weapon to service, apply remedial action, apply intermediate action to stop uncontrolled automatic fire, and correct a sluggishly operating weapon.

Safety Requirements

In a training environment, leaders must perform a risk assessment in accordance with FM 5-19, Composite Risk Management. Leaders will complete a DA Form 7566 COMPOSITE RISK MANAGEMENT WORKSHEET during the planning and completion of each task and sub-task by assessing mission, enemy, terrain and weather, troops and support available-time available and civil considerations, (METT-TC). Note: During MOPP training, leaders must ensure personnel are monitored for potential heat injury. Local policies and procedures must be followed during times of increased heat category in order to avoid heat related injury. Consider the MOPP work/rest cycles and water replacement guidelines IAW FM 3-11.4, NBC Protection, FM 3-11.5, CBRN Decontamination. Everyone is responsible for safety. A thorough risk assessment must be completed prior to every mission or operation.

Risk Assessment Level

None

Environmental Considerations

NOTE: Instructor should conduct a Risk Assessment to include Environmental Considerations IAW FM 3-100.4, Environmental Considerations in Military Operations, Appendix G, and ensure students are briefed on hazards and control measures.

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Evaluation	Students will be evaluated on their ability to accomplish the task. They will be graded as a "go" or "no-go". Retrain and re-test students until they achieve a "go".
Instructional Lead-in	Tell the Soldier what is expected of him by reviewing the task standards. Stress to the Soldier the importance of observing all cautions, warnings, and dangers to avoid injury to personnel and, if applicable, damage to equipment.
Resource Requirements	*Instructor Materials:* See the lesson plan resources. *Student Materials:* See the lesson plan resources.
Special Instructions	Break the students down into 8 man groups, have each group cover down on one machine gun. One Instructor will grade each student individually.
Procedures	Provide the Soldier with the equipment and/or materials described in the conditions statement.
Feedback Requirements	Feedback is essential to effective learning. Schedule and provide feedback on the assessment and any information to help answer Soldiers' questions about the training exercise.

SOLUTION FOR
PRACTICAL EXERCISE 071-SAWE01 PE5

PERFORMANCE MEASURES

1. Corrected malfunction to return weapon to service.
2. Applied remedial action.
3. Applied immediate action to stop uncontrolled automatic fire (runaway gun).
4. Corrected a sluggishly operating weapon.

PRACTICAL EXERCISE SHEET 071-SAWE01 PE6

Title

Mount a M2 machine gun on an M3 tripod.

Lesson Number/Title

071-SAWE01 Version 1.0 / M2 .50 Caliber Machine Gun

Security Classification

Unclassified

Introduction

Tell the Soldier what is expected of him by reviewing the task standards. Stress to the Soldier the importance of observing all cautions, warnings, and dangers to avoid injury to personnel and, if applicable, damage to equipment.

Motivator

You must be able to quickly mount the machine gun to its tripod in order to provide timely accurate fires.

Enabling Learning Objective

NOTE. The instructor should inform the students of the following Enabling Learning Objective covered by this practical exercise. (ELO ELO F)

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

Action:	Mount a Caliber .50 M2 Machine Gun on an M3 Tripod
Conditions:	As a Gunner given a caliber .50 M2 machine gun, an M3 tripod, a pintle assembly, and traversing and elevation (T&E) mechanism. You have been directed to mount a caliber .50 M2 machine gun on an M3 tripod.
Standards:	Clear the caliber .50 M2 machine gun, set up the M3 tripod, and secure the caliber .50 M2 machine gun to the M3 tripod.

Safety Requirements

In a training environment, leaders must perform a risk assessment in accordance with FM 5-19, Composite Risk Management. Leaders will complete a DA Form 7566 COMPOSITE RISK MANAGEMENT WORKSHEET during the planning and completion of each task and sub-task by assessing mission, enemy, terrain and weather, troops and support available-time available and civil considerations, (METT-TC). Note: During MOPP training, leaders must ensure personnel are monitored for potential heat injury. Local policies and procedures must be followed during times of increased heat category in order to avoid heat related injury. Consider the MOPP work/rest cycles and water replacement guidelines IAW FM 3-11.4, NBC Protection, FM 3-11.5, CBRN Decontamination. Everyone is responsible for safety. A thorough risk assessment must be completed prior to every mission or operation.

Risk Assessment Level

None

Environmental Considerations

NOTE: Instructor should conduct a Risk Assessment to include Environmental Considerations IAW FM 3-100.4, Environmental Considerations in Military Operations, Appendix G, and ensure students are briefed on hazards and control measures.

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	training and missions. In doing so, you will contribute to the sustainment of our training resources while protecting people and the environment from harmful effects.
Evaluation	Students will be evaluated on their ability to accomplish the task. They will be graded as a "go" or "no-go". Retrain and re-test students until they achieve a "go".
Instructional Lead-in	Tell the Soldier what is expected of him by reviewing the task standards. Stress to the Soldier the importance of observing all cautions, warnings, and dangers to avoid injury to personnel and, if applicable, damage to equipment.
Resource Requirements	*Instructor Materials:* See the lesson plan resources. *Student Materials:* See the lesson plan resources.
Special Instructions	Break the students down into 8 man groups, have each group cover down on one machine gun. One Instructor will grade each student individually.
Procedures	Provide the Soldier with the equipment and/or materials described in the conditions statement.
Feedback Requirements	Feedback is essential to effective learning. Schedule and provide feedback on the assessment and any information to help answer Soldiers' questions about the training exercise.

SOLUTION FOR
PRACTICAL EXERCISE 071-SAWE01 PE6

PERFORMANCE MEASURES

1. Cleared the caliber .50 M2 machine gun.
2. Set up the M3 tripod.
3. Secured the caliber .50 M2 machine gun to the M3 tripod.

PRACTICAL EXERCISE SHEET 071-SAWE01 PE7

Title

Engage targets with an M2 machine gun (LFX).

Lesson Number/Title

071-SAWE01 Version 1.0 / M2 .50 Caliber Machine Gun

Security Classification

Unclassified

Introduction

Tell the Soldier what is expected of him by reviewing the task standards. Stress to the Soldier the importance of observing all cautions, warnings, and dangers to avoid injury to personnel and, if applicable, damage to equipment.

Motivator

You must be able to effectively and accurately engage targets with the M2 machine gun in order to destroy or suppress enemy positions and provide fire support for friendly forces.

Enabling Learning Objective

NOTE. The instructor should inform the students of the following Enabling Learning Objective covered by this practical exercise. (ELO ELO G)

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

Action:	Engage Targets with a Caliber .50 M2 Machine Gun.
Conditions:	You are a member of an infantry platoon and are given a zeroed caliber .50 M2 machine gun, a tripod or vehicle, linked caliber .50 ammunition, and a sector of fire with engageable targets. You have identified a moving or stationary target.
Standards:	Fire the caliber .50 M2 machine gun to engage targets in your assigned sector of fire. Apply the correct target-engagement techniques so that all targets are destroyed, suppressed, or a cease fire has been given.

Safety Requirements

In a training environment, leaders must perform a risk assessment in accordance with FM 5-19, Composite Risk Management. Leaders will complete a DA Form 7566 COMPOSITE RISK MANAGEMENT WORKSHEET during the planning and completion of each task and sub-task by assessing mission, enemy, terrain and weather, troops and support available-time available and civil considerations, (METT-TC). Note: During MOPP training, leaders must ensure personnel are monitored for potential heat injury. Local policies and procedures must be followed during times of increased heat category in order to avoid heat related injury. Consider the MOPP work/rest cycles and water replacement guidelines IAW FM 3-11.4, NBC Protection, FM 3-11.5, CBRN Decontamination. Everyone is responsible for safety. A thorough risk assessment must be completed prior to every mission or operation.

Risk Assessment Level

None

Environmental Considerations

NOTE: Instructor should conduct a Risk Assessment to include Environmental Considerations IAW FM 3-100.4, Environmental Considerations in Military Operations, Appendix G, and ensure students are briefed on hazards and control measures.

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	training and missions. In doing so, you will contribute to the sustainment of our training resources while protecting people and the environment from harmful effects.
Evaluation	Students will be evaluated on their ability to accomplish the task. They will be graded as a "go" or "no-go". Retrain and re-test students until they achieve a "go".
Instructional Lead-in	Tell the Soldier what is expected of him by reviewing the task standards. Stress to the Soldier the importance of observing all cautions, warnings, and dangers to avoid injury to personnel and, if applicable, damage to equipment.
Resource Requirements	*Instructor Materials:* See the lesson plan resources. *Student Materials:* See the lesson plan resources.
Special Instructions	Break the students down into 8 man groups, have each group cover down on one machine gun. One Instructor will grade each student individually.
Procedures	Provide the Soldier with the equipment and/or materials described in the conditions statement.
Feedback Requirements	Feedback is essential to effective learning. Schedule and provide feedback on the assessment and any information to help answer Soldiers' questions about the training exercise.

SOLUTION FOR
PRACTICAL EXERCISE 071-SAWE01 PE7

PERFORMANCE MEASURES

1. Selected a suitable firing position.
2. Obtained the correct sight picture.
3. Applied the correct engagement technique based on the target type.
4. Adjusted the aiming point to place effective fire on the target.
5. Fired on the targets until they were destroyed, suppressed, or until an order to cease fire was received.

PRACTICAL EXERCISE SHEET 071-SAWE01 PE8

Title

Dismount the M2 Machine Gun from the M3 Tripod.

Lesson Number/Title

071-SAWE01 Version 1.0 / M2 .50 Caliber Machine Gun

Security Classification

Unclassified

Introduction

Tell the Soldier what is expected of him by reviewing the task standards. Stress to the Soldier the importance of observing all cautions, warnings, and dangers to avoid injury to personnel and, if applicable, damage to equipment.

Motivator

You must be able to quickly remove the machine gun from action in order to move to your next firing position.

Enabling Learning Objective

NOTE. The instructor should inform the students of the following Enabling Learning Objective covered by this practical exercise. (ELO ELO H)

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

Action:	Dismount a Caliber .50 M2 Machine Gun from an M3 Tripod.
Conditions:	As a Gunner given a caliber .50 M2 machine gun mounted on an M3 tripod with pintle and traversing and elevation (T&E) mechanism, and a storage bag. You have been directed to dismount the machine gun from the tripod.
Standards:	Clear the caliber .50 M2 Machine gun, remove from the M3 tripod, collapse the tripod, remove and store the pintle and traversing and elevation (T&E) mechanism, and store the tripod.

Safety Requirements

In a training environment, leaders must perform a risk assessment in accordance with FM 5-19, Composite Risk Management. Leaders will complete a DA Form 7566 COMPOSITE RISK MANAGEMENT WORKSHEET during the planning and completion of each task and sub-task by assessing mission, enemy, terrain and weather, troops and support available-time available and civil considerations, (METT-TC). Note: During MOPP training, leaders must ensure personnel are monitored for potential heat injury. Local policies and procedures must be followed during times of increased heat category in order to avoid heat related injury. Consider the MOPP work/rest cycles and water replacement guidelines IAW FM 3-11.4, NBC Protection, FM 3-11.5, CBRN Decontamination. Everyone is responsible for safety. A thorough risk assessment must be completed prior to every mission or operation.

Risk Assessment Level

None

Environmental Considerations

NOTE: Instructor should conduct a Risk Assessment to include Environmental Considerations IAW FM 3-100.4, Environmental Considerations in Military Operations, Appendix G, and ensure students are briefed on hazards and control measures.

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	training and missions. In doing so, you will contribute to the sustainment of our training resources while protecting people and the environment from harmful effects.
Evaluation	Students will be evaluated on their ability to accomplish the task. They will be graded as a "go" or "no-go". Retrain and re-test students until they achieve a "go".
Instructional Lead-in	Tell the Soldier what is expected of him by reviewing the task standards. Stress to the Soldier the importance of observing all cautions, warnings, and dangers to avoid injury to personnel and, if applicable, damage to equipment.
Resource Requirements	*Instructor Materials:* See the lesson plan resources. *Student Materials:* See the lesson plan resources.
Special Instructions	Break the students down into 8 man groups, have each group cover down on one machine gun. One Instructor will grade each student individually.
Procedures	Provide the Soldier with the equipment and/or materials described in the conditions statement.
Feedback Requirements	Feedback is essential to effective learning. Schedule and provide feedback on the assessment and any information to help answer Soldiers' questions about the training exercise.

SOLUTION FOR
PRACTICAL EXERCISE 071-SAWE01 PE8

PERFORMANCE MEASURES

1. Cleared the caliber .50 M2 machine gun.
2. Removed the machine gun from the M3 tripod.
3. Collapsed the M3 tripod.
4. Stored the pintle and T&E mechanism in the storage bag.
5. Stored the M3 tripod.

Appendix D - Student Handouts

M2 .50 Caliber Machine Gun
071-SAWE01 / Version 1.0

Sequence	Media Name	Media Type
None		

M2 .50 Caliber Machine Gun

071-SAWE01 / Version 1.0

Effective Date: 08 March 2013

1. The importance of this lesson: (Why)

Engage targets with the .50 cal M2 Machine Gun.

2. What we want our Soldiers to Achieve: (Outcomes/Standard)

Adhere to prescribed safety guidelines and procedures. Clear the weapon, perform a function check to ensure the weapon is operational, load the weapon, engage targets in an assigned sector of fire, correct simulated/actual weapons malfunctions and clear the weapon in accordance with TM 9-1005-313-10 and FM 3-22.68.

3. Tasks to be taught

Task Number	Task Title	Task Type
071-022-0001	Maintain a Caliber .50 M2 Machine Gun	Individual TAUGHT
071-022-0003	Load a Caliber .50 M2 Machine Gun	Individual TAUGHT
071-022-0004	Unload a Caliber .50 M2 Machine Gun	Individual TAUGHT
071-022-0005	Correct Malfunctions of a Caliber .50 M2 Machine Gun	Individual TAUGHT
071-022-0010	Mount a Caliber .50 M2 Machine Gun on an M3 Tripod	Individual TAUGHT
071-022-0011	Dismount a Caliber .50 M2 Machine Gun from an M3 Tripod	Individual TAUGHT
071-313-3454	Engage Targets with a Caliber .50 M2 Machine Gun	Individual TAUGHT
071-313-3455	Set Headspace and Timing on a Caliber .50 M2 Machine Gun	Individual TAUGHT

Additional Non-Standard Tasks

None

4. References:

Reference Number	Reference Title	Date
FM 3-22.65	Browning Machine Gun, Caliber .50 HB, M2	03 Mar 2005
FM 5-19	COMPOSITE RISK MANAGEMENT	21 Aug 2006
TM 9-1005-213-10	Operator's Manual for Machine Guns, Caliber .50; M2, Heavy Barrel Flexible, W/E, M48 Turret Type, Soft Mount, (Navy) Fixed Type Right Hand Feed, (Navy) Fixed Type Left Hand Feed (Navy) {TM 02498A-10/2; To 11W2-6-3-161; SW361-AB-MMO-010}	12 Feb 2010
TM 9-1005-213-23&P	UNIT AND DIRECT SUPPORT MAINTENANCE MANUAL (INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST) FOR MACHINE GUNS, CALIBER .50: M2, HEAVY BARREL FLEXIBLE, W/E (NSN 1005-00-322-9715) (EIC: 4AG) M48 TURRET TYPE (	15 Mar 2002
TM 9-1005-245-13&P	OPERATORS, UNIT, AND DIRECT SUPPORT MAINTENANCE MANUAL WITH REPAIR PARTS AND SPECIAL TOOLS LIST (RPSTL) FOR MACHINE GUN MOUNTS AND COMBINATIONS FOR TACTICAL/ARMORED VEHICLES AND GROUND MOUNTING M122 MACH	17 Apr 2005
TM 9-2350-255-10-2	OPERATORS MANUAL FOR OPERATION UNDER UNUSUAL CONDITIONS, MAINTENANCE, AND AMMUNITION VOL 2 OF 2 TANK, COMBAT, FULL TRACKED: 105-MM GUN, M1 (NSN 2350-01-061-2445) TANK, COMBAT, FULL TRACKED: 105-MM GUN, I	28 Dec 1990
TM 9-2350-264-10-2	Operator's Manual for Tank, Combat, Full-Tracked: 120-MM Gun, M1A1 (NSN: 2350-01-087-1095) (EIC:AAB) General Abrams Volume 2 of 3	07 Sep 2011

Additional Non-Standard References

Unit SOPs.

5. Resources

TIME: Time of Instruction (Time not specified)

LAND: Classroom, Training Area, and Range Requirements

Id	Name
17120	General Instruction Building
17832	Range, Machine Gun Field Fire

AMMO: Ammunition Requirements

DODIC	Name
AB36	Cartridge, .50 Cal Linked Dummy M2 (Linked)
A529	.50 4 Ball-1 Tracer

MISC: Materiel Items and TADSS Requirements

Id	Name
1005-00-288-3565	SWAB,SMALL ARMS CLEANING
1005-00-322-9715	MACHINE GUN,CALIBER .50
1005-00-322-9716	MOUNT,TRIPOD,MACHINE GUN
1005-00-556-4102	ROD,CLEANING,SMALL ARMS
1005-00-726-6131	BARREL,MACHINE GUN
1005-01-526-7354	CLEANING KIT,GUN
1010-00-557-4621	ELEVATION MECHANISM
1010-01-151-6227	ELEVATING MECHANISM,MORTAR
1010-01-151-6229	PINTLE ADAPTER ASSE
1010-01-151-6229	PINTLE ADAPTER ASSE
1010-01-180-9319	MOUNT,GUN
1010-01-180-9319	MOUNT,GUN
2320-01-413-3739	Truck Utility: Expanded Capacity Up Armored HMMWV 4x4 W/E: M1114
2330-00-141-8049	TRAILER,TANK
4933-00-535-1217	Gage, Headspace
4933-00-716-0041	EXTRACTOR,RUPTURED CARTRIDGE CAS
5220-00-535-1217	GAGE,HEADSPACE
5830-00-164-6622	Public Address Set: AN/TIQ-2
6515-00-137-6345	Plug Ear Universal Size 400S
6530-00-783-7510	LITTER,NONRIGID,POLELESS
6530-01-260-1222	RESCUE AND TRANSPORT SYSTEM,PATI
6545-01-254-9551	MES,COMBAT LIFESAVER-1999
6665-01-381-3023	Wet Bulb-Globe Temperature Kit
6850-00-224-6657	CLEANING COMPOUND,RIFLE BORE
6920-00-071-4780	Target, Silhouette
6920-00-078-5123	TARGET,MACHINE GUN
6920-01-167-1392	Target, Silhouette: 25 Meter Zero Target
7240-00-089-3827	Can, Military
7920-00-205-1711	RAG,WIPING
8415-01-092-0039	MITTEN,HEAT PROTECTIVE
9150-00-889-3522	LUBRICATING OIL,SEMIFLUID
9150-01-079-6124	CLEANER,LUBRICANT AND PRESERVATI

(Note: Asterisk before ID indicates a TADSS.)

Additional Non-Standard Resources

None

6. A possible technique to achieve the outcome:

Maximise hands on training time to allow the students to achieve task mastery.
Grade the Soldiers using the task performance measures.
Retrain Soldiers who do not receive a GO.
Re-test Soldiers until they achieve a GO.

7. Conduct AAR with Soldier and Cadre.

AAR's are essential to ensure the quality of the instruction and the efficiency of the course.
Schedule AAR's with Instructors to solicit feedback on the techniques and procedures in use.
Schedule AAR's with the Student's to solicit feedback on Instructional techniques, information being presented, and efficiency of the course.

NOTE: Before presenting this lesson, Instructors must be thoroughly prepared by studying the appropriate lesson plan and identified reference material.