STP 21-1-SMCT

HEADQUARTERS
DEPARTMENT OF THE ARMY

Soldier's Manual of
Common Tasks
Skill Level 1

AUGUST 2003

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***STP 21-1-SMCT**

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Headquarters
Department of the Army
Washington, DC, 31 August 2003

SOLDIER'S MANUAL OF COMMON TASKS

Skill Level 1

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PREFACE

This manual is one of a series of soldier training publications that support individual training. Commanders, trainers, and soldiers will use this manual and STP 21-24-SMCT, *Soldier's Manual of Common Tasks, Skill Levels 2, 3, and 4*, to plan, conduct, sustain, and evaluate individual training of common tasks in units.

This manual contains a common task training plan for skill levels (SL) 1 through 4 and task summaries for SL 1 critical common tasks that support unit wartime missions. This manual is the only authorized source for these common tasks. Task summaries in this manual supersede any common tasks appearing in MOS-specific soldier's manuals.

Training support information, such as reference materials, is also included. Trainers and first-line supervisors should ensure SL 1 soldiers have access to this publication in their work areas, unit learning centers, and unit libraries.

This manual applies to both active and reserve component soldiers.

Unless this manual states otherwise, masculine pronouns do not refer exclusively to men.

The proponent of this publication is the Commander, United States Army Training and Doctrine Command (TRADOC), with the Commander, United States Army Training Support Center (ATSC) designated as the principle publishing, printing and distribution agency. Proponents for the specific tasks are the Army schools and agencies as identified by the school code, listed at appendix A. This code consists of the first three digits of the task identification number. All comments, suggestions, and recommended changes to this publication should be submitted as follows:

Record any comments or questions regarding the task summaries contained in this manual on a DA Form 2028 (*Recommended Changes to Publications and Blank Forms*) and send it to the respective task proponent with information copies forwarded to: Commander, U.S. Army Training and Doctrine Command, ATTN: ATTG-I, Fort Monroe, VA 23651-5000, and Commander, U.S. Army Training Support Center, ATTN: ATIC-ITSC-CM, Fort Eustis, VA 23604-5166.

SPECIAL NOTES CONCERNING THE AUGUST 2003 SMCT

5" X 7" Format. Beginning with the August 2003 revisions, both the STP 21-1-SMCT and STP 21-24-SMCT are printed in 5"x7" format, following the very favorable acceptance of previous skill level 1 SMCTs which inaugurated the "pocket-size" manuals. This, however, has precluded incorporating full-size reproducible forms at the end of the books. Instead, a Guide to Forms (Appendix B) is now provided which, in the online versions of the new manuals, contains electronic links to the downloadable, reproducible forms. Where online access is not available, the soldier's unit often has hard copies of the forms, or can obtain them.

Land navigation skills and knowledge, for common tasks 071-329-1006, Navigate from One Point on the Ground to Another Point While Dismounted, and 071-329-1030, Navigate from One Point on the Ground to Another Point While Mounted are grouped in Appendix C, identified by the grey-edged pages near the end of this manual.

Task 052-192-1135, Locate Mines by Probing. Performance standards for this task are now incorporated into task 052-192-1042, Perform Self-Extraction from a Mined Area. These standards are further updated from the 18 March 03 revision of Locate Mines by Probing.

Task 071-730-0014, Identify Combat Vehicles. This task, uniquely, incorporates a Windows-based online option (ROC-V, Recognition of Combat Vehicles) for training and testing soldiers. In addition to teaching thermal and visual identification cues of vehicles and practical use of thermal sensor image controls, the program ensures identification standards are current, irrespective of print date of this manual. Refer to the Evaluation Preparation section of this task for instructions on accessing the ROC-V program.

SPECIAL NOTE FROM THE STAFF
CONCERNING THE REVISED SMCT

Experienced trainers will notice that, in addition to the numerous new tasks in the revised SMCT, there are many tasks for which the skill level has been lowered from that in the past. This reflects results from the recent survey of approximately 19,000 enlisted soldiers, their commanders, and senior leaders, to determine who was actually performing certain tasks**,** and the amount of learning that was actually filtering down in the "one room schoolhouse" of the working Army. When it was established that a significant percentage of soldiers were performing those tasks at skill levels that were above their own, it was decided to lower the task designation, giving trainers—and the Army—the full advantage of accelerated learning at every level. This SMCT, if anything, reflects back to its users a faithfulness to this spirit of Army training from whom it derived, an allegiance and gratitude to the profession and legacy of every United States Army soldier.

Thank you.

United States Army Training and Doctrine Command

United States Army Training Support Center

Chapter 1

Introduction to the SMCT System

1-1. GENERAL

Training prepares soldiers, leaders, and units to fight and win in combat—the Army's basic mission. As explained in the Army's CAPSTONE training document, FM 7-0 Training the Force, units do not have the time and resources to achieve and sustain proficiency on every possible training task. Commanders must identify the unit's critical wartime tasks. These tasks make up the unit's Mission Essential Task List (METL). Commanders use this list to develop their unit training plan. Noncommissioned Officer (NCO) trainers then plan the individual training that soldiers in the unit need to accomplish the METL. The soldier training publications (STP), also known as soldier's manuals (SMs), provide the critical individual tasks for each military occupational specialty (MOS) that support the unit's full spectrum of missions. The NCO trainer uses the tasks in the SMs to train the soldiers and measure the soldier's proficiency on these unit critical tasks. The manuals provide task performance and evaluation criteria and are the basis for individual training and evaluation in the unit and for task-based evaluation during resident training.

1-2. PURPOSE

The Soldier's Manual of Common Tasks (SMCT), Skill Level (SL) I, contains the common tasks that are essential to the Army's ability to win on the modern battlefield. In the event of war, regardless of job or individual MOS, each soldier risks exposure to hostile actions. This manual contains the common tasks that soldiers must be able to perform to fight, survive, and win in combat.

The SMCT provides the commander, NCO trainer or first-line supervisor, and individual soldiers with the information necessary to support integration and sustainment training in their units. This information allows trainers to plan, prepare, train, evaluate, and monitor individual training of common tasks. Using the appropriate mission training plan (MTP), MOS specific STPs, and this manual, will help provide the foundation for an effective unit training plan.

1-3. COMMANDER'S RESPONSIBILITIES

The commander at each level develops a unit METL in consultation with the command sergeant major and subordinate commanders. Using the Training Planning Process described in FM 7-0, the commander develops the METL and then determines the level of training needed to attain and maintain proficiency. After determining the necessary training, the commander

develops a strategy to accomplish the required training. The commander also gives his or her trainers the guidance they need to carry out this strategy. Each commander must design a unit training plan that prepares the unit for the full spectrum of operations. Soldiers must develop and sustain proficiency in the critical tasks for their MOS and skill level. The commander's unit training program should provide individual training for all soldiers assigned to the unit and routinely evaluate soldier proficiency. The leader's assessment and the Common Task Test (CTT) are two tools that give the trainer and commander feedback on the status of training for individuals and for the unit. This feedback should also be integrated with collective training such as the MTP and crew drills. The Common Task Training Plan, located in Chapter 2*,* provides information on where the common tasks are first trained to standard and how often the tasks should be trained to maintain proficiency.

Based on the commander's guidance, individual training in the unit is the responsibility of the NCO trainers. The commander must give the NCO trainer the priorities, resources, and direction needed to carry out training. He or she must also assess the training results of the MTP and other training events, and adjust the training plan accordingly. To develop a training program, we recommend the following seven-step approach:

Step 1. Set the objectives for training.

Step 2. Plan the resources (personnel, time, funds, facilities, devices, training aids).

Step 3. Train the trainers.

Step 4. Provide the resources.

Step 5. Manage risks, environmental and safety considerations.

Step 6. Conduct the training.

Step 7. Evaluate the results.

1-4. TRAINER'S RESPONSIBILITIES

Trainers use the steps below to plan and evaluate training.

a. *Identify individual training requirements*. The NCO determines which tasks soldiers need to train based on the commander's training strategy. The unit's training plan, METL, MTP, and the Common Task Training Plan (Chapter 2) are sources for helping the trainer define the individual training needed.

b. *Plan the training.* Plan individual training based on the unit’s training plan. Be prepared to take advantage of opportunities to conduct individual training (“hip pocket” training).

c. *Gather the training references and materials.* The task summaries list references that can assist the trainer in preparing for the training of that

task. Check the Reimer Digital Library to see if any new resources have been added.

d. *Manage risks and environmental and safety concerns.* Assess the risks involved in training a specific task under the conditions current at the time you are scheduled to train and implement controls, if necessary, to lessen the risk level. Ensure that your training preparation takes into account those cautions, warnings, and dangers associated with each task as well as environmental and safety concerns.

e. *Train each soldier.* Show the soldier how to do the task to standard and explain step-by-step how to do the task. Give each soldier a chance to practice the task step-by-step.

f. *Emphasize training in Mission-Oriented Protective Posture (MOPP) Level 4 clothing*. Soldiers have difficulty performing even very simple tasks in a nuclear/chemical environment. The combat effectiveness of the soldier and the unit can degrade quickly when trying to perform in MOPP 4. Practice is the best way to improve performance. The trainer is responsible for training and evaluating soldiers in MOPP 4 so that they are able to perform critical tasks to standards within a nuclear/chemical environment.

g. *Check each soldier.* Evaluate how well each soldier performs the tasks in this manual. Conduct these evaluations during individual training sessions or while evaluating individual proficiency during the conduct of unit collective tasks. This manual provides a training and evaluation guide for each task to enhance the trainer's ability to conduct year-round, hands-on evaluations of tasks critical to the unit's mission. Use the information in the Common Task Training Plan as a guide to determine how often to train the solder on each task to maintain proficiency.

h. *Record the results.* Use the leader book referred to in FM 7-10 to record task performance. This gives the leader total flexibility on the method of recording training. The trainer may use DA Form 5164-R (Hands-on Evaluation} and DA Form 5165-R (Field Expedient Squad Book} as part of the leader book. These forms are optional and locally reproducible. More information on the use of these forms is provided in Appendix B of this manual.

i. *Retrain and evaluate.* Work with each soldier until the individual performs the task to standard. Well-planned, integrated training increases the professional competence of each soldier and contributes to the development of an efficient unit. The NCO or first-line supervisor is a vital link in the conduct of training.

1-5. SOLDIER'S RESPONSIBILITIES

Each soldier must be able to perform the individual tasks that the first-line supervisor has identified based on the unit's METL. The soldier must perform the task to the standard listed in the SMCT. If a soldier has a

question about how to do a task, or which tasks in this manual he or she must perform, it is the soldier's responsibility to go to the first-line supervisor for clarification. The first-line supervisor knows how to perform each task or can direct the soldier to the appropriate training materials. Additionally, each soldier should—

a. Know the training progression for both the common critical tasks and their MOS specific critical tasks for their skill level. Lists of the critical tasks can be found in Chapter 2 of this manual (for common tasks) and the STP for their specific MOS (MOS specific tasks).

b. Check the Reimer Digital Library for new training materials to support self-development either to maintain previously trained tasks or to learn new tasks.

1-6. TASK SUMMARIES

Task summaries document the performance requirements of a critical common task. They provide the soldier and the trainer with the information necessary to evaluate critical tasks. The format for the task summaries is—

a. *Task Title.* The task title identifies the action to be performed.

b. *Task Number.* A l0-digit number that identifies each task. The first three digits of the number represent the proponent code for that task. (A list of the proponent codes is given in Appendix A.) Include the entire 10-digit task number, along with the task title, in any correspondence relating to the task.

c. *Conditions.* The task conditions identify all the equipment, tools, materials, references, job aids, and supporting personnel that the soldier needs to perform the task. This section identifies any environmental conditions that can alter task performance such as visibility, temperature, or wind. This section also identifies any specific cues or events (for example, a chemical attack or identification of an unexploded ordnance hazard) that trigger task performance.

d. *Standard.* A task standard specifies the requirements for task performance by indicating how well, completely, or accurately a product must be produced, a process must be performed, or both. Standards are described in terms of accuracy, tolerances, completeness, format, clarity, number of errors, quantity, sequence, or speed of performance.

e. *Training and Evaluation Guide.* This section has two parts. The first part, Performance Steps, lists the individual steps that the soldier must complete to perform the task. The second part is the Performance Evaluation Guide. This provides guidance on how to evaluate a soldier's performance of the task. It is composed of three subsections. The Evaluation Preparation subsection identifies special setup procedures and, if required, instructions for evaluating the task performance. Sometimes the conditions and standard must be modified so that the task can be evaluated

in a situation that does not exactly duplicate actual field performance. This subsection may also include instructions that the evaluator should give to the soldier before the performance test. The Performance Measures subsection identifies the criteria for acceptable task performance. The soldier is rated (GO/NO GO) on how well he or she performs specific actions or produces specific products. As indicated in the Evaluation Guidance subsection, the soldier must score a GO on all or specified performance measures to receive a GO on the task.

f. *References.* This section identifies references that provide more detailed and thorough explanations of task performance requirements than that given in the task summary description. This section identifies resources the soldier can use to improve or maintain performance.

Additionally, task summaries can include safety statements, environmental considerations, and notes. Safety statements (danger, warning, caution) alert users to the possibility of immediate death, personal injury, or damage to equipment. Notes provide additional information to support task performance.

1-7. EVALUATING TASK PERFORMANCE

Trainers need to keep the following points in mind when preparing to evaluate their soldiers—

a. Review the performance measures to become familiar with the criteria on which the soldier will be scored.

b. Ensure that all necessary equipment and clothing needed for proper performance of the job are on hand at the training site. Don't forget to include safety equipment.

c. Prepare the test site according to the conditions section of the task summary. Some tasks contain special evaluation preparation instructions. These instructions tell the trainer what modifications must be made to the job conditions to evaluate the task. Reset the site to its original condition after evaluating each soldier to ensure that the conditions are the same for each soldier.

d. Advise each soldier of any special guidance that appears in the Evaluation Preparation section of the task summary before evaluating.

e. Score each soldier based on the information in the Performance Measures and Evaluation Guidance sections.

f. Record the date and task performance score ("GO" or "NO GO") in the Leader Book.

1-8. TRAINING TIPS FOR TRAINERS

a. Prepare yourself:

(1) Get training guidance from your chain of command on when to train, which soldiers to train, the availability of resources, and a training site.

(2) Get task conditions and standards from the task summary in this manual.

(3) Ensure that you can do the task. Review the task summary and the references in the reference section. Practice doing the task or, if necessary, have someone train you on the task.

b. Prepare the resources:

(1) Obtain the required resources as identified in the conditions statement for each task and/or modified in the Training and Evaluation Guide.

(2) Gather the equipment and ensure that it is operational.

(3) Prepare a training outline consisting of informal notes on what you want to cover during your training session.

(4) Practice your training presentation.

(5) Coordinate for the use of training aids and devices.

(6) Prepare the training site using the conditions statement as modified in the Training and Evaluation Guide.

c. Prepare the soldiers:

(1) Tell the soldier what task to do and how well it must be done. Refer to the task standard and the performance measures for the task, as appropriate.

(2) Caution soldiers about safety, environment, and security considerations.

(3) Provide any necessary training on basic skills that soldiers must have before they can be trained on the task.

(4) Test each soldier to determine who needs training in what areas by having the soldier perform the task.

d. Train soldiers who fail the initial test:

(1) Demonstrate how to do the task or the specific performance steps to those soldiers who could not perform to standard. Have the soldiers study the appropriate training materials.

(2) Have the soldiers practice the task until they can perform it to standard.

(3) After remedial training, retest each solider who did not initially pass the performance test.

(4) Provide feedback to those soldiers who fail to perform to the SMCT standards, and have them continue to practice until they can perform to the SMCT standards.

(5) Record the results in the Leader Book.

1-9. TRAINING SUPPORT: THIS MANUAL INCLUDES THE FOLLOWING THAT PROVIDE ADDITIONAL TRAINING SUPPORT INFORMATION.

a. Appendix A - Proponent School and Agency Codes guide, lists the task proponents and agency codes (first three digits of the task number) with addresses for submitting comments concerning specific tasks in this manual.

b. Appendix B - Guide to Forms, explains the use of various SMCT training and evaluation forms and, in the online version of this manual, provides links to the forms.

c. Appendix C - Land Navigation Skills and Knowledge, provides additional training support related to the two land navigation tasks in Subject Area 5 (Navigate).

d. Glossary - The Glossary section lists abbreviations and acronyms and their definitions.

e. References - The Reference section lists all reference materials cited in the task summaries by type, identification number, and title.

Note: Combine training on the individual tasks contained in this manual with the collective tasks contained in the MTP. Ensure that the necessary safety equipment and clothing needed for proper performance of the job are on hand at the training site.

Chapter 2

Training Guide

2-1. COMMON TASK TRAINING PLAN

The Common Task Training Plan provides information to help the trainer plan, prepare, train, evaluate, and monitor individual training in units. It lists, by general subject area and skill level, the critical common tasks soldiers must perform, the initial training location, and a suggested frequency of training. The training location column uses brevity codes to indicate where the task is first taught to standards. If the task is taught in the unit the word "UNIT" appears in this column. "SD" indicates tasks trained via self-development media. If it is taught in the training base, the brevity code (BCT, OSUT, AIT) of the resident course appears. Brevity codes and resident courses are listed below.

ANCOC	Advanced NCO Course
BNCOC	Basic NCO Course
PLDC	Primary Leadership Development Course
BCT	Basic Combat Training
OSUT	One Station Unit Training
AIT	Advanced Individual Training
UNIT	Trained in/by the Unit
SD	Self-Development Training

The sustainment training column lists how often (frequency) soldiers should train on the task to ensure they maintain their proficiency. This information is not a requirement, but rather a guide the commander can use to develop a comprehensive unit training plan. The commander, with the unit trainers, is in the best position to determine on which tasks and how often soldiers need training to maintain unit readiness.

Frequency Codes	
AN	Annually
SA	Semi-Annually
QT	Quarterly

Common Task Training Plan			
Task Number	***Title***	***Training Location***	***Sustainment Training Frequency***
Skill Level 1			
Subject Area 1. Individual Conduct and Laws of War			
181-101-1013	Comply with the Uniform Code of Military Justice (UCMJ)	BCT/OSUT	AN
181-105-1001	Comply with the Law of War and the Geneva and Hague Conventions	BCT/OSUT	AN
224-176-1425	Interact with News Media	BCT/OSUT	AN
331-202-1049	Comply with the Requirements of the Code of Conduct	BCT/OSUT	AN
805C-PAD-1245	Support Unit and Family Readiness Through the Army Family Team Building (AFTB) Program	BCT/OSUT	AN
805C-PAD-1391	Comply with the Army's Equal Opportunity and Sexual Harassment Policies	BCT/OSUT	AN
Subject Area 2. First Aid			
081-831-1000	Evaluate a Casualty	BCT/OSUT	AN
081-831-1003	Perform First Aid to Clear an Object Stuck in the Throat of a Conscious Casualty	BCT/OSUT	AN
081-831-1005	Perform First Aid to Prevent or Control Shock	BCT/OSUT	AN
081-831-1007	Perform First Aid for Burns	BCT/OSUT	AN

Common Task Training Plan			
Task Number	***Title***	***Training Location***	***Sustainment Training Frequency***
081-831-1008	Perform First Aid for Heat Injuries	UNIT	AN
081-831-1025	Perform First Aid for an Open Abdominal Wound	UNIT	AN
081-831-1026	Perform First Aid for an Open Chest Wound	UNIT	AN
081-831-1032	Perform First Aid for Bleeding of an Extremity	BCT/OSUT	AN
081-831-1033	Perform First Aid for an Open Head Wound	BCT/OSUT	AN
081-831-1034	Perform First Aid for a Suspected Fracture	BCT/OSUT	AN
081-831-1042	Perform Mouth-to-Mouth Resuscitation	BCT/OSUT	SA
081-831-1044	Perform First Aid for Nerve Agent Injury	BCT/OSUT	QT
081-831-1045	Perform First Aid for Cold Injuries	UNIT	AN
081-831-1046	Transport a Casualty	BCT/OSUT	AN
081-831-1053	Practice Individual Preventive Medicine Countermeasures	BCT/OSUT	SA
Subject Area 3. Nuclear, Biological, and Chemical (NBC)			
031-503-1013	Decontaminate Yourself and Individual Equipment Using Chemical Decontaminating Kits	BCT/OSUT	AN

Common Task Training Plan			
Task Number	***Title***	***Training Location***	***Sustainment Training Frequency***
031-503-1015	Protect Yourself from NBC Injury/Contamination with Mission-Oriented Protective Posture (MOPP) Gear	BCT/OSUT	AN
031-503-1017	Respond to Depleted Uranium	BCT/OSUT	AN
031-503-1018	React to Nuclear Hazard/Attack	BCT/OSUT	AN
031-503-1019	React to Chemical or Biological Hazard/Attack	BCT/OSUT	AN
031-503-1035	Protect Yourself from Chemical/Biological Contamination Using Your Assigned Protective Mask	BCT/OSUT	AN
031-503-1036	Maintain Your Assigned Protective Mask	BCT/OSUT	AN
031-503-1037	Detect Chemical Agents Using M8 or M9 Detector Paper	BCT/OSUT	AN
Subject Area 4. Survive (Combat Techniques)			
052-192-1042	Perform Self-Extraction from a Mined Area	AIT	QT
052-192-1242	Locate Mine and Booby Trap Indicators by Visual Means	AIT	AN
071-326-0502	Move Under Direct Fire	BCT/OSUT	SA
071-326-0503	Move Over, Through, or Around Obstacles (Except Minefields)	BCT/OSUT	SA

Common Task Training Plan			
Task Number	***Title***	***Training Location***	***Sustainment Training Frequency***
071-326-0510	React to Indirect Fire While Dismounted	BCT/OSUT	SA
071-326-0511	React to Flares	BCT/OSUT	SA
071-326-0513	Select Temporary Fighting Positions	BCT/OSUT	SA
071-326-3002	React to Indirect Fire While Mounted	UNIT	AN
071-326-5703	Construct Individual Fighting Positions	BCT/OSUT	SA
071-331-0815	Practice Noise, Light, and Litter Discipline	BCT/OSUT	SA
071-331-1004	Perform Duty as a Guard	BCT/OSUT	AN
071-410-0002	React to Direct Fire While Mounted	UNIT	AN
071-710-0006	Plan Use of Night Vision Devices	UNIT	SA
093-401-5040	React to Unexploded Ordnance Hazards	UNIT	SA
551-88M-0005	Operate a Vehicle in a Convoy	UNIT	SA
Subject Area 5. Navigate			
071-329-1006	Navigate from One Point on the Ground to Another Point While Dismounted	BCT/OSUT	SA
071-329-1030	Navigate from One Point on the Ground to Another Point While Mounted	UNIT	SA

Common Task Training Plan			
Task Number	***Title***	***Training Location***	***Sustainment Training Frequency***
Subject Area 6. Communicate			
113-571-1022	Perform Voice Communications	BCT/OSUT	SA
113-600-2001	Communicate Via a Tactical Telephone	BCT/OSUT	AN
113-637-2001	Communicate Via a Tactical Radio in a Secure Net	BCT/OSUT	AN
Subject Area 7. See			
071-331-0804	Perform Surveillance without the Aid of Electronic Devices	UNIT	SA
071-730-0014	Identify Combat Vehicles	UNIT	SA
Subject Area 8. Hand Grenades and Land Mines			
071-325-4401	Perform Safety Checks on Hand Grenades	BCT/OSUT	SA
071-325-4407	Employ Hand Grenades	BCT/OSUT	SA
071-325-4425	Employ an M18A1 Claymore Mine	BCT/OSUT	QT
Subject Area 9. M16-Series Rifle			
071-008-0007	Engage Targets with an M16-Series Rifle Using an AN/PAS-13 Series Thermal Weapon Sight	BCT/OSUT	AN
071-311-2025	Maintain an M16-Series Rifle	BCT/OSUT	SA
071-311-2027	Load an M16-Series Rifle	BCT/OSUT	SA

Common Task Training Plan			
Task Number	***Title***	***Training Location***	***Sustainment Training Frequency***
071-311-2028	Unload an M16-Series Rifle	BCT/OSUT	SA
071-315-2308	Engage Targets with an M16-Series Rifle Using a Night Vision Sight AN/PVS-4	BCT/OSUT	QT
Subject Area 10. M240B Machine Gun			
071-000-0005	Prepare a Range Card for a Machine Gun	UNIT	SA
071-025-0001	Maintain an M240B Machine Gun	AIT	QT
071-025-0003	Load an M240B Machine Gun	AIT	QT
071-025-0004	Unload an M240B Machine Gun	AIT	QT
071-025-0007	Engage Targets with an M240B Machine Gun	AIT	QT
Subject Area 11. M249 Machine Gun			
071-010-0006	Engage Targets with an M249 Machine Gun	BCT/OSUT	AN
071-312-4025	Maintain an M249 Machine Gun	BCT/OSUT	QT
071-312-4027	Load an M249 Machine Gun	BCT/OSUT	AN
071-312-4028	Unload an M249 Machine Gun	BCT/OSUT	AN
Subject Area 12. M60 Machine Gun			
071-312-3025	Maintain an M60 Machine Gun	UNIT	SA

Common Task Training Plan			
Task Number	***Title***	***Training Location***	***Sustainment Training Frequency***
071-312-3027	Load an M60 Machine Gun	UNIT	SA
071-312-3028	Unload an M60 Machine Gun	UNIT	SA
071-312-3031	Engage Targets with an M60 Machine Gun	UNIT	SA
Subject Area 13. MK19 Machine Gun			
071-030-0001	Maintain an MK19 Machine Gun	UNIT	AN
071-030-0004	Engage Targets with an MK19 Machine Gun	UNIT	AN
071-030-0005	Load an MK19 Machine Gun	UNIT	AN
071-030-0006	Unload an MK19 Machine Gun	UNIT	AN
071-030-0007	Perform a Function Check on an MK19 Machine Gun	UNIT	AN
Subject Area 14. Caliber .50 M2 Machine Gun			
071-022-0001	Maintain a Caliber .50 M2 Machine Gun	UNIT	QT
071-022-0003	Load a Caliber .50 M2 Machine Gun	UNIT	QT
071-022-0004	Unload a Caliber .50 M2 Machine Gun	UNIT	QT
071-313-3454	Engage Targets with a Caliber .50 M2 Machine Gun	UNIT	QT

Common Task Training Plan			
Task Number	***Title***	***Training Location***	***Sustainment Training Frequency***
Subject Area 15. M136 Launcher			
071-054-0001	Prepare an M136 Launcher for Firing	BCT/OSUT	AN
071-054-0002	Restore an M136 Launcher to Carrying Configuration	BCT/OSUT	AN
Subject Area 16. M203 Grenade Launcher			
071-311-2125	Maintain an M203 Grenade Launcher	BCT/OSUT	QT
071-311-2127	Load an M203 Grenade Launcher	BCT/OSUT	QT
071-311-2128	Unload an M203 Grenade Launcher	BCT/OSUT	QT
071-311-2129	Correct Malfunctions of an M203 Grenade Launcher	BCT/OSUT	QT
071-311-2130	Engage Targets with an M203 Grenade Launcher	BCT/OSUT	QT
Subject Area 17. M4 Carbine			
071-100-0003	Engage Targets with an M4 or M4A1 Carbine	UNIT	AN
071-100-0004	Maintain an M4 or M4A1 Carbine	UNIT	AN
Subject Area 18. 9-mm Pistol			
071-004-0001	Maintain an M9 Pistol	UNIT	AN
071-004-0003	Load an M9 Pistol	UNIT	AN
071-004-0004	Unload an M9 Pistol	UNIT	AN
071-004-0006	Engage Targets with an M9 Pistol	UNIT	AN

Common Task Training Plan			
Task Number	***Title***	***Training Location***	***Sustainment Training Frequency***
Subject Area 19. Crowd Control			
191-376-4121	Use a Riot Baton	BCT/OSUT	QT
191-376-4122	Position Yourself in Riot Control Formations	BCT/OSUT	QT
Subject Area 20. Casualty Reporting and Handling			
101-515-1997	Inter Isolated Remains (After Receiving Authorization)	BCT/OSUT	SA
101-515-1998	Evacuate Isolated Remains	BCT/OSUT	SA
101-515-1999	Recover Isolated Remains	BCT/OSUT	SA
Subject Area 21. Defense Measures			
052-191-1361	Camouflage Yourself and Your Individual Equipment	BCT/OSUT	QT
052-191-1362	Camouflage Equipment	UNIT	SA
191-376-4114	Control Entry to and Exit from a Restricted Area	BCT/OSUT	SA
301-371-1000	Report Intelligence Information	BCT/OSUT	AN
301-371-1050	Implement Operations Security (OPSEC) Measures	UNIT	AN

Common Task Training Plan			
Task Number	***Title***	***Training Location***	***Sustainment Training Frequency***
Skill Level 2			
Subject Area 1. Individual Conduct and Laws of War			
181-101-2023	Enforce the Uniform Code of Military Justice (UCMJ)	PLDC	AN
181-105-2001	Enforce the Law of War and the Geneva and Hague Conventions	UNIT	AN
181-105-2002	Conduct Combat Operations According to the Law of War	UNIT	AN
224-176-2426	Enforce Compliance with Media Ground Rules	UNIT	SA
331-202-1050	Enforce Compliance with the Code of Conduct	UNIT	AN
805C-PAD-2503	Enforce Compliance with the Army's Equal Opportunity and Sexual Harassment Policies	PLDC	QT
Subject Area 2. First Aid			
081-831-0101	Request Medical Evacuation	PLDC	AN
081-831-1054	Evacuate Casualties	PLDC	SA
081-831-9000	Implement Preventive Medicine Measures (PMM)	PLDC	SA

Common Task Training Plan			
Task Number	***Title***	***Training Location***	***Sustainment Training Frequency***
Subject Area 3. Nuclear, Biological, and Chemical (NBC)			
031-503-1023	Protect Yourself from Nuclear, Biological, and Chemical (NBC) Injury/Contamination When Changing Mission-Oriented Protective Posture (MOPP) Gear	UNIT	SA
031-503-2001	Identify Chemical Agents Using M256-Series Chemical Agent Detector Kit	UNIT	SA
031-503-2023	Measure Radiation Dose Rate and Total Dose	UNIT	SA
031-503-3002	Conduct Unmasking Procedures	UNIT	SA
031-503-3004	Supervise the Crossing of a Contaminated Area	UNIT	SA
031-503-3005	Submit an NBC 1 Report	UNIT	SA
031-503-3008	Implement Mission-Oriented Protective Posture (MOPP)	UNIT	SA
031-503-3010	Supervise the Employment of Nuclear, Biological, and Chemical (NBC) Markers	UNIT	AN

Common Task Training Plan			
Task Number	***Title***	***Training Location***	***Sustainment Training Frequency***
031-503-4002	Supervise Unit Preparation for a Nuclear, Biological, and Chemical (NBC) Attack	UNIT	AN
031-506-1053	Report NBC Information Using NBC 4 Report	UNIT	SA
031-506-2061	Conduct a Mask Fit Test	UNIT	QT
Subject Area 4. Survive (Combat Techniques)			
061-283-6003	Adjust Indirect Fire	UNIT	QT
071-326-0608	Use Visual Signaling Techniques	PLDC	SA
071-326-5704	Supervise Construction of a Fighting Position	PLDC	AN
071-326-5705	Establish an Observation Post	PLDC	AN
Subject Area 5. Navigate			
071-329-1019	Use a Map Overlay	UNIT	QT
Subject Area 20. Casualty Reporting and Handling			
805C-PAD-2060	Report Casualties	UNIT	SA
Subject Area 21. Defense Measures			
071-430-0002	Conduct a Defense by a Squad	PLDC	SA
Subject Area 22. Unit Operations			
071-326-5502	Issue a Fragmentary Order	PLDC	QT

Common Task Training Plan			
Task Number	***Title***	***Training Location***	***Sustainment Training Frequency***
071-326-5503	Issue a Warning Order	PLDC	QT
551-88N-0002	Prepare for Unit Move	UNIT	QT
Subject Area 23. Security and Control			
301-371-1200	Process Captured Materiel	UNIT	AN
Subject Area 25. Equipment Checks			
091-CLT-4029	Supervise Preventive Maintenance Checks and Services (PMCS)	PLDC	QT
101-92Y-0003	Enforce Compliance with Supply Discipline Procedures	PLDC	SA
101-92Y-0004	Enforce Property Accountability Policies	PLDC	SA
101-92Y-0005	Enforce Compliance with Property Accountability Policies	PLDC	SA
101-92Y-0006	Inspect Equipment for Accountability, Cleanliness, and Serviceability	UNIT	QT
Subject Area 27. Risk Management			
850-001-2000	Employ Accident Prevention Measures and Risk Management Process	PLDC	QT

Common Task Training Plan			
Task Number	***Title***	***Training Location***	***Sustainment Training Frequency***
Subject Area 28. Administration/Management			
805C-PAD-2044	Recommend Individual for Award	PLDC	QT
805C-PAD-2145	Counsel a Soldier on the Contents of a Noncommissioned Officer Evaluation Report and NCOER Checklist	PLDC	QT
805C-PAD-2146	Prepare the Rater's Portion of a Noncommissioned Officer Evaluation Report (NCOER)	PLDC	AN
805C-PAD-2402	Provide Input on Personnel Actions Affecting Subordinates	PLDC	QT
805C-PAD-2407	Recommend Disciplinary Action for a Soldier	PLDC	AN
805C-PAD-2461	Maintain Accountability of Personnel (Status Report)	UNIT	SA
805C-PAD-2472	Prepare a Duty Roster	UNIT	AN
Skill Level 3			
Subject Area 1. Individual Conduct and Laws of War			
805C-PAD-3238	Enforce the Equal Opportunity Program	BNCOC	QT

Common Task Training Plan			
Task Number	***Title***	***Training Location***	***Sustainment Training Frequency***
Subject Area 4. Survive (Combat Techniques)			
052-192-4053	Supervise Minefield Breaching Operations	UNIT	SA
071-410-0012	Conduct Occupation of an Assembly Area	BNCOC	SA
071-420-0021	Conduct a Movement to Contact by a Platoon	BNCOC	SA
071-430-0028	Consolidate a Unit	BNCOC	SA
071-430-0029	Reorganize a Unit	BNCOC	SA
Subject Area 5. Navigate			
071-332-5000	Prepare an Operation Overlay	BNCOC	QT
Subject Area 19. Crowd Control			
191-378-4302	Form Squad-Size Riot Control Formations	UNIT	AN
Subject Area 21. Defense Measures			
052-195-3066	Direct Construction of Nonexplosive Obstacles	UNIT	AN
071-410-0019	Control Organic Fires	UNIT	SA
441-091-3000	Supervise the Implementation of Air Defense Measures	UNIT	AN
Subject Area 22. Unit Operations			
071-326-3013	Conduct a Tactical Road March	BNCOC	QT

Common Task Training Plan			
Task Number	***Title***	***Training Location***	***Sustainment Training Frequency***
071-326-5805	Conduct a Route Reconnaissance Mission	UNIT	QT
071-332-5021	Prepare a Situation Map	UNIT	QT
071-720-0015	Conduct an Area Reconnaissance by a Platoon	UNIT	QT
101-92Y-0002	Plan Tactical Resupply Operations	BNCOC	SA
301-371-1150	Identify Intelligence and Electronic Warfare (IEW) Assets	BNCOC	AN
551-88M-0001	Lead a Convoy Serial/March Unit	UNIT	SA
551-88N-0003	Plan Unit Move	UNIT	SA
Subject Area 23. Security and Control			
191-379-4407	Plan Convoy Security Operations	UNIT	QT
301-371-1052	Protect Classified Information and Material	UNIT	AN
805C-PAD-3594	Store Classified Information and Materials	UNIT	AN

Common Task Training Plan			
Task Number	*Title*	*Training Location*	*Sustainment Training Frequency*

Performance Steps

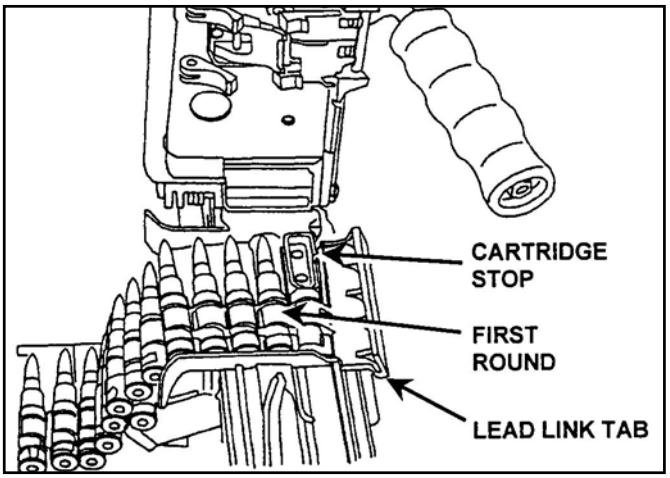

Figure 071-312-4027-4. Link belt in feed tray

WARNING

The weapon is now loaded.

Evaluation Preparation:

Setup: Use dummy ammunition to test this task. At the test position, provide an M249 and a belt of linked, dummy 5.56-mm ammunition. For standardization, always place the bolt and cocking handle forward and the safety in the safe position. Make sure the ammunition is clean and linked properly. Have an assistant relink and wipe the ammunition clean before the next test.

Brief Soldier: Tell the soldier to load the M249 machine gun.

Performance Measures	GO	NO GO
1. Locked the bolt in the rear position.	____	____
2. Pushed the cocking handle forward to the locked position.	____	____
3. Pushed the safety to the safe position.	____	____
4. Checked to make sure the feed tray, receiver, and chamber were clear.	____	____

Performance Measures	GO	NO GO
5. Attached the ammunition box with linked ammunition to the receiver.	____	____
6. Placed the link belt in the feed tray with the first round against the cartridge.	____	____
7. Closed the cover.	____	____

Evaluation Guidance: Score the soldier GO if all performance measures are passed. Score the soldier NO GO if any performance measure is failed. If the soldier scores NO GO, show the soldier what was done wrong and how to do it correctly.

References

Required	Related
	FM 3-22.68
	TM 9-1005-201-10

071-312-4028
Unload an M249 Machine Gun

Conditions: Given an M249 machine gun loaded with 5.56-mm ammunition (linked or in an M16 magazine) and a requirement to unload the M249.

Standards: Removed all ammunition, expanded brass, links, and the magazine from the weapon.

Performance Steps

1. Pull the cocking handle to the rear, locking the bolt in the rear position.
2. Place the safety in the safe mode (the red band will not show) and return the cocking handle to its forward position.
3. Remove ammunition and links.

   a. Belt-fed. Raise the cover and remove any ammunition or links from the feed tray.

   b. Magazine-fed. Push down on the magazine release tab and pull the magazine out. Then raise the cover.
4. Raise the feed tray and inspect the chamber to ensure that it contains no ammunition. If it contains ammunition, remove the ammunition.
5. Close the cover.
6. Place the safety in the fire mode (the red band will show).
7. Pull the cocking handle to the rear, and pull the trigger while manually

Performance Steps
easing the bolt forward to the closed position.

Evaluation Preparation:

Setup: At the test site, provide the soldier with all the equipment given in the task conditions. Evaluate this task using dummy 5.56-mm linked rounds or dummy 5.56-mm ammunition loaded in 30-round M16 magazines.

Brief Soldier: Tell the soldier to unload the M249 in the correct manner.

Performance Measures	GO	NO GO
1. Pulled the cocking handle to the rear, locking the bolt in the rear position.	____	____
2. Placed the safety in safe mode (the red band will not show) and returned the cocking handle to its forward position.	____	____
3. Removed ammunition and links.	____	____
a. Belt-fed. Raised the cover and removed any ammunition or links from the feed tray.		
b. Magazine-fed. Pushed down on the magazine release tab and pulled the magazine out. Then raised the cover**.**		
4. Raised the feed tray and inspected the chamber to ensure that it contained no ammunition. If it contained ammunition, removed the ammunition.	____	____
5. Closed the cover.	____	____
6. Placed the safety in the fire mode (the red band will show).	____	____
7. Pulled the cocking handle to the rear, and pulled the trigger while manually easing the bolt forward to the closed position**.**	____	____

Evaluation Guidance: Score the soldier GO if all performance measures are passed. Score the soldier NO GO if any performance measure is failed. If the soldier scores NO GO, show the soldier what was done wrong and how to do it correctly.

References

Required	Related
	FM 3-22.68

071-312-3025
Maintain an M60 Machine Gun

Conditions: Given an M60 machine gun that needs to be cleaned and inspected. You have a cleaning kit, cleaner lubricant preservative (CLP), lubricating oil arctic weather (LAW), swabs, a dummy cartridge, and a field table or ground cloth on which to work.

Standards:

1. Disassembled the M60 machine gun into the following groups: stock; buffer and operating rod; bolt assembly; trigger mechanism; barrel; feed cover, feed tray, and hanger; forearm; and receiver.

2. Cleaned the M60 machine gun, removed powder fouling and other foreign material and identified any unserviceable parts. Did not get CLP in the gas cylinder.

3. Lubricated the M60 machine gun.

4. Assembled the M60 machine gun, performed a function check, ensured the forearm group was locked in place, the hinge pin was interlocked with the latch engaging the sear pin, and the stock group latch engaged.

Performance Steps

WARNING

Weapon must be clear before disassembling.

1. Clear the M60 machine gun.
   - **a.** Pull the cocking handle to the rear.
   - **b.** Lock the bolt to the rear.
   - **c.** Raise the feed cover.
   - **d.** Ensure the chamber is empty.
   - **e.** Close the feed cover.
   - **f.** Place the safety lever on FIRE.
   - **g.** Pull the cocking handle to the rear and hold it.
   - **h.** Pull the trigger and allow the bolt to ease forward.
   - **i.** Place the selector lever on SAFE.

2. Remove the stock group.
   - **a.** Raise the hinged shoulder rest.

Performance Steps

b. Insert the nose of a dummy cartridge into the latch hole (figure 071-312-3025-1).

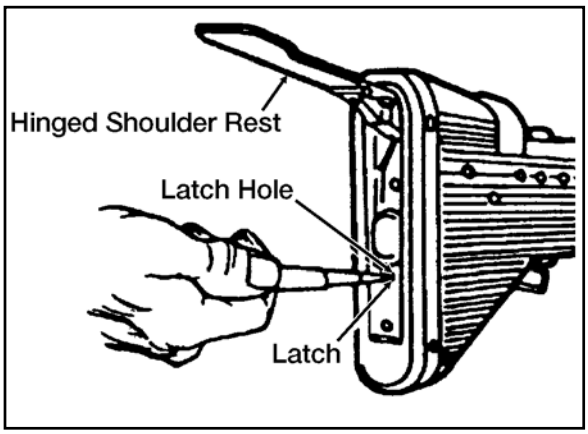

Figure 071-312-3025-1. Stock

c. Push the latch down.

d. Pull the stock group to the rear, removing it from the M60 machine gun.

3. Remove the buffer, operating rod, and bolt assembly group.

a. Remove the buffer.

(1) Press the exposed buffer lightly with the palm of the hand (figure 071-312-3025-2).

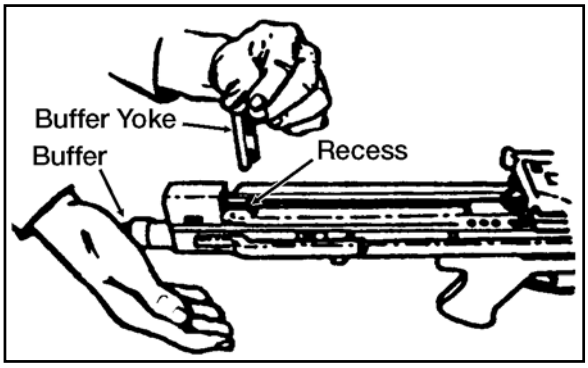

Figure 071-312-3025-2. Buffer yoke

(2) Remove the buffer yoke from the top of the receiver.

(3) Remove the buffer slowly by pulling it rearward. Allow the driver spring guide to expand until the end of the guide is showing at the rear of the receiver.

(4) Pull the buffer plunger from the driver spring guide (figure 071-312-3025-3).

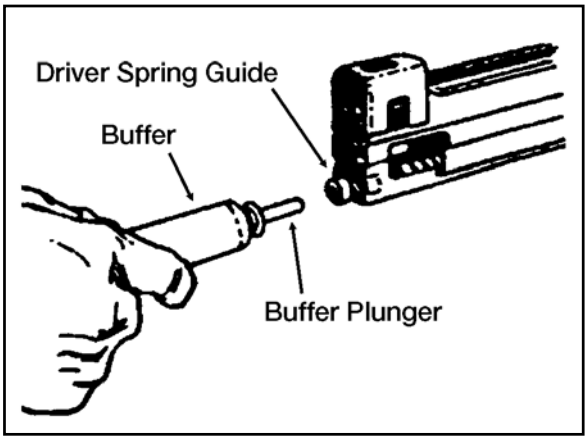

Figure 071-312-3025-3. Buffer

(5) Pull the driver spring guide and spring from the receiver.

(6) Separate the driver spring from the driver spring guide.

Performance Steps

b. Remove the operating rod and bolt.

(1) Grasp the pistol grip with the left hand.

(2) Pull the cocking handle to the rear with your right hand until the bolt separates from the barrel socket.

(3) Return the cocking handle to the forward position.

(4) Pull the cam roller until it stops. This pulls the rod and bolt to the rear.

(5) Push the bolt to the rear with your finger on the face of the bolt (figure 071-312-3025-4).

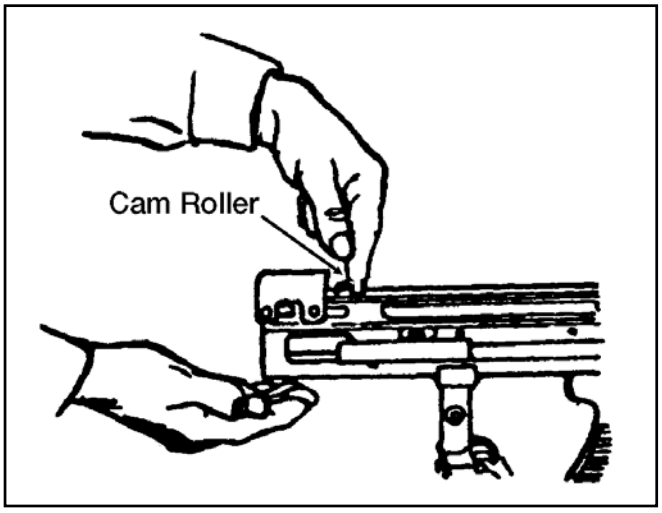

Figure 071-312-3025-4. Cam roller

Performance Steps

(6) Grasp the operating rod and bolt when they are about 4 inches out of the cylinder to prevent the bolt from rotating.

(7) Pull the operating rod and bolt from the receiver (figure 071-312-3025-5).

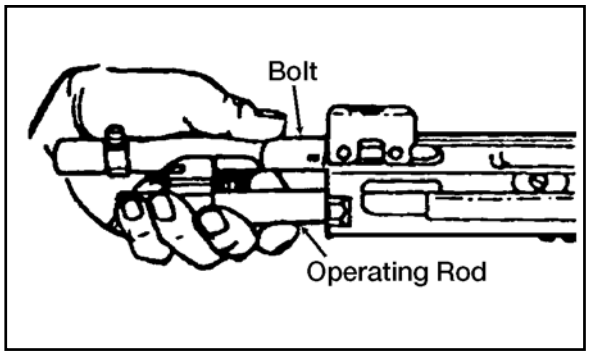

Figure 071-312-3025-5. Operating rod and bolt

(8) Relax your grip, allowing the bolt to rotate slowly.

(9) Grasp the bolt and operating rod with both hands. The bolt should be on the bottom, facing away from your body.

(10) Disengage the bolt from the operating rod by pulling forward on the operating handle and lifting upward (figure 071-312-3025-6).

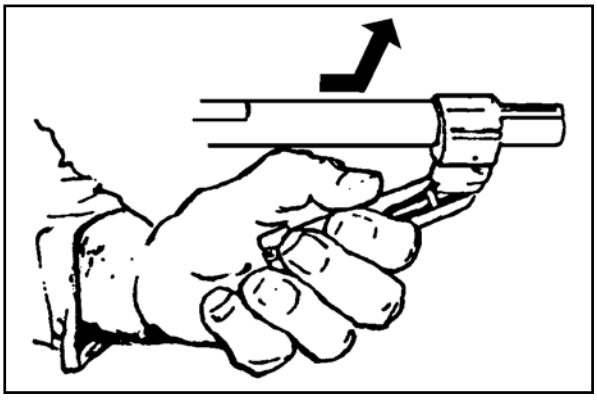

Figure 071-312-3025-6. Bolt assembly and operating rod being separated

Performance Steps

4. Remove the trigger mechanism group consisting of the grip, leaf spring, and retaining pin.

a. Press in on the rear of the leaf spring.

b. Rotate the rear of the leaf spring up to clear it from the sear pin (figure 071-312-3025-7).

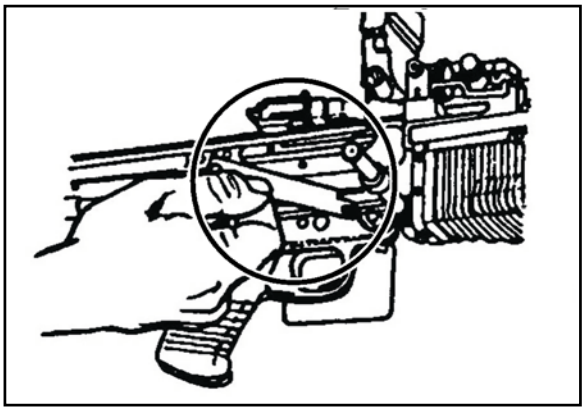

Figure 071-312-3025-7. Sear pin

c. Pull the leaf spring to the rear, disengaging it from the front notch of the retaining pin.

d. Remove the retaining pin by pushing it to the left.

e. Remove the trigger mechanism.

(1) Slide the trigger mechanism slightly forward.

(2) Rotate the front of the trigger mechanism housing down.

(3) Remove the trigger mechanism (figure 071-312-3025-8).

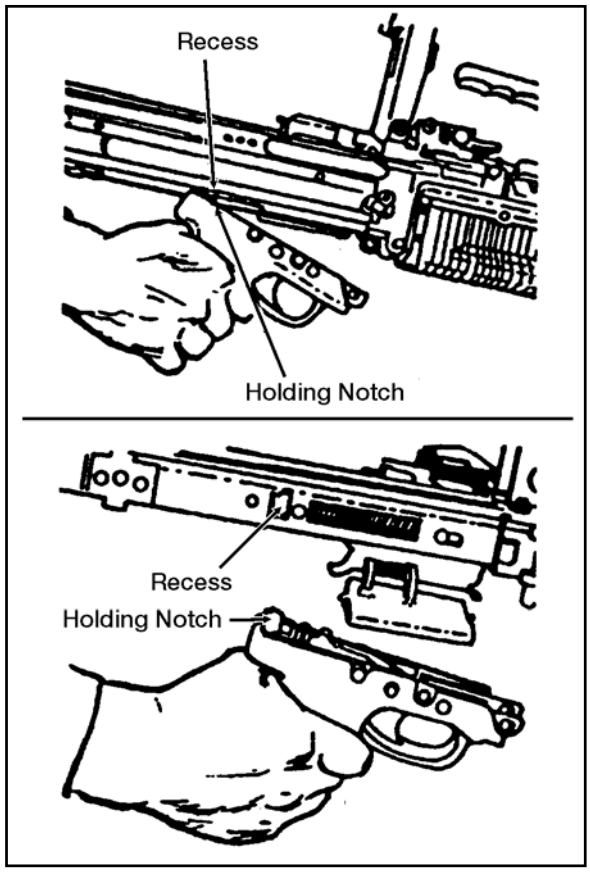

Figure 071-312-3025-8. Trigger mechanism group

5. Remove the cover, feed tray, and hanger group.

a. Remove the feed cover.

(1) Raise the feed cover.

(2) Unlock the hinge pin using a pointed object (figure 071-312-3025-9).

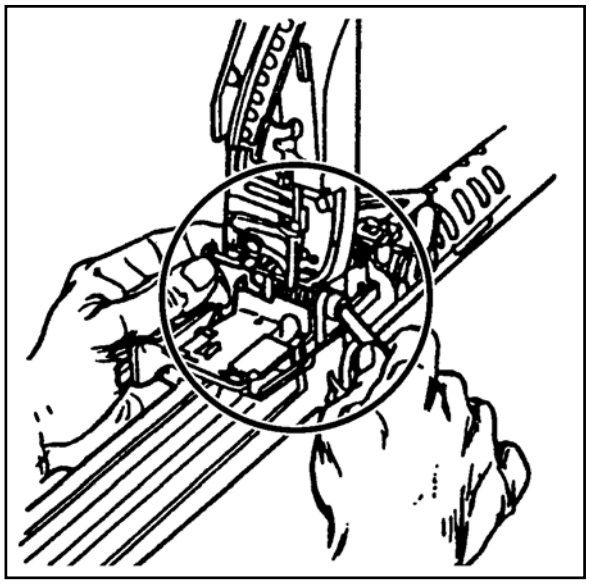

Figure 071-312-3025-9. Hinge pin latch

(3) Push the hinge pin out of its recess and remove it from the opposite side of the hinge pin latch.

(4) Lift the feed cover from the receiver assembly.

(5) Remove the feed cover spring from the cover.

b. Lift the feed tray and hanger group from the receiver assembly (figure 071-312-3025-10).

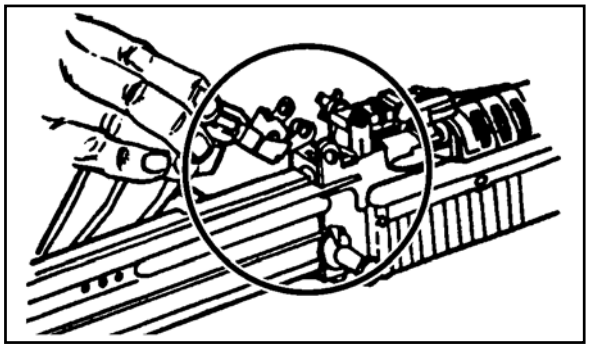

Figure 071-312-3025-10. Feed tray and hanger group

6. Remove the barrel group, made up of the barrel, flash suppressor, front sight, bipod assembly, and gas cylinder system.

a. Push in on the barrel locking lever plunger (figure 071-312-3025-11).

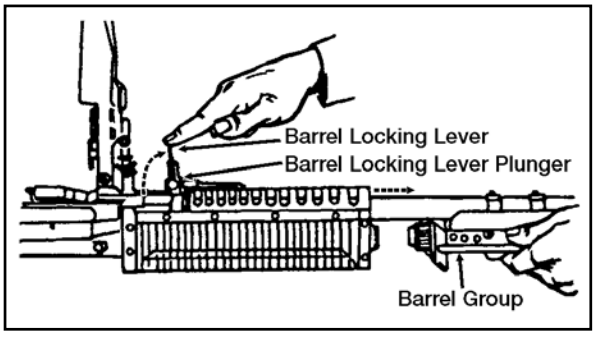

Figure 071-312-3025-11. Barrel locking lever

b. Raise the barrel locking lever to the vertical position.

c. Remove the barrel group by pulling it straight to the front of the rifle.

7. Remove the forearm assembly.

a. Turn the receiver so the top is facing down.

b. Insert a pointed object into the latch hole at the bottom rear of the forearm assembly (figure 071-312-3025-12).

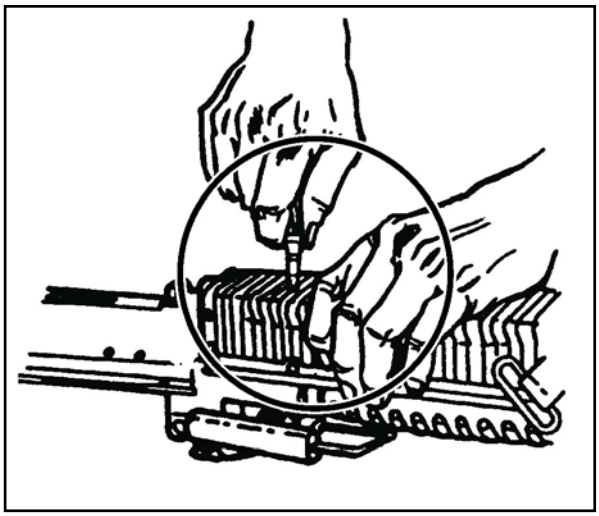

Figure 071-312-3025-12. Forearm latch

c. Release the forearm latch by pressing downward with a pointed object.

d. Raise the rear of the forearm assembly slightly.

e. Pull the forearm assembly to the front to remove it.

Note. This completes general disassembly of the M60 machine gun. The receiver group requires no disassembly.

8. Clean the M60 machine gun.

CAUTION
Do not use gasoline, kerosene, benzene, or high pressure water, steam, or air for cleaning.

a. Position the gas cylinder above the barrel during cleaning so as not to get CLP in the gas cylinder.

b. Clean the bore using CLP and a bore brush attached to a cleaning rod.

(1) Run the brush through the bore without reversing the direction of the brush while it is in the bore.

(2) Repeat the preceding step until most of the powder fouling and other foreign matter have been removed.

Performance Steps

(3) Swab out the bore several times using a cleaning rod and a swab wet with CLP.

(4) Swab out the bore several times using a cleaning rod and a dry swab.

c. Clean the chamber using CLP and a chamber brush attached to a cleaning rod.

(1) Run the brush through the chamber.

(2) Repeat the preceding step until most of the powder fouling and other foreign matter have been removed.

(3) Swab out the chamber several times using a cleaning rod and a swab wet with CLP.

(4) Swab out the chamber several times using a cleaning rod and dry swab.

d. Clean the receiver with a receiver brush and CLP.

(1) Brush the receiver until most of the powder fouling and other foreign matter have been removed.

(2) Swab out the receiver several times using a cleaning rod and a swab wet with CLP.

(3) Swab out the receiver several times using a cleaning rod and dry swab.

e. Clean the buffer and operating rod group using CLP and a receiver brush. Do not submerge the buffer in any cleaning solvents.

(1) Brush the buffer group until powder fouling and other foreign matter have been removed.

(2) Swab out the operating rod several times using a cleaning rod and a swab wet with CLP.

(3) Swab out the operating rod several times using a cleaning rod and a dry swab.

f. Wipe down all parts of the M60 machine gun except the rubber-coated parts with a rag wet with CLP.

g. Dry all parts cleaned with CLP.

9. Inspect the parts for serviceability.

a. Stock group.

(1) Ensure the stock group fits securely on the receiver.

(2) Check the guide rails for cracks, bends, or burrs.

(3) Check the shoulder rest and stock latch for binding.

Performance Steps

(4) Check the rubber coating for gumming or cracking.

b. Buffer and operating rod group.

(1) Check the yoke and yoke recess for burrs, cracks, or bends.

(2) Ensure the buffer plunger fits easily into the recess in the driver spring guide.

(3) Check the driver spring for kinks and broken or separated wires.

(4) Check the driver spring guide for bends, ensuring the spool is tight on the shaft.

(5) Check the sear notch on the operating rod for excessive wear or burring.

c. Bolt assembly group.

(1) Check the bolt plug, bolt plug pin, and actuator cam assembly for chips and burrs.

(2) Check the firing pin for cracks or wear on the tip.

(3) Check the ejector and extractor to ensure they are under spring tension and are not chipped or worn.

d. Trigger mechanism group.

(1) Check the shoulder of the sear for excessive wear.

(2) Check the mechanism for cracks (check carefully near the retaining pins).

(3) Check the leaf spring to ensure it is under tension.

(4) Check the safety for correct function. (The sear should move only slightly when the safety lever is on SAFE, and freely when the safety lever is on FIRE.)

e. Barrel group.

(1) Check to ensure the suppressor is tight.

(2) Check the front sight and barrel locking-cam for bends, cracks, burrs, or excessive wear.

(3) Check the bipod assembly for correct functioning. (The legs should lock in the up and down position. The leg extension should lock at the desired heights.)

(4) Check the gas piston and gas cylinder for burrs.

(5) Check the detent on the tab lock washers of the gas cylinder nut and gas cylinder extension to ensure it is not broken.

(6) Check the bleeder hole in the gas cylinder extension to ensure it is clear.

Performance Steps

f. Feed cover, feed tray, and hanger.

(1) Check to ensure all parts inside the feed cover are under spring tension.

(2) Check the feed cover to ensure it is not bent or torn.

(3) Check the belt holding pawl to ensure it is under spring tension.

g. Forearm assembly.

(1) Check the assembly to ensure it is not bent.

(2) Check the spring in the latch to ensure it is not broken.

h. Receiver group.

(1) Check the receiver to ensure it is not bent or cracked.

(2) Check the cocking handle to ensure it slides freely within its guide path.

(3) Check the elevation scale on the rear sight to ensure it is legible. The elevation screw should not be burred or worn.

10. Lubricate the M60 machine gun.

Note. When lubricating the M60 machine gun at temperatures below 0 degrees Fahrenheit, use LAW and lubricate lightly to avoid freeze-ups; under all other conditions, use CLP. When using LAW, lubrication techniques are the same as for CLP.

a. Make sure you do not get CLP inside the buffer assembly or inside the gas cylinder.

b. Run a cleaning patch with several drops of CLP on it through the bore.

c. Wipe down all non-rubber-coated exterior surfaces of the M60 machine gun with a rag with several drops of CLP on it.

d. Use CLP to lubricate the following surfaces.

(1) Bolt locking lugs by the camming surfaces.

(2) Operating rod surfaces along the receiver rails.

(3) Actuator roller on the bolt and where the bolt actuator rides the feed pawl carrier on the underside of the cover assembly.

11. Assemble the M60 machine gun in the following order.

a. Assemble the forearm group.

(1) Guide the forearm assembly over the operating rod tube, ensuring the operating rod does not strike the baffles inside the forearm assembly.

Performance Steps

(2) Align the recess in the forearm assembly with the end of the operating rod tube.

(3) Tap up on the bottom rear of the forearm assembly with the palm of your hand to lock it in position.

b. Assemble the feed cover, feed tray, and hanger group.

(1) Align the guides of the feed tray and hanger on the left side of the cover mounting brackets and sear, the feed tray, and hanger in the receiver.

(2) Replace the cover.

(a) Insert the cover spring in the cover.

(b) Align the cover with the mounting brackets.

(c) Insert the hinge pin from the right side.

(d) Insert the hinge pin latch from the left side, making sure that the hinge pin and the hinge pin latch interlock.

c. Assemble the barrel group.

(1) Make sure the barrel locking lever is in the vertical position (figure 071-312-3025-11).

(2) Put the rear of the barrel through the forearm assembly.

(3) Align the gas cylinder nut with its recess in the forearm assembly.

(4) Lower the barrel locking lever to its most downward position.

d. Assemble the trigger mechanism group (figure 071-312-3025-8).

(1) Engage the holding notch of the trigger mechanism group in its recess in the bottom of the receiver (figure 071-312-3025-8).

(2) Rotate the front of the trigger mechanism up.

(3) Align the holes of the trigger mechanism with the mounting bracket on the receiver.

(4) Insert the retaining pin from the left.

(5) Attach the leaf spring by placing the open end of the leaf spring on the retaining pin.

(6) Engage the hooked end to the sear pin.

e. Assemble the bolt and operating rod group.

(1) Hold the bolt securely in one hand with the camming slot up. The face of the bolt should be toward the body.

(2) Position the rear of the operating rod yoke against the rear firing pin spool with the other hand (figure 071-312-3025-13).

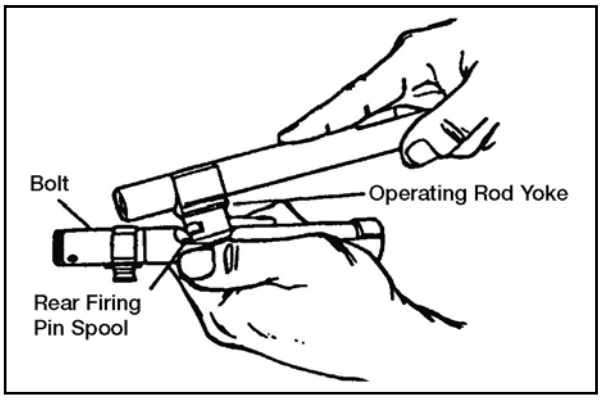

Figure 071-312-3025-13. Rear of operating rod yoke positioned against rear firing pin spool

(3) Push on operating rod, compressing the firing pin spring.

(4) Position the operating rod yoke between the firing pin spool.

(5) Push forward on the rear of the bolt with the other hand, causing the bolt to rotate until the locking lugs are vertical and the cam roller is up.

(6) Push the operating rod and bolt (ensure the cam roller faces up) into the receiver until the end of the operating rod is even with the rear of the receiver (figure 071-312-3025-14).

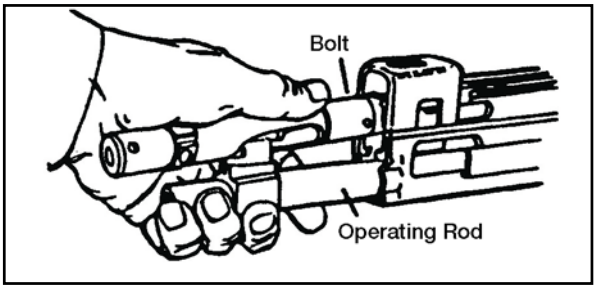

Figure 071-312-3025-14. Operating rod and bolt

(7) Put the driver spring guide into the driver spring.

(8) Put the free end of the driver spring in the opening of the operating rod.

Performance Steps

(9) Pull the trigger.

(10) Push in the driver spring until the head of the guide is about one inch from the receiver (figure 071-312-3025-3).

f. Assemble the buffer group (figure 071-312-3025-3).

(1) Put the buffer plunger into the driver spring guide.

(2) Push forward on the buffer until the operating rod and bolt go fully forward.

(3) Push in on the buffer until the recesses on the buffer are aligned with the recesses in the receiver.

(4) Place the buffer yoke in the buffer recess on top of the receiver.

g. Assemble the stock group.

(1) Align the guide rails of the stock group with the guide rails on the receiver.

(2) Push forward until the stock is fully seated. You will hear a distinct click when the latch engages.

12. Perform a function check to ensure that the M60 machine gun is assembled correctly.

a. Place the safety on FIRE.

b. Pull the cocking handle to the rear.

c. Return the cocking handle forward to the locked position.

d. Close the cover.

e. Place the safety on SAFE.

f. Pull the trigger; the weapon should not fire.

g. Place the safety on FIRE.

h. Pull the cocking handle to the rear, holding it in that position.

i. Pull the trigger, allowing the bolt to ease forward.

j. Store the weapon in the arms room or continue the mission.

Evaluation Preparation:

Setup: At the test site, provide one M60 machine gun, all required cleaning equipment, and a field table or ground cloth to work on.

Brief Soldier: Tell the soldier to disassemble, clean, assemble, and perform a function check on the machine gun.

Performance Measures	GO	NO GO
1. Cleared the weapon so the selector lever was on SAFE.	____	____

Performance Measures	GO	NO GO
2. Disassembled the weapon into the major groups without damaging any components.	____	____
3. Cleaned the weapon, removed the powder fouling and other foreign material and dried all components cleaned with CLP.	____	____
4. Identified any damaged, worn, or malfunctioning components.	____	____
5. Assembled the weapon in the correct sequence without damaging any components.	____	____
6. Performed a function check, ensured the weapon operated properly.	____	____

Evaluation Guidance: Score the soldier GO if all performance measures are passed. Score the soldier NO GO if any performance measure is failed. If the soldier scores NO GO, show him what was done wrong and how to do it correctly.

References

Required	Related
FM 3-22.68	
TM 9-1005-224-10	
TM 9-1005-224-23&P	

071-312-3027
Load an M60 Machine Gun

Conditions: Given a cleared M60 machine gun with a bipod and linked 7.62-mm ammunition. You must load the machine gun.

Standards: Loaded linked ammunition in the feed tray groove so, when the cover was closed, a round remained in the tray groove and ammunition fed correctly.

Performance Steps

WARNING

Keep all loaded weapons pointed in the direction of the target area.

1. Place the safety on FIRE (“F”).

Performance Steps
2. Open the bolt by pulling the cocking handle to the rear, locking the bolt to the rear with the palm of your hand facing up.
3. Return the cocking handle to the forward position.
4. Place the safety on SAFE (“S”).
5. Raise the cover.
6. Ensure that the feed tray, receiver group, and chamber are clear.
7. Place the first round of the belt in the feed tray groove, making sure the double link is leading with the open side of the link down.
8. Hold the belt up (about six rounds from the loading end) while closing the cover, ensuring that the first round remains in the feed tray groove.

Evaluation Preparation:

Setup: At the test position, place an M60 machine gun with bipod legs extended. Place a belt of linked dummy 7.62-mm ammunition with the machine gun. For standardization, have the bolt and cocking handle forward, the safety on S, and the belt of ammunition on top of the cover. Ensure the ammunition is clean and linked properly. Get an assistant to relink and wipe the ammunition clean for repeat testing.

Brief Soldier: Tell the soldier to load the M60 machine gun.

Performance Measures	GO	NO GO
1. Placed the safety on “F.”	____	____
2. Pulled the cocking handle to the rear position with the palm up.	____	____
3. Returned the cocking handle to the forward position.	____	____
4. Placed the safety on “S.”	____	____
5. Raised the cover.	____	____
6. Ensured the feed tray, receiver group, and chamber are clear.	____	____
7. Placed first round in the feed tray groove.	____	____
8. Held the belt up while closing the cover.	____	____
9. Closed the cover so the first round remained in the feed tray groove.	____	____
10. Completed performance measures 1 through 9 in sequence.	____	____

Evaluation Guidance: Score the soldier GO if all performance measures are passed. Score the soldier NO GO if any performance measure is failed. If the soldier scores NO GO, show the soldier what was done wrong and how to do it correctly.

References

Required	Related
FM 3-22.68	
TM 9-1005-224-10	

071-312-3028

Unload an M60 Machine Gun

Conditions: Given an M60 machine gun with a bipod, loaded with linked 7.62-mm ammunition. You need to unload the weapon.

Standards: Removed all ammunition and links from the machine gun. Cleared the weapon, ensuring the chamber was empty and the safety was on SAFE (“S”).

Performance Steps

> **WARNING**
>
> Keep the M60 machine gun oriented on the target area while unloading.

1. Remove the ammunition from the M60 machine gun.
    a. Pull the cocking handle to the rear, ensuring that the bolt is locked to the rear.
    b. Place the safety lever on “S.”
    c. Return the cocking handle to its forward position.
    d. Raise the cover.
    e. Remove any ammunition or links from the tray.
    f. Raise the feed tray.
    g. Look into the chamber to ensure it is empty.
2. Clear the weapon.
    a. Confirm that no ammunition is in the chamber.
    b. Close the cover.
    c. Place the safety on FIRE (“F”) .

Performance Steps

d. Pull the cocking handle to the rear; hold it.

CAUTION
The bolt must be eased forward to prevent damage to the feed tray assembly and operating rod assembly. Do not close the cover with the bolt forward.

e. Pull the trigger, allowing the bolt to ease forward.

f. Place the safety on "S" (SAFE).

Evaluation Preparation:

Setup: At the test site, place an M60 machine gun loaded with a belt of five or more rounds of linked ammunition. Have the bipod legs extended. For standardization, begin with the bolt forward and the safety on F (FIRE).

Brief Soldier: Tell the soldier to assume the prone position.

Performance Measures	GO	NO GO
1. Removed the ammunition from the M60 machine gun.	____	____
a. Pulled the cocking handle to the rear, ensuring that the bolt was locked to the rear.		
b. Placed the safety lever on "S" (SAFE).		
c. Returned the cocking handle to the forward position.		
d. Raised the cover.		
e. Removed any ammunition or links from the tray.		
f. Raised the feed tray.		
g. Looked into the chamber to ensure it was empty.		
2. Cleared the M60 machine gun.	____	____
a. Confirmed that no ammunition was in the chamber.		
b. Closed the cover.		
c. Placed the safety on "F" (FIRE).		
d. Pulled the cocking handle to the rear; held it.		
e. Pulled the trigger, allowing the bolt to ease forward.		
f. Placed the safety on "S" (SAFE).		

Evaluation Guidance: Score the soldier GO if all performance measures are passed. Score the soldier NO GO if any performance measure is failed.

If the soldier scores NO GO, show him what was done wrong and how to do it correctly.

References

Required	Related
FM 3-22.68	

071-312-3031
Engage Targets with an M60 Machine Gun

Conditions: Given a zeroed M60 machine gun with a bipod and linked 7.62-mm ammunition. You have engageable targets in your assigned sector of fire.

Standards: Fired the M60 machine gun to engage targets in your assigned sector of fire. Applied correct M60 machine gun target engagement techniques so each target was hit.

Performance Steps

1. Assume a stable, prone firing position.
2. Align the sights on the target to get a correct sight picture.

a. Obtain sight alignment by centering the front sight blade in the aperture of the rear sight with the top of the front sight blade even with the top of the rear sight slide (figure 071-312-3031-1).

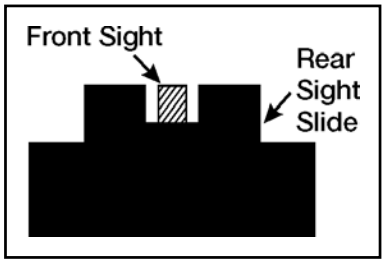

Figure 071-312-3031-1. Sight alignment

b. Obtain a sight picture by centering the target over the front sight blade so it appears to rest on top of the front sight blade and on top of the rear sight slide (figure 071-312-3031-2).

Performance Steps

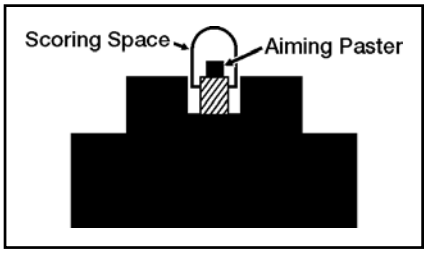

Figure 071-312-3031-2. Sight picture

3. Fire the M60 machine gun.

a. Pull the trigger straight to the rear.

b. Say to yourself "Fire a burst of six."

c. Release the trigger.

Note. This aids in controlling the number of rounds in each burst and prevents excessive wear on sear and sear notch.

Note. If you miss the target with your initial burst, you must select a new aiming point the same distance from the target as the center of impact of the initial burst but in the opposite direction, and fire a second burst.

4. Adjust fire using the adjusted aiming point method (figure 071-312-3031-3).

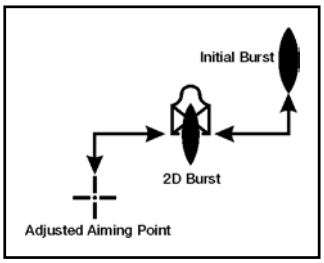

Figure 071-312-3031-3. Adjusted aiming point method

a. Observe the impact of rounds in the target area by watching the flight of tracer rounds or the strike of rounds in the target area.

b. Change your body position.

Note. Traverse means to move the muzzle of the weapon to the left or right to distribute fire laterally.

Performance Steps

c. Traverse the target area with a bipod mounted M60 machine gun by selecting successive aiming points (figure 071-312-3031-4).

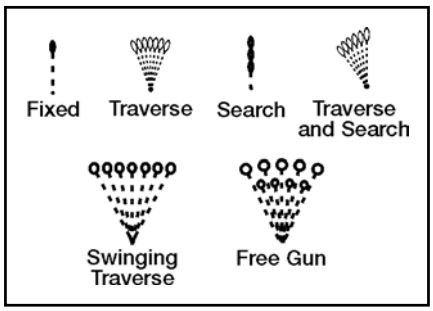

Figure 071-312-3031-4. Traversing and searching

(1) Shift your shoulders slightly to the right or left for minor changes in direction.

(2) Move your elbows and align the body to remain directly behind the gun for major changes.

Note. "Search" means to move the muzzle of the weapon up or down to distribute fire in depth across the target area.

d. Search the target area by selecting successive aiming points, changing elevation by moving your elbows closer together or farther apart (figure 071-312-3031-4).

5. Engage an area target using six- to nine-round bursts.

a. Determine the width and depth of the target.

b. Fire six- to nine-round bursts until you hit the center mass of the target area (figure 071-312-3031-5).

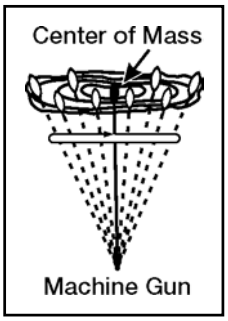

Figure 071-312-3031-5. Center of mass

c. Adjust fire by traversing and searching to cover all the target area.

6. Engage a point target using six- to nine-round bursts (figure 071-312-3031-6).

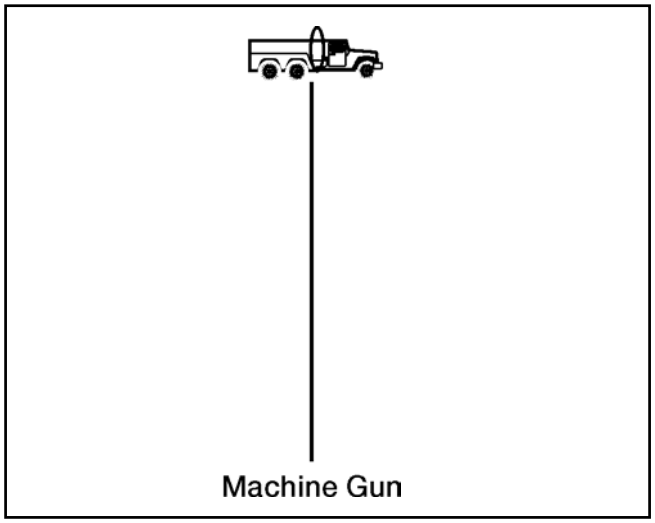

Figure 071-312-3031-6. Point target engagement

a. Select a distinct aiming point.

b. Estimate range.

Performance Steps

c. Fire six- to nine-round bursts to obtain accurate range and deflection.

d. Place effective fire on the target by observing the rounds as they impact in the target area. Make necessary adjustments to hit the target.

7. Engage a moving target using six- to nine-round bursts (figure 071-312-3031-7).

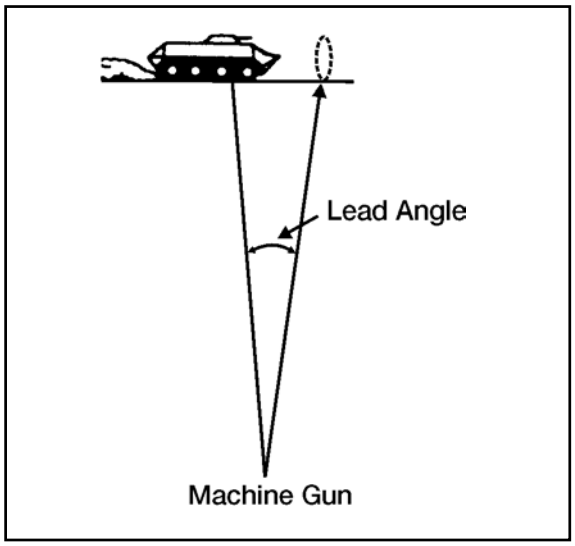

Figure 071-312-3031-7. Moving target engagement

a. Estimate the speed of the target and the lead required to fire and hit it.

b. Fire, tracking the target as it moves.

c. Adjust the lead by observing tracers and the strike of the bullets.

Evaluation Preparation:

Setup: Evaluate this task on a live-fire range. Evaluate the soldier on his ability to fire on the center of mass of a target, adjusting his aim by traversing and searching the weapon. Provide the soldier with point targets, area targets, and moving targets. If the soldier hits the target with the first burst, provide the soldier with directions so he demonstrates to you that he can adjust fire. If moving targets are not available, provide the soldier with a scenario in which he must describe the proper technique to use.

Brief Soldier: Tell the soldier to assume the prone position. Assign the soldier a sector and direct the soldier to engage area, point, and moving targets and to hit the center of mass of each target. Tell the soldier you are evaluating his ability to adjust fire as much as his ability to hit the target. If a moving target is not available, tell the soldier to simulate firing on a moving target while describing for you the actions required.

Performance Measures	GO	NO GO
1. Assumed a stable, prone firing position.	____	____
2. Aligned the sights on the target to get a correct sight picture.	____	____
a. Obtained sight alignment by centering the front sight blade in the aperture of the rear sight with the top of the front sight blade even with the top of the rear sight slide.		
b. Obtained a sight picture by centering the target over the front sight blade so it appears to rest on top of the front sight blade and on top of the rear sight slide.		
3. Fired the M60.	____	____
a. Pulled the trigger straight to the rear.		
b. Said to yourself "Fire a burst of six."		
c. Released the trigger.		
4. Adjusted fire using the adjusted aiming point method.	____	____
a. Made a minor change in direction.		
b. Made a major change in direction.		
c. Widened the impact area by traversing.		
d. Raised the impact point by searching.		
5. Engaged an area target using six- to nine-round bursts.	____	____
a. Determined the width and depth of the target.		
b. Fired six- to nine-round bursts until you hit the center mass of the target area.		
c. Adjusted fire by traversing and searching to cover all of the target area.		
6. Engaged a point target using six- to nine-round bursts.	____	____
a. Selected a distinct aiming point.		

Performance Measures	GO	NO GO
b. Estimated range.		
c. Fired six- to nine-round bursts to obtain accurate range and deflection.		
d. Placed effective fire on the target by observing the rounds as they impacted in the target area. Made necessary adjustments to hit the target.		
7. Engaged a moving target using six- to nine-round bursts.	____	____
a. Estimated the speed of the target and the lead required to fire and hit it.		
b. Fired, tracking the target as it moved.		
c. Adjusted the lead by observing tracers and the strike of the bullets.		

Evaluation Guidance: Score the soldier GO if all performance measures are passed. Score the soldier NO GO if any performance measure is failed. If the soldier scores NO GO, show him what was done wrong and how to do it correctly.

References

Required	Related
FM 3-22.68	

SUBJECT AREA 13: MK19 MACHINE GUN

071-030-0001
Maintain an MK19 Machine Gun

Conditions: Given an MK19 machine gun, an M3 tripod, a traversing and elevating (T&E) mechanism, an M64 cradle mount; rifle bore cleaner (RBC), lubricant oil (LSA), or lubricating oil (LSAT or LAW); grease (GMD); cleaning solvent (PD680); wiping rags or cloth (abrasive crocus); a cleaning rod assembly and a small-arms cleaning brush; linked 40-mm ammunition and one spent 40-mm cartridge case.

Standards: Cleaned and lubricated the MK 19 and its components. Inspected all parts and turned in those in need of maintenance. Reassembled the gun so it was operational. Cleaned and inspected ammunition for serviceability, and turned in any unserviceable ammunition.

Performance Steps

1. Clear the MK19.

a. Place the safe/fire switch in the SAFE (S) position. Ensure the bolt is forward.

b. Open the top cover and inspect the feed tray and extractors on the bolt face to ensure that no round is in the pickup position.

c. Unlock and pull charger handle 2 to 3 inches to the rear; inspect the face of the bolt and the chamber for ammunition.

d. Return the bolt to the forward position and rotate the charger handle to the locked position.

2. Disassemble the MK19.

a. Remove the feed throat assembly (figure 071-030-0001-1). Squeeze the two sets of grip pins together and pull them straight out.

b. Remove the bolt and backplate assembly.

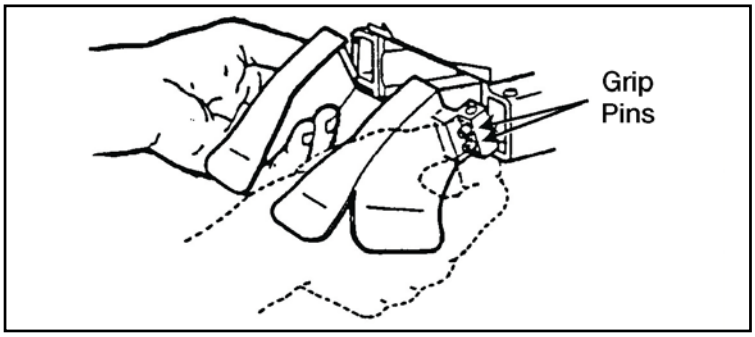

Figure 071-030-0001-1. Removal of feed throat assembly

WARNING

Make sure the bolt is in the forward position before you remove the backplate pin assembly. Failure to observe this warning will result in injury.

(1) Place the safe/fire switch on FIRE (F).

(2) Open the top cover.

(3) Using the rim of a spent cartridge, pull the backplate pin straight out (figure 071-030-0001-2).

Performance Steps

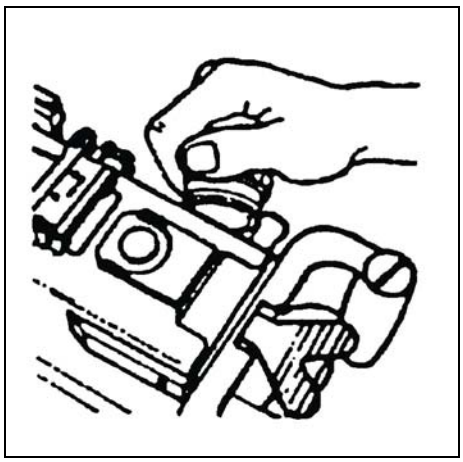

Figure 071-030-0001-2. Removal of backplate pin

(4) Lift up slightly on the backplate assembly. Slowly pull the bolt and backplate assembly out of the receiver.

(5) Support the bolt with one hand and maintain a control grip with the other hand. Lift the bolt up slightly and remove it (figure 071-030-0001-3).

Performance Steps

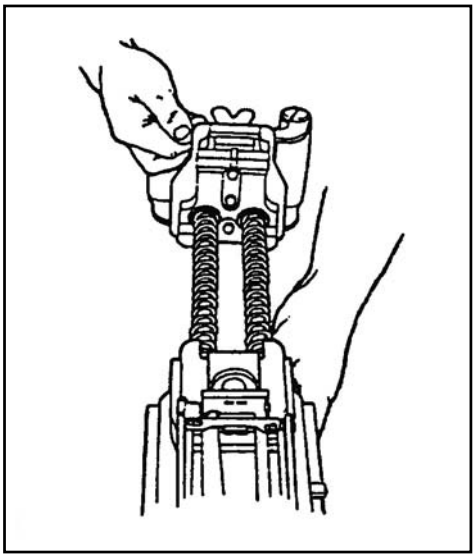

Figure 071-030-0001-3. Removal of bolt and backplate assembly

c. Remove the primary drive lever and vertical cam assembly.

CAUTION
Do not rest the vertical cam assembly on its chromed surface.

(1) Reach under the top of the receiver to locate the drive lever lock on the vertical cam assembly and slide the lock rearward about 1/4 inch (figure 071-030-0001-4).

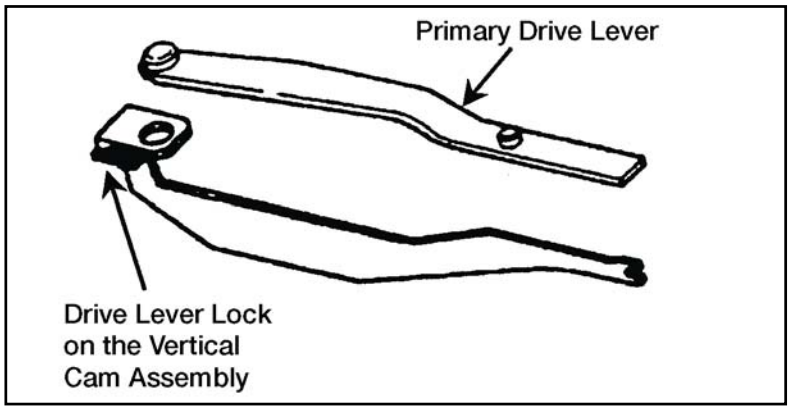

Figure 071-030-0001-4. Primary drive lever and vertical cam assembly

(2) Press down on the primary drive lever's pivot post. This releases the primary drive lever and vertical cam assembly (figure 071-030-0001-5).

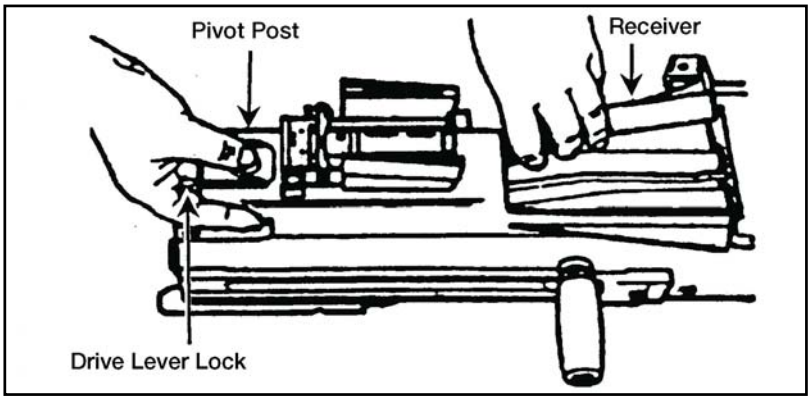

Figure 071-030-0001-5. Removal of the primary drive lever and vertical cam assembly

(3) Pull out the cam (to the rear) and the lever from the receiver.

d. Remove secondary drive lever.

(1) Push down on the pivot post from the outside top cover. This releases the secondary drive lever (figure 071-030-0001-6).

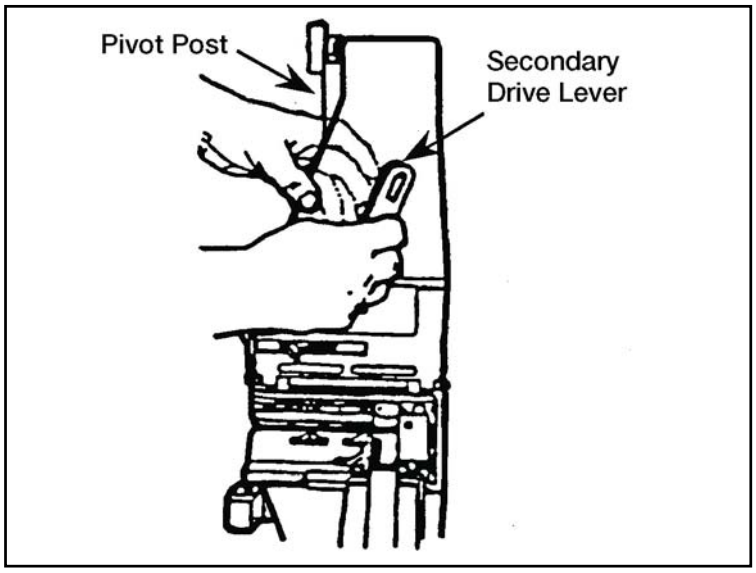

Figure 071-030-0001-6. Removal of the secondary drive lever

(2) Lift out the secondary drive lever from the top cover (figure 071-030-0001-7).

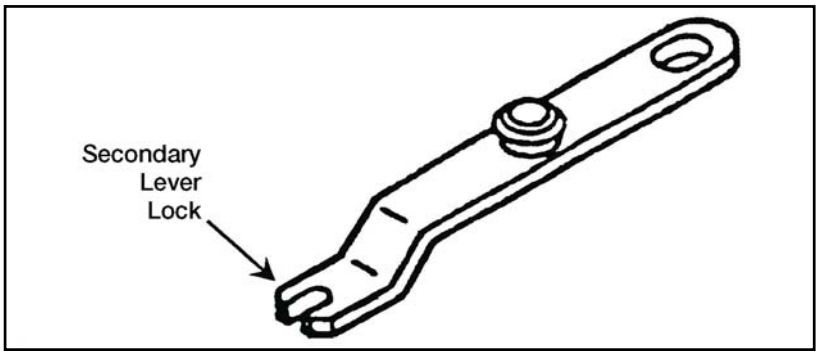

Figure 071-030-0001-7. Secondary drive lever.

e. Remove the feed slide assembly (Figure 071-030-0001-8).

Performance Steps

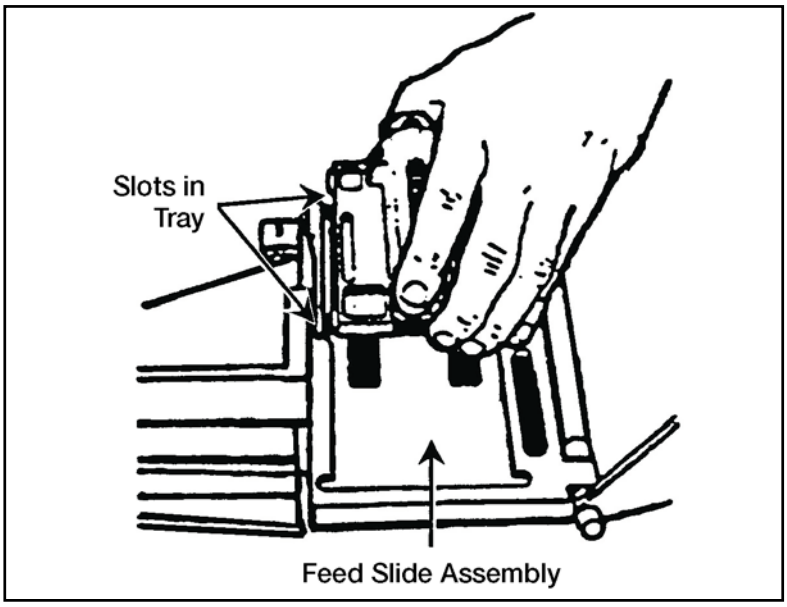

Figure 071-030-0001-8. Removal of the feed slide assembly.

(1) Pivot the tray that holds the feed slide assembly out of the top cover.

(2) Move the feed slide assembly to line up the tabs with the slots in the tray.

(3) Lift upward on the feed slide assembly.

f. Remove the top cover assembly and feed tray (figure 071-030-0001-9).

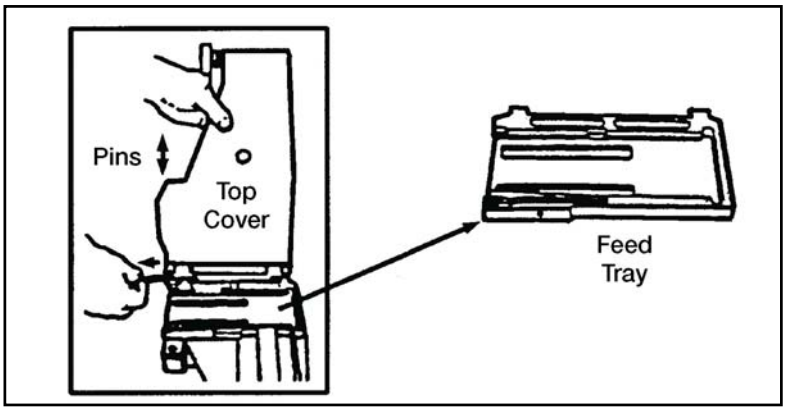

Figure 071-030-0001-9. Removal of the top cover assembly and feed tray

CAUTION
Using your fingers only, not pliers, remove the top cover pins. Forcing the pin could break the small cross pin on the rod.

Note. The feed tray must be down for you to remove the top cover pins.

(1) Hold the top cover straight up to align the end of the cross pin.

(2) Pull straight out on the pins.

(3) Lift off the top cover.

(4) Lift the tray out of the feeder.

g. Remove the alignment guide assembly (figure 071-030-0001-10).

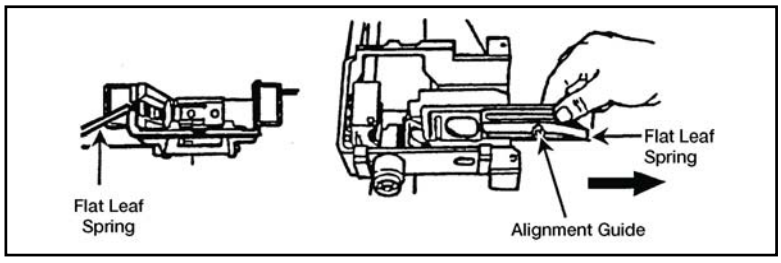

Figure 071-030-0001-10. Removal of the alignment guide assembly

(1) Depress the flat leaf spring by using a cartridge link toggle (male end) or a small tool.

(2) Slide the alignment guide toward the feeder mouth.

(3) Pull rearward on the alignment guide and lift it out.

h. Remove the ogive plunger by pulling it out (figure 071-030-0001-11).

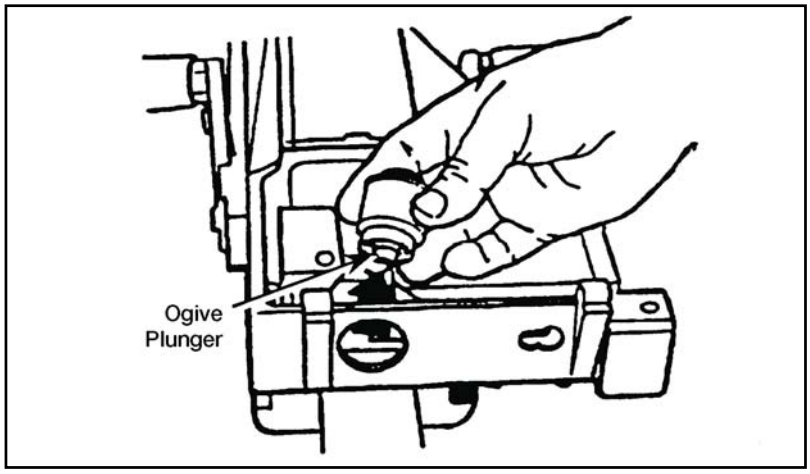

Figure 071-030-0001-11. Removal of the ogive plunger

i. Remove the round positioning block (figure 071-030-0001-12).

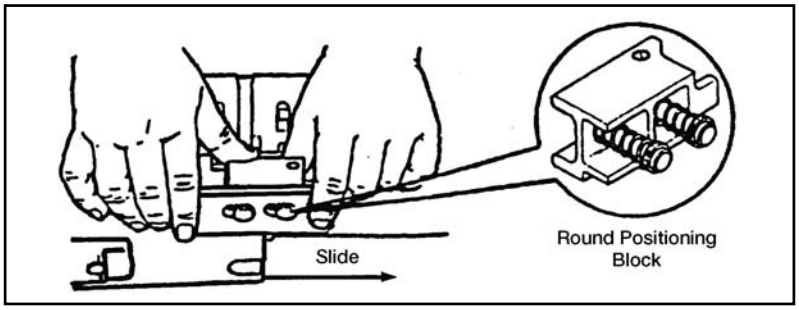

Figure 071-030-0001-12. Removal of the round positioning block

(1) Grasp the two control grips with both hands and lift up slightly to disengage the backplate from the locking lugs in the receiver.

(2) Pull the round positioning block toward the muzzle end of gun.

Performance Steps

j. Remove the charger assemblies (both sides) (figure 071-030-0001-13).

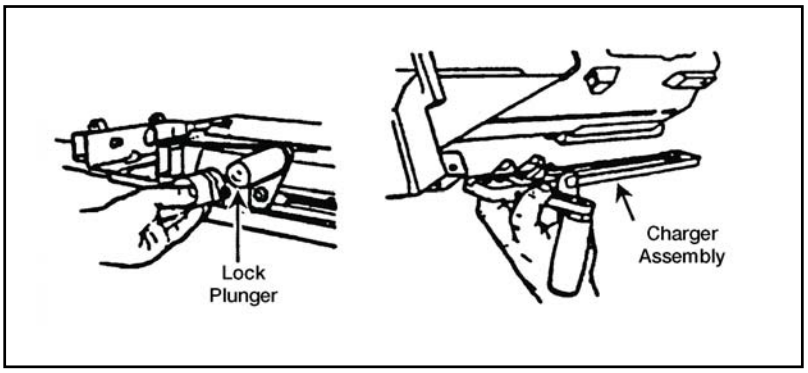

Figure 071-030-0001-13. Removal of the charger assembly

(1) Rotate the charger handle up.

(2) Using either your fingers or a spent case, pry out on the lip of the lock plunger.

(3) Lift up on the lock plunger to retract it; slide the charger assembly all the way to the rear.

(4) Pull the charger assembly away from the receiver.

k. Remove the receiver sear assembly (figure 071-030-0001-14).

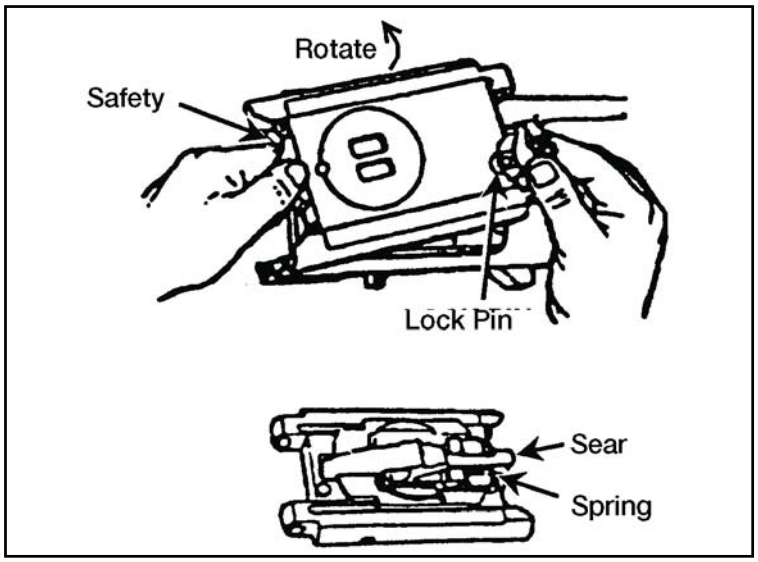

Figure 071-030-0001-14. Removal of the receiver sear assembly

(1) Turn the receiver on its top. Put the safe/fire switch in FIRE (F) position.

(2) Lift up slightly on the lock pin with your fingers, using a cartridge link.

(3) Squeeze the receiver sear (underneath the safety) and simultaneously rotate the sear housing assembly approximately 15 degrees in either direction.

(4) Press down on the sear housing assembly and rotate the assembly until it stops (90 degrees from its original position).

(5) Press the receiver sear and safety together while you put safe/fire switch on safe (S). This locks the sear in the down position and keeps you from accidentally losing the sear spring.

(6) Lift out the sear housing assembly.

3. Clean the parts of the MK19.

Note. Do not reverse the direction of the bore brush while it is in the bore.

a. Clean the receiver assembly (figure 071-030-0001-15).

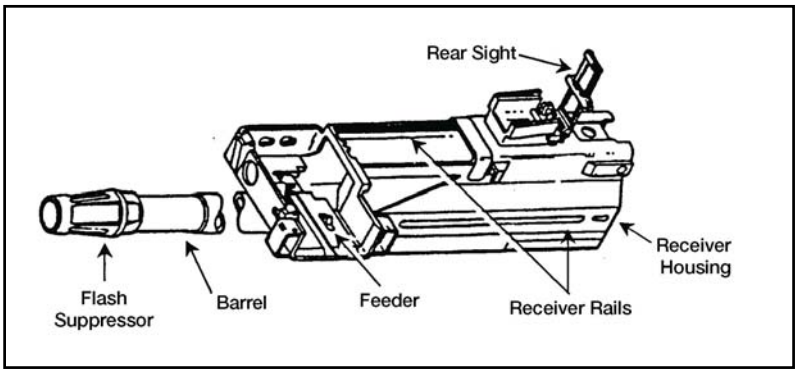

Figure 071-030-0001-15. Receiver assembly

(1) Apply solvent to a rag or brush. Wipe or brush dirt away from all parts, especially the interior of the receiver housing, receiver rails, and feeder.

(2) Swab out the bore and chamber, using a bore brush and RBC.

(3) Wipe all parts dry.

b. Clean the receiver sear assembly (figure 071-030-0001-14).

(1) Use only cleaning solvent on a rag or brush.

(2) Wipe or brush away dirt.

(3) Wipe dry.

WARNING

Never immerse the sear housing assembly in solvent. Solvent may dilute the lubricant inside the sear housing.

c. Clean the alignment guide assembly, ogive plunger, round positioning block, and secondary drive lever; wipe or brush off dirt and dry.

WARNING

Never immerse the ogive plunger assembly in solvent.

d. Clean the charger assemblies.

(1) Apply cleaning solvent to a rag or brush, and wipe or brush off dirt.

Performance Steps

(2) Wipe dry.

e. Clean the vertical cam assembly, primary drive lever, feed slide assembly, and feed tray.

(1) Soak in cleaning solvent.

(2) Wipe or brush off dirt.

(3) Wipe dry.

f. Clean the top cover assembly.

(1) Apply cleaning solvent to a rag or brush and wipe or brush off dirt from all parts.

(2) Wipe all surfaces dry.

g. Clean the bolt and backplate assembly.

(1) Apply cleaning solvent to rag or brush and wipe or brush off dirt from all parts.

(2) Wipe all surfaces dry.

4. Clean the components.

a. Clean the T&E mechanism.

(1) Remove foreign matter with a clean, dry wiping rag.

(2) Use small arms cleaning brush to clean the numbers on the scale.

b. Clean the M3 tripod, MK64 gun cradle mount, and pintle.

(1) Use a cleaning swab saturated with carbon removing compound to remove dirt.

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

5. Clean ammunition. Remove foreign matter with a clean, dry wiping rag.

6. Inspect all MK19 parts for serviceability.

a. Receiver assembly.

(1) Check the receiver housing for cracks and rust.

(2) Check the receiver rails for burrs and cracked welds.

(3) Check the feeder pawls for burrs and lack of spring action. Check the pins for retention.

(4) Check the barrel for carbon buildup and pitting in the bore and chamber.

(5) Check the flash suppressor for dents, cracks, and erosion. Make sure minimal movement is maintained.

Performance Steps

(6) Check the rear sight for rust, binding, and broken or bent parts.

b. Receiver sear assembly.

(1) Check for burrs on all parts.

(2) Closely inspect the rear shoulder for burrs.

c. Alignment guide assembly.

(1) Check the alignment guide spring for deformity, cracks, and looseness.

(2) Check the pin for breaks and cracks.

d. Ogive plunger assembly and round positioning block.

(1) Check the ogive plunger head for burrs and broken parts.

(2) Check the round positioning block for weak spring action and loose or broken parts.

e. Charger assembly (left and right).

(1) Check the grooved edges for burrs and bends.

(2) Check the latches for spring action on detects.

(3) Check the entire charger assembly for cracks, burrs, bends, and chips.

f. Vertical cam assembly and primary drive lever.

(1) Check the vertical cam assembly for bends, burrs, pits, scratches, and aluminum buildup on chromed surface (mirror-like surface).

(2) Check the drive lever lock for looseness or binding.

(3) Check the primary drive lever for burrs, especially around the pivot posts.

g. Secondary drive lever.

(1) Check for missing retaining ring from the pivot post.

(2) Check the pivot post and forked end for burrs.

h. Feed slide assembly and feed tray.

(1) Check the feed pawls and feed tray for burrs and binding.

(2) Check the guide rails for burrs.

i. Top cover assembly.

(1) Check the top cover housing for cracks and rust.

(2) Check the latch for binding, looseness, and breaks.

j. Bolt and backplate assembly.

(1) Check the cocking lever for chips, burrs, and breaks.

Performance Steps

(2) Check the guide rods for binding and bends.

(3) Check the recoil spring for weak action. Position the bolt end against a hard, flat surface and push up and down on backplate assembly.

(4) Check the backplate pin for missing retaining spring.

(5) Check for missing, loose or broken safety wire.

k. Report any deficiencies to supervisor.

7. Inspect all components for serviceability.

a. T&E mechanism.

(1) Inspect the hand wheels for smooth operation and rust. Check the threads for burrs and rust.

(2) Check the traversing slide lock for spring action. Make sure the elevating mechanism sleeve fits on the traversing bar and clamps firmly.

(3) Check the traversing and elevating scales for legibility.

(4) Inspect the quick release pin and chain for burrs and rust; check for missing spring-loaded balls.

b. M3 Tripod.

(1) Check for completeness of tripod; make sure all nuts and bolts are tightly secured.

(2) Check for cracks on the legs and tripod head.

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

(4) Check the pintle lock release cam for correct operation.

(5) Check the locking action of the front leg clamping assembly.

(6) Make sure the rear legs lock in the open position, the sleeve latch notch and the right leg slide notch engage completely, and the latch spring has good tension.

(7) Check the telescoping, indexing, and locking actions of rear legs and front leg locking assembly.

c. MK64 gun cradle mount.

(1) Check for missing or damaged parts.

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

(3) Inspect pintle lock assembly for nut, bolt, and cotter pin. Check the pintle surface for burrs and rust.

d. Report any deficiencies to supervisor.

8. Inspect ammunition for damage and corrosion. Turn in any unserviceable ammunition.

Performance Steps

9. Lubricate the MK19 and components. Do not use CLP, and do not mix lubricants.

CAUTION

1. Never immerse the sear housing, ogive plunger, or bolt assemblies in cleaning solvent. Solvent could dilute the lubricant or grease inside.
2. Never lubricate the MK19 with CLP.
3. Avoid mixing lubricants.
4. Completely wipe off all excess lubricants.

a. Lubricate lightly to moderately with LSAT, LSA, or GMD (never CLP). In cold weather (0 to -25 degrees Fahrenheit), use LSAT, LSA, GMD, or LAW. In extra cold weather (-25 degrees Fahrenheit and below), use LAW.

b. Apply lubricant to all weapon parts and surfaces except charger handles. Work in the lubricant by moving the parts.

c. Lubricate all components and wipe them with an oily rag to remove excess oil.

10. Assemble the MK19 machine gun.

a. Attach the charger assemblies (both sides) (figure 071-030-0001-16).

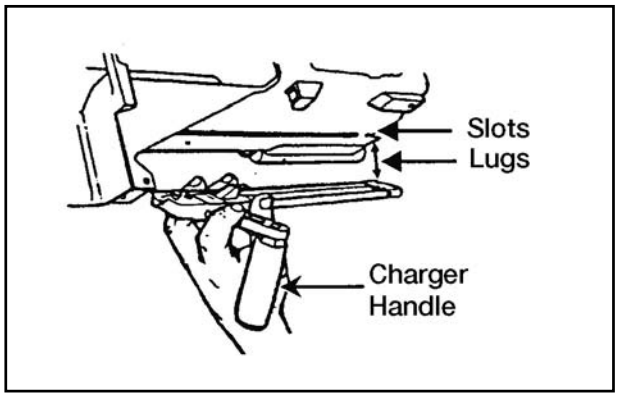

Figure 071-030-0001-16. Attachment of the charger assemblies

(1) Turn the receiver upright.

(2) Rotate the charger handles to the straight-up position.

(3) Line up the lugs on the charger with the slots in the receiver rail. Insert the charger lugs into the slots.

(4) Hold the charger tightly against the rail. Slide the charger forward until it locks into place.

b. Attach the round positioning block (Figure 071-030-0001-17).

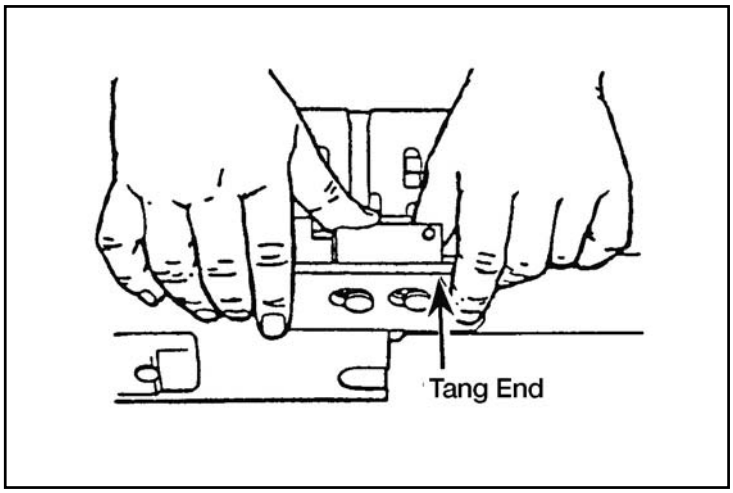

Figure 071-030-0001-17. Attachment of the round positioning block

(1) Insert the blocks into the slots with the tang end forward.

(2) Push against the block and slide it toward the rear until the block locks into place.

c. Insert the ogive plunger assembly into the opening.

d. Insert the alignment guide assembly (figure 071-030-0001-18).

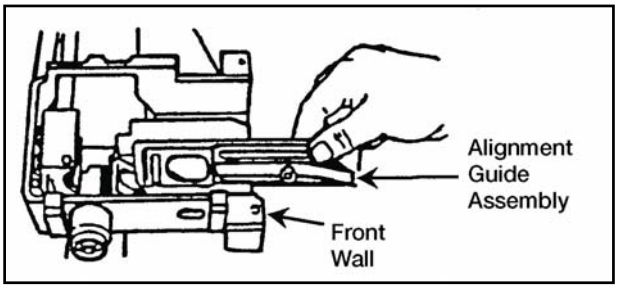

Figure 071-030-0001-18. Insertion of the alignment guide assembly

Performance Steps

(1) Position the alignment guide assembly so the pin is lined up with the slot in the feeder wall.

(2) Hold the alignment guide against the front wall and slide the alignment guide into the receiver until it clicks.

e. Attach the feed tray and feed slide assembly (figure 071-030-0001-19).

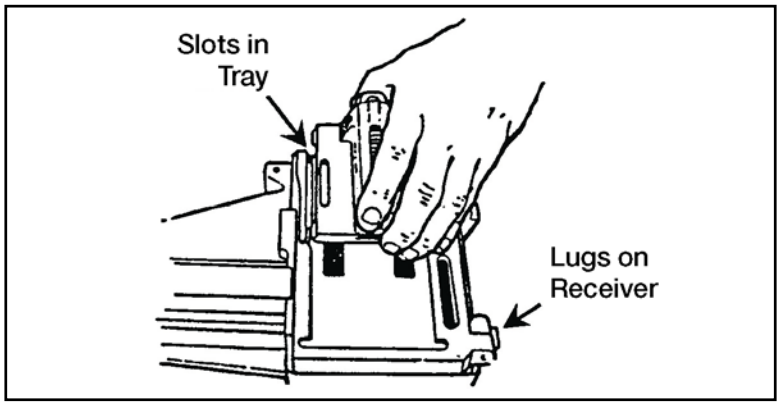

Figure 071-030-0001-19. Attachment of the feed slide assembly

(1) Place the tray in the top of the feeder, recessed side up.

(2) The pinholes on the tray should line up with the lugs on the receiver.

(3) Position the feed slide assembly by lining up the tabs with the slots on the tray.

(4) Insert the tabs into the slots. Drop the feed slide assembly into the tray and move it slightly to ensure engagement.

f. Attach the top cover assembly (figure 071-030-0001-20).

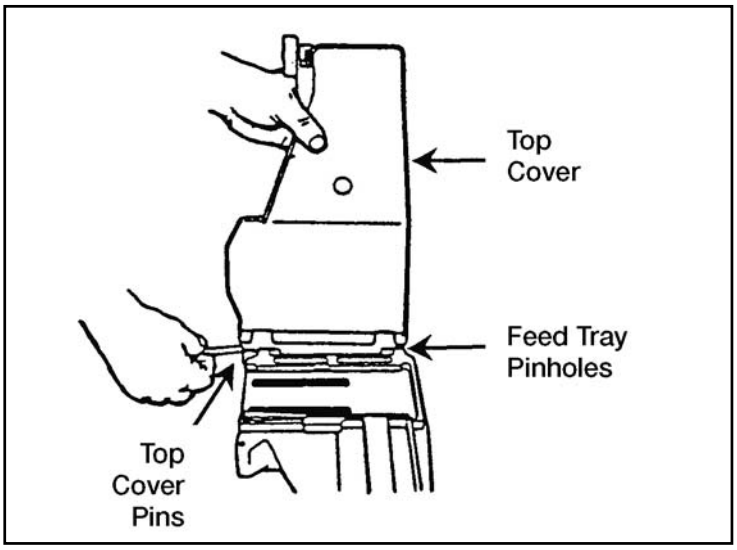

Figure 071-030-0001-20. Attachment of the top cover assembly

(1) Ensure the feed tray is in the proper place in the receiver.

(2) Place the top cover on the receiver. Line up the pinholes on the cover with the receiver's lug end and the pinholes on the feed tray.

(3) Hold the top cover straight up. Insert the top cover pins on both sides. Fully insert the cross pin. Rotate the top cover so it is fully open.

WARNING

To avoid breaking the cross pin, be sure to insert it fully into the receiver before you close the top cover.

g. Engage the secondary drive lever (figure 071-030-0001-21).

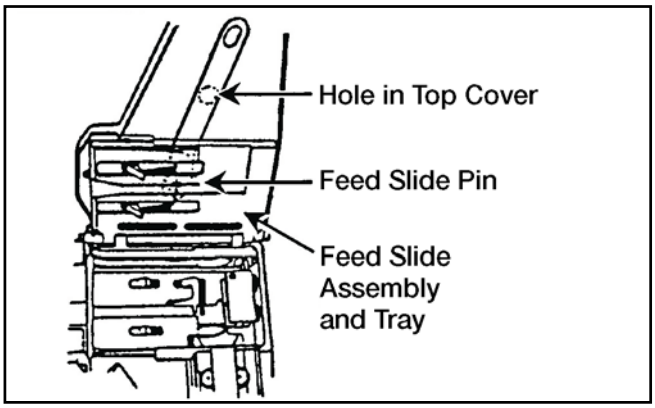

Figure 071-030-0001-21. Engaging the secondary drive lever

(1) Rotate the feed slide assembly and tray upward.

(2) Engage the forked end of the secondary drive lever with the feed slide pin.

(3) Press the raised pivot post through the hole in the stop cover.

(4) Press the secondary drive lever against the top cover until it locks into place.

CAUTION
Be sure to engage the secondary drive lever with the feed slide pin, or the gun will not fire.

h. Engage the vertical cam assembly (figure 071-030-0001-22).

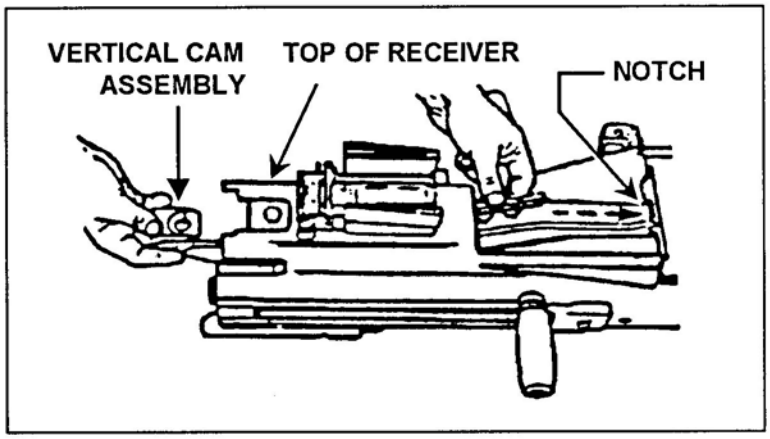

Figure 071-030-0001-22. Engaging the vertical cam assembly.

(1) Slide the vertical cam assembly through the rear of the receiver. The raised portion should slide over the top of the receiver. The drive lever lock should be underneath.

(2) Engage the forked end in the notch.

i. Engage the primary lever (figure 071-030-0001-23).

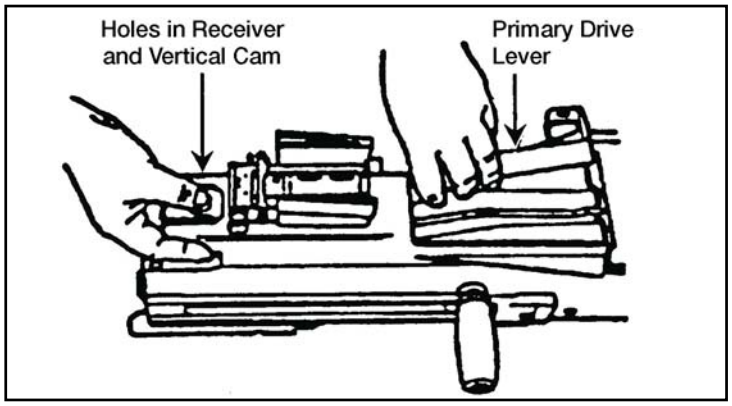

Figure 071-030-0001-23. Engaging the primary drive lever

(1) Hold the vertical cam assembly in place and slide the primary drive lever into the receiver.

(2) Slide the primary drive lever lock to the rear and engage the pivot post lever through the holes in the receiver and vertical cam.

(3) Slide the primary drive lever lock forward. (The primary drive lever lock is located on the vertical cam just beneath the top of the receiver).

j. Insert the bolt and backplate assembly (figure 071-030-0001-24).

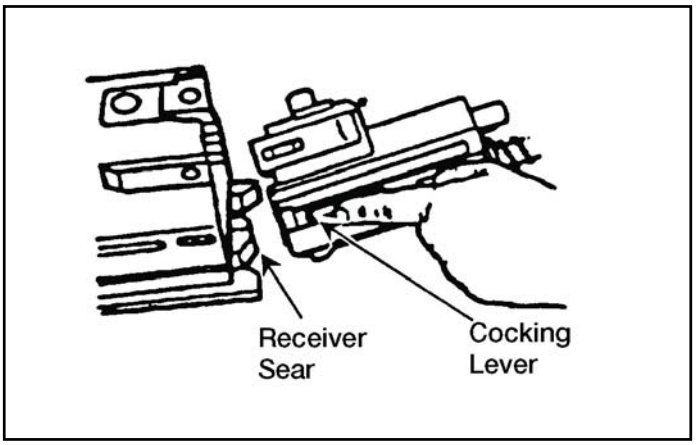

Figure 071-030-0001-24. Insertion of the bolt and backplate assembly

(1) Place the safe/fire switch in the fire (F) position.

(2) Press the receiver sear using your thumbs or the rim of a cartridge case.

(3) Make sure the cocking lever is cocked and forward.

(4) Slide the bolt and backplate assembly all the way forward.

(5) Insert the backplate pin to lock the assembly in place.

(6) Close the cover.

WARNING

Before inserting the bolt and backplate assembly, put the cocking lever in the forward position.

CAUTION

Before closing the top cover, always make sure the secondary drive lever engages the feed slide pin, the feed slide assembly is to the left, and the bolt is forward. Never try to force the top cover closed. Doing so could damage the weapon.

k. Attach the receiver sear assembly (figure 071-030-0001-25).

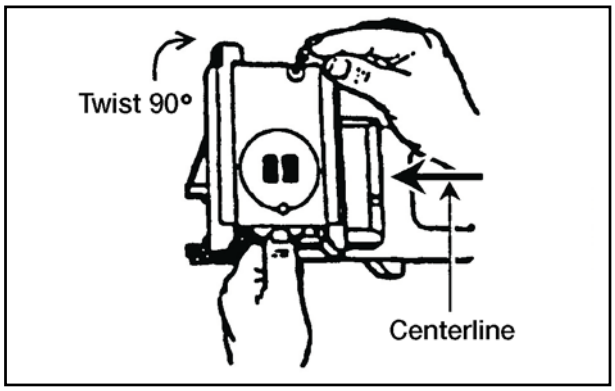

Figure 071-030-0001-25. Attachment of the receiver sear assembly

(1) Turn the receiver over on its top.

(2) Place the sear housing on the receiver and line up the sear housing assembly at a right angle to the barrel center line.

(3) Put the safe/fire switch on fire (F) position.

(4) Press down and rotate the housing assembly until it stops.

(5) Press up on the sear and rotate it until it locks in position.

l. Attach the feed throat assembly.

(1) Squeeze the grip pins and align them with the holes in the receiver.

(2) Release the grip pins to attach the feed throat.

11. Perform a function check to make sure you have assembled the weapon correctly.

Evaluation Preparation:

Setup: At the test site, provide the soldier with the equipment listed in the task conditions. Use the performance steps in the training outline to evaluate the soldier's performance of the task.

Brief Soldier: Tell the soldier to perform operator level maintenance on the MK19 and to perform a function check to ensure the weapon functions correctly.

Performance Measures	GO	NO GO
1. Cleared the weapon.	____	____
2. Disassembled the weapon without damaging any parts.	____	____
3. Cleaned the weapon parts.	____	____
4. Cleaned the components.	____	____
5. Cleaned the ammunition.	____	____
6. Inspected all parts, components, and ammunition for serviceability.	____	____
7. Reported all deficiencies to your supervisor.	____	____
8. Lubricated the weapon parts and components using the correct lubricant and lubrication techniques.	____	____
9. Assembled the weapon in the correct sequence without damaging any parts.	____	____
10. Performed a function check.	____	____

Evaluation Guidance: Score the soldier GO if all performance measures are passed. Score the soldier NO GO if any performance measure is failed. If the soldier scores NO GO, show him what was done wrong and how to do it correctly.

References

Required	Related
	FM 23-27
	TM 9-1010-230-10

071-030-0004
Engage Targets with an MK19 Machine Gun

Conditions: Given a zeroed MK19 machine gun (tripod or cupola mounted), linked 40-mm grenade ammunition, and a sector of fire with engageable targets.

Standards: Fired the MK19 machine gun to engage targets in assigned sector of fire. Applied correct machine gun target engagement techniques so each target was covered with fire.

Performance Steps

1. Assume a suitable firing position. Based on your situation, select a firing position that will allow you to observe and engage targets yet minimize your exposure to enemy fire.

a. Seated firing positions. Sit directly behind the weapon between the trail legs of the tripod.

(1) Legs extended. Extend your legs under the tripod (figure 071-030-0004-1).

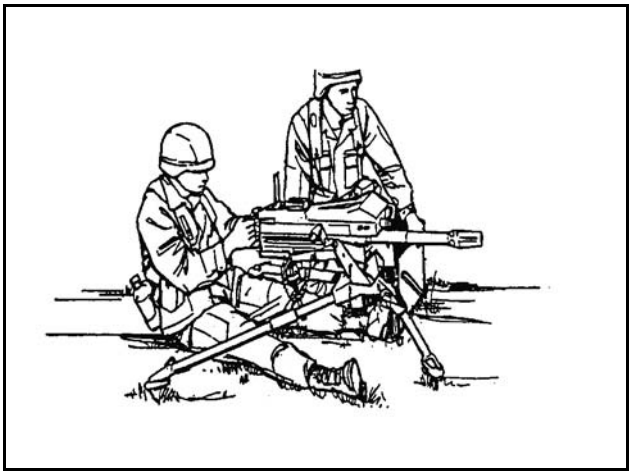

Figure 071-030-0004-1. Seated firing position, legs extended

(2) Legs crossed. Cross your legs and place your elbows on the inside of your thighs for support when firing the weapon (figure 071-030-0004-2).

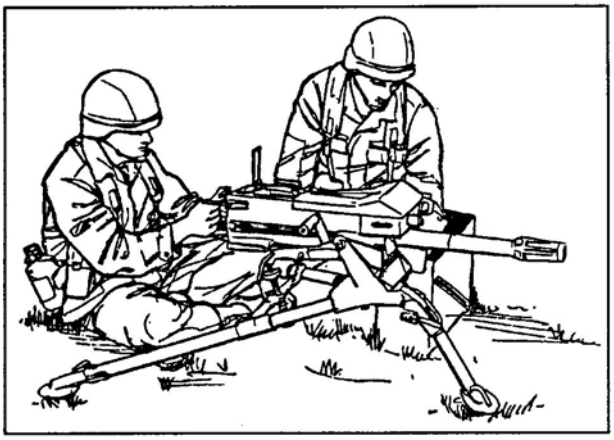

Figure 071-030-0004-2. Seated firing position, legs crossed

(3) Legs braced. Extend your legs, brace them on the trail legs of the tripod, and place your elbows on the inside of your thighs for support (figure 071-030-0004-3).

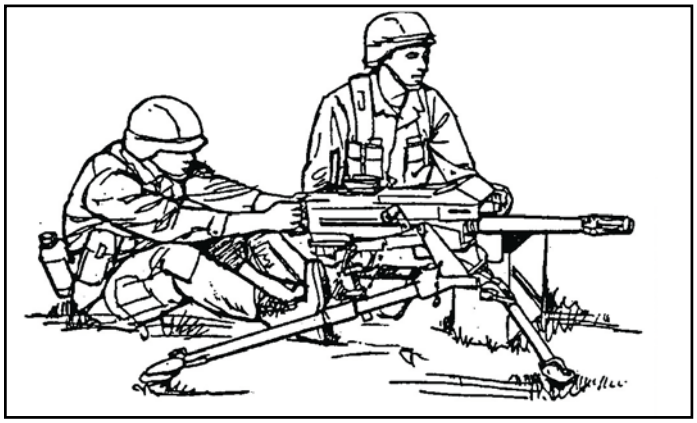

Figure 071-030-0004-3. Seated firing position, legs braced

b. Kneeling position. Kneel and grasp the control grips with your thumbs on the trigger (figure 071-030-0004-4).

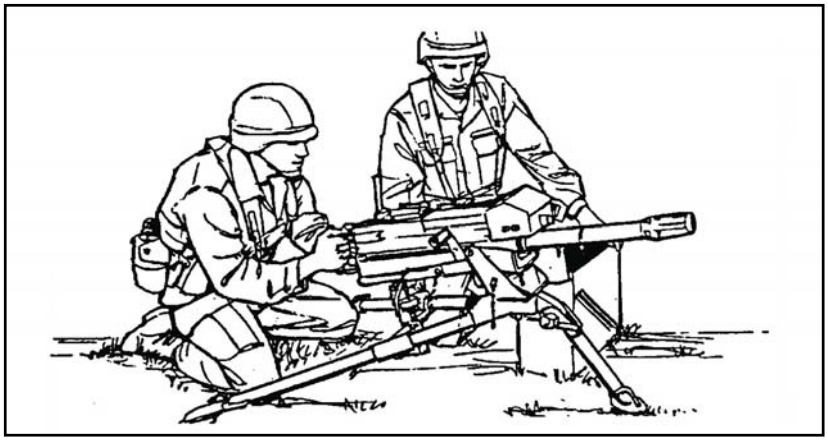

Figure 071-030-0004-4. Kneeling position

c. Standing position for gun mounted on a vehicle pedestal (figure 071-030-0004-5).

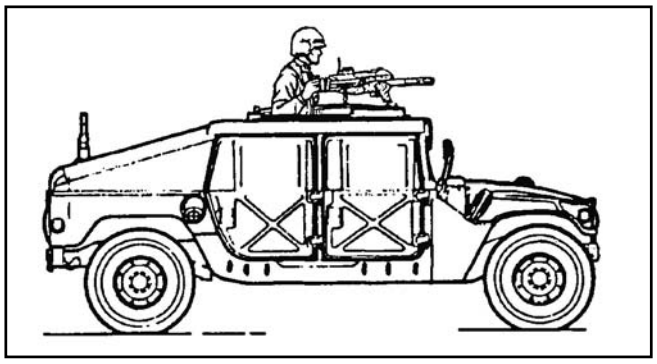

Figure 071-030-0004-5. Standing position for mounted gun

2. Acquire the target using correct sight alignment.

3. Apply correct engagement technique based on target types.

a. Use correct gun manipulation technique (figure 071-030-0004-6).

(1) Fixed fire. This is fire delivered against a point target. Only one aiming point is necessary with little or no manipulation of the gun.

Performance Steps
(2) Traversing fire. This is fire distributed against a wide target requiring successive changes in direction of gun. This means using the T&E mechanism to traverse the gun left or right to distribute fire laterally. **(3)** Searching fire. This is fire delivered against a deep target or a linear target with depth in width by successive changes in elevation. This means using the T&E mechanism to move the muzzle of the weapon up or down to distribute fire in depth. **(4)** Traversing and searching fire. This is fire delivered in width and depth by successive changes in direction and elevation. It is employed against a target whose long axis is oblique to the direction of fire. **(5)** Swinging traverse. This is fire delivered against targets that require major changes in direction but little or no change in elevation. Loosen the traversing slide lock enough to swing the gun laterally. **(6)** Free gun. This is fire delivered against moving targets that must be rapidly engaged with fast changes in direction and elevation. To fire free gun, remove the T&E mechanism.

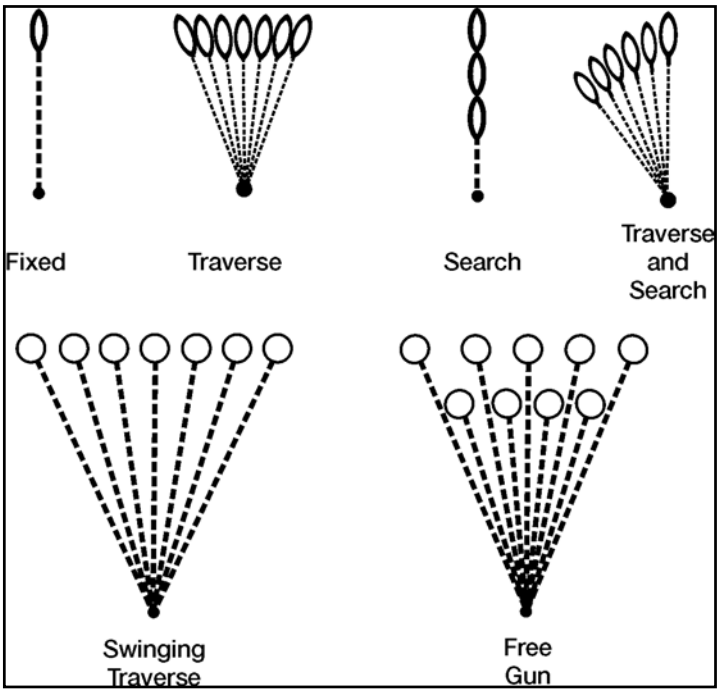

Figure 071-030-0004-6. Techniques of fire with respect to the MK19

b. Use correct application of fire to engage specific targets.

(1) Point target. Engage point targets with fixed fire using a single aiming point (figure 071-030-0004-7).

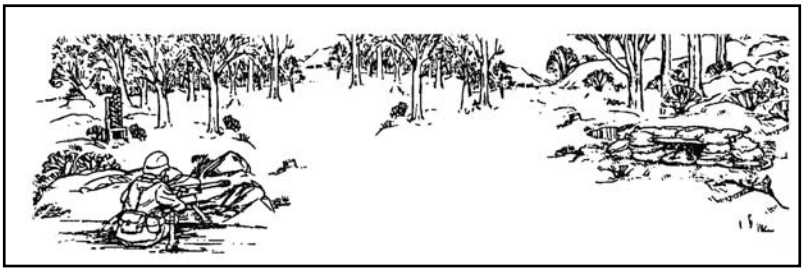

Figure 071-030-0004-7. Point target

(2) Linear target. Initially aim just outside either flank and fire. Traverse fire back and forth from flank to flank, covering the entire target area (figure 071-030-0004-8).

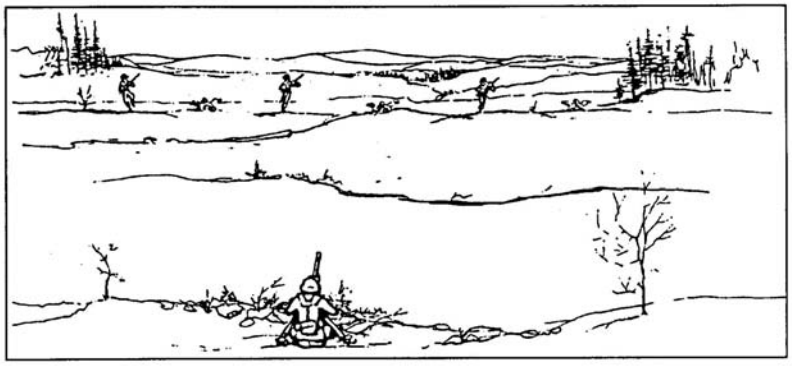

Figure 071-030-0004-8. Linear target

(3) Linear target with depth. Initially aim at the near flank with range set to the midpoint of the target unless another portion of the target is more critical or presents a greater threat. Fire on the near flank, then traverse and search back and forth, covering the entire target (figure 071-030-0004-9).

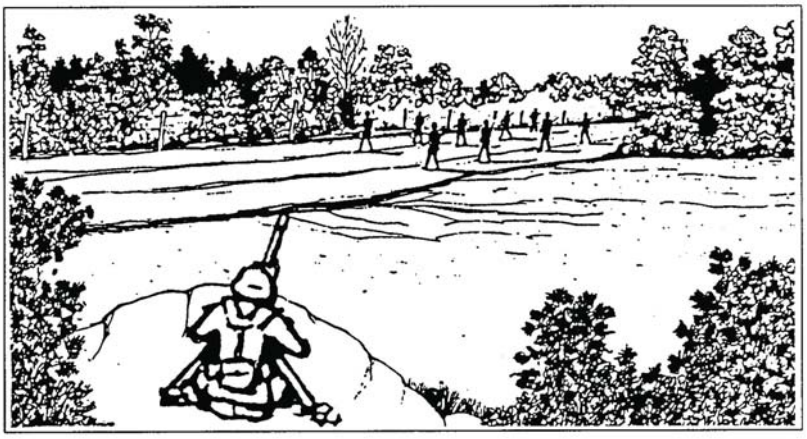

Figure 071-030-0004-9. Linear target with depth

Performance Steps

(4) Deep target. Initially aim at the end of the target closest to the gun, unless another portion of the target is more critical or presents a greater threat (auto rifleman). Fire and search up the far end and back again repeatedly (figure 071-030-0004-10).

Figure 071-030-0004-10. Deep target

(5) Area target. Initially aim at the midpoint of the target area. Traverse and search to either flank, then traverse and search to the opposite flank (figure 071-030-0004-11).

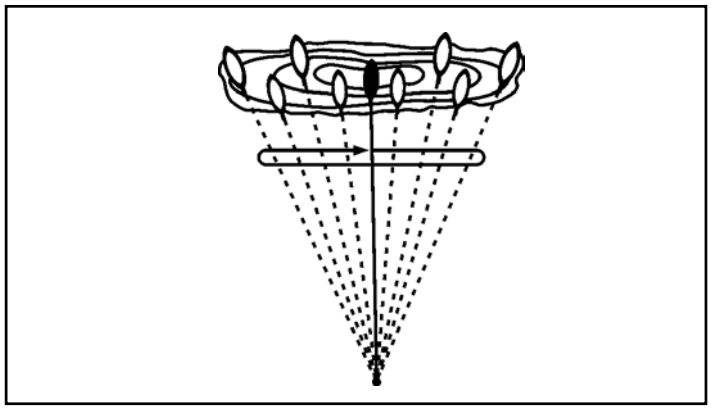

Figure 071-030-0004-11. Engagement of area targets, single gun

4. Use observation of fire and adjusted aiming point to place effective fire on the target.

a. Observation of fire. Observe the strike of the rounds in relation to the target; adjust elevation and direction needed to move the center of impact onto the target.

Note. This does not call for use of the sights.

Example. Suppose you fire at a target 500 meters away. The rounds impact 20 meters short and 50 meters right. To manipulate the gun onto the target, use the traversing and elevating mechanism hand wheels to move the muzzle left and up the proper number of clicks.

b. Adjusted aiming point. Use this method to adjust fires quickly without making a sight or T&E adjustment (figure 071-030-0004-12).

(1) 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.

(2) Lay the gun on that aiming point and fire.

Performance Steps

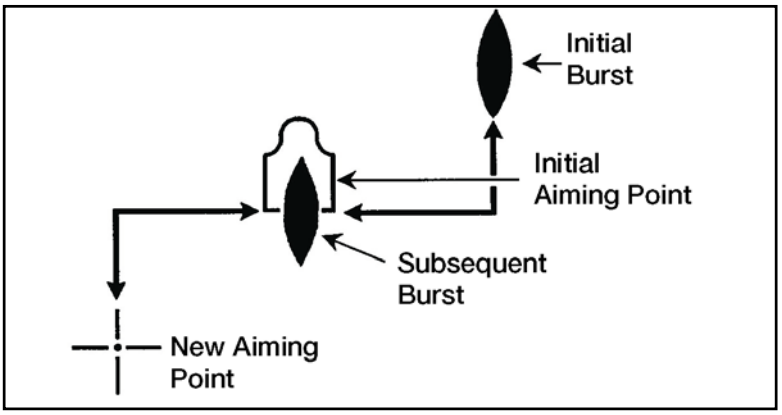

Figure 071-030-0004-12. Adjusted aiming point method

5. Fire on the targets until they are destroyed or until you receive an order to cease fire.

Evaluation Preparation:

Setup: Evaluate this task on a live-fire range designed for 40-mm machine gun firing. For a tripod mounted MK 19 tell the soldier to fire table II, tasks 4 through 8, FM 23-27, appendix C. For a vehicle-mounted MK19, tell the soldier to fire table III, tasks 2 through 5, FM 23-27, appendix C.

Brief Soldier: Tell the soldier to perform the tasks outlined in appendix C, FM 23-27. Brief him on the task conditions, standards, and ammunitions. Tell him he will be evaluated on his ability to apply correct target engagement techniques and place effective fire on targets.

Performance Measures	GO	NO GO
1. Assumed a suitable firing position.	____	____
2. Applied correct engagement technique based on target type.	____	____
a. Used correct gun manipulation technique.		
b. Used correct application of fire to engage specific targets.		
3. Placed effective fire on targets (score a minimum of 84 points).	____	____

Performance Measures	GO	NO GO
4. Used correct application of fire to engage specific targets.	____	____
5. Used observation of fire and adjusted aiming point to place effective fire on the target.	____	____

Evaluation Guidance: Score the soldier GO if all performance measures are passed. Score the soldier NO GO if any performance measure is failed. If the soldier scores NO GO, show him what was done wrong and how to do it correctly.

References

Required	Related
	FM 23-27

071-030-0005

Load an MK19 Machine Gun

Conditions: Given a can of linked 40-mm grenade ammunition and a cleared MK19 machine gun mounted on an M3 tripod or on a vehicle. (If firing from a vehicle, ammunition can bracket must be attached to the gun mount.)

Standards: Loaded linked ammunition through feed throat into feeder so, when cover was closed, the round was straight and firmly seated against the bolt, and the ammunition fed correctly.

Performance Steps

1. Make sure the chamber is empty, the bolt is in the forward position, and the charger handles are in the up (lock) position.

2. Make sure the safety switch is in the safe (S) position.

WARNING

Do not let the top cover slam shut from the open position. Injury to personnel or damage to equipment could result.

3. Insert the first round.

a. Open the top cover and insert the first round through the feed throat into the feeder, link opening first (figure 071-030-0005-1).

Performance Steps

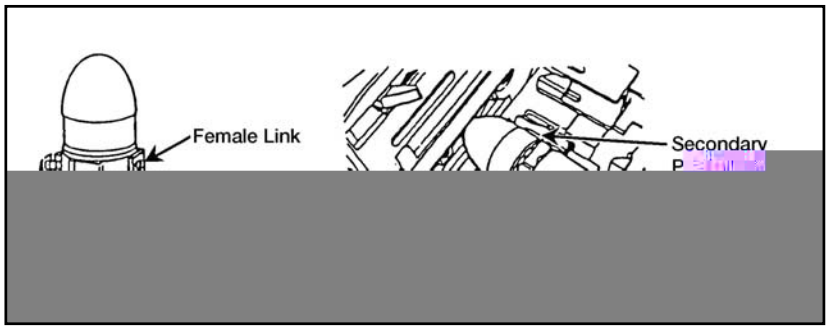

Figure 071-030-0005-1. Insertion of first round through feed throat

b. Push or slide the round across the first set of feeder pawls, making sure the round is straight and firmly seated against the bolt (figure 071-030-0005-2).

Figure 071-030-0005-2. Pushing round across feeder pawls

c. Index the feed slide assembly to the left and close the top cover (figure 071-030-0005-3).

Performance Steps

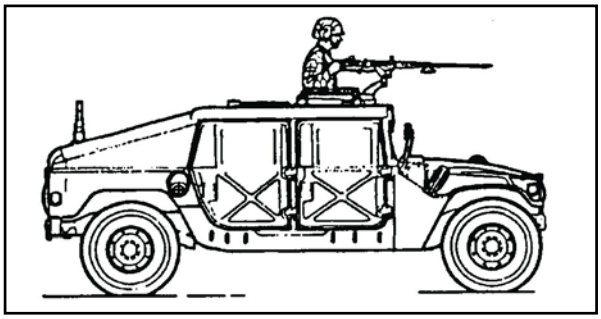

Figure 071-313-3454-5. Standing position (HMMWV mount)

2. Obtain the correct sight picture.

a. Sight alignment. Center the front sight post in the peep sight (figure 071-313-3454-6).

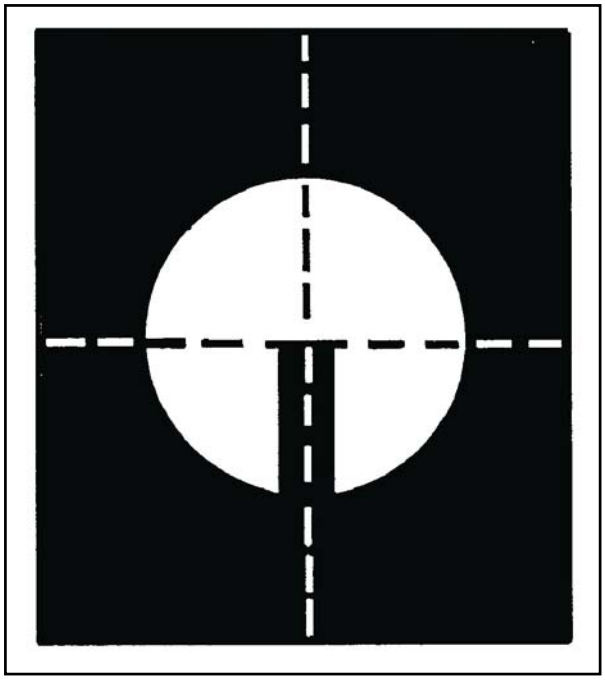

Figure 071-313-3454-6. Correct sight alignment

b. Sight picture. Place top center of front sight blade at bottom center of intended target (figure 071-313-3454-7).

Performance Steps

Figure 071-313-3454-7. Correct sight picture

3. Apply the correct engagement technique based on target type (figure 071-313-3454-8).

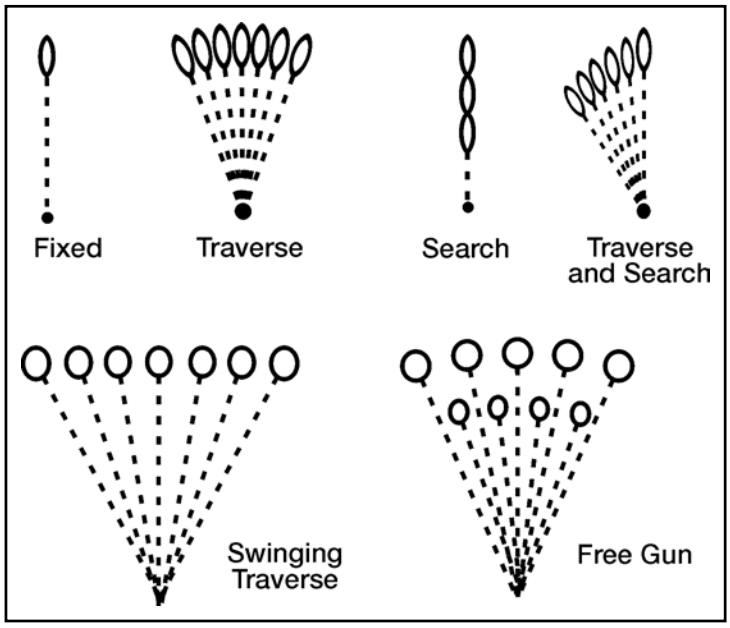

Figure 071-313-3454-8. Techniques of fire with respect to the gun

a. Use the correct gun manipulation technique.

(1) Fixed fire. Refers to fire delivered against a point target. Only one aiming point is necessary, with little or no manipulation of the gun.

(2) Traversing fire. Refers to fire distributed against a wide target, requiring successive changes in the gun direction. To distribute fire laterally, use the T&E mechanism to traverse the gun left or right.

(3) Searching fire. Refers to fire delivered against a deep target or a linear target with depth by successively changing elevation. To distribute fire in depth, use the T&E mechanism to move the muzzle of the weapon up or down.

(4) Traversing and searching fire. Refers to fire delivered in width and depth by successive changes in direction and elevation. Use this type of fire against a target whose long axis is oblique to the direction of fire.

(5) Swinging traverse. Refers to fire delivered against targets that require major changes in direction but little or no change in elevation. Loosen the traversing slide lock enough to swing the gun laterally.

Performance Steps

(6) Free gun. Refers to fire delivered against moving targets that must be rapidly engaged with fast changes in direction and elevation. To fire free gun, remove the T&E mechanism.

b. Correctly apply fire to engage specific targets.

(1) Point target. Engage point targets with fixed fire using a single aiming point (figure 071-313-3454-9).

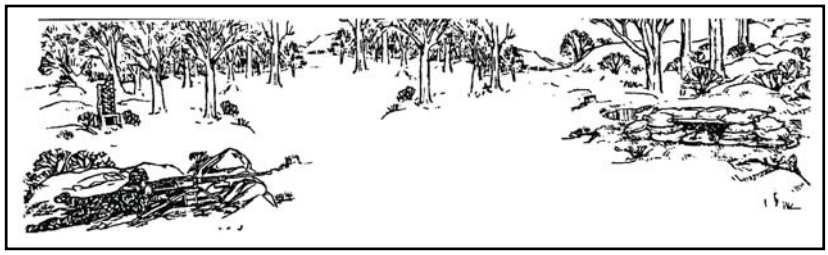

Figure 071-313-3454-9. Point target

(2) Linear target. Initially aim at the midpoint of the target. Traverse fire to one flank and then to the other to cover the entire target (figure 071-313-3454-10).

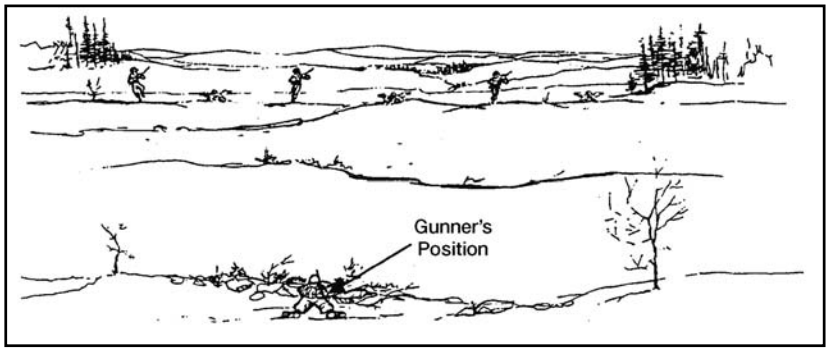

Figure 071-313-3454-10. Linear target and one gun

(3) Linear target with depth. Initially aim at the midpoint of the target, unless another portion of the target is more critical or presents a greater threat. Traverse and search to the flank closest to your position, then back to the other flank, so you cover the entire target (figure 071-313-3454-11).

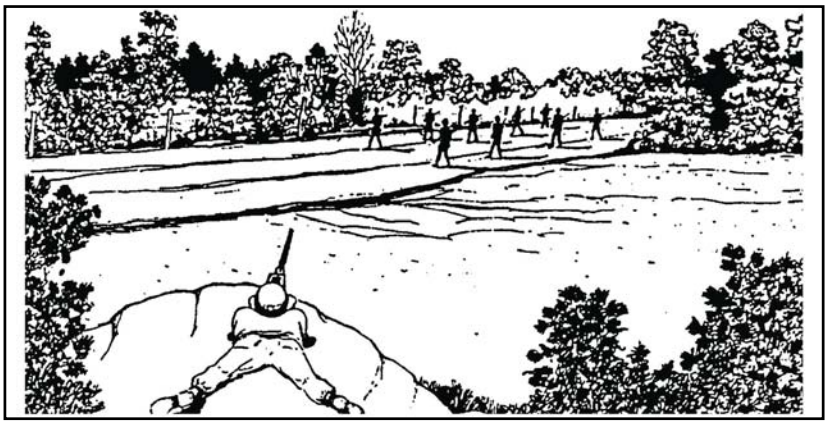

Figure 071-313-3454-11. Linear target with depth

(4) Deep target. Initially aim at the midpoint of the target, unless another portion of the target is more critical or presents a greater threat. Search down to the near end, then search up to the far end (figure 071-313-3454-12).

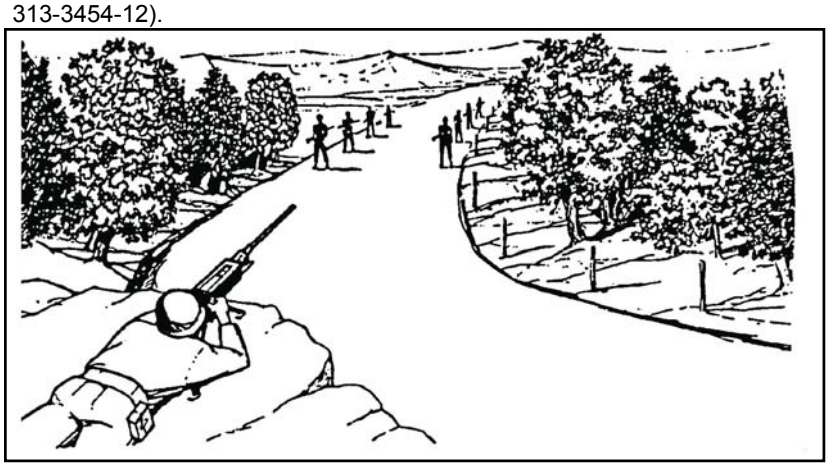

Figure 071-313-3454-12. Deep target

(5) Area target. Initially aim at midpoint of the target area. Traverse and search to either flank, then traverse and search to the opposite flank (figure 071-313-3454-13).

Performance Steps

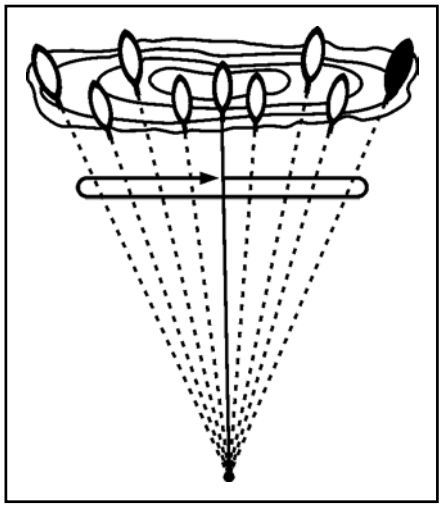

Figure 071-313-3454-13. Engagement of area targets

4. Observe fire and adjust the aiming point to place effective fire on the target.

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

b. Adjusted aiming point. Adjust fire quickly without adjusting the sight. 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. Fire a second burst (figure 071-313-3454-14).

Performance Steps

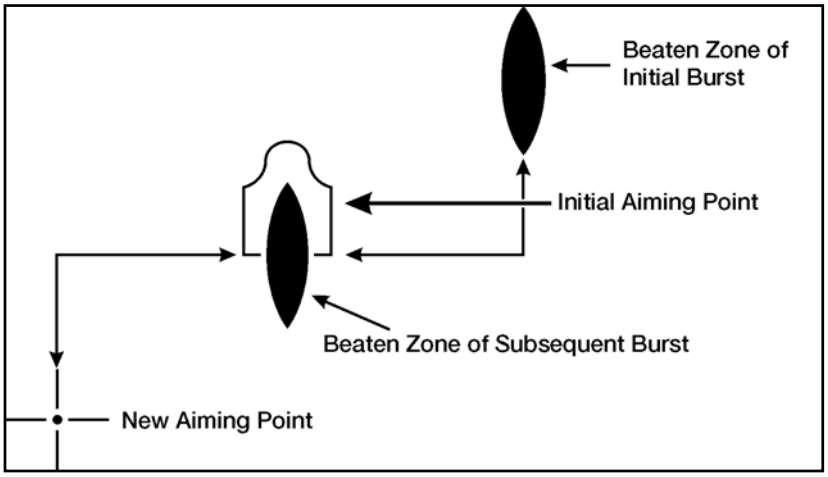

Figure 071-313-3454-14. Adjusted aiming point method

5. Fire on the targets until they are all destroyed, or until you receive an order to cease fire.

Evaluation Preparation:

Setup: Evaluate this task on a 10-meter live-fire range equipped with the basic machine gun target pasters (FSN 6920-078-5128). Provide the soldier with a caliber .50 M2 machine gun (tripod mounted) with 236 rounds of linked caliber .50 ammunition (117 rounds for practice and 119 rounds for qualification). Conduct 10-meter firing according to FM 23-65, appendix C, table I.

Brief Soldier: Tell the soldier he will fire table I according to FM 23-65, appendix C (brief the conditions, standards, and ammunition). Tell the soldier that, when you instruct him to fire, you will evaluate his ability to apply correct target engagement techniques and to place effective fire on targets.

Performance Measures	GO	NO GO
1. Assumed a suitable firing position.	____	____
2. Applied correct engagement technique based on target type.	____	____
a. Used correct gun manipulation technique.		
b. Used correct application of fire to engage specific targets.		

Performance Measures	GO	NO GO
3. Placed effective fire on targets (score a minimum of 84 points).	____	____

Evaluation Guidance: Score the soldier GO if all performance measures are passed. Score the soldier NO GO if any performance measure is failed. If the soldier scores NO GO, show him what was done wrong and how to do it correctly.

References

Required	Related
	FM 23-65
	TM 9-1005-213-10

SUBJECT AREA 15: M136 LAUNCHER

071-054-0001
Prepare an M136 Launcher for Firing

Conditions: Given an M136 launcher (AT4) and a requirement to prepare it for firing.

Standards: Performed prefire checks on the M136 AT4 and prepared the round for firing.

Performance Steps

Note. Because the M136 launcher is issued as a round of ammunition rather than as a weapon, the launcher is completely used; therefore, inspection is limited to visual examination of the external components.

1. Perform the prefire checks. The overall condition of the launcher should be inspected before it is used (figure 071-054-0001-1). The firer should ensure—

a. The transport safety pin is in place and fully seated and the lanyard is attached.

b. The cocking lever is in the SAFE position and folded down.

c. The fire-through muzzle cover is intact. If the seal is torn, it should be removed to ensure that no foreign objects have gotten into the launcher.

d. The launcher's color-coded band is the correct color: black for high-explosive antitank, gold for target-practice tracers, and blue for field-handling trainers.

Performance Steps

e. The sights function properly. Open the sight covers to ensure the sights pop up and are not damaged.

f. The red safety catch does not move when depressed.

g. The rear seal is not damaged.

h. The shoulder stop is not broken or damaged and it unsnaps and folds down.

i. The carrying sling is not frayed and is attached to the launcher.

j. The launcher body has no cracks, dents, or bulges.

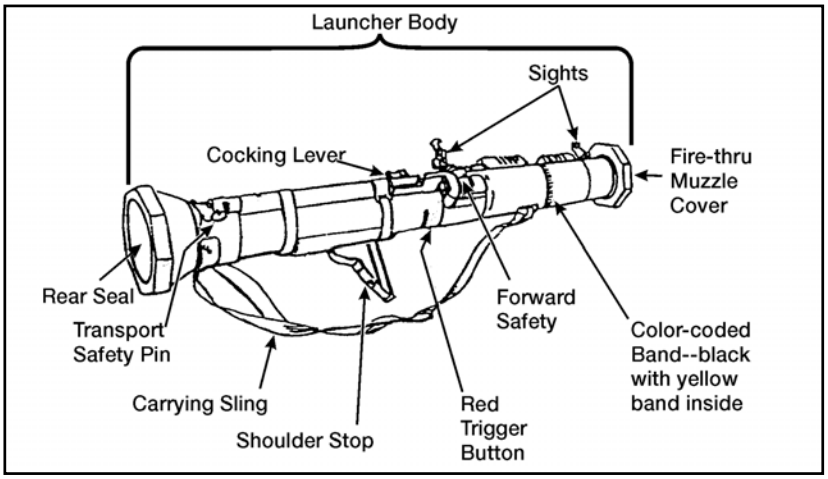

Figure 071-054-0001-1. Parts of the M136 launcher to be inspected

2. Prepare the launcher for firing. Preparation procedures are—

a. Remove the launcher from the carrying position and cradle it with the left arm (figure 071-054-0001-2).

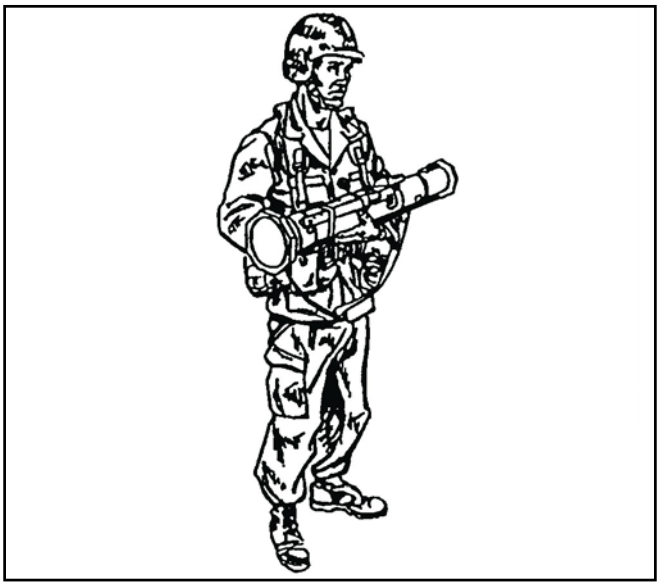

Figure 071-054-0001-2. Cradle position

b. While cradling the launcher, pull the transport safety pin with the right hand and release it (figure 071-054-0001-3).

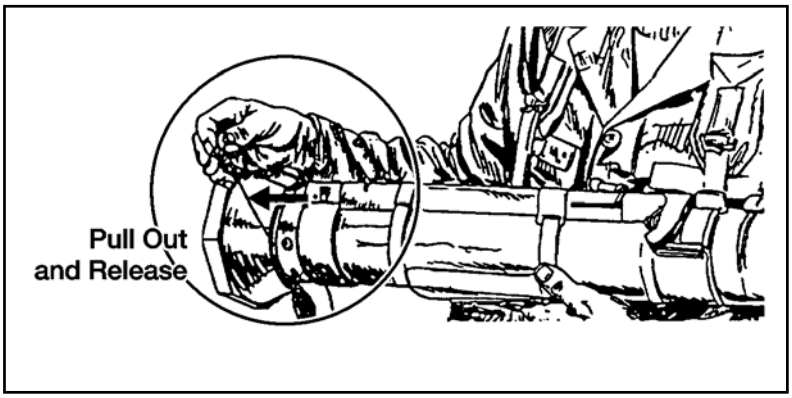

Figure 071-054-0001-3. Removing the transport safety pin

Performance Steps

Note. Ensure the transport safety pin is attached to the launcher by its lanyard. If the launcher has no lanyard, place the transport safety pin in your pocket. If the launcher remains unfired, reinsert the transport safety pin.

WARNINGS

Make sure personnel wear earplugs.

Point the weapon toward the target.

Clear the back blast area.

c. Unsnap and unfold the shoulder stop (figure 071-054-0001-4).

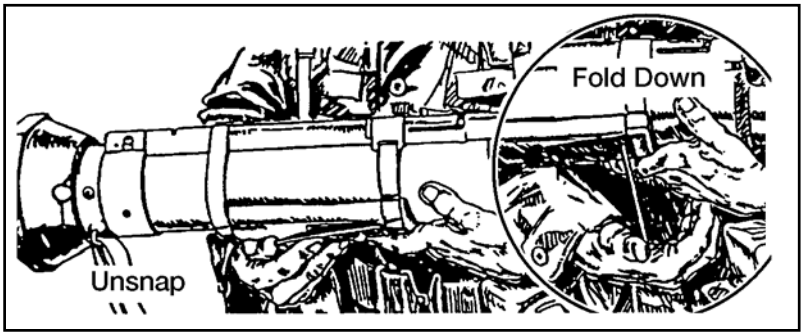

Figure 071-054-0001-4. Unsnapping the shoulder stop

d. With the shoulder stop in position, place the launcher on the right shoulder.

e. With the launcher on the right shoulder and supported with the left hand, release the front sight by pressing down on the sight cover and sliding it to the rear. Release the rear sight by pressing down on the cover and sliding it forward. Sliding the covers off allows the sights to pop up.

f. Check the backblast area.

g. Cock the launcher by unfolding the cocking lever with the right hand. Place the thumb of the right hand under the cocking lever. Grip the front of the firing mechanism for support. Push the cocking lever forward to the right. Let the cocking lever slide back (figure 071-054-0001-5).

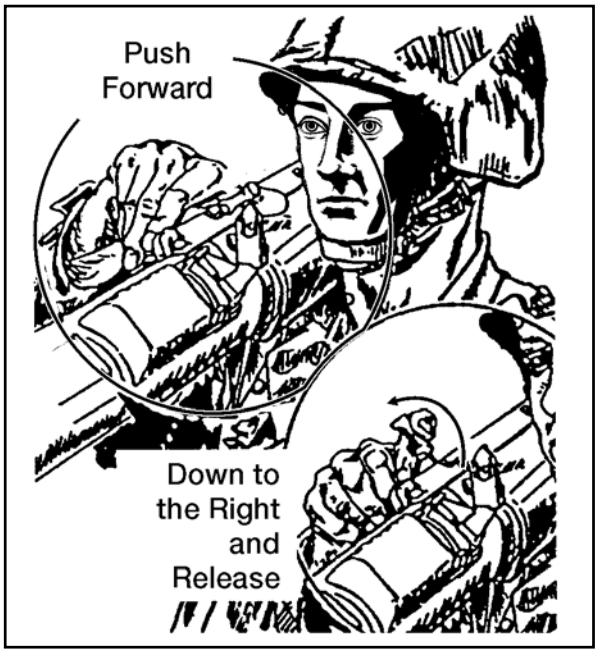

Figure 071-054-0001-5. Cocking the launcher

h. Adjust the rear sight for the required range.

(1) When closing the sight cover, set the sight on a range of 200 meters. When the rear sight is uncovered, the battlesight setting is 200 meters. If the range to the target is more than 200 meters but less than 250 meters, no sight adjustment is required (figure 071-054-0001-6).

Performance Steps

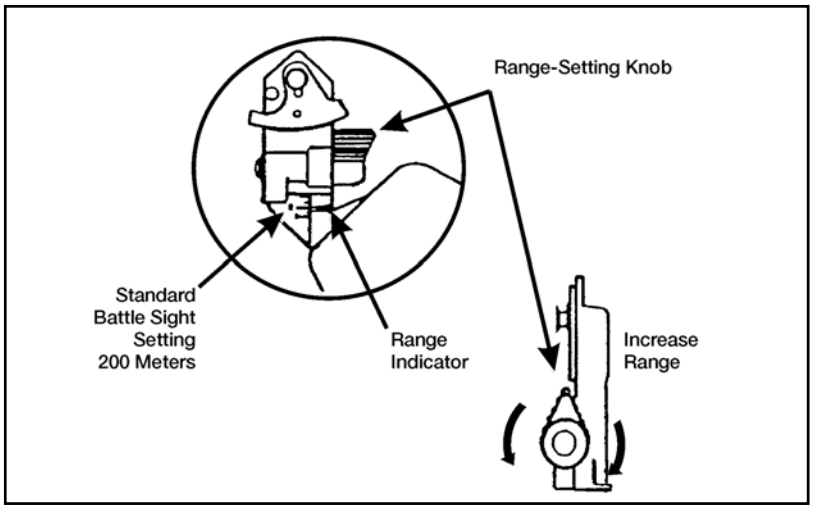

Figure 071-054-0001-6. Adjusting the rear sight

(2) To adjust the rear sight range setting to more than 200 meters, turn the range knob clockwise (toward the muzzle). To decrease the range, turn the range knob counterclockwise (toward the gunner). There is a click at each 50-meter increment; this sound aids you during limited visibility (figure 071-054-0001-6).

Evaluation Preparation:

Setup: At the test site, provide an expended AT4 or a tracer trainer in the carrying configuration; have the soldier place it in the carrying position. Tell the soldier the range to the target. Ask the soldier when the rear sight requires adjustment.

Brief Soldier: Tell the soldier to prepare the launcher to fire. Tell the soldier he will be required to answer questions about the launcher.

Performance Measures	GO	NO GO
1. Performed the prefire checks.	____	____
a. Checked the transport safety pin.		
b. Ensured the cocking lever was on SAFE.		
c. Checked the fire-through muzzle cover.		
d. Checked the color-coded band.		

Performance Measures	GO	NO GO
e. Checked the front and rear sights.		
f. Checked the red safety catch.		
g. Checked the rear seal.		
h. Checked the shoulder stop.		
i. Checked the carrying sling.		
j. Checked the body of the launcher.		
2. Prepared the launcher for firing.	____	____
a. Removed the transport safety pin.		
b. Unsnapped and unfolded the shoulder stop.		
c. Placed the launcher on the right shoulder.		
d. Released the front and rear sights.		
e. Checked the back-blast area.		
f. Cocked the launcher.		
g. Adjusted the rear sight.		

Evaluation Guidance: Score the soldier GO if all performance measures are passed. Score the soldier NO GO if any performance measure is failed. If the soldier scores NO GO, show him what was done wrong and how to do it correctly.

References

Required	Related
	FM 3-23.25

071-054-0002

Restore an M136 Launcher to Carrying Configuration

Conditions: Given an M136 launcher (AT4) prepared for firing and the requirement to restore the launcher to carrying configuration.

Standards: Restored the launcher to a safe carrying configuration without damaging the equipment.

Performance Steps
Note: The launcher is prepared for immediate firing but is not fired.
1. If the gunner remains in the same position, he should—

Performance Steps

(a) Release the red safety catch (this step applies only if the firing sequence has proceeded to this point).

(b) Return the cocking lever to the SAFE (uncocked) position by pushing it up and to the left, then pulling it rearward and fold the cocking lever down.

(c) Keep the launcher pointed at the target area, and remove the launcher from his shoulder.

(d) Replace the transport safety pin, with the launcher cradled in his left arm.

2. If the gunner is to move to another position, in addition to the steps shown above, he must—

(a) Return the rear sight to the battlesight setting of 200 meters, fold down the front and rear sights, and close the sight covers.

CAUTION
The rear sight may be damaged if it is not returned to a battlesight setting of 200 meters before closing the sight cover.

(b) Fold the shoulder stop and snap it back into position.

Evaluation Preparation:

Setup: At the test site, provide an expended AT4 or a tracer trainer. The AT4 or tracer trainer is in the ready to fire configuration.

Brief Soldier: Tell the soldier to assume a correct standing, ready-to-fire position with the launcher. Once he has assumed the firing position, tell him to return the launcher to the carrying configuration.

Performance Measures	GO	NO GO
Note. The performance measures are scored in sequence.		
1. Released the red safety catch.	____	____
2. Returned the cocking lever to the SAFE position and folded the cocking lever down.	____	____
3. Removed the launcher from the shoulder and cradled it with the left arm.	____	____
4. Replaced the transport safety pin.	____	____
5. Returned the rear sight to the battlesight setting.	____	____
6. Folded and covered the sights.	____	____
7. Folded the shoulder stop and snapped it in place.	____	____

Evaluation Guidance: Score the soldier GO if all performance measures are passed. Score the soldier NO GO if any performance measure is failed. If the soldier scores NO GO, show him what was done wrong and how to do it correctly.

References

Required	Related
	FM 3-23.25
	TM 9-1315-886-12

SUBJECT AREA 16: M203 GRENADE LAUNCHER

071-311-2125

Maintain an M203 Grenade Launcher

Conditions: Given an M203 grenade launcher; cleaner, lubricant, preservative (CLP); thong; bore brush; and clean rags.

Standards: Cleared the M203 grenade launcher; disassembled the M203; cleaned and lubricated the M203; inspected the M203 before assembly; assembled the M203; and performed a function check on the M203.

Performance Steps

1. Clear the M203 grenade launcher.
2. Disassemble the M203 (figure 071-311-2125-1).

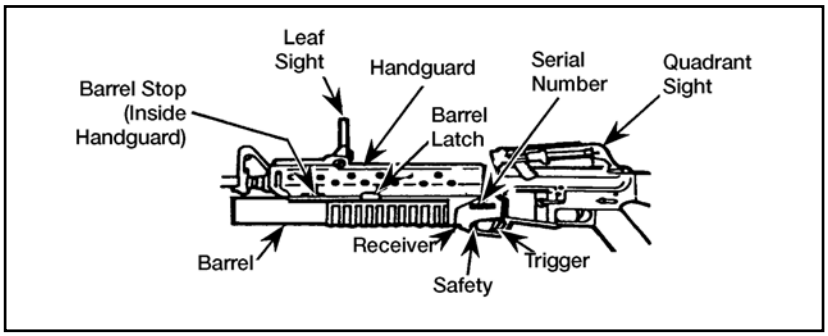

Figure 071-311-2125-1. Components of the M203 grenade launcher

Performance Steps

WARNING

Before disassembling the weapon, clear the rifle and grenade launcher.

a. Remove the quadrant sight (if used) by loosening the knurled screw on the right side (figure 071-311-2125-2).

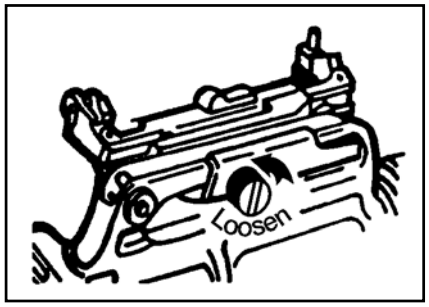

Figure 071-311-2125-2. Removing quadrant sight

b. Pull back the slip ring. Lift up on the handguard and pull it to the rear to remove (figure 071-311-2125-3).

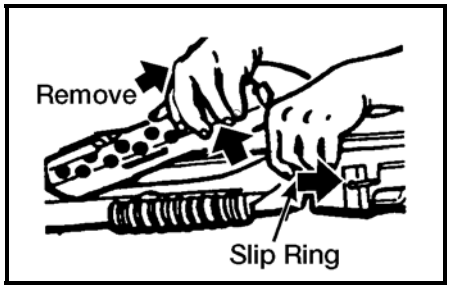

Figure 071-311-2125-3. Removing handguard

c. Press the barrel latch and move the barrel forward to the barrel stop (figure 071-311-2125-4).

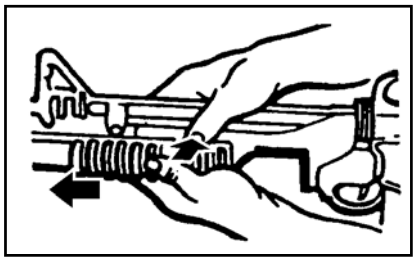

Figure 071-311-2125-4. Unlocking and opening the M203 barrel

d. Press the barrel stop to release the barrel from the receiver and remove the barrel (figure 071-311-2125-5).

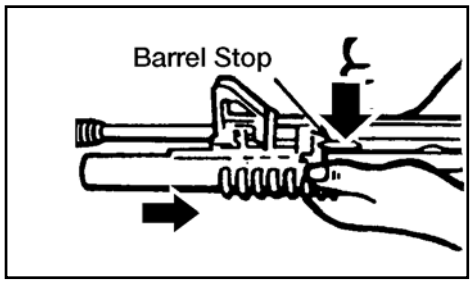

Figure 071-311-2125-5. Removing the M203 barrel

Note. Further disassembly may be performed only by the armorer.

3. Clean and lubricate the M203.

a. Bore. Attach a clean, dry rag to the thong and thoroughly moisten the rag with CLP. Pull the rag through the bore several times. Attach the bore brush to the thong, pull it through the bore several times, and follow this with more rags, moistened with CLP, if needed (figure 071-311-2125-6). Pull dry rags through the bore and inspect each rag as it is removed. The bore is clean when a dry rag is removed unfouled. Pull a rag lightly moistened with CLP through the bore to leave a light coat of lubricant inside the barrel.

Performance Steps

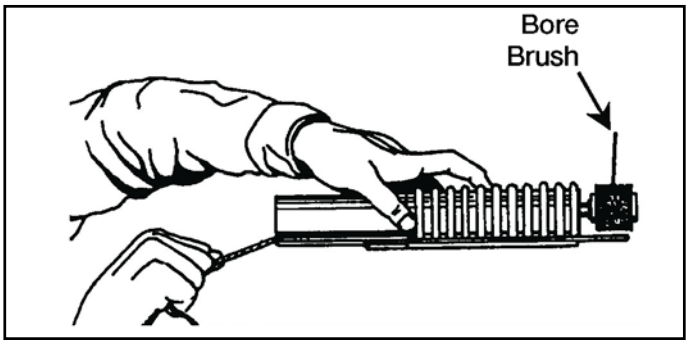

Figure 071-311-2125-6. Cleaning the M203 barrel

b. Breech insert. Clean the face of the breech insert retainer with a patch and CLP. Remove the CLP cleaner with dry rags, then lubricate the breech with a light coat of CLP.

c. All other parts. Use a brush and dry rags to clean all other parts and surfaces. Apply a light coat of CLP to the exterior of the launcher after cleaning.

d. Safety mechanism. Clean the safety mechanism properly with CLP. Lubricate the safety with CLP.

Note. For cleaning the rifle portion of the launcher, refer to Task 071-311-2025.

4. Inspect the M203 before assembly.

a. Check handguard for cracks, dents, or distortion that prevent its firm attachment to the rifle.

b. Check leaf sight for bent or damaged parts and for rust or corrosion.

c. Check leaf sight for legibility of marking.

d. Check barrel for cracks and general condition. Inspect all parts for wear and damage.

e. Check for burrs, scratches, nicks, or other damage.

5. Assemble the M203.

a. Press the barrel stop. Slide the barrel into the receiver (figure 071-311-2125-7).

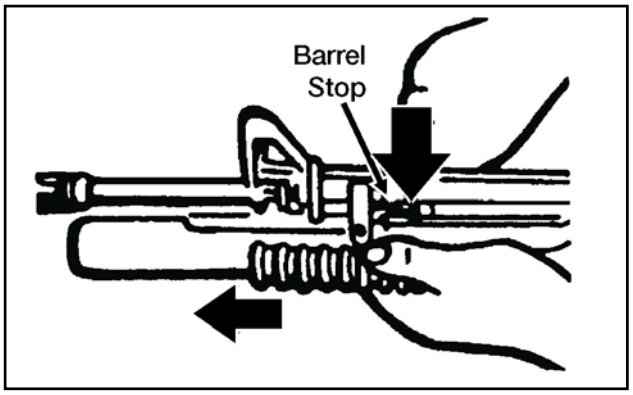

Figure 071-311-2125-7. Installing the M203 barrel

b. Move the barrel rearward to lock (figure 071-311-2125-8).

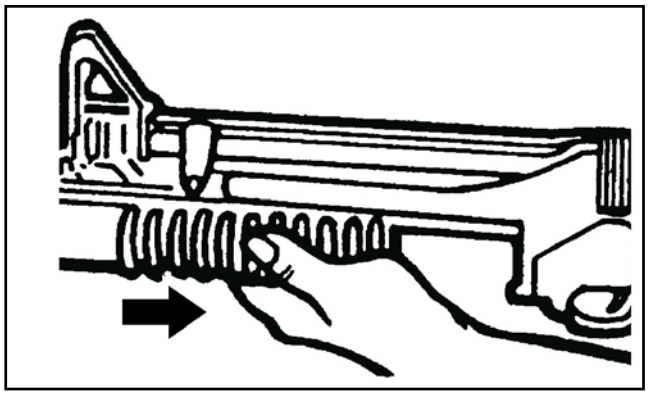

Figure 071-311-2125-8. Locking the M203 barrel

c. Install the handguard and secure with the slip ring (figure 071-311-2125-9).

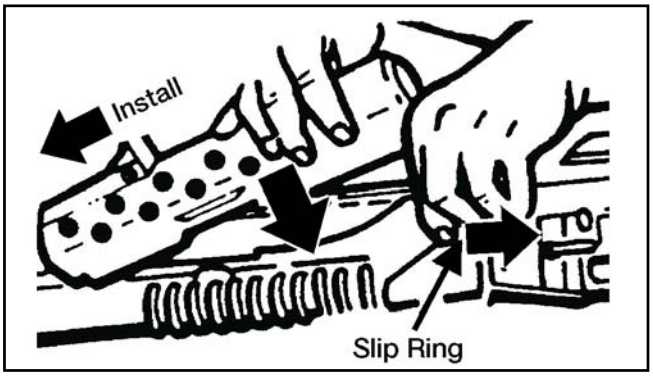

Figure 071-311-2125-9. Installing the handguard

d. Install the quadrant sight (figure 071-311-2125-10).

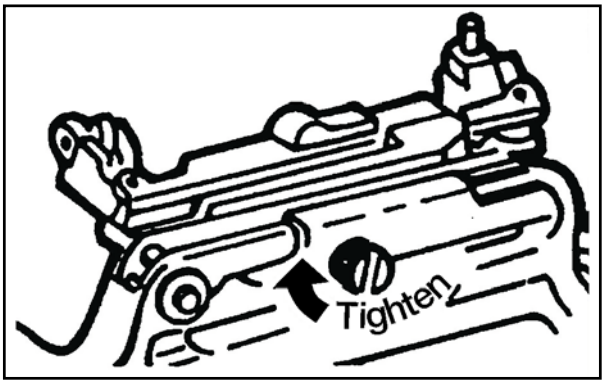

Figure 071-311-2125-10. Installing the quadrant sight

6. Perform a function check on the M203.

a. Check the proper operation of the sears. Cock the launcher and pull the trigger. The firing pin should release. Hold the trigger to the rear and cock the launcher. Release the trigger, then pull. The firing pin should release.

b. Check the safety in both SAFE and FIRE positions with trigger. Launcher must be cocked before safety can be placed in SAFE position.

Performance Steps
c. Check the leaf sight windage adjustment screw for proper operation. Do not move the elevation adjustment screw if the weapon has been zeroed.
d. Move barrel forward and back to be sure the stop and barrel latch function.

Evaluation Preparation:

Setup: At the test site, provide all materials and equipment given in the task conditions.

Brief Soldier: Tell the soldier he will perform unit maintenance on the M203 grenade launcher.

Performance Measures	GO	NO GO
1. Cleared the M203 grenade launcher.	____	____
2. Disassembled the M203.	____	____
a. Removed the quadrant sight.		
b. Pulled back the slip ring.		
c. Moved the barrel forward to the barrel stop.		
d. Removed the barrel.		
3. Cleaned and lubricated the M203.	____	____
a. Cleaned the bore.		
b. Cleaned the breech insert.		
c. Cleaned all other parts.		
d. Cleaned the safety mechanism.		
4. Inspected the M203 before assembly.	____	____
a. Checked the handguard.		
b. Checked the leaf sight.		
c. Checked the barrel.		
d. Checked for burrs, scratches, and other damage.		
5. Assembled the M203.	____	____
a. Slid the barrel into the receiver.		
b. Closed the barrel.		
c. Installed the handguard.		
d. Installed the quadrant sight.		

Performance Measures	GO	NO GO
6. Performed a function check on the M203.	____	____
a. Checked operation of the sears.		
b. Checked safety in both the SAFE and the FIRE positions.		
c. Checked the leaf sight windage adjustment screws for proper operation.		
d. Checked the barrel latch and the stop function.		

Evaluation Guidance: Score the soldier GO if all performance measures are passed. Score the soldier NO GO if any performance measure is failed. If the soldier scores NO GO, show him what was done wrong and how to do it correctly.

References

Required	Related
	FM 23-31
	TM 9-1010-221-10

071-311-2127

Load an M203 Grenade Launcher

Conditions: Given an M203 grenade launcher, ammunition, and a requirement to load the weapon.

Standards: Inserted ammunition into the chamber without damaging the equipment or injuring personnel. Followed all safety procedures in accordance with TM 9-1010-221-10.

Performance Steps

WARNING

Keep muzzle down range and clear of all troops**.**

1. Ensure that the safety switch is in the SAFE (“S”) position until ready to fire.
2. Depress the barrel latch.
3. Slide the barrel assembly forward (extraction and cocking automatically take place during this step).
4. Before loading, make sure that the bore and chamber are clean and dry.

Performance Steps

5. Insert the ammunition into the chamber.

> **WARNING**
>
> Do not fire pyrotechnic ammunition made for the AN-M8 pyrotechnic pistol in the M203 grenade launcher. Make sure you have the right ammunition. Never load aircraft ammunition M384 (HE) or M385 (practice). It could result in serious injury.

6. Slide the barrel closed until it locks and clicks.

Evaluation Preparation:

Setup: At the test site, in an outside field environment, provide all equipment and materials listed in the task condition statement.

Brief Soldier: Tell the soldier to load the M203 grenade launcher and to perform all steps correctly.

Performance Measures	GO	NO GO
1. Ensured that the safety switch was in the SAFE ("S") position until ready to fire.	____	____
2. Pressed the latch and slid the barrel forward.	____	____
3. Before loading, made sure that the bore and chamber were cleaned and dried.	____	____
4. Inserted the ammunition into the chamber.	____	____
5. Slid the barrel closed until it locked and clicked.	____	____

Evaluation Guidance: Score the soldier GO if all performance measures are passed. Score the soldier NO GO if any performance measure is failed. If the soldier scores NO GO, show him what was done wrong and how to do it correctly.

References

Required	Related
	FM 23-31
	TM 9-1010-221-10

071-311-2128

Unload an M203 Grenade Launcher

Conditions: Given a loaded M203 grenade launcher and a requirement to unload it.

Standards: Pressed the latch and moved the barrel forward to eject ammunition. Caught the round as it dropped.

Performance Steps

Note. If weapon has been fired and only shell casing is in chamber, disregard step 3 and the requirement for slow movement in step 4.

1. Place safety in the ON position.
2. Depress the barrel latch.
3. Place one hand under the barrel assembly forward of the trigger guard.
4. Slowly slide the barrel assembly forward (the round will eject).
5. Secure the round.

Evaluation Preparation:

Setup: At the test site, in an outside field environment, provide all equipment and materials listed in the task conditions statement.

Brief Soldier: Tell the soldier to unload the M203 grenade launcher, performing all steps correctly.

Performance Measures	GO	NO GO
1. Pressed the latch.	____	____
2. Moved the barrel forward.	____	____
Note. The round extracts and ejects automatically.		
3. Caught the round—did not let it drop.	____	____

Evaluation Guidance: Score the soldier GO if all performance measures are passed. Score the soldier NO GO if any performance measure is failed. If the soldier scores NO GO, show him what was done wrong and how to do it correctly.

References

Required	Related
	FM 23-31
	TM 9-1010-221-10

071-311-2129

Correct Malfunctions of an M203 Grenade Launcher

Conditions: Given an M203 grenade launcher mounted on an M16-series rifle and 40-mm ammunition. The grenade launcher has failed to function or fire.

Standards: Corrected malfunctions of an M203 grenade launcher. Followed all safety precautions according to TM 9-1010-221-10.

Performance Steps

1. Keep the weapon pointed at the target and keep all soldiers clear of the muzzle (at least 80 meters or 264 feet).

Note. M203 malfunctions consist of hangfires and misfires. A hangfire is a delay in the propellant's igniting. A misfire is a failure to fire. Both are handled in the same way because they are often indistinguishable.

2. Wait 30 seconds from the time of the failure to fire, then open the breech.

3. Remove the round from the breech.

a. Release the barrel latch.

b. Slide the barrel forward to eject the round.

c. Either catch the ejected round or reduce the distance the round falls by holding the weapon close to the ground.

d. If the round does not eject, tap the casing with the rifle cleaning rod.

e. If the casing cannot be removed, notify the NCOIC or unit maintenance.

4. Examine the primer to determine whether the round or the firing mechanism is defective.

a. If the primer is dented, keep the damaged round separate from other ammunition until it can be disposed of properly.

b. If the primer is not dented, the firing mechanism is faulty. Report it to the NCOIC or unit maintenance.

Note. If the primer is not dented, the round may be reloaded on an operational M203.

Evaluation Preparation:

Setup: Provide all materials listed in the task conditions. Use dummy ammunition for training.

Brief Soldier: Tell the soldier he must assume a firing position to apply any required immediate action.

Performance Measures	GO	NO GO
1. Kept the weapon pointed at the target and kept all troops clear of the muzzle (at least 80 meters or 264 feet).	____	____
2. Waited 30 seconds from the time of the failure to fire, then opened the breech.	____	____
3. Removed the round from the breech.	____	____
a. Released the barrel latch.		
b. Slid the barrel forward to eject the round.		
c. Caught either the ejected round or reduced the distance the round fell by holding the weapon close to the ground.		
d. If the round did not eject, tapped the casing with the rifle cleaning rod.		
e. If casing could not be removed, notified the NCOIC or unit maintenance.		
4. Examined the primer to determine whether the round or the firing mechanism was defective.	____	____
a. If the primer was dented, kept the damaged round separate from other ammunition until it could be disposed of properly.		
b. If the primer was not dented, reported the faulty firing mechanism to the NCOIC or unit maintenance.		

Evaluation Guidance: Score the soldier GO if all performance measures are passed. Score the soldier NO GO if any performance measure is failed. If the soldier scores NO GO, show him what was done wrong and how to do it correctly.

References

Required	Related
	FM 23-31
	TM 9-1010-221-10

071-311-2130

Engage Targets with an M203 Grenade Launcher

Conditions: Given a zeroed M203 grenade launcher mounted on an M16-series or M4-series rifle, enemy targets located within engagement ranges, and sufficient ammunition.

Standards: Destroyed or disabled enemy targets without causing injury or death to friendly personnel.

Performance Steps

Note. This task may be performed using either of two sights found on the system.

WARNING

Keep muzzle pointed downrange and clear of all friendly troops.

1. Keep the safety in the SAFE position until ready to fire.
2. Load the M203 grenade launcher (Task 071-311-2127).

WARNING

Fire high-explosive (HE) grenades at targets within 130 meters (427 feet) (minimum safe) only from a protected position. When training (minimum safe), do not fire at targets within 130 meters (427 feet). In combat, do not fire at targets closer than 31 meters (102 feet).

3. Determine range to target (figure 071-311-2130-1).

Performance Steps

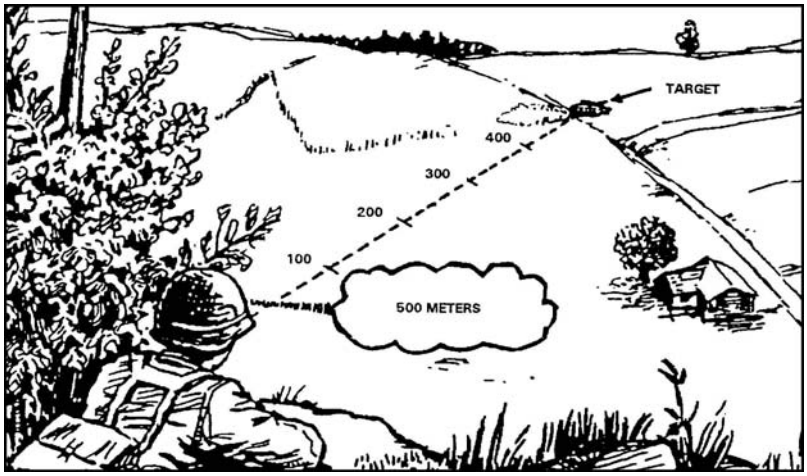

Figure 071-311-2130-1. Range estimation

4. Determine if target is engageable.

5. Determine if target should be engaged.

6. Select the appropriate firing technique based on target range (figure 071-311-2130-2).

Performance Steps

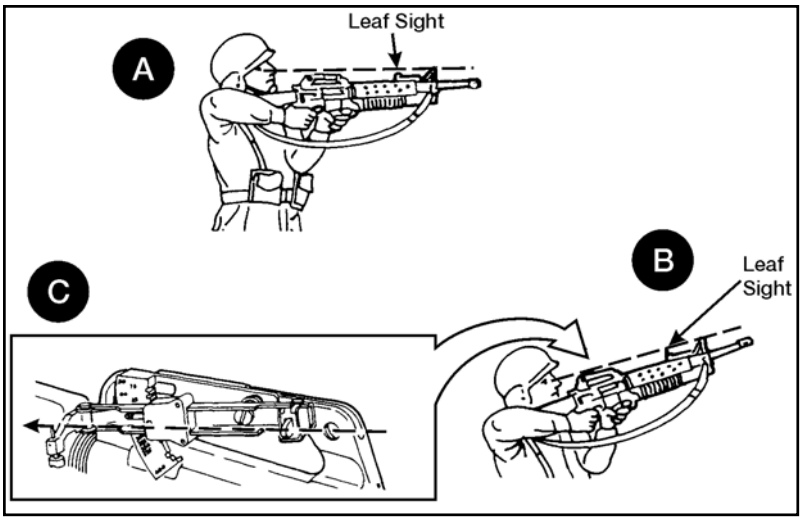

Figure 071-311-2130-2. Firing techniques

a. For short-range targets at 50 meters or less, place the leaf sight down and use the rifle sights (A, figure 071-311-2130-2).

Note. Estimate distance to target and aim head high on the target.

b. For targets from 50 to 250 meters, raise the leaf sight and use with the rifle front sight (B, figure 071-311-2130-2).

c. For targets from 250 to 400 meters, use the front and rear sight of the quadrant sight only (C, figure 071-311-2130-2).

7. Select and assume an appropriate firing position (figure 071-311-2130-3).

Performance Steps

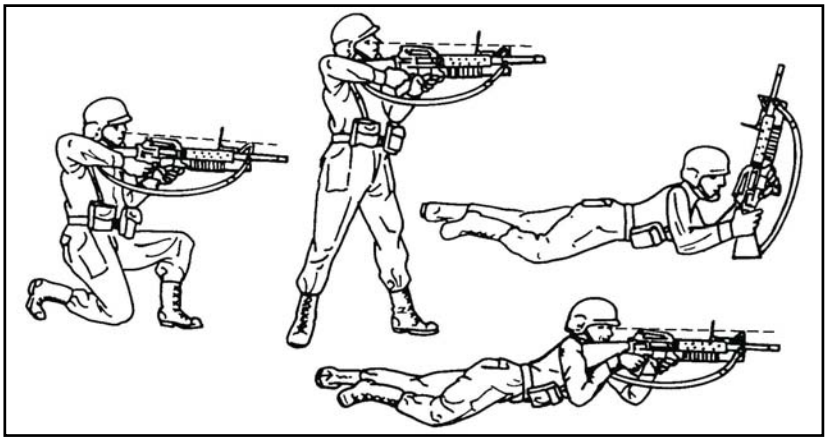

Figure 071-311-2130-3. Firing positions

Note. Launcher may be fired from the standing, kneeling, or prone position.

a. Place the stock of the weapon on the ground when firing long range from the prone position.

b. Hold the stock firmly against your shoulder for all other positions.

8. Obtain sight picture (using leaf sight or quadrant sight).

Note. Leaf sight may be used at ranges between 50 and 250 meters. Quadrant sight ranges are from 50 to 400 meters.

9. Adjust the leaf sight if necessary (figure 071-311-2130-4).

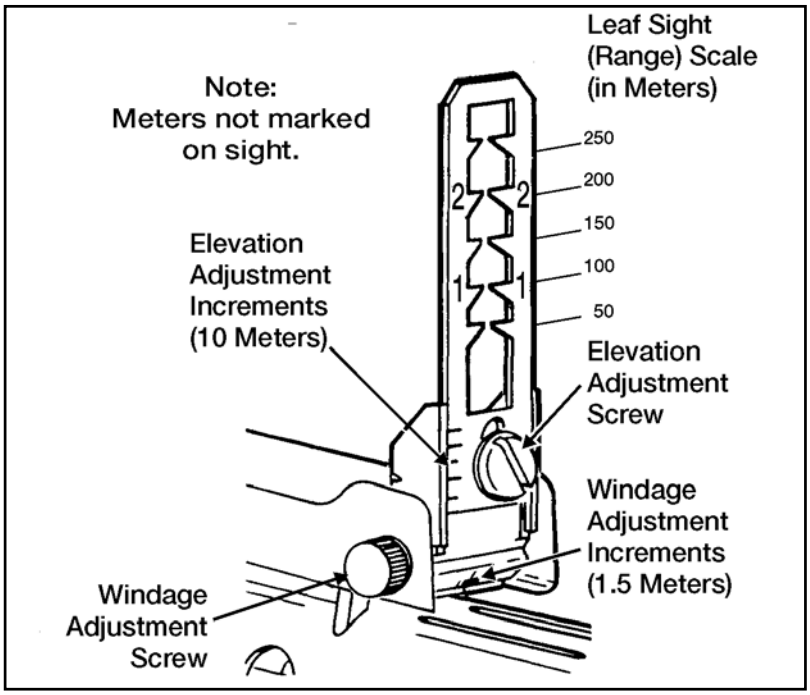

Figure 071-311-2130-4. Leaf sight

Notes.

1. For range, the leaf sight scale is marked in 50-meter (165-foot) increments for targets from 50 to 250 meters.
2. For elevation, one increment equals 10 meters (33 feet) at a 200-meter (660-foot) range.
3. For windage, one increment equals 1.5 meters (5 feet) at a 200-meter (660-foot) range.

a. For headwind and rear wind—

(1) Loosen the elevation adjustment screw to move the leaf sight up to increase range for head wind.

(2) Lower it to decrease range for rear wind.

(3) Use the rim of a used 40-mm cartridge to turn the elevation adjustment screw.

b. For left wind and right wind—

Performance Steps

(1) Turn the windage adjustment screw clockwise to adjust for wind from the left.

(2) Turn the windage adjustment screw counterclockwise to adjust for wind from the right.

10. Adjust the quadrant sight if necessary (figure 071-311-2130-5).

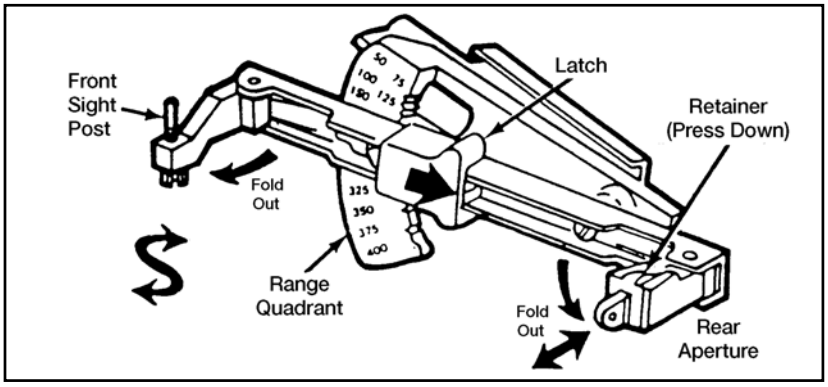

Figure 071-311-2130-5. Quadrant sight

Note. Range quadrant is marked in 25-meter (83-foot) increments from 50 to 400 meters (165 to 1,320 feet).

a. Pull the latch toward you to release the quadrant sight arm.

b. Select elevation.

Note. For elevation adjustment, one notch equals 5 meters (17 feet) at a 200-meter (660-foot) range.

c. For head wind and rear wind—

(1) Turn the front sight post left to increase range for head wind.

(2) Turn the front sight post right to decrease range for rear wind.

d. For left wind and right wind:

(1) Depress the retainer and slide the rear aperture in to adjust for wind from the right.

(2) Slide the rear aperture out to adjust for wind from the left.

Note. The vertical line marks the center. One notch equals 1.5 meters (5 feet) at a 200-meter (660-foot) range.

11. Move safety to the FIRE position.

Performance Steps

WARNING

Be sure there are no obstacles (such as the sling or branches) in the line of fire.

12. Aim and squeeze the trigger to fire.

Note. Practice breath control when firing the rifle.

13. If the first round misses, adjust fire as necessary by sensing the impact of the round and manipulating the sight.

Note. Continue the adjustment process until a hit is obtained or the area has been covered by fire.

a. If time allows, whether using the AN/PVS-4 or AN/PVS-7, adjust the sights, but if time is critical, adjust the point of aim instead.

b. If the grenade lands more than 25 meters over or short of the target, adjust the range quadrant to bring the next grenade on target.

c. If the grenade explodes less than 25 meters from the target, adjust the point of aim to bring the next grenade on target.

d. If the launcher is properly zeroed, deviation errors will be small and you can easily correct them by adjusting the aiming point. Adjust for wind as described in steps 9 and 10.

Evaluation Preparation:

Setup: At a live-fire M203 range, provide all the materials indicated in the task conditions.

Brief Soldier: Tell the soldier to engage targets in his sector of fire at ranges from 50 to 250 meters.

Performance Measures	GO	NO GO
1. Kept the safety in the SAFE position until ready to fire.	____	____
2. Loaded the M203 grenade launcher.	____	____
3. Determined range to target.	____	____
4. Selected the appropriate firing technique based on target range.	____	____
5. Selected firing position.	____	____
6. Adjusted the leaf sight.	____	____

Performance Measures	GO	NO GO
7. Adjusted the quadrant sight.	____	____
8. Moved safety to the FIRE position.	____	____
9. Aimed and squeezed the trigger to fire.	____	____
10. Adjusted fire by sensing the impact of the round and manipulating the sight.	____	____

Evaluation Guidance: Score the soldier GO if all performance measures are passed. Score the soldier NO GO if any performance measure is failed. If the soldier scores NO GO, show him what was done wrong and how to do it correctly.

References

Required	Related
	FM 23-31
	TM 9-1010-221-10

SUBJECT AREA 17: M4 CARBINE

071-100-0003
Engage Targets with an M4 or M4A1 Carbine

Conditions: Given an M4 or M4A1 carbine, magazines, ammunition, individual combat equipment, and stationary or moving targets (personnel or equipment) at engageable ranges.

Standards: Detected and determined range to targets. Fired the M4 or M4A1 carbine to engage targets in assigned sector of fire. Applied correct marksmanship fundamentals and target engagement techniques so each target was hit or suppressed.

Performance Steps
1. Assume an appropriate firing position based on the situation. The firing position should protect you from enemy fire and observation, yet allow you to place effective fire on targets in your sector of fire.
a. Foxhole. Advantages: best when available. Disadvantages: no overhead cover.

Performance Steps

b. Prone. Advantages: steady, easy to assume, low silhouette, and easily adapted to use of cover and support. Disadvantages: effectiveness can be limited by terrain and vegetation irregularities.

c. Prone supported. Advantages: steadier than prone, other advantages the same as prone. Disadvantages: same as prone.

d. Kneeling. Advantages: used when firing from behind something; used on ground that is level or gently sloping upward. Disadvantage: exposed to small arms fire.

e. Kneeling supported. Advantages: steadier than kneeling; other advantages the same as kneeling. Disadvantages: exposed to small arms fire.

f. Standing. Advantages: used in assault to surprise targets or when other positions are not appropriate. Disadvantages: exposed to small arms fire.

2. Identify targets in your designated sector of fire.

3. Determine range to a target.

a. Your M4 or MA1 carbine sights can be used to estimate range to targets(s). Viewed through the front sight, a man-sized target appears:

(1) Twice the width as the front sight post at about 90 meters.

(2) The same width as the front sight post at about 175 meters.

(3) Half the width of the front sight post at about 350 meters.

4. Load and fire on targets using appropriate engagement techniques.

a. Load the weapon.

b. Use the appropriate aiming technique.

(1) Engage a stationary target using reference points or sighting points.

(2) Engage a target moving toward you as you would a stationary target.

(3) Engage a target moving laterally, using the single lead technique, by placing the trailing edge of the front sight post at the center of the target. This method causes the lead to increase automatically as the range increases.

(4) Engage multiple targets by first firing at the one presenting the greatest danger (usually the closest) and then rapidly proceeding to next target.

c. Use the quick-fire technique when there is no time to properly aim. Use this technique on targets within 30 meters of your location. (This technique is most effective in urban terrain or heavy bush.)

Performance Steps
(1) Use the standing position. **(2)** Use the raised stockwell. Look two or three inches above the sights, on a plane that is level with the barrel. **(3)** Look at the target, NOT at the sights. **d.** Fire on the targets until they are destroyed or until you receive an order to cease fire.

Evaluation Preparation:

Setup: On a live-fire range, provide sufficient quantities of equipment and ammunition to support the number of soldiers tested. Have each soldier use his own rifle and magazine.

Brief Soldier: Tell soldier he is to detect and engage targets in his sector and, when asked, state the range to the target.

Performance Measures	GO	NO GO
1. Assumed an appropriate firing position based on the situation.	____	____
2. Identified targets in your designated sector of fire.	____	____
3. Determined the range to a target.	____	____
4. Loaded and fired on targets using appropriate engagement techniques.	____	____

Evaluation Guidance: Score the soldier GO if all performance measures are passed. Score the soldier NO GO if any performance measure is failed. If the soldier scores NO GO, show him what was done wrong and how to do it correctly.

References

Required	Related
	FM 21-75
	FM 23-9
	TM 9-1005-319-10

071-100-0004

Maintain an M4 or M4A1 Carbine

Conditions: Given an M4 or M4A1 carbine, magazine, 5.56-mm ammunition, and small-arms accessory case with the following cleaning materials: clean wiping rags, bore brush, chamber brush, toothbrush,

cleaning rod, small-arms swabs, pipe cleaners, cleaner lubricant and preservative (CLP), lubricating oil arctic weather (LAW), and carbine bore cleaner.

Standards: Cleaned, inspected, and lubricated the carbine and magazine so they functioned correctly. Cleaned and inspected the ammunition. Turned in any unserviceable ammunition.

Performance Steps

1. Clear the carbine.

a. Remove the magazine from the carbine, if there is one present.

b. Cock the carbine.

c. Turn the selector to SAFE.

Note. The selector cannot be turned to SAFE unless the carbine is cocked.

d. Lock the bolt open.

(1) Pull the charging handle rearward.

(2) Press the bottom of the bolt catch.

(3) Allow the bolt to move forward until it engages the bolt catch.

(4) Return the charging handle to the forward position.

(5) Ensure the selector is on SAFE.

e. Check the receiver and chamber to ensure they do not contain ammunition.

2. Disassemble the carbine.

CAUTION

Do not use a screwdriver or any other tool when removing the handguards. Doing so may damage the handguards, slip ring, or both.

WARNING

Use care not to bend or dent the gas tube while removing handguards.

a. Remove the sling.

b. Remove the handguards if you can see dirt or corrosion through the vent holes. Handguards are interchangeable because they are identical.

CAUTION

Use only hand pressure to disengage the pivot and takedown pins. Force other than hand pressure may cause damage to the weapon so replacement of the weapon is required. Push the pivot and takedown pins only far enough to disengage the upper receiver from the lower receiver.

c. Push the takedown pin as far as it will go and pivot the upper receiver from the lower receiver.

d. Push the receiver pivot pin.

e. Separate the upper and lower receivers.

f. Pull back the charging handle.

g. Remove the bolt carrier and bolt.

h. Remove the charging handle.

CAUTION
Do not fully remove the round nuts from the threaded studs. The threaded studs are flared on the end to prohibit removal. However, if the nuts are inadvertently removed, they may be reinstalled.

i. Remove carrying handle assembly. Loosen the round nuts on the left side of the carrying handle approximately four turns. Loosen the clamping bar from the left side of the upper receiver and lift off the carrying handle.

j. Remove the firing pin retaining pin.

k. Put the bolt assembly in the locked position by pushing in the bolt.

l. Remove the firing pin by allowing it to drop out of the rear of the bolt carrier into your hand.

m. Remove the bolt cam pin by turning it one-quarter turn and lifting it out.

n. Pull the bolt assembly from the carrier.

Note. Perform steps o through q only when the parts are dirty or damaged.

o. Press the rear of the extractor pin to check spring function. Report any weak springs to unit armorer for replacement.

p. Remove the extractor pin by pushing it out with the firing pin (use care not to damage the firing pin).

q. Lift out the extractor and spring, taking care that the spring does not separate from the extractor.

r. Release the buffer by pressing the buffer and depressing the retainer.

s. Remove the buffer and action spring separating the buffer from the spring.

t. Extend the buttstock assembly to full open. The M4/M4A1 has a four-position buttstock: closed, 1/2 open, 3/4 open, and full open.

u. Grasp the lock lever in the area of the retaining nut, pull downward, and slide the buttstock to the rear to separate the buttstock assembly from the lower receiver extension.

3. Clean the carbine.

Performance Steps

a. Upper receiver group.

(1) Use small-arms swabs, CLP, and bore brush to clean bore.

(2) Use rags, cleaning brush, and CLP to remove powder fouling, corrosion, dirt, and rust from other areas.

(3) Clean bolt lugs with CLP and chamber brush.

(4) Use CLP and bore brush to clean barrel locking lugs and gas tube.

b. Lower receiver group.

(1) Remove powder fouling, corrosion, and dirt with rags, cleaning brush, and CLP.

(2) Clean buffer tube and buttstock tube with rag attached to holder.

(3) Clean buffer action spring and inside lower receiver extension with brush and rags.

c. Bolt carrier group.

(1) Clean outer and inner surfaces of bolt carrier with rags and CLP.

(2) Clean carrier key (use worn bore brush).

(3) Clean firing pin recess and firing pin with brush and CLP.

(4) Clean firing pin hole with pipe cleaner and CLP.

(5) Clean carbon deposits and dirt from locking lugs with cleaning brush and CLP.

(6) Clean areas behind bolt ring and under lip of extractor with brush and CLP.

4. Inspect carbine for serviceability.

a. Upper receiver group.

(1) Check for free movement of the forward assist assembly.

(2) Check for broken or damaged ejection port cover.

(3) Check rear sight windage and elevation knob for damage and looseness.

(4) Check carrying handle assembly for missing or damaged parts and ensure the handle assembly will mount to the upper receiver.

(5) Check front sight assembly for damage.

(6) Inspect bore and chamber for pitting or obstructions.

(7) Inspect bolt lugs for cracks and burrs.

Performance Steps

(8) Check for free movement of slip ring.

(9) Check the compensator for proper alignment.

Note. The compensator has five slots. The third or middle slot should line up with the front sight post. If not, turn the compensator in for maintenance.

(10) Check the bolt guide rails for chips and burrs.

b. Lower receiver.

(1) Check trigger mechanism for missing or damaged parts.

(2) Check bolt catch for free movement.

(3) Check magazine release button for free movement.

(4) Check buttstock assembly for dents and rust and ensure proper operation of retaining nut and lock-release lever.

(5) Check action spring and buffer for damage.

c. Bolt carrier group.

(1) Check bolt carrier for chips, burrs, and cracks.

(2) Check bolt for cracks or fractures, especially in the cam pin hole area. Bolts that contain pits in the firing pin hole need replacing.

(3) Check firing pin retaining pin for bends and excessive wear.

(4) Check firing pin for bends, cracks, and blunted or sharp end.

(5) Check cam pin for cracks and chips.

(6) Check extractor for chipped or broken edges in the area of the lip that engages the cartridge rim. Check to ensure the rubber insert is inside the extractor spring.

d. Report and turn in unserviceable parts for maintenance.

5. Lubricate the carbine.

Note. Under all but the coldest arctic conditions, CLP is the lubricant to use on the carbine. Between +10 degrees Fahrenheit and -10 degrees Fahrenheit, either CLP or LAW can be used. For -35 degrees Fahrenheit or lower, use LAW only.

Note. Lightly lube means apply a film of lubricant barely visible to the eye.

Note. Generously lube means apply the lubricant heavily enough so it can be spread with the finger.

a. Upper receiver and carrying handle.

(1) Upper receiver. Lightly lube inside of receiver, bore, chamber, locking lugs, outer surfaces of barrel and front sight, and mating surface for carrying handle.

Performance Steps

(2) Carrying handle. Apply a drop or two of lubricant to both threaded studs. Lightly lube the clamping bar and both round nuts. Lightly lube the mating surface.

(3) Front sight detent. Depress and apply two or three drops of CLP to front sight detent. Depress several times to work lube into the spring.

(4) Adjustable rear sights. Use one or two drops of CLP. Rotate the following parts to ensure lubricant is spread evenly above and below:

(a) Elevation screw shaft.
(b) Elevation knob.
(c) Windage knob.
(d) Windage screw.

b. Lower receiver group.

(1) Lightly lube inside and outside lower receiver extension, buffer, and action spring. Lightly lube inside buttstock assembly. Generously lube buttstock lock-release lever and retaining pin.

(2) Generously lube takedown pin, pivot pin, detents, and all other moving parts and their pins.

c. Bolt carrier group.

(1) Lightly lube charging handle and inner and outer surfaces of bolt carrier.

(2) Place one drop of CLP in the carrier key.

(3) Apply a light coat of CLP on firing pin and firing pin recess in bolt.

(4) Generously lube outside the bolt body, bolt rings, and cam pin area.

(5) Apply a light coat of CLP on extractor and pin.

6. Assemble the carbine.

a. Install buttstock assembly. Align the buttstock assembly with lower receiver extension; pull downward on the lock release lever near the retaining pin, and slide the buttstock assembly onto the lower receiver extension.

b. Insert action spring and buffer.

c. Insert extractor and spring.

d. Push in extractor pin.

e. Slide bolt into carrier.

WARNING

Be sure the cam pin is installed in the bolt group. If it is not, the carbine can still fire and will explode.

f. Replace bolt cam pin.

g. Drop in and seat firing pin.

h. Pull bolt back.

i. Replace retaining pin.

j. Engage, then push charging handle in part of the way.

WARNING

Do not exchange or switch bolt assemblies from one M4 or M4A1 to another.

k. Slide in bolt carrier group.

l. Push in charging handle and bolt carrier group together.

m. Join upper and lower receivers.

n. Engage receiver pivot pin.

o. Close upper and lower receiver groups. Push in takedown pin.

p. Replace handguards.

q. Replace sling.

7. Perform a function check on the M4 or M4A1 carbine to determine correct functioning according to Task 071-100-0005.

8. Maintain M16/M4 magazine and ammunition.

a. Maintain magazine.

(1) Disassemble magazine.

- Insert the nose of a cartridge into the hole in the base of the magazine and raise the rear of the magazine until the indentation on the base is clear of the magazine.
- Slide the base forward until free of the tabs.
- Remove the magazine spring and follower (do not separate).

(2) Clean all parts using a rag soaked with CLP. Dry all parts.

(3) Inspect parts for damage such as dents and corrosion. If any damage is found, turn in to maintenance.

(4) Lubricate the magazine. Lightly lube the spring only.

Performance Steps

(5) Assemble the magazine.

- Insert the follower and spring in the magazine tube and jiggle the spring to seat them in the magazine.
- Slide the base under all four tabs until it is fully seated. Make sure the printing is on the outside.

b. Maintain ammunition.

(1) Clean ammunition with a clean dry rag.

(2) Inspect and turn in any ammunition with the following defects: corrosion, dented cartridges, cartridges with loose bullets, and cartridges with the bullet pushed in.

Evaluation Preparation:

Setup: Have soldiers use their own weapons and magazines. Provide swabs, cleaner, lubricant, preservative (CLP), pipe cleaners, lubricating oil, and rifle bore cleaner (the soldier should not select rifle bore cleaner for use). Also provide several rounds of dummy ammunition, if available.

Brief Soldier: Tell the soldier to clean, inspect, and lubricate the weapon and magazine following normal safety practices.

Performance Measures	GO	NO GO
1. Cleared the carbine.	____	____
2. Disassembled the carbine.	____	____
3. Cleaned the weapon using the correct materials.	____	____
4. Inspected for unserviceable parts.	____	____
5. Assembled the carbine.	____	____
6. Performed a function check.	____	____
7. Disassembled the magazine.	____	____
8. Cleaned the magazine.	____	____
9. Assembled the magazine	____	____
10. Cleaned the ammunition.	____	____

Evaluation Guidance: Score the soldier GO if all performance measures are passed. Score the soldier NO GO if any performance measure is failed.

If the soldier scores NO GO, show him what was done wrong and how to do it correctly.

References

Required	Related
	TM 9-1005-319-10

SUBJECT AREA 18: 9MM PISTOL

071-004-0001
Maintain an M9 Pistol

Conditions: Given an M9 pistol with components (M12 or M7 holster, magazine, and ammunition pocket), 9-mm ammunition, cleaner lubricant preservative (CLP), lubricating oil arctic weather (LAW), lubricating oil semifluid (LSA), bore brush, wiping rags, M4 cleaning rod (a one-section handle and a swab holder), and small-arms cleaning swabs.

Standards: Cleaned and lubricated M9 pistol and magazine; inspected parts, turned in unserviceable parts for maintenance, assembled pistol, ensured pistol was operational, cleaned and inspected ammunition for serviceability, and turned in unserviceable ammunition.

Performance Steps

1. Clear the pistol.
   - **a.** Place the safety lever in the SAFE position.
   - **b.** Hold the pistol in the raised pistol position.
   - **c.** Depress the magazine release button; remove the magazine from the pistol.
   - **d.** Pull the slide to the rear; remove any chambered round.
   - **e.** Push the slide stop up, locking the slide to the rear.
   - **f.** Look into the chamber to ensure it is empty.
2. Disassemble the pistol and magazine.
   - **a.** Depress the slide stop and let the slide go forward.
   - **b.** With your right hand, hold the pistol with the muzzle slightly raised.
   - **c.** With your forefinger, press the disassembly lever button (figure 071-004-0001-1).

Performance Steps

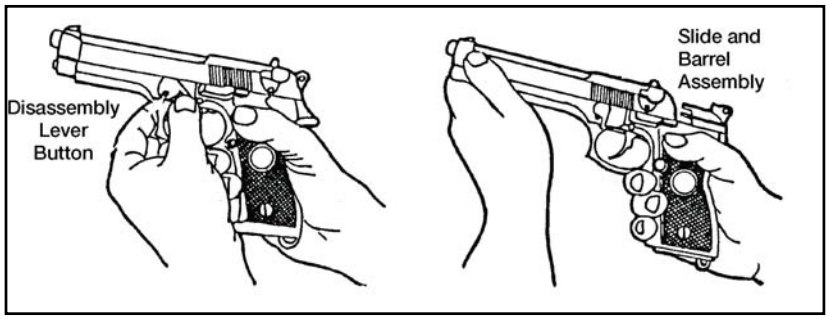

Figure 071-004-0001-1. Disassembly lever button

d. Rotate the disassembly lever downward until it stops.

e. Pull the slide and barrel assembly forward (figure 071-004-0001-1), and remove it from the receiver.

f. Slightly compress the recoil spring and spring guide. At the same time, lift them up and remove them, allowing the recoil spring to stretch slowly (figure 071-004-0001-2).

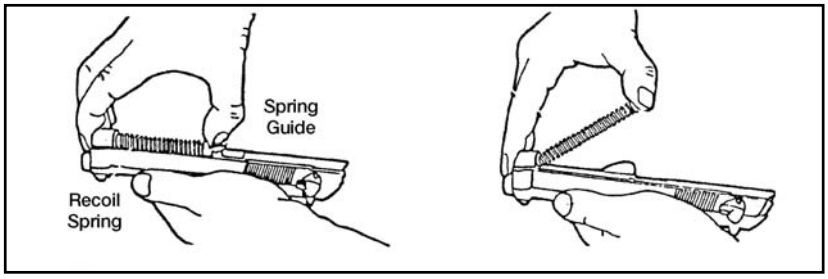

Figure 071-004-0001-2. Removal of the recoil spring and spring guide

g. Separate the recoil spring from the spring guide.

h. Push in on the locking block plunger while pushing the barrel forward slightly. Lift and remove the locking block and barrel assembly from the slide (figure 071-004-0001-3).

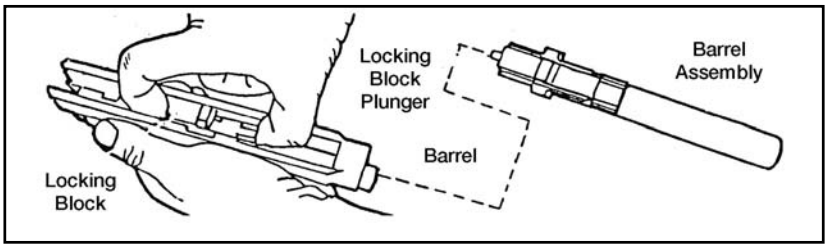

Figure 071-004-0001-3. Removal of the locking block and barrel assembly

i. Disassemble the magazine (figure 071-004-0001-4).

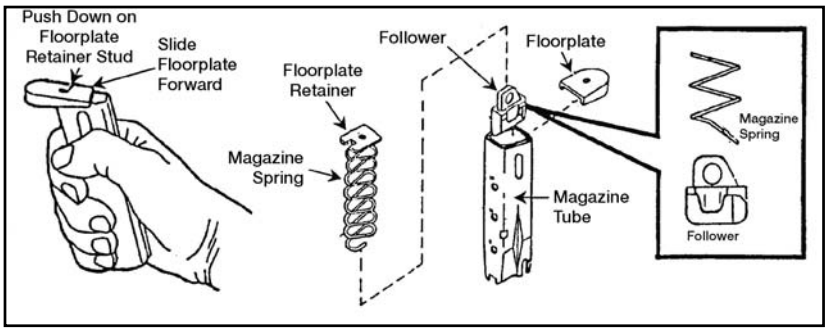

Figure 071-004-0001-4. Disassembly of the magazine

(1) Grasp the magazine firmly, with the floor plate up and the back of the magazine tube against the palm of your hand.

(2) Depress the locking block to make the locking block plunger protrude.

(3) Using the locking block plunger, push down on the floor plate retainer stud.

(4) Slide the floor plate slightly forward with your thumb.

(5) While removing the floor plate, use your thumb to keep pressure on the magazine spring.

(6) Remove the floor plate retainer, the magazine spring, and the follower from the magazine tube.

(7) Remove the magazine spring from the follower.

(8) Remove the floor plate retainer from the magazine spring.

3. Clean the pistol and magazine.

Performance Steps

CAUTION
Use the bore brush to clean only the bore. Using it on any other part of the pistol will cause damage.

a. Slide assembly.

(1) Clean slide assembly with a cloth. Use CLP on a soft brush to remove excess dirt and carbon.

(2) Wipe the slide assembly dry with a clean cloth.

b. Barrel assembly.

(1) Attach a bore brush to a cleaning rod. Moisten the bore brush with CLP and insert it into the chamber end of the barrel. Make sure the brush completely clears the muzzle before you pull it back through the bore. Repeat this procedure several times to loosen carbon deposits.

(2) To clean and dry the barrel, push a clean swab through the bore. Repeat as necessary with fresh swabs until a swab comes out clean.

(3) Clean locking block with a soft brush.

(4) Clean the recoil spring and spring guide with CLP and, if needed, a soft brush or cloth.

c. Receiver assembly. Wipe the receiver assembly clean with a cloth and, if needed, a soft brush.

d. Magazine (figure 071-004-0001-4).

(1) Wipe the magazine tube and the follower with CLP, a cloth, and a soft brush.

(2) Clean the magazine spring, floor plate retainer, and floor plate with a clean cloth.

e. Holster. Remove dirt from exterior with stiff brush. Wipe interior with clean cloth.

f. Ammunition. If ammunition gets wet or dirty, clean it and remove corrosion from it at once using a dry cloth.

4. Inspect for serviceability.

a. Slide assembly.

(1) Check to ensure the ambidextrous safety moves freely.

(2) Check the firing block for damage.

(3) Check the rear sight for looseness.

b. Barrel assembly.

(1) Inspect the bore and chamber for pitting or obstructions.

Performance Steps

(2) Check the locking block plunger to ensure the locking block moves freely.

(3) Inspect the locking lugs for cracks and burrs.

c. Recoil spring and recoil spring guide.

(1) Check recoil spring to ensure it is not bent or damaged.

(2) Check recoil spring to ensure it is straight and free of cracks and burrs.

d. Receiver assembly.

(1) Check for bends, chips, and cracks.

(2) Check to ensure the slide stop and magazine stop move freely.

(3) Check the guide rails for excessive wear, burr, cracks, or chips.

e. Magazine assembly (figure 071-004-0001-4).

(1) Check for damage to the spring and follower.

(2) Inspect magazine lips to ensure they are not bent excessively and that they have no cracks and burrs.

(3) Check to ensure the magazine tube is not bent.

f. Ammunition.

(1) Check for damaged or corroded ammunition. Turn in heavily corroded or damaged ammunition.

(2) Check to ensure ammunition is free of oil and grease.

5. Lubricate the pistol and magazine.

Note. CLP, LSA, and LAW are the only lubricants authorized for this pistol.
Note. You can use CLP and LSA interchangeably.
Note. Before firing, remove excess lubricant from the bore.

a. Lubricate all parts with a light coat of LSA or CLP at temperatures above -10 degrees Fahrenheit, or LAW at temperatures below +10 degrees Fahrenheit.

b. Do not mix LAW with other lubricants.

6. Assemble the pistol.

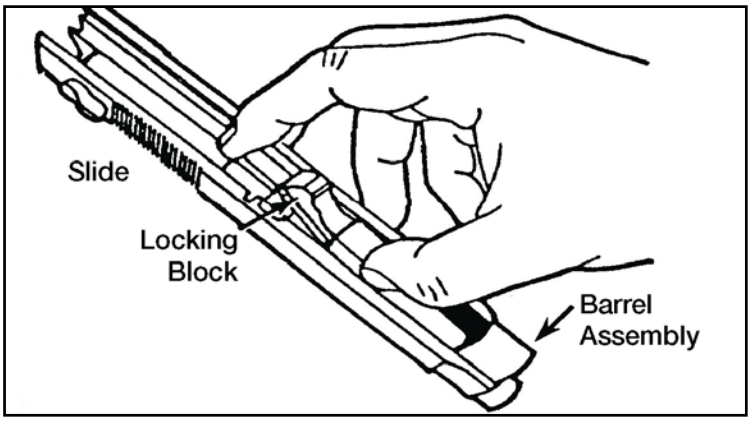

Figure 071-004-0001-5. Insertion of the barrel assembly

a. Grasp the slide with the bottom facing up (figure 071-004-0001-5).

b. With the other hand, grasp the barrel assembly with the locking block facing up.

c. Insert the muzzle into the forward end of the slide. At the same time, lower the rear of the barrel assembly by moving the barrel slightly downward with light thumb pressure. The barrel will fall into place.

d. Insert the recoil spring guide into the recoil spring (figure 071-004-0001-6).

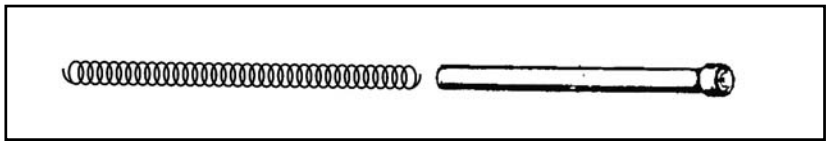

Figure 071-004-0001-6. Recoil spring and spring guide

e. Insert the end of the recoil spring and the recoil spring guide into the recoil spring housing. At the same time, compress the recoil spring and lower the spring guide until it is fully seated on the locking block cutaway (figure 071-004-0001-7).

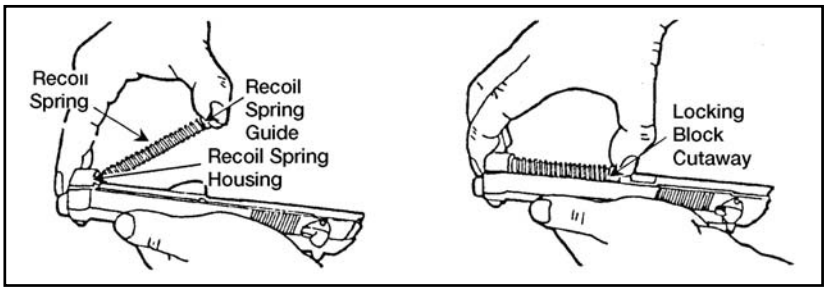

Figure 071-004-0001-7. Insertion of the recoil spring and guide

CAUTION
Be sure that the hammer is uncocked and firing pin block lever is in the down position. If the hammer is cocked, *manually and carefully* lower the hammer. Do not pull the trigger while placing the slide onto the receiver.

f. Push the firing pin block lever down. Grasp the slide and barrel assembly with the sights up, and align the slide on the receiver assembly guide rails (figure 071-004-0001-8).

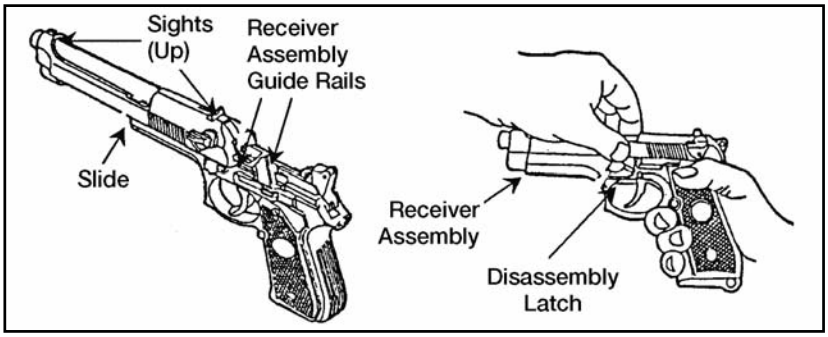

Figure 071-004-0001-8. Final assembly

g. Push until the rear of the slide is a short distance beyond the rear of the receiver assembly and hold. At the same time, rotate the disassembly latch lever upward. A click indicates a positive lock (figure 071-004-0001-8).

h. Assemble the magazine.

(1) Insert the follower into the top coil of the magazine spring. Make sure the notches on the follower and magazine tube are on the same side.

Performance Steps

(2) Insert the magazine spring with follower into magazine tube.

(3) Turn the magazine bottom up, with its back against the palm of the hand. Attach and center the floor plate retainer on the bottom spring coil.

CAUTION

After inserting the magazine spring, keep tension on it with your thumb. Be careful not to place the lips of the magazine tube on a hard surface while you reassemble the magazine.

(4) Push and hold the magazine spring and floor plate retainer down. At the same time, slide the floor plate over the sidewalls until it seats fully.

(5) Carefully insert the magazine into the pistol well. You will hear a click when it locks into position.

WARNING

Make sure the pistol is clear and unloaded.

7. Perform a function check.

Evaluation Preparation:

Setup: At the test site, provide a field table with all the equipment given in the task conditions.

Brief Soldier: Tell the soldier to clear, disassemble, clean, inspect, lubricate, assemble, and perform a function check on the weapon.

Performance Measures	GO	NO GO
1. Cleared the pistol.	____	____
2. Disassembled the pistol and magazine without damaging any parts.	____	____
3. Cleaned the pistol, components, and ammunition.	____	____
4. Inspected the pistol, components, and ammunition for defects.	____	____
5. Lubricated the pistol and magazine correctly.	____	____
6. Assembled the pistol and magazine in correct sequence.	____	____
7. Performed a function check.	____	____

Evaluation Guidance: Score the soldier GO if all performance measures are passed. Score the soldier NO GO if any performance measure is failed. If the soldier scores NO GO, show him what was done wrong and how to do it correctly.

References

Required	Related
	TM 9-1005-317-10

071-004-0003
Load an M9 Pistol

Conditions: Given an unloaded M9 pistol and a separate magazine loaded with M9 ammunition.

Standards: Correctly loaded the magazine and ammunition into the pistol; ensured safety lever was in the safe position.

Performance Steps

WARNING

The M9 pistol has single- and double-action firing modes. When the safety is set to FIRE, squeezing the trigger will automatically cock and fire the pistol (this is the double-action mode).

Keep your finger away from the trigger until you intend to fire.

1. Place safety lever in SAFE position.

2. Insert the loaded magazine into the pistol magazine well until you hear a click when the magazine seats fully.

3. Point the pistol in a safe direction (usually at the target or skyward).

4. Retract the slide fully and release it. This strips a cartridge from the magazine and chambers it.

Evaluation Preparation:

Setup: At the test site, provide the equipment listed in the task conditions . Use dummy rounds to evaluate this task.

Brief Soldier: Tell the soldier to load the M9 pistol so it will fire a round when he squeezes the trigger.

Performance Measures	GO	NO GO
1. Placed the safety lever in SAFE position.	____	____
2. Inserted the loaded magazine into the magazine well.	____	____

Performance Measures	GO	NO GO
3. Pointed the pistol in a safe direction (usually at the target or skyward).	____	____
4. Retracted and released the slide to chamber a cartridge from the magazine.	____	____

Evaluation Guidance: Score the soldier GO if all performance measures are passed. Score the soldier NO GO if any performance measure is failed. If the soldier scores NO GO, show him what was done wrong and how to do it correctly.

References

Required	Related
	TM 9-1005-317-10

071-004-0004
Unload an M9 Pistol

Conditions: Given an M9 pistol loaded with rounds.

Standards: Correctly removed magazine and ammunition from the pistol; removed all the rounds from the magazine; and ensured the pistol safety lever was in the SAFE position.

Performance Steps

WARNING

The M9 pistol will fire single- or double-action mode. With the safety in the FIRE position, squeezing the trigger automatically cocks and fires the pistol. This is the double-action mode of firing the pistol. Keep your finger away from the trigger unless you intend to fire.

1. Remove the magazine and the ammunition from the pistol.

a. Place the safety lever in the SAFE position.

b. Depress the magazine release button, and remove the magazine from the pistol.

c. Point the pistol in a safe direction (usually at the target or skyward).

d. Retract the slide fully to remove the chambered cartridge.

e. Lock the slide to the rear using the slide stop. Visually inspect the chamber to make sure it is empty.

f. Release the slide. Ensure the safety lever is in the SAFE position.

Performance Steps
2. Remove the ammunition from the magazine. **a.** With one hand, hold the magazine upright, front end forward. With your thumb, firmly press down on the cartridge rim, and push forward. As the cartridge moves forward, tip the forward end of it up and out with your index finger. **b.** Repeat the above steps until the magazine is empty.

Evaluation Preparation:

Setup: At the test site, provide the equipment listed in the task conditions. You can use dummy rounds to evaluate this task.

Brief Soldier: Tell the soldier to unload the M9 pistol and remove all ammunition from the magazine.

Performance Measures	GO	NO GO
1. Removed magazine and ammunition from the pistol.	____	____
2. Removed ammunition from magazine.	____	____

Evaluation Guidance: Score the soldier GO if all performance measures are passed. Score the soldier NO GO if any performance measure is failed. If the soldier scores NO GO, show him what was done wrong and how to do it correctly.

References

Required	Related
	TM 9-1005-317-10

071-004-0006

Engage Targets with an M9 Pistol

Conditions: Given an M9 pistol and one or more magazines loaded with 9-mm ammunition.

Standards: Applied the correct M9 target engagement techniques, and engaged hostile targets.

Performance Steps
1. Identify the target(s). The most likely target you will engage is an enemy soldier on foot.
2. Apply the fundamentals of quick fire.

Performance Steps

Note. To fire quickly without using the pistol sights, use the pistol as an extension of your arm.

a. To use the pistol grip, hold the pistol in your nonfiring hand. Form a "V" with the thumb and forefinger of your firing hand.

b. Place the pistol in the "V," with the sights in line with your firing arm.

c. Hold your upper arm close to your body, and your forearm at about a 45-degree angle.

d. Wrap your lower three fingers around the grip, putting equal pressure to the rear with all three fingers (figure 071-004-0006-1).

e. Place your thumb alongside the pistol without applying any pressure.

f. Place your trigger finger on the trigger so it can be pulled to the rear.

g. Tightly grip the pistol until your hand begins to tremble. Relax until the trembling stops. At this point, you have applied the necessary pressure for a solid grip.

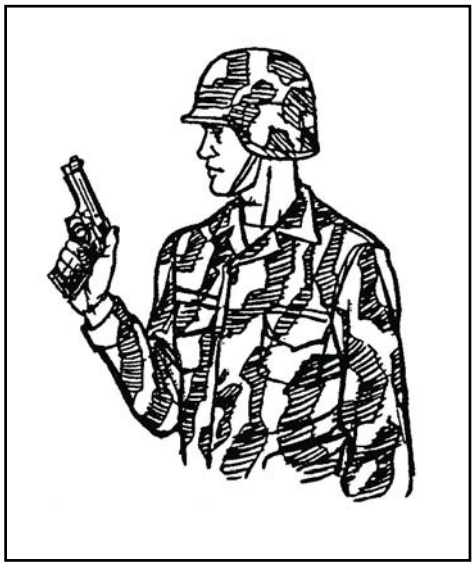

Figure 071-004-0006-1. Pistol ready position, one-hand grip

Note. If you relax any of your three fingers on the grip, you must reapply the entire grip.

Performance Steps

3. Choose one of the following supported or unsupported grips:

a. Supported grip. The only supported grip is the one-hand grip (figure 071-004-0006-2). Begin by gripping the weapon as previously described (step 2). Allow the thumb of your firing hand to rest without pressure beside your weapon. Place your trigger finger, between the tip and the second joint, on the trigger, so you can squeeze the trigger to the rear. Your trigger finger must work independently of your other fingers.

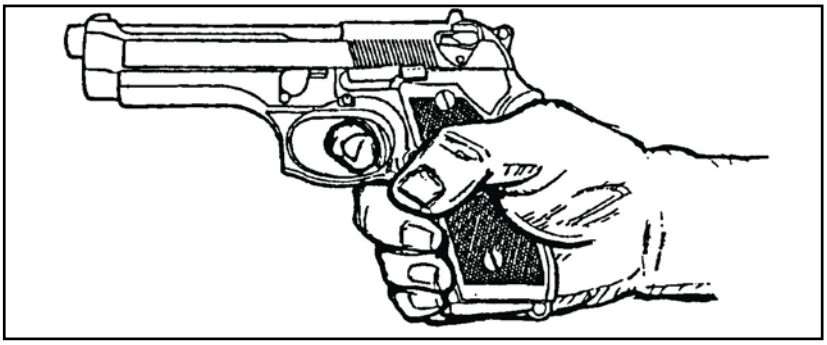

Figure 071-004-0006-2. One-hand grip

b. Unsupported grips. You may use any of three nonfiring hand grips to support your firing hand (figure 071-004-0006-3, figure 071-004-0006-4, and figure 071-004-0006-5).

(1) Fist grip (figure 071-004-0006-3). Begin by gripping the weapon as previously described (step 2). Firmly close the fingers of your nonfiring hand over the fingers of your firing hand. Make sure the index finger of your nonfiring hand is between the middle finger of your firing hand and the guard. Place your nonfiring thumb beside your firing thumb.

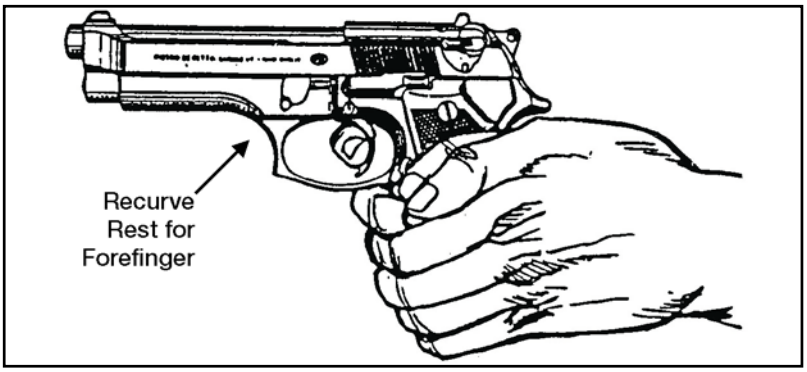

Figure 071-004-0006-3. Fist grip

Note. The M9 pistol has a recurved trigger guard, which allows you to place the index finger of your nonfiring hand on the front of the trigger guard if you wish.

(2) Palm-supported grip (figure 071-004-0006-4). Begin by gripping the weapon as previously described (step 2). Place your nonfiring hand under your firing hand. Wrap your nonfiring fingers around the back of your firing hand. Place your nonfiring thumb over the middle finger of your firing hand.

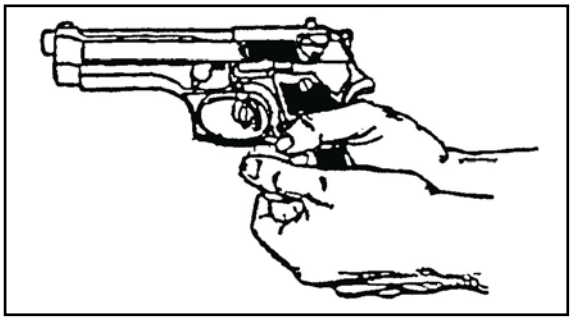

Figure 071-004-0006-4. Palm-supported grip

(3) Weaver grip (figure 071-004-0006-5). Apply this grip the same as the fist grip, but wrap your nonfiring thumb over your firing thumb.

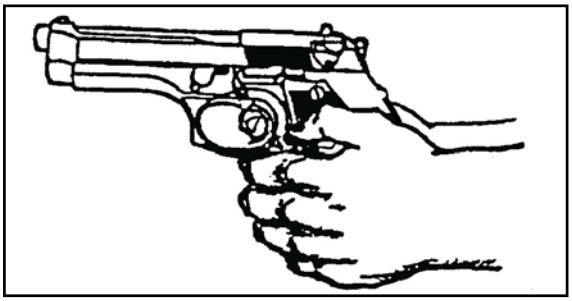

Figure 071-004-0006-5. Weaver grip

4. Select the most stable firing position with the best cover. Consider the following positions:

a. Prone (figure 071-004-0006-6). To assume the prone position—

(1) Lie flat on the ground, facing the target.

(2) Extend your arms to the front, with your firing arm locked.

(3) Wrap your nonfiring hand around either the wrist or the fingers of your firing hand.

(4) Face forward. Keep your head down between your arms and behind the weapon.

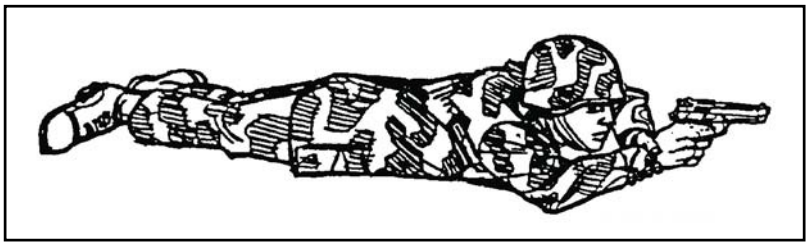

Figure 071-004-0006-6. Prone position

b. Standing-with-support (figure 071-004-0006-7). To assume this position--

(1) Use available cover for support. For example, stand behind a tree or wall.

(2) Stand behind a barricade, with your firing side in line with the edge of the barricade.

Performance Steps

(3) Place the palm of your nonfiring hand at eye level on the edge of the barricade, and extend your thumb past the edge of the barricade.

(4) Lock the elbow of your firing arm. Rest your forearm on the extended thumb of your nonfiring hand.

(5) Move the foot on your nonfiring side forward until your toe touches the bottom of the barricade.

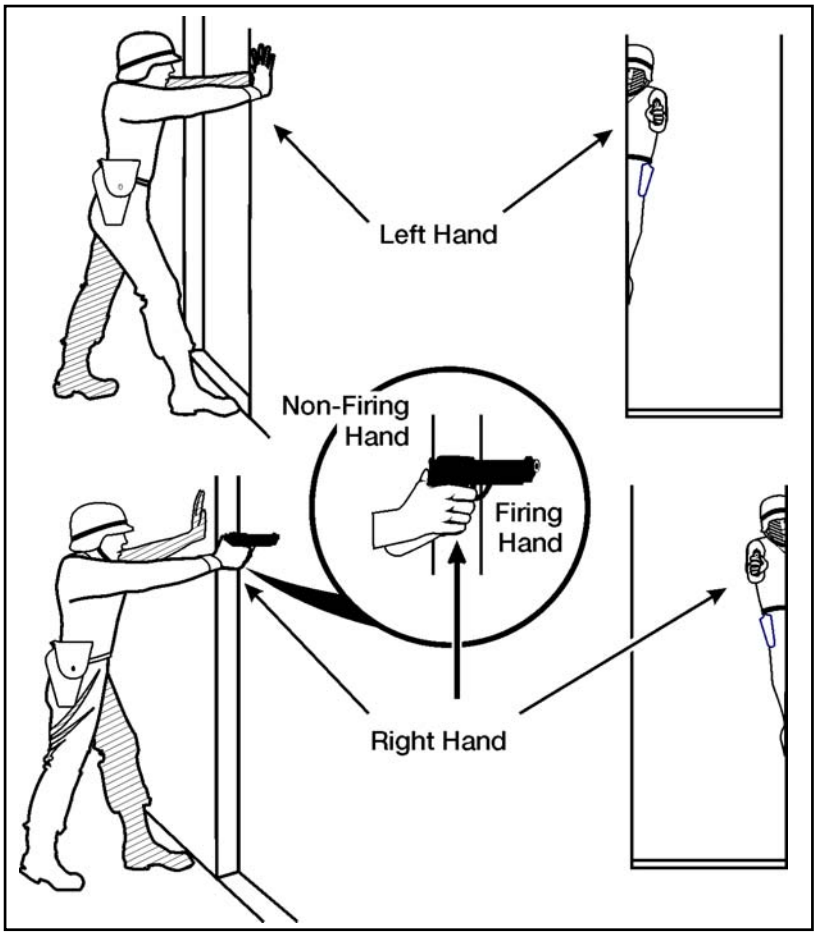

Figure 071-004-0006-7. Standing-with-support position

Performance Steps

c. Kneeling (figure 071-004-0006-8). To assume this position—

(1) Use available cover, such as a low wall, rocks, or a vehicle that you can fire over, for support.

(2) Place your firing knee on the ground. Put your left knee down to fire left-handed, or your right knee down to fire right-handed.

(3) Bend your other knee. Place the foot on your nonfiring side flat on the ground, pointing toward the target. Extend your arms over available cover and use it for support.

(4) Lock the wrist and elbow of your firing arm.

(5) Wrap your nonfiring hand around your firing fist or wrist to support your firing arm.

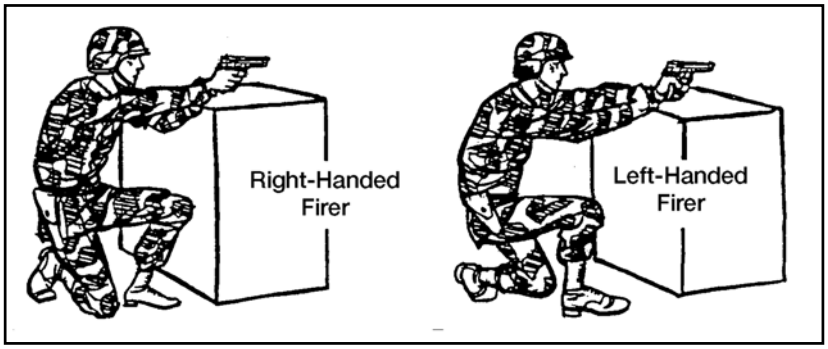

Figure 071-004-0006-8. Kneeling position

Note. This position could silhouette you, making you a better target. When possible, fire around the sides of walls, rocks, or vehicles instead of over them.

d. Standing-without-support (figure 071-004-0006-9). To assume this position—

(1) Face the target.

(2) Place your feet a comfortable distance apart.

(3) Wrap your nonfiring hand around the fist or wrist of your firing hand. Lock the wrist and elbow of your firing arm toward the target.

(4) Keep your body straight.

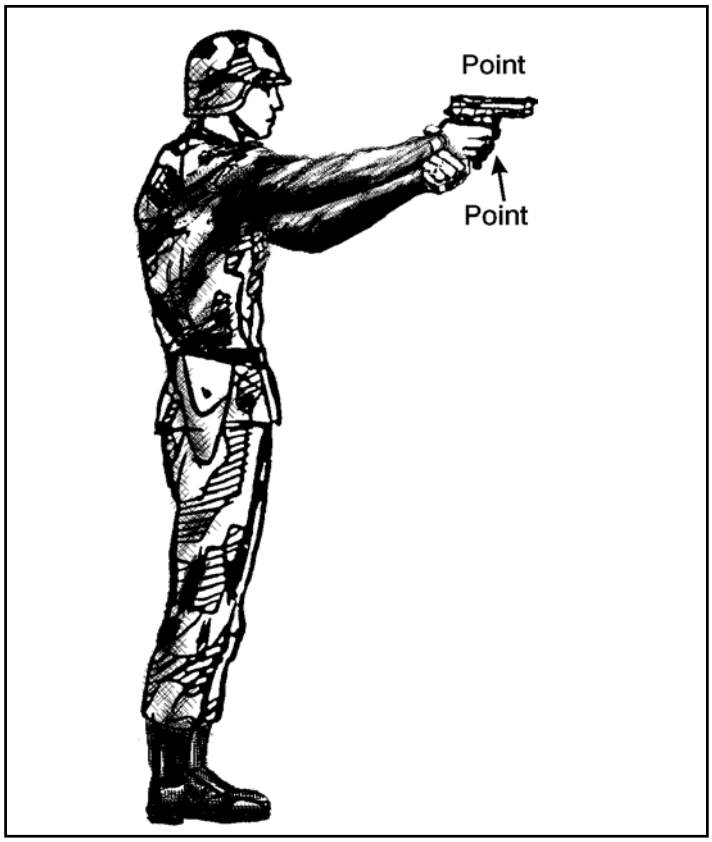

Figure 071-004-0006-9. Standing-without-support position

e. Crouching (figure 071-004-0006-10). This position is the same as the standing-without-support position, except you must bend your knees slightly. Balance by leaning forward at the waist.

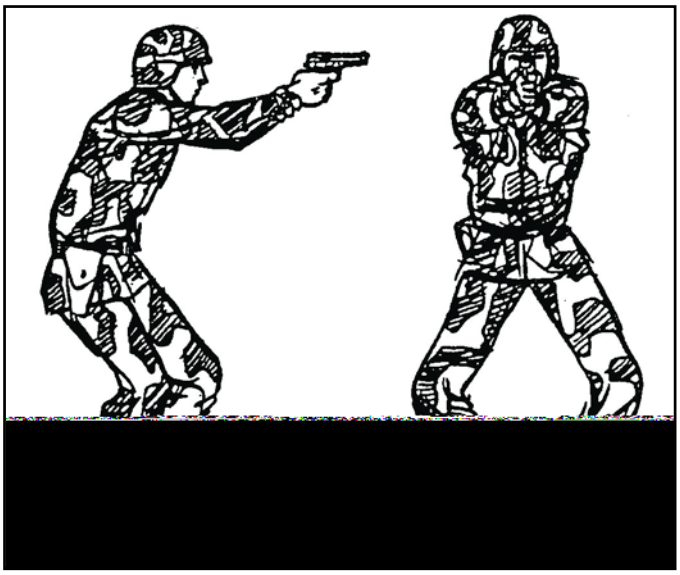

Figure 071-004-0006-10. Crouching position

5. Apply the fundamentals of marksmanship.

a. Pistol grip. To obtain a proper pistol grip—

(1) Place the pistol in the "V" formed by the thumb and forefinger of your firing hand. Line the sights up with your firing arm. Wrap your lower three fingers around the pistol. Grip with your middle finger under the trigger guard. Exert equal pressure on all three lower fingers to the rear, back through the wrist and forearm (figure 071-004-0006-1).

(2) Rest your thumb on top of your middle finger when gripping the pistol. Do not exert any downward pressure.

(3) Grip the pistol firmly, but not so firmly that your hand trembles.

b. Sight alignment. To sight properly—

(1) Align the front sight blade in the rear sight notch so an equal amount of light shows on either side of the front sight. Ensure the top of the front and rear sights are even.

(2) Relax as much as possible.

(3) Maintain the correct sight alignment, and focus on the front sight.

Performance Steps

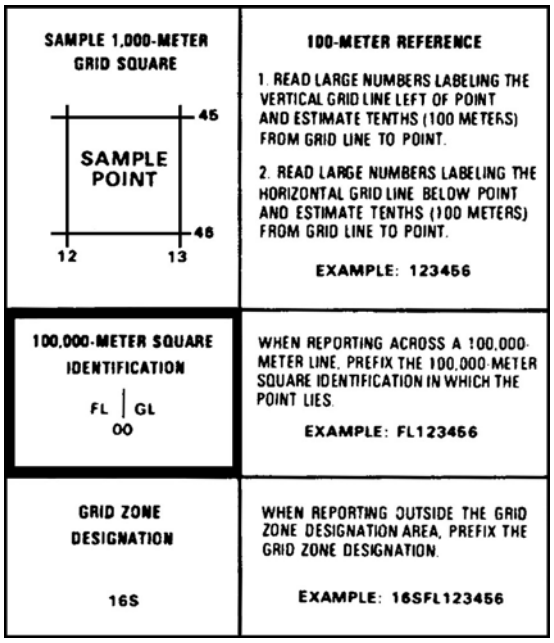

Figure C-18. Grid reference box

h. Place the 100,000-meter-square identifier in front of the coordinate, GL115813.

Evaluation Preparation:

Setup: Give the soldier a standard 1:50,000-scale military map in a field location, a 1:50,000 grid coordinate scale, a pencil, paper, and a point on a map for which coordinates must be determined.

Brief Soldier: Tell the soldier to write down the two-letter 100,000-meter-square identifier and the six-digit grid coordinates for one point and the two-letter 100,000-meter-square identifier.

Performance Measures	GO	NO GO
1. Determined the six-digit grid coordinates for the point on the map with a 100-meter tolerance.	____	____
2. Recorded the grid coordinates with the correct two-letter 100,000-meter-square identifier.	____	____

Evaluation Guidance: Score the soldier GO if all performance measures are passed. Score the soldier NO GO if any performance measure is failed. If the soldier scores NO GO, show the soldier what was done wrong and how to do it correctly.

References

Required	Related
FM 3-25.26	
GTA 05-02-012	

Land Navigation Task 5

Determine a Magnetic Azimuth Using a Lensatic Compass

Conditions: Given a compass and a designated point on the ground.

Standards: Determined the correct magnetic azimuth to the designated point within three degrees using the compass-to-cheek method, and within ten degrees using the center-hold method.

Performance Steps

1. Read your compass (figure C-19).

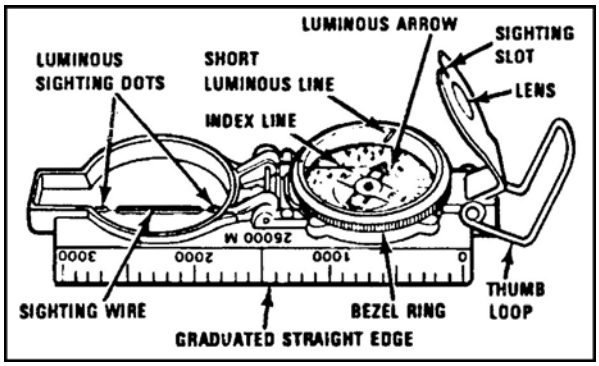

Figure C-19. Lensatic compass

a. The floating dial is used to determine the direction in which you are pointing your compass.

b. The outer, black ring of numbers and tick marks are used for finding direction in mils (figure C-20).

Performance Steps

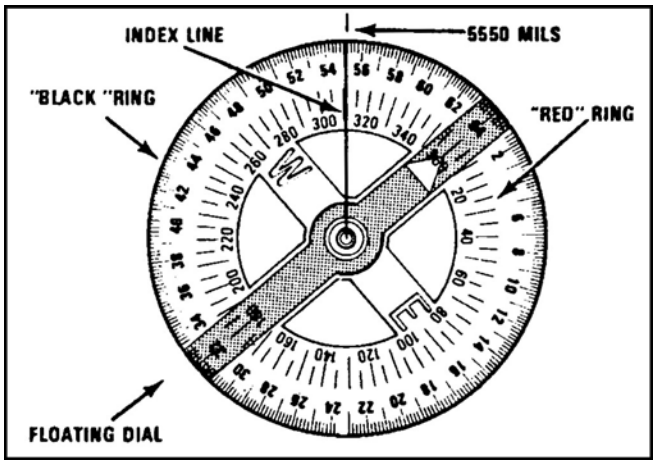

Figure C-20. Lensatic compass floating dial

c. The inner, red ring of numbers and tick marks are used for finding direction in degrees.

(1) There are 360 degrees or 6400 mils in a circle. These are marked with a tick mark every 5 degrees or 20 mils. However, not every tick mark is numbered. You will have to determine the number for these lines using the numbers that are shown.

(2) To read direction, point the compass in the direction you want to go or want to determine.

(3) Look beneath the index line on the outer glass cover and estimate to the nearest degree or 10 mils the position of the index line over the red or black scale.

(4) Be careful to hold the compass still so that the dial remains stationary while you are reading the scale.

(5) If you understand these readings and can apply either of the holding and sighting techniques of shooting an azimuth, you will be proficient in performing this task.

2. Shoot an azimuth.

a. Use your compass to determine or follow an azimuth. The arrow on the compass points toward magnetic north. The arrow is also attracted by any mass of metal; for example, a truck, your rifle, your helmet, and even electrical power lines. Thus, be sure you use your compass away from metal objects so it will not give a wrong reading.

Performance Steps

b. The lensatic compass must always be held level and firm when sighting on an object and reading an azimuth.

c. There are two methods of holding the lensatic compass and sighting.

(1) Compass-to-cheek method (figure C-21). To use this method—

(a) Open the cover to a 90-degree angle to the base. Position the eyepiece at a 45-degree angle to the base.

(b) Place your thumb through the thumb loop, form a steady base with your third and fourth fingers, and extend your index finger along the side of the compass base.

(c) Place the hand holding the compass into the palm of the other hand.

(d) Bring both hands up to your face and position the thumb that is through the thumb loop against the cheekbone.

(e) Look through the lens of the eyepiece. If the dial is not in focus, move the eyepiece up or down until the dial is in focus.

(f) Align the sighting slot of the eyepiece with the sighting wire in the cover on the point for which the azimuth is being determined. Look through the lens of the eyepiece and read the azimuth under the index line.

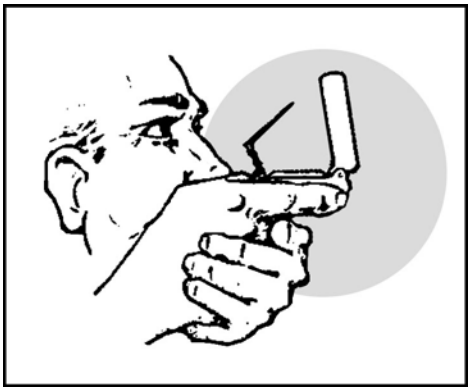

Figure C-21 Compass -to-cheek method

(2) Center-hold method (figure C-22). To use this method—

Performance Steps

Note. This method is used only when a precise direction is not required.

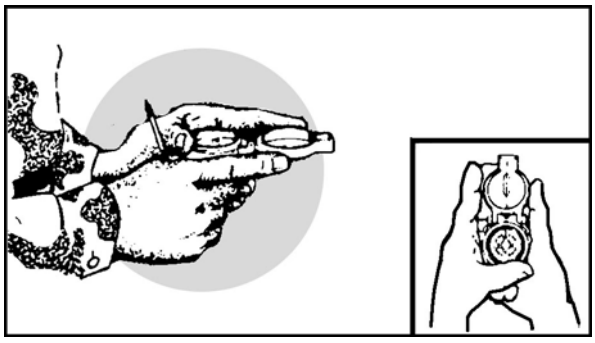

Figure C-22. Center-hold method

(a) Open the compass so that the cover forms a straight edge with the base. The lens of the compass is moved out of the way.

(b) Next, place your thumb through the loop, form a steady base with your third and fourth fingers, and extend your index finger along the side of the compass.

(c) Place the thumb of the other hand between the eyepiece and lens, extend the index finger along the remaining side of the compass, wrap the remaining fingers around the fingers of the other hand, and pull your elbows firmly into your side. This will place the compass between your chin and your belt.

(d) To measure an azimuth, turn your entire body toward the object and point the compass cover directly at the object. Look down and read the azimuth from beneath the fixed black index line. This method can be used at night.

(e) To keep from going in circles when you are land navigating, stop occasionally to check the azimuth along which you are moving. Also, you can move from object to object along your path by shooting an azimuth to each object and then moving to that object. Repeating this process while you navigate should keep you straight.

Evaluation Preparation:

Setup: Select a point to use as a target and determine the azimuth to the point using the compass that the soldier will use.
Brief Soldier: Point out the selected spot to the soldier. Tell the soldier to shoot an azimuth to that spot using both the compass-to-cheek method and the center-hold method.

Performance Measures	GO	NO GO
1. Determined the correct magnetic azimuth to the designated point within 3 degrees using the compass-to-cheek method.	____	____
2. Determined the correct magnetic azimuth to the designated point within 10 degrees using the center-hold method.	____	____

Evaluation Guidance: Score the soldier GO if all performance measures are passed. Score the soldier NO GO if any performance measure is failed. If the soldier scores NO GO, show the soldier what was done wrong and how to do it correctly.

References

Required	Related
FM 3-25.26	

Land Navigation Task 6

Determine the Elevation of a Point on the Ground Using a Map

Conditions: Given a standard 1:50,000 scale military map, a pencil, and a designated point on the map.

Standards: Determined the elevation of the designated point to within half the value of the contour interval.

Performance Steps

1. Locate contour lines and contour intervals.

a. The brown lines on the map are called contour lines. Each line shows the height above sea level. Contour lines never cross one another. Printed at the bottom of the map is the contour interval, which is the difference in height (elevation) between one brown line and the one on either side of it. On a map with a scale of 1:50,000, the contour interval is usually 20 meters. This would make point A 80 meters higher or lower than point B (figure C-23).

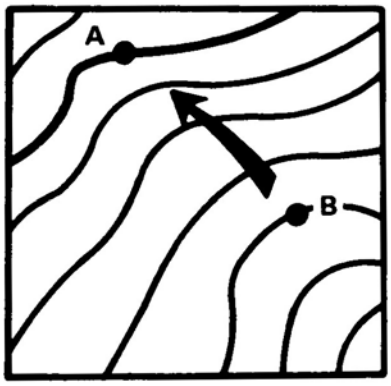

Figure C-23. Contour lines

Performance Steps

b. You can easily tell from the brown lines the direction of uphill or downhill because every fifth line is heavier and has a number that gives its elevation. Let's say the contour interval is 20 meters again. Now you can tell that point B. Also, if you know the distance between A and B, you can get an idea of the steepness of the slope (figure C-24).

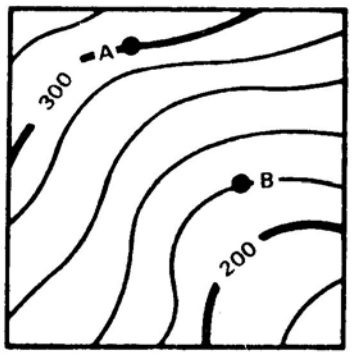

Figure C-24. Contour intervals

c. Widely spaced contour lines show a gentle slope. When they are close together, the slope is steep (figure C-25).

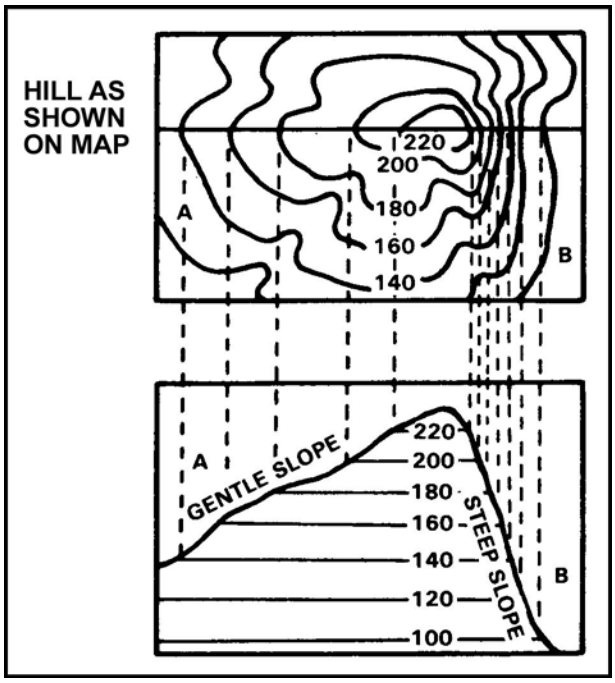

Figure C-25. Slope

d. When the contour lines are close together at the top of the hill, the hilltop is pointed. When the contour lines are widely spaced, the hilltop is flat (figure C-26).

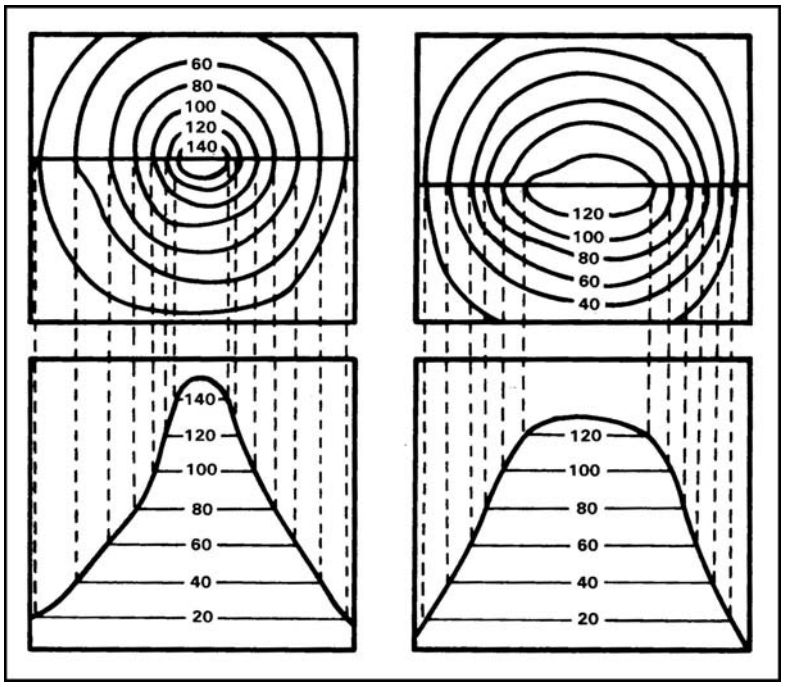

Figure C-26. Elevation

2. Determine elevation.

a. Locate the point on the map. (It may already be plotted on the map, or given as eight-digit coordinates).

b. Determine the contour interval of the map from the marginal information.

c. Locate the index contour line nearest the point for which the elevation is being sought.

d. Count the number of contour lines, up or down, that must be crossed to go from the numbered lines to the point, and note the direction to the point. If the point is on a contour line, its elevation is that of the contour line. For points between contour lines—

(1) Points less than one-fourth the distance between lines are considered to be the same as the elevation of the nearest line.

Performance Steps

(2) Point one-fourth to three-fourths the distance from the lower line are considered to be at an elevation half the contour interval above the lower line.

e. To estimate the elevation of the top of an unmarked hill, add half the contour interval to the elevation of the highest contour line around the hill.

f. To estimate the elevation of the bottom of depression, subtract half the contour interval from the elevation of the lowest contour around the depression.

g. On maps that do not show elevation and relief as much detail as needed, supplementary contour lines may be used. Marginal information indicates the interval, and the supplementary lines are used exactly like solid contour lines.

h. Benchmarks and spot elevation also indicate points of known elevation.

Evaluation Preparation:

Setup: Provide the soldier with a 1:50,000 scale military map, a designated point on the map labeled "A", and a pencil.

Brief Soldier: Tell the soldier to determine the elevation of the point that is labeled "A" on the map.

Performance Measures	GO	NO GO
1. Determined the correct elevation within half the value of the contour interval.	____	____
Note. If the contour interval of the map is in feet, the answer must be in feet. If the contour interval is in meters, the answer must be in meters.		

Evaluation Guidance: Score the soldier GO if the performance measure is passed. Score the soldier NO GO if the performance measure is failed. If the soldier scores NO GO, show what was done wrong and how to do it correctly.

References

Required	Related
FM 3-25.26	

Land Navigation Task 7

Determine a Location on the Ground by Terrain Association

Conditions: In the field during daylight, while at an unknown location on the ground, given a standard 1:50,000-scale military map of the area, pencil, paper, a coordinate scale, protractor, and a known point on the ground.

Standards: Determined the six-digit coordinate of your location with a 100-meter tolerance within seven minutes.

Performance Steps

1. Determine the type of terrain feature upon which you are located. (See task number 071-329-100, Identify Terrain Features On A Map.)
2. Determine what types of terrain features surround your location.
3. Orient the map. (See task number 071-329-1012, Orient A Map To The Ground By Map Terrain Association.)
4. Determine the four cardinal directions (north, south, east, and west). (See task number 071-329-1002, Determine The Grid Coordinates Of A Point On A Military Map.)
5. Determine your location.

   a. Relate the terrain features on the ground to those shown on the map.

   b. After you have determined where the terrain features on the ground and those on the map coincide, determine the coordinates of your location using the coordinate scale and protractor.

Evaluation Preparation:

Setup: Select a field site that has terrain features that are shown on the map. At the test site, provide a field table, a 1:50,000-scale military map of the area, pencil, paper, and a coordinate scale.

Brief Soldier: Tell the soldier he or she must determine a six-digit coordinate of his or her location within 7 minutes. Tell the soldier one of the cardinal directions (north, south, east, or west).

Performance Measures	GO	NO GO
1. Identified the type of terrain feature upon which you were located.	____	____
2. Identified the terrain features around your location.	____	____
3. Oriented the map.	____	____

Performance Measures	GO	NO GO
4. Determined the remaining three cardinal directions.	____	____
5. Identified the same terrain features on the map.	____	____
6. Determined the six-digit grid coordinate of your own location (the point selected must be within 100 meters of your location).	____	____

Evaluation Guidance: Score the soldier GO if all performance measures are passed. Score the soldier NO GO if any performance measure is failed. If the soldier scores NO GO, show the soldier what was done wrong and how to do it correctly.

References

Required	Related
FM 3-25.26	

Land Navigation Task 8

Measure Distance on a Map

Conditions: Given a standard 1:50,000-scale military map, a strip of paper with a straight edge, and a pencil.

Standards:
1. Determined the straight-line distance, in meters, between two points, with no more than five percent error.
2. Determined the road (curved line) distance, in meters, between two points, with no more than ten percent error.

Performance Steps

1. Identify the scale of the map. The map scale is the ratio (1:50,000) of the distance on the map (1 inch) compared to the distance on the ground (usually 50,000 inches).
2. Convert a straight-line map distance to miles, meters, or yards using the map's bar scale (figure C-27).

Performance Steps

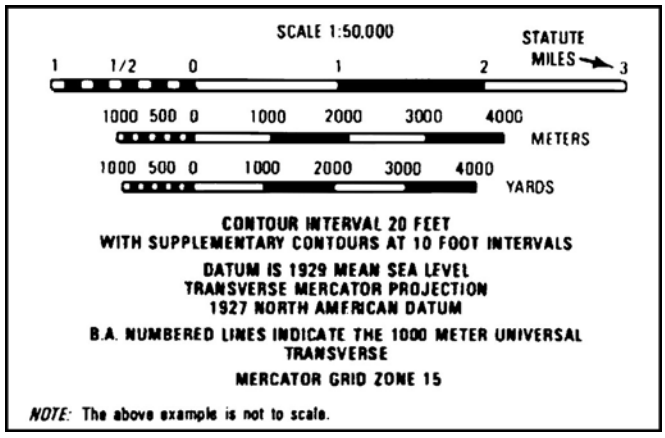

Figure C-27. Bar scales

a. For map distances equal to or less than one inch:

(1) Line up the straight edge of a strip of paper with the beginning and ending points on the map.

(2) Mark on the straight edge of the paper the beginning and ending points (figure C-28).

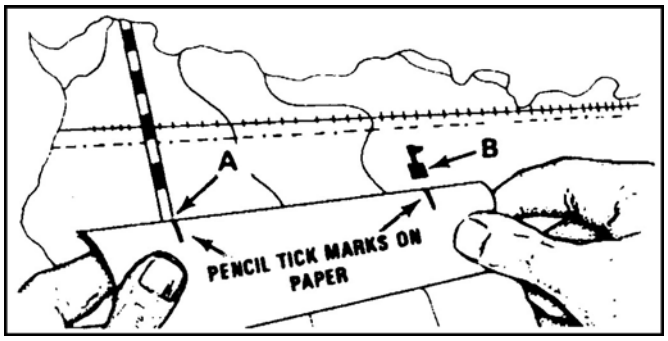

Figure C-28. Measuring distance

(3) Match the marks on the paper with the appropriate bar scale (figure C-29).

Performance Steps

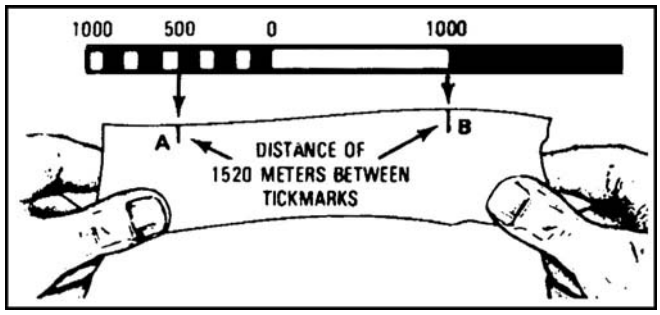

Figure C-29. Determining distance

(4) Determine the distance on the scale that compares to the distance on the paper.

b. For map distances greater than one inch:

(1) Line up the straight edge of a strip of paper with the beginning and ending points on the map.

(2) Mark the beginning and ending points on the straight edge of the paper (figure C-28).

(3) Place the starting point on the paper under the zero on the bar scale.

(4) Measure off 4,000 meters and place a new tick mark on the paper.

(5) Place the new tick mark under the zero on the bar scale.

(6) Determine if the end point falls within the bar scale.

(a) Record the value on the scale of the end point if the end point fits on the scale.

(b) Add 4,000 meters to the value you derived in step 2b(6)(a). This is the total difference.

(7) Determine if the end point does not fall within the bar.

(a) Repeat steps 2b(4) and (5) until the end point falls within the bar.

(b) Add 4,000 meters to the value you derived in step 2b(6)(a) for each time you performed step 2b(4). This is the total difference.

3. Convert a road map distance to miles, meters, or yards using the map's bar scale (figure C-28). This is the actual distance you have to travel to reach the point whose straight line distance you identified in step 2.

Performance Steps

a. Line up the straight edge of a strip of paper with the beginning point and the point at which the road makes the first curve on the map.

b. Mark on the straight edge of the paper the beginning and curve points (figure 27).

c. Repeat steps 3a and b (each time using the point of the curve as the next beginning point) until you reach the end point.

d. Use step 3 to determine the road distance in miles, meters, or yards as appropriate.

(1) If the total distance measured on the paper is equal to or less than 1 inch, use steps 2a(3) and (4).

(2) If the total distance measured on the paper is more than 1 inch, use steps 2b(3) through (7).

Evaluation Preparation:

Setup: In the field or classroom, give the soldier a 1:50,000-scale military map, a strip of paper with a straight edge, and a pencil. On the map, plot a straight-line distance of 3,000 to 4,000 meters. Mark this distance points A and B. On a road or trail, plot a curved-line distance of 3,000 to 4,000 meters with at least two changes of direction. Mark this distance points C and D.

Brief Soldier: Tell the soldier that he or she must determine the straight-line distance between points A and B with no more than 5 percent error, and the curved-line distance between points C and D with no more than 10 percent error. He or she must either write down the correct answers or state the answers when asked by the scorer.

Performance Measures	GO	NO GO
1. Identified the scale of the map.	____	____
2. Converted the straight-line map distance to miles, meters or yards using the map's bar scale with no more than 5 percent error.	____	____
3. Converted the road map distance to miles, meters, or yards using the map's bar scale with no more than 10 percent error.	____	____

Evaluation Guidance: Score the soldier GO if all performance measures are passed. Score the soldier NO GO if any performance measure is failed. If the soldier scores NO GO, show the soldier what was done wrong and how to do it correctly.

References

Required	Related
FM 3-25.26	

Land Navigation Task 9

Convert Azimuths

Conditions: Given a standard 1:50,00-scale military map with a declination diagram, a pencil, and a magnetic azimuth and a grid azimuth that must be converted.

Standards: Converted the given magnetic azimuth to a grid azimuth and the given grid azimuth to a magnetic azimuth without error.

Performance Steps

1. The north-south lines on your map give grid north. The needle of your compass points to magnetic north. Grid north and magnetic north are usually different by a few degrees. Neither one points straight to the North Pole (called true north), but you do not need to know true north to keep from getting lost in a combat area. The difference in degrees for every map is shown on the bottom of mapsheet (figure C-30).

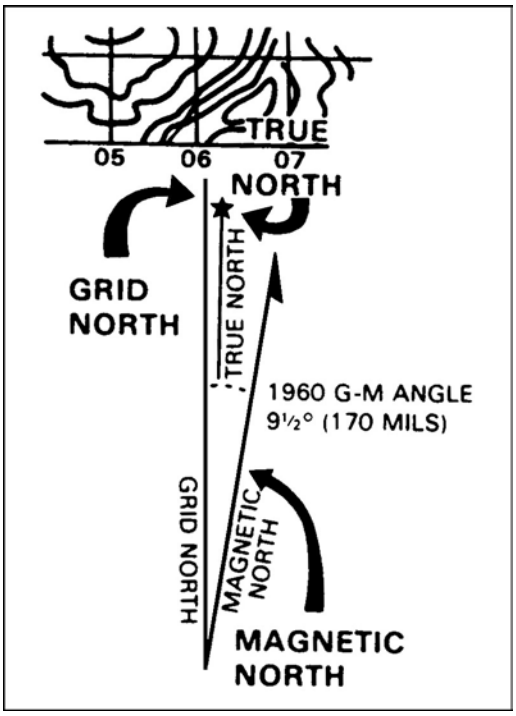

Figure C-30. Declination diagram

2. The difference between grid north and magnetic north is called the grid-magnetic (G-M) angle. The diagram at the bottom of the map tells you how to change grid azimuths to magnetic azimuths and magnetic azimuths to grid azimuths (figure C-31).

Performance Steps

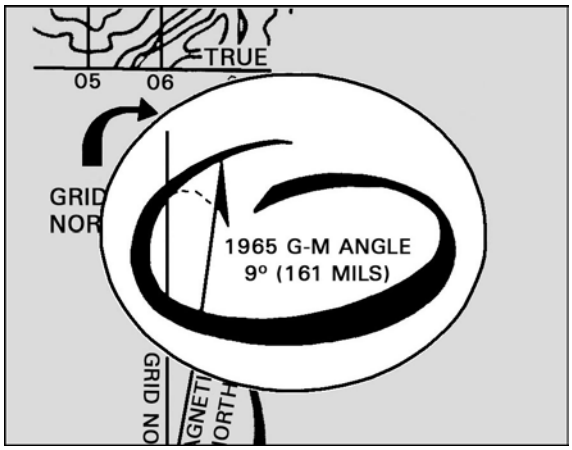

Figure C-31. G-M angle

3. For example, you aim your compass at a distant point. The compass reading you get is 190 degrees, the magnetic azimuth. The diagram on your map (see figure 2) tells you that the G-M angle is 9 degrees, and it also tell you that "to convert a magnetic azimuth to a grid azimuth, add the G-M angle." Therefore add 9 degrees to your compass reading. This gives you 190 + 9 = 199. Your grid azimuth is 199 degrees.
4. The G-M angle depends on where you are in the world.
5. Convert azimuths when given an easterly G-M angle (figure C-32).

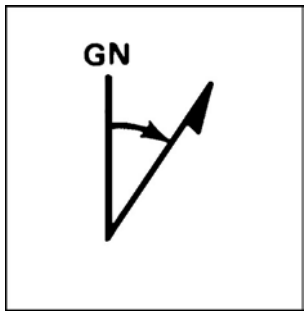

Figure C-32. Converting azimuths with easterly G-M angle

a. To convert a magnetic azimuth to a grid azimuth, add the value of the G-M angle to the magnetic azimuth.

Performance Steps

b. To convert a grid azimuth to a magnetic azimuth, subtract the G-M angle from the grid azimuth.

6. Convert azimuths when given a westerly G-M angle (figure C-33).

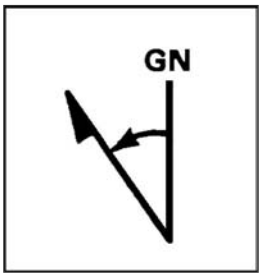

Figure C-33. Converting azimuths with westerly G-M angle

a. To convert a magnetic azimuth to a grid azimuth, subtract the value of the G-M angle from the magnetic azimuths.

b. To convert a grid azimuth to a magnetic azimuth, add the value of the G-M angle to the grid azimuth.

Evaluation Preparation:

Setup: Give the soldier a standard 1:50,000-scale military map, a piece of paper, a pencil, and a magnetic and grid azimuth to be converted.

Brief Soldier: Tell the soldier to convert the magnetic azimuth to a grid azimuth and the grid azimuth to a magnetic azimuth.

Performance Measures	GO	NO GO
1. Determined correct grid azimuth.	____	____
2. Determined correct magnetic azimuth.	____	____

Evaluation Guidance: Score the soldier GO if all performance measures are passed. Score the soldier NO GO if any performance measure is failed. If the soldier scores NO GO, show what was done wrong and how to do it correctly.

References

Required	Related
FM 3-25.26	

Land Navigation Task 10
Orient a Map Using a Lensatic Compass

Conditions: Given a field table, a standard 1:50,000-scale military map, a protector, a pencil, paper, and a compass in daylight.

Standards: Oriented the map to the ground using a compass so the north-seeking arrow of the compass was within 3 degrees (20 mils) of the angle shown in the grid-magnetic (G-M) angle of the declination diagram shown on the map.

Performance Steps

1. With the map level, place the compass parallel to a north-south grid line with the cover side of the compass pointing towards the top of the map. This will place the black index line on the dial of the compass parallel to grid north. Because the needle on the compass points to magnetic north, a declination diagram on the face of the compass is formed by the index line and the compass needle.

2. Rotate map and compass until the directions of the declination diagram formed by the black index line and the compass needle match the direction shown the declination diagram printed on the margin of the map. The map is then oriented.

3. If the magnetic north arrow on the map is to the left of the grid north, the compass reading will equal the G-M angle (given the declination diagram). If the magnetic north is the right of the grid north, the compass reading will equal 360 degrees (6400 mils) minus the G-M angle.

4. Remember to point the compass north arrow in the same direction as the magnetic north arrow (step 2 above), and the compass reading (equal to the G-M angle or the 360 degrees (6400 mils) minus G-M angle) will be quite apparent.

Note. If the G-M angle is less then 3 degrees (50 mils), do not line up the north arrow.

5. Some maps have a built-in protractor considering of a pivot point "P" on the south neat line of the map and several degrees of arc along the north neat line of the map. The G-M line is obtained by connecting pivot "P" with the appropriate value of the G-M angle (taken from the declination diagram) on the arc. The map may then be oriented by placing the compass parallel on this line and rotating the map and compass until the needle point is aligned with the continuous line formed by the index line and the sighting wire. The map is then oriented.

Performance Steps
6. An alternate method is to draw a magnetic north line on the map from any N-S and E-W grid line intersection using the protractor. Align the straightedge of the compass along this magnetic north line and rotate the map and compass together until the north arrow falls beneath the fixed black index line on the compass.

Evaluation Preparation:

Setup: Select an area that is free of magnetic interference (parlance, vehicles). Provide a field table, 1:50,000-scale military map, a protractor, a pencil, paper, and a compass.

Brief Soldier: Tell the soldier to orient the map to the ground using the compass. Tell the soldier he must use the G-M angle shown by the declination diagram if it exceeds 3 degrees (50 mils).

Performance Measures	GO	NO GO
1. Determined whether G-M angle exceeds 3 degrees (50 mils)	____	____
2. Aligned the side of the compass with one of the north-south grid lines.	____	____
3. Positioned the cover of the compass toward the top of the map.	____	____
4. Oriented the map.	____	____
5. Corrected the orientations of the map when the G-M angle exceeded 3 degrees (50 mils) using one of the following:	____	____
a. Used the G-M angle formed by the compass' black index line and the compass needle.		
b. Used the pivot point "P" on the south neat line and the degrees of arc along the north neat line and placed the compass along this line.		
c. Drew a magnetic north line from any N-S and E-W grid the intersection using a protractor and placed the compass along this line.		
Note. Step 5 is required only when G-M angle exceeds 3 degrees or 50 mils. Step 5b is tested only if the map has the built-in protractor.		

Evaluation Guidance: Score the soldier GO if all performance measures are passed. Score the soldier NO GO if any performance measure is failed.

If the soldier scores NO GO, show what was done wrong and how to do it correctly.

References

Required	Related
FM 3-25.26	

Land Navigation Task 11

Orient a Map to the Ground by Map-Terrain Association

Conditions: Given a standard 1:50,000-scale military map in the field in daylight.

Standards: Oriented the map to within 30 degrees of north.

Performance Steps

1. Match terrain features appearing on the map with physical features on the ground (figure C-34).

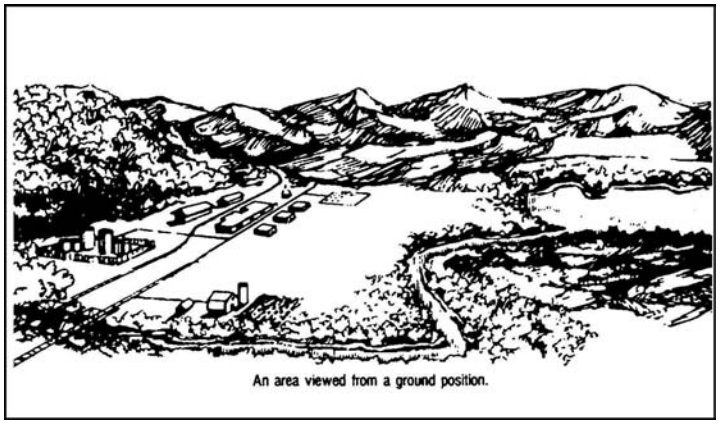

Figure C-34. Features used to orient map

   a. Hold the map in a horizontal position.

   b. Line up features on the ground with those on the map.

2. Check orientations obtained by this method by placing a compass along one of the north-south grid lines to keep from orienting the map in the wrong direction (that is, 180 degrees out) or by aligning two or more features. Incorporate the declination constant in determining the 30 degrees.

Evaluation Preparation:

Setup: Use an area of terrain with identifiable terrain features, natural and/or man-made. Provide a field table and a 1:50,000-scale map of the area.

Brief Soldier: Tell the soldier to use the terrain features around him or her, the soldier must orient the map to within 30 degrees of north.

Performance Measures	GO	NO GO
1. Matched terrain features by holding map in horizontal position and lining up features on the ground.	____	____
2. Checked orientations.	____	____

Evaluation Guidance: Score the soldier GO if all performance measures are passed. Score the soldier NO GO if any performance measure is failed. If the soldier scores NO GO, show the soldier what was done wrong and how to do it correctly.

References

Required	Related
FM 3-25.26	

Land Navigation Task 12

Locate an Unknown Point on a Map and on the Ground by Intersection

Conditions: Given a standard 1:50,000-scale military map of the area, the location of two known points, a compass, a straight edge, a coordinate scale, a protractor (GTA 05-02-012), a pencil, and an object or terrain feature for which the soldier must determine the grid location.

Standards: Determined the 100,000-meter square identification letters and six-digit coordinates of the object or terrain feature to within 100 meters.

Performance Steps
1. Use the map and compass method (figure C-35).

Performance Steps

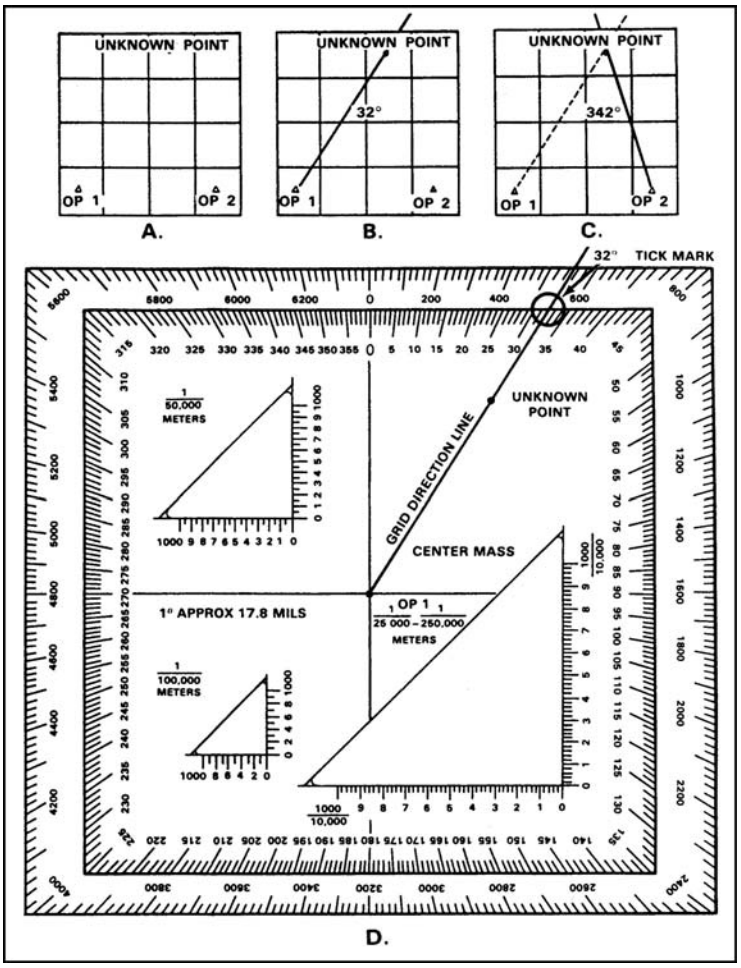

Figure C-35. Location of an unknown point

Note. The example map is not to scale—an easterly G-M angle to 10 degrees is used in the examples.

a. Determine the G-M angle of the map you are using.

b. Locate and mark your position on the map.

Performance Steps

c. Convert the magnetic azimuth to the unknown point (22 degrees); change it to a grid azimuth. In the example, the G-M angle used was 10 degrees easterly, giving a grid azimuth of 32 degrees.

d. Place the protractor on the map, ensuring that the zero-degree indication on the protractor is pointing to the top of the map (north) and the index point is placed center of mass on your location (figure C-36). Place a tick mark at the number of degrees you want to plot. Draw a line on the map from your position on this grid azimuth (32 degrees).

e. Move to or call a second known position from which the unknown point can be seen. Locate this position on the map.

f. Repeat steps 1c and 1d.

g. Where the lines cross is the location of the unknown point.

2. Use the straightedge method (when no compass is available) (figure C-36).

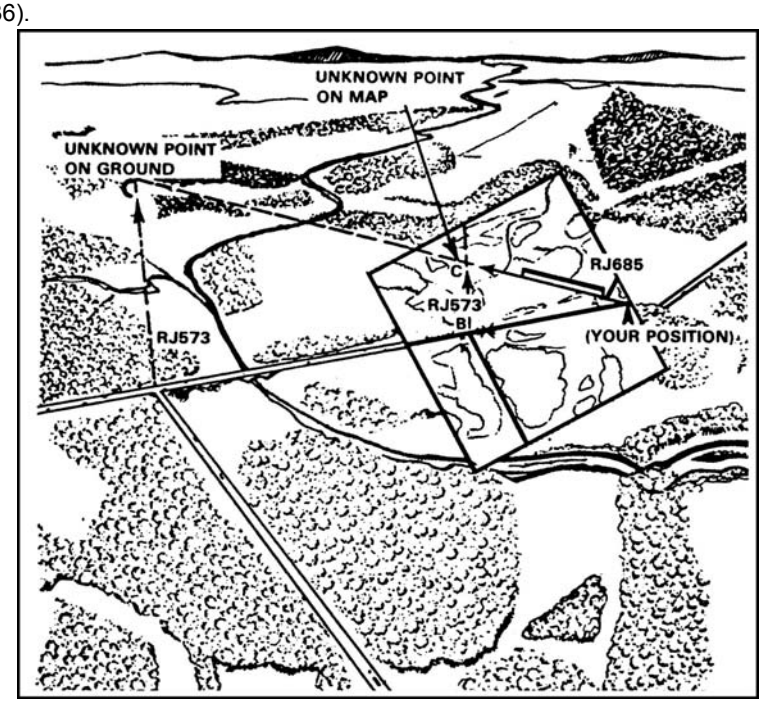

Figure C-36. Intersection without compass

Performance Steps

a. See task number, 071-329-1012, Orient a Map to the Ground by Map Terrain Association.

b. Locate and mark your position on the map.

c. Lay a straightedge on the map with one end at user's position (A) as a pivot point, and rotate the straightedge until the unknown point is sighted along the edge.

d. Draw a line along the straightedge.

e. Repeat steps 2b, 2c, and 2d at position (B) and, to check for accuracy, at a third position.

f. The intersection of the lines is the location of the unknown point (C).

Evaluation Preparation:

Setup: In a field location, give the soldier a standard 1:50,000-scale military map of the area, a compass, a straightedge, a coordinate scale, a protractor, a pencil, an unknown point, and two points (at least 400 meters apart) from which to determine azimuths to the unknown point.

Brief Soldier: Tell the soldier to determine the six-digit grid coordinates of the unknown point.

Performance Measures	GO	NO GO
1. Determined the six-digit grid coordinates, to include the 100,000 meter square identifier of the unknown point to within 100 meters.	____	____

Evaluation Guidance: Score the soldier GO if the performance measure is passed. Score the soldier NO GO if the performance measure is failed. If the soldier scores NO GO, show what was done wrong and how to do it correctly.

References

Required	Related
FM 3-25.26	
STP 21-1-SMCT	

Land Navigation Task 13

Locate an Unknown Point on a Map and on the Ground by Resection

Conditions: Given an unknown location, a standard 1:50,000-scale military map of the area, a compass, a straightedge, a coordinate scale, a protractor

(GTA 05-02-012), a pencil, and two terrain features visible from your location and identifiable on the map.

Standards: Determined the 100,000 meter square identification letters and six-digit coordinates of your location to within 100 meters of the actual grid coordinates.

Performance Steps

1. Use the map and compass method (figure C-37).

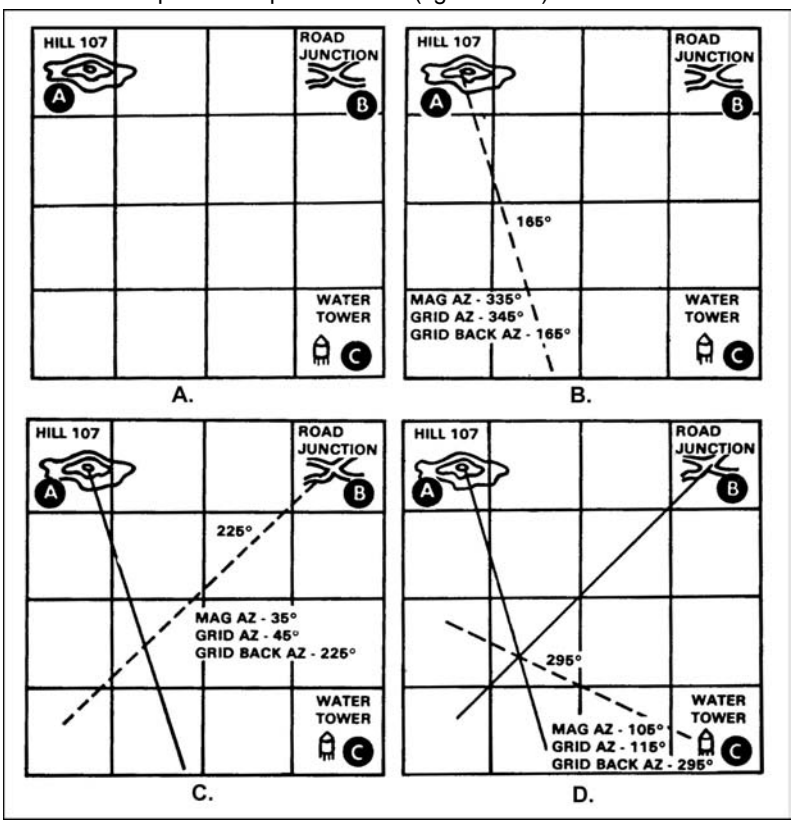

Figure C-37. Using the map and compass

Note. The example map is not to scale—an easterly G-M angle of 10 degrees is used in the examples.

a. Determine the G-M angle of the map you are using.

Performance Steps

b. Locate two known positions on the ground and mark them on your map (A, figure C-37).

c. Using your compass, measure the magnetic azimuth to one of the known locations; change it to a grid azimuth (B, figure C-37.)

(1) If it is a westerly G-M angle, subtract the number of degrees in the G-M angle from your magnetic azimuth.

(2) If it is an easterly G-M angle, add the number of degrees in the G-M angle to your magnetic azimuth.

d. Change this grid azimuth to a back azimuth.

e. Place the protractor on the map, ensuring that the zero degree indicator on the protractor is pointing to the top of the map (north), and the index point is placed center mass on this location. Place a tick mark at the number of degrees you want to plot. Remove the protractor from the map and draw a line on the map from this position on the grid back azimuth you found, in the direction of your unknown position.

f. Repeat steps 1c through 1e for a second (C, figure C-37), and third (D, figure C-37) known position.

g. Where these lines cross is your location.

2. Perform resection without a compass (figure C-38).

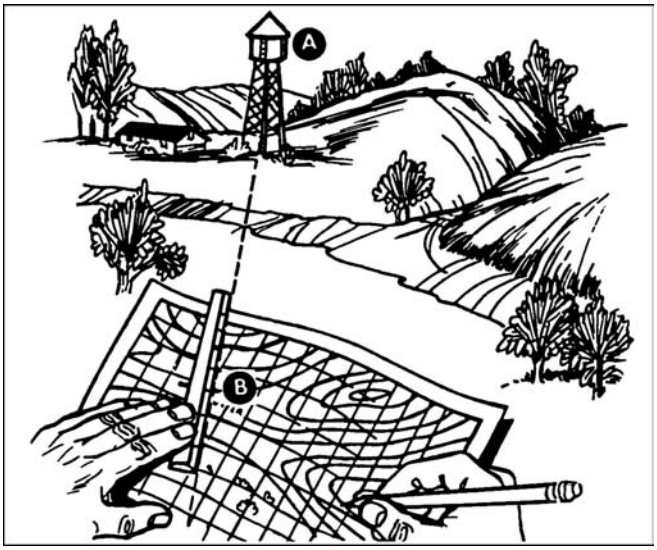

Figure C-38. Resection without a compass

Performance Steps

a. Orient your map as closely as you can using one of the ways you've learned about finding direction: compass, sun, watch, or stars. Then look for some feature, such a water tower (figure C-38, point A), that you can also find on the map. Put a ruler or straightedge on the map, and place its edge next to the water tower symbol (figure C-38, point B) on the map. Then align the straightedge so that it points directly at the real water tower. Draw a line along the straightedge or ruler (the line will cross the symbol for the water tower on your map).

Note. Do not move your map once it is properly oriented.

b. Find another feature, such a road junction (figure C-39, point C), and do the same things. Lay the straightedge on your map and point it at the real road junction, ensuring at the same time that its edge crosses over the road junction (figure C-39, point D) on the map. Draw another line along the ruler until it crosses (intersects) the first line. The point where the lines cross is your location. (figure C-39, point X) if you do this step with a third line, it may help location your position more accurately.

Figure C-39. Resection without a compass continued

Performance Steps

3. To perform modified resection you must be located on a linear feature such as a road, stream bank, railroad or ridge. First orient your map, then find some feature that you can also find on the map, such as the water tower in the previous example. Just as before, put a straightedge through the water tower on the map and align the straightedge so that it points directly at the real water tower. Draw a line along the ruler or straightedge. The point where the line crosses the linear feature is your location.

Note. Always orient your map as closely as you can. The compass is the best way to do so. If you don't have a ruler, use your rifle cleaning rod or a section of radio antenna as a straightedge.

Evaluation Preparation:

Setup: Give the soldier a standard 1:50,000-scale military map of the local area, a compass, a coordinate scale, a protractor (GTA 05-02-012), a pencil, a straightedge, and the location of two known points.

Brief Soldier: Tell the soldier to determine the six-digit coordinates for his location.

Performance Measures	GO	NO GO
1. Determined the six-digit grid coordinate and the 100,000 meter square identifier of the soldier's position (unknown point) within 100 meters.	___	___

Evaluation Guidance: Score the soldier GO if the performance measure is passed. Score the soldier NO GO if the performance measure is failed. If the soldier scores NO GO, show what was done wrong and how to do it correctly.

References

Required	Related
FM 3-25.26	

Land Navigation Task 14

Determine Direction without a Compass

Conditions: During daylight and at night (with a clear view of the Big Dipper), given a wristwatch (not digital), the soldier must determine direction in a field environment with natural vegetation available.

Standards: Identified north and east within 15 degrees.

Note. All of the procedures given in this task give approximate directions. For accurate directions, a compass must be used.

Performance Steps

1. Determine direction using the shadow-tip method.

a. Place a stick or branch into the ground vertically at a fairly level spot where the sun will cast a distinct shadow. Mark the shadow with a stone, twig, or other means (figure C-40).

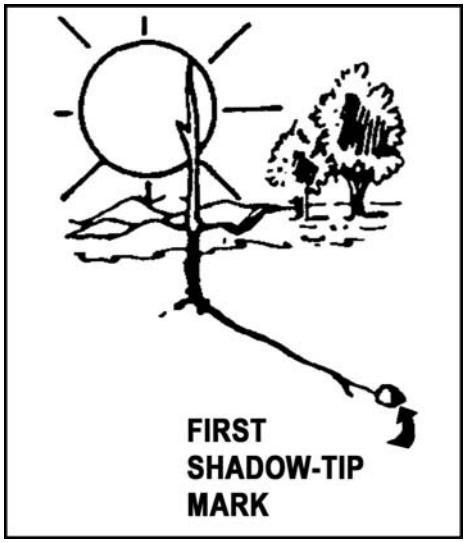

Figure C-40. First shadow-tip mark

b. Wait 10 or 15 minutes until the shadow tip moves a few inches. Mark the new position of the shadow tip as in step 1a (figure C-41).

Performance Steps

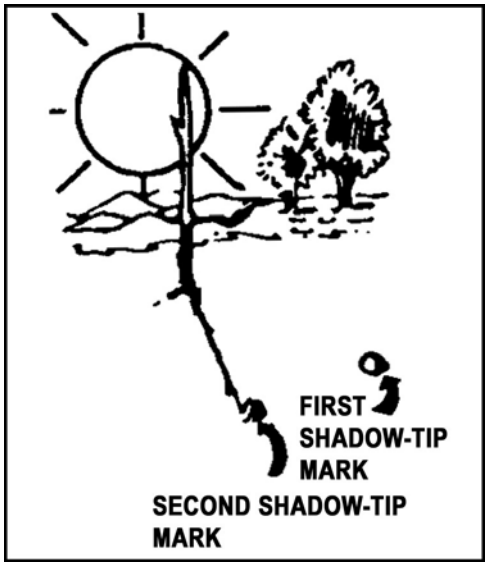

Figure C-41. Second shadow-tip mark

c. Draw a straight line through the two marks you made on the shadow tips. This line is an east-west line (figure C-42).

Performance Steps

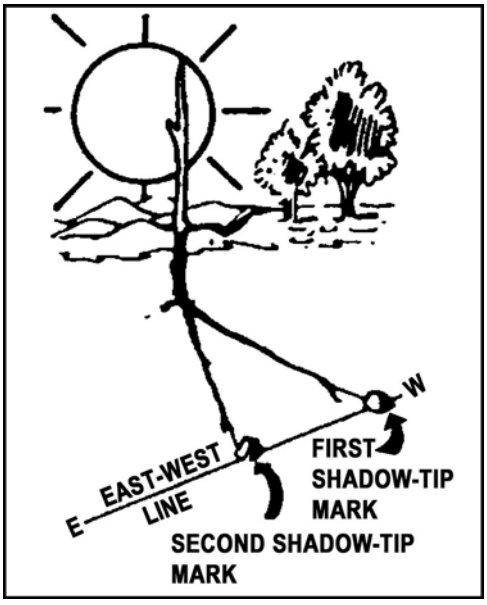

Figure C-42. East-west line

d. Determine which is the east end of the line and which is the west end.

(1) The sun rises in the east and sets in the west.

(2) The first shadow tip you mark is always west and the second mark is always east.

(3) The shadow tip moves in the opposite direction.

e. Determine north and south. Draw a line at a right angle to the east-west line at any point (figure C-43). This is the north-south line.

Performance Steps

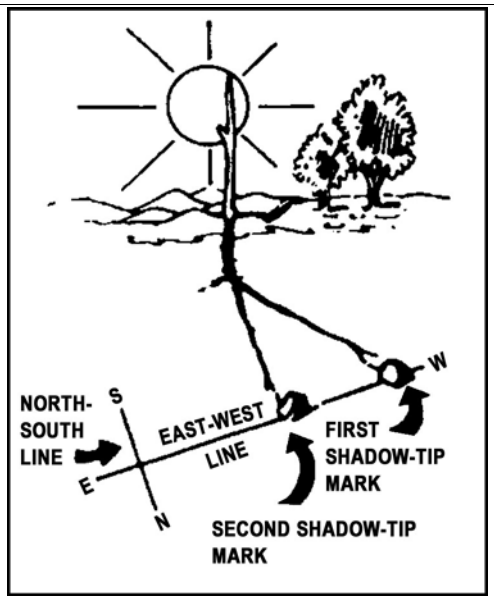

Figure C-43. North-south line

2. Determine direction using the watch method without a compass.

a. Point the hour hand at the sun when you are north of the equator. South will be halfway between the hour hand and 12 o'clock (figure C-44).

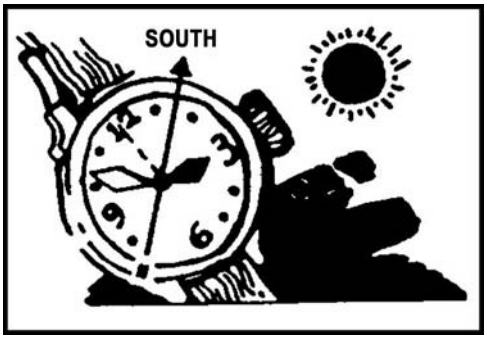

Figure C-44. Watch method

b. Point 12 o'clock at the sun when you are south of the equator. North will be halfway between the hour hand and 12 o'clock.

Performance Steps

3. Use the North Star method to determine direction at night. At night, you can locate north by finding the North Star (Polaris). First, find the Big Dipper. The last two stars in the cup point directly at Polaris, which is about five times as far out as the distance between those two stars in the cup. Facing Polaris, you are looking north, with east on your right and west on your left (figure C-45).

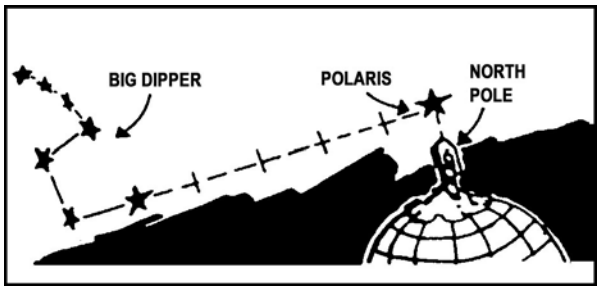

Figure C-45. North Star method

Note. During the training session, stress these four facts:
1. The sun rises in the east and sets in the west.
2. When you face north, east is to your right, west is to your left, and south is to your back.
3. The Big Dipper is a pattern of stars that resembles a soup ladle.
4. The Southern Cross is the main constellation used as a guide south of the equator and the above general directions for using north and south stars are reversed.

Evaluation Preparation:

Setup: Directionally orient yourself to an area that is unfamiliar to the soldier to be tested.

Brief Soldier: Accompany the soldier to the area and tell the soldier to use the field-expedient methods to determine which direction is north and east. Use a compass direction of your choice. Do not tell the soldier how he or she did on performance measure 1 until he or she completes performance measure 2.

Note. Before the soldier is scored a GO for this task, he or she must display proficiency in all three field-expedient methods of determining direction without a compass. However, performance measure 3 must be tested in a different location.

Performance Measures	GO	NO GO
1. Determined direction using the shadow-tip field-expedient method	____	____
a. Placed a stick vertically into the ground at a desired spot.		
b. Marked the tip of the stick's shadow to represent west.		
c. Waited 10 to 15 minutes.		
d. Marked a new position of the tip of the stick's shadow to represent east.		
e. Drew an east-west line through the two shadow-tip marks.		
f. Drew a north-south line at a right angle to the east-west line.		
g. Pointed in the required direction within 15 degrees.		
2. Determined direction using the watch field-expedient method.	____	____
a. In the Northern Hemisphere, pointed the hour hand of the watch at the sun; in the Southern Hemisphere, pointed the 12 o'clock position of the watch at the sun.		
b. Pointed in the required direction within 15 degrees.		
3. Determined direction using the North Star field-expedient method.	____	____
a. Located the Big Dipper.		
b. Located Polaris, the North Star.		
c. Pointed in the required direction within 15 degrees.		

Evaluation Guidance: Score the soldier GO if all performance measures are passed. Score the soldier NO GO if any performance measure is failed. If the soldier scores NO GO, show the soldier what was done wrong and how to do it correctly.

References

Required	Related
FM 3-25.26	

Land Navigation Task 15

Determine Azimuths Using a Protractor

Conditions: Given a standard 1:50,000-scale military map with two known points plotted on the map, a protractor, a straightedge, a pencil, and requirement to determine the azimuth from your location (point A) to another point (point B) on the map.

Standards: Determined the grid azimuth (in mils or degrees) from your location (point A) to point B to within 1 degree or 20 mils.

Performance Steps

1. The direction from one point to another, either on the map or on the ground, is called an azimuth. Azimuths are given in degrees or mils in a clockwise direction from north, and all azimuths taken from a map are grid azimuths.

   a. An azimuth in degrees can be any number up to 360, as there are 360 degrees in a circle. Due east is 90 degrees, due south is 180 degrees, due west is 270 degrees, and due north is 360 degrees or 0 degrees.

   b. An azimuth in mils can be any number up to 6400, as there are 6400 mils in circle. Due east is 1600 mils, due south is 3200 mils, due west is 4800 mils, and due north is 6400 mils or 0 mils.

2. The most accurate way to determine an azimuth from a map is to use a protractor. There are two types of protractors in use in the Army today.

   a. The square protractor (GTA 05-02-012), which has a degree scale and a mil scale. The inner scale is the degree scale, and the outer scale is the mil scale.

   b. The semicircular protractor, which may or may not have two scales: an outer scale in mils and an inner scale in degrees. The mil and degree scales consist of two rows of numbers. In each of the scales, the outer row of numbers is used when determining azimuths to the east of your position, and the inner row of numbers is used when determining azimuths to the west of your position.

3. Use the protractor properly.

   a. Plot the location of two points on the map.

   b. Using a straightedge, draw a straight line (azimuth line) from point A to point B.

Note. The line drawn between the two points must be long enough to cross the scale(s) of the protractor in order to read the azimuth. Should the line between the two points be too short to cross the scale(s), extend the line beyond point B until it crosses the scale(s).

Performance Steps

c. Place the index of the protractor at the point where the azimuths line crosses one of the vertical (north-south) grid lines. This procedure allows greater accuracy in aligning the index line to a true reading where the azimuth line crosses the protractor scale.

Note. Ensure that the 0-degrees or 0-mils mark on the protractor is toward the top (north) of the map.

d. Start at the 0-degree or 0-mil mark on the protractor and read to the right (clockwise) until you reach the point where the azimuth line crosses the scale(s) of the protractor.

Note. When using the protractor, each tick mark on the degree scale is 1 degree, while each tick mark on the mil scale is 20 mils.

e. Read the azimuth where the azimuth line crosses the scale(s).

(1) Figure 49, 65 degrees.

(2) Figure 50, 65 degrees - 1150 mils.

Note. When using the square protractor, the scale can be read all the way around the protractor. In using the semicircular protractor, when point B is to the left (west) of point A. The protractor must be reversed so that 0 is toward the bottom of the map (south).

Evaluation Preparation:

Setup: Provide the soldier with a 1:50,000-scale military map, two points plotted and labeled (A) and (B), a protractor, a straightedge, and a pencil.

Brief Soldier: Tell the soldier to determine the azimuth from point A to point B within one degree or 20 mils.

Performance Measures	GO	NO GO
1. Determined the correct azimuth (within 1 degree or 20 mils).	____	____

Evaluation Guidance: Score the soldier GO if the performance measure is passed. Score the soldier NO GO if the performance measure is failed. If the soldier scores NO GO, show what was done wrong and how to do it correctly.

References

Required	Related
FM 3-25.26	
GTA 05-02-012	

Land Navigation Task 16
Compute Back Azimuths

Conditions: Given azimuths and a requirement to compute back azimuths.

Standards: Determined the back azimuth of a given azimuth to the exact degree or mils.

Performance Steps

1. Determine a back azimuth using degrees. Suppose you follow a 65-degree azimuth from point A to point B and then want to go back to your original location. To do this, you use a back azimuth. You simply add 180 to the first azimuth. Your back azimuth is 65 + 180 = 245 degrees.

2. Determine a back azimuth using mils. You move from point A to point B on an azimuth of 1150 mils. Should you wish to return to point A, you would follow a back azimuth. To determine the back azimuth you simply and 3200 mils to 1150: 3200 + 1150 = 4350.

Note. The rule to remember to determine a back azimuth is as follows:
—Degrees: Less than 180 degrees, add 180 degrees. More than 180 degrees, subtract 180 degrees.
—Mils: Less than 3200 mils, add 3200 mils. More than 3200 mils, subtract 3200 mils.

Evaluation Preparation:

Setup: Provide the soldier with azimuths, one in degrees and one in mils.

Brief Soldier: Tell the soldier to compute the exact back azimuths.

Performance Measures	GO	NO GO
1. Computed the exact back azimuth.	____	____

Evaluation Guidance: Score the soldier GO if the performance measure is passed. Score the soldier NO GO if the performance measure is failed. If the soldier scores NO GO, show what was done wrong and how to do it correctly.

References

Required	Related
FM 3-25.26	

Glossary

ACS	Army Community Service
ADAPCP	Alcohol and Drug Abuse Prevention and Control Program
AER	Army Emergency Relief
AFTB	Army Family Team Building
AHS	Academy of Health Sciences
AIDS	acquired immunodeficiency syndrome
APAC	Army Public Affairs Center
APC	armored personnel carrier
AR	Army regulation
ATNAA	antidote treatment nerve agent autoinjector
AZ	azimuth
BDU	battle dress uniform
BFV	Bradley fighting vehicle
BMD	Boyevaya Mashina Desantnika [literal Russian: combat vehicle, airborne]
BMP	Boyevaya Mashina Pekhoty [literal Russian: combat vehicle, infantry}
C2W	command and control warfare
CANA	convulsant antidote for nerve agent
CASCOM	Combined Arms Support Command
CB	chemical or biological
CCC	Community Counseling Center
CID	Criminal Investigation Command
CLP	cleaner lubricant preservative
cm	centimeter
CO	company
CTT	Common Task Test
CVC	combat vehicle crewman
D	drive
DA CIR	Department of the Army circular
DA Form	Department of the Army form
DA Pam	Department of the Army pamphlet

DD Form	Department of Defense form
DNA	deoxyribonucleic acid
DNVT	digital non-secure voice terminal
DODD	Department of Defense directive
DODI	Department of Defense instruction
DS2	decontaminating solution #2
DU	depleted uranium
EFMP	Exceptional Family Members Program
EO	equal opportunity
FEBA	forward edge of the battle area
FM	field manual
FPL	final protective line
FSN	Federal stock number
FTX	field training exercise
G2	assistant chief of staff, G2 (intelligence)
G3	assistant chief of staff, G3 (operations and plans)
G-M	grid-magnetic
GMD	grease, molybdenum disulfide
GPS	Global Positioning System
GTA	graphic training aid
HC	hexachloroethane (smoke)
HIV	human immunodeficiency virus
HMMWV	high mobility multipurpose wheeled vehicle
HQ	headquarters
HUMINT	human intelligence
ID	Identification
IDAA	Individual Dynamic Absorption Application
IHFR	improved high frequency radio
IMINT	imagery intelligence
IN	Infantry
JAG	Judge Advocate General
JFK	John F Kennedy Special Warfare Center and School
JP	joint publication

LAW	lubricating oil arctic weather
LBE	load-bearing equipment
LCE	load carrying equipment
LCSS	lightweight camouflage screen system
LCE	load carrying equipment
LSA	lubricating oil, semifluid, automatic
LSAT	(lubricating oil)
m	meter
MANSCEN	Maneuver Support Center
MASINT	measurement and signature intelligence
METT-TC	mission, enemy, terrain, troops, time available, and civilian considerations
MI	military intelligence
mm	millimeter
MOPP	mission-oriented protective posture
MOUT	military operations in urban terrain
mph	miles per hour
N	neutral
NATO	North Atlantic Treaty Organization
NBC	nuclear, biological, and chemical
NCO	noncommissioned officer
NCOIC	noncommissioned officer in charge
NCS	net control station
NSN	national stock number
OD	olive drab
OPLAN	operation plan
OPORD	operation order
OPSEC	operations security
P	park
Pam Cl	pralidoxime chloride
PDF	principal direction of fire
PL	preservative lubricant
PLT	platoon
PMCS	preventive maintenance checks and services
PMM	preventive medicine measure

RADIAC	radiation, detection, indication, and computation
RBC	rifle bore cleaner
ROC-V	recognition of combat vehicles
RSTA	reconnaissance, surveillance, and target acquisition
RT	radio transmission
S1	personnel officer
S2	intelligence officer
SALUTE	size, activity, location, unit, time, equipment
SAW	squad automatic weapon
SIG	signal
SIGINT	signals intelligence
SINCGARS	Single-Channel Ground and Airborne Radio System
SL	skill level
SMCT	soldier's manual of common tasks
SME	subject matter expert
SOI	signal operating instruction
SOP	standing operating procedure
SQD	squad
SSI	Soldier Support Institute
STD	sexually transmitted disease
STP	soldier training publication
T&E	traversing and elevating
TB	technical bulletin
TC	training circular
TEC	training extension course
TM	technical manual
TRP	target reference point
TW	target width
TWS	thermal weapon sight

U.S.	United States
UCMJ	Uniform Code of Military Justice
VRC	vehicular radio configuration
WBGT	wet bulb globe temperature
WP	white phosphorus

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Required Publications

Required publications are sources that users must read in order to understand or to comply with this publication.

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