



# M1117 Guardian Armored Security Vehicle Gunnery in the Heavy Brigade Combat Team

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*Gunnery . . . it's fast, aggressive, and labor-intensive. It requires hours of training, weeks of range time, and months of preparation. Of all crew training, it is the one event that solidifies confidence, increases survivability, and makes the crew lethal.*

For years, military police have been firing the gunnery that local leadership developed and installations supported. Gunnery involving crew drills, gunnery skills tests, formal evaluation processes, gunnery table modeling, standardized fire commands, the conduct of fire, target acquisition, minimum proficiency levels, and legitimate range requirements<sup>1</sup> has been the exception rather than the norm throughout the Military Police Corps. But all of that is about to change. The Army has standardized “common gunnery” for the heavy brigade combat team (HBCT) and will soon standardize gunnery for all crews—regardless of the unit or branch. If you’re a military policeman—especially a Guardian crewman—get ready. Changes are just around the corner!

As part of an Army-wide effort to revise existing gunnery field manuals (FMs), the U.S. Army Military Police School Directorate of Training has been working closely with personnel from Fort Knox, Kentucky. The goal of these efforts is to produce gunnery manuals to address “common gunnery” needs. These FMs will consist of four “volumes.”

- **Volume 1** will contain detailed gunnery requirements for training Soldiers on individual weapons, optics, and designators.
- **Volume 2** will actually consist of three FMs—one for HBCTs (referred to as the “HBCT gunnery manual”), one for Stryker brigade combat teams, and one for infantry brigade combat teams. Each manual will cover platform characteristics of the direct-fire weapon systems, ammunition and training device overviews, gunnery training plans, gunnery tables, crew evaluations, and platform-specific information for the corresponding brigade type. Sections on collective gunnery tables and combined arms, live-fire exercises will also be included in each manual.

This volume will standardize methods of training and semiannual qualification of military police who are assigned as Guardian crewmen.

- **Volume 3** will contain standardized gunnery information for the sustainment unit community based on standardized truck gunnery. Commanders of military police units will refer to this volume to determine gunnery requirements for their “uparmored” humvee crews.
- **Volume 4** will contain detailed gunnery requirements for indirect-weapon systems.

## **Current Guardian Crew Gunnery**

There is currently no rigorous gunnery training program for Guardian crews like the programs used by Abrams, Bradley, and Stryker crews. Since the Guardian was fielded, commanders have been left to determine their own training and qualification requirements, to resource ammunition as it has become available, and to conduct the gunnery that they felt was necessary. This approach impedes efforts to improve Guardian systems and capabilities, does not allow specific range requirements to be forecasted or funded, does not invigorate the development of a simulator that augments Guardian gunnery training (similar to the Advanced Gunnery Training System for the Abrams or the Precision Gunnery System for the Bradley), and does not promote a common gunnery standard for the Regiment. The U.S. Army Training Support Center is now updating Training Circular (TC) 25-8 to capture Guardian range requirements; the scout/reconnaissance range has been selected as the standard for Guardian gunnery.

## **Gunnery Standardization**

The new gunnery manuals will standardize resources and requirements, streamline training programs, provide

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common evaluation procedures, and establish a common set of qualification tables for all direct-fire weapon systems. In short, all aspects of direct-fire engagement will be standardized, thereby creating common gunnery for all armed platforms in the Army.

Preparing gunnery crews and small units for missions requires the compilation of direct-fire gunnery for the Abrams, Bradley, Stryker, and Guardian into one HBCT gunnery manual. This is quite a challenge. Even though these direct-fire variants are similar in some aspects, they are quite different across the board.

The HBCT gunnery manual will outline standardized engagement processes that create a common gunnery language for all direct-fire weapon systems. As a result, the gunnery learning curve will be significantly reduced. Military police Guardian crews will be able to easily transition from one brigade type to another. Essentially, the manual will describe the standard way to do business across the Army no matter what weapon system is fired in ground combat—and that is a colossal change!

The HBCT gunnery manual will also serve as a baseline for Guardian gunnery. However, the success of the firing unit will depend on the commander's flexibility in developing the gunnery based on the unit configuration, mission-essential task list, possible deployment locations, and subordinate unit task and purpose. The HBCT gunnery manual is intended to—

- Standardize all direct-fire platform gunnery.
- Standardize fire commands across all direct-fire platforms.
- Establish common gunnery table methodology that incorporates training devices, simulators, simulations, and progressive live fire.
- Establish a common scoring and evaluation model for the Army.
- Provide commanders with a common reference set that encompasses all direct-fire weapon systems.
- Provide a user-friendly reference with stand-alone, platform-specific appendixes.
- Provide commanders with the flexibility to tailor gunnery programs to their deployment configurations and missions.
- Build the framework for updating FM 3-19.6 or creating a gunnery TC.
- Enable the incorporation of spin-off technologies from future combat systems.

The HBCT gunnery manual will enable commanders and staff to easily locate information. It will contain an overview followed by information on the target acquisition process, engagement of targets, indirect fire, fire commands, gunnery planning, and gunnery execution and evaluation.

The chapters will serve as desk references, and the appendixes will outline the items that need to be included on the vehicles for gunnery and during deployment.

The primary themes of the manual will be commonality and standardization. These themes will have the greatest impact on the engagement process, gunnery tables, and evaluation procedures.

### Engagement Process

Although the engagement process for all direct-fire platforms is basically the same, the terms used to express the elements have varied depending on the platform. The HBCT gunnery manual will standardize the engagement process and provide a common gunnery language that spans all direct-fire platforms throughout the Army. The HBCT gunnery manual will describe the engagement process (referred to as "DIDEA") as consisting of the following five steps:

- **Detect.** This step involves searching for, detecting, and acquiring a target.
- **Identify.** In this step, the potential threat is clearly identified, classified, and confirmed as hostile.
- **Decide.** Vehicle commanders must determine the method of target destruction (direct or indirect fire) that should be used to destroy the threat.
- **Engage.** The crew conducts a direct-fire engagement or calls for an indirect-fire engagement. Fire commands have been standardized across all platforms.
- **Assess.** The neutralization or destruction of the threat is confirmed.

In developing these new manuals, the standardization of fire commands for all direct-fire systems was a significant challenge. For example, one issue that needed to be addressed was the distinction between "precision gunnery" and "degraded gunnery." If precision gunnery were to require a fire control system with full ballistic solution, automatic lead, laser range finder, and thermal optics, then nonstabilized Guardians would never qualify as "precise;" they would always be considered "degraded." Consequently, the terms "precision gunnery" and "degraded gunnery" were eliminated. Seven standard terms were established based on weapon system capabilities; the following seven terms will comprise the elements of standard fire commands:

- **Crew response:** verbal confirmations of initial or subsequent fire commands issued by the vehicle commander; stated to ensure clarity of the commands.
- **Crew action:** a function performed by the crew to direct fire onto a target; stated upon the completion of the implied task as directed by the fire

command. The selection of the MK19 machine gun as the M48 Patton weapon system to use in response to a fire command is an example of a crew action.

- **Sensing:** the strike identification of a round fired from a weapon in relation to the target. If the rounds do not have the desired effect on the target, the vehicle commander is alerted to issue subsequent fire commands. Vehicle commanders also use sensing information to determine when to issue new initial-fire commands to engage additional targets.
- **Engagement technique:** a specific technique directed by the vehicle commander for the gunner to suppress or destroy targets.
- **Modifier:** an enhancement of a target description; used to clearly identify the target to be engaged when multiple targets are faced. In urban environments, vehicle commanders use modifiers to narrow the gunner’s search for the intended target.
- **Clarification:** a crew member request for the vehicle commander to repeat or correct an element of the fire command.
- **Driver action:** a function performed to move a vehicle into the position that best supports the engagement. Driver actions are used to move through obscurants, return to defilade, and seek alternate positions.

### Gunnery Tables

The biggest change to gunnery is the development of and methodology for using the gunnery tables (Figure 1).

The HBCT gunnery manual will contain two primary sets of qualification tables—one for stabilized platforms and one for unstabilized platforms. Until a unit’s Guardian turrets have been stabilized, the unit should follow the unstabilized gunnery program. Guardian turret improvements will eventually allow the vehicle to be placed into the stabilized platform set along with the Abrams, Bradley, and Stryker.

The crawl-walk-run methodology for using the tables is designed to train critical tasks, challenge crews, and maintain high standards. Because the gunnery tables will share the same characteristics and primary means of evaluation, Guardian crew members who change stations or transition to a gun truck will already be familiar with the similar gunnery tables and evaluation processes. Minimum proficiency levels (MPLs), threat matrices, common score sheets, and table-naming conventions will be common elements of the new gunnery tables.

MPLs will be used to develop scenarios, ensuring that all primary gunnery skill sets are trained and tested. MPLs will provide a baseline set of requirements that must be met by all direct-fire weapon crews. They will be used to train and evaluate critical skills, prevent skill atrophy, and make proper use of resourced ammunition and targetry across the Army. Sample crew MPLs are shown in Figure 2.

Commanders will be able to apply a list of MPLs to any engagement on any given table. For example, in a Guardian engagement with two targets, the commander will specifically select scenario conditions such as a chemical environment, at night, on the offense, with one 40-millimeter target at a distance greater than 1,200 meters and another 40-millimeter target at a distance less than 200 meters. Flexibility will be key to developing scenarios that best fit unit missions. The HBCT gunnery manual will contain an MPL Application Guide that indicates which MPL is best-suited for each engagement. MPLs that do not apply will be depicted in the MPL Application Guide by blocks marked “NO GO.”

A sample gunnery table illustrating the table and task numbering systems, the six standard engagement types, and a crawl-walk-run training model is provided in Figure 3 (page 28). The Roman numeral at the head of each table column represents the gunnery table number. Each

	Gunnery Table	Title and Purpose
Preliminary Gunnery	I	Crew Critical Skills <sup>1</sup>
	II	Preliminary Crew Proficiency Course <sup>2</sup>
Basic Gunnery	III	Basic Machine Gun Course A
	IV	Basic Machine Gun Course B
	V	Basic Crew Practice
	VI	Basic Crew Qualification <sup>2</sup>
Intermediate Gunnery	VII	Intermediate Section Proficiency
	VIII	Intermediate Section Practice
	IX	Intermediate Section Qualification <sup>3</sup>
	X	Advanced Platoon Proficiency
Advanced Gunnery	XI	Advanced Platoon Practice
	XII	Advanced Platoon Qualification <sup>4</sup>

<sup>1</sup>Prerequisite for live fire.  
<sup>2</sup>Prerequisite qualification to continue on to Intermediate Gunnery.  
<sup>3</sup>Prerequisite qualification to continue on to Advanced Gunnery.  
<sup>4</sup>Prerequisite qualification for combined arms, live-fire exercises.

Figure 1. Gunnery tables

of the six standard engagement types (vehicle commander, machine gun pure, 40-millimeter pure, change of weapon system, degraded, and multiple target) is assigned a permanent task number. Task 0, for example, is always a vehicle commander engagement—a situation that would occur if a Guardian gunner were incapacitated and the vehicle commander were required to occupy the gunner’s station. An engagement number is a two-digit number that consists of the gunnery table number followed by the task number. For example, the engagement number for Table V, Task 0, is 50. This methodology will allow leaders to track crew progression by task so that they can identify shortcomings in training.

As the table numbers increase, the level of difficulty for each task also increases—at least through Table V (Crew Practice). The level of difficulty for Table VI (Crew Qualification) tasks should be equal to or lower than previously trained tasks.

### Evaluation Process

Evaluations will be based on the ability of the threat to destroy a friendly vehicle, taking into account the friendly vehicle type, threat target type, threat vehicle range, and friendly vehicle posture. These parameters will define how threat matrices are developed and employed in the gunnery training model. As the dynamics of combat change and the threat increases, threat matrices can be updated to replicate current threats and then applied to the scoring model.

### Collective Gunnery

The tables necessary to allow humvee and Guardian crews to participate in collective gunnery have been developed. However, before initiating collective gunnery, commanders must consider the structures of the individual squads and platoons and their capabilities to fire MK19s and M48s using the same scenarios, on the same ranges, during all phases of gunnery.

### Conclusion

Although the new manuals represent a huge step forward in the area of gunnery, it will take time for the force to completely understand and make full use of their potential. Soldiers will need to be educated. And the best

MPL	Gunnery Table <sup>1</sup>				
	II	III	IV	V	VI
One defensive engagement: day and night	Y	Y	Y	Y	Y
One offensive engagement: day and night	Y	Y	Y	Y	Y
One short halt or traffic control point: day OR night	Y	Y	Y	Y	Y
One CBRN engagement: day and night	Y	Y	Y	Y	Y
One short-range, machine gun <sup>2</sup> engagement (<300 m): day OR night	Y	Y	Y	Y	Y
One long-range, main-gun <sup>3</sup> target: day OR night	Y		Y	Y	Y
One short-range, main-gun <sup>3</sup> engagement: day OR night	Y		Y	Y	Y

<sup>1</sup>Gunnery Table III is for the basic machine gun, and there are no main gun requirements. If Gunnery Tables III and IV are used together, then the MPLs for Gunnery Table IV apply.

<sup>2</sup>The term "machine gun" refers to coaxially mounted 7.62 or Cal. 50 (armored security vehicle) weapons, respectively.

<sup>3</sup>The term "main gun" refers to 25-mm, 40-mm, or 120-mm systems.

Weapon	Short-Range Engagement	Long-Range Engagement
Machine gun	<300 m	N/A
25 mm	<800 m	>1,600 m
40 mm	<400 m	>1,200 m
120 mm	<800 m	>2,000 m

Figure 2. Sample crew MPLs

gunnery program can only be created through use, feedback, and updates. But these are solid, new manuals; and military police Guardian crews are at the forefront of the changes. These changes should be embraced by leaders. The new manuals should be viewed as a significant improvement to Guardian gunnery and training for the Soldiers of the Military Police Corps Regiment.

#### Endnote:

<sup>1</sup>TC 25-8, *Training Ranges*, 5 April 2004.

#### References:

<sup>1</sup>TC 25-8, *Training Ranges*, 5 April 2004.

<sup>2</sup>FM 3-19.6, *Armored Security Vehicle*, 24 May 2006.

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Task Number and Type		II			III			IV			V			VI		
		PCPC			Basic MG A			Basic MG B			Crew Practice			Crew Qualification		
0	Vehicle Commander	STA Cal .50 			STA 40 mm 						STA Cal .50 	MOV 40 mm 		MOV 40 mm 		
1	Machine Gun Pure	STA Cal .50 	STA Cal .50 		STA Cal .50 	STA Cal .50 					STA Cal .50 	STA Cal .50 	MOV Cal .50 	STA Cal .50 	STA Cal .50 	
2	Machine Gun Pure	STA Cal .50 					STA Cal .50 									
3	40-mm Pure	MOV 40 mm 						STA 40 mm 	STA 40 mm 		MOV 40 mm 	MOV 40 mm 		MOV 40 mm 		
4	40-mm Pure (HVCC option)	STA 40 mm 	STA 40 mm 	MOV 40 mm 				STA 40 mm 			STA 40 mm 			STA 40 mm 	STA 40 mm 	MOV 40 mm 
5	Change of Weapon System	STA Cal .50 	STA 40 mm 	STA 40 mm 				STA Cal .50 	STA 40 mm 		STA Cal .50 	STA Cal .50 	STA 40 mm 	STA Cal .50 	STA 40 mm 	STA 40 mm 
6	Change of Weapon System	STA Cal .50 	STA Cal .50 	STA 40 mm 				STA Cal .50 	MOV 40 mm 		STA Cal .50 	STA Cal .50 	STA 40 mm 	STA Cal .50 	STA 40 mm 	
7	Degraded	STA 40 mm 	STA 40 mm 					STA 40 mm 			STA Cal .50 	STA 40 mm 		STA 40 mm 	STA 40 mm 	
8	Degraded	STA Cal .50 			STA Cal .50 						STA Cal .50 	STA 40 mm 	STA 40 mm 	MOV 40 mm 		
9	Multiple Target	STA Cal .50 					STA Cal .50 									

Figure 3. Sample armored security vehicle gunnery tables with targetry

