ATP 3-21.71

MECHANIZED INFANTRY PLATOON AND SQUAD

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MECHANIZED INFANTRY PLATOON AND SQUAD

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Preface

ATP 3-21.71 provides techniques, and procedures for the employment of the Bradley Fighting Vehicle-equipped mechanized Infantry platoon and squads in multidomain operations. It provides the framework and technical employment principles for a mechanized Infantry platoon in the Armor and mechanized Infantry companies and combined arms battalions found in the Armored brigade combat team.

The principal audience for ATP 3-21.71 is the commanders, staff, officers, noncommissioned officers, and Soldiers within the Combined Arms Battalion. The audience includes the United States Army Training and Doctrine Command institutions and components. This publication serves as an authoritative reference for personnel developing doctrine, materiel and force structure, institutional and unit training, and standard operating procedures for the mechanized Infantry platoon and squad.

The doctrinal principles and procedures contained within this publication are intended to be used as a guide and not to be considered prescriptive. ATP 3-21.71 outlines the framework in which mechanized Infantry platoons and squads will operate, either by themselves or together as part of the company.

Commanders, staffs, and subordinates must ensure that their decisions and actions comply with applicable U.S., international, and in some cases host-nation laws and regulations. Commanders at all levels will ensure that their Soldiers operate in accordance with the law of armed conflict and applicable rules of engagement. (See FM 6-27 for additional information.)

ATP 3-21.71 uses joint terms where applicable. Selected joint and Army terms and definitions appear in both the glossary and the text. Terms for which ATP 3-21.71 is the proponent publication (the authority) are presented in italics and bold font in the text and marked with an asterisk (*) in the glossary. Definitions shown in the text, the term is italicized, and the number of the proponent publication follows the definition. The use of a trade or brand name does not constitute endorsement of any specific commercial product, commodity, service, or enterprise by the United States Army.

ATP 3-21.71 applies to the Active Army, Army National Guard/Army National Guard of the United States and United States Army Reserve unless otherwise stated.

The proponent for ATP 3-21.71 is the United States Army Maneuver Center of Excellence. The preparing agency is the Doctrine and Collective Training Division, Department of Training, Tactics and Doctrine, United States Army Maneuver Center of Excellence. Send comments and recommendations on DA Form 2028 *(Recommended Changes to Publications and Blank Forms)* to Commander, United States Maneuver Center of Excellence and Fort Moore, ATZK-TDD (ATP 3-21.71), 1 Karker Street, Fort Moore, GA 31905 5410; by email to usarmy.moore.mcoe.mbx.doctrine@army.mil; or submit an electronic DA Form 2028.

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Introduction

ATTP 3-21.71, Mechanized Infantry Platoon and Squad (Bradley) was last developed in November 2010. When ATP 3-21.8 was published in April 2016, it included three Infantry platoons and squads, (Infantry, mechanized, and Stryker). ATTP 3-21.71 was rescinded after its information was added to ATP 3-21.8 in 2016. In 2021, each of the Infantry platoons and squads were required to have its own doctrinal manual.

ATP 3-21.71 is now an Army techniques publication but has kept the same title as the 2010 version. ATP 3-21.71 changed its focus to the employment and execution of platoon and squad operations, and it describes techniques for the integration of the mounted and dismounted Infantry. ATP 3-21.71 cites ATP 3-21.8, Infantry Rifle Platoon and Squad for Infantry techniques.

The techniques addressed in ATP 3-21.71 include the movement and maneuver of units in relation to each other, the terrain, and the enemy. Techniques vary with terrain and other circumstances; they change frequently as the enemy reacts and friendly forces explore new approaches. Applying techniques usually entails acting under time constraints with incomplete information. Techniques always require judgment in application; they are always descriptive, not prescriptive.

To comprehend the doctrine contained in this publication, readers must understand the tactics in FM 3-90 and FM 3-96. To comprehend how the mechanized Infantry platoon organizes and is doctrinally employed, the reader must understand ATP 3-90.1 and ATP 3-90.5.

ATP 3-21.71 incorporates the significant changes in Army doctrinal terminology, concepts, constructs, and proven tactics developed during recent operations. It also incorporates changes based on newly published Army capstone doctrine and operational concept.

The following is a brief introduction and summary of changes by chapter:

Chapter 1 – Organization

Chapter 1 focuses on the mechanized Infantry platoon and squads' role and organization, as well as the platoon's mission, capabilities, and limitations. It provides a discussion on the duties and responsibilities within the platoon and squads.

Chapter 2 – Planning and Preparing for Operations

Chapter 2 provides small-unit leaders with a framework (troop leading procedures) to analyze a mission, develop a plan, and prepare for an operation. In addition, chapter 2:

- Discusses parallel planning.
- Describes orders
- Explains the four types of rehearsals.
- Defines Precombat checks and inspections.

Chapter 3 – Offense

Chapter 3 discusses offensive actions to defeat, destroy, or neutralize the enemy. The chapter addresses the characteristics of the offense and describes the four offensive operations (discussion mainly focuses on movement to contact and attack). Chapter 3 also discusses—

- Forms of maneuver.
- Actions on Contact.
- Common offensive planning considerations.
- Operations during limited visibility.

Chapter 4 – Defense

This chapter covers the conduct of the defense, common defensive planning considerations, types of defensive operations, engagement area development, and fighting position construction. Chapter 4 also describes:

- The characteristics of the defense.
- The variations of Area Defense.
- The techniques of conducting an area defense.

Chapter 5 – Enabling Operations and Activities

Chapter 5 describes the enabling tasks, which are specialized missions that platoons plan and conduct to seize or retain a tactical advantage and establishes techniques and procedures the mechanized Infantry platoon can apply to these specialized missions. These include:

- Assembly areas.
- Passage of lines.
- Relief in place.
- Breaching.
- Chemical, biological, radiological, and nuclear (CBRN) operations.
- Counter-unmanned aircraft system and electromagnetic warfare.

Chapter 6 – Sustainment

Chapter 6 discusses the process that the platoon leader and platoon sergeant use to anticipate the needs of the mechanized Infantry platoon. In addition, chapter 6 addresses—

- Sustainment responsibilities and relationships within the platoon.
- Planning, preparation, execution, and assessment for:
  - Supply and field services.
  - Distribution and resupply operations.
  - Maintenance.
- Tactical combat casualty care.

Appendixes

There are 4 appendixes in the publication. They are—

- Appendix A: Direct Fire Planning and Control
- Appendix B: Fire Support Planning
- Appendix C: Battle Drills
- Appendix D: Crew Drills

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Chapter 1
Organization

The fundamental mission of the mechanized Infantry platoon and squad is to close with and destroy the enemy. The purpose of the mechanized Infantry platoon and squad in large-scale combat operations is to conduct offensive, defensive and stability operations, and domestically provide defense support of civil authorities. This chapter discusses the doctrine that is the basis for platoon and squad techniques, and procedures. It discusses the skills and individual responsibilities required of leaders and Soldiers at the small-unit level.

SECTION I – ROLE OF THE MECHANIZED INFANTRY PLATOON AND SQUAD

1-1. The mechanized Infantry platoon and squad are part of the mechanized Infantry company and when task organized may be part of a company team within the combined arms battalion (CAB). The mechanized Infantry platoon is organized to conduct continuous execution of offensive, defensive, and stability operations or defense support of civil authorities. The mechanized platoon can deploy rapidly and execute missions throughout the range of military operations. The platoon can conduct effective combat or other operations immediately upon arrival in an operational area. This section addresses the mission, capabilities, limitations, and organization of the mechanized Infantry platoon and squad.

1-2. The mechanized Infantry platoon and squads are a versatile force that can fight mounted or dismounted. The Bradley fighting vehicle (known as BFV) provides the platoon leader (known as PL) the flexibility to fight the dismounted and mounted element mutually supporting or independent of each other. The BFV is an extremely powerful and robust weapon system that enables the mechanized Infantry to find and destroy the enemy at long ranges while the dismounted Infantry, supported by the BFV, can destroy the enemy in close combat. The *enemy* is a party identified as hostile against which the use of force is authorized (ADP 3-0).

MISSION

1-3. The mission of the mechanized Infantry is to close with the enemy by means of fire and movement to defeat or capture, or to repel assault by fire, close combat, or counterattack. Despite any technological advances, the only way to gain the advantage in operations is by close combat between ground forces. BFV-equipped mechanized Infantry platoons play the following main roles in close combat situations:

- Operate mainly at night or during other periods of limited visibility.
- Penetrate and hold existing (natural and man-made) obstacles and difficult terrain as pivots for operational and tactical maneuver.

- Attack by Infantry squads over approaches not feasible for armored forces.
- Seize or secure wooded and built-up areas.
- Control restrictive routes for use by other forces.
- Conduct operations in the sustainment area.

1-4. Success in battle hinges on the actions of platoons, sections, and squads in close combat, on their ability to react to contact, employ suppressive fires, maneuver to a vulnerable flank, and fight through to defeat, destroy, or capture an enemy. Successful leaders understand how to fight their squads, sections, or platoons as intact organizations, and understand how to integrate both the mounted and dismounted elements into a maneuver force that maximizes the potential of both the Infantry and BFV. Mechanized leaders also understand how to use terrain to good advantage, how to operate their weapons with accuracy and deadly effect, and how to outthink, out move, and out fight the enemy. The BFV provides the capability to:

- Deliver mobile-protected transport of sufficient Infantry to the critical point on the battlefield.
- Deliver direct fire to support the dismounted Infantry.
- Deliver fires to suppress or destroy enemy fighting vehicles and light-armor vehicles.
- Deliver antiarmor fires to destroy enemy armor.
- Establish strong points to deny the enemy key terrain or flank positions.
- Establish battle positions (BPs) and engagement areas (EAs) as part of a larger defense.
- Integrate mounted and dismounted elements into offensive and defensive operations.
- Operate in a CBRN environment.

MULTIDOMAIN OPERATIONS

1-5. PLs should understand how higher headquarters (HQ) analyzes different domains in the operating environment and understand how leaders define large-scale combat operations. *Multidomain operations* are the combined arms employment of joint and army capabilities to create and exploit relative advantages to achieve objectives, defeat enemy forces, and consolidate gains on behalf of joint force commanders (FM 3-0). Multidomain operations are the army's contribution to joint campaigns, spanning the competition continuum. During conflict, the army forces close with and destroy the enemy, defeat enemy formations, seize critical terrain, and control populations and resources to deliver sustainable political outcomes. All operations are multidomain operations, however, the maneuver force's role in multidomain operations is to conduct combined arms maneuver.

DOMAINS

1-6. A *domain* is a physically defined portion of an operational environment requiring a unique set of warfighting capabilities and skills (FM 3-0). Land operations require mastery of terrain and ground maneuver. Cyberspace operations require mastery of digital information systems and computer code. Space, air, and maritime operations likewise require specific capabilities and skills. The five domains in multidomain operations are land, maritime, air, space, and cyberspace. The three dimensions are

human, physical, and information. (See FM 3-0 for more information.) Mechanized platoons will not plan for space and cyber capabilities, but they must assume that they will be operating in an environment where they will be contested in those domains.

LARGE SCALE COMBAT OPERATIONS

1-7. *Large-scale combat operations* are extensive joint combat operations in terms of scope and size of forces committed, conducted as a campaign aimed at achieving operational and strategic objectives (ADP 3-0). During large-scale combat operations, the platoon conducts offensive, defensive, stability, and enabling operations to defeat enemy forces. (See ATP 3-90.1 for more information.)

1-8. An *offensive operation* is an operation to defeat or destroy enemy forces and gain control of terrain, resources, and population centers (ADP 3-0). These types of operations impose the commander's will on the enemy. Even when conducting defensive operations, seizing, and retaining the initiative requires executing offensive operations at some point. (See ATP 3-90.1 for more information.)

1-9. A *defensive operation* is an operation to defeat an enemy attack, gain time, economize forces, and develop conditions favorable for offensive or stability operations (ADP 3-0). Successful defenses are aggressive, and commanders use all available means to disrupt enemy forces. (See ATP 3-90.1 for more information.)

1-10. A *stability operation* is an operation conducted outside the United States in coordination with other instruments of national power to establish or maintain a secure environment and provide essential governmental services, emergency infrastructure reconstruction, and humanitarian relief (ADP 3-0). Commanders are legally required to perform minimum-essential stability operations tasks when controlling a populated area of operation (AO) in an area considered under military occupation as defined in the law of armed conflict. These tasks may include security, food, water, shelter, and medical treatment. Commanders should consult with the assigned judge advocate or legal advisor when questions arise regarding the legal and ethical responsibilities during stability operations. (See ADP 3-07 for a more detailed discussion on stability.)

1-11. An *enabling operation* is an operation that sets the friendly conditions required for mission accomplishment (FM 3-90). Enabling operations, by themselves, do not directly accomplish the end state, but are required to successfully conduct offensive, defensive, and stability operations.

SECTION II – MECHANIZED INFANTRY PLATOON AND SQUAD

1-12. Mechanized Infantry platoons and squads normally operate as part of a larger force. They benefit from the support of other Infantry units, Armor, artillery, mortars, close air support (CAS), attack helicopters, air defense, and engineer assets. They also provide their own suppressive fires either to repel enemy assaults or to support their own maneuver. This section describes the mechanized Infantry platoon and squad.

ORGANIZATION

1-13. The mechanized Infantry platoon is equipped with four BFVs and is divided into two vehicle sections with three Infantry squads. Figure 1-1 depicts the BFV-equipped platoon organization. The BFV provides the PL the flexibility to fight the dismounted and mounted element mutually supporting or independent of each other. The platoon must prepare to fight in a variety of OEs. Once the Infantry squads have dismounted, the mounted element can provide a base of fire for the Infantry squads as they close with and destroy the enemy.

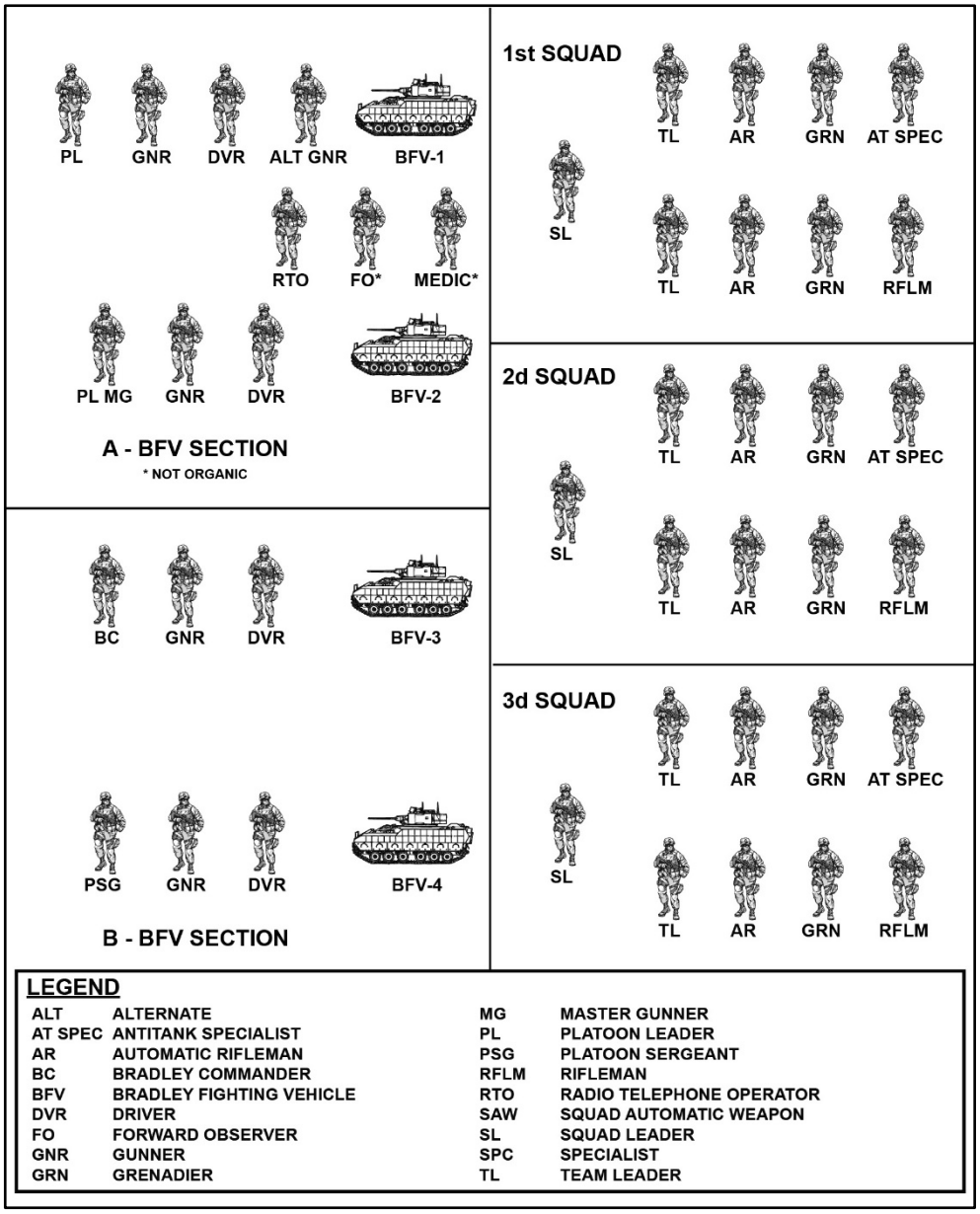


Figure 1-1. Mechanized Infantry platoon organization

MOUNTED ELEMENT

1-14. The mounted element consists of four BFV's that are organized into the following two sections. The A section with the PL as the section leader and the second BFV as the wingman. The B section with the platoon sergeant (known as PSG) as the section leader and the second BFV as the wingman.

DISMOUNTED ELEMENT

1-15. Three Infantry squads make up the platoon's dismounted element. The Infantry squads are organized as follows. The Infantry squad leader has two four-Soldier fire teams. Each fire team comprises:

- Fire team leader.
- Automatic rifleman.
- Grenadier.
- Rifleman.

1-16. Based on the mission, the squad can carry the Javelin command launch unit and missiles as well as a medium machine gun. Mechanized Infantry platoons employ the "arms room" concept, meaning leaders will decide which weapon to employ after a mission variable analysis. The Army mission variables are mission, enemy, terrain and weather, troops, and support available, time available, civil considerations, and information considerations (METT-TC [I]). An example is the PL may select to have the Infantry squads use Javelin missiles if there is an armor threat or conducting defensive operations. The PL select using medium machine guns when the dismounted Infantry is fighting in an urban environment or have a dismounted Infantry threat.

1-17. One rifleman is designated as the antiarmor specialist. The other rifleman in each squad is assigned the medium machine gun or is employed as a squad designated marksman with an optically enhanced general-purpose weapon. Leaders decide which weapon system to employ based on METT-TC (I).

RESPONSIBILITIES

1-18. The employment of the BFV by well-trained and proficient Soldiers enhances the platoon's capabilities to conduct operations with greater lethality, survivability, command and control, and mobility. The duties and responsibilities inherent within the mechanized Infantry platoon and squad enable the exercise of command and control throughout the conduct of operations. During operations, no amount of technology or equipment can take the place of competent leadership. The leaders within the platoon and squad lead through a combination of personal example, persuasion, and compulsion. Paragraphs 1-19 to 1-41 address the duties and responsibilities of the key personnel common to the mechanized Infantry platoon.

HEADQUARTERS ELEMENT

1-19. The HQ section provides the platoon with command and control, and communications. It consists of the PL the PSG, and the platoon to radio-telephone operator (known as RTO).

Platoon Leader

1-20. Leads the platoon in supporting the missions of the company, company team, and CAB. They base their actions on the concepts and mission of the company and CAB commanders. The PL bears the responsibility for all that the platoon does or fails to do, this includes the tactical employment, collective training, administration, personnel and property management, and logistics of the platoon. PLs know the Soldiers and how to employ the platoon and its weapons. They bear personal responsibility for positioning

and employment of all assigned or attached weapons. The PL regularly consults with the PSG on all platoon matters. List of responsibilities and duties are as follows:

- Leads by example.
- Knows, establishes, and enforces appropriate standards.
- Conducts troop leading procedures.
- Establishes the platoon's timeline and priorities of work.
- Integrates the combined maneuver of mounted and dismounted elements.
- Plans and controls employment of direct and indirect fires.
- Directs the maneuver of the entire mounted element when mounted.
- Serves as Bradley commander (known as BC) when mounted.
- Fights the platoon using appropriate movement and maneuver techniques, formations, and fire commands.
- Positions self in the best position to control the platoon's main effort or to achieve the platoon's decisive operation, which is frequently used by Infantry squads when the plan includes dismounted operations.
- Employs all available assets during limited visibility to designate targets for the direct and indirect fires.
- Conducts planning for current and future operations.
- Plans operations with the help of the PSG, section leaders, squad leaders, and other key personnel.
- Develops the indirect and direct fires plan with the PSG, section leaders, squad leaders, and forward observer (FO).
- Plans for and integrates supporting unmanned aircraft system (UAS) into reconnaissance or security requirements.
- Issues warning orders (WARNORDs) and operation orders (OPORDs), fragmentary orders (FRAGORDs), as necessary to accomplish the mission.
- Requests information and support from the company commander needed to help the platoon perform its mission.
- Monitors the company command net, and primarily provides operational assessments to the commander as necessary whether operating independently or as part of a higher operation.
- Monitors consumption and ensures crews' ability to upload or cross-level ammunition within the sections' or platoon's scheme of maneuver.
- Plans and assists the PSG in planning and coordinating sustainment for the platoon.
- Receives on-hand status reports from the PSG, section leaders and squad leaders during both planning and execution.
- Reviews platoon requirements based on the tactical plan.
- Coordinates and assists in the development of the obstacle plan.
- Analyzes tactical situations, disseminates, and filters information, and employs the full capabilities of the platoon's equipment (digital or analog) to accomplish the mission.
- Manages information.
- Ensures situation reports (SITREPs) are accurately prepared and sent forward to the company commander.
- Analyzes, and then disseminates to subordinates, pertinent tactical friendly and enemy updates.

- Monitors execution of platoon and companies' designated priorities of work.
- Designates rehearsal priorities.
- Designates and executes priorities for precombat inspections (PCIs).
- Directs implementation of protection and local security requirements including listening post/observation post (OP), CBRN, air guards, and local security patrols.
- Ensures all personnel are issued isolated Soldier guidance to facilitate recovery prior to capture, using DD Form 1833 *(Isolated Personnel Report [ISOPREP]).* (See FM 3-50.)

Platoon Sergeant

1-21. The PSG operates and controls the BFV mounted elements weapons systems, reliable communication, and casualty evacuation (CASEVAC). The PSG will dismount as required to accomplish the mission. The PSG is the senior noncommissioned officer (NCO) and most experienced Soldier in the platoon. The PSG assists and advises the PL. In the PL's absence, the PSG leads the platoon. The PSG supervises the platoon's administration, logistics, and maintenance. They handle individual training management and the professional development of the Soldiers. They advise the PL on appointments, promotions and reductions, assignments, and discipline of NCOs and enlisted Soldiers in the platoon. Their tactical expertise in platoon operations includes maneuver of the platoon and employment of all weapons. The PSG—

- Directs the maneuver and employment of the mounted element in the absence of the PL and, when necessary, controls the maneuver of other subordinate elements of the platoon.
- Serves as a BC when the platoon operates mounted.
- Monitors the company net. Primarily prepares and submits logistical reports, SITREPs, and other routine traffic to higher.
- Directs the platoon's CASEVAC process during mounted or dismounted operations.
- Receives and accounts for task organized attachments such as air defense assets, engineers, or other military occupational specialties.
- Takes charge of task-organized elements in the platoon during tactical operations, which may include, quartering parties, support elements in raids or attacks, and security patrols.
- Collects, prepares, and forwards logistical status updates and requests to the company HQ prior to, during, and following combat operations.
- Receives section and squad leaders' administrative, logistical, and maintenance reports and requests for rations, water, fuel, and ammunition.
- Ensures ammunition and supplies are properly and evenly distributed after the platoon consolidates on the objective and while the platoon reorganizes.
- Maintains platoon strength information, consolidates, and forwards the platoon's casualty reports, and receives and orients replacements.
- Coordinates and supervises company directed platoon resupply operations.
- Ensures Soldiers distribute supplies according to the PL's guidance and direction.

- Updates the PL on appropriate reports, and forwards reports needed by higher HQ.
- Enforces the execution of the platoon's timeline and priorities of work.
- Conducts PCIs.
- Monitors the morale, discipline, and health of platoon members.
- Ensures Soldiers maintain all equipment.
- Accounts for Soldiers, equipment, and supplies.
- Ensures all subordinates understand the isolated Soldier guidance issued through the platoon OPORD (see FM 3-50 and DD Form 1833).
- Supervises execution of assembly area (AA) procedures, resupply logistics packages (LOGPACs) and other routine functions.
- Supervises execution of directed protection requirements.
- Implements the PLs plan for integrating UAS into reconnaissance and security requirements.
- Responsible for the platoon's current operations and implementing directed guidance now and for the next several hours.
- Monitors consumption of critical supplies; designates priorities of support within the platoon.
- Prepares and submits a platoon sector sketch.
- Coaches, counsels, and mentors Soldiers.
- Upholds standards and platoon discipline.

Platoon Radiotelephone Operator

1-22. The RTO is primarily responsible for communication with its controlling HQ (usually the company). During operations, the RTO—

- Establishes and maintains platoon communications with higher HQ and subordinate elements and conducts regular radio checks, immediately informing PLs about any change in communications status.
- Conducts radio checks with higher HQ according to unit standard operating procedures (SOPs) and if radio contact cannot be made as required, the RTO informs the PSG or PL.
- Acts as an expert in radio procedures and report formats such as CAS, call for mortar and artillery fire, or medical evacuation (MEDEVAC).
- Maintains the frequencies and call signs for platoon and higher.
- Assists the PL and PSG employing digital command and control systems with individual squads and platoon.
- Assigns vehicle radio fills and is responsible for communications maintenance.
- Maintains responsibility for all platoon communications equipment.
- Constructs a sand table.
- Receives and analyzes routine reports from BCs or squads.
- Tracks completion of assigned tasks.
- Submits routine information to higher HQ, including task completion.

MOUNTED ELEMENT

1-23. The mounted element comprises four BFV's that are organized into the following two sections: The A section with the PL as the section leader and the second BFV as the

wingman. The B section with the PSG as the section leader and the second BFV as the wingman.

Section Leader

1-24. While mounted, the PL and PSG are the section leaders. However, if the PL or PSG must dismount, the senior BC within each section becomes the section leader, assisting and advising the PL in the employment of the mounted section. The section leader's responsibilities include, but not limited to:

- Tactically employing and maintaining the BFVs within the section and individual training of the section's personnel.
- Monitoring the vehicle and section position on the platoon formation, digital overlays, and digital reports.
- Navigating correctly, with or without precision navigation system.
- Sending spot reports as requested or when the section makes contact.
- Preparing and submitting a DA Form 5517 *(Standard Range Card).*

BFV Commander

1-25. The PL, PSG, and the two section leaders serve as the BC for their respective BFVs. In the PL's absence, the gunner assumes the responsibilities of the BC, and the alternate gunner moves to the gunner's position. When the PSG dismounts the gunner assumes responsibility as the BC. The BC—

- Acquires targets.
- Assigns sectors of fire to self and gunner using the gunner's sights and the Commander's Independent Viewer.
- Commands the vehicle in the section and platoon.
- Maintains turret orientation and continuous scanning within the BFV's assigned sector of fire.
- Controls vehicle fires independently or as part of the platoon's fire plan.
- Lays the gun for deflection.
- Issues fire commands.
- Holds the vehicle's position in platoon formations.
- Monitors the commander's tactical display for vehicle position, digital overlays, and digital reports.
- Navigates correctly, with or without precision navigation system.
- Sends SITREPs as requested or when the vehicle makes contact.
- Ensures the welfare of the crew.
- Trains Soldiers on BFV weapons systems and crew drills.
- Maintains the BFV hull and turret weapon systems.
- Ensures the dismounted element has full situational awareness prior to dismounting the vehicle.
- Ensures dismounts are clear of vehicle prior to conducting mounted operations.
- Is responsible for the close integration of mounted weapons in support of dismounted operations, whether as a vehicle or as part of a section or platoon's fires.

- Monitors and reports consumption of ammunition and fuel prior to and during the conduct of operations.
- Prepares and submits a Standard Range Card.

Bradley Fighting Vehicle Gunner

1-26. The gunner observes the battlefield to detect enemy targets. The gunner is responsible for the following:

- Operating the turret weapons as directed by the BC to engage and destroy targets.
- Serving as BC when only two people remain in the BFV.
- Bearing the responsibility for performing unit-level maintenance on the turret and its weapons systems.
- Assisting with navigation and with radio operation.

Bradley Fighting Vehicle Driver

1-27. The driver operates the vehicle under the BC's control. The driver is responsible for—

- Following terrain-driving procedures and tries to select hull-down positions.
- Helping detect targets and observe rounds fired.
- Helping with navigation by monitoring odometer readings and observing terrain.
- Bearing the main responsibility for maintaining the vehicle's automotive (hull) systems.
- Ensuring ramp is clear prior to raising or lowering.

DISMOUNTED ELEMENT

1-28. Three Infantry squads make up the platoon's dismounted element. The Infantry squads are organized as follows. The Infantry squad has two fire teams each with four Soldiers and a squad leader. Each fire team includes—

- Fire team leader.
- Automatic rifleman.
- Grenadier.
- Rifleman.

Squad Leader

1-29. A staff sergeant leads each of the three squads. Their squads are habitually associated with a vehicle section. The squad leader is responsible for the tactical employment of the squad and its weapons systems. The squad leader directs team leaders and leads by personal example. The squad leader is responsible for the accountability of squad members, has authority over subordinates and overall responsibility of those subordinates' actions. The squad leader is a tactical leader and leads by example. The squad leader—

- Accounts for Soldiers and equipment.
- Is the subject matter expert on all battle and individual drills.

- Is the subject matter expert for the squad’s organic weapons employment and employment of supporting assets.
- Monitors the squad leader's display, while mounted, for friendly position updates, overlay updates, and SITREPs, and to maintain awareness of the BFV's position relative to the platoon formation and the terrain.
- Maintains constant communications while mounted and keeps Soldiers informed.
- Passes appropriate information to the team leaders.
- Controls the maneuver of their squad and its rate and distribution of fire; controls two fire teams in the offense.
- Selects each fighting position in the defense; issues commands, codes, and signals to start, stop, and shift fires.
- Directs maintenance of squad weapons and equipment.
- Ensures Soldiers in the squads each receive the allotted material and supplies.
- Ensures supplies and equipment are internally cross leveled within the squad.
- Informs the PL and PSG regularly as to the squad's supply status and other squad requirements.
- Inspects the condition of Soldier's weapons, clothing, and equipment.
- Manages the logistical and administrative needs of the squad, to include requesting and issuing ammunition, water, rations, and special equipment.
- Completes casualty feeder reports and reviews casualty reports completed by squad members.
- Sends SITREPs and reports as requested by the PL or PSG.
- Trains their squad on individual and collective tasks required to sustain combat effectiveness.
- Prepares and submits a squad sector sketch.

Team Leader

1-30. Each squad includes two fire team leaders. The team leader leads the fire team members by personal example, is responsible for accountability of team members, and has authority over subordinates and overall responsibility of their actions. Centralized authority enables the team leader to maintain discipline and unity and to act decisively. Under the fluid conditions of close combat, the team leader accomplishes assigned missions using initiative without needing constant guidance from higher HQ. Team leaders lead from the front and set the example for the rest of the fire team. The team leader—

- Monitors the squad leader's display, while mounted, for friendly position updates, overlay updates, and SITREPs.
- Monitors the squad leader's display to maintain awareness of the BFV's position relative to the platoon formation and the terrain.
- Controls the fire team's movement and fire.
- Helps the squad leader control the squad tactically.
- Helps the squad leader train team members on individual and collective tasks and battle drills.
- Keeps Soldiers in the troop compartment well informed and alert.

- Sends SITREPs or spot reports as requested by the squad leader or as the team makes contact.
- Controls the team's fire and distribution by designating and marking targets.

Squad Members

1-31. Squad members provide local security needed; they also provide maintenance support for the BFV. Each squad member is equally responsible for the welfare of their squad. Squad members are defined as follows:

Rifleman

1-32. Each Infantry squad has two riflemen. Each rifleman is equipped with a rifle or carbine. One rifleman is designated as the antiarmor specialist (see below). The other rifleman in each squad can be assigned the medium machine gun or deploy as a Squad Designated Marksman with an optically enhanced general-purpose weapon. Riflemen employ the "arms room" concept, meaning leaders will decide which weapon to employ after a METT-TC (I) analysis.

Antiarmor specialist

1-33. As the designated Javelin or shoulder launched antitank gunner, the squad antiarmor specialist has a Javelin antitank missile system. This weapon system gives the squad, platoon, and company a lethal fire-and-forget, man-portable, top attack antiarmor capability. With it, they can defeat enemy main battle tanks during day, night, and adverse weather conditions up to 2,500 meters. If required, the squad antiarmor specialist destroys enemy armor threats that might impede the squad or platoon's progress.

Grenadier

1-34. Each Infantry squad has two grenadiers. The grenadier has an M320 weapon system, which consists of a rifle or carbine with attached 40-millimeter (mm) grenade launcher. With the M320, the grenadier gives the fire team an indirect-fire capability out to 350 meters. They can fire high-explosive (HE) rounds to suppress and destroy enemy Infantry and lightly armored vehicles. They can also employ smoke to screen and cover their squad's movement, fire, and maneuver. During limited visibility operations, the grenadier can also employ illumination rounds to increase the squad's visibility and to mark enemy or friendly positions and can cover dead space with HE to deny enemy movement.

Automatic rifleman

1-35. Each Infantry squad has two automatic weapons. The automatic rifleman mainly uses the squad automatic weapon. The squad automatic weapon gives the squad a high volume of sustained, long-range, suppressive, or lethal fires far beyond the range of the rifleman. The automatic rifleman uses the squad automatic weapon to suppress enemy Infantry and bunkers, to destroy enemy automatic rifle and antitank teams, and to enable other teams and squads to maneuver.

Combat Lifesaver

1-36. The *combat lifesaver* is a nonmedical Soldier of a unit trained to provide enhanced first aid as a secondary mission (FM 4-02). The combat lifesaver (CLS) is not intended to take the place of medical personnel. Using specialized training, the CLS can slow deterioration of a wounded Soldier's condition until treatment by medical personnel is possible. Each certified CLS is issued a CLS aid bag and should have a laminated quick reference GTA 08-01-004. Whenever possible, the PL ensures each fire team includes at least one CLS. (See chapter 6, section IV for additional information on CLSs.) The CLS—

- Ensures that the squad CLS bags and litters are properly packed and stored.
- Identifies Class VIII shortages to the platoon medic.
- Applies appropriate tactical combat casualty care (TCCC) skills for injuries and participates in all manual and litter-carry drills.
- Uses appropriate TCCC skills in the field until casualties can be evacuated or medical personnel take over.
- Assists medical personnel in providing TCCC and preparing patients for evacuation.
- Knows the location of the casualty collection point (CCP) and the unit's SOP for establishing it.
- Initiates DD Form 1380 *(Tactical Combat Casualty Care [TCCC] Card),* when required.

Note. Leaders within the platoon should make the CLS program a training priority.

HABITUAL ATTACHMENTS

1-37. Habitual attachments for the mechanized Infantry platoon normally include a platoon FO team and a platoon combat medic. These habitual attachments are normally attached when the platoon deploys. In a mechanized Infantry company, a field maintenance team (FMT) may be attached to that company to provide direct support to the mechanized platoon. That maintenance team will generally remain in the AA or remain at least one terrain feature behind the company during the conduct of planned operations. PL s should form relationships and understand capabilities of attachments and direct support personnel.

Forward Observer

1-38. The FO, along with the FO's fire support RTO, is the platoon subject matter expert on indirect fires planning and execution. The FO advises the PL and subordinate leaders on the employment and execution for all fire support assets (if assigned), including, CAB mortars, field artillery (FA), and other allocated fire support assets. The FO is responsible for locating targets and calling for and adjusting indirect fires. The platoon FO team also knows the mission and concept of operations, specifically the platoon's scheme of maneuver and concept of fires. The FO also—

- Informs the company fire support team (FIST) of the platoon's situation, location, and indirect fire support requirements.

- Prepares and uses maps, overlays, and terrain sketches.
- Calls for and adjusts indirect fire.
- Selects targets to support the platoon's mission.
- Selects OPs and movement routes to and from selected targets.
- Operates digital message devices and maintains communication with the company and CAB fire support officers (FSOs).
- Maintains grid coordinates of current location.
- Prepares to employ Army aviation attack and reconnaissance, and joint and multinational CAS assets.
- Is responsible for all aspects of planning and executing indirect fire and, in the absence of a FIST, the PL is responsible.

Combat Medic

1-39. Combat medics are allocated to mechanized Infantry rifle companies based on one combat medic per platoon, and one senior combat medic per company. The platoon combat medic or the company senior combat medic goes to the casualty's location, or the casualty is brought to the combat medic at the CCP. The CCP combat medic makes an assessment, administers initial medical care, initiates a DD Form 1380 (see chapter 6, section 3), then requests evacuation or returns the individual to duty.

1-40. When mounted. the mechanized Infantry platoon combat medic usually rides in the same vehicle as the PSG. When the platoon dismounts, the combat medic positions themselves with the dismounts. TCCC and emergency medical treatment procedures performed by the combat medic may include opening an airway, starting intravenous fluids, controlling hemorrhage, preventing, or treating for shock, splinting fractures, or suspected fractures, and providing relief for pain.

1-41. The mechanized Infantry platoon combat medic is trained under the supervision of the battalion surgeon or physician's assistant on medical tasks and the medical PL and PSG on tactical tasks. The platoon combat medic is under the direct supervision of the company senior combat medic when attached to the company. The platoon combat medic—

- Triages injured, wounded, or ill friendly and enemy personnel for priority of treatment.
- Conducts sick call screening.
- Assists in the evacuation of sick, injured, or wounded personnel under the direction of the PSG.
- Assists in the training of the platoon's CLSs in enhanced first-aid procedures.
- Requisitions Class VIII supplies from the battalion aid station (known as BAS) for the platoon (individual first aid kit, CLS, aid bag) according to the tactical SOP.
- Recommends locations for platoon CCP, when established.
- Provides guidance to the platoon's CLSs as required.

BRADLEY FIGHTING VEHICLE

1-42. The BFV enhances the platoon's capabilities to conduct operations with greater lethality, survivability, sustainability, and mobility. The information systems enhance

the crew's communication during operations. Because the mechanized Infantry platoon can transfer more information at every level, leaders and Soldiers must work together to manage the information.

WEAPON SYSTEMS

1-43. The BFV's four weapon systems include the M242-25-mm automatic gun, the M240C 7.62-mm coaxial machine gun, the tube-launched, optically tracked, wire-guided/wireless (TOW) missile-launcher system (TOW 2A, 2B, and bunker buster), and two smoke-grenade launchers.

LETHALITY

1-44. The BFV features an Improved Bradley Acquisition System (known as IBAS), which includes an improved target acquisition subsystem and missile control subsystem. The improvements include a second-generation, forward-looking infrared (IR) radar; a thermal sight; a target-designation function; dual-target tracking; an eye-safe laser range finder; an automatic gun-target adjustment; automatic optical alignment; and commanders independent viewer capability. Second-generation forward-looking IR radar allows the BC or gunner to identify and acquire targets beyond the range of the vehicle's weapon systems. The IBAS is the primary optic for the Bradley and has multiple internal sights (binocular and monocular) with the capability to display day (clear) and night (thermal) views. The commander's independent viewer provides the commander a 360 degrees panoramic viewing capability for acquiring a target in a day/night battlefield environment and for target handoff to the gunner for engagement. The M2A3/4 BFV can use the 25-mm or 7.62-mm to engage either of two targets appearing in the same field of view, and the TOW while stationary.

SURVIVABILITY

1-45. Equipment on the BFV that helps ensure survivability includes—

- Roof fragmentation protection.
- Mounting capability for reactive armored tiles.
- 10-Soldier gas particulate filter unit.
- Halon fixed fire suppression systems in engine and personnel compartments.
- Portable carbon dioxide fire extinguishers.
- Bradley urban survivability kits.
- Bradley advanced survivability seats.
- Grenade launcher with two types of rounds:
  - M82 smoke screening simulant.
  - L8A1/L8A3 smoke screening red phosphorous.

CAPABILITIES

1-46. In accomplishing its assigned missions, the platoon employs close combat forces and sustainment assets within its capabilities. The platoon's effectiveness depends on the synergy of its subordinate elements, to include its BFVs and the Infantry squads. To employ the platoon effectively, the PL capitalizes on its strengths. The BFV-equipped mechanized Infantry platoon can—

- Assault enemy positions.

- Assault with small arms and indirect fire to deliver Infantry squads to tactical positions of advantage.
- Use 7.62-mm coaxial machine gun for personnel and trucks.
- Destroy light armor vehicles using direct fire from the BFV.
- Employ 25-mm cannon fire to fix, suppress, or disrupt the movement of fighting vehicles and antiarmor systems up to 2,500 meters.
- Use armor-piercing fin-stabilized discarding sabot tracer (APFSDS-T) and armor-piercing discarding sabot with tracer (APDS-T) for engaging enemy armor.
- Use high explosive incendiary tracers (HEI-T) for engaging light-skinned vehicles and fixed fortifications.
- Use TOW fires to destroy tanks and fighting vehicles out to 3,750 meters (see TC 3-22.32 for types of rounds and ranges).
- Use Javelin fires to destroy tanks and fighting vehicles out to 2,500 meters.
- Block dismounted avenues of approach.
- Seize and retain key and decisive terrain.
- Clear danger areas and prepare positions for mounted elements.
- Conduct mounted or dismounted patrols and operations in support of security operations.
- Develop the situation through reconnaissance and close combat.
- Establish defensive BPs to deny the enemy important terrain or flank positions.
- Overwatch and secure tactical obstacles.
- Repel enemy attacks through close combat.
- Conduct assault breaches of obstacles.
- Participate in air assault operations.
- Operate in a CBRN environment.
- Conduct stability tasks.
- Assist in CASEVAC.

LIMITATIONS

1-47. The PL must understand the limitations of the BFV-equipped mechanized Infantry platoon to effectively employ the platoon. These limitations include the following:

- High consumption rate of Class III (petroleum, oils, and lubricants), Class V (ammunition), and Class IX (repair parts and components for equipment maintenance).
- Dependency on LOGPACs from the forward support company (FSC) to maintain continuous operations.
- Built-up areas, dense woods, and other restricted terrain reduce the mobility of BFVs.
- BFVs are vulnerable to enemy antiarmor fire, attack helicopters, mines, antitank guided missile (ATGM) and close attack aircraft.
- Infantry squads are vulnerable to small arms fire, anti-personnel mines, conventional and improvised explosive hazards, and indirect fire when dismounted.
- The foot speed of the dismounted Soldiers may establish the pace of operations.

- The BFV poses a variety of challenges during water crossing operations including availability of bridges with sufficient weight classifications and adequate fording sites.
- Radio communications may be significantly degraded in built-up areas and other restricted terrain.
- Noise generated by BFVs may prevent them from arriving in an area undetected.
- BFVs have a large vehicle signature.

SECTION III – MECHANIZED INFANTRY AND ARMOR COMPANY

1-48. The role of the Armor and mechanized Infantry and Armor company is to fight and win engagements on any battlefield in any operating environment. The CAB commander may task organize the company into company teams to execute close combat tactical missions as part of Armored brigade combat team (ABCT) operations. Companies are optimized to conduct offensive, defensive, and stability operations. Companies can deploy worldwide while conducting operations across the range of military operations. The CAB has two mechanized Infantry companies and one Armor company. The second variation is two Armor companies and one mechanized Infantry company. Application of Armor and mechanized Infantry companies as a combined arms team can capitalize on the strengths of the company elements while minimizing their limitations. (See ATP 3-90.1 for more information).

MECHANIZED INFANTRY COMPANY

1-49. The mechanized Infantry company is designed to fight and win engagements on any battlefield in any operational environment (OE). Its design optimizes the company to conduct offensive and defensive operations. However, it is equally organized and trained to conduct operations focused on stability operations. The mechanized Infantry company can deploy worldwide and conduct missions in large-scale combat operations.

1-50. The mechanized Infantry company consists of a HQ and three mechanized Infantry platoons that are organized, equipped, and trained to fight with organic assets or as a task-organized company. The HQ element includes two BFVs and is under the command of the commander and executive officer (XO). The mechanized Infantry company has the following capabilities:

- Seizes and retains key terrain.
- Assaults enemy positions.
- Infiltrates enemy positions.
- Conducts combat operations under limited visibility.
- Clears enemy from restricted and urban terrain.
- Blocks mounted or dismounted avenues of approach.
- Conducts dismounted or mounted patrols.
- Conducts reconnaissance and security operations.
- Participates in air assault operations.
- Repels enemy attacks with close combat.
- Establishes strong points to deny the enemy key terrain or flank positions.

- Establishes BPs and EAs as part of a larger defense.
- Operates in a CBRN environment.

1-51. A maintenance section from the FSC is normally in direct support of the mechanized Infantry company. An ambulance squad in the CAB may deploy and attach an armored MEDEVAC vehicle to a mechanized Infantry company with its assigned crew of one emergency care sergeant with two ambulance drivers/crew.

1-52. The company maneuvers in various types of terrain, climate, and visibility conditions. It capitalizes on all forms of mobility, to include helicopters and tactical airlift. The combination of BFVs and dismounted Infantry makes it well suited for employment in large-scale combat operations. Unlike the Infantry and Stryker rifle companies, it has no organic mortars. (See figure 1-2.)

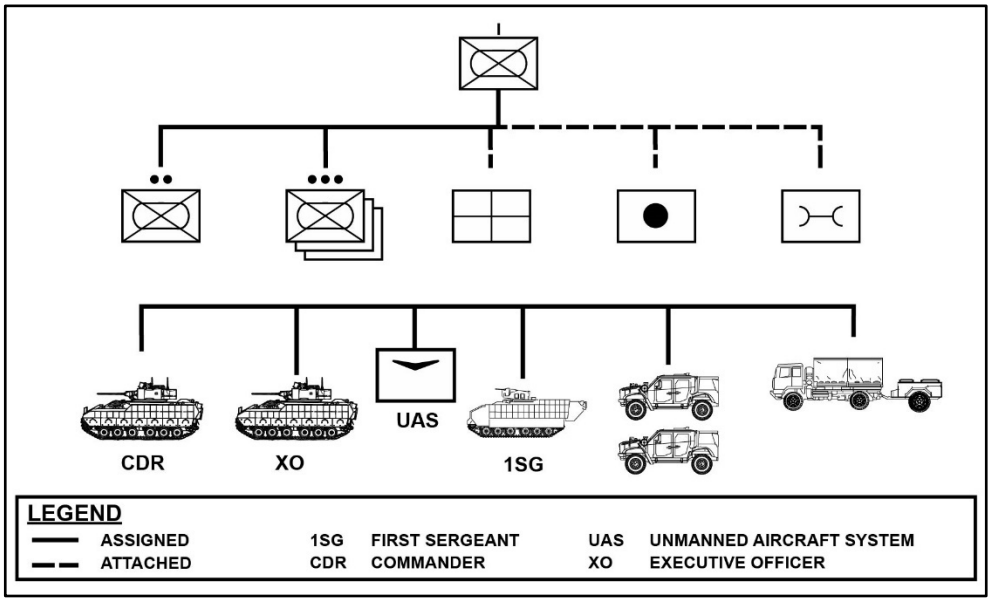


Figure 1-2. Mechanized Infantry company

ARMOR COMPANY

1-53. The Armor company is designed to fight and win engagements through speed, firepower, and shock effect. As with the mechanized Infantry company, its design optimizes the Armor company to conduct offensive and defensive operations. However, it may be organized and trained to conduct operations focused on stability operations. The company can deploy worldwide and conduct large-scale combat operations.

1-54. The Armor company consists of a HQ and three tank platoons that are organized, equipped, and trained to fight with organic assets or as a task-organized company. The HQ element includes two tanks commanded by the commander and XO. The Armor company has the following capabilities:

- Conducts operations requiring firepower, mobility, armored protection, and shock effect.

- Reduces mine and wire obstacles when equipped with mine rollers and mine plows.
- Employs a combination of fire and maneuver to destroy enemy tanks, fighting vehicles, antiarmor systems, and emplacements.
- Seizes key terrain.
- Assaults enemy positions.
- Provides support, in the form of armor protection and fires, to Infantry and engineer elements in restricted or urban terrain or during an assault.
- Conducts combat operations under limited visibility.
- Conducts mounted patrols.
- Blocks mounted avenues of approach.
- Conducts security, screen, and guard operations.
- Operates effectively as a counterattack or penetration force as part of a larger operation.
- Establishes BPs and EAs as part of a larger defense.
- Establishes strong points to deny the enemy key terrain or flank positions.
- Operates in a CBRN environment without individual protective equipment when the collective protection and overpressure systems in the M1 tank are operational.

1-55. A maintenance section from the FSC normally provides direct support to the Armor company. An ambulance squad in the CAB may deploy and attach an armored MEDEVAC vehicle to an Armor company with its assigned crew of one emergency care sergeant with two ambulance drivers/crew. (See figure 1-3.)

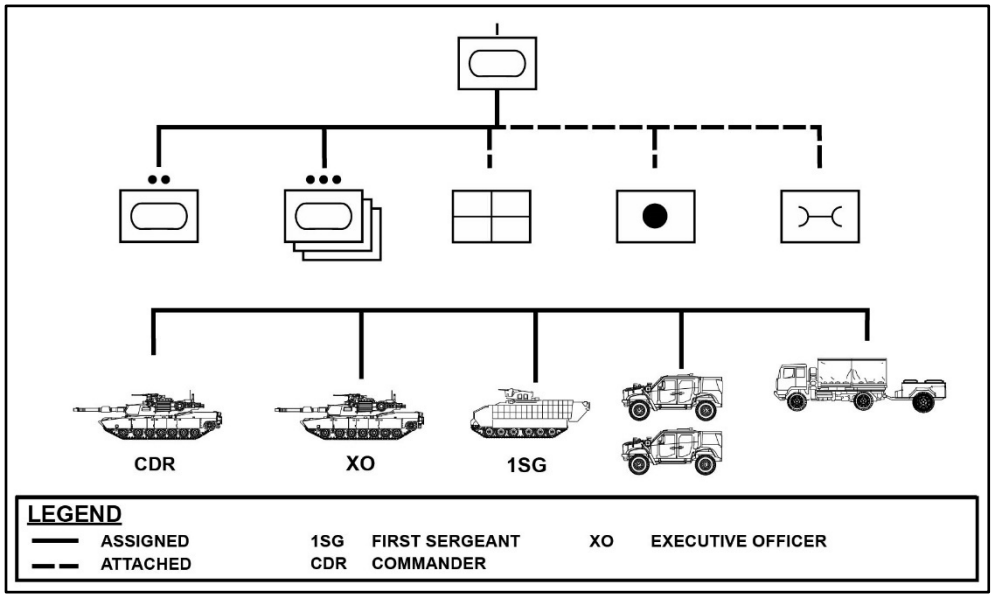


Figure 1-3. Armor company

MECHANIZED INFANTRY AND ARMOR COMPANY TEAM

1-56. The role of the Armor and mechanized Infantry company team is to fight and win engagements on any battlefield in any OE. The CAB commander may task organize the company team to execute close combat tactical missions as part of ABCT operations. Company teams are optimized to conduct offensive, defensive, and stability operations. Company teams can deploy worldwide and conduct operations across the range of military operations.

1-57. The company team is task-organized with mechanized Infantry and tank platoons based upon missions. Its effectiveness increases through the synergy of combined arms including tanks, BFVs, Infantry, engineers, and support elements. Typically, an Armor company team comprises two tank platoons with one mechanized Infantry platoon. A mechanized Infantry company team comprises two mechanized Infantry platoons with one tank platoon. However, the final task organization may include a variety of attachments. This determination is made to ensure that main and supporting efforts have the right elements at the appropriate time. Additional considerations include assigned tasks, terrain, and the nature of enemy forces. Effective application of the company team as a combined arms force can capitalize on the strengths of the team's elements while minimizing its respective limitations. See ATP 3-90.1 for more information.

SECTION IV – THE COMBINED ARMS BATTALION

1-58. *Combined arms* is the synchronized and simultaneous application of arms to achieve an effect greater than if each element was used separately or sequentially (ADP 3-0). The mechanized Infantry platoon and company operate within a larger organization, such as the CAB. The CAB is part of the ABCT. While ABCTs are the Army's armored combined arms force, it is the CAB, with the main battle tanks, BFVs, 120-mm mortar systems, scouts, and Infantry squads that provides its tremendous striking power. The combination of firepower, mobility, protection, and information collection capabilities make it invaluable to the ABCT commander when conducting large-scale combat operations. Depending upon the threat, the CAB can fight without augmentation. It can also be tailored and task-organized to meet the precise needs of its mission that are directly influenced by the OE. (Refer to ATP 3-90.5 for more information).

1-59. CABs are organized to fight and win offensive and defensive operations but are equally capable of executing stability and defense support of civil authority tasks as part of a joint task force. The CAB combines the efforts of its HQ, Armor, and mechanized Infantry companies to execute tactical missions as part of an ABCT operation. CABs have the ability to mass combat power quickly while integrating and synchronizing the supporting and sustaining multipliers.

1-60. The CAB is designed around one of two configurations, two mechanized Infantry companies and one Armor company or two Armor companies and one mechanized Infantry company (see figures 1-4 and 1-5 on page 22). The Brigade Support Battalion provides an organic FSC, which is attached to the CAB and is responsible for maintenance and sustainment. The FSC is organized with maintenance and vehicle

recovery platoons and sections, a distribution platoon and field feeding section. The FSC is in direct support of the CAB for all sustainment operations. Besides the maneuver companies and FSC the CAB also has a HQ company with CAB staff and enablers. The CAB organization also includes the following:

- Scout platoon.
- Mortar platoon.
- Sniper squad.
- Medical platoon.

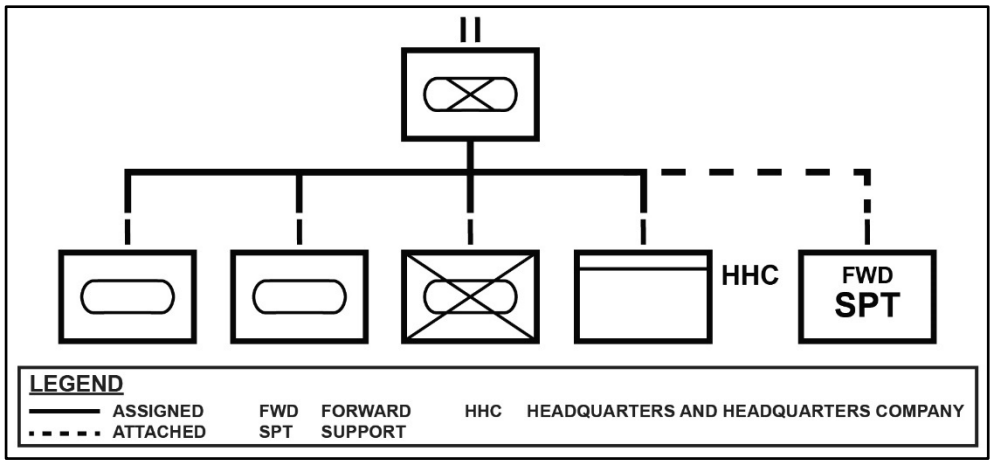


Figure 1-4. Combined arms battalion (Armor heavy).

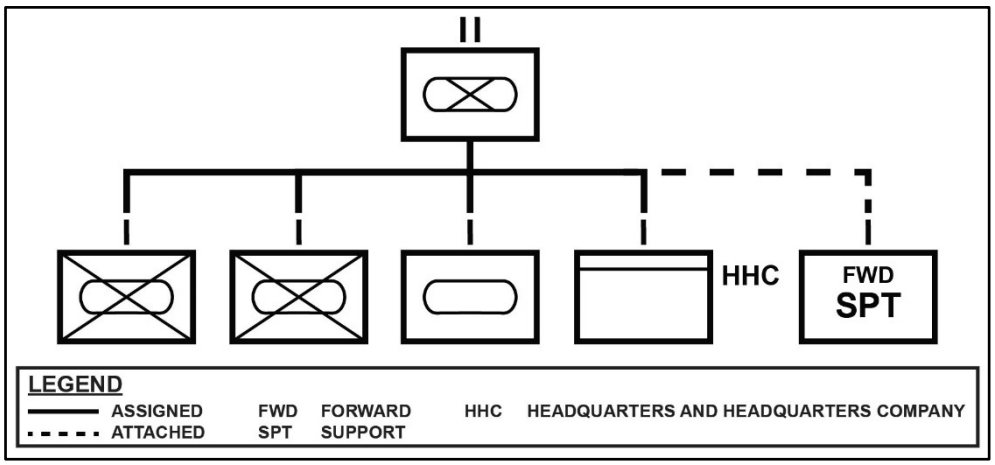


Figure 1-5. Combined Arms battalion (Infantry heavy)

Chapter 2

Planning and Preparing for Operations

Troop leading procedures (TLP) begin when the PL receives the first indication of an upcoming mission and they continue throughout the operational process (plan, prepare, execute, and assess). TLP comprise a sequence of actions that help PLs use available time effectively and efficiently to issue orders and execute tactical operations. TLP are not a hard and fast set of rules, but rather a guide that must be consistently applied with the situation and the experience of the PL and their subordinate leaders. All leaders from PL to team leader conduct TLP using the same steps described in this chapter.

SECTION I – TROOP LEADING PROCEDURES

2-1. *Troop leading procedures* are a dynamic process used by small-unit leaders to analyze a mission, develop a plan, and prepare for an operation (ADP 5-0). An *operation* is a sequence of tactical actions with a common purpose or unifying themes (JP 1, Vol 1). TLP begin when the PL receives the WARNORD from the company commander. TLP are a format to help PLs use time available effective and efficiently to issue orders and execute tactical operations. TLP are not a hard and fast set of rules, but rather a guide that must be consistently applied with the situation. (See figure 2-1 on page 24.)

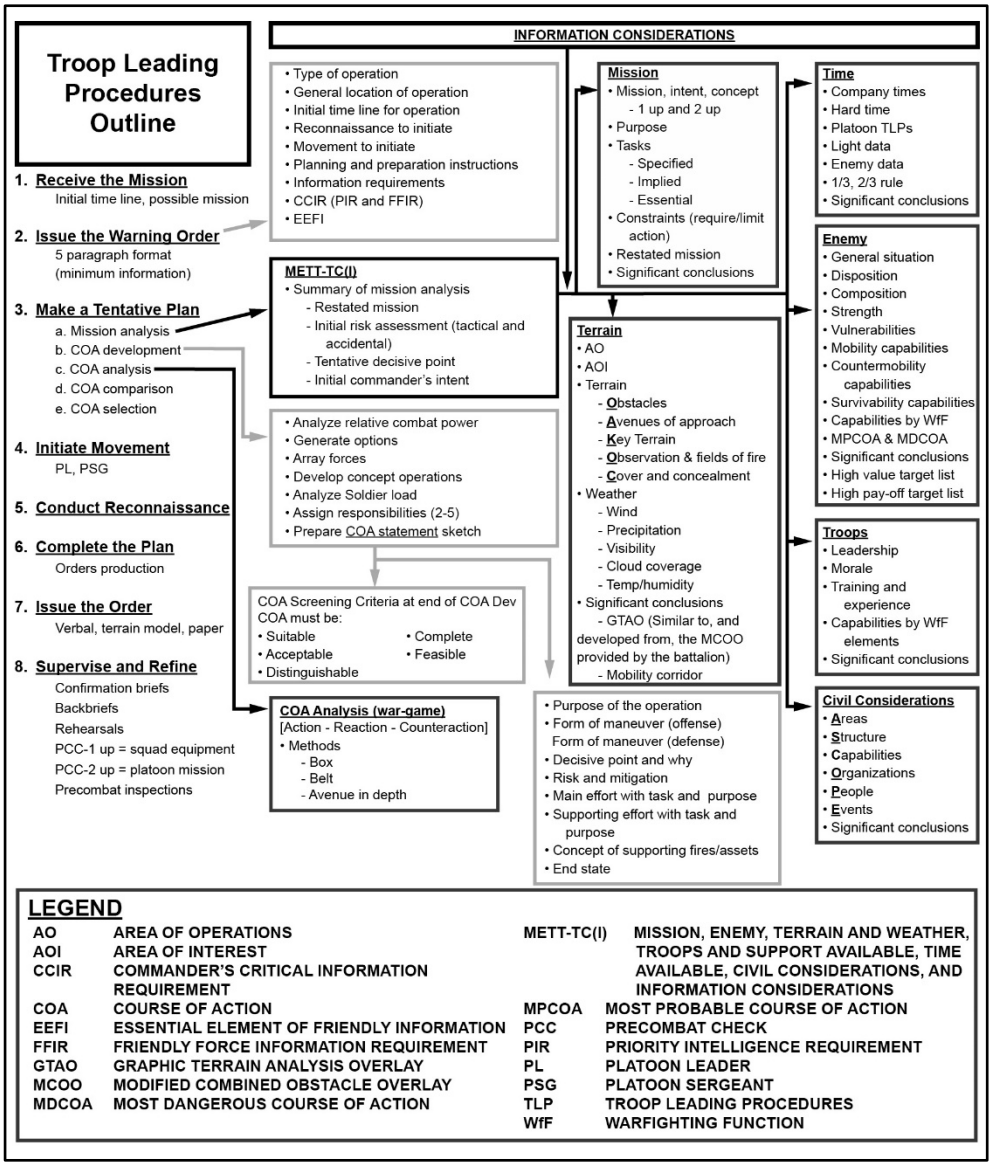


Figure 2-1. Troop leading procedures outline

2-2. The tasks involved in some actions (such as initiating movement, issuing the WARNORD, and conducting reconnaissance) may recur several times during the process. The last action (activities associated with supervising and refining the plan) occurs continuously throughout TLP. The squad leader conducts TLP the same way as the PL.

2-3. The PL must understand that their planning is parallel with the higher HQ. (See figure 2-2.) As the higher HQ plan develops, the PL must continue to develop their own

plan, up until execution. The PL should backbrief the company commander following the company OPORD to ensure they understand the commander's intent. Once they confirm their commander's intent, they begin the TLP process. The *commander's intent* is a clear and concise expression of the purpose of the operation and the desired objectives and military end state (JP 3-0).

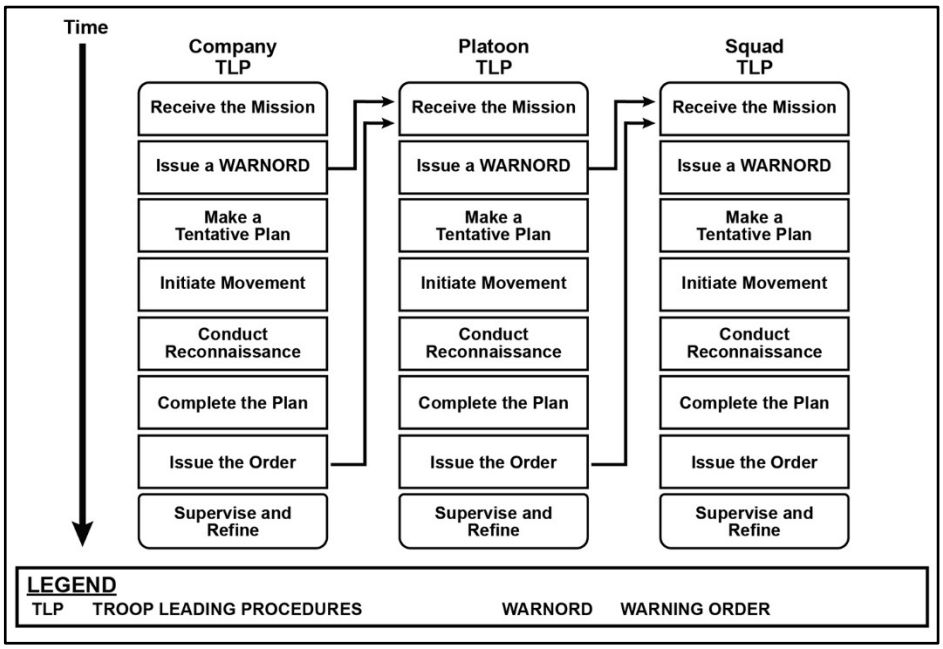


Figure 2-2. Parallel planning

2-4. The PL does not plan in isolation. They should utilize their PSG, squad leaders and BCs to aid in the planning process. The experience of the NCOs enables to PL to plan effectively in a time constrained environment. An example of assigned planning responsibilities is:

- PSG, squad leaders, and section leaders help plan paragraph 3, execution.
- PSG, medic, and FMT representative plan paragraph 4, sustainment.
- RTO helps plan paragraph 5, command, and signal.

2-5. This section discusses each step of TLP, which provide small-unit leaders a framework for planning and preparing for operations. are a sequence of actions that assist leaders to effectively and efficiently use available time to issue orders and execute tactical operations while understanding and mitigating the inherent risk that is involved with any operation. TLP consist of eight steps. The sequence of the steps of TLP is not rigid. Leaders modify the sequence to meet the mission, situation, and available time. The steps of TLP are—

- Step 1. Receive the mission.
- Step 2. Issue a WARNORD.
- Step 3. Make a tentative plan.
- Step 4. Start necessary movement.
- Step 5. Conduct reconnaissance.

- Step 6. Complete the plan.
- Step 7. Issue the complete order.
- Step 8. Supervise and refine.

2-6. Time management is the key; the PL maximizes available planning time by starting as soon as they receive the first bit of information about the upcoming operation. Some of the following steps are done concurrently, and others are continuous throughout the operation. One of the most critical aspects of planning is providing subordinates with a timeline for the mission.

2-7. The PL follows the one-thirds, two-thirds rule when planning their operations. The one-thirds, two-thirds rule allocates one-third of the planning time to the leader and the remaining two-thirds planning time for their subordinates to conduct TLP.

STEP 1: RECEIVE THE MISSION

2-8. Receive the mission may occur in several ways. It may begin with the initial WARNORD or OPORD from higher HQ, or when a leader anticipates a new mission. The PL determines their units' missions and assesses the time available to accomplish them.

2-9. Upon receipt of the WARNORD, FRAGORD, or OPORD, the PL's first task is to extract their mission from the commander's overall plan. The key to understanding the platoon mission as part of the company mission lies in two elements of the plan: one- and two-level higher commander's intent and the concept of operations. The PL's understanding of the commander's intent, as well as their task and purpose, allows them to use their initiative, exploit battlefield opportunities, and accomplish the commander's plan. It's imperative for the PL to consult with their PSG once they receive the mission to develop the platoon's WARNORD. If they do not understand the intent or purpose, they must ask the commander for clarification.

STEP 2: ISSUE A WARNING ORDER

2-10. The PL alerts their platoon to the upcoming operation by issuing a WARNORD. The amount of detail included in a WARNORD depends on the available time, the platoon's communications capability, and the information subordinates need to initiate proper planning and preparation. The PL issues the WARNORD as soon as possible to facilitate subordinate preparation and planning (see figure 2-3). The WARNORD may include the following information:

- Changes to task organization.
- Updated graphics.
- Enemy and friendly situation changes.
- Company mission.
- Commander's intent.
- Platoon mission.
- Specified tasks and implied tasks.
- Initial rehearsal guidance.
- A tentative timeline, to include the following:
  - Earliest time of movement.
  - Readiness condition (REDCON) and vehicle preparation schedule.

- Reconnaissance.
- Rehearsal schedule.
- Time and location at which the platoon OPORD will be issued.
- Time of precombat check (PCC)/PCI.

Warning Order # **to Operations Order #**
Initial Task Organization:
Effective Date/Time:

1. Situation:
General Enemy Overview:
- Area of Operation (AO)
- Area of Interest (AOI)
- Who the Platoon/Squad is fighting
- Battalion Mission
- Battalion Commander Intent
- Company Mission
- Company Commander Intent

2. Mission:
Upcoming Task and Purpose or Type of Operational/ General Location:

3. Execution:
Movement Instructions/Movement to Initiate:
- Our Current Location
- Our Next Location:
- Objective Location:

Reconnaissance Guidance/Reconnaissance to Initiate:
Information Requirements:
Coordinated Instructions:
- Mission-Oriented Protective Posture (MOPP)
- Collection Operations Management (COM)
- Route
- Zero/Boresight
- Precombat Inspections
- Commander's Critical Information Requirement (CCIR)
  - Priority Intelligence Requirement (PIR)
  - Friendly Force Information Requirement (FFIR)
- Priorities of Work
- Order of Movement
- Priorities of Rehearsals

Initial Operational/Planning Timeline:
- Platoon/Squad Operational/Planning
- Enemy
- Weather (WX)/Light Data

4. Sustainment:
Planning/Preparation Instructions:
Company Trains Grid
Unit Maintenance Collection Point (UMCP) Grid
Logistics Release Point (LRP) Grid
Ambulance Exchange Point (AXP) Grid
Casualty Collection Point (CCP) Grid
Class of Supply:
- Class I
- Class III
- Class IV
- Class V
- Others

5. Command and Signal:
Platoon Command Post (CP):
- Primary CP
- Alternate CP (when required)

Succession of Command
Platoon Grid
Company Command Post Grid

Figure 2-3. WARNORD example

STEP 3: MAKE A TENTATIVE PLAN

2-11. Once the PL has issued the WARNORD they develop a tentative plan. To form the tentative plan the PL performs mission analysis utilizing the mission variables of METT-TC (I). The PL should utilize their PSG and squad leaders' tactical knowledge to assist in developing the plan.

2-12. PLs do not need to wait for a complete company OPORD before starting to develop a tentative plan. PLs can begin mission analysis upon receipt of the company WARNORD.

2-13. *Situational understanding* is the product of applying analysis and judgment to relevant information to determine the relationships among the operational and mission variables. (ADP 6-0). The PL conducts mission analysis to develop and to confirm what the platoon must do to accomplish the mission. The PL conducts mission analysis by evaluating the mission variables of METT-TC (I). The PL plans within the time constraints of the mission while still adhering to the one-third, two-thirds rule.

2-14. Mission analysis helps the PL answer the following questions:

- What is the current situation?
- What is the mission?
- How is the mission best accomplished?
- What are the possible risks?

2-15. The PL begins mission analysis immediately upon receipt of the mission from the company commander. During mission analysis, the PL—

- Restates the given mission.
- Conducts an initial risk assessment.
- Identifies tentative decisive point.

2-16. The PL can divide the planning amongst their subordinates in the platoon. They rely on the expertise and experience of their NCOs to develop a complete plan.

2-17. The PL oversees the planning of the mission. But in a time-constrained environment, the assistance from experienced NCOs allows the PL to coordinate with higher HQ and plan for the integration of assets available.

MISSION ANALYSIS

2-18. Mission analysis is the process the PL uses to gain a complete understanding of the mission assigned and the next and two levels higher commander's intent. During mission analysis the PL gathers all the tools to conduct mission planning. These tools may include but are not limited to:

- Modified combined obstacle overlay developed by the CAB S-2.
- Graphic terrain analysis overlay (known as GTAO) developed by the company commander.
- Enemy situation template developed by the company commander.
- Higher HQ's tentative timeline.
- Higher HQ's OPORD.
- Higher HQ's WARNORDs.

2-19. The PL uses the mission variables of METT-TC (I) to conduct mission analysis. The PL analyzes the variables as the information comes available from higher. They can lean on their NCOs to assist in analysis of the variables. At the conclusion of mission analysis, the PL will understand—

- CAB and company commander's intent.
- Factors of the mission variables as they relate to what the platoon must achieve.
- Tentative decisive point(s) essential to mission success.
- Tentative communications and electromagnetic warfare activities (see chapter 6 for more information).
- Type, nature, and probable location of enemy contact throughout the operation.

- Threat-based and accident-based risk hazards to platoon operations (see ATP 5-19 for more information).
- The platoon's mission statement, nested with higher mission and intent.
- A GTAO for all pertinent terrain in the AO.
- The enemy situation template, as it pertains to the operation.
- The timeline.

METT-TC (I)

2-20. Mission variables describe characteristics of the assigned area and their impacts to a mission to include—

- Mission.
- Enemy.
- Terrain and weather.
- Troops and support available.
- Time available.
- Civil considerations.
- Information considerations.

2-21. Analyzing METT-TC (I) is a continuous process. Information considerations is expressed as a parenthetical variable (I) in that it is not an independent variable, but an important consideration combined with each mission variable that the PL should pay particular attention to in understanding a situation. During execution, continuous analysis of the mission variables facilitates the issuing of well-developed FRAGORDs. PLs assess if any new information presented during the planning process changes their mission and if so, decide how to adjust the plan to meet these new situations.

2-22. METT-TC (I) analysis does not need to occur in any particular order, how and when PLs analyze the variables depends on when they receive information as well as on their experience and preferences. One technique is to parallel the TLP based on the products received from their company commander

ANALYSES OF MISSION

2-23. PLs must understand the mission, intent, and operation concept one and two levels higher. Doing so makes it possible to exercise disciplined initiative and act within limited windows of opportunity. The PL looks to answer the question, "What have I been told to do, and why?"

2-24. PLs use the following to gain understanding of the mission:

- CAB (two levels up) mission, intent, and concept.
- Company (one level up) mission, intent, and concept.
- Unit's purpose.
- Constraints.
- Specified, implied, and essential tasks.
- Restated mission.

Combined Arms Battalion (Two Levels Up) Mission, Intent, and Concept

2-25. Leaders understand their two-level up higher HQ concept of the operation. They identify tasks and purposes, and how their one-level up is contributing to the fight. They must also understand commanders' intent two levels up.

2-26. Understanding of the two-level up higher HQ mission, intent, and concept allows the PL to understand where their platoon fits into the mission. This assists the PL in developing a plan to meet the commanders' two- and one-level up intent. A thorough understanding of the one and two level up allows the PL to exercise disciplined initiative in the absence of orders.

Company (One Level Up) Mission, Intent, and Concept

2-27. Leaders understand their immediate HQ concept of the operation. They identify their HQ tasks and purposes as well as their own contributions to this fight. They must clearly understand their commander’s intent. Also, they identify the tasks, purposes, and dispositions for all adjacent maneuver elements under the HQ control.

Unit’s Purpose

2-28. PLs find their units' purposes in the concept of the operation in the commander’s OPORD. The operation's purpose usually matches or achieves the purpose of the immediate higher HQ. They must understand why their commander assigned their platoon it’s purposes. Then, they determine how they fit into the company’s concept of operations. If the leaders are unclear of their purpose, they should consult their commander for further explanation.

Constraints

2-29. A *constraint* is restriction placed on the command by a higher command. A constraint dictates an action or inaction, thus restricting the freedom of action of a subordinate commander (FM 5-0). The PL determines all constraints the company's OPORD places on the platoon's ability to execute the mission. Annexes to the order may also include constraints. The operation overlay, for example, may contain a restrictive fire line (RFL) or a no-fire area. Constraints may also be issued verbally, in WARNORDs, or in policy memoranda. Constraints may also be based on resource limitations within the command, such as organic fuel transport capacity, or physical characteristics of the OE.

Specified, Implied, and Essential Tasks

2-30. A *task* a clearly defined action or activity specifically assigned by an appropriate authority to an individual or organization, or derived during mission analysis, that must be accomplished (JP 1, Vol 1). The PL must identify and understand tasks required to accomplish a given mission. The tasks assigned to the PL are outlined in the company's OPORD. The three types of tasks (specified, implied, and essential) are discussed in paragraphs 2-31 to 2-33.

Specified Task

2-31. A *specified task* is a task specifically assigned to a unit by its higher headquarters (FM 5-0)-are found throughout the OPORD. Specified tasks also may be found in annexes and overlays, for example: seize Objective Cow; reconnoiter Route Red; assist the forward passage of First Platoon, B Company; send two Soldiers to assist in the loading of ammunition.

Implied Task

2-32. An *implied task* is a task that must be performed to accomplish a specified task or mission but is not stated in the higher headquarter's order (FM 5-0). Implied tasks derive from a detailed analysis of the company's order, from the enemy situation and course of action (COA), from the terrain, and from knowledge of doctrine and history. Analyzing the platoon's current location in relation to future assigned area as well as the doctrinal requirements for each specified task might reveal the implied tasks. Only those requiring resources should be used. For example, if the specified task is to seize Objective Cow and new intelligence has Objective Cow surrounded by reinforcing obstacles, this intelligence would drive the implied task of breach reinforcing obstacles in the vicinity of Objective Cow.

Essential Task

2-33. An *essential task* is a specified or implied task that must be executed to accomplish the mission (FM 5-0). An essential task, along with the company's purpose, is usually assigned by the CAB's OPORD in the concept of operation or tasks to subordinate units. For offensive and defensive operations, since the purpose is the same nested concept, the essential task accomplishes the company's purpose. For supporting efforts, it accomplishes the assigned purpose, which shapes the main effort.

Decisive Point

2-34. A *decisive point* is key terrain, key event, critical factor, or function that, when acted upon, enables commanders to gain a marked advantage over an enemy or contribute materially to achieving success (JP 5-0). Identifying a tentative decisive point(s) and verifying it during COA development is the most important aspect of the TLP. Visualizing a valid decisive point is how leaders determine how to achieve success and accomplish their purpose. Leaders develop their entire COA from a decisive point. A decisive point might be where or how, or from where, the unit will combine the effects of combat power against the enemy. A decisive point might be the event or action (with respect to terrain, enemy, or time, and generation of combat power) that will ultimately and irreversibly lead to the unit achieving its purpose.

Restated Mission

2-35. The PL concludes mission analysis by restating the mission. A *mission statement* is a short sentence or paragraph that describes the organization's essential task(s), purpose, and action containing the elements of who, what, when, where, and why (JP 5-0). The five elements of a mission statement answer these questions, commonly referred to as the five Ws:

- Who will execute the operation (unit or organization)?
- What is the unit's essential task (tactical mission task)?
- When will the operation begin (by time or event) or what is the duration of the operation?
- Where will the operation occur (assigned area, objective, grid coordinates)?
- Why will the force conduct the operations (for what purpose)?

ANALYSIS OF ENEMY

2-36. Analyzing the enemy answers, the question, what is the enemy doing and why? The leader answers the following questions:

- What is the composition and strength of the enemy?
- What are the capabilities of their weapons and other systems?
- What is the location of current and probably enemy positions?
- What is the enemy's most probable COA (defend, reinforce, attack, withdraw, or delay)?

Assumptions

2-37. The leader must understand assumptions the company commander uses to portray the enemy's COA. The leader's own assumptions must nest with those of the higher commander. They must continually update their enemy templates as new information becomes available.

Doctrinal Analysis (How the Enemy Will Fight)

2-38. The PL must understand when, where, and how the enemy fights or tends to use their available assets. They must know more than just the enemy's number and types of vehicles, troops, and weapons. A threat template is a visual illustration of how the enemy force might look and act without the effects of weather and terrain. The PL takes into consideration recent enemy actions and uses the appropriate threat template from doctrine to gain insight into how the enemy may fight. (See TC 7-100 for more information).

2-39. The PL must rely on information provided from the higher HQ OPORD, and the commander's analysis and deductions about the enemy in its assigned area. The PL uses the higher echelon's analysis to drive their logical assumptions about how the enemy may fight at their level.

Disposition

2-40. The leader determines how the enemy is arrayed using the enemy analysis from the commander's OPORD. The company OPORD contains the information the PL needs to determine the disposition of the higher enemy elements. The PL then determines the enemy's patterns in their employment or troops and equipment. The PL leverages recent S2 intelligence updates, and surveillance assets available to determine the enemy's disposition.

Composition

2-41. The PL's analysis must determine the types of vehicles, troops, and equipment the platoon may encounter on the operation. They can utilize the company OPORD to help drive their analysis. The PL must be familiar with the basic characteristics of the enemy units and platforms identified.

Strength

2-42. The PL identifies the strength of enemy unit the platoon will be encountering in the operation. They derive the strength of their templated enemy from the analysis done by the commander in the company OPORD.

Capabilities

2-43. Based on the company OPORD, enemy's doctrine and current location, the PL must determine the enemy's capabilities and threat. A *threat* is any combination of actors, entities, or forces that have the capability and intent to harm United States forces, United States national interest, or the homeland (ADP 3-0). This includes studying and knowing the maximum effective range for each enemy weapon system, their doctrinal rates of march, and how the enemy doctrinally executes offensive and defensive operations. The *hybrid threat* force structure and organizational guide shows examples of threat organizations and equipment this reference can help PLs understand threat capabilities when conducting mission analysis. (See TC 7-100.4.) A *hybrid threat* is a diverse and dynamic combination of regular forces, irregular forces, terrorists, or criminal elements unified to achieve mutually benefitting effects (ADP 3-0). All enemy capabilities are different and unique to the type of unit or formation friendly forces are expected to encounter, platoons will have to rely on the latest intelligence update to make decisions on—

- Types of weapons systems to employ.
- Use of BFVs and dismounted Infantry.
- Types of ammunition requirements.
- Types of special equipment requirements.

2-44. The PL determines the capabilities of the next higher enemy element. These capabilities should include assets the next higher element, or other higher enemy HQ, may reasonably provide. This includes the employment of enemy reserves, CBRN weapons, artillery or mortar locations and ranges, reconnaissance and surveillance, and security operations.

Recent Activities

2-45. Gaining complete understanding of the enemy's intentions can be difficult when the enemy's situation templates, composition, and disposition are unclear. The enemy's recent activities must be understood because they can provide insight into future activities and intentions. When time permits, the PL conducts a pattern analysis of the enemy's actions to predict future actions. The PL must receive updates from the commander and CAB intelligence cell in order to understand the enemy situation. The commander's analysis will be the main input into the PL's enemy recent activity analysis.

Enemy Situation Template

2-46. The PL analyzes the company OPORD and the commander's enemy and terrain deductions to identify how the enemy may fight. The PL develops the enemy's most likely and most dangerous COA based on their analysis of the commander's deductions and company enemy situation template. The platoon's situation template depicts one echelon lower than developed by the company OPORD. The PL, using knowledge of the enemy's doctrine and terrain, develops a situation template depicting enemy BPs, crew-served weapons positions, key enablers, or defensive trenches. (See table 2-1.)

Table 2-1. Recommended enemy situation template items

Defensive and Offensive Enemy Situation Template Items	
Primary, alternate, subsequent positions. Engagement area Individual vehicles. Crew-served weapons. Tactical and protective obstacles. Planned indirect fire targets. Observation posts. Command and control positions. Final protective fires and final protective line. Location of reserves. Routes for reserve commitment. Travel time for reserve commitment. Reserve force commitment triggers. Sectors of fire. Attack formations and axes of advance	Battle positions, trenches, and area of operations. Coordinated fire line and restrictive firing lines. Objective(s), phase lines, and support (attack) by fire position(s). Maximum engagement line. Planned indirect-fire targets. Electromagnetic warfare capabilities. Reconnaissance/security objectives. Reconnaissance force routes. Fires (indirect fires and manned and unmanned aircraft systems). Chemical, biological, radiological, and nuclear employment. Protective obstacle locations. Enemy scheme of maneuver. Unmanned aircraft system capabilities.

Analysis of Terrain and Weather

2-47. Terrain and weather are key aspects to mission analysis. When analyzing terrain, the PL considers man-made features and effects on natural terrain features and climate. They also consider the effects of man-made and natural terrain in conjunction with the weather on friendly and enemy operations. In general, terrain and weather do not favor one side over the other unless one is better prepared to operate in the environment or is more familiar with it. The terrain, however, may favor defending or attacking. Analysis of terrain answers the question: What is the terrain's effect on the operation? The PL analyzes terrain using the five military aspects of terrain.

2-48. The PL develops a GTAO. They must utilize the command's analysis of the terrain to help facilitate their planning. The PL analyzes the five military aspects of terrain (observation and fields of fire, avenues of approach, key terrain, obstacles, and cover and concealment [OAKOC]) to brief their subordinates on the effects of the terrain on friendly and enemy units.

2-49. For the PL to have a starting point for the company's terrain analysis, the PL must first define the OE. The *operational environment* is the aggregate of conditions, circumstances, and influences that affect the employment of capabilities and bear on the decisions of the commander (JP 3-0). The PL must understand the platoon's assigned area and areas of interest. An *area of interest* is that area of concern to the commander, including the area of influence, areas adjacent to it, and extending into enemy territory (JP 3-0). This area also includes areas occupied by enemy forces who could jeopardize the accomplishment of the mission. The PL uses boundaries to define a platoon's assigned area.

2-50. Based on time available, the PL may have to prioritize portions of terrain analysis. For example, if conducting an attack, the PL might prioritize the areas around the objective for analysis and the route they intend on using. Given more time, the PL would conduct analysis on the remainder of the assigned area and area of interest.

FIVE MILITARY ASPECTS OF TERRAIN

2-51. The PL analyzes terrain using the five military aspects of OAKOC. Military aspects of terrain are used to analyze the terrain features on the map. The sequence of analysis can vary. The leader determines the effects of each aspect as pertaining to friendly and enemy forces. These effects translate directly into conclusions applying to friendly or enemy COA. Following OAKOC, the procedure is to first identify where forces have difficulty moving (obstacles) then identifying areas where forces can travel (avenues of approach) become more evident. Leaders can analyze OAKOC in any order they choose.

Obstacles

2-52. An *obstacle* is any barrier designed or employed to disrupt, fix, turn, or block the movement and maneuver, and to impose additional losses in personnel, time, and equipment (JP 3-15). The leader identifies existing, reinforcing, tactical, and protective obstacles, specifically highlighting those in their assigned area and on/around the objective. (See FM 3-90.) Existing obstacles may be natural (intractable soils, rivers, mountains, wooded areas) or man-made (enemy explosive and nonexplosive obstacles and structures, including bridges, canals, railroads, and embankments associated with them. Obstacle types include—

- Existing obstacles are inherent aspect of the terrain that impede movement and maneuver, either natural or man-made.
- Reinforcing obstacles are those man-made obstacles that strengthen existing terrain to achieve a desire effect.
- Tactical obstacles are used to shape enemy maneuver and to maximize the effects of fires, and they directly attack the ability of a force to move, mass and reinforce.
- Protective obstacles are employed to protect people, equipment, supplies, and facilities against threats and have two primary roles:
  - Defense.
  - Security.

2-53. The PL utilizes the commander's graphical terrain overlay to plot obstacles identified by CAB and higher HQ on their map. They can analyze the map to determine

locations of other existing obstacles that can influence their operation. The PL analyzes the terrain to identify possible locations on the map when the platoon may have to change movement formation and speed. The categories of terrain are defined in paragraphs 2-54-2-56.

2-54. Unrestricted terrain free of restrictions to movement, so no actions are needed to enhance mobility. For armored forces, unrestricted terrain typically is flat or moderately sloped, with scattered or widely spaced obstacles such as trees or rocks. This terrain generally allows wide maneuver and offers unlimited travel over well-developed road networks. It allows the platoon and squads to move with little hindrance.

2-55. Restricted terrain hindering movement somewhat. Little effort is needed to enhance mobility, but units might have to zigzag or make frequent detours. They could have a hard time maintaining optimum speed, moving in some types of combat formations, or transitioning from one formation to another. For armored forces, restricted terrain typically means moderate to steep slopes or moderate to dense spacing of obstacles such as trees, rocks, or buildings. Swamps and rugged ground are two examples of restricted terrain for Infantry forces. Poorly developed road systems may hamper logistical or rear area movement.

2-56. Severely restricted terrain that severely hinders or slows movement in combat formations unless some effort is made to enhance mobility. Engineer forces might be needed to improve mobility or platoon and squads might have to deviate from doctrinal tactics. For example, they might have to move in columns rather than in lines. Or, they might have to move much more slowly than they would like. For armored forces, steep slopes, densely spaced obstacles, and absence of a developed road system characterize severely restricted terrain.

Note. Terrain categorization is especially important to armored forces and reinforces the need to conduct additional analysis at the platoon level despite being provided a geographic terrain overlay from the commander.

Avenues of Approach

2-57. An *avenue of approach* is a path used by an attacking force leading to its objective or to key terrain. Avenues of approach exist in all domains. (ADP 3-90) Avenues of approach are classified by type (mounted, dismounted, air, or subterranean), formation, and speed of the largest unit traveling on it.

2-58. The PL can include the following considerations in evaluation of avenues of approach:

- How can each avenue of approach be used to support the platoon's movement and maneuver?
- How will each avenue support movement techniques, formations and, once the platoon makes enemy contact, maneuver?
- Will variations in trafficability force changes in formations or movement techniques or require clearance of restricted terrain?
- What are the advantages and disadvantages of each avenue?
- What are the enemy's likely counterattack routes?

- What lateral routes could be used to shift to other axes, and which could the enemy use to threaten the platoon's flanks?
- How will each avenue of approach affect the rate of movement of each type of force?

2-59. The PL can include the following defensive consideration in evaluation of avenues of approach:

- What are all likely enemy avenues into the company's sector?
- How can the enemy use each avenue of approach?
- What lateral routes could the enemy use to threaten the company's flanks?
- What avenues would support a friendly counterattack or repositioning of forces?

Key Terrain

2-60. *Key terrain* is an identifiable characteristic whose seizure or retention affords a marked advantage to either combatant (ADP 3-90). It is a conclusion, usually arrived at after enemy analysis and COA development, rather than an observation. The PL must assess which terrain in their assigned area is essential to mission accomplishment.

2-61. Next, the PL identifies decisive terrain that, if held or controlled, has an extraordinary impact on the mission. Decisive terrain is key terrain whose seizure and retention is mandatory for successful mission accomplishment (ADP 3-90). Some operations will not have decisive terrain.

2-62. The PL references the company OPORD to understand if the commander has designated any terrain in their assigned areas as key or decisive. They must understand the higher HQ key and decisive terrain to make their own deductions and incorporate the designated terrain into their order.

Observations and Fields of Fire

2-63. Observation is the condition of weather and terrain that permits a force to see the friendly, enemy, and neutral personnel and systems, and the key aspects of the environment. The PL identifies location along each avenue of approach providing clear observation and fields of fire for the attacker and defender. They analyze the area surrounding key terrain, objectives, EA, and obstacles. The PL analyzes the intervisibility lines and dead space on the map to determine what locations will give their squads the most advantageous observation and what locations will obscure the enemy's line of sight onto their formation.

2-64. A field of fire is the area that a weapon or group of weapons may cover effectively from a given position. When a PL is selecting positions for their squads and sections, they must balance how the field of fire will give advantage while also providing cover from the enemy's weapon systems.

2-65. Offensive considerations in analyzing observation and fields of fire include the following:

- Where do enemy observers and weapon systems have clear observation and fields of fire available on or near the objective?
- Where can the enemy concentrate fires?

- Where will the enemy be unable to concentrate fires?
- Where is the enemy vulnerable?
- Where can the platoon support the movement of a friendly force with mortar, medium machine gun, or Javelin?
- Where can friendly forces conduct support by fire (known as SBF) or assault by fire?
- Where are the natural target reference points (TRPs)?
- Where does the PL position indirect fire observers?

2-66. Defensive considerations in analyzing observation and fields of fire include—

- What locations have clear observation and fields of fire along enemy avenues of approach?
- Where will the enemy establish firing lines or SBF positions?
- Where will the platoon be unable to mass fires?
- Where is the dead space in platoon's assigned area? Where is the platoon vulnerable?
- Where are the natural TRPs?
- Where can the platoon destroy the enemy?
- How obvious are these positions to the enemy?
- Where does the PL position indirect fire observers?

Cover and Concealment

2-67. Cover is protection from the effects of fires and concealment is protection from observation or surveillance. Understanding the difference in the two allows the PL to effectively emplace squads and sections to have effective fields of fire on the enemy while maintaining survivability. PLs look at the terrain, foliage, structures, and other features along avenues of approach (and on objectives or key terrain) to identify sites offering cover and concealment. In the defense, weapon positions must be lethal to the enemy and survivable to the Soldier. Cover and concealment are just as vital as clear fields of fire. Cover and concealment can be either part of the environment or something brought in by the unit to create the desired effect. Both offensive and defensive considerations must be made:

- Offensive considerations include—
  - What axes afford clear fields of fire and cover and concealment?
  - Which terrain provides bounding elements with cover and concealment while increasing lethality?
- Defensive considerations include—
  - What locations afford cover and concealment as well as good observation and fields of fire?
  - How can friendly and enemy forces use the available cover and concealment?

Conclusions from Terrain Analysis

2-68. Following terrain analysis, the PL should have a fully developed GTAO and analysis that should produce several specific conclusions to include—

- Potential locations for battle, SBF, and assault by fire positions.

- Potential locations that support EAs and ambush sites.
- Immediate and intermediate objectives.
- Potential asset locations such as enemy command posts (CPs) or ammunition caches.
- Potential AAs for friendly or threat forces.
- Potential OPs.
- Likely location for artillery firing positions.
- Likely locations for air defense artillery system positions.
- Locations that enable reconnaissance, surveillance, and target-acquisition positions.
- Locations for forward area arming and refueling points.
- Suitable landing and drop zones.
- Potential breach locations.
- Optimized infiltration lanes.

Note. At company level and below, the commander and subordinate leaders develop a GTAO. Helps explain findings about the effects of terrain and weather on the mission. The graphic depiction of terrain can be a photograph, overlay for a map sheet, or a terrain model. Not only does it facilitate planning, but it also aids in briefing subordinates.

Military Aspects of Weather

2-69. The military aspects of weather are visibility, wind, precipitation, cloud cover, temperature, humidity, and atmospheric pressure (as required). The PL must reference the company OPORD, and information pushed down from the S-2 to review the commander's deductions of the weather to help form their own conclusions. The PL determines how the weather is going to affect both friendly and enemy forces during the operation.

Visibility

2-70. The PL identifies critical conclusions from visibility from the company OPORD's and the commander's deductions. Factors such as, light data, fog, beginning of morning nautical twilight, end of evening nautical twilight, moonrise, cloud cover, and heavy precipitation will affect the platoon's ability to operate during day and night. Illumination during night operations will have a direct effect on the effectiveness of the platoon's night vision capabilities. Low visibility is beneficial to the platoon's effectiveness during offensive operations because it conceals their movement from the enemy. Low visibility can hinder defensive operations because it degrades the platoon's target acquisition capabilities and conceals the enemy's movement.

Winds

2-71. Winds of sufficient speed can reduce the combat effectiveness of a force downwind as the result of blowing dust, obscurants, sand, or precipitation. High winds near the ground can lower visibility due to blowing dust; they can also affect movement or stability of some vehicles.

2-72. The PL references the company OPORD to analyze the impact of the wind as determined by the command and CAB S-2. High winds can reduce the effectiveness communication platforms and other electronic devices. The PL describes how the wind is going to affect the operation in terms of friendly and enemy forces. Wind is always described as from…to, as in winds are from the east moving to the west. The PL must answer these questions:

- Will wind speed cause obscurants to dissipate quickly?
- Will wind speed and direction favor enemy use of obscurants?
- How will the wind affect the spread of CBRN contamination?

Precipitation

2-73. Precipitation is any moisture falling from a cloud in frozen or liquid form. Precipitation affects soil trafficability, visibility, and the function of many electro-optical systems needed for information collection. Heavy precipitation can affect all aspects of a military operation. The PL can utilize their PSG and squad leaders' expertise to determine the effect of precipitation on their platoon's operations.

Cloud Cover

2-74. Cloud cover affects ground operations by limiting illumination and could affect the thermal signature of targets. The PL must analyze the commander’s OPORD to ascertain the expected weather and illumination deductions for the operation. Cloud cover at night will impede the platoon’s ability to operate their night vision devices. Heavy cloud cover often canalizes aircraft within air avenues of approach and on the final approach to target.

Temperature

2-75. Temperature extremes can reduce the effectiveness of troops and equipment capabilities. It can affect the timing of operations; extremely high temperatures may require dismounted troops to operate at night. Leaders should always watch for signs of heat injuries. High temperatures can affect fuel consumption rates in vehicles and affect the muzzle velocity of direct and indirect fire weapons. Extreme cold weather can impact operations and leaders must ensure that Soldiers have proper cold weather equipment when operating in extreme cold environments. Leaders should always watch for signs of cold weather injuries. Extreme cold can also have a significant impact on weapons, vehicles, and equipment. Leaders should conduct prior planning and exercise precautions when operating in extreme temperatures.

2-76. One of the most significant effects of temperature on the BFV is thermal crossover. Thermal crossover is the condition in which the temperature of a ground-based vehicle is close to, if not the same as, the surrounding land. Because of this condition, thermal optics are unable to detect threat vehicles until a temperature disparity exists between the land and the vehicles. PLs must take thermal crossover into account when planning operations because it will affect their platoon's target acquisition ability.

Humidity

2-77. Humidity is the state of the atmosphere with respect to water vapor content. High humidity affects the human body's ability to cool itself. The PL must take humidity into account for dismount rate of march and Soldier load. Higher humidity in high temperatures will require the PL to coordinate water resupplies frequently throughout the operation. When the difference between the temperature and absolute humidity (dew point) coincides, there's a higher chance of fog. Fog will affect the platoon's visibility and target acquisition.

ANALYSIS OF TROOPS AND SUPPORT AVAILABLE

2-78. One of the most important aspects of TLP is understanding and knowing the capabilities of the platoon. This includes support and attachments to the platoon and status of all equipment in the platoon. The PL must review the task organization assigned to them by the commander in the company OPORD to know what support is available to them for the operation. Analysis of troops and support available answers the question: What assets are available to accomplish the mission? Additional questions the PL answers include—

- What is the strength of the platoon?
- What is the platoon's operational readiness rate?
- What are the strengths and weaknesses of subordinate leaders?
- What is the supply status of ammunition, water, fuel (if required), and other necessary items?
- What is the present physical condition of Soldiers (morale, sleep)?
- What is the condition of equipment?
- What is the unit's training status and experience relative to the mission?
- What additional attachments will accompany the team?
- What additional assets are required to accomplish the mission?

ANALYSIS OF TIME

2-79. Time refers to many factors during the operations process (planning, preparation, execution, and assessment). The categories that leaders consider include the following (use HOPE-LW mnemonic):

- Higher echelon's timeline.
- Operational.
- Planning and preparation.
- Enemy timeline.
- Light and weather.

2-80. During all phases, leaders consider critical times, unusable time, the time it takes to accomplish activities, the time it takes to move, priorities of work, and tempo of operations. Other critical conditions to consider include visibility and weather data, and events such as higher HQ tasks and required rehearsals. Implied in the analysis of time is leader prioritization of events and sequencing of activities.

2-81. As addressed in step 1 of the TLP, time analysis is a critical aspect to planning, preparation, and execution. Time analysis is often the first thing a leader does. The leader must not only appreciate how much time is available, but also must be able to appreciate

the time/space aspects of preparing, moving, fighting, and sustaining. The leader must analyze their own tasks and assess enemy actions. Most importantly, as events occur, the leader must adjust the time available and assess its impact on what the leader wants to accomplish. Finally, the leader must update previous timelines for subordinates, listing all events affecting the platoon and its subordinate elements.

ANALYSIS OF CIVIL CONSIDERATIONS

2-82. Civil considerations include the influences of man-made infrastructure, civilian institutions, and attitudes, activities of civilian leaders, populations, and organizations within the AO (to include informational aspects for each), about the conduct of military operations. Civil considerations generally focus on the immediate impact of civilians on operations in progress. Civil considerations of the environment can either help or hinder friendly or enemy forces. The PL's understanding of the civilian empathy toward friendly and enemy forces allows them to prepare their platoon for expected civilian interactions. Analysis of civil considerations answers two critical questions:

- How do civilian considerations affect the operation?
- How does the operation affect civilians?

2-83. The company provides the PL with civil considerations affecting the next echelon's mission. Areas, structures, capabilities, organizations, people, and events (also called ASCOPE) are used to analyze and describe these civil considerations. (See ATP 3-90.1 for additional information.)

COURSE OF ACTION DEVELOPMENT

2-84. The purpose of COA development is to determine one or more ways to accomplish the mission consistent with the immediate higher commander's intent. A COA describes how the unit might generate the effects of overwhelming combat power against the enemy at the decisive point(s) with the least friendly casualties. Each COA the PL develops must be detailed enough to clearly describe how the leader envisions using all assets and combat multipliers to achieve the unit's mission-essential task and purpose. The PL ensures they are incorporating all attachment and assets into the COA.

Note. Decisive points are not centers of gravity; they are keys to attacking or protecting them. A center of gravity is the source of power that provides moral or physical strength, freedom of action, or will to act. (See FM 5-0 for additional information.)

2-85. To develop a COA, the PL focuses on the actions the unit must take at the decisive point(s) and works backward to the start point (SP). The PL focuses on developing one primary COA but should develop contingencies within the plan. The result of the COA development process is paragraph 3 (execution) of the OPORD. A COA should position the platoon to support the company and CAB's mission. It also should give subordinates the maximum latitude for initiative. The PL ensures they are adhering to the one third, two third rule when planning and developing a COA.

SCREENING CRITERIA

2-86. The PL uses screening criteria to ensure the COA they develop achieves the commander's intent and accomplishes the mission. Screening criteria guides the PL in developing an effective COA to accomplish the mission. The criteria are tools to establish the baseline products for analysis. The PL commonly asks five questions of screening criteria to test a possible solution. A COA should be suitable, feasible, acceptable, distinguishable, and complete (see ATP 3-90.1 for a detailed discussion):

- Suitable—fits within available resources
- Feasible—worth the cost or risk.
- Acceptable—solves the problem and is legal and ethical.
- Distinguishable—differs significantly form other solutions.
- Complete—contains the critical aspects of solving the problem from start to finish.

Note. Leaders assess risk continuously throughout COA development.

ACTIONS

2-87. Next, the PL analyzes relative combat power, generates options, arrays forces, develops concept of operation, analyzes Soldier load, assigns responsibility, and prepares a COA statement and sketch. Paragraphs 2-88 to 2-97 describe the process that must be taken when developing a COA. The PL should leverage the experience of subordinate leaders to support in COA development.

ANALYZE RELATIVE COMBAT POWER

2-88. *Combat power* is the total means of destructive and disruptive force that a military unit/formation can apply against an enemy at a given time (JP 3-0). During the first step of COA development, analyzing relative combat power, leaders compare friendly combat power with the enemy.

2-89. This step compares combat power strengths and weaknesses of both friendly and enemy forces. At the platoon level this should not be a complex process. For the PL, is starts by returning to the conclusions the commander arrived at during mission analysis, specifically the conclusions about the enemy's strength, weakness, and vulnerabilities. In short, the PL is trying to see where, when, and how the effects of the platoon's combat power can be superior to the enemy's while achieving the mission. This analysis should lead to techniques, procedures, and a potential decisive point that will focus the COA development.

2-90. The PL can utilize the experience of their PSG, squad, and section leaders to best determine how to implement their available combat power against the enemy. This is achieved through a thorough analysis of enemy composition, disposition, and identified weaknesses.

GENERATE OPTIONS

2-91. After gathering information relevant to the mission variables and commander's intent, the PL formulates possible solutions to accomplish the mission. The PL carefully

considers the guidance provided by the commander and develops several alternatives to accomplish the mission. The PL focuses on developing one COA that meets the screening criteria, but they should develop contingencies for their COA to remain flexible during mission execution. The experience of the platoon and time available to plan determines how many COAs the PL considers.

ARRAY FORCES

2-92. To array forces, the PL analyzes the company OPORD and determines if they have any enablers attached to their platoon. They must then determine the specific number of squads and weapons necessary to accomplish the mission and provide a basis for development of a scheme of maneuver. The PL will consider the platoon's restated mission statement, the commander's intent, and the enemy's most probable COA. They should allocate resources to the main effort (at the decisive point) and continue with support efforts in descending order of importance to accomplish the task and purposes they assigned during Step 2. For example, the main effort in an attack of a strong point may require an Infantry squad and an engineer squad to secure a foothold, whereas an SBF force may require an entire squad and the fires from the vehicles to isolate the objective.

DEVELOP A CONCEPT OF OPERATIONS

2-93. The concept of operations describes how the PL envisions the operation occurring from start to conclusion. The PL determines how to accomplish each task assigned by the company commander. The concept of operation is a framework to assist leaders, not a script. The normal cycle for an offensive operation is tactical movement, actions on the objective, and consolidation and reorganization. The normal cycle for defensive operation is EA development and preparation of the BPs, actions in the EA, counterattack, and consolidation and reorganization. The concept of operations should identify the best way to utilize terrain and employ the platoon's strengths against the enemy's weaknesses. Fire support is an important part of the concept of operations. The PL identifies assigned fires in the company OPORD. The PL develops graphic control measures to pass onto their subordinates to ensure mutual understanding of the plan. *Fire support* is fires that directly support land, maritime, amphibious, space, cyberspace, and special operations forces to engage enemy forces, combat formations, and facilities in pursuit of tactical and operational objectives (JP 3-09).

ANALYZE SOLDIER LOAD

2-94. The PL analyzes Soldier load to determine what mission essential equipment will be carried by the Soldiers during the operation. This analysis can be driven by the PSG, squad leaders, and section leaders. The experience of the NCOs in the platoon will help the PL determine which mission essential equipment will be utilized during the operation. A thorough analysis of Soldier load can prevent Soldier's from carrying extra weight and hindering the tempo of the operation.

ASSIGN RESPONSIBILITIES

2-95. The PL assigns responsibility for each task to a subordinate. They ensure that each element of their platoon, organic and attached, are accounted for, and utilized effectively during the operation. The PL should rely on the expertise of their NCOs to aid in the

integration of the mounted and dismounted elements when assigning responsibilities. The company FSO can help the PL plan the most effective use of fires available during the mission. *Fires* are the use of weapon systems or other actions to create specific lethal or nonlethal effects on a target (JP 3-09).

PREPARE A COURSE OF ACTION STATEMENT AND SKETCH

2-96. The PL uses the COA statement and ad hoc sketch to describe the concept of operations. These two products are the basis for paragraph 3 (execution) of the OPORD. The COA statement specifies how the platoon will accomplish the mission. The first three steps of COA development provide the bulk of the COA statement. The COA statement details how the platoon's operation supports the company mission, the decisive point and why it is decisive, the form of maneuver or type of defensive mission, and operational framework. The *operational framework* is a cognitive tool used to assist commanders and staffs in clearly visualizing and describing the application of combat power in time, space, purpose, and resources in the concept of operations (ADP 1-01). The COA sketch is a drawing or series of drawings to assist the PL in describing how the operation will unfold. The ad hoc sketch provides a picture of the maneuver aspects of the concept. The PL uses tactical mission task graphics and control measures (see FM 3-90) to convey the operation in a doctrinal context. Both the COA statement and sketch focus at the decisive point. The COA statement should identify—

- Decisive point and what makes it decisive.
- Form of maneuver or form of the defense.
- Tasks and purposes of the main and supporting efforts as well as the reserve when required.
- Reserve planning priorities.
- Purposes of critical warfighting functions.
- End state.

2-97. The COA ad hoc sketch should identify how the platoon intends to focus the effects of overwhelming combat power at the decisive point. When integrated with terrain, the refined product becomes the platoon's operations overlay. The COA sketch is used to help the PL during planning and during briefing to the subordinates and to visualize the sequence of events as an operation unfolds. (See figure 2-4 on page 46.)

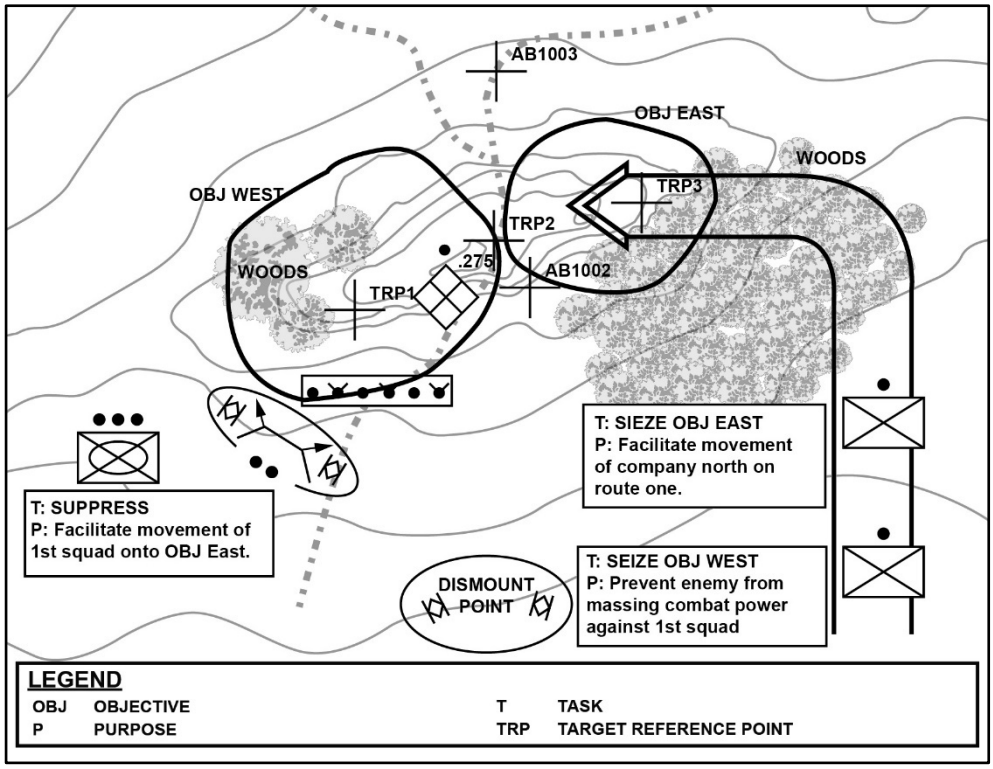


Figure 2-4. COA sketch

COURSE OF ACTION ANALYSIS

2-98. After developing a COA, the PL analyzes it to determine its advantages and disadvantages, to visualize the flow of the battle, and to identify requirements to synchronize actual execution. Typically, this is done mentally or during a discussion with the PSG, squad leaders, or other key personnel. This technique is not complicated, and it facilitates a total understanding of the plan. This is not a rehearsal.

COURSE OF ACTION COMPARISON AND SELECTION

2-99. If the PL had the time to develop more than one COA, they must compare them by weighing the specific advantages, disadvantages, strengths, and weaknesses of each. These attributes may pertain to the accomplishment of the platoon purpose, the use of terrain, the destruction of the enemy, or any other aspect of the operation that the PL believes is important. The PL uses these factors as their frame of reference in tentatively selecting the best COA. They make the final selection of a COA based on their own analysis.

STEP 4: INITIATE MOVEMENT

2-100. Many company level operations require movement to a forward assembly area, which is an area a unit occupies to prepare for an operation, and a BP during the planning

phase of an operation. The PL addresses movement in their timeline; they order the platoon to begin moving following the company plan. Activities may include rehearsing battle drills, movement formations, beginning priorities of work or sending platoon representatives to an AA with the company quartering party.

STEP 5: CONDUCT RECONNAISSANCE

2-101. Whenever time and circumstances allow, or as directed by higher HQ, leaders personally observe the assigned area for the mission before execution. The minimum action desired is a thorough map reconnaissance supplemented by geospatial intelligence and other intelligence products and assessments. As directed, subordinates or other elements (such as scouts) may perform the reconnaissance for the leader while the leader completes other TLP steps.

2-102. To exploit the principles of speed and surprise, leaders should weigh the advantages of reconnoitering personally against using only the supplied information from higher echelon information systems. They realistically consider the dangers of reconnoitering personally, and the time required to conduct them. Leaders might be able to plan their operations using combat information provided by higher echelon information collection assets. Combat information is the unevaluated data, gathered by or provided directly to the tactical commander which, due to its highly perishable nature or the criticality of the situation, cannot be processed into tactical intelligence in time to satisfy the user's tactical intelligence requirements. It can be extremely important in a time constrained environment.

2-103. However, if time permits, leaders should verify higher HQ intelligence requirement by reconnoitering visually. They should seek to confirm the priority intelligence requirements (PIRs) supporting their tentative plans. These PIRs usually consists of assumptions or critical facts about the enemy. This can include strength and location, especially at templated positions. It also can include information about the terrain. For example, verification that a tentative SBF position can suppress the enemy, or an avenue of approach is useable.

2-104. If possible, leaders should include their subordinate leaders in their reconnaissance efforts. This allows the subordinates to see as much of the terrain and enemy as possible. The reconnaissance also helps subordinate leaders gain insight into the leaders' visions of the operation.

2-105. The leaders' reconnaissance might include moving to or beyond the line of departure (LD), reconnaissance, and surveillance of an assigned area, or moving mounted or dismounted from the forward edge of the battle area back to and through the platoon assigned area or BP along likely enemy avenues of approach. If possible, leaders should select vantage points with the best possible view of the decisive point(s). In addition to the leaders' reconnaissance efforts, units can conduct additional reconnaissance operations. Examples include surveillance of an area by subordinate elements, patrols to determine enemy locations, and establishment of OPs/combat outpost (see chapter 6) to gain additional information. Leaders also can incorporate Javelin command launch unit and small unmanned aircraft systems (sUASs) as surveillance tools (day or night), based on an analysis of METT-TC (I).

2-106. The nature of the reconnaissance and surveillance, including what it covers and how long it lasts, depends on the tactical situation and time available. Leaders should use the results of the COA development process to identify information and security requirements of the unit's reconnaissance and surveillance mission.

2-107. Leaders must include disseminating results and conclusions derived from reconnaissance and surveillance into their time analysis. They also must consider how to communicate changes in the COA to their subordinates and how these changes affect their plans, actions of the subordinates, and other supporting elements.

STEP 6: COMPLETE THE PLAN

2-108. During this step, leaders expand their selected (or refined) COA into completing the OPORD. The PL refines the plan based on the results of the reconnaissance and coordination. They then complete the plan using these results and new information from their commander, other PLs, and members of their platoon. The PL utilizes this time to ensure the surveillance, fires, and sustainment plans are refined to meet the needs of the platoon. They should keep the plan as simple as possible, while at the same time, ensuring that the platoon scheme of maneuver supports the commander's intent.

STEP 7: ISSUE THE ORDER

2-109. If possible, the PL issues the order (See figure 2-5) from a vantage point overlooking the terrain on which the platoon will maneuver. If not, they use a terrain model, sand table, sketches, or their map to orient the platoon. If time permits, the PL should lead the platoon in a walk-through using a sand table.

2-110. To ensure complete understanding of the operation, the PL, squad leaders, and BCs can conduct confirmation briefings immediately after the OPORD is issued.

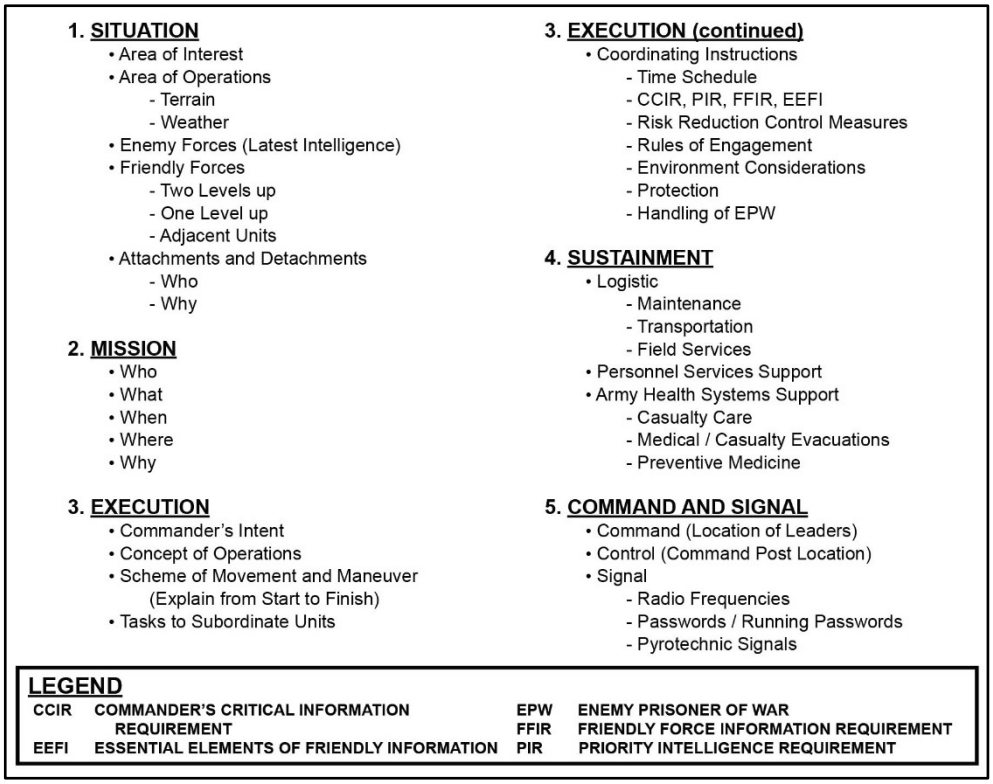


Figure 2-5. OPORD format

STEP 8: SUPERVISE AND REFINE

2-111. Flexibility is the key to effective operations. The PL must be able to refine their plan whenever new information becomes available. If they adjust the plan, they must inform the platoon and supervise implementation of the changes. Once the operation has begun, the PL must be able to direct their platoon in response to new situations and new orders

SECTION II – ORDERS

2-112. Orders are how the PL receives and transmits information, from the earliest notification that an operation will occur through the final steps of execution. WARNORDs, OPORDs, and FRAGORDs are critical to mission success. In a tactical situation, the PL and subordinate leaders work with orders daily, and they must have precise knowledge of the correct format for each type of order. Orders at the platoon and squad level are preferably given orally. The PL develops orders with input from their PSG and squad leaders. Orders can be given as a preformatted message or as a free text message in mission command systems. They follow the five-paragraph field order format as follows:

- Situation.
- Mission.
- Execution.
- Sustainment.
- Command and signal.

WARNING ORDER

2-113. A *warning order* is a preliminary notice of an order or action that is to follow (JP 5-0). PLs alert their platoons by using a WARNORD during the planning of an operation and issue additional WARNORDs as additional information and guidance becomes available. The WARNORD follows the five-paragraph field order format, but the amount of detail it includes depends on the information and time available when the order is issued, and the information subordinate leaders need for proper planning and preparation. A WARNORD clearly informs the recipient of what tasks they must do now as well as possible future tasks. However, a WARNORD does not authorize execution other than planning unless specifically stated. WARNORDS—

- Allow subordinates to begin to plan their missions.
- Provide a planning timeline.
- Provide an initial task organization.
- Provide a priority for rehearsals.

OPERATION ORDER

2-114. An *operation order* is a directive issued by a commander to subordinate commanders for the purpose of effecting the coordinated execution of an operation (JP 5-0). The five-paragraph format is used to organize the information, to ensure completeness, and to help subordinate leaders understand and follow the order. The platoon and squad leaders normally give the OPORD orally. Whenever possible, the leader gives the order while observing the objective or uses a terrain model or ad hoc sketch along with a map to explain the order. When giving the OPORD, the PL should consider—

- The time available.
- Whether to give the order to their squad leaders or to the whole platoon.

FRAGMENTARY ORDER

2-115. A *fragmentary order* is an abbreviated operation order issued as needed to change or modify an order or to execute a branch or sequel (JP 5-0). It provides timely changes of existing orders to subordinates while providing notification to higher and adjacent commands. At the platoon and squad level, a FRAGORD is usually an oral brief or written order that addresses only those parts of the original OPORD that have changed. The OPORD format and all the five-paragraph headings are used. After each heading, state either “no change” or the new information. This ensures that recipients know they have received the entire FRAGORD. A FRAGORD may—

- Communicate changes in the enemy or friendly situation.
- Change tasks of subordinate elements based on changes in the situation.
- Implement timely changes to existing orders.
- Provide pertinent extracts from more detailed orders.
- Provide interim instructions until the leader can develop a detailed order.

STANDARD OPERATING PROCEDURES

2-116. A *standard operating procedure* is a set of instructions applicable to those features of operations that lend themselves to a definite or standardized procedure without loss of effectiveness (JP 3-31). SOPs detail how to apply tactics, techniques, and procedures within a specific unit. They may be adapted in a given location for a given threat. SOPs standardize routine or recurring actions that don't require the leader's personal involvement. However, SOPs may include rare or abnormal events that could cause mission failure. SOPs regulate operations within and between command and control elements and mission command systems.

RISK MANAGEMENT

2-117. *Risk management* is the process to identify, assess, and mitigate risks and make decisions that balance risk cost with mission benefits (JP 3-0). The risk management (RM) process is used to mitigate risks associated with all hazards that have the potential to injure or kill personnel, damage, or destroy equipment, or otherwise impact overall mission accomplishment. Commanders, PLs, and Soldiers at all levels must understand the guiding principles to prevent unnecessary loss.

2-118. The principles of RM include the following (see ATP 5-19)—

- Integrating RM into all phases of missions and operations.
- Making risk decisions at the appropriate level.
- Accepting no unnecessary risk.
- Applying RM cyclically and continuously.

2-119. Risk assessment is the identification and assessment of hazards allowing a leader to implement measures to control hazards. Leaders assess risk to protect the force and aid in mission accomplishment. Leaders consider two kinds of risk: threat (tactical) and hazard (accident).

2-120. Tactical risk is associated with hazards existing due to the enemy's presence. The consequences of tactical risk take two major forms:

- Enemy action in which the leader has accepted risk such as an enemy attack where the friendly leader has chosen to conduct an economy of force.
- Lost opportunity, in which movement across terrain severely restricts the speed of traverse that restricts the unit's ability to mass the effects of combat power, for example.

2-121. Accident risk includes all operational risk other than tactical risk and can include hazards concerning friendly personnel, equipment readiness, and environment. Fratricide is an example of an accident risk.

2-122. The leader must identify risks based on the results of the mission analysis. Once identified, risk must be reduced through controls. For example, fratricide is a hazard

categorized as an accident risk; surface danger zones (SDZs) and risk estimate distance are used to identify the controls, such as TRPs and phase lines, to reduce this accidental risk. SDZs are described in appendix A direct fire planning. (See ATP 5-19 for additional information.)

FRATRICIDE AVOIDANCE

2-123. Fratricide is defined as the employment of friendly weapons with the intent of killing the enemy or destroying their equipment that results in the unforeseen and unintentional death or injury of friendly personnel. Fratricide prevention is the PL's responsibility.

EFFECTS

2-124. The effects of fratricide within a unit can be devastating to morale, good order, and discipline. Fratricide causes unacceptable losses and typically affects the unit's ability to survive and function, increasing the risk of mission failure.

CAUSES

2-125. Leaders must identify the factors that may affect their units and then strive to eliminate or correct them. The primary causes of fratricide are—

- Inability to maintain situational awareness.
- Vague or unclear orders.
- Poor target recognition and acquisition.
- Failures in the direct fire control plan.
- Failures in land navigation.
- Failures in combat identification.
- Inadequate control measures.
- Failures in reporting and communications.
- Individual and weapons errors.
- Battlefield hazards.
- Reliance on instruments.

SECTION III – REHEARSALS

2-126. A *rehearsal* is a session in which the commander and staff or unit practices expected action to improve performance during executions (ADP 5-0). Rehearsals allow the PL and their Soldiers to practice key aspects of the concept of operations. These actions help Soldiers orient themselves to their environment and the planned actions of other units before executing an operation. Rehearsals help Soldiers build a lasting mental picture of the sequence of key action within the operation. By seeing the PLs, squad leaders, and BCs actions, rehearsals also enable Soldiers to assume the role of their supervisors if that situation were to arise (see FM 6-0 for more information).

TYPES OF REHEARSALS

2-127. Each rehearsal type achieves a different result and has a specific place in the preparation timeline. The types of rehearsals are the—

- Backbrief.

- Combined arms rehearsal.
- Support rehearsal.
- Battle drill or SOP rehearsal.

BACKBRIEF

2-128. A backbrief is a briefing by subordinates to the PL to review how subordinates intend to accomplish their mission. Squad leaders and BCs perform backbriefs throughout preparation to allow the PL to clarify the commander's intent and provide additional guidance early in subordinate planning.

2-129. Backbriefs are performed sequentially in which the squad leaders and BCs review assigned tasks and planned actions from start to finish of the operation. When time is available, backbriefs can be combined with other types of rehearsals to allow subordinate leaders to coordinate plans before performing more elaborate drills. Backbriefs require the fewest resources and may be the only option under time-constrained conditions.

Note. The backbrief must not be confused with a confirmation brief. A confirmation brief is an opportunity for the squad leaders and BCs to verify receipt and understanding of the mission, specified tasks, immediately following the issuance of the order.

COMBINED ARMS REHEARSAL

2-130. A combined arms rehearsal is a rehearsal in which subordinate units synchronize their plans with each other. A maneuver HQ normally executes a combined arms rehearsal after subordinate units issue their OPORD. This rehearsal type helps ensure that subordinate commanders' plans achieve the higher commander's intent.

SUPPORT REHEARSAL

2-131. The support rehearsal helps synchronize each warfighting function with the overall operation. This rehearsal supports the operation so units can accomplish their mission. Throughout preparation, units conduct support rehearsals within the framework of a single or limited number of warfighting functions. These rehearsals typically involve coordination and procedure drills for aviation, fires, engineer support, sustainment, and CASEVAC. Support rehearsals and combined arms rehearsals complement preparations for the operation. Units may conduct rehearsals separately and then combine them into full-dress rehearsals. Although these rehearsals differ slightly by warfighting function, they achieve the same result.

BATTLE DRILL OR STANDARD OPERATING PROCEDURE REHEARSAL

2-132. A battle drill is a collective action rapidly executed without applying a deliberate decision-making process. A battle drill or SOP rehearsal ensures that all participants understand a technique or a specific set of procedures. Throughout preparation, squads and platoons rehearse battle drills and SOPs. These rehearsals do not need a completed order from higher HQ. Leaders place priority on those drills or actions they anticipate occurring during the operation. For example, an Infantry platoon may rehearse a battle drill on reacting to an ambush while waiting to begin movement.

REHEARSAL TECHNIQUES

2-133. Rehearsals should follow the crawl-walk-run training methodology whenever possible. This prepares the platoons and subordinate elements for increasingly difficult conditions. (See FM 6-0 for additional information.) Resources required for each technique range from broad to narrow and each rehearsal technique imparts different level of understanding to participants. Units can conduct these forms of rehearsals if mission variables permit (see ATP 3-90.1).

- Full-dress rehearsal.
- Key leader rehearsal.
- Terrain-model rehearsal.
- Digital terrain-model rehearsal.
- Sketch-map rehearsal.
- Map rehearsal.
- Network rehearsal.

TERRAIN MODEL

2-134. Terrain models are a three-dimensional scale model of the terrain. They are effective for briefing and discussing the actions on the objective. Also effective in depicted primary routes and alternate routes to and from the objective and objective rally points. It may depict the entire mission area. However, for offensive missions, priority should be given to building a model of the objective area.

- It should be built oriented to the ground (north on the model is north on the ground) and should show the main terrain features in the area.
- The next step after orienting the model to the ground is the construction of grid squares.
  - The leader should identify the grid squares that the model will show.
  - These ensure a more accurate model.
- The terrain model should depict key terrain, friendly control measures, and enemy dispositions.
- Materiel for constructing the model includes string, yarn (various colors), chalk (colored), 3x5 cards, target markers, or unit markers.
- The terrain model allows squad leaders and section leaders to rehearse their plan with their squad members.

SECTION IV – PRECOMBAT CHECKS AND INSPECTIONS

2-135. A PCI is a formal, time-intensive inspection that is done before the mission. Its goal is to make sure Soldiers and BFVs are fully prepared to execute the upcoming mission. A PCI is the leader's validation that subordinate, and subordinate's equipment is ready for the upcoming operations.

2-136. A PCC is less formal and more mission specific items than a PCI. During a PCC, Soldiers at all levels check the equipment for which they are responsible. PCCs emphasize areas, missions, or tasks required for upcoming missions. The BCs perform the PCCs on the BFVs.

2-137. The PL or PSG should observe each crew and squad during preparation for combat. They should conduct the inspection once the section and squad leaders report that they are prepared. It is essential that the entire platoon chain of command knows how to conduct PCCs and PCIs.

2-138. PCCs and PCIs are critical to the success of missions. These checks and inspections are leader tasks and cannot be delegated below the team-leader level. For example, at the platoon echelon, the PSG spot checks throughout the unit's preparation for combat. The PL and PSG make a final inspection. For the squad echelon, team leaders spot check throughout preparation, and the squad leader makes a final inspection. They ensure the Soldier is prepared to execute the required individual and collective tasks supporting the mission. Checks and inspections are part of the TLP protecting against shortfalls endangering Soldiers' lives and jeopardizing the execution of a mission.

2-139. PCCs and PCIs must be tailored to the specific unit and mission requirements. Each mission may require a separate set of checklists. Each element will have its own established set of PCCs and PCIs, but each platoon within its element should have identical checklists. Mounted elements and the dismounted Infantry squads will have a different checklist.

2-140. One of the best ways to ensure PCCs and PCIs are complete and thorough is with full-dress rehearsals. These rehearsals, run at combat speed with communication and full-battle equipment, allow the commander and subordinate leaders to envision minute details, as they will occur in the assigned area. If the operation is to be conducted at night, Soldiers should conduct full-dress rehearsals at night as well. PCCs and PCIs should include backbriefs on the mission, the task and purpose of the mission, and how the Soldiers' role fits into the scheme of maneuver. The Soldiers should know the latest intelligence updates, rules of engagement (ROE), be versed in casualty response, evacuation procedures, and sustainment requirements.

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Chapter 3
Offense

PLs and squad leaders must understand the principles and tactics, techniques, and procedures associated with the offense. They must comprehend their role when operating within a larger organization's operations, and when operating independently. Leaders must recognize the complementary and reinforcing effects of other maneuver elements and supporting elements with their own capabilities and understand the impact of open or restrictive terrain on their operations. The platoon conducts the offense to destroy enemy forces, seize decisive terrain, deprive the enemy of resources, deceive, or divert the enemy, develop intelligence, or hold an enemy in position. This chapter covers the conduct of the offense, actions on contact, common offensive planning considerations, movement to contact, attack, operations during limited visibility, and transition.

SECTION I – CONDUCT OF THE OFFENSE

3-1. The basics of the offense establish a foundation for further discussion of how the mechanized Infantry platoon conducts offensive operations. An offensive operation is an operation to defeat or destroy enemy forces and gain control of terrain, resources, and population centers.

CHARACTERISTICS OF THE OFFENSE

3-2. The mechanized Infantry platoon and squad gains and maintains the initiative and keeps constant pressure on the enemy throughout its zone. Success in the offense greatly depends upon the proper application of the characteristics of the offense discussed in paragraphs 3-3 to 3-6.

AUDACITY

3-3. Audacity is a willingness to take bold risks. The offense favors bold execution of the plan. PLs display audacity by accepting risks commensurate with the value of their objectives. They dispel uncertainty by acting decisively. They compensate for any lack of information by aggressively developing the situation to seize the initiative, engaging in continuous combat to create exploitable opportunities as they arise, and engaging in the following activities:

- Building flexible plans that allow leaders to recognize and react or adapt to changing circumstances (emerging threats or opportunities).
- Maintaining situational awareness to identify and take advantage of opportunities.

- Understanding the true value of an objective to the larger operation and the risks involved in achieving it (audacity is the willingness to accept risk).
- Maintaining continuous communications to ensure others are aware of changes to the plan.
- Requesting additional support as required to mitigate unnecessary risks.

CONCENTRATION

3-4. Concentration is massing the effects of combat power in time and space at the decisive point(s) to achieve a single purpose. This requires coordination and an awareness of the environment to position forces in ways that enable concentration without losing surprise, sacrificing tempo, or creating lucrative targets for the enemy. The mechanized Infantry platoon achieves concentration by—

- Understanding the higher commander's intended decisive point, and the effects the platoon is tasked to achieve at that point.
- Understanding the required force ratio at the decisive point and analyzing the platoon's ability to achieve that ratio.
- Carefully planning and coordinating to synchronize efforts based on a thorough terrain and enemy analysis and accurate reconnaissance and surveillance.
- Designating main and supporting efforts, balancing the allocation of combat power between them, and designing a scheme of maneuver that arrays appropriate combat power at the decisive point.
- Integrating effects from higher-level assets, including:
  - Indirect fires.
  - Army, joint, and multinational aviation assets.
  - Electromagnetic warfare with maneuver.
- Maintaining continuous information flow to keep operations synchronized.
- Planning appropriate direct fire and fire support coordination measures (FSCMs) to maximize effects at designated times and places.

SURPRISE

3-5. Surprise is an effect achieved by attacking the enemy at a time or place they do not expect or in a manner for which they are unprepared. Surprise delays enemy reactions, overloads and confuses enemy command and control systems, induces psychological shock in enemy Soldiers and leaders, and reduces the coherence of defensive missions. By diminishing enemy combat power, surprise enables the attackers to exploit enemy paralysis and hesitancy. The mechanized Infantry platoon achieves surprise by—

- Conducting thorough reconnaissance and surveillance to confirm enemy disposition, determine what actions they are prepared for, and identify opportunities to exploit in unexpected ways.
- Changing the tempo of operations or accepting risk in a way the enemy was unable to anticipate.
- Conducting counter reconnaissance, employing stealth, and disrupting communications to deny enemy situational understanding.
- Striking the enemy from an unexpected direction, at an unexpected time, and with a combination of capabilities that they are unable to defeat.

TEMPO

3-6. *Tempo* is the relative speed and rhythm of military operations over time with respect to the enemy (ADP 3-0). Controlling or altering tempo is necessary to retain the initiative. A faster tempo allows attackers to quickly penetrate barriers and defenses and destroy enemy forces in-depth before they can react. Leaders can also purposely slow the tempo to lull the enemy into a false sense of security, but this is rarely done at the platoon or squad level. Leaders adjust tempo as tactical situations, sustainment necessity, or operational opportunities allow. They ensure synchronization and proper coordination, but not at the expense of losing opportunities to defeat the enemy. Rapid tempo denies the enemy the chance to rest while continually creating offensive opportunities but demands quick decisions and places ever increasing strain on Soldiers, equipment, and systems. Tempo is not simply speed. Tempo is the constant application of maneuver elements against enemy combat power, balanced with tactical pauses to ensure appropriate conditions are set to enable continuous operations. The mechanized Infantry platoon controls the tempo by—

- Streamlining planning, preparation, and recovery activities to start movement more quickly than expected from a previous action.
- Ensuring detailed enemy and terrain analysis informs leaders when to employ dismounts.
- Moving more quickly than expected, especially across restrictive terrain.
- Selecting movement formations like bounding overwatch can impact tempo and slow movement.
- Engaging the enemy at multiple locations within a short time or simultaneously.
- Maintaining situational awareness and audaciously exploiting opportunities as they appear.

OFFENSIVE OPERATIONS

3-7. Offensive operations impose the leader's will on an enemy. The offense is the most direct means of seizing, retaining, and exploiting the initiative to gain a physical and psychological advantage. In the offense, the platoon's main effort is a sudden action directed toward enemy weaknesses and capitalizing on speed, surprise, and shock. If that effort fails to destroy an enemy, operations continue until enemy forces are defeated. The *main effort* is a designated subordinate unit whose mission at a given point in time is most critical to overall mission success (ADP 3-0). Offensive operations compel an enemy to react, creating new or larger weaknesses the attacking force can exploit. The four types of offensive operations are movement to contact, attack, exploitation, and pursuit.

MOVEMENT TO CONTACT

3-8. *Movement to contact* is a type of offensive operation designed to establish or regain contact to develop the situation (FM 3-90). The goal of a movement to contact is to make initial contact with the smallest friendly force possible, consistent with protecting the force while retaining enough combat power to develop the situation and mitigate the associated risk. When possible, friendly units should attempt to make first contact with enemy forces by way of a sensor or other unmanned system. The unit conducts a

movement to contact when the enemy situation is vague or not specific enough to conduct an attack. A movement to contact creates favorable conditions for subsequent tactical actions. Once the platoon makes contact with the enemy force, the leader has five options: attack (platoon assault), defend, bypass, delay, or withdraw. The PL selects a COA, reports to the commander then executes. The primary method of conducting a movement to contact involves the platoon advancing within an assigned area towards specified intermediate or march objectives. Subordinate variations of a movement to contact include search and attack, and cordon and search operations.

ATTACK

3-9. An *attack* is a type of offensive operation that defeats enemy forces, seizes terrain, or secures terrain (FM 3-90). An attack masses the effects of overwhelming combat power against selected portions of an enemy force with a tempo and intensity that the enemy force cannot match. Attacking units seek positions of advantage and deliberately synchronize their combined arms teams. An attack differs from a movement to contact because enemy main body dispositions are at least partially known, allowing the leader to achieve greater synchronization. This enables more effective massing of an attacking force's combat power than in a movement to contact. The attack can be hasty or deliberate depending upon the time available for assessing the situation, planning, and preparing.

3-10. Variations of the attack are ambush, counterattack, raid, and spoiling attack. The PLs' mission, commanders' intent, and mission variables guide which of these variations of attack to employ. Units conduct each of these variations, except for a raid, as either a hasty or a deliberate operation.

EXPLOITATION

3-11. An *exploitation* is a type of offensive operation that usually follows a successful attack and is designed to disorganize the enemy in depth (FM 3-90). Exploitations seek to disintegrate enemy forces to the point where they have no alternative but surrender or take flight. Exploitations take advantage of tactical opportunities, foreseen or unforeseen. While all units, regardless of their size, conduct exploitation, division and higher HQ normally plan exploitations as branches or sequels.

PURSUIT

3-12. A *pursuit* is a type of offensive operation designed to catch or cut off a hostile force attempting to escape, with the aim of destroying it (FM 3-90). A pursuit normally follows a successful exploitation. However, any offensive operation can transition into a pursuit if it is apparent that enemy resistance has broken down entirely and the enemy is fleeing the battlefield. Pursuits entail rapid movement and decentralized control.

TACTICAL FRAMEWORK OF THE OFFENSE

3-13. The tactical framework helps visualize operations and to organize forces. The framework used to illustrate the execution of offensive operations tends to overlap each other during the conduct of offense. Section IV movement to contact, and section V attack in this chapter describe how to apply the tactical framework in offensive

operations. The tactical framework is used to describe in detail actions that elements of the platoon and company take to—

- Find the enemy—intelligence drives fires and maneuver.
- Fix the enemy— prevent repositioning or reinforcement making them easier to destroy.
- Finish the enemy—mass available combat power to accomplish the mission.
- Follow through—defeat in detail, consolidate, reorganize, and transition.

SECTION II – ACTIONS ON CONTACT

3-14. *Actions on contact* is a process to help leaders understand what is happening and to take action (FM 3-90). Leaders analyze the enemy throughout TLP to identify all likely contact situations that may occur during an operation and consider their initial actions. Analysis of the enemy will identify many areas where enemy contact is likely; however, it will not identify all of them. The framework for taking actions on contact should guide all enemy contact, whether anticipated or not. Actions on contact does not replace the use of battle drills; instead, battle drills may be elements of the broader process of taking actions on contact. (See Appendix C for battle drills). Actions on contact is not intended to generate a rigid, lockstep response to the enemy. Rather, the goal is to provide an orderly framework that enables leaders to apply sound decision making and timely actions to complete the operation. (See FM 3-90 for more information.)

3-15. Typically, a unit's SOP dictates specific actions, to include battle drills and reports, depending on the type of contact. Additionally, the mission variables, commander's intent and guidance, and scheme of maneuver guide the actions individual units take when they make enemy contact. (See FM 3-90 for more information.)

FORMS OF CONTACT

3-16. In offensive and defensive operations, contact occurs when the mechanized Infantry platoon encounters a situation requiring a lethal or nonlethal response to the enemy. (See FM 3-90 for more information.) These situations may entail one or more forms of contact:

- Direct: Interactions from ground-based, line-of-sight weapons systems (small arms, tank main guns, and antitank missiles).
- Indirect: Interactions from non-line-of-sight weapons systems (including cannon artillery, mortars, and rockets).
- Non-hostile: Neutral interactions that may degrade military operations (including civilians on the battlefield, nongovernmental organizations, or neutral forces).
- Obstacles: Interactions from natural and manmade obstacles (including rivers and minefields).
- CBRN: Interactions from friendly, enemy, and civilian CBRN effects (including CBRN attacks, and toxic industrial materials).
- Aerial: Interactions from air-based combat platforms (including attack helicopters, armed or unarmed UAS, and fixed-wing aircraft).

- Visual: Interaction from acquisition via the human eye, optical, or electro-optical systems (including ground reconnaissance, telescopic, thermal, and IR sights on weapons and sensor platforms such as UAS and satellites).
- Electromagnetic: Interactions via systems used to acquire, degrade, or destroy using select portions of the electromagnetic spectrum (including radar systems, jamming, cyberspace, and electromagnetic pulse).
- Influence: Interactions through the information dimension intended to shape the perceptions, behaviors, and decision making of people relative to a policy or military objective (including through social media, telecommunications, human interaction, and other forms of communication and contact).

FOUR STEPS OF ACTIONS ON CONTACT

3-17. The steps of actions on contact are not intended to generate a rigid, lockstep response to the enemy. Rather, the goal is to provide an orderly framework that gives leaders and soldiers a process to survive the initial contact. When applied most or all the actions can and may happen simultaneously. Unit leaders must apply timely actions and sound decision making when applying the steps. Actions on contact are applicable to all types of operations. They are just as applicable to a squad coming into direct fire contact with an enemy during a movement to contact, an Armor company observing enemy in the defense, a signal element ambushed by the enemy, or a division in the attack. This framework is a way for leaders to quickly determine if things are going according to plan and what actions they need to take to either stay on plan or adjust to the new situation. (See FM 3-90 for more information.)

3-18. Mechanized Infantry platoons and squads should execute actions on contact using a logical, well-organized process that guides the response. The four steps of actions on contact are—

- React.
- Develop the situation.
- Choose an action.
- Execute and report.

REACT

3-19. If the enemy initiates the contact, the element in contact conducts the react to contact battle drill. Any unengaged element monitors the situation and prepares to either support the portion of the platoon in contact or continue the mission. Simultaneously, the platoon, section, or squad in contact reports the contact to their higher HQ which helps them to develop the situation. This also alerts the higher echelon and allows the initiation of necessary actions.

3-20. If friendly forces make contact first without the enemy being aware, they determine if they have been detected, if not they move to a location where they won't be observed and continue the actions on contact process. The mechanized Infantry platoon should attempt to make contact with the smallest element possible. This element is the one that reacts to contact, while the rest of the force begins conducting actions on contact at different tempos.

DEVELOP THE SITUATION

3-21. The unit in contact develops the situation to define the threat being faced. This helps to develop the situation across the front of the unit and ultimately provides more maneuver space to execute further actions. The unit in contact initiates direct and indirect fires to develop the situation, gain initiative and compare courses of action. As the situation develops and the enemy force's dispositions, strength, and intentions become clearer, the unit in contact submits additional reports. Typical things to consider include but are not limited to the following:

- Size, activity, location, composition, and orientation of the enemy force.
- Understanding of enemy capabilities with respect to friendly forces (superior or inferior enemy force)
- Identify enemy flanks and whether they are assailable.
- Impact of obstacles and terrain.
- Enemy capabilities.
- Probable enemy intentions.
- Potential method of gaining positional advantage over the enemy.
- Friendly situation (location, strength, and capabilities).
- Possible friendly actions to achieve the specified end state.
- Means of presenting the enemy with multiple dilemmas.

3-22. For lower echelons with a small frontage such as platoons and below, it will not take long to develop the situation. Additional considerations should include views from UAS, employment of mortars and artillery, and recon by fire.

CHOOSE AN ACTION

3-23. After the platoon makes contact, the PL gathers information to make an assessment based on their understanding of the enemy and friendly forces' composition and disposition and chooses an action consistent with the higher echelon commander's intent and within the unit's capabilities. These actions typically are—

- Attack.
- Bypass.
- Defend.
- Delay.
- Withdrawal.

3-24. Additional considerations are breach, break contact, or cross boundaries. Some actions require the company commanders' approval prior to execution. Reasons for needing a higher commander's approval could include—

- Action requires additional resources.
- Action consumes scarce, limited, or otherwise mission-essential resources (such as breaching assets).
- Action is not within the commander's intent.
- Action sets conditions for the higher echelon to continue.
- Action changes company commanders' scheme of maneuver.
- Action commits the company commander to a changed scheme of maneuver.

EXECUTE AND REPORT

3-25. With the action selected and, if needed, approved by their higher echelon, the unit in contact takes the appropriate actions. The unit initiates direct and indirect fires to gain the initiative and if appropriate to engage enemy forces. If the action is to defend or withdraw, the unit in contact does so while maintaining contact and continuing to gain as much information as possible about the enemy forces disposition and positions. To *withdraw* is to disengage from an enemy force and move in a direction away from the enemy (ADP 3-90). If the action is to bypass the enemy, the unit in contact maintains contact and continues their mission. Unless specifically told by their higher HQ to break contact, the unit in contact will maintain contact no matter which action is chosen. Regardless of the chosen action, reporting to the next higher echelon is required to ensure the unit is staying within the commander's intent.

SECTION III – COMMON OFFENSIVE PLANNING CONSIDERATIONS

3-26. Planning begins once the platoon receives the WARNORD or OPORD from the commander. During this phase, the PL conducts TLP. The PL must account for all considerations applicable for offensive operations when developing their OPORD or FRAGORD.

3-27. Once the PL issues the WARNORD, they initiate rehearsals of tactical movement and battle drills. These rehearsals allow the platoon to begin preparing for the mission. Once the plan is complete, rehearsals are matched to the actual terrain and anticipated actions on contact with the enemy.

COMMAND AND CONTROL

3-28. The PL’s mission and commander’s intent drive the scheme of maneuver and allocation of available resources. All planning for offensive operations addresses the mission variables of METT-TC (I). The command-and-control function of offensive operations for the platoon include the following—

- Location of key leaders and succession of command.
- Scheme of maneuver and commanders' intent.
- Establishment of a common operational picture using available command and control systems, ideally both digitally and analog.
- Required graphic control measures.
- Mission objectives, courses of action including task and purpose, for each subordinate element.
- Primary, alternate, contingency, and emergency communications (use PACE mnemonic) plan.
- Reporting requirements.
- Suspected enemy locations, strengths, and capabilities.
- COAs.
- Priorities of fire.
- Bypass criteria.

MOVEMENT AND MANEUVER

3-29. The platoon conducts tactical movement when contact with the enemy is possible or anticipated. *Tactical movement* is a movement in which troops and vehicles are arranged to protect combat forces during movement when a threat of enemy interference is possible (FM 3-90). The platoon maintains integrity throughout the movement and plans for enemy interference enroute to or shortly after arrival at its destination. During tactical movements, the PL must be prepared to transition to maneuver against an enemy force. Once deployed in its assigned zone, the platoon moves using proper techniques for assigned missions. When contact is made, fire and movement is executed.

3-30. The PL's mission analysis helps to facilitate the decision on how to move most effectively. When planning platoon movements, the PL ensures the unit is moving in a way that supports a rapid transition to maneuver. Platoon movement should be as rapid as the terrain, mobility of the force, and enemy situation permit. The ability to gain and maintain the initiative often depends on movement being undetected by the enemy. The platoon depends heavily upon the terrain for protection from enemy fire. Once contact with the enemy is made, squads and platoons execute the appropriate actions on contact, and leaders begin to maneuver their units.

3-31. The PL conducts maneuver to avoid enemy strengths and create opportunities that increase the effects of combat power. Surprise is achieved by making unexpected maneuvers, rapidly changing the tempo of ongoing operations, avoiding observation, and using deceptive techniques and procedures. The PL seeks to overwhelm the enemy with one or more unexpected actions before it has time to react in an organized fashion. This occurs when the attacking force can engage the defending enemy force from positions of advantage with respect to the enemy, such as engaging from a flanking position.

Note. Whether doing movement or maneuver, leaders should anticipate and routinely account for time spent in tactical pauses, whether to set conditions for continued movement, or for other formations to do so.

MOVEMENT FORMATIONS

3-32. A *movement formation* is an ordered arrangement of forces for a specific purpose and describes the general configuration of a unit on the ground (ADP 3-90). A PL can use several different combat formations depending on the mission variables: column, line, echelon (left or right), wedge, vee, coil, and herringbone. The enemy's anticipated disposition, combined with effects of terrain, are the primary considerations in selecting a movement formation. The effects of micro-terrain and visibility determine the actual arrangement and location of the unit's personnel and vehicles within a given formation. The platoon’s selected movement formation describes the relationship of subordinate squads and sections to each other on the ground. The selected platoon formation must always maintain 360-degree security while moving and at the halt no matter the circumstance. Movement formations can be directed by company or platoon SOP. Leaders will position themselves where they can best control the platoon movement. Unless directed by the company commander, platoons will choose their own formations within the company formation. Based on the formation selected or directed by the

company commander, PLs must ensure the platoon maintains security of their designated company sector during all movements and at the halt (for example, company column, platoon wedge). (When the platoon moves as part of a company, see ATP 3 90.1 for more information). (Infantry squads, see ATP 3-21.8 for movement formations.)

Column Formation

3-33. The *column formation* is a movement formation with elements arranged one behind another (FM 3-90). (See figure 3-1.) The platoon uses the column when moving fast, when moving through restricted terrain on a specific route, or when it does not expect enemy contact. Each vehicle normally follows behind the vehicle in front of it. Organizations plan at a minimum for approximately 100 meters between vehicles, but terrain and visibility determine distance between vehicles when traveling in a column (METT-TC [I] dependent). However, if the situation dictates, vehicles can disperse laterally to enhance security. This is sometimes referred to as a staggered column. The staggered column (see figure 3-2) is used when speed is critical, but the platoon has a limited area for lateral dispersion, or when enemy contact is possible. The staggered column provides greater firepower and security to the front. Leaders will position themselves where they can best control the platoon movement.

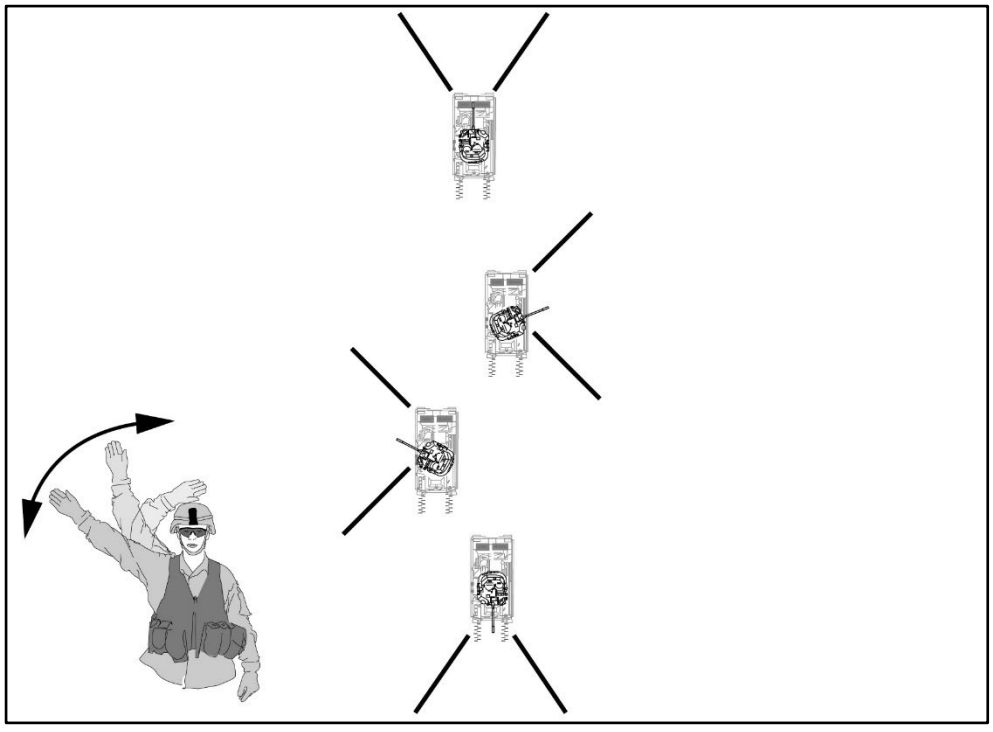


Figure 3-1. Column formation

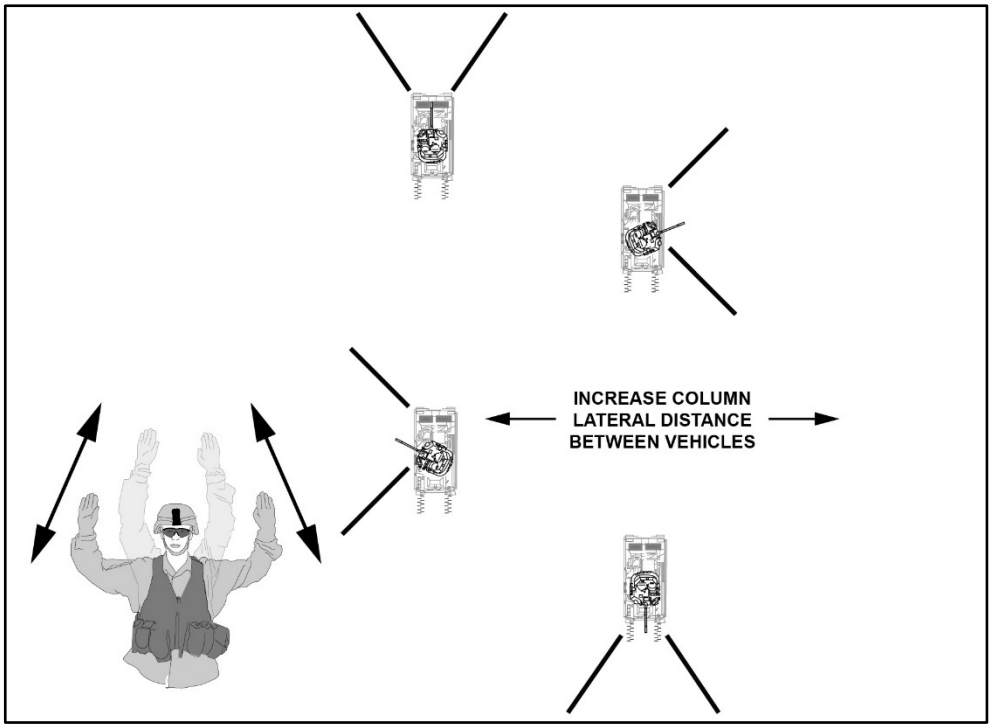


Figure 3-2. Staggered column formation

Line Formation

3-34. A *line formation* is a movement formation in which elements move abreast of each other (FM 3-90). When assaulting a weakly defended objective, crossing open areas, or occupying a support-by-fire position, the platoon mainly uses the line formation as shown in figure 3-3 on page 68. The platoon can use the line formation in the assault to maximize the platoon's firepower and shock effect. The platoon normally uses the line formation when no terrain remains between it and the enemy, when the platoon has suppressed the enemy's antitank weapons, or when the platoon is vulnerable to artillery fire and must move fast. Because the line formation maximizes fires to the direct front, platoons typically only use it when overwatched by another element. Leaders will position themselves where they can best control the platoon movement.

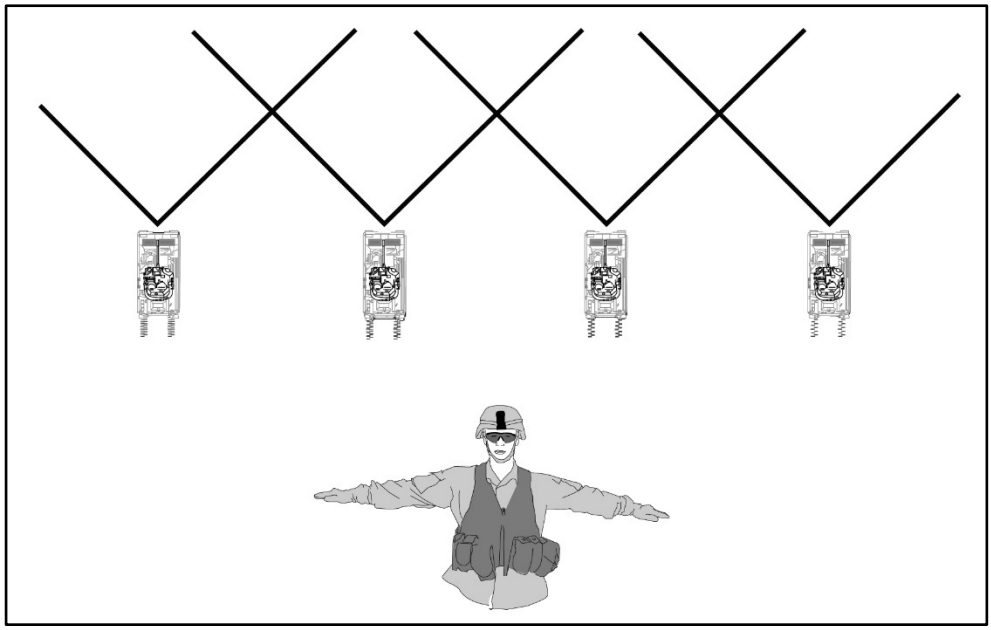


Figure 3-3. Line formation

Echelon Formation

3-35. An *echelon formation* is a movement formation with elements arranged on an angle to the left or to the right of the direction of attack (echelon left, echelon right). (FM 3-90). When the company wants to maintain security or observation of one flank, and when the platoon does not expect enemy contact, the platoon uses the echelon formation shown in figure 3-4. The echelon formation is used to maximize fires in one direction, towards a flank. Typically, it may be used on the side of a company wedge formation, or in advancing towards the flank of an objective when the PL wants to maintain a high volume of fire without masking anybody. Unless there is another formation opposite the echelon, there is a risk of an exposed flank. Leaders will position themselves where they can best control the platoon movement.

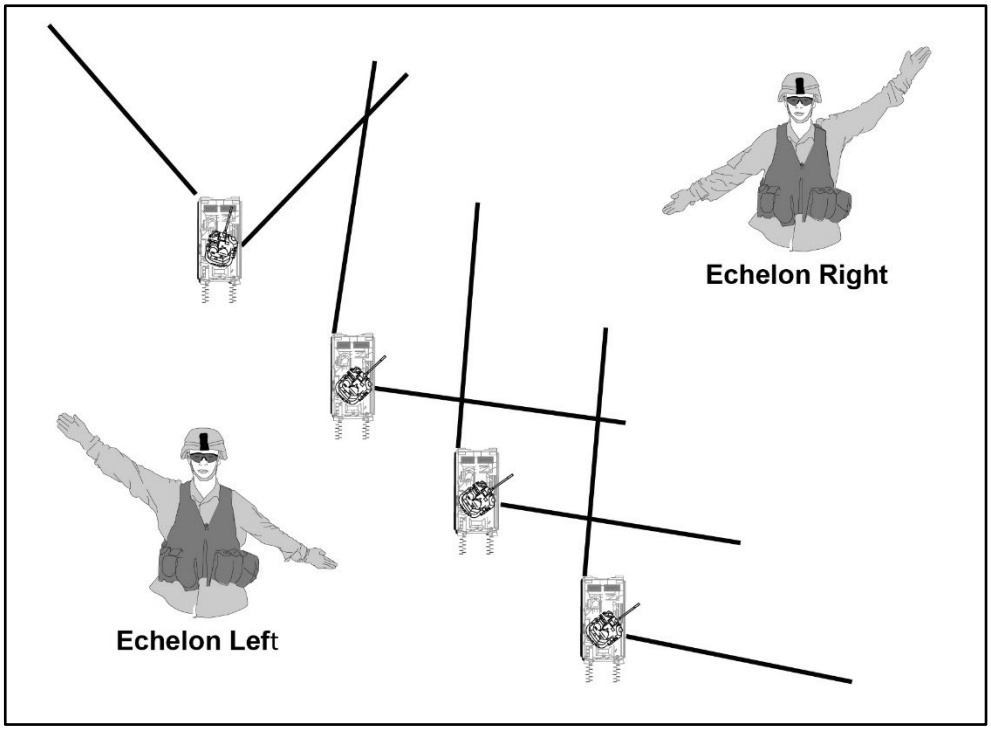


Figure 3-4. Echelon right formation

Wedge Formation

3-36. The *wedge formation* is a movement formation with one lead element and the trail elements are paired off abreast of each other on the flanks (FM 3-90). When the enemy situation seems unclear or when contact might occur, leaders often use the wedge formation as shown in figure 3-5 on page 70. Both the PL and PSG stay in the center of the formation, with their wingmen located to the rear of and outside of them. A platoon wedge might be considered heavy on one side if that leader drops back somewhat to gain some of the advantages of the echelon formation. The wedge formation is a good formation for maintaining all-around observation and security, particularly in situations when the enemy situation is less clear. The wedge formation can be heavy left or heavy right, the PL determines the formation based on possible enemy contact and terrain.

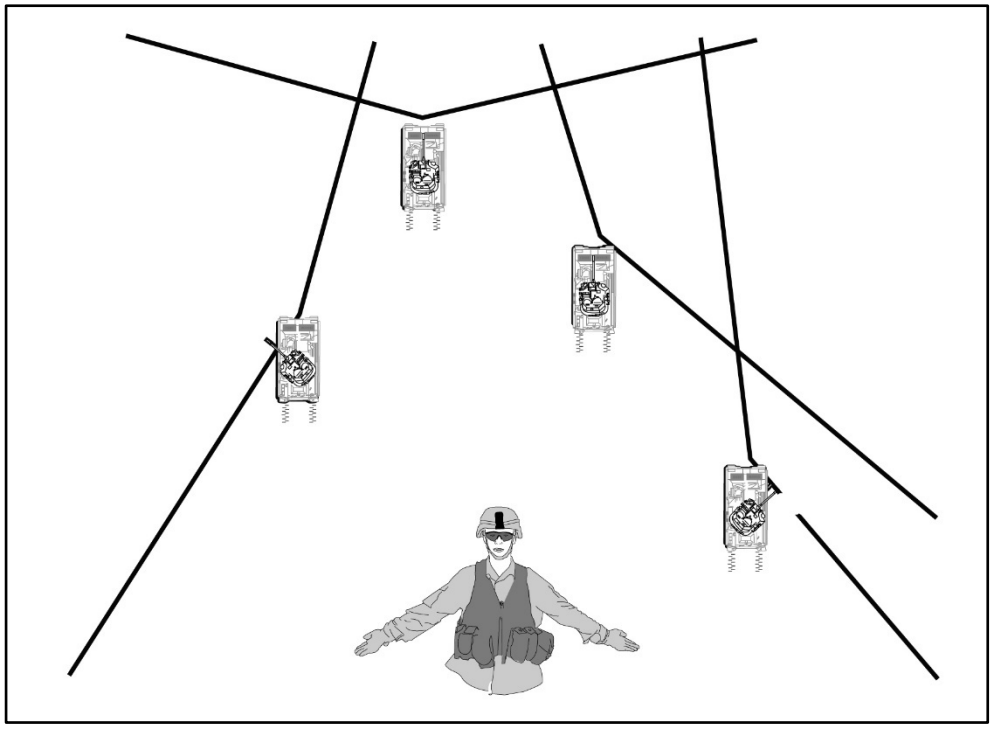


Figure 3-5. Wedge formation

Vee Formation

3-37. A *vee formation* is a movement formation with two elements abreast and one or more elements trailing (FM 3-90). If there are more elements after the trail element in the vee formation, the trail elements can be in front or behind the main body. (See figure 3-6.) This arrangement is suited for an advance against a known threat to the front. Units use this formation when they know the enemy force's location and disposition and expect enemy contact. Both the PL and PSG stay in the center of the formation, with their wingmen located forward and to the outside of them. The vee provides maximum firepower forward and good firepower to the flanks, but the firepower on the flanks is less than that provided by the wedge. The vee allows a unit to change quickly to a line, wedge, or column formation.

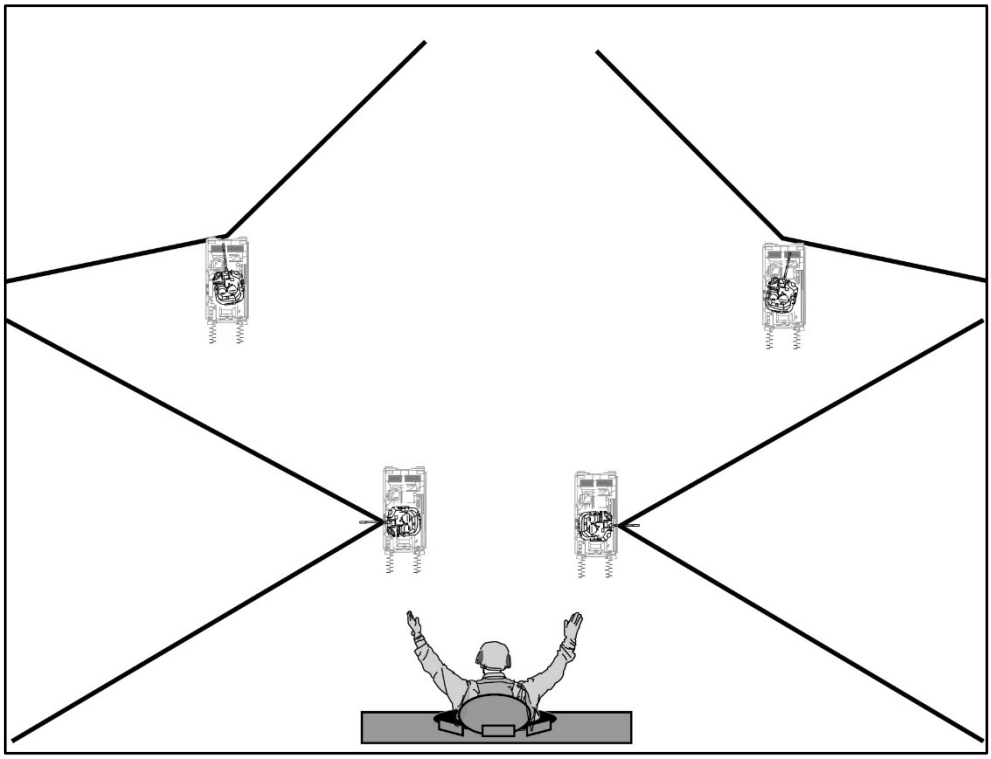


Figure 3-6. Vee formation

Coil and Herringbone

3-38. The coil and herringbone are platoon-level formations employed when elements of the company are stationary and must maintain 360-degree security. The platoon may execute a coil or herringbone alone or as part of a company. Typically, per SOP, if a platoon stops in a security formation for more than a directed amount of time, it should start increasing security posture, such as chemical alarms, camouflage, sector sketches, and so forth. Platoons should consider using Infantry to clear the area prior to moving vehicles off a road or trail. Platoons should always be aware of mines and improvised explosive devices during movement.

Coil

3-39. The coil (see figure 3-7 on page 72) provides all-around security and observation when the platoon is stationary. It is useful for tactical refueling, resupply, and issuing platoon orders. Security is posted to include air guards and dismounted fire teams. The vehicle turrets are manned. The lead vehicle halts in the direction of travel while the other vehicles position themselves to form a circular formation. The platoon should be able to transition from any formation into a coil. The coil may transition to a tactical assembly area.

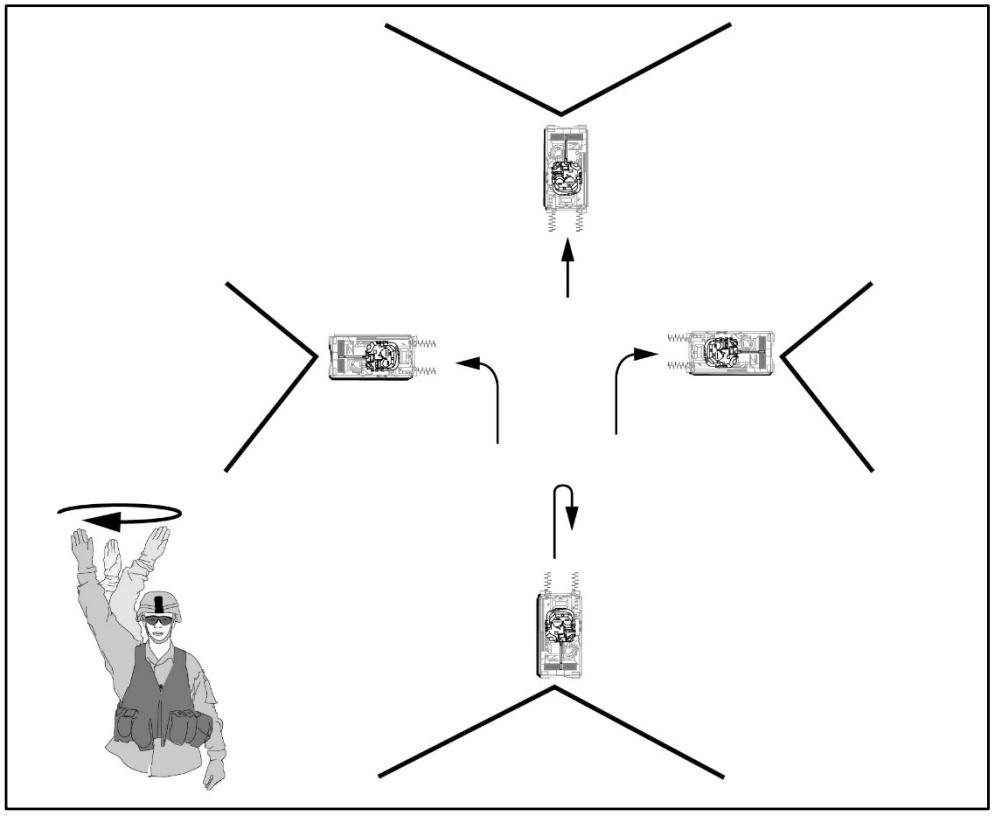


Figure 3-7. Coil formation

Herringbone

3-40. The platoon uses the herringbone to disperse when traveling in column formation (see figure 3-8). They can use it during air attacks or when they must stop during movement. It lets them move to covered and concealed positions off a road or from an open area and set up all-round security without detailed instructions. They reposition the vehicles as needed to take advantage of the best cover, concealment, and fields of fire. Fire team members dismount and establish security. A herringbone can be used for a short halt simply to let other vehicles pass through. Or it can be a longer halt for defensive purposes.

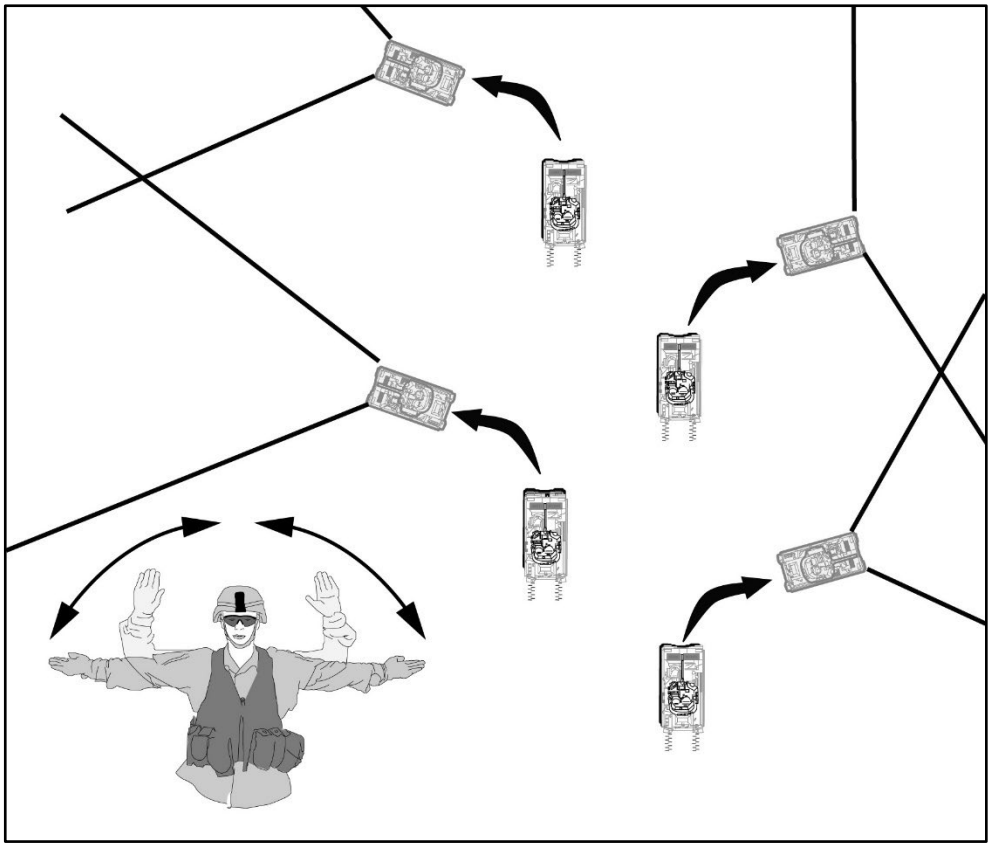


Figure 3-8. Herringbone formation

FORMATION SELECTION

3-41. The PL selects the formation that provides the proper security, direct fires, control, and speed for the operation. The PL's use of planned and rehearsed movement formations allows the platoon to rapidly shift from one formation to another, giving additional flexibility when adjusting to changes in the mission variables of METT-TC (I). The company commander may dictate platoon movement formations as part of the company movement. To ensure the effectiveness of the movement, PLs must plan and rehearse so that they can change formations using standard responses to changing situations. By designating the movement formation planned for use, the PL—

- Establishes the known relationship between units.
- Indicates probable reactions once the enemy makes contact with the formation.
- Indicates the level of security desired.
- Establishes the orientation of platoon weapon systems.
- Postures friendly forces for the attack.

CHANGE OF FORMATION DRILL

3-42. This drill is executed to accomplish a rapid change of formation in response to a change in terrain or enemy situation. The PL must ensure that each BFV commander knows the new formation and the relative position of each BFV in the new formation. The PL uses visual signals or the radio to initiate the drill. Figure 3-9 illustrates the movement of individual BFVs during a change of formation from column to wedge to line, and vee.

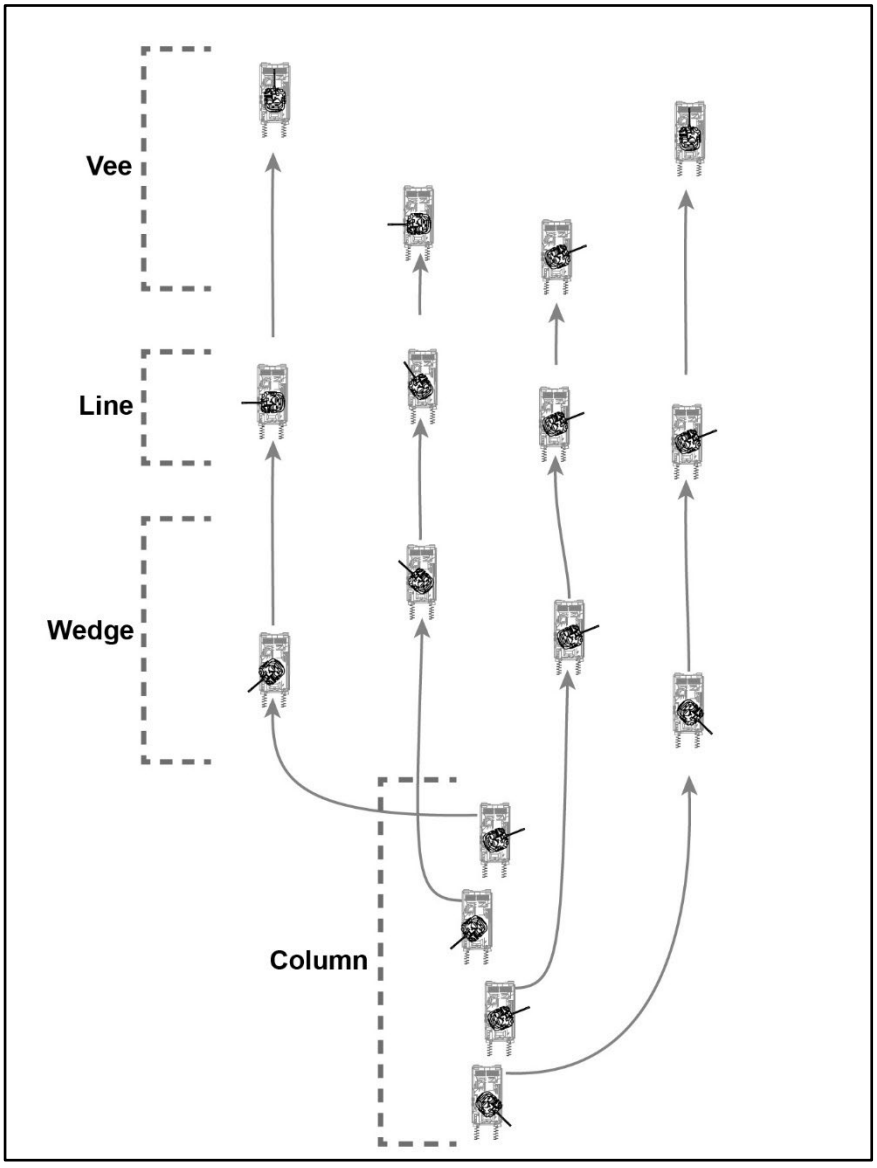


Figure 3-9. Change Formation Drill

3-43. During rehearsals of movement formations, the PLs should train crews to change formations on command, either by vehicle radio or using hand and arm signals. BFV crews should be trained on each position in the selected formation, understanding turret orientation and sectors of fire while moving. PLs and BCs must rehearse changing formations and fully understand their BFVs purpose in each type of formation. Moving from column to wedge or wedge to line is a difficult task and only happens if crews are trained and proficient in each type of movement formation (see table 3-1). Units are responsible for movement and maneuver training as part of home station training.

Table 3-1. Comparison of movement formations

Formation	*Security*	*Direct Fires*	*Control*	*Speed*
Column	Good dispersion Good all-around security	Good to the front and rear Excellent to the flanks	Easy to control Flexible formation	Fast
Line	Excellent to the front Poor to the flank and rear	Excellent to the front Poor to the flank and rear	Difficult to control Inflexible formation	Slow
Echelon	Good to the echeloned flank	Good to the echeloned flank	Good to the echeloned flank	Slow
Wedge	Good all-around security	Good to the front and flanks	Less difficult to control than a line flexible formation	Faster than the line
Vee	Better to the front	Very good to the front	Difficult to control	Slow

MOVEMENT TECHNIQUES

3-44. The PL uses the movement formations in conjunction with three movement techniques: traveling, traveling overwatch, and bounding overwatch. Movement techniques limit the unit's exposure to enemy fire and posture the unit to react to enemy contact. The PL selects the appropriate movement technique based on the chance of enemy contact. While moving, individual Soldiers and vehicles use the terrain to protect themselves when enemy contact is possible or expected. (See figure 3-10 on page 76.) They use natural cover and concealment to avoid enemy fires. Soldiers and vehicle crews—

- Take active countermeasures, such as using obscuration and direct and indirect fire, to suppress or obscure suspected enemy positions.
- Cross open areas quickly and avoid large open areas, especially areas surrounded by high ground or terrain that can cover and conceal enemy forces.
- Avoid possible kill zones because it is easier to cross difficult terrain than to fight enemy forces on unfavorable terms.
- Do not silhouette themselves against the skyline.
- Do not move directly forward from a concealed firing position.

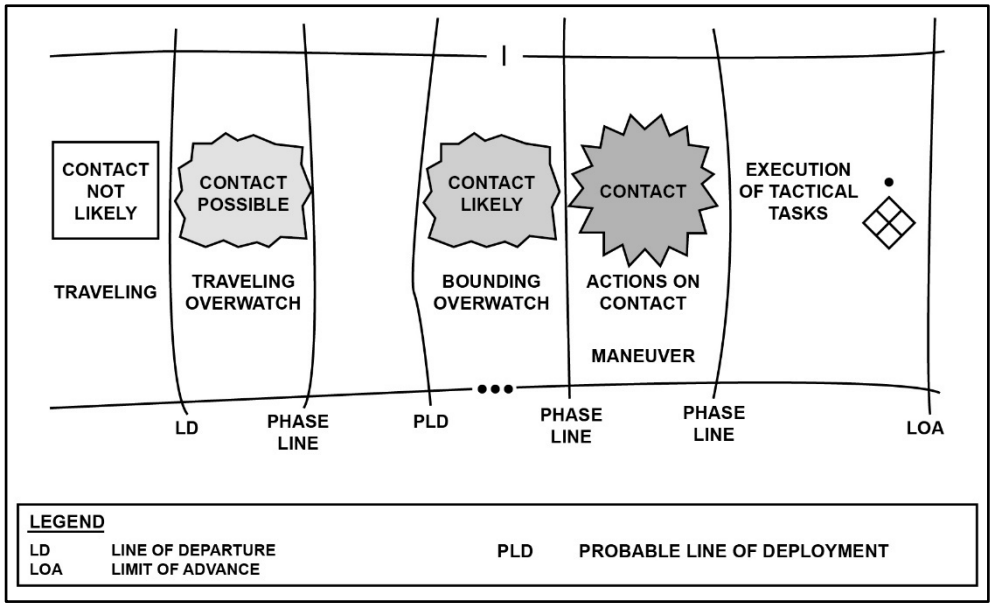


Figure 3-10. Transition from movement techniques to maneuver

3-45. The PL selects from the three movement techniques based on enemy analysis (see ATP 3-21.8 for dismounted techniques):

- The likelihood of enemy contact.
- The type of contact expected.
- Availability of an overwatch element.
- The level of security required during movement.
- Timeline of higher HQ.

Traveling

3-46. *Traveling* is a movement technique used when speed is necessary and contact with enemy forces is not likely (FM 3-90). All elements of the unit move simultaneously. The PL is located where they can best control the situation. Trailing elements may move in parallel columns to shorten the column and reaction time. Distances between sections are based on terrain, visibility, and direct fire weapons ranges. Distances between the BFVs within the sections varies based on terrain, and visibility. However, BFVs must be able to support each other with direct fire weapons if contact occurs. (Figure 3-11 depicts the traveling movement technique.)

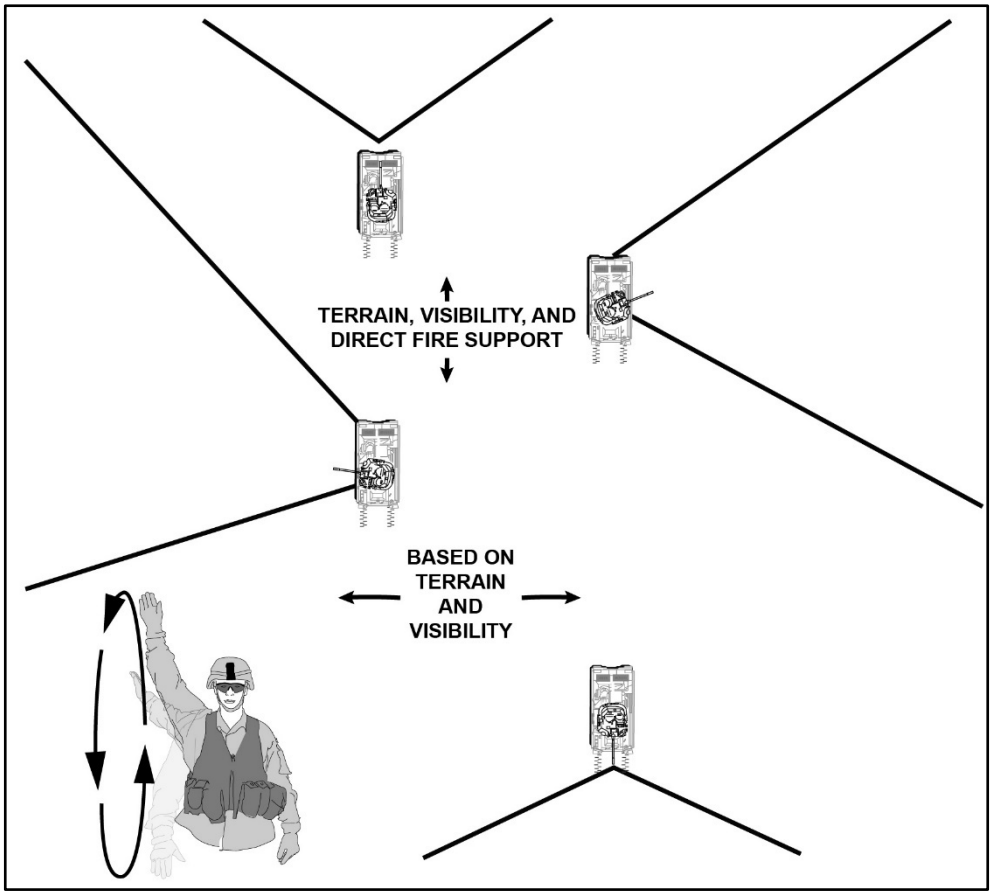


Figure 3-11. Traveling movement technique

Traveling Overwatch

3-47. *Traveling overwatch* is a movement technique used when contact with enemy forces is possible (FM 3-90). Traveling overwatch is an extended form of traveling that provides additional security when speed is desirable, but contact is possible. The trailing element moves at variable speeds and may pause for short periods to overwatch the lead element. The trailing element maintains distance based on terrain, visibility, and direct fire weapons range. It controls its movement based on the lead elements movement. The rear element overwatches at such a distance that if enemy forces engage the lead element, it will not prevent the rear element from firing or moving to support the lead element. Leaders will position themselves where they can best control the platoon movement (See figure 3-12 on page 78).

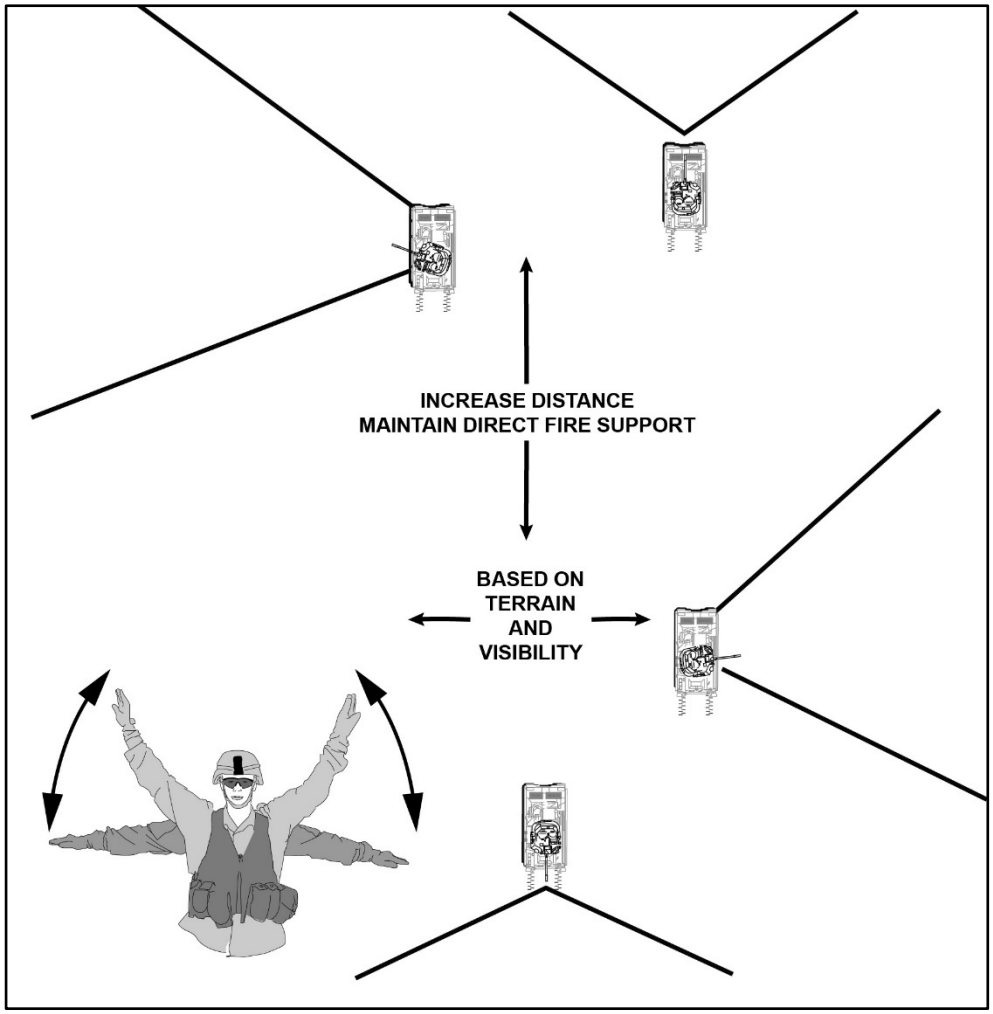


Figure 3-12. Traveling overwatch technique

Bounding Overwatch

3-48. *Bounding overwatch* is a movement technique used when contact with enemy forces is expected (FM 3-90). The unit moves by bounds. One element always halts in position to overwatch another element while it moves. The overwatching element positions to support the moving unit by fire or maneuver. The PL uses the bounding overwatch movement technique when contact is expected with enemy forces. There are two variations of this technique: alternating bounds and successive bounds. Figures are not to scale. (See figure 3-13 and 3-14 on page 80.)

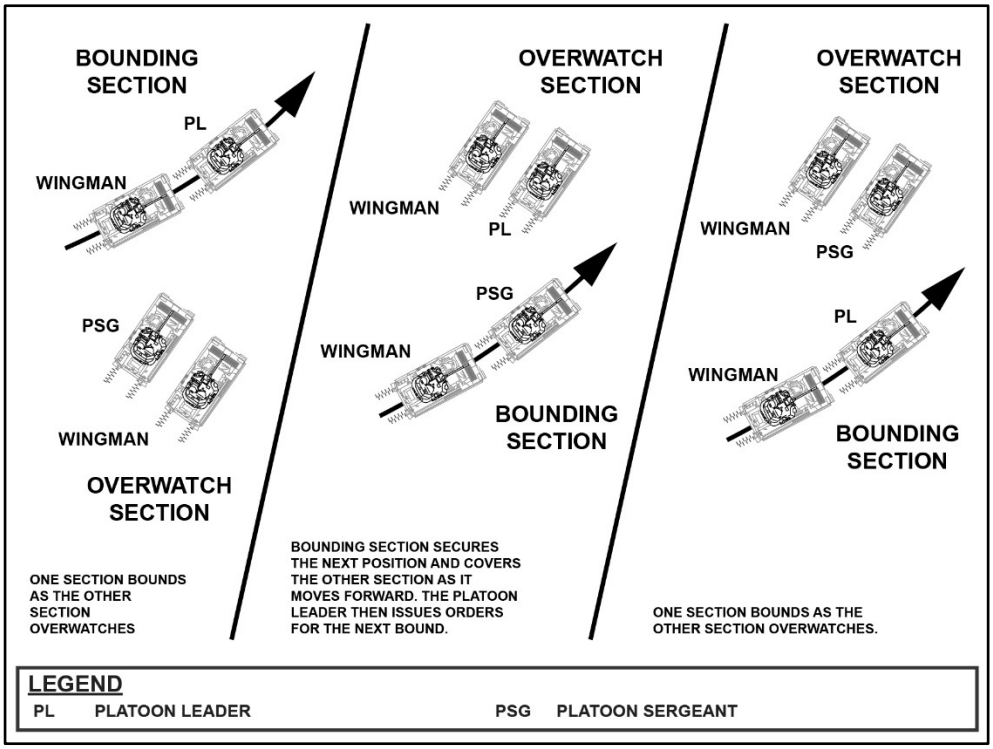


Figure 3-13. Bounding overwatch

3-49. In both cases, the overwatch element is assigned sectors to scan while the bounding element uses terrain to achieve cover and concealment. Based off threat and time available, the mechanized Infantry elements utilize Infantry squads to clear intervisibility lines and defiles prior to vehicles occupying their overwatch position. They can immediately support the bounding elements with fire or maneuver against the enemy if the bounding elements make contact. Unless they make contact enroute, the bounding elements move via covered and concealed routes into the next set of SBF positions. The PL uses the terrain, available cover, and the available supporting range of overwatching weapons to determine the length of bounds. The bounding element should never move beyond the range of supporting fires from the stationary element. The element in overwatch must be able to range well beyond the moving element to engage potential enemy positions. The PL can use the uncommitted part of their forces whenever needed as part of an immediate and controlled reaction to any threat to the bounding force. In the absence of suitable positions from which to overwatch, the platoon should move in traveling overwatch.

Alternating Bounds

3-50. If the platoon uses alternating bounds, the bounding element moves forward, halts, and occupies a SBF position. The stationary element always covers the bounding element's movement, halt, and occupation of the bounding element's SBF position. The bounding element advances past the stationary element, takes an overwatch position,

and becomes the new forward element. The former stationary element now becomes the bounding element, advances past the stationary element, and occupies a new SBF position. This method is usually more rapid than successive bounds (See figure 3-14).

Successive Bounds

3-51. As depicted in figure 3-14, if the unit uses successive bounds, the lead element, covered by the trail element, advances, and occupies a SBF position. The rear element advances to a SBF position abreast of the lead element and halts. The lead element moves to the next position and the move continues. Only one element moves at a time, and the rear element avoids advancing beyond the lead element.

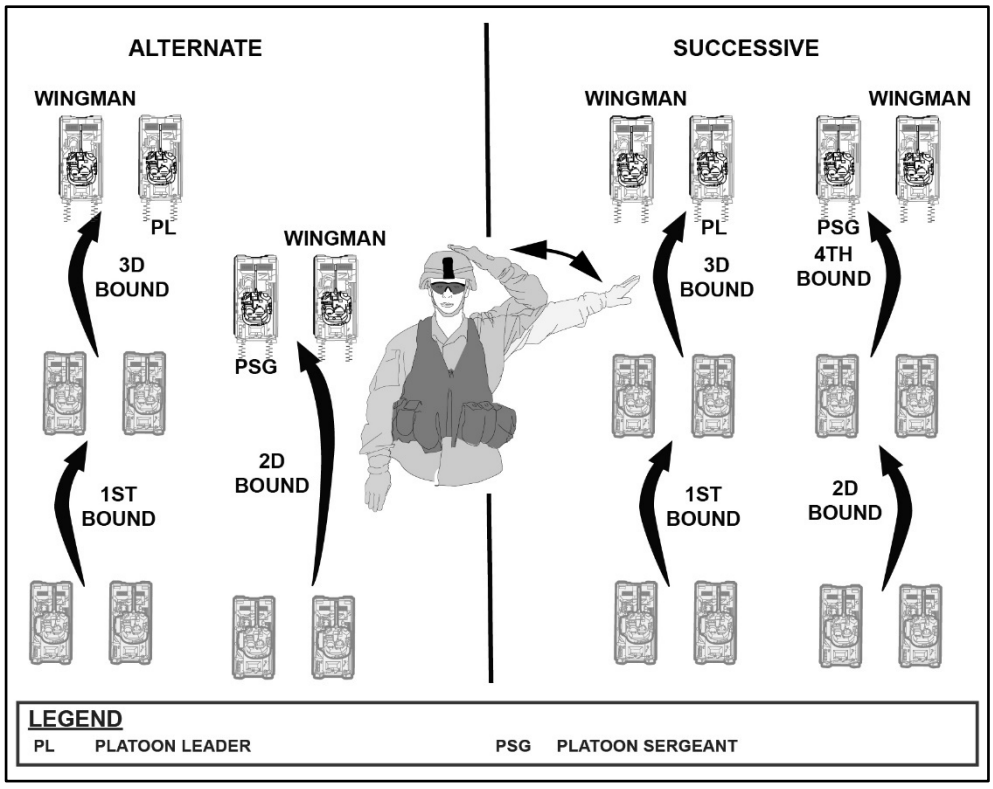


Figure 3-14. Methods of bounding overwatch

Clearing Defiles

3-52. In geography, a defile is a narrow pass or gorge between mountains or hills which could force vehicles to move in a column with a narrow front. Using dismounts is an integral part of transition from movement to maneuver. While dismounting may slow down the tempo of the unit, it is necessary to survive first contact. Critical to establishing tempo, PLs ensure the dismounted and mounted forces synchronize their movements to be mutually supported. One technique for accomplishing the synchronization is for the platoon to clear defiles. Clearing a defile can be understood as a deliberate and planned

variation of the bounding overwatch movement technique. When conducted correctly, the dismounted Infantry move ahead or to the flanks of the mounted elements and clear defile locations.

3-53. Platoons must plan for and allow time and space for dismounted Infantry to approach and clear terrain. Platoons can use obscuration fires or terrain to deny the enemy observation and dismount the Infantry closer to defiles. The PL may use UASs to conduct initial reconnaissance of known defiles. While the Infantry approaches the defile, platoons must plan for their mounted elements to overwatch their movement and provide direct-fire support from BFVs. The CAB mortar platoon (if available) can also provide indirect-fire support.

3-54. Once a defile has been cleared or seized, the Infantry can secure that terrain and bound the mounted elements forward. Once the mounted elements are set, the Infantry can once again push forward to clear the next defile. As with the decision to dismount the Infantry, clearing a defile is slow and deliberate, sacrificing speed. However, it can maintain tempo with the goal of conserving enough combat power to get to the objective and achieve the mission.

DISMOUNT POINTS FOR INFANTRY SQUADS

3-55. The PL determines where the Infantry squads will dismount based on guidance from the company OPORD. These dismount points are geographically depicted on the map where the Infantry squads will join the fight. These dismount points can be short of the objective, on the objective, or beyond the objective. Platoons should rehearse actions at dismount points. Some examples include—

- BCs take up a covered position.
- BCs relay tactical situation to dismounts.
- PL establishes command and control on the ground once dismounted.
- PSG establishes command and control of the mounted element.
- BCs provide cover, concealment, and obscuration at the dismount point.

Short of the Objective

3-56. The advantages of dismounting the squads before reaching the objective include protection of the Infantry during the dismount process, control at the dismount point, and the ability to continue suppression of the enemy by supporting indirect fires during the dismount.

3-57. The advantage of dismounting first is to use the Infantry to clear ATGM positions to set conditions for the armored force to maneuver onto the objective. They can also conduct dismount breaches that enable Infantry squads to assault the objective under overwatch of the mounted elements. Disadvantages include exposure of the squads to indirect and small-arms fire as they maneuver to the objective area and the possibility that suitable dismount points will be targeted for enemy indirect fires.

On the Objective

3-58. The primary advantages of this option are greater speed and enhanced protection of the squads as the platoon maneuvers to the objective area. There are several disadvantages in dismounting on the objective: difficulty in orienting the dismounted

elements on specific locations and objectives while they are riding in the BFVs, problems that may arise in establishing control at dismount points, and vulnerability of BFVs and Infantry squads to short-range antiarmor weapons.

Beyond the Objective

3-59. This dismount option has several potential advantages, including effective controls at the dismount point, greater ease in orienting the dismounted elements to the terrain and the objectives of the assault, and confusion or disorientation among enemy elements when they are forced to fight in an unexpected direction. At the same time, there are significant disadvantages, including vulnerability of the company to attack from enemy positions in-depth or from enemy reserve forces and vulnerability of the BFVs to short-range antiarmor systems and increased risk of fratricide.

Remount Points

3-60. The PL identifies remount for dismounted Infantry squads. The PL analyzes the terrain and mission to determine the most suitable location for the dismounted Infantry squads to remount. Remount points may differ from the planned dismount points. Remount points are affected by the mission variables identified during planning. For speed verses security platoons may have to remount under fire, and if necessary, they may have to remount in the first available vehicle and gain accountability prior to movement.

FORMS OF MANEUVER

3-61. The PL conducts maneuver through the synchronization of fire and movement. The PL references the company OPORD for any dictated forms of maneuver and within the commander's intent, the PL selects a form of maneuver based on their analysis of the mission variables, METT-TC (I). The PL achieves surprise by making unexpected maneuvers, rapidly changing tempo, avoiding observation, and using deceptive techniques and procedures. An operation may contain several forms of maneuver. The forms of maneuver are—

- Frontal attack.
- Penetration.
- Envelopment.
- Turning movement.
- Infiltration.

Frontal Attack

3-62. *Frontal attack* is a form of maneuver in which the attacking force seeks to destroy a weaker enemy force or fix a larger enemy force in place over a broad front (FM 3-90). The frontal attack is the least advantageous to the platoon because it exposes most of the platoon to the concentrated fires of the enemy. The platoon and company normally conduct a frontal attack as part of a larger operation.

3-63. Frontal attacks are executed with overwhelming and well-synchronized speed and strength against a weaker enemy. The mechanized Infantry platoon can execute a frontal attack when the enemy is at a clear and distinct disadvantage. (See figure 3-15.)

3-64. PLs use graphical control measures to aid in briefing the platoon the plan. The PL follows the graphical control measures received from the company OPORD and may not need to add more. The PL can also use any other control measure necessary to control the front attack, including—

- Attack positions.
- Lines of departure.
- Phase lines.
- Assault positions.
- Limits of advance.
- Directions of attack or axes of advance for every maneuver unit.

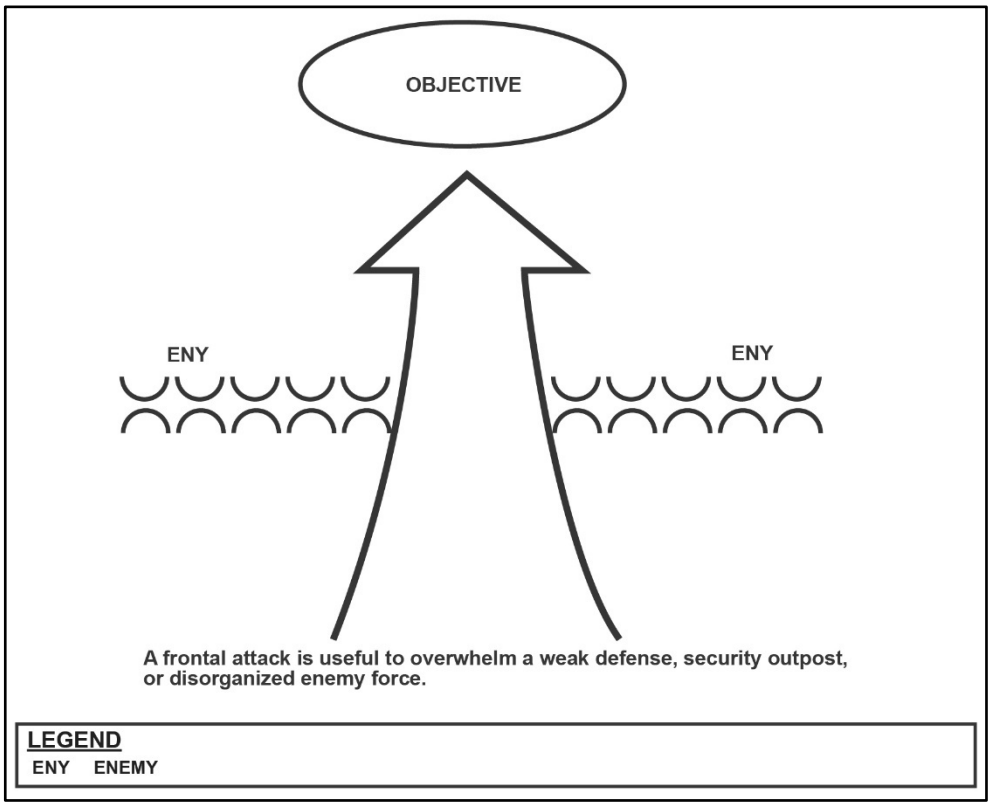


Figure 3-15. Frontal attack

Penetration

3-65. A *penetration* is a form of maneuver in which a force attacks on a narrow front (FM 3-90). Penetrations are conducted when the enemy has no assailable flanks, enemy positions are overextended and weak spots are detected in the enemy defense, or time does not permit an envelopment. Penetrations are normally conducted at the CAB echelon and above. (See figure 3-16 on page 84.) The mechanized Infantry platoon may be utilized as a component of the assault, support, or may be part of the breach force in support of the penetration. Successful penetration depends on the attacking force's

ability to suppress enemy weapons systems, to concentrate forces to overwhelm the enemy defender at the point of attack, and to pass sufficient forces through the gap to defeat the enemy quickly. (See FM 3-90 for more information.)

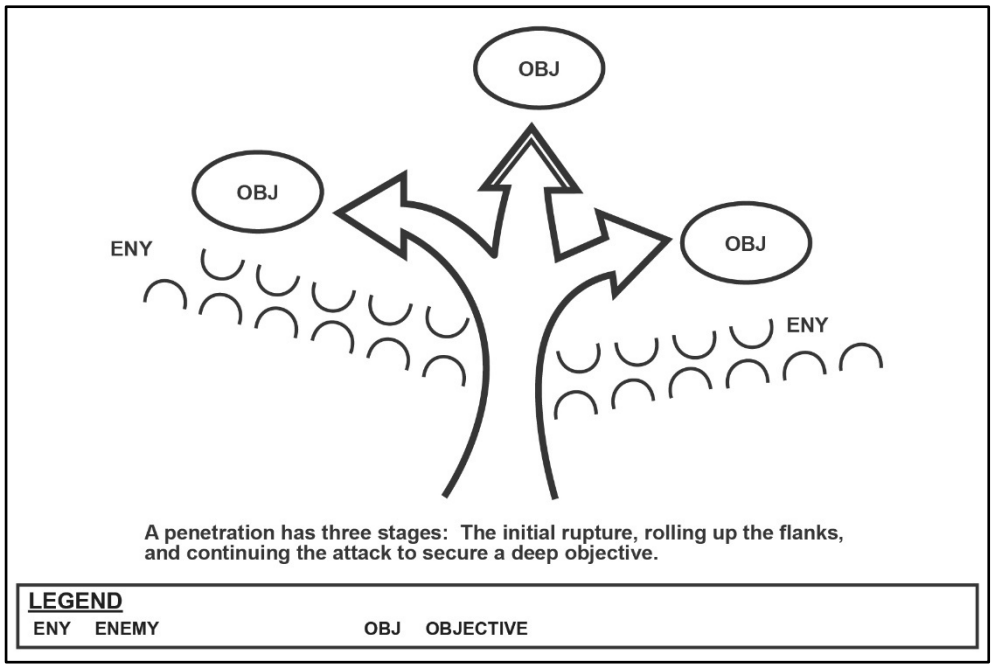


Figure 3-16. Penetration

Envelopment

3-66. *Envelopment* is a form of maneuver in which an attacking force avoids an enemy's principal defense by attacking along an assailable flank (FM 3-90). At the tactical level, envelopments focus on seizing terrain, destroying specific enemy forces, and interdicting enemy withdrawal routes, but are also prepared to engage enemy forces repositioning within the objective, or enemy reserves or counterattacking forces. (See figure 3-17.) Generally, an envelopment is the preferred form of maneuver instead of a penetration or frontal attack because the attacking force tends to suffer fewer casualties while having the most opportunities to destroy the enemy.

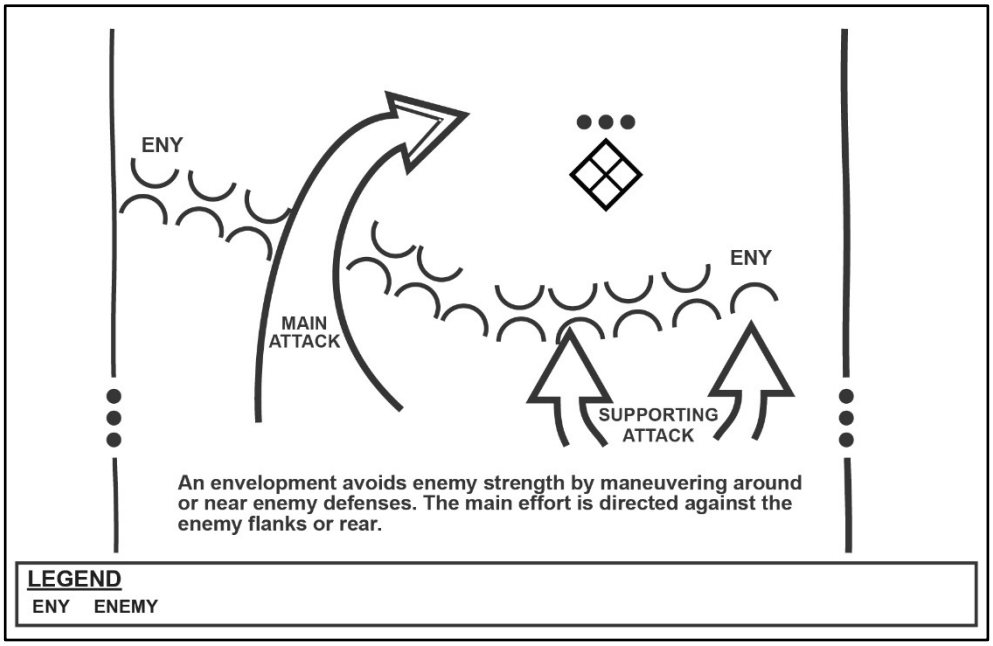


Figure 3-17. Envelopment

Turning Movement

3-67. A *turning movement* is a form of maneuver in which the attacking force seeks to avoid the enemy's principal defensive positions by attacking to the rear of their current positions forcing them to move or divert forces to meet the threat (FM 3-90). The objective of the turning movement is to make contact with the enemy, but at a location advantageous to the commander conducting the turning movement and out of the enemy's established EAs. (See figure 3-18 on page 86.)

3-68. A turning movement differs from envelopment because the force conducting a turning movement seeks to make the enemy forces displace from their current locations, whereas an enveloping force seeks to engage the enemy forces in their current locations from an unexpected direction. The mechanized Infantry platoon conducts a turning movement as part of a larger force.

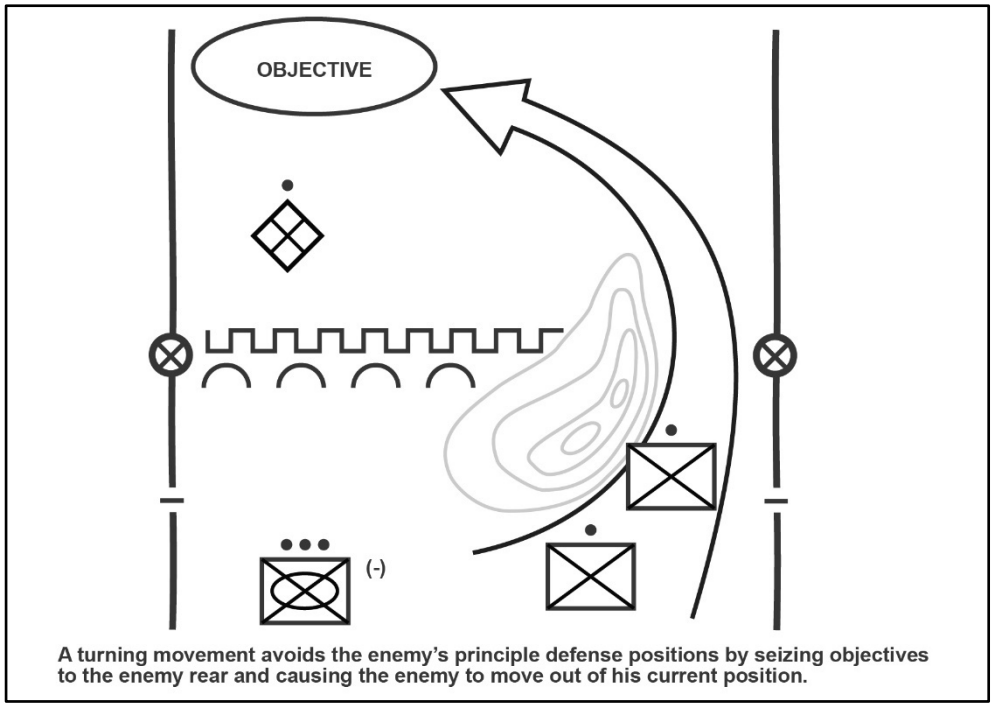


Figure 3-18. Turning movement

Infiltration

3-69. An *infiltration* is a form of maneuver in which an attacking force conducts undetected movement through or into an area occupied by enemy forces (FM 3-90). Infiltration occurs by land, water, air, or a combination of means. (See figure 3-19.) Moving and assembling forces covertly through enemy positions is time consuming. To infiltrate successfully, the force avoids detection and engagement. Since this requirement limits the size and strength of the infiltrating force, the PL is typically limited to the dismounted Infantry to conduct this form of maneuver. The PL considers separate infiltration routes for the BFVs to control the noise and light discipline of the platoon. Infiltrated forces alone can rarely defeat an enemy, infiltration is normally used in conjunction with other forms of maneuver.

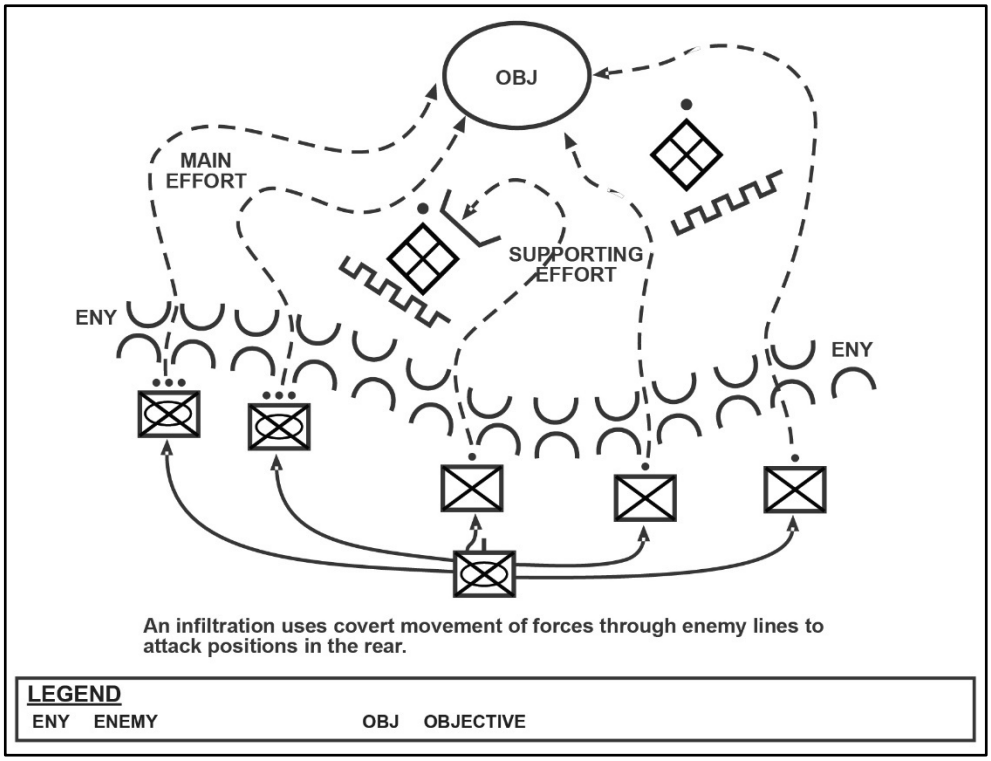


Figure 3-19. Infiltration

INTELLIGENCE

3-70. The PL uses threat event templates, the situation template, the likely threat COA, the most dangerous threat COA, civil consideration products, terrain analysis, weather, and other intelligence products and assessments. The PL can obtain this information from the CAB intelligence officer's analysis and the company OPORD. During offensive operations PLs should analyze terrain for impassable and slow go terrain that will directly impact the ability to fight. The evaluation of avenues of approach leads to a recommendation of the best avenues of approach to a command's objective and to the identification of avenues of approach available to the threat for counterattack, withdrawal, or the movement of reinforcements or reserves. By studying the terrain, the leader tries to determine the primary enemy heavy and light avenues of approach to the objective. The leader also tries to determine the most advantageous area the enemy's main defense might occupy, routes the enemy may use to conduct counterattacks, and other factors of OAKOC. The attacking platoon continuously conducts information collection during the battle because it is unlikely the PL has complete knowledge of the enemy's intentions and actual actions.

FIRES

3-71. The PL conducts fire support planning concurrently with the company commander and CAB. The ABCT and CAB typically use top-down fire support planning, with bottom-up refinement of plans. As part of the top-down fire planning system, the company commander refines the fire support plan from higher HQ to meet mission requirements, ensuring these refinements are incorporated into the higher HQ plan. The PL executes assigned fires from the company and plans fires in accordance with the company OPORD. A *fire support plan* is a plan that addresses each means of fire support available and describes how Army indirect fires, joint fire support, and target acquisition are integrated into operations to facilitate success (FM 3-09).

3-72. A clearly defined concept of fires enables the PL and FO (if attached) to articulate precisely how they want indirect fires to affect the enemy during the different phases of the operation. In turn, this allows the company FSO to facilitate the development of fires supporting accomplishment of the company's mission down to the squad level (See Appendix B for more information).

SUSTAINMENT

3-73. The objective of sustainment in offensive operations is to ensure the company maintains momentum. *Sustainment* is the provision of the logistics, financial management, personnel services, and health service support necessary to maintain operations until successful mission completion (ADP 4-0). The PL ensures they understand the company's sustainment plan to facilitate the platoon's sustainment during the operation. The PL and PSG submit accurate quantities of their supplies on hand to the company XO through the logistical status report. The company determines when this due to the XO and the PL reports based on the assigned times.

3-74. The platoon must be ready to refuel and rearm at any opportunity. PSGs must report consumption of Class III and Class V to the company during execution of the mission. The platoon is largely responsible for its own CASEVAC from the point of injury (POI) to the platoon and company CCP.

3-75. An important aspect of sustainment in a mechanized Infantry platoon is executed by the FMT. The PL ensures their platoon conducts the proper preventive maintenance checks and services (PMCS) throughout an operation. Thorough PMCS by the operators allows the FMT to order the correct parts to ensure the BFVs maintain a fully mission capable status. (See chapter 6 for more information on sustainment).

PROTECTION

3-76. The rapid tempo of offensive operations poses challenges in the protection of friendly assets. *Protection* is the preservation of the effectiveness and survivability of mission-related military and nonmilitary personnel, equipment, facilities, information, and infrastructure deployed or located within or outside the boundaries of a given operational area (JP 3-0). PLs maintain high operating tempo to deny the enemy a chance to plan, prepare, and execute an effective response to friendly offensive operations. The PL extracts the information needed on protection from the company and CAB's OPORD. The understanding of protection will allow the PL to maximize the survivability of the platoon. If applicable the PL coordinates with their higher HQ for

additional protection resources needed to achieve mission success. The exact techniques employed in a specific situation must reflect the mission variables. (See ADP 3-37 for protection.)

3-77. *Survivability operations* are those protection activities that alter the physical environment by providing or improving cover, camouflage, and concealment (ATP 3 37.34). *Survivability* is the quality or capability of military forces which permits them to avoid or withstand hostile actions or environmental conditions while retaining the ability to fulfill their primary mission (ATP 3-37.34). In the offence, camouflage and concealment typically play a greater role in survivability operations. Movement and maneuver-related tasks typically preclude the ability to develop extensive fighting and protective positions. Indirect fire survivability positions and hasty fighting positions, as well as protective positions for key weapon systems, CPs, and critical supplies may be required. Prioritize the use of terrain to provide a measure of protection during the advance. Some examples of survivability tasks executed during the offense are—

- Reducing vehicle signatures using camouflage.
- Using dispersion in movement formations.
- Conducting electromagnetic protection.
- Emplacing air guards.
- Planning and executing survivability moves.
- Training and rehearsing battle drills for all forms of contact.

3-78. Depending on the threat, primary protection concerns of the platoon may be enemy artillery, air, and CBRN threats or hazards. The expected threats should be outlined in the commander's and CABs OPORD. In the face of an enemy air threat, the platoon usually has only passive and active (with its organic weapons) air defenses. However, air defense assets may be located near the company and may provide coverage.

3-79. The PL integrates CBRN defense considerations into mission planning based on the information in the company and CAB's OPORD. This includes the CBRN core functions of assess, protect, and mitigate and the integrating activity of hazard awareness and understanding. The PL uses the company OPORD to determine the appropriate mission-oriented protective posture (MOPP) level for the platoon during the operation (see chapter 5 for CBRN).

SECTION IV – MOVEMENT TO CONTACT

3-80. *Movement to contact* is a type of offensive operation designed to establish or regain contact to develop the situation (FM 3-90). The platoon may participate in a movement to contact in a variety of circumstances when the enemy situation is not clear. For instance, when attacking to straighten the front-line trace; when conducting operations within the enemy's security zone; when following an enemy force that has rapidly displaced or when restrictive terrain allows considerable concealment to threat forces. When planning and executing a movement to contact platoons may not encounter all the forms of contact but must plan and prepare for every contingency. Understanding the forms of contact may help guide the PL in the movement to contact planning process. See section II of this chapter for detailed description of the forms of contact. Units plan and conduct movement to contact to gain or regain contact with the enemy. It ends when

they make enemy contact. Search and attack, and cordon and search are variations of movement to contact.

ORGANIZATION OF FORCES

3-81. The mechanized Infantry platoon normally conducts movement to contact as part of a company team within the CAB; however, based on the mission variables of METT-TC (I) it can conduct the operation independently. Within the CAB, a movement to contact is organized as a minimum with a forward security force, advanced guard, and a main body. Based on METT-TC (I), the CAB commander may increase the unit's security by resourcing an offensive covering force and an advance guard for each column, as well as flank and rear security. A scout platoon is normally tasked with the mission to screen, guard, or provide flank and rear security. The platoon would be organized into one of the following forces when conducting a movement to contact as part of a larger force.

FORWARD SECURITY FORCE

3-82. The forward security force generally comprises an advance guard, a covering force or both. When the platoon serves as the forward security force the composition depends on mission variables. The forward security force moves as quickly and aggressively as possible but remains within supporting range of the main body's weapon systems. It is essential to provide early warning and reaction time for the main body. It destroys small enemy forces or causes the enemy to withdraw before they can disrupt the main body. Within a company team, a mechanized Infantry platoon normally serves as the forward security force.

ADVANCE GUARD

3-83. When the platoon serves as the advance guard, its purpose is to protect the main body from surprise attack and develop the situation to protect the deployment of the main body when it is committed to action. These responsibilities include—

- Providing security and early warning for the main body and facilitating its uninterrupted advance.
- Conducting reconnaissance to locate enemy forces within the command directed boundaries and along the platoons' axis of advance.
- Conducting actions on contact to retain freedom of maneuver for the unit.
- Calling for indirect fires to impede or harass the enemy.
- Destroying enemy reconnaissance elements.
- Finding, fixing, defeating, destroying, or containing enemy security forces to retain freedom of maneuver for the unit.
- Bypassing and reporting obstacles or acting as the support or breach force during breaching operations.

3-84. Composition of the advance guard depends upon METT-TC (I). In open terrain, it may move mounted; but in restricted, close, complex, or urban terrain, dismounted movement with vehicles in the overwatch may be a better choice. Engineers, tank, or mechanized Infantry platoons may be attached to the advance guard. The mortar platoon or a mortar section may support the advance guard.

3-85. The advance guard is the commander's main effort and should be designated as the priority for fires, and all other forms of support. Once the main body is committed, priorities will shift to that element. In planning the movement to contact, each decision point should be based on the actions of the advance guard.

MAIN BODY

3-86. The *main body* is the principal part of a tactical command or formation. It does not include detached elements of the command, such as advance guards, flank guards, and covering forces (ADP 3-90). The combat elements of the main body are prepared to deploy and maneuver rapidly to a decisive point on the battlefield to destroy the enemy. The main body bases its movement on the advance guard. The main body, remaining attuned to the advance guard's situation, provides responsive support when the advance guard makes contact. The CAB commander may designate a portion of the main body as the reserve.

3-87. Tasks the platoon can perform within the main body include the following:

- Find, fix, defeat, destroy, or contain the enemy's fixing force followed by the enemy assault force or site exploitation force, to retain freedom of maneuver for the remainder of the company.
- Maneuver to develop the situation and gain understanding of enemy capabilities and disposition.
- Execute a COA to defeat or destroy a designated enemy main body element.
- Standard formations and battle drills that allow the commander to shift combat power rapidly.
- Anticipate the CAB commander’s decisions for commitment of the main body and plan accordingly, which PLs perform based on their knowledge of commander’s intent and their own situational awareness.

RESERVE

3-88. The mechanized Infantry platoon may be identified as part of the reserve for a CAB. The mission variables determine the size of the reserve, and the more unknown the enemy situation, the larger the size of the reserve. On contact with enemy forces, a reserve provides flexibility to react to unforeseen circumstances and allows a unit to resume its movement. When designated as the CAB reserve, the PL must understand the battalion's planning priorities and release criteria for employing the reserve. The reserve must know how to locate and enter the radio net for every element in the battalion.

MECHANIZED INFANTRY PLATOON CONDUCTING A MOVEMENT TO CONTACT

3-89. The mechanized Infantry platoon normally conducts movement to contact as part of a larger element. If tasked to conduct a movement to contact as an independent element, platoons employ appropriate movement techniques, standard formations and battle drills that allow the PL to rapidly shift combat power to a decisive point. The platoon will execute a purposeful and aggressive movement, decentralized control, and hasty deployment of formations. Platoons may move mounted, dismounted or a combination of both based on terrain and the enemy situational template. Normally a platoon conducts a movement to contact by advancing within an assigned zone toward

a march objective. The PL analyzes the situation and selects the proper tactics to conduct the mission. Platoons must be proficient in all forms of contact and battle drills. The PL reports all information rapidly and accurately and strives to gain and maintain contact with the enemy. The fundamentals of movement to contact are the following:

- Focus all efforts on finding the enemy.
- Keep initial contact force small, mobile, self-contained, and avoid becoming decisively engaged by the enemy's main body.
- Task-organize the force and use movement formations and battle drills to deploy and attack rapidly in any direction.
- Keep subordinate forces within supporting distances to facilitate gaining and maintaining contact.
- Upon gaining contact, maintain that contact regardless of the COA adopted.
- Orient on planned march objectives.

CONTROL MEASURES

3-90. A *control measure* is a means of regulating forces or warfighting functions (ADP 6-0). Execution of movement to contact usually starts from a LD at the time specified in the OPORD. The leader controls the movement to contact by using phase lines, contact points, and checkpoints when necessary. A *contact point* in land warfare, is a point on the terrain, easily identifiable, where two or more units are required to make contact (JP 3-50). The leader controls the depth of movement to contact by using a limit of advance (LOA) or a forward boundary. The leader could designate one or more objectives to limit the extent of movement to contact and orient the force. However, these are often terrain-oriented and used primarily to guide movement.

3-91. Although movement to contact may result in seizing terrain, the primary focus should be on the enemy force. If the leader has enough information to locate significant enemy forces, then the leader should plan some other type of offensive action.

3-92. Leaders use positive control over maneuver units, coupled with battle drills and formation discipline. Platoons are assigned a zone for a movement to contact and not normally assigned their own AO.

3-93. The leader can designate a series of phase lines successively becoming the new rear boundary of forward security elements as force advances. Each rear boundary becomes the forward boundary of the main body and shifts as the security force moves forward. The rear boundary of the main body designates the limit of responsibility of the rear security element. This line shifts as the main body moves forward.

SEQUENCE OF EVENTS, EXAMPLE

3-94. Most platoon movement to contacts will follow a sequence of events similar to the example sequence addressed below, as part of a larger movement to contact. This sequence of events is used for discussion purposes and is not the only way to sequence a movement to contact. With any sequence, leaders understand events will vary depending on the mission variables of METT-TC (I) and to some degree, events will overlap. Events include—

- AA.
- Reconnaissance and surveillance.

- Movement to the LD.
- Movement after the LD.
- Initial engagement (transition to a maneuver plan).

ASSEMBLY AREA

3-95. Once the AA is established, the platoon prepares for upcoming operations and leaders plan, direct, and supervise mission preparations. This time allows the platoon and squads to conduct PCCs, PCIs, rehearsals, and sustainment activities. The platoon typically conducts these preparations within a company AA, as it rarely occupies its own AA. See chapter 5 for detailed description of establish and occupy an AA.

RECONNAISSANCE AND SURVEILLANCE

3-96. Leaders should aggressively seek information about the terrain and enemy. Because the enemy situation and available planning time may limit a unit's reconnaissance and surveillance activities, the platoon usually conducts reconnaissance to answer the commander's critical information requirements. An example is reconnoitering and timing routes from the AA to the LD. The platoon may augment the efforts of the battalion scout platoon to answer the commander's critical information requirements. For example, the platoon may conduct an area or zone reconnaissance to reconnoiter an identified named area of interest. A *named area of interest* is a geospatial area or systems node or link against which information that will satisfy a specific information requirement can be collected, usually to capture indications of adversary courses of action (JP 2-0). Other forms of reconnaissance and surveillance provided to the platoon may include information from maps and terrain software/databases and UASs. Updates from reconnaissance and surveillance activities can occur at any time while the platoon and squad are planning for, preparing for, or executing the mission. As a result, leaders must be prepared to adjust their plans.

MOVEMENT TO THE LINE OF DEPARTURE

3-97. The platoon typically moves from the AA to the LD as part of the company movement plan. This plan may direct the platoon to move to an attack position-the last position an attacking force occupies or passes through before crossing the LD (ADP 3-90)-and await orders to cross the LD. If so, the PL reconnoiters, times, and rehearses the route to the attack position. BCs and squad leaders know where they are located within the assigned attack position. The company commander may order all platoons to move within a company formation from the AA directly to the point of departure, the point where the unit crosses the LD and begins moving along a direction of attack (ADP 3-90). If one point of departure is used, it is important the lead platoon and trail platoons reconnoiter, time, and rehearse the route to the point. This allows the company commander to maintain synchronization. To maintain flexibility and to maintain synchronization, a point of departure along the LD may be designated for each platoon. Movement to and/or across the LD may entail a forward passage of line (See chapter 5 for passage of lines).

MOVEMENT AFTER THE LINE OF DEPARTURE

3-98. A movement to contact usually starts from a LD at the time specified in the OPORD or FRAGORD. The PL controls the movement to contact of the platoon by

using phase lines, contact points, and checkpoints as required and controls the depth of the movement to contact by using an LOA or a forward boundary. March objectives (one or more), such as, attack position or assault position, may be used to limit the extent of the movement to contact and orient the force. This movement is often terrain oriented and used only to guide the force. Although a movement to contact may result in taking a terrain objective, the primary focus should be on the enemy force. When the PL has enough information to locate significant enemy forces, the leader should plan another type of offensive action.

3-99. PLs plan the approach for the movement to contact, ensuring synchronization, security, speed, and flexibility by selecting the platoon's routes, movement formation, and movement technique. Leaders must be prepared to make contact with the enemy. They must plan accordingly to reinforce the company commander's needs for synchronization, security, speed, and flexibility. During the movement to contact, the PL may exercise disciplined initiative and alter the platoon's movement formation and movement technique or speed to maintain synchronization with the other platoons. This retains flexibility for the company commander.

INITIAL ENGAGEMENT

3-100. Usually within the platoon's movement technique during a movement to contact, the lead element, will make the initial contact with the enemy. Upon making contact, the lead element reacts, develops the situation, choose an action, and execute and report. The lead element determines the size and activity of the enemy force and avoids being fixed or destroyed. If possible, the lead element dismounts their Infantry squads. When the enemy is moving, the lead element determines the direction of movement and the size and composition of the force. After developing the situation, the element leader chooses and an action to use against the enemy. The element leader or attached FO can disrupt lead enemy forces by placing indirect fires on the enemy forces. Speed of selecting a COA and execution is critical when the enemy is moving. When the enemy is stationary, the lead element determines if the enemy is occupying prepared positions and is reinforced by obstacles and minefields. The lead element tries to identify any crew-served weapons or antitank weapon positions, the enemy's flanks, and gaps in positions. The lead element passes this combat information and proposed COA to the PL to assess the information and further develop the situation, if required. Developing the situation and achieving an understanding of the enemy force is critical to deciding how to continue the engagement.

3-101. When the mechanized Infantry platoon is committed as the advance guard, the platoon maneuvers to overpower and destroy a small security team or squad-size element, respectively. Commitment against a larger force or an enemy strong point normally requires the deployment of the movement to contact's main body (see ATP 3-90.1). The advance guard protects the main body by fixing enemy forces, which allows the movement to contact's main body to retain its freedom to maneuver. In developing the situation, the advance guard PL maintains pressure on the enemy by fire and movement. The advance guard probes and conducts a vigorous reconnaissance of the enemy's flanks to determine the enemy's exact location, composition, and disposition. Once contact is made with an enemy force, there are one of five planned options-attack, defend, bypass, delay, or withdraw.

PLAN

3-102. Movement to contact is one of the most difficult missions to plan. The goal is to prevent a meeting engagement with the enemy. A *meeting engagement* is a combat action that occurs when a moving force engages an enemy at an unexpected time and place (FM 3-90). Units plan and conduct movement to contact to gain or regain contact with the enemy. It ends when they make contact.

3-103. Planning begins by developing the concept of the operations with the ultimate focus on control of the objective and conducting a reverse planning sequence from the objective to the LD. This is accomplished by understanding the commander's intent and developing a simple concept of operations. The PL receives guidance from the commander on the PIR and develops a plan to answer the commander’s PIR. To plan the mission, the PL must understand the breadth and depth of the axis of advance, whether there are any established bypass criteria, and the required effects to be achieved against all enemy forces in zone.

3-104. The PL must have a good indirect fire plan for their route to cover anticipated places of contact. They work with the company FSO and FOs to develop the platoon’s fire plan. These targets are a product of the PL's analysis of the factors of METT-TC (I) and must be incorporated into the company indirect fire plan. The PL, PSG, section leaders, or squad leaders may initiate the calls for fire.

3-105. When planning, the PL identifies where the platoon will likely transition from movement to maneuver. This will allow the PL to decide which movement formations will be most effective against the template enemy forces. They plan to make enemy contact with the smallest friendly force possible preferably an unmanned system or sensor. This allows the PL sufficient combat power to maneuver and develop the situation for the company commander.

3-106. Leaders conduct information collection to determine the enemy's location and intent while conducting security operations to protect the main body. This includes available manned and unmanned air assets, allowing the main body to focus on planning and preparation. This includes rehearsals on the conduct of hasty attack operations, bypass maneuvers, and hasty defenses. PLs use all available information and intelligence to identify the probable locations for meeting engagements. Identifies other forms of contact, by type and location, anticipates associated actions, and battle drills. The PL should develop and nest their graphic control measures with their commander.

3-107. The PL develops contingency plans in the case of meeting an unexpected enemy force or obstacle. They develop options during their planning. Contingency plans may consist of the following actions:

- Platoon makes contact with a small enemy force.
- Platoon makes contact with a larger force beyond its capabilities to defeat.
- Platoon makes contact with an obstacle unidentified by higher.
- Action to report and bypass an enemy force.
- Maneuver options and transitions.

PREPARE

3-108. Preparation actions are performed by the platoon to improve its ability to execute an operation. The platoon's success during missions depends as much on preparation as planning. Activities specific to preparation include—

- Revising and refining the plan.
- Rehearsals.
- Sustainment preparations (Class I, III, V).
- Equipment maintenance and PMCS.
- Confirm zero test fire weapons.
- Troop movements.
- PCCs and PCIs.
- Subordinate confirmation briefs and back briefs.

3-109. While preparing, the PL must receive the most current intelligence updates from the commander and the CAB's intelligence cell. The PL plans *troop movement*, which is the movement of Soldiers and units from one place to another by any available means (FM 3-90), in accordance with the company OPORD. They request any updated imagery from higher HQ to develop situational awareness and make any adjustments to the final plan. The PL communicates any intelligence updates on the enemy situation to their subordinates and receives a back brief to confirm their understanding.

REHEARSALS

3-110. The platoon uses rehearsals to help understand their roles in upcoming operations, practice complicated tasks, and ensure equipment and weapons function properly. Following the last company rehearsal, the platoon should conduct a final rehearsal of its own to incorporate adjustments to the company scheme of maneuver. The platoon rehearsal should cover the following subjects:

- Movement from current positions.
- Routes (to include passage points, contact points, checkpoints, and CCP).
- Dismount and remount rehearsals.
- Actions on contact, based on where enemy contact is likely and expected.
- Actions on the objective.
- CASEVAC.
- PACE plan.
- Sustainment plan (priority [Class III (B), Class V])
- Recovery plan.
- Consolidation and reorganization.

EXECUTION

3-111. The platoon synchronizes its actions with adjacent and supporting units, maintaining contact and coordination as prescribed in orders and unit SOP. The company commander synchronized a movement to contact utilizing graphic control measures. The PL should nest their graphic control measures with their commander. Paragraphs 3-112 to 3-19 discuss executing movement to contact in a four-step sequence.

FIND THE ENEMY

3-112. The PL uses all available sources of combat information to find the enemy's location and dispositions, which ensures that they can commit forces under optimal conditions. The optimal conditions could be making and maintaining contact with the smallest element possible. This allows the commander to develop the situation before committing the main body.

FIX THE ENEMY

3-113. *Fix* is a tactical mission task in which a unit prevents the enemy from moving from a specific location for a specific period (FM 3-90). Once contact is made, the platoon brings overwhelming fires onto the enemy to prevent them from conducting a spoiling attack or organizing a coherent defense. The security force maneuvers as quickly as possible to find gaps in the enemy's defenses.

3-114. The platoon conducts maneuvers at a high tempo the enemy cannot match so success depends upon the platoon’s ability to rapidly suppress or immobilize enemy forces. The security force does not allow the enemy to maneuver against the main body. The organization, size, and combat power of the security force are major factors determining the size of the enemy force it can defeat without deploying the main body.

3-115. The techniques the leader employs to fix the enemy when both forces are moving are different than those employed when the enemy force is stationary during the meeting engagement. In both situations, when the security force cannot overrun the enemy by conducting a hasty frontal attack, a portion of the main body is deployed. When this occurs, the unit is no longer conducting movement to contact but an attack.

FINISH THE ENEMY

3-116. If the security force cannot overrun the enemy with a frontal attack, the main body leader quickly maneuvers the main body to conduct a penetration or envelopment that overwhelms the enemy force before it can react or reinforce. The commander will likely direct the security force to continue to fix by using SBF or assault by fire. The leader attempts to defeat the enemy in detail while still maintaining the momentum of advance. After an attack, the main body leader resumes the movement to contact. If the enemy is not defeated, three main options exist: bypass, transition to a more deliberate operation, or conduct some type of defense.

3-117. The PL dismounts the Infantry squads as early as feasibly possible. The Infantry squads provide flexibility to the PL to maneuver their BFV with overwatch positions. The integration of the Infantry squads and mounted sections allow the PL to mass overwhelming combat power onto enemy positions, until they are defeated, or forced to withdrawal. The PL must identify a remount point to secure the Infantry squads following the defeat or withdrawal of the enemy.

FOLLOW THROUGH

3-118. If the enemy is defeated, the platoon transitions back into movement to contact and continue to advance. The movement to contact terminates when the unit reaches the final objective or LOA, or transitions to a more deliberate operation, defense, or retrograde.

3-119. It is possible that sufficient intelligence on enemy composition and disposition will emerge during a movement to contact that gives the commander the choice to continue or change the plan. The friendly force commander has the option to shift from a movement to contact to a hasty attack prior to making contact with the enemy. If so, the operation would still follow this framework.

VARIATIONS OF A MOVEMENT TO CONTACT

3-120. Movement to contact has two variations: search and attack and cordon and search. Paragraphs 3-121 through 3-143 further discuss these variations.

SEARCH AND ATTACK

3-121. *Search and attack* is a variation of movement to contact where a friendly force conduct coordinated attacks to defeat a distributed enemy force (FM 3-90). Units employ this variation of a movement to contact when enemy forces are operating as small, dispersed elements, and the units cannot target them by any methods other than a physical search. This prevents the enemy the ability to move within a given zone. The platoon participates as part of a company or CAB search and attack. A unit conducts a search and attack to—

- Render the enemy in the zone combat ineffective.
- Prevent the enemy from operating unhindered in a given zone.
- Prevent the enemy from massing to disrupt or destroy friendly military or civilian operations, equipment, or facilities.
- Gain information about the enemy and the terrain.

3-122. The organization, control measures, and conduct of a search and attack are similar in Bradley equipped mechanized Infantry and light Infantry units. Bradley units can move more rapidly than Infantry units and can use the BFVs to secure the outer perimeter.

Control Measures for Search and Attack

3-123. When the platoon is conducting a search and attack as a company the company commander establishes control measures that allow for decentralized execution. This allows the PL to exercise initiative to the greatest extent possible. The minimum control measures for a search and attack are—

- Assigned areas.
- TRPs.
- Objectives.
- Checkpoints.
- Contact points.
- Routes.
- Appropriate direct fire control measures (known as DFCMs).
- Operational graphics.

3-124. An assigned area defines the location in which the subordinate units will conduct their searches. The use of TRPs facilitates responsive fire support upon making contact with enemy forces. The use of objectives and checkpoints guide the movement of

subordinate elements. Units use other control measures, such as phase lines and named areas of interest, as necessary.

Organization of Forces

3-125. The commander task-organizes the subordinate units into reconnaissance, fixing, and finishing forces. They assign specific tasks and purposes to their search and attack forces. Definitions of each element are listed below. Additional considerations when organizing the platoon for a search and attack are—

- METT-TC (I) analysis.
- Commanders' intent and PIR.
- Enemy situation, disposition, strength, composition, and capabilities.
- Fire support assets available.
- Deployment of mounted, dismounted or a combination of both (possible split section operations).
- Sustainment requirements and CASEVAC.
- Employment of key weapons.
- Requirement for planned patrol bases or assemble areas.

Reconnaissance Force

3-126. The size and composition of the reconnaissance force is based on the available information on the size and activity of the enemy operating in the designated AO. A reconnaissance force is typically organized around the scout platoon; however, it may include, or may consist solely of, a mechanized Infantry platoon. The platoon will reconnoiter identified named areas of interest. The PL may identify fixing and finish elements within the platoon.

Fixing Force

3-127. The *fixing force* is a force designed to supplement the striking force by preventing the enemy from moving from a specific area for a specific time (ADP 3-90). The fixing force must have sufficient combat power to isolate the enemy once the reconnaissance force finds them. The fixing force develops the situation once the reconnaissance force finds the enemy. When developing the situation, the fixing force either continues to maintain visual contact with the enemy until the finishing force arrives or conducts an attack to physically fix the enemy until the finishing force arrives. The PL may identify a finishing element within the platoon.

3-128. The platoon maintains visual contact to allow the reconnaissance force to continue to other named areas of interest, and it isolates the immediate area. The fixing force makes physical contact only if the enemy attempts to leave the area or other enemy elements enter the area. The platoon attacks the enemy if that action meets the commander's intent and if they have sufficient combat power to destroy the enemy.

Finishing Force

3-129. The finishing force must have sufficient combat power to destroy enemy forces located within the zone. The role of the finishing force is to destroy enemy forces within search and attack area. The finishing force must be mobile and responsive enough to

engage the enemy before they are able break contact with the reconnaissance or fixing forces. A platoon, as the finishing force, may be tasked to conduct the following:

- Destroy the enemy with an attack or attack by fire.
- Destroy the enemy with area and point ambushes while the reconnaissance or fixing forces drive the enemy toward the ambush location.

CORDON AND SEARCH

3-130. A *cordon and search* is a variation of movement to contact where a friendly force isolates and searches a target area (FM 3-90). It is a common tactical mission during stability operations. The purpose of cordon and search is to obtain weapon caches, materiel or information, a specific high-value target, or persons of interest.

3-131. It involves the emplacement of a cordon, or security perimeter, to prevent traffic in and out of the area. The cordon serves to isolate the objective area and permits the search element to operate unimpeded within the secured area. Armored vehicles provide a means of establishing traffic control posts by using its size to block high-speed avenues of approach. When paired with another armored vehicle at a point, it can provide coverage on inner and outer cordon security. The mechanized platoon may be part of either the cordon element or the search element or a combination of both. (See ATP 3-90.1 for more information.)

Control Measures for a Cordon and Search

3-132. The use of standard tactical control measures is essential to command-and-control measures over forces approaching and conducting cordon and search operations. This includes—

- AAs positioned in remote areas outside of enemy observation.
- Multiple AAs to minimize enemy surveillance efforts.
- Checkpoints leading to the target and in the objective area, which are essential for ensuring all units arrive at the target in the proper order and on time.
- Rally points to and from the objective area, which allow for cordon and search elements to reorganize if units become engaged, lost, have vehicle trouble, or lose communications during ingress and egress from the target.
- Phase lines, which are helpful in controlling cordon and search elements approaching the target from different directions or at different times.
- RFLs, which prohibit fires and their effects between converging friendly forces.
- Routes to and from the objective.
- Friendly passage points if required.
- Graphic control measures showing a trace of the inner and outer cordon to include the search area.

3-133. PLs should consider the following techniques for a successful cordon and search operation:

- Positioning vital leaders so they can see and control all subordinate elements.
- Positioning essential assets such as crew-served weapons and interpreters at the critical locations.

- Being prepared to move leaders and support assets from one location to another during mission execution or as necessary.
- Positioning vehicles and personnel to be searched so the security element's sectors of fire face to the outside of the friendly element and away from noncombatants when executing searches.
- Keeping the bulk of forces within the perimeter so if the situation escalates, they are essentially in a battle or support-by-fire position.
- Ensuring all personnel understand direct fire and contingency plans. For example:
  - Actions to take in the event vehicle or personnel penetrate the outer or inner cordon.
  - Engagement criteria for all weapons systems.
  - Engagement criteria for crew served weapons or restrictions to rifle only engagements.
  - When to cease fire and signal to use for cease-fire.

Organization of Forces

3-134. A cordon and search require a command, security, search, and support element to perform the major tasks. The security element sets up the cordon, which usually consists of an outer cordon "ring" and an inner cordon "ring." The search element clears and searches suspected buildings to capture or destroy enemy forces, insurgents, and contraband. This is the main effort. The support element may be the reserve, provide SBF, and be prepared to perform the other cordon and search tasks.

3-135. Additional assets may be available and should be included in the planning and rehearsals of the operation. Assets may be internal or external to the CAB and company and can include military police, engineers, civil affairs, psychological operations, military intelligence, aviation, or artillery, and military working dogs. Platoons will also have an artillery FO and may have a joint terminal attack controller (JTAC) attached.

Command Element

3-136. The command element is the HQ executing command and control for cordon and search. There may be several combat multipliers attached. Frequently, leaders are given a variety of assets to assist them in accomplishing their mission. Ideally, leaders' task-organizes their assets to maintain control of three to five elements.

3-137. The composition of the command element may be as small as the leader and an RTO, or may include security vehicles, interpreters, host-nation officials, and local authorities. The command element leads from a position where they are best able to provide control but should remain mobile and able to move to all points within the cordon and search operation, ensuring coordination of all elements and supporting assets.

Security Element

3-138. The primary task of the security element is total isolation of the target area, either physically or by fire. The security element limits enemy or civilian influence in the objective area and prevents targets from escaping the cordon. It may have to use multiple

avenues of approach and operate decentralized to accomplish its mission. It also may have to establish multiple blocking positions and OPs and conduct patrols in order to isolate the target area. The security element may be tasked with establishing an inner cordon, outer cordon or both depending on forces available. It's essential to have the cordon established to use as a trigger to commit the search element. The security element may include the following:

- Vehicle-mounted sections or platoons.
- Interpreters.
- Detainee teams.
- Crowd control teams.
- OPs.
- Traffic control post or blocking positions.
- Host nation security force (military or police).
- Integrated aviation assets.
- Dismounted squads or platoons.
- Search teams both male and female.
- UAS coverage.

3-139. The execution of outer cordon missions is an integral part of the security element in all cordon and search missions. The outer cordon isolates the objective area and prevents enemy or civilian influence. This requires detailed planning, coordination, integration, and synchronization to achieve the lethal and nonlethal combined arms effects required for mission execution. Some considerations for outer cordon include the following:

- Vehicles for traffic control post and blocking positions.
- Detailed terrain analysis, identifying dead space between positions on the cordon denying possible escape route for hostiles.
- Overwatch positions.
- Aviation assets to observe the target area and inform the outer cordon if vehicles or persons leave the target area.
- Constant communication between the aviation element and outer cordon better facilitates the isolation of the target area.
- An initial detainee collection point for receipt and temporary holding of detainees.
- An initial materiel collection point for consolidation of captured materiel.

3-140. Weapon systems to consider for outer cordon positions are wheeled or tracked vehicles with weapons systems, crew-served weapons, Javelin with the command launch unit, snipers if available, or squad designated marksmen.

Search Element

3-141. The search element's mission is to clear, and search the target in order to capture, kill, or destroy the targeted individuals and materiel. The search element initiates action once the outer and inner cordons are in place. The element accomplishes its mission by gaining a foothold on or in the target to clear all enemy and control noncombatant personnel, and by conducting a systematic search of the target. These areas may be searched selectively (only specific rooms/buildings/blocks) or systematically

(everything within a given area). Due to the split-second decisions made, it is imperative this element not only understands but also complies with the ROE.

3-142. To accomplish its mission, the search element has three primary tasks: securing, clearing, and searching the target. The search element may be task-organized into search, security, and support teams in order to facilitate mission accomplishment. All these teams understand and are prepared to assume the role of other teams in the search element.

Support Element

3-143. Support elements are designed to act as a force multiplier during a cordon and search operation and should be positioned where they can best accomplish assigned tasks. Support elements may assist the cordon and search force by serving as a designated reserve, providing additional enabling teams to support all elements of the force, and conducting continuing actions such as establishing a temporary defensive position, conducting vehicle recovery, CASEVAC, and resupply. Support elements must be prepared to respond to time-sensitive information identified within the operation which may necessitate either an immediate follow-on missions or be handed off to higher.

SECTION V – ATTACK

3-144. Platoons and squads normally conduct an attack as part of a company. A successful attack requires detailed planning, synchronization, and rehearsals. The company commander designates platoon objectives with a task and purpose for their assault, support, reserve, and if necessary, breach elements. To ensure synchronization, all leaders must know the location of their subordinates and adjacent units during the attack.

3-145. The mechanized Infantry platoon in the attack has the advantage over Infantry and Stryker platoons in that it is supported by and can generate massive direct firepower on an objective. The Infantry squads can maneuver while the BFV provides protection and direct fire support. However, many enemy weapons can disable and or destroy a BFV, but the dismounted Infantrymen have an advantage in the ability to use the available cover and concealment, giving them the ability to disperse.

COMMON CONTROL MEASURES FOR THE ATTACK

3-146. The commander assigns the AO to units conducting offensive operations. If necessary, a commander can assign an area (zone or AO) or use axis of advance, direction of attack, routes, or additional phase lines to further control maneuver forces. Within these assigned areas units, at a minimum, designate these control measures:

- A phase line as the LD, which may also be the line of contact.
- The time to initiate the operation.
- The objective.

3-147. In the company operations order platoons will be given general control measures necessary to control an attack. Short of the LD, platoons may have predesignated AAs and attack positions where they prepare for offensive actions

or wait for established required conditions to initiate the attack. Beyond the LD, platoons may designate checkpoints, phase lines, probable lines of deployment (PLDs), assault positions, DFCMs, and indirect FSCMs. Between the PLD and the objective, units can use a final coordination line, assault positions, SBF and attack by fire positions, and a time of assault to further control the final stage of their attacks. Beyond the objective, commanders can impose a LOA if they do not want their units to conduct exploitation or a pursuit or template where they want their forces to position after the completion of the attack such as a BP or blocking position.

3-148. Units increase control over the movement of all attacking elements in attacks during limited visibility conditions. Typically, they impose additional control measures beyond those used in daylight attacks. These additional measures may include using a point of departure and a direction of attack.

DELIBERATE AND HASTY OPERATIONS

3-149. Attacks are characterized as hasty or deliberate with the primary difference between them being the extent of planning and preparation. A *hasty operation* is an operation in which a commander directs immediately available forces, using fragmentary orders, to perform tasks with minimal preparation, trading planning and preparation time for speed of execution (ADP 3-90). A *deliberate operation* is an operation in which the tactical situation allows the development and coordination of detailed plans, including multiple branches and sequels (ADP 3-90). They include published, detailed orders with multiple branches and sequels, detailed knowledge of all aspects of enemy dispositions, a force that has been task organized specifically for the operation, and the conduct of extensive rehearsals. Attacks are either force- or terrain-oriented, and the enemy can be stationary or moving.

PLAN

3-150. The planning phase begins when the platoon receives the WARNORD or OPORD from the commander. During this phase, the PL conducts TLP as outlined in Chapter 2. After they issue the WARNORD, the PL directs the preparation of mission-essential equipment and initiates rehearsals of tactical movement and battle drills. These rehearsals allow the platoon to begin preparing for the mission. Once the PL completes their plan, rehearsals are matched to the actual terrain and anticipated actions on contact with the enemy. The PL directs the plan for PCCs and PCIs, directs time, location, and areas of emphasis for PCIs.

3-151. In the plan for an attack, the PL seeks to surprise the enemy by choosing an unexpected direction, time, type, or strength for attacking. Surprise delays enemy reactions, overloads and confuses enemy command and control and reduces the coherence of the enemy's defensive operations. The leader achieves tactical surprise by attacking in bad weather and over seemingly impassible terrain, conducting feints and demonstrations. Platoons do this while maintaining a high tempo, destroying enemy forces.

3-152. In attack planning the PL must understand and plan how and where to mass the platoon's direct fires. In developing this plan, the PL should consider when and where dismounted systems are deployed, and where to employ BFVs by split section, or fight the platoon to achieve massed fires on the enemy. The PL should understand the

principles of direct fire planning (see appendix A direct fire planning) and the appropriate fire commands and DFCMs necessary to initiate, focus, distribute and shift the platoon's direct fires. The PL should understand where planned fires will occur and where potential contact may occur, requiring action or contact drills or other means of directing the platoon's fires (see appendix C battle drills). Critical to the plan is understanding how to integrate the fires of the BFVs with the maneuver of the dismounts. While the PL will generally develop this plan, the PSG must be equally able to control the plan in execution. Additional considerations include—

- Planned dismount and remount points.
- DFCMs for the PSG when in control of the BFVs (if the PL dismounts).
- DFCMs for the Infantry squads.
- Indirect fire control measures and echeloning indirect fires.

3-153. The PL and FO often will find themselves as the observer (and executor) of company and CAB level fires. Understanding the concept of echelon fires is critical for indirect fire plan to be synchronized with the maneuver plan. The purpose of echeloning fires is to maintain constant fires on a target while using the optimum delivery system up to the point of its risk-estimate distance in combat operations or minimum safe distance in training. Echeloning fires provides protection for friendly forces as they move to and assault an objective, allowing them to close with minimal casualties. It prevents the enemy from observing and engaging the assault by forcing the enemy to take cover, allowing the friendly force to continue the advance unimpeded.

3-154. In planning the leaders must focus on routes, formations, and navigational aids they will use to traverse the ground from the LD or point of departure to the objective. Some terrain locations may require the attacking unit to change its combat formation, direction of movement, or movement technique when it reaches those locations. The unit can post guides at these critical locations to ensure maintaining control over the movement.

PREPARE

3-155. Attacks are best organized and coordinated in AAs (See chapter 5 for AA procedures). Leaders should continue TLP and priorities of work to the extent the situation and mission allow before moving to attack positions. These preparations include but are not limited to—

- Protecting the force.
- Conducting AA procedures.
- Changing or refining task organization.
- Conducting TLP and sustainment activities.
- Performing reconnaissance.
- Refining the plan.
- Issuing OPORD or FRAGORD.
- Conducting zero and test firing all weapons systems.
- Conducting rehearsals to include movement and actions on the objective.
- Rehearsing plan for detainees.
- Conducting PCCs and PCIs.
- Conducting mess/chow and rest plan as necessary.

3-156. The PL and subordinate leaders exercise and refine the maneuver and fire plans during rehearsals, which are an important part of ensuring the plan's coordination and synchronization. As part of the rehearsal process, the PL reviews the anticipated actions with leaders to ensure all understand the plan, the relationship between fire and movement, and the synchronization of critical events. These critical events include—

- Moving from the AA to the LD.
- Uncoiling from the AA.
- Maneuvering from the LD to the PLD.
- Occupying support-by-fire positions.
- Executing actions on contact: planned or unplanned.
- Executing the platoon's direct fire plan.
- Conducting the breach.
- Assaulting the objective.
- Consolidating on the objective.
- Exploiting success or pursuing a withdrawing enemy.
- Executing actions of echelon reserves.
- Transitioning to a follow-on posture or subsequent mission.

3-157. The platoon should conduct rehearsals under as many types of adverse conditions as possible with time and other restraints to identify and prepare to cope with problems. At the platoon, the rehearsal includes battle drills, such as creating lanes through minefields.

3-158. As part of TLP, leaders should conduct a personal reconnaissance of the actual terrain when it will not compromise operations security (OPSEC) or result in excessive risk to leaders. Modern information systems can enable leaders to conduct a virtual reconnaissance when a physical reconnaissance is not practical. If a limited-visibility attack is planned, they should reconnoiter the terrain at night.

EXECUTE

3-159. The platoon conducts tactical movement as part of the company plan under supporting fires using a combination of traveling, traveling overwatch, and or bounding overwatch movement techniques. The PL transitions the platoon from movement to maneuver at a point either identified by the company commander during their TLP, or when the platoon makes contact with the enemy, to reach its objective to support the company attack. During the movement or maneuver, the company commander may designate support-by-fire positions to protect friendly forces with direct fires. As the company maneuvers, it employs both direct and indirect fires to destroy, suppress, neutralize, or obscure the enemy positions. If detected early, the platoon concentrates direct and indirect fires, establishing a base-of-fire, and maneuvers to develop the situation and regain the initiative. The mechanized Infantry platoon conducts most movement to an objective while mounted.

3-160. If the Infantry squads are dismounted and moving separately from the vehicles, leaders must maintain a common operational picture between the mounted sections and the three Infantry squads. The PL must consider the following when planning movement to the objective:

- AA to the attack position (if used) or LD.

- LD to the assault position.
- Assault position to the objective.

3-161. The LD is normally a phase line where elements of the attacking force transition to movement techniques in preparation for contact with the enemy. Before leaving the AA, the PL should receive updated information on enemy forces, friendly forces, and the terrain. The PL then disseminates this to the section and squad leaders to keep them abreast of the situation.

3-162. The platoon moves forward from the AA to the LD, usually as part of a company formation, along a planned, timed, and rehearsed route. The PL must ensure that they cross the LD at the designated point of departure. They time the move from the AA beforehand, so the lead section crosses the point of departure at the time of attack. The company commander will direct if the platoon is to halt in an attack position. If the PL must halt in an attack position, they place the platoon in a coil or herringbone formation, Infantry squads are out pulling security and conducts necessary last-minute coordination. Weapons are in weapons safety posture RED (see TC 3-20.40) and weapons hold status until the platoon crosses the LD (see appendix A, paragraph A-63).

FIND THE ENEMY

3-163. Gaining and maintaining contact with the enemy (when the enemy is determined to hide, deny, or break contact) is vital to the success of an attack. As platoons moves from the LD and cross the PLD towards the objective and as current intelligence and relevant combat information on the enemy is updated, the enemy situation generally becomes clearer. PLs and subordinate leaders, through actions on contact, rapidly develop the situation in accordance with the company commander's plan and intent for the attack.

Line of Departure to the Assault Position

3-164. The PL directs the movement of the platoon through checkpoints along the route. During movement, they ensure the platoon navigates from checkpoint to checkpoint or phase line by using basic land navigation skills. The PL ensures their platoon is employing the correct formation and technique for the movement. During movement, the platoon uses cover and concealment (when necessary) and, if detected, smoke and supporting fires. The platoon communicates primarily by frequency modulation (FM) radio but should limit their reliance on radios. PLs may communicate by using hand and arm signals, or flags. PLs should always be prepared to transition from movement to maneuver in the event of chance contact while moving to the assault position.

Assault Position to the Objective

3-165. The assault position is the last covered and concealed position before reaching the objective. The platoon may move through the assault position at a probable LD to begin the assault. The PL may stop in the assault position and designate a probable LD between the assault position and the objective. The probable LD between the assault position and the objective is where the assault, support, and security elements move to their respective positions.

3-166. The PL and company commander must decide whether or not the assault element will assault the objective mounted or dismounted. Generally, if the enemy is in restrictive terrain and poses a significant antiarmor threat, the platoon assaults the objective dismounted. If the objective is on unrestrictive terrain and the enemy's antiarmor threat is minimal, the assault element may assault mounted. The following describes mounted and dismounted assaults:

Mounted Assault

3-167. If the PL decides to assault mounted, then as soon as the BFVs assault across the objective, the Infantry squads dismount to clear the objective of enemy forces.

Dismounted Assault

3-168. If the PL decides to assault the objective dismounted, the PL dismounts the Infantry squads to assault the objective, and the BFVs move to support-by-fire positions. If possible, dismount the Infantry squads in an area that offers some cover and concealment from enemy observation and direct fire, which allows the squads to assemble and orient appropriately. The dismount point must be close enough to the objective that the Infantry squads do not become excessively fatigued while moving to the objective.

3-169. PLs initiate preparatory and supporting indirect fires to cover movement and maneuver from assault position to the objective.

3-170. Whether assaulting mounted or dismounted, the PL or company commander designates the dismount point based on the following factors:

- Short of the objective (near or at the assault position).
- On the objective.
- Beyond the objective.

FIX THE ENEMY

3-171. By fixing and/or disrupting the enemy, the objective of the attacker’s main effort is isolated to prevent the enemy from maneuvering to reinforce the enemy targeted for destruction. The goal of isolation is to prevent the enemy from reinforcing the objective and to prevent enemy forces on the objective from leaving. Platoons isolate the objective area by using both indirect and direct fires to suppress enemy forces and enable friendly forces to close unengaged and finish them. The PL and PSG develop a plan for time of suppression on the objective to conserve ammunition and ensure they effectively isolate the objective. Mechanized Infantry platoons will likely be an isolating force within a company. If the platoon must isolate its own objective, the PL may use the mounted element to accomplish isolation. The mounted element by its nature is agile, has significant firepower, has protection from small arms fire, and is led by the PSG. Using the mounted element for this purpose allows the three Infantry squads to conduct actions on the objective.

FINISH THE ENEMY

3-172. During the assault, the attacking force maneuvers to gain positional advantage to seize, retain, and exploit the initiative while avoiding the enemy's defensive strength.

The attacker employs tactics defeating the enemy by attacking through a point of relative weakness, such as a flank or the rear. The keys to success are, first, maintaining a sufficient volume of suppression to enable continued maneuver through the objective, and then to strike hard and fast, overwhelm a portion of the enemy force, and quickly transition to the next objective or phase, thus maintaining the momentum of attack without reducing the pressure.

Seize a Foothold to Exploit the Assault

3-173. When conducting the assault across the objectives, a technique is to designate the BFVs, under the PSG's control, as the mounted support element and to designate the three nine-man Infantry squads as the breach and or the assault elements. Platoon internal support elements, employing the medium machine guns, should be considered.

3-174. As the Infantry squads move to the objective, Soldiers use individual movement techniques and fire teams retain their basic fire team wedge. The mounted support element begins placing suppressive fires on the objective and monitors the breach and assault elements' movement, and shifts, lifts, or ceases fire according to the plan and the situation. The support (or assault) squad begins placing suppressive fires on the far side of the breach to support the breach element's initial breach of the objective.

3-175. During the breach a section of the mounted element should switch from their 25-mm cannon to 7.62-mm coaxial machine guns firing close to the dismounts to allow the breach element to establish a foothold on the objective while avoiding fratricide. The remaining section can continue to suppress with their 25-mm cannons. To prevent fratricide, supporting direct fire must continue to suppress the enemy, and the PL or PSG must closely control it.

3-176. When conducting mounted and dismounted integration platoons need to allow the closest possible integration of support weapons systems outside of the SDZ. This is achieved by using markings, established TRPs, signals, and cross talk. One technique is to mark, either with IR devices or other visual means, each Soldier, or the assault element team on the flank nearest the support element. The assaulting Soldiers and the support element sustain a continuous rate of fire to suppress the enemy. When the assault element moves to the breach point, the base-of-fire leader (PSG) verifies that the assault element is at the right location. They must be able to identify the assault element while it assaults the objective. One section, or designated BFVs, may shift their 25-mm cannon fires to another portion of the objective.

3-177. As the breach element is preparing to conduct the breach, the mounted support-by-fire element monitors their progress. This helps the mounted element shift fires as needed. Visual observation is vital so they can maintain suppressive fires just forward of the breach and assault elements. The assault element (one or two squads) passes through the breach element toward the objective.

3-178. The mounted element monitors the forward progress of the assault element and keeps shifting suppressive direct fire at a safe distance in front of them. The FO echelons indirect fire weapons systems to a smaller system and shifts or lifts accordingly. The breach element should bound forward to provide continual close-in suppressive fire to support the actions of the assault element as it moves across the objective. Once the assault element has seized the initial foothold on the objective, the breach element may

then move to the objective to reinforce the assault element. The assault element conducts fire and movement across the objective until it clears the objective or reaches the LOA.

Progress and Communications

3-179. As this occurs, the PSG closely observes the progress of the breach and assault elements to ensure no loss in momentum and that assault and breach elements do not cross in front of the mounted support-by-fire line. As the direct fires of the platoon's support element become masked, the PL (or PSG) shifts, lifts or ceases fire, or they displace the sections and or weapons to a position where they can continue to support the assault element. Other considerations are the platoon may have to clear backwards. This situation may occur when the BFVs pass through the objective area and the Infantry squads must dismount and clear on the far side of an objective without BFV support. These types of situations are rare, leaders must plan and deconflict fires with follow on forces.

3-180. All communications from the mounted support element to the breach and assault squads is by FM radio or visual signals. If the mounted element leader observes problems, they report them to the PL who uses this information in conjunction with what they see on the objective to control the assault.

FOLLOW THROUGH

3-181. Once an enemy is finished, actions by the platoon are not complete. Small remaining elements of the enemy may require the platoon to destroy them in detail. If all enemy forces are not neutralized, the platoon maintains constant pressure to keep them off balance while capitalizing on successful tactical actions. Before starting to consolidate and reorganize platoons are vulnerable to enemy counterattack and indirect fire. Platoons must immediately establish a hasty defense and prepare for an enemy assault.

VARIATIONS OF ATTACKS

3-182. Units use variations of the attack to organize forces against specific enemy dispositions. Attack variations include—

- Ambush.
- Counterattack.
- Raid.
- Spoiling attack.

AMBUSH

3-183. An *ambush* is a variation of attack from concealed positions against a moving or temporarily halted enemy (FM 3-90). An ambush stops, denies, or destroys enemy forces by maximizing the element of surprise. Ambushes can employ direct fire systems as well as other destructive means, such as command-detonated mines, indirect fires, and supporting nonlethal effects. They may include an assault to close with and destroy enemy forces. In an ambush, the ambush force does not normally seize and hold ground objectives and has a planned withdrawal.

3-184. The two methods of ambush are point and area. In a point ambush, a unit deploys to attack a single kill zone. The *kill zone* is the location where fires are concentrated in an ambush (FM 3-90). In an area ambush, a unit deploys into two or more related point ambushes. Units smaller than a platoon do not normally conduct an area ambush.

3-185. A specific type of a point ambush is an anti-armor ambush. The anti-armor ambush is significantly different from a typical point ambush in that it typically involves only crew-served weapons and anti-armor systems and can be conducted at longer ranges. An anti-armor ambush typically involves engaging a limited number of enemy armored vehicles and immediately withdrawing. Other than for security purposes, an anti-armor ambush should have limited need for individual small arms. Antiarmor ambushes focus on moving or temporarily halted enemy armored vehicles. A typical ambush is organized into three elements: assault, support, and security.

Assault

3-186. This element fires into the kill zone. Its goal is to destroy the enemy force. When used, the assault force may attack into and clear the kill zone and may be assigned additional tasks. These include searching for items of intelligence value, capturing detainees, and completing the destruction of enemy equipment to preclude its immediate reuse.

Support

3-187. This element supports the assault element by firing into and around the kill zone, and it provides the ambush's primary killing power. The support element attempts to destroy most of the enemy combat power before the assault element moves into the objective or kill zone.

Security

3-188. This element isolates the kill zone, provides early warning of the arrival of any enemy relief force, and provides security for the assault and support elements. It secures the objective rally point and blocks enemy avenues of approach into and out of the ambush site, which prevents the enemy from entering or leaving.

COUNTERATTACK

3-189. A *counterattack* is a variation of attack by a defending force against an attacking enemy force (FM 3-90). The PL directs a counterattack normally conducted from a defensive posture to defeat or destroy enemy forces and exploit an enemy weakness. This attack by defensive forces regains the initiative or denies the enemy success with their attack. The platoon may conduct a counterattack as a committed force, or as the reserve. The platoon counterattacks after the enemy begins their attack, reveals their main effort, or creates an assailable flank.

3-190. As part of a higher HQ, the platoon conducts the counterattack much like other attacks. However, the PL must synchronize the execution of their counterattack within the overall defensive effort. Counterattacks afford the defender the opportunity to create favorable conditions for the commitment of additional combat power, such as a general transition to the offense or a more localized operation such as restoring the front-line

trace. The platoon should rehearse the counterattack and prepare the ground to be traversed. Counterattacks are more useful to the higher HQ when the platoon anticipates employment; plans and prepares for employment; and executes with the other defending, delaying, or attacking forces in conjunction with the higher commander's plan.

RAID

3-191. A *raid* is a variation of attack to temporarily seize an objective with a planned withdrawal (FM 3-90). A raid is a limited-objective attack, usually small-scale, entailing swift penetration of hostile territory to secure information, confuse the enemy, or destroy installations. A raid always ends with a planned withdrawal to a friendly location upon completion of the mission.

3-192. The platoon can conduct an independent raid (mounted or dismounted) in support of the CAB or company operation, or it can participate as part of the company in a series of raids. Infantry squads may execute raids in support of a larger operation. They can be an independent squad operation or possibly with a section of BFVs in support.

3-193. The platoon may conduct a raid to—

- Capture detainees.
- Capture or destroy specific command and control locations.
- Destroy logistic areas.
- Obtain information concerning enemy locations, dispositions, strengths, intentions, or methods of operation.
- Confuse the enemy or disrupt their plans.

Task Organization

3-194. The purpose of the operation determines the task organization of the raiding force. However, the raiding force normally comprises the following elements:

- Support force (with the task of SBF).
- Assault force (with the task of destroy).
- Security force (with the task of isolation).
- Breach force (if required).

Execution

3-195. The main differences between a raid and other special-purpose attacks are the limited objectives of the raid and the associated withdrawal following completion. However, the sequence of platoon actions for a raid is very like those for an ambush or attack. Additionally, the assault element of the platoon may have to conduct a breach of a protective obstacle (if a breach force is not designated).

3-196. Raids are not limited by visibility or distance. When the location to be raided is beyond supporting distances of friendly lines, the raiding party operates as a separate force. An objective, usually very specific in nature, is assigned to orient the raiding unit. During the withdrawal, the attacking force should use a route different from that used to conduct the raid itself.

SPOILING ATTACK

3-197. A *spoiling attack* is a variation of an attack employed against an enemy preparing for an attack (FM 3-90). The purpose of a spoiling attack is to disrupt the enemy's offensive capabilities and timelines while destroying their personnel and equipment. The purpose is not to secure terrain or other physical objectives. A commander may direct a platoon to conduct a spoiling attack during friendly defensive preparations to strike the enemy while they are in AAs or attack positions preparing for their own offensive operation. The PL plans for a spoiling attack as they do for other attacks.

SECTION VI – OPERATIONS DURING LIMITED VISIBILITY

3-198. Effective use of advanced optical sights and equipment during limited visibility attacks enhances the ability of squads and platoons to achieve surprise, hit targets, and cause panic in enemy formations. Advanced optics and equipment allow the Infantry Soldier to see farther and with greater clarity. Although advanced sights and night vision optics provide an advantage over most enemy formations, leaders should plan to encounter a peer force equipped with similar optics. Mechanized platoons and squads have—

- Night vision equipment mounted on the helmet of each Soldier.
- Weapon-mounted and handheld devices to identify and designate targets.
- Vision devices and thermal imagers on the BFV for the driver, gunner, and the BC.

3-199. Night vision devices provide good visibility in all but pitch-black conditions but do somewhat limit the Soldier's field of view. Since they do not transmit a light source, the enemy detection devices cannot detect them. Soldiers must be aware night vision devices can emit a glow around the eyepiece. Soldiers should exercise caution and use the correct eyecup to reduce risk of detection.

3-200. The BFV is as effective at night as during the day. It can be driven, and its weapon systems can be fired during limited visibility. The driver has an enhanced vision capability, and the BC has both an enhanced vision and thermal imaging capability. The BFV is capable of accurately identifying its current location with the onboard Global Positioning System (GPS). The common operational picture allows leaders to always locate their subordinate units.

DESIGNATING AND CONTROLLING FIRES

3-201. Bradley leaders and Soldiers have an increased ability to designate and control fires during limited visibility. PLs and Soldiers have three types of advanced optics and equipment for use in fire control:

- Target designators.
- Aiming lights.
- Target illuminators.

TARGET DESIGNATORS

3-202. Leaders can designate targets with greater precision using the IBAS which the leader designates targets and sectors of fire and to concentrate fire. The leader lazes a

target on which they direct their Soldiers to place their fires. The Soldiers then use their weapon's aiming lights to engage the target.

AIMING LIGHTS

3-203. Soldiers with aiming lights have greater accuracy of fires during limited visibility. Each Soldier in the mechanized platoon is equipped with an aiming light for their individual weapon. Aiming lights work with the individual Soldier's helmet-mounted night vision goggles. It puts an IR light on the target at the point of aim.

TARGET ILLUMINATORS

3-204. Leaders can designate larger targets using target illuminators. Target illuminators are essentially IR light sources that light the target, making it easier to acquire effectively. Leaders and Soldiers use the IR devices to identify enemy or friendly personnel and then engage targets using their aiming devices. Additional options are use of IR illumination or tracer rounds. Leaders should exercise caution when using illumination devices, the enemy forces may be equipped with similar night vision devices.

ILLUMINATING ROUNDS

3-205. Illuminating rounds fired to burn on the ground can also mark objectives. This helps the platoon orient on the objective but may adversely affect night vision devices. These rounds are typically delivered from the CAB mortar section.

ILLUMINATION PLANS

3-206. Leader’s plan but may not use illumination during limited visibility attacks. CAB commanders normally control conventional illumination but may authorize the company commander to do so. If the commander decides to use conventional illumination, they should not call for it until the assault is initiated or the attack is detected. It should be placed on several locations over a wide area to confuse the enemy as to the exact place of the attack. It should be placed beyond the objective to help assaulting Soldiers see and fire at withdrawing or counterattacking enemy Soldiers.

3-207. The PL, squad leaders, and BCs must develop SOPs and sound COAs to synchronize the employment of IR illumination devices, target designators, and aiming lights during their assault on the objective. These include using luminous tape or chemical lights to mark personnel and using weapons control restrictions. The PL may use the following techniques to increase control during the assault:

- Flares, grenades, or smoke on the objective.
- Vehicle marking SOP.
- IR source to mark front line trace of friendly forces.
- UASs.
- Mortar or artillery rounds to orient attacking units.
- Base squad or fire team to pace and guide others.
- Reduced intervals between Soldiers and squads.

3-208. Like a daylight attack, indirect and direct fires are planned for a limited visibility attack but are not executed unless the platoon is detected or is ready to assault. Some weapons may fire before the attack and maintain a pattern to deceive the enemy or to

help cover noise made by the platoon's movement. This is not done if it will disclose the attack.

3-209. Smoke further reduces the enemy's visibility; smoke is particularly effective at night when threat forces use their night vision devices. The FO fires smoke rounds close to or on enemy positions, so it does not restrict friendly movement or hinder the breaching of obstacles. Employing smoke on the objective during the assault may make it hard for assaulting Soldiers to find enemy fighting positions. If enough thermal sights are available, smoke on the objective may provide a decisive advantage for a well-trained platoon.

SECTION VII – TRANSITION

3-210. During the planning of offensive operations, the PL must discern from the company OPORD the potential follow-on missions and begin to plan how to achieve them. When planning for future operations, the PL must be forward thinking and determine the possible timeline, type of operation, and location of follow-on missions. Platoons conduct consolidation, reorganization, and transition which best facilitate future operations and provide adequate protection.

CONSOLIDATE AND REORGANIZE

3-211. Once enemy resistance on the objective has ceased, the platoon quickly consolidates to defend against a possible counterattack and prepares for follow-on missions. The PL assesses and reports the status of their platoon in accordance with company SOP.

3-212. *Consolidate* is to organize and strengthen a captured position to use it against the enemy (FM 3-90). During consolidation, the PL determines if their sections and squads are positioned according to the original plan or to changes in the factors of METT-TC (I). Once the platoon is positioned to defend against an enemy counterattack, section and squad leaders create sector sketches and submit them to the PL. This information allows the PL to verify the location and orientation of elements when the situation does not allow them to walk the entire security perimeter. As a minimum, section and squad leaders provide the PL with the location and sectors of their key weapons. The PL must use the TLP to plan and prepare. The PL ensures the platoon—

- Eliminates enemy resistance on the objective.
- Establishes security beyond the objective by securing areas that may be the source of enemy direct fires or enemy artillery observation.
- Brings the BFVs forward into designated positions.
- Establishes additional security measures, such as OPs and patrols.
- Prepares for and assists the passage of follow-on forces (if required).
- Continues to improve security by conducting other necessary defensive actions.
- Adjusts final protective fires (FPFs).
- Secures detained personnel.

3-213. *Reorganization* are all measures taken by the commander to maintain unit combat effectiveness or return it to a specified level of combat capability (ATP 3-94.4). Reorganization is normally conducted concurrently with consolidation and comprises

actions taken to prepare for follow-on operations. During reorganization, leaders identify and report losses. Section and squad leaders update their status reports. Section leaders provide information on their fuel status. The PSG consolidates the reports, updates all platoon status reports, and sends a consolidated platoon report to the company commander and the first sergeant (1SG). Based on the information in this consolidated status report, the platoon reorganizes personnel and redistributes ammunition, equipment, and other mission-essential items. As with consolidation, the PL must plan and prepare for reorganization as they conduct their TLP. They ensure the platoon is prepared to—

- Reestablish chain of command.
- Provide essential medical treatment and evacuate casualties, as needed.
- Cross-level personnel and adjust task organization when necessary.
- Prepare for the enemy counterattack.
- Conduct resupply operations, to include rearming and refueling.
- Redistribute ammunition.
- Conduct required maintenance and recovery.
- Prepare for follow-on missions.

CONTINUING OPERATIONS

3-214. At the conclusion of an engagement, the platoon may occupy a hasty or deliberate defense, or if ordered, transition to another offense operation. The PL considers the higher commander's concept of operations, friendly capabilities, and enemy situation when making this decision. All missions should include plans for exploiting success or assuming a defensive posture. The platoon should assume that the enemy will continue to engage known friendly positions with indirect fires even if their attack has culminated.

3-215. The company commander may order the platoon to conduct a hasty operation (for example, a raid, spoiling attack, or retrograde) or participate in a movement to contact. PLs remain flexible and prepared for follow-on mission or plan to execute contingency plans in the commander's order.

Chapter 4
Defense

The mechanized Infantry platoon conducts defensive operations to defeat enemy attacks, gain time, control key terrain, protect critical infrastructure, secure the population, and economize forces. Most importantly, the platoon sets conditions to transition to the offense. Defensive operations alone are not decisive unless combined with offensive operations to surprise the enemy, attack enemy weaknesses, and pursue or exploit enemy vulnerabilities. Even within the conduct of the mechanized Infantry company defense, the mechanized Infantry platoon exploits opportunities to conduct offensive actions within its assigned area to deprive the enemy of the initiative and create the conditions to assume the offense. Other reasons for conducting defensive operations include, retain decisive terrain, or deny a vital area to the enemy, attrition or fix the enemy as a prelude to the offense, counter surprise action by the enemy, or to increase the enemy's vulnerability by forcing the enemy commander to concentrate subordinate forces. This chapter covers the basics of the defense, common defensive planning considerations, EA development, example of events for area defense, and actions in defensive positions.

SECTION I – BASICS OF THE DEFENSE

4-1. To ensure the success of the defense, the PL must understand the characteristics of the defense and apply TLP during planning, preparation, and execution of the operation. The characteristics of the defense, from paragraphs 4-2 to 4-12, constitute the planning fundamentals for the mechanized Infantry platoon.

CHARACTERISTICS

4-2. Successful defenses employ the characteristics of disruption, flexibility, maneuver, mass and concentration, depth, preparation, and security. Defenders subvert an attacker's tempo, formations, and synchronization by countering their initiative and preventing them from massing overwhelming combat power. (See ADP 3-90 for more information.)

DISRUPTION

4-3. The mechanized Infantry platoon disrupt attackers' tempo and synchronization with actions designed to prevent them from massing combat power. Disruptive actions attempt to unhinge the enemy's preparations and, ultimately, their attacks. Methods include defeating or misdirecting enemy reconnaissance forces, breaking up their formations, isolating their units, and impeding an enemy force's ability to synchronize

its combined arms. Disruption attacks the enemy's will to fight and their means of effective command and control.

FLEXIBILITY

4-4. Defensive operations require flexible plans. Planning focuses on preparation in depth, and the ability to shift the main effort. The PL adds flexibility by designating alternate and supplementary positions, designing counterattack plans, and preparing to counterattack. Rehearsals of defensive plans are critical to an effective, flexible defense.

MANEUVER

4-5. Maneuver also allows the mechanized Infantry platoon to take full advantage of the AO and to mass and concentrate when desirable. Maneuver allows the platoon to achieve a position of advantage over the enemy to accomplish the mission.

MASS AND CONCENTRATION

4-6. The PL seeks to mass the effects of overwhelming combat power and shifts it to support the main effort. To obtain an advantage at decisive points, the commander economizes and accepts risk in some areas, retains, and when necessary, reconstitutes a reserve, and maneuvers to gain local superiority at the point of decision. The commander accepts risk in some areas to mass effects elsewhere. Obstacles, security forces, and fires can assist in reducing risk.

OPERATIONS IN-DEPTH

4-7. Simultaneous application of combat power throughout the defensive sector improves the chances for success while minimizing friendly casualties. Quick, violent, and simultaneous action throughout the depth of the company's defensive sector can hurt, confuse, and even paralyze an enemy force when they are most exposed and vulnerable. Such actions weaken the enemy's will and do not allow any early successes to build the confidence. Operations in-depth prevent the enemy from gaining momentum in the attack. Synchronization of main and supporting operations facilitates mission success. The PL uses varying weapons ranges and the positioning of Infantry squads and BFVs in primary, alternate, and subsequent BPs to create opportunities for depth.

PREPARATION

4-8. Preparation, an inherent strength of the defense, provides the PL time to study the ground and select positions that allow the massing of fires on likely approaches. The platoon uses available time to combine natural and man-made obstacles to canalize attacking forces into EAs. The PL uses the time available to coordinate and rehearse actions on the ground, gaining intimate familiarity with the terrain, place security, OPs, and reconnaissance forces throughout the sector. The PL will continue defensive preparations in-depth, even as the close engagement begins.

4-9. During the preparation of the defense, time management is a critical task. Actions the PL can do to make effective use of the time available:

- Immediately prepare and issue WARNORDS upon receipt of higher WARNORD or OPORD.
- Issue early guidance for rehearsals and PCIs.

- Conduct leaders' reconnaissance of assigned positions prior to preparing the platoon OPORD.
- Start work immediately on known requirements such as battalion-directed obstacles.
- Manage execution of allocated blade time for dig assets.
- Manage the rest plan to maximize usage of limited visibility hours.
- Issue clear guidance for priorities of work, tied to the published timeline, and ensure subordinate leaders execute them.
- Delegate requirements to subordinate leaders.
- Ensure continuous positional improvement for the duration of the defense.

4-10. The company commander must define what tasks subordinate units must accomplish before they can occupy the defense. The commander determines when units must occupy the defense to have enough time to complete the preparation priority of work before the defend time. Based on the time assigned by the company commander, the PL and PSG establish priorities of work for their platoon.

SECURITY

4-11. *Security operations* are those operations performed by commanders to provide early and accurate warning of enemy operations, to provide the forces being protected with time and maneuver space within which to react to the enemy, and to develop the situation to allow commanders to effectively use their protected forces. (ADP 3-90). They prevent enemy intelligence, surveillance, and reconnaissance assets from determining the company locations, strengths, and weaknesses. These measures also provide early warning and continuously disrupt enemy attacks. Protection efforts prevent or mitigate detection, threat effects, and hazards to preserve combat power and enable freedom of action. These measures all contribute to the mechanized Infantry platoon’s security. They inhibit or defeat enemy reconnaissance operations.

4-12. The company or higher can assist in directing security efforts, for instance a screen line or counter reconnaissance effort. Regardless of external security efforts, the PL is responsible for directing appropriate security measures within the platoon's defensive sector, to identify and target enemy forces or deny them freedom of movement or opportunities to establish surveillance. These efforts might include local security patrols, listening post/OP, indirect fires, active scanning, use of UASs, and maintaining directed levels of security 33, 50 or 100 percent security.

TYPES OF DEFENSIVE OPERATIONS

4-13. Three basic types of defensive operations include area defense, mobile defense, and retrograde. These three operations have significantly different concepts and pose significantly different problems.

AREA DEFENSE

4-14. An *area defense* is a type of defensive operation that concentrates on denying enemy forces access to designated terrain for a specific time rather than destroying the enemy outright (ADP 3-90). In an area defense, the mechanized Infantry platoon concentrates on denying enemy forces access to designated terrain for a specific time, limiting their freedom of maneuver and channeling them into killing areas. The platoon

retains terrain that the attacker must control to advance. The enemy force is drawn into a series of EAs where it is attacked from mutually supporting positions and destroyed, largely by fires.

MOBILE DEFENSE

4-15. A *mobile defense* is a type of defensive operation that concentrates on the destruction or defeat of the enemy through a decisive attack by a striking force (ADP 3-90). In a mobile defense, the mechanized Infantry company or company team withholds a large portion of available forces for use as a striking force in a counterattack. The *striking force* is a dedicated counterattack force in a mobile defense constituted with the bulk of available combat power (ADP 3-90). Mobile defenses require enough depth to let enemy forces advance into a position that exposes them to counterattack. The defense separates attacking forces from their support and disrupts the enemy's command and control. As enemy forces extend themselves in the defended area, lose momentum and organization, the platoon may be tasked as a striking force to surprise and overwhelm the enemy with a powerful counterattack. larger formations normally execute mobile defenses. However, the company generally conducts a mobile defense or a delay as part of the fixing force. While the commander shapes the enemy's penetration, or it attacks as part of the striking force mechanized platoons can be task organized as part of the striking force or fixing force.

RETROGRADE OPERATIONS

4-16. A *retrograde* is a type of defensive operation that involves organized movement away from the enemy (ADP 3-90). Retrograde operations are organized movements away from the enemy. This includes delays, withdrawals, and retirements. Retrograde operations gain time, preserve forces, place the enemy in unfavorable positions, or avoid combat under undesirable conditions.

VARIATIONS OF AREA DEFENSE

4-17. The platoon executes the defense using one or a combination of following forms:

- Defend a linear obstacle.
- Conduct a perimeter defense.
- Conduct a reverse-slope defense.

DEFEND A LINEAR OBSTACLE

4-18. The main purpose of the defense of linear obstacle, as with any defense, is to force or deceive the enemy into attacking under unfavorable circumstances. The platoon can conduct either an area or perimeter defense along or behind a linear obstacle. An area defense is preferred because it accepts less risk by not allowing the enemy to cross the obstacle. Linear obstacles such as mountain ranges or rivers generally favor a forward defense. The key to success in a defense of a linear obstacle is maintaining the integrity of the defense by preventing the enemy from securing a foothold on the friendly side of the obstacle. Defending units integrate additional obstacles to stop enemy forces, channel them into planned EAs, and to further enable the integrity of the linear obstacle. The defense of a linear obstacle usually forces the enemy to deploy, concentrate forces, and conduct breaching operations. (See figure 4-1.)

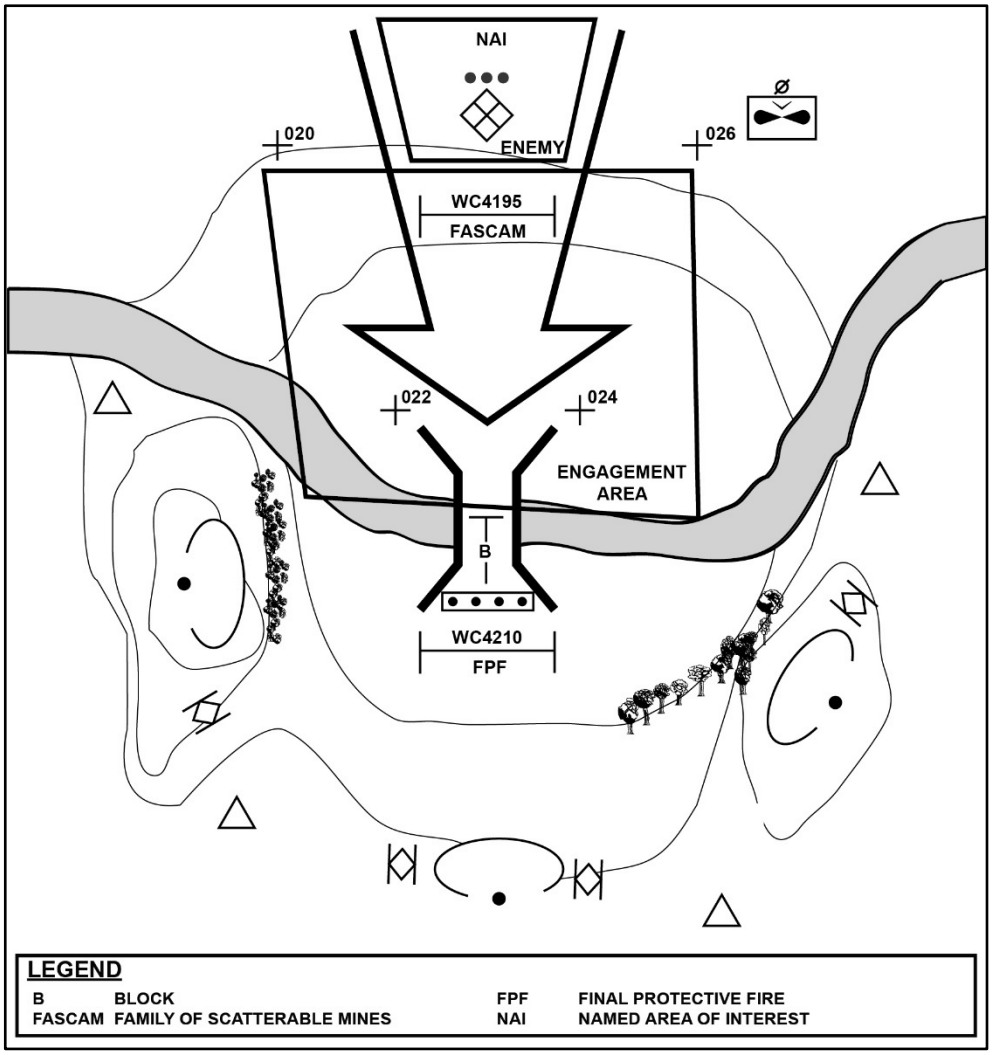


Figure 4-1. Defend a linear obstacle

CONDUCT A PERIMETER DEFENSE

4-19. A perimeter defense (see figure 4-2 on page 122) is oriented in all directions. The platoon can employ the perimeter defense as an option when conducting an area or perimeter defense. The prerequisites for a successful perimeter defense are aggressive patrolling and security operations outside the perimeter. The PL in a perimeter defense designates the trace of the perimeter, BPs, contact points, and lateral and forward boundaries. When the PL determines the most probable direction of enemy attack, that part of the perimeter covering that approach may be reinforced with additional resources. The PL increases the effectiveness of the perimeter by tying it into a natural or man-made obstacles, which allows the defending unit to concentrate its combat power in more threatened areas.

4-20. The perimeter defense is a relatively uncommon mission for a mechanized platoon because it allows only limited maneuver and limited depth. The platoon may be called on to conduct a perimeter defense under a variety of conditions, such as—

- Holding critical terrain in areas where the defense is not tied in with adjacent units.
- Defending in place when it has been bypassed and isolated by the enemy.
- Conducting occupation of an independent AA or reserve position.
- Concentrating fires in two or more adjacent avenues of approach.
- Defending support or sustainment assets.
- Occupying a patrol base when dismounted.
- Occupying an AA when mounted.

4-21. A perimeter defense differs from other defenses in that—

- The trace of the platoon is circular or triangular rather than contiguous.
- Unoccupied areas between squads are smaller.
- The bulk of combat power is on the perimeter.

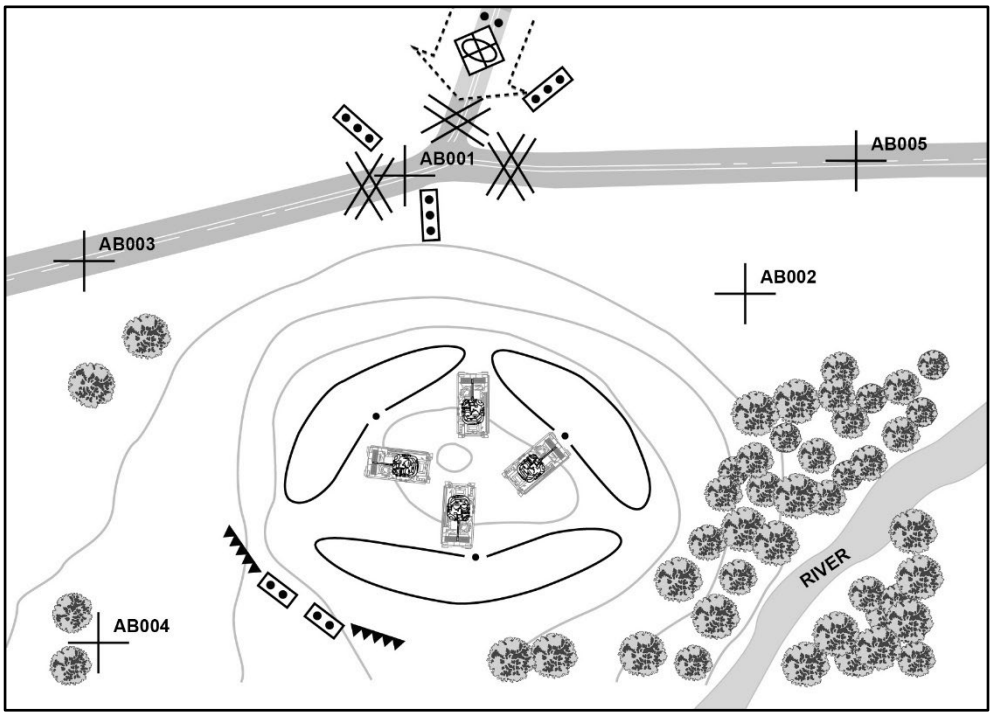


Figure 4-2. Perimeter defense

CONDUCT A REVERSE-SLOPE DEFENSE

4-22. The PL organizes a reverse-slope defense on the portion of a terrain feature or slope with a topographical crest that masks the main defensive positions from enemy observation and direct fire (see figure 4-3). The PL gives up their long-range fires to take advantage of the cover provided by the terrain. Although some units and weapons

might be positioned on the forward slope, the crest, or the counter slope (a forward slope of a hill to the rear of a reverse slope), most forces are on the reverse slope. The key to this defense is control the crest by direct fire.

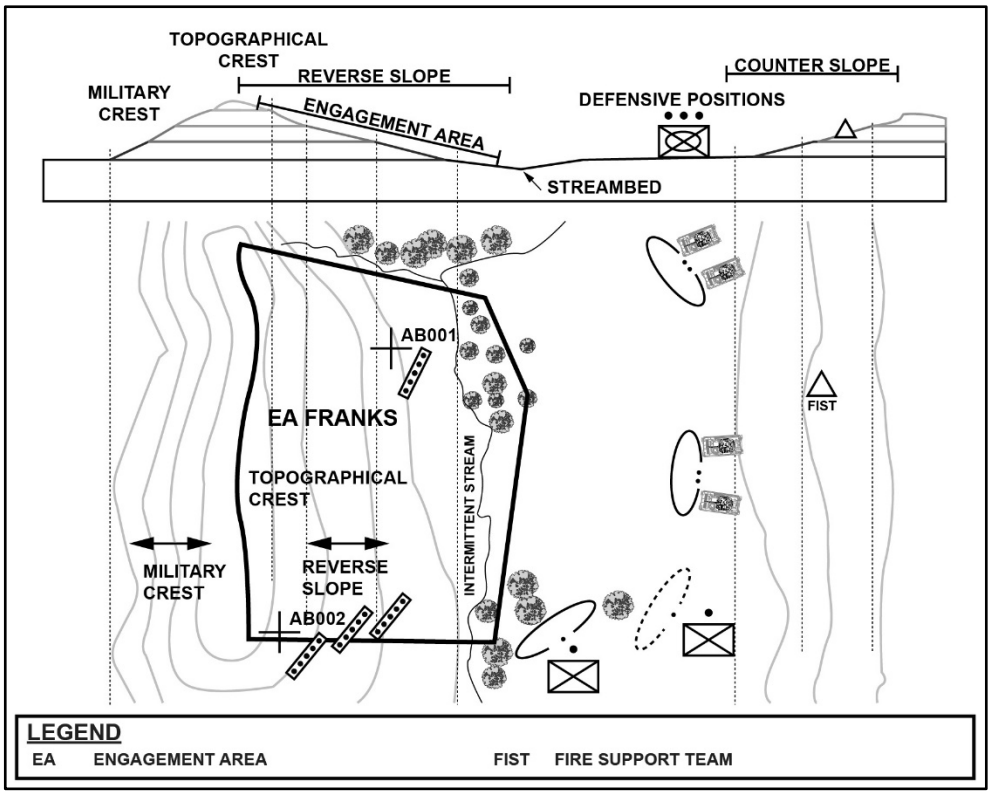


Figure 4-3. Reverse slope defense options

4-23. BFVs offer the platoon additional opportunities with positioning. They can begin positioned forward to take advantage of their protection from artillery and their ability to engage the enemy at long ranges. After an initial engagement, BFVs may move over or around the crest line and through the Infantry squads on the reverse-slope to a position either on the flanks or farther in depth to the rear.

4-24. Obstacles are necessary in a reverse-slope defense. Since the enemy will be engaged at close range, obstacles should prevent the enemy from closing too quickly and overrunning the positions, and they should facilitate the platoon's disengagement.

4-25. The goal is to make the enemy commit forces against the forward slope of the defense, causing enemy forces to attack in an uncoordinated fashion across the exposed topographical crest. Firing from covered and concealed positions throughout the battle area, the defending force maintains a distinct advantage over the exposed enemy forces and canalizes them through unfamiliar terrain into kill zones.

TECHNIQUES OF CONDUCTING AN AREA DEFENSE

4-26. The mechanized Infantry platoon can conduct an area defense using one of three basic techniques: defend a BP, defend a sector, and defend a strongpoint. Paragraphs 4-27 to 4-32 describe each technique.

DEFEND A BATTLE POSITION

4-27. A BP is a general location and orientation of forces on the ground, from which units defend. The techniques allow units to concentrate fires or place units in an advantageous position for a counterattack (see BPs for definitions). The purpose for defending a BP includes—

- Destroy an enemy force in the EA.
- Block an enemy avenue of approach.
- Control key or decisive terrain.
- Fix the enemy force to allow another unit to maneuver.

4-28. The mechanized Infantry platoon can maneuver in and outside of the BP as necessary to adjust fires or to seize opportunities for offensive operations within the commander's intent. When the PL maneuvers outside of the BP, the company commander must be notified.

BATTLE POSITIONS

4-29. A *battle position* is a defensive location oriented on a likely enemy avenue of approach (ADP 3-90). A BP is generally only used during defensive operations. BP is a symbol that depicts the location and general orientation of most of the defending forces. A PL’s use of a BP does not direct the position of the subordinate's entire force within its bounds since it is not an assigned area. There are five kinds of BP: primary, alternate, supplementary, subsequent, and strong point. When assigning BPs, the PL designates the primary BP. The squad and section leaders designate and prepares alternate, supplementary, and subsequent positions as time and other resources permit and if the terrain or situation requires them. (Figure 4-4 depicts the five kinds of BPs.)

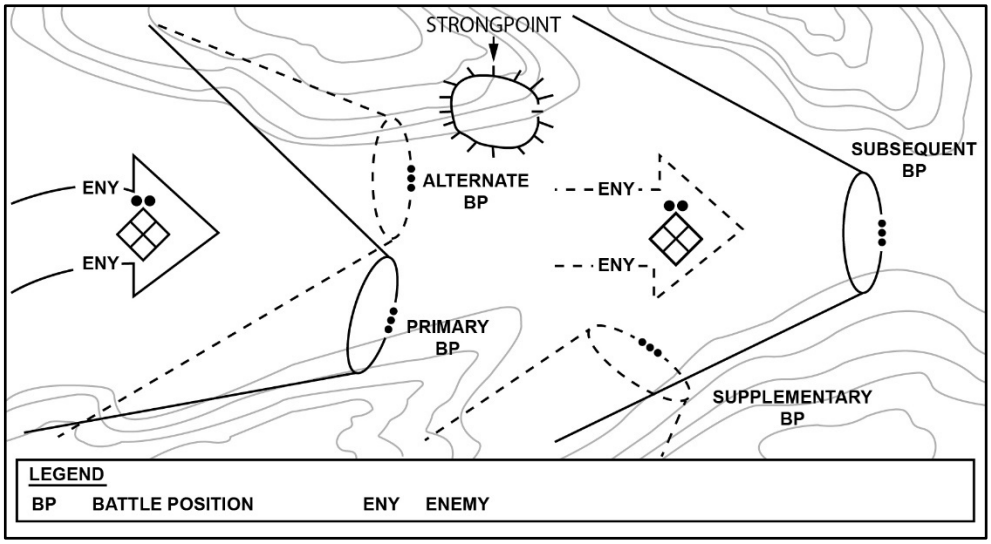


Figure 4-4. Five kinds of battle positions

Primary Position

4-30. The *primary position* is the position that covers the enemy's most likely avenue of approach into the assigned area (FM 3-90). The primary BP covers the enemy's most likely avenue of approach into the assigned area. It is the best position from which to accomplish the mission, such as cover an EA. The PL assigns the primary BP to their squads and sections.

Alternate Position

4-31. The *alternate position* is a defensive position that the commander assigns to a unit or weapon system for occupation when the primary position becomes untenable or unsuitable for carrying out the assigned task (FM 3-90). The alternate BP covers the same area as the primary BP but is occupied when the primary position become untenable or unsuitable for the squad or section to carry out their assigned task. For example, a section or squad occupies their alternate BPs when their primary BP becomes suppressed by enemy fire.

Supplementary Position

4-32. A *supplementary position* is a defensive position located within a unit's assigned area that provides the best sectors of fire and defensive terrain along an avenue of approach that is not the primary avenue where the enemy is expected to attack (FM 3-90). For example, a section or squad's supplementary BP would cover an avenue approach on a flank of their position.

Subsequent Position

4-33. A *subsequent position* is a position that a unit expects to move to during the course of battle (FM 3-90). A planned and, to some extent, prepared location for a defense or delay that is behind the primary positions initially occupied for a defense. A defending unit may have a series of subsequent positions. Subsequent positions can be further organized into primary, alternate, and supplementary positions.

Strong Point

4-34. A *strong point* is a heavily fortified battle position tied to a natural or reinforcing obstacle to create an anchor for the defense or to deny the enemy decisive or key terrain (ADP 3-90). The mission to create and defend a strong point implies retention of terrain to stop or redirect enemy formations. A strong point requires extensive time, engineer support, and Class IV resources to construct.

DEFEND A SECTOR

4-35. A defensive sector is an area designated by boundaries that define where units operate and the terrain for which it is responsible. A *sector* is an operational area assigned to a unit in the defense that has rear and lateral boundaries and interlocking fires (FM 3-0). This technique allows the unit to maintain flank contact and security and ensures unity of effort within the scheme of maneuver. *Unity of effort* is the coordination and cooperation toward common objectives, even if the participants are not necessarily part of the same command or organization that is the product of successful unified action (JP 1, Volume 2). Sector boundaries never split an avenue of approach. Sectors are oriented on avenues of approach and are used when the commander wishes to allow maximum freedom of action. Platoons will start in their primary BPs and displace to supplementary or subsequent BPs in accordance with established displacement criteria. Critical to a defense in sector is that defending units ensure they stay tied in with adjacent units when they displace in order to prevent gaps from emerging.

DEFEND A STRONG POINT

4-36. Defending a strongpoint implies retention of terrain with the purpose of stopping or redirecting enemy formations. Defense of a strongpoint is an uncommon mission for the mechanized Infantry platoon. Strongpoints sacrifice the mobility of the unit's organic weapon systems.

4-37. Defending strongpoints requires extensive engineer support to create obstacles and increase survivability efforts. This includes providing all assets overhead protection, trenches, and other protective construction using both natural and man-made terrain. The company prepares a strong point for all around defense and incorporates the mechanized Infantry platoon into the defensive operation.

TACTICAL FRAMEWORK OF THE DEFENSE

4-38. As part of a larger element, the mechanized Infantry platoon conducts defensive operations within several integrated and overlapping activities. The mechanized Infantry platoon provides the company commander with flexibility to integrate mounted and dismounted assets into the defense. The company may conduct a perimeter defense

operation along with offensive and patrolling operations as in the offense, defensive operations are typically executed in a four-step tactical framework. The four steps are find the enemy, fix the enemy, finish the enemy, and follow through. The framework is for discussion purposes only and is not the only way of executing defensive operations. Normally the first two steps are supporting efforts, while the finish step is the main effort. Follow through is usually a sequel or branch to the plan based upon the situation. These steps may not occur sequentially; they may occur simultaneously These steps are—

- Find the enemy.
- Fix the enemy.
- Finish the enemy.
- Follow through.

FIND THE ENEMY

4-39. Intelligence drives fires and maneuver. Gain and maintain contact. This may occur in the higher echelon's security area by forces external to the platoon, or it may occur when the platoon's own security elements first identify enemy forces with UAS, optics, or other long-range sensors.

FIX THE ENEMY

4-40. Prevent repositioning or reinforcement making them easier to destroy. The platoon uses natural or reinforcing obstacles, and/or direct and indirect fires to fix enemy forces in a position that provides relative advantage to the defending force.

FINISH THE ENEMY

4-41. Mass available combat power in the main battle area to accomplish the mission. Once enemy forces are fixed in positions within planned EAs, the platoon masses the effects of direct and indirect fires to destroy enemy forces. As necessary, the platoon displaces to additional BPs for survivability or in response to continued enemy maneuver.

FOLLOW THROUGH

4-42. Defeat in detail, consolidate, reorganize, and transition. The platoon plans to complete the destruction of enemy forces through fires or a counterattack. As necessary, the platoon consolidates and reorganizes within defensive positions and transitions to a follow-on mission.

SECTION II – COMMON DEFENSIVE PLANNING CONSIDERATIONS

4-43. The planning phase of a defensive operation is a continuous process that begins when the leader receives the WARNORD, OPORD, or FRAGORD. Planning may continue as the platoon gains more information through the plan of the higher HQ and from further reconnaissance and rehearsals.

4-44. The PL must consider the BPs and how well direct fires can mass on the EA. They should consider existing and man-made obstacle emplacement to channel the enemy

into the platoon's EA. They must consider the integration of combined arms in the defense. They must consider the placement of Infantry squads, ensuring fratricide avoidance measures are in place. As planning progresses, it is important that the PL make a careful evaluation of the considerations outlined in the following discussion, which is organized using the warfighting functions.

COMMON DEFENSIVE CONTROL MEASURES

4-45. The PL should use the minimum control measures required to complete their missions while providing subordinates the flexibility needed to respond to changes in the situation. (See ATP 3-90.1 for more information.) Common defensive control measures include the following:

- EA.
- BP.
- Battle handover line (BHL).
- Named areas of interest.
- Target areas of interest.
- FSCM.
- DFCMs.
- Disengagement line.
- Phase lines, screen lines, contact points, coordination points, passage lanes, and routes.
- Main battle area.
- Designated hide positions.
- Forward security area.
- Obstacle groups, and what level for execution.
- CCPs and ambulance exchange points.

COMMAND AND CONTROL

4-46. The PL must understand the company plan and triggers; they develop their plan based on these factors as well as the commander's intent. While the commander normally determines operational considerations, they may allow the PL to make decisions covering some or all of these areas such as OPSEC, occupation of firing positions, initiation of direct fires, primary and supplementary platoon sectors of fire, and disengagement criteria.

4-47. The PL ensures that their defensive plans are compatible and that control measures, remount points, contact points and phase lines, are sufficient for when assigning sector. The defensive plan must address what happens when it succeeds, and the opportunity exists to transition from defense to offense.

4-48. The primary concern in selecting fighting positions is the platoon's ability to concentrate and mass lethal fires into its sectors of fire. Dispersion between fighting positions reduces vulnerability of platoon to enemy fires.

MOVEMENT AND MANEUVER

4-49. Maneuver considerations are key to employment of direct fire weapons on the battlefield. In the defense, effective weapons positioning is critical to success. Effective

weapons positioning enables the platoon to mass fires at critical points in the EA and shift fires as needed. The platoon must exploit the strengths of its weapons systems while minimizing exposure to enemy observation and fires.

4-50. In conjunction with EA Dev (See section III for EA development) the PL designs a direct fire plan that allows them to mass the platoon's fires and then shift, distribute, or focus those fires at critical points within the EA. The direct fire plan describes the way the PL envisions the fight unfolding and allows the PL to fight the full platoon or fight as sections, whether for survivability or to better distribute fires throughout the EA. The PL should prepare an immediate plan for direct fires, but quickly integrates that initial fire plan with both indirect fires and the obstacle effort.

DEPTH AND DISPERSION

4-51. Dispersing positions laterally and in depth helps protect the force from enemy observation and fires. Platoon positions are established in depth, allowing sufficient maneuver space within each position for in-depth placement of vehicle weapon systems and dismounted Infantry elements. Vehicle and Infantry fighting positions are positioned to allow massing of direct fires at critical points on the EA. Although the METT-TC (I) variables ultimately determine the placement of weapon systems and unit positions, the following apply:

- TOW missiles are employed best at a range of 2,500 to 3,750 meters where targets can be tracked for at least 12 seconds.
- BFVs are best employed from flank positions and in positions from which they can destroy lightly armored vehicles and Infantry, or fix or severely limit the movement of tanks, usually at a range of 2,500 meters or less.
- Infantry squads should be positioned on reverse-slopes or in restricted terrain where they cannot be engaged before they fire on the enemy.
- Infantry squads can supplement the antiarmor fires of tanks and BFVs with Javelin missiles, which have a maximum range of 2,500 meters.
- Infantry squads can retain or deny key terrain if employed in strong points or well-covered positions.
- Infantry squads can protect obstacles or flank positions that are tied into severely restricted terrain.

MOBILITY

4-52. During defensive preparations, mobility focuses on the ability to resupply, reposition, and conduct rearward and forward passage of forces, supplies, and equipment. Once defensive preparations are complete, the mobility focus shifts to routes from hide positions, and to alternate, supplementary, or subsequent positions. The company commander will establish the priority of mobility effort within the company.

DISENGAGEMENT CRITERIA AND DISPLACEMENT

4-53. *Disengagement line* is a phase line located on identifiable terrain that, when crossed by the enemy, signals to defending elements that it is time to displace to their next position (ADP 3-90). When defending in depth the PL must take into consideration disengagement criteria and determine when to break contact or displace to alternate or supplementary BP. The plan must be issued in the platoon order and rehearsed as part of defensive preparations. The platoon must establish planned remount points for

Infantry squads to displace to the next BP. Vocal commands and visual signals must be established to signal the platoon to break contact and displace. Strict discipline must be enforced by platoon members not to become decisively engaged with enemy forces, go to the remount point, remount, and move to the next position.

COUNTERMOBILITY

4-54. *Countermobility* is a set of combined arms activities that use or enhance the effects of natural and man-made obstacles to prevent the enemy freedom of movement and maneuver (ATP 3-90.8). To be successful in the defense, the PL must integrate obstacles into both the direct and indirect fire plans. An obstacle is any barrier designed or employed to disrupt, fix, turn, or block the movement and maneuver, and to impose additional losses in personnel, time, and equipment. There are two types of obstacles: existing and reinforcing. Reinforcing obstacle are further categorized as either tactical or protective. In support of defensive operations, countermobility operations use tactical obstacles to shape engagements and maximize the effects of fires and use protective obstacles to provide close-in protection around defensive positions. Effective obstacles block, turn, fix, disrupt, or force the enemy to attempt to breach them (See ATP 3-90.8 terms for definitions of block, disrupt, fix, and turn).

EXISTING OBSTACLES

4-55. Existing obstacles are inherent aspects of the terrain that impede movement and maneuver. Existing obstacles may be natural (intractable soils, rivers, mountains, wooded areas) or manmade (enemy explosive and nonexplosive obstacles and structures, including bridges, canals, railroads, and embankments associated with them). Although not specifically designed or intended as an obstacle, structures may pose as an obstacle based on existing characteristics or altered characteristics that result from combat operations or a catastrophic event. Structures such as bridges and overpasses present an inherent impediment to mobility based on weight and clearance restrictions. Existing obstacles are shown on the graphical terrain analysis overlay.

REINFORCING OBSTACLES

4-56. Reinforcing obstacles are those manmade obstacles that strengthen existing terrain to achieve a desired effect. For U.S. Forces, reinforcing obstacles on land consist of land mines, networked munitions, and demolition and constructed obstacles. The basic employment principles for reinforcing obstacles are—

- Support the maneuver commander's plan.
- Integrate with observation and fires.
- Integrate with other obstacles.
- Employ in depth.
- Employ for surprise.

4-57. Demolition obstacles. Demolition obstacles are created using explosives. Examples include bridge or other structure demolition (rubble) and road craters. (See ATP 3-90.8 appendix B for more information on demolition obstacles.)

4-58. Constructed obstacles. Constructed obstacles are created without the direct use of explosives. Examples include wire obstacles, antivehicle ditches, or similar construction that involves the use of heavy equipment.

4-59. Reinforcing obstacles are employed as part of the movement and maneuver and protection warfighting functions. Reinforcing obstacle are further categorized as either tactical or protective. (See ATP 3-90.8 for additional information.) In the defense, leaders use reinforcing obstacles to—

- Slow the enemy's advance to give the platoon or squad more time to mass fires on the enemy.
- Protect defending units.
- Canalize the enemy into places where they can easily be engaged.
- Separate the enemy's armor from its infantry.
- Strengthen areas that are lightly defended.

Tactical Obstacles

4-60. The primary purposes of tactical obstacles are to shape enemy maneuver and to maximize the effects of fires. Tactical obstacles directly attack the ability of a force to move, mass, and reinforce; therefore, they affect the tempo of operations. Units integrate obstacles into the scheme of maneuver to enhance the effects of fires. Existing obstacles that a unit reinforces and integrates with observation and fires may become tactical obstacles. The types of tactical obstacles are clearly distinguished by the differences in execution criteria. The three types are—

- Directed obstacles.
- Situational obstacles.
- Reserved obstacles.

4-61. A *directed obstacle* is an obstacle directed by a higher commander as a specified task to a subordinate unit (ATP 3-90.8). The higher commander directs and resources these obstacles as specified tasks to a subordinate unit. Units plan, prepare, and execute directed obstacles during the preparation of the AO. Most tactical obstacles are directed obstacles. Directed obstacles will typically have some level of engineer support in emplacement; however, a platoon may be tasked to emplace one without engineer support. A directed obstacle should be emplaced immediately in order to conserve time to implement a company or platoon obstacle plan.

4-62. A *situational obstacle* is an obstacle that a unit plans and possibly prepares prior to starting an operation but does not execute unless specific criteria are met (ATP 3-90.8). Situational obstacles are preplanned obstacles as part of a targeted area of interest. They provide flexibility for emplacing tactical obstacles based on battlefield development.

4-63. A *reserved obstacle* is an obstacle of any type, for which the commander restricts execution authority (ATP 3-90.8). The purpose of a reserved obstacle is to retain control over the mobility along an avenue of approach. (See ATP 3-90.8 for more information.)

Protective Obstacles

4-64. The primary purpose of protective obstacles are to protect people, equipment, supplies, and facilities against threats. Protective obstacles have two primary roles:

- Defense
- Security

Defense

4-65. Protective obstacles provide friendly forces with local, close-in protection. They prevent the enemy from delivering a surprise assault from areas close to a position and are integrated with FPFs to defeat the final assault of the enemy. Protective obstacles are employed to defeat mounted and dismounted threats. Protective obstacles are generally built in and around defensive positions. While they will limit the enemy's mobility, they will have no impact on the threat force's use of direct fires.

Security

4-66. Protective obstacles are used to prevent or mitigate hostile actions against friendly forces and critical fixed sites (such as air facilities, bases or base camps, critical infrastructure, and sustainment sites). Protective obstacles used for security produce scalable effects that range from lethal to nonlethal and are appropriate for the situation based on the ROE.

4-67. Protective obstacles are key enablers to survivability operations, physical security, and antiterrorism. Units on the move rely on rapidly emplaced protective obstacles that units can quickly recover, deactivate, or destroy. Stationary units continuously improve their security posture. An example of improving emplaced, protective obstacles is by integrating mines, trip-flares, tanglefoot, or other means. (See ATP 3-37.34 for more information on the use of protective obstacles in survivability).

SURVIVABILITY

4-68. Survivability positions are prepared in defensive positions or strongpoints to protect vehicles, weapon systems, and the Infantry squads. Dismounted positions can be dug in and reinforced with overhead cover to provide Infantry squads and crew-served weapons with protection against fragmentation. Vehicle fighting positions are constructed with both hull-defilade firing positions and turret-defilade observation positions. However, construction of vehicle fighting positions usually requires external engineer assets that are allocated from the CAB for a specific amount of time or a fixed number of positions to be dug (Refer to Section V for more information on the construction of vehicle fighting positions.) Before digging, the platoon should plan first to incorporate the natural terrain, including intervisibility lines or other terrain into defensive positions. The PL must understand where best to use scarce dig assets, and recognize the tendency that, once units are in prepared defensive positions, they often want to stay in those positions. The PL should develop and issue clear displacement criteria and rehearse the plan for that displacement to ensure the platoon is not fixed in position and unable to displace.

INTELLIGENCE

4-69. The immediate purpose of defensive operations is to defeat an enemy attack. Commanders defend to buy time, hold key terrain, hold the enemy in one place while attacking in another, or destroy enemy combat power while reinforcing friendly forces. Intelligence products should determine the enemy's strength, courses of action, and location of enemy follow-on forces. The PL relies heavily on the intelligence assets and analysis from their commander and CAB intelligence cell.

4-70. The PL never has all the information needed about the enemy. Therefore, the PL can only obtain the best possible intelligence products available, conduct continuous reconnaissance, and integrate new and updated intelligence and assessments throughout the operation. In defensive operations, intelligence products focus on—

- Anticipated timetable of the enemy's COAs.
- Routes, composition, equipment, strengths, and weaknesses of the advancing enemy force.
- Enemy reconnaissance objectives or goals.
- Enemy main body objectives and goals.
- Enemy indirect fire capabilities (both lethal and nonlethal) and goals.
- Effects of terrain and weather on friendly forces, enemy forces, and civil considerations on current and projected operations.
- Likely withdrawal routes for enemy forces.
- Information on enemy equipment capabilities and recognition features.
- Commanders' PIRs.
- When applicable, locations, numbers, and intentions of civilian populations.
- When applicable, numbers, routes, and direction of movement for displaced civilians.

FIRES

4-71. For the indirect fire plan to be effective in the defense, the unit must plan and execute indirect fires in a manner that achieves the intended task and purpose of each target.

4-72. Indirect fires serve a variety of purposes in the defense, to include—

- Slowing and disrupting enemy movement.
- Preventing the enemy from executing breaching operations at turning or blocking obstacles.
- Destroying or delaying enemy forces at obstacles using massed indirect fires or precision munitions.
- Defeating attacks along dismounted avenues of approach with FPFs.
- Disrupting the enemy to allow friendly elements to disengage or conduct counterattacks.
- Obscuring enemy observation or screening friendly movement during disengagement and counterattacks.
- Providing obscurants to separate enemy echelons or to silhouette enemy formations to facilitate direct fire engagement.
- Providing illumination, as necessary.
- Delivering scatterable mines to close lanes and gaps in obstacles, disrupting or preventing enemy breaching operations, disrupting enemy movement at choke points, or separating or isolating enemy echelons.
- Providing echelonment of fire in the defense.
- Providing FPFs.

4-73. In developing the fire plan, the PL must understand the indirect fire systems available to provide support. Considerations when developing the plan include tactical capabilities, weapons ranges, and available munitions. These factors help the PL and FO

determine the best method for achieving the task and purpose for each target in the fire plan. The FO contributes significantly to the platoon fight by providing the observer plan and how to integrate fires. Positioning is critical, the PL, in coordination with the company FSO, selects positions providing the platoon FO with unobstructed observation of the platoon sector.

SUSTAINMENT

4-74. When planning defensive operations, the PL must consider additional Class IV obstacle and barrier material requirements that may be required to conduct the defense. The coordination and planning for the delivery of Class IV should be preplanned and synchronized to ensure delivery of the right amount and type of Class IV, and Class V ammunition to the emplacing unit at the right place and right time. Normally the requirement to transition and deliver Classes IV and V requires advance notice due to the significant distribution platform requirements. The PL must coordinate with the company to synchronize the delivery of supplies to conduct the defense based on established priorities. The PL should also consider prestocking (otherwise known as pre-positioning or caching). The PL's mission analysis (or guidance from the company commander) may reveal that the platoon's Class IV and Class V needs during an operation may exceed its basic load. This may require the platoon to establish pre-positioned ammunition points. The pre-positioned supplies may be positioned at an alternate or subsequent BP and should be dug in and guarded. (See ATP 3-90.8 for more information) (See Chapter 6, Sustainment, for more information.)

PROTECTION

4-75. The PL must consider protection during the planning phase of the defense. The platoon must establish security, plan for survivability, and the emplacement of obstacles to improve the effectiveness of the defense. The PL may employ counter reconnaissance (security patrols) and establish OPs to counter enemy reconnaissance and surveillance efforts. The PL integrates platoon reconnaissance and surveillance efforts to include using organic UASs, and security patrols tied to the company information collection effort. Platoons plan the use of obscurants to support disengagement or movement of forces. Platoons assign sectors of fire to prevent fratricide and friendly fire. Platoons may have engineer and CBRN assets attached to provide additional support.

ACTIVE AND PASSIVE AIR DEFENSE

4-76. In the face of an enemy air threat, the platoon usually has only active and passive (with its organic weapons) air defenses. Air defense units are usually not assigned below brigade combat team level. However, air defense assets may be located near the platoon and may provide area coverage. The PL and subordinate leaders must understand that in most cases they are required to provide their own air defense. Leaders must ensure all active and passive air defense measures are well planned and implemented, to include air defense warnings, air guards, camouflage of vehicles and positions, reducing vehicle signatures, and scanning for any hostile sUASs. The PL also plans for counter-unmanned aircraft system (C-UAS) actions and reducing their platoon's electromagnetic signature. See Chapter 5 for more information.

CBRN PROTECTION

4-77. Operationally, CBRN passive defense enables the unit's ability to continue military operations in a CBRN environment while minimizing the vulnerability of the force to the degrading effects of CBRN threats and hazards. CBRN protection measures are taken to keep CBRN threats and hazards from having an adverse effect on Soldiers, equipment, and facilities. (See chapter 5 for more information) Tasks that enable CBRN protection include the following:

- Employing individual protective equipment and other CBRN protective equipment.
- Establishing CBRN alarm conditions.
- Utilizing shielding or protective cover.
- Establishing deliberate decontamination plans.

PLATOON AS A RESERVE

4-78. The *reserve* is a portion of a body of troops that is withheld from action at the beginning of an engagement to be available for a decisive movement (ADP 3-90). If assigned as the company reserve, the mechanized Infantry platoon is usually positioned to the rear of the other platoons. The reserve adds depth to the defense. The company commander gives the reserve platoon a primary and several supplementary positions. The reconnoitering, occupation, and preparation of the reserve position are the same as a defensive position. Besides conducting a defense, the reserve platoon may have one of the following missions:

- Block penetrations.
- Secure the company flanks and rear.
- Plan and conduct a counterattack.
- Provide CAB reserve.

4-79. When designated as the CAB reserve, the PL must understand the battalion's planning priorities and release criteria for employing the reserve. The reserve must know how to locate and enter the radio net for every element in the battalion. The reserve position is a lucrative enemy artillery target and must be concealed.

SECTION III – ENGAGEMENT AREA DEVELOPMENT

4-80. An *engagement area* is an area where the commander masses effects to contain and destroy an enemy force (FM 3-90). Platoons may be defending in a company level EA, where they mass fires of three platoons but will be required to develop a decentralized platoon and possible section EAs. The success of the EA depends on how effectively the PL can integrate the obstacles and fire plans to achieve the platoon's purpose. At the platoon level, EA development remains a complex function that requires parallel planning and preparation if the platoon is to accomplish the tasks for which it is responsible. Beginning with an evaluation of the METT-TC (I) variables, the development process covers the following steps (asterisks denote steps that occur simultaneously FM 3-90):

- Identify likely enemy avenues of approach.
- Identify the most likely enemy COA.
- Determine where to kill the enemy.
- Position subordinate forces and weapons systems.*
- Plan and integrate obstacles.*
- Plan and integrate fires.*
- Rehearse the execution of operations within the EA.

IDENTIFY LIKELY ENEMY AVENUES OF APPROACH

4-81. The PL conducts an initial reconnaissance of the terrain using OAKOC. If possible, the PL does this from the enemy's perspective along each avenue of approach into the sector of fire or the proposed EA. The PL looks for existing obstacles and potential locations to emplace obstacles. The PL tries to determine how the enemy will use the terrain to their advantage and uses this to develop the defensive plan. Paragraphs 4-82 through 4-85 discuss techniques and considerations when identifying the enemy's likely avenues of approach.

IDENTIFY KEY AND DECISIVE TERRAIN

4-82. Key and decisive terrain includes locations that afford positions of advantage over the enemy, and natural obstacles and choke points that restrict forward movement.

COVER AND CONCEALMENT

4-83. The PL determines which avenues provide cover and concealment for the enemy while allowing them to maintain their tempo. Command and control systems can graphically help the company commander by showing line of sight data which enables the commander to identify decision point positions.

TERRAIN

4-84. The PL determines which terrain the enemy is likely to use to support each avenue.

LATERAL ROUTES

4-85. The PL evaluates lateral routes connecting each avenue of approach.

IDENTIFY MOST LIKELY ENEMY COURSE OF ACTION

4-86. The PL greatly enhances this step by gaining information early. The PL will gain an initial understanding of the following questions from the company commander's order and will continue to refine their understanding through their own analysis and during reconnaissance of the defense:

- Where does the enemy want to go?
- Where will the enemy go based on terrain?
- What is the enemy's mission (or anticipated mission)?
- What are the enemy's objectives?
- How will the enemy structure their attack?
- How will the enemy employ their reconnaissance assets?
- What are the enemy's expected rates of movement?
- How will the enemy respond to friendly actions?
- Where is the dead space?
- What terrain will the enemy use to support their attack (for example, where will they place a SBF position)?
- What are the natural obstacles in the defensive sector?

DETERMINE WHERE TO KILL THE ENEMY

4-87. PLs review their understanding of the terrain and the enemy's likely plan to advance through it, and they use that understanding to determine the places within the assigned or tentative EAs where the platoon will be able to most effectively mass fires on the enemy. For example, rough terrain where the enemy is slowed; terrain that lends itself to a flanking shot; naturally constricting terrain such as a defile, or areas that can be improved with reinforcing obstacles, and so forth. If the platoon was not already assigned an EA, a line drawn around all of these areas serves to delineate the EA. Depending on the nature of the terrain, there may be one critical spot, or several separate areas. The PL identifies the trace of the most distant points in the EA and designates that as the maximum engagement line. Ideally, this aligns with the maximum ranges of the weapons systems; however, terrain, crew proficiency, or other factors may limit this. Once the platoon understands where it can most effectively kill enemy forces, it emplaces natural or man-made TRPs to focus their fires. TRPs enable the platoon to shift fires from one to another, distribute fires across a target array, or change the focus of fires. In planning where to kill the enemy, the PL must be careful not to make flawed assumptions about how the enemy will maneuver. For instance, do not assume the enemy force will choose to come out of a wood line and expose itself to fires just because the company's EA is on an open piece of terrain. The leader—

- Identifies TRPs that match the enemy's scheme of maneuver, allowing the platoon (or company) to identify where it will engage the enemy through the depth of the EA.
- Identifies and records the exact location of each TRP.
- Determines how many weapon systems must focus fires on each TRP to achieve the desired purpose.
- Determines engagement lines for all weapons systems.

- Establishes EAs around TRPs.
- Begins development of a direct fire plan that focuses on each TRP and incorporates all appropriate DFCMs.

Note. In marking TRPs, use thermal sights to ensure visibility at the appropriate range under varying conditions, to include daylight and limited visibility. Ensure TRP markings are only visible to friendly forces using some type of directional marking system.

POSITION SUBORDINATE FORCES AND WEAPON SYSTEMS

4-88. Once the PL understands where they intend to kill the enemy, the next step is to position weapons in a place where they can identify the TRPs and engage enemy forces around them. To position weapons effectively, leaders must know their characteristics, capabilities, and limitations of the weapons as well as the effects of terrain and the tactics used by the enemy. PLs should position weapons where they have protection, where they can avoid detection, and where they can surprise the enemy with accurate, lethal fires. To position the weapon, the PL must know where they want to destroy the enemy and what effect they want the weapon to achieve. The PL must ensure that weapons have a clear line of sight from the tentative location and can observe the associated TRPs. For dug-in positions, this requires confirming line of sight from a prone position. Additional considerations are as follows:

- Select tentative section and squad defensive positions.
- Conduct a leader's reconnaissance of the tentative defensive positions.
- Drive the EA to confirm that the selected positions are tactically advantageous.
- Confirm and mark the selected defensive positions.
- Ensure the defensive positions do not conflict with those of adjacent units and is effectively tied in with adjacent positions.
- Select primary, alternate, and supplementary fighting positions to achieve the desired effect for each TRP.
- Ensure the section leaders and squad leaders position weapon systems so the required numbers of weapons, BFVs, and or squads effectively cover each TRP.
- Ensure that positions allow BCs and or gunners to observe the EA from the turret-down position and engage enemy forces from the hull down position.
- Stake vehicle positions following the unit SOP so engineers can dig in the positions while BFV crews perform other tasks.
- Inspect all vehicle positions.

Note. When possible, select vehicle positions while moving in the EA. Using the enemy’s perspective enables the PL to assess survivability of the positions.

PLAN AND INTEGRATE OBSTACLES

4-89. To be successful in the defense, the PL must integrate tactical obstacles with the direct fire plan, taking into account the intent of each obstacle. At the company level, obstacle intent comprises the target of the obstacle, the desired effect on the target, and the relative location of the group. A platoon must have a clear task and purpose to properly emplace a tactical obstacle. Normally, the company or CAB task force will designate the purpose of the tactical obstacle. The following steps apply in planning and integrating obstacles:

- Determine the obstacle group's intent confirming the target, relative location, and effect, and ensure intent supports the task force scheme of maneuver.
- Identify, site, and mark the obstacles within the obstacle group.
- Integrate protective obstacle types and locations within the defense.
- Ensure coverage of all obstacles with direct fires.
- Assign responsibility for guides and lane closure, as required.
- Emplace obstacles based on analysis of the mission variables of METT-TC (I), secure Classes IV and V points, or secure obstacle worksites.
- Coordinate engineer disengagement criteria, actions on contact, and security requirements with the engineer PL at the obstacle worksite if supported by an engineer platoon.
- When emplacing obstacles, the assigned BC or squad leader in overwatch must personally sight-in the obstacle.
- Sighting in the obstacle ensures that the overwatching element can observe-and engage-the length of the obstacle.
- Obstacle emplacement is an essential priority of work and must be closely supervised and tracked to completion and accomplished to standard.

4-90. The purpose will influence many aspects of the operation, from selection and design of obstacle sites to actual conduct of the defense. Once the tactical obstacle has been emplaced, the PL must report its location and the gaps in the obstacle to the company commander. This ensures that the company commander can integrate obstacles with their direct and indirect fire plans, refining their EA development.

PLAN AND INTEGRATE FIRES

4-91. The PL, with the assistance of the FO, determines the purpose of fires and where that purpose is best achieved. This plan provides the most effective fires resources and mitigate the risk of fratricide as the attacking enemy nears the designated EAs while supporting air assets conduct army aviation and CAS attacks. During EA development, DFCMs, and FSCMs such as TRPs and trigger lines are critical. In planning and integrating direct and indirect fires, the PL must accomplish the following:

- Determine the purpose of fires if the company commander still needs to determine this.
- Determine where that purpose will best be achieved if the company commander still needs to determine this.
- Establish the observation plan with redundancy for each target.
- Ensure observers include the PL as well as members of subordinate elements (such as team leaders) with fire support responsibilities.

- Identify enemy high pay off targets.
- Develop both tactical and technical triggers to implement timely fires.
- Obtain accurate target locations using survey and or navigational equipment.
- Refine target locations to ensure coverage of obstacles.
- Adjust artillery and mortar targets.
- Plan FPF.
- Request critical friendly zone for maneuver units and no fire areas for OPs and forward positions.

REHEARSE THE EXECUTION OF OPERATIONS WITHIN THE ENGAGEMENT AREA

4-92. The purpose of rehearsal is to ensure that all leaders and Soldiers understand the plan (see figure 4-5) and are prepared to cover their assigned areas with direct and indirect fires.

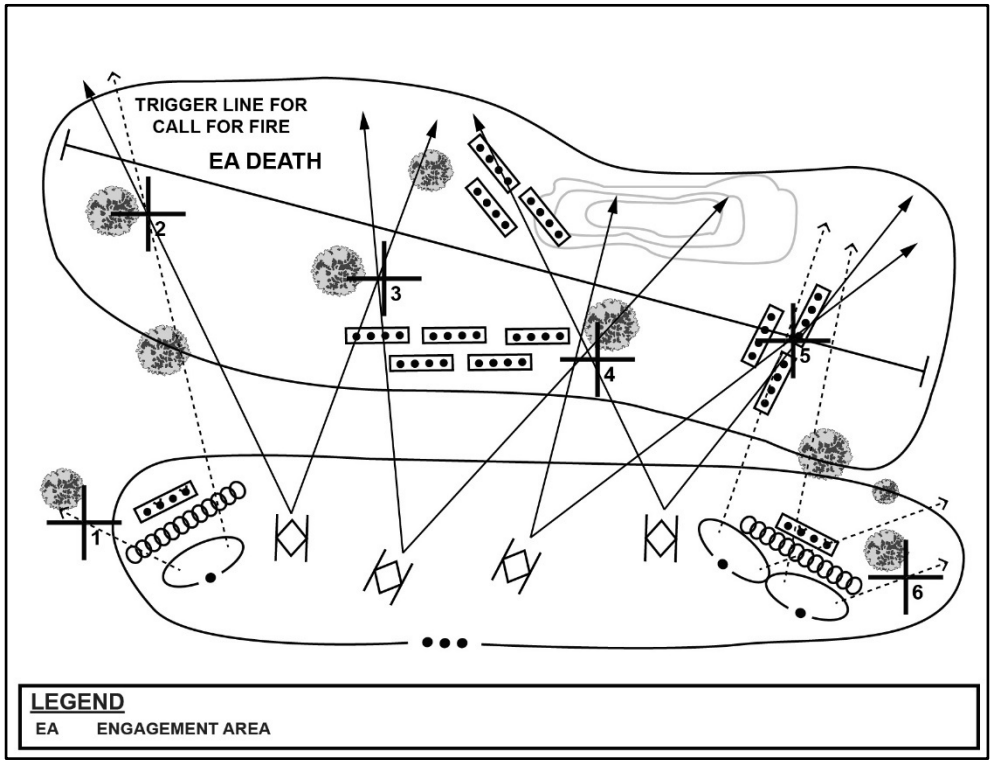


Figure 4-5. Integrated engagement area plan

4-93. The platoon will likely participate in a company level EA rehearsal. The company commander has several options for conducting a rehearsal, but the mounted rehearsal is the most common and most effective. One technique for the mounted rehearsal in the defense is to have the company trains, under the control of the company XO, move through the EA to depict the enemy force while the commander and subordinate

platoons rehearse the battle from the team defensive positions. The rehearsal should cover—

- Rearward passage of security forces (when necessary).
- Closure of lanes (when necessary).
- Movement from the hide position to the defensive positions.
- Use of fire commands, triggers, and or maximum engagement lines to initiate direct and indirect fires.
- Shifting of fires to refocus and redistribute fire effects.
- Disengagement criteria.
- Identification of displacement routes and times.
- Location of remount points, the times remount operations will take place, and movement considerations for conduct of a remount in contact.
- Preparation and transmission of critical reports using FM and digital systems (as applicable).
- Assessment of the effects of enemy weapon systems.
- Displacement to alternate, supplementary, or subsequent defensive positions.
- Cross-leveling or resupply of Class V items.
- Evacuation of casualties.

Note. When conducting their rehearsal, the PL should coordinate with the company to ensure other units' rehearsals are not planned for the same time and or location. Coordination will lead to more efficient use of planning and preparation time for all company units. It will eliminate the danger of misidentification of friendly forces in the rehearsal area.

SECTION IV – DEFENSIVE POSITIONS AND AVENUES OF APPROACH

4-94. Additional considerations during EA development are planning and wargaming the best places for Infantry squads and BFVs. As the PL conducts a terrain and METT-TC (I) analysis they should consider separate defensive positions and multiple avenues of approach. The PL should walk the positions to ensure the weapons orientation, positioning of the BFVs and Infantry squads are according to the preestablished plan. The following paragraphs cover different techniques the PL can use when developing defensive positions using separate avenues of approach.

ONE DEFENSIVE POSITION COVERING THE SAME AVENUE OF APPROACH

4-95. BFVs and Infantry squads are on the same defensive position covering the same avenue of approach. (See figure 4-6 on page 142.) The advantages of collocating the BFVs and Infantry squads include the following:

- The platoon can defend against mounted and dismounted attacks and move rapidly to another position.
- Squads can rapidly remount BFVs.

- Within the defensive position, the BFV may be positioned with the squads forward or around the vehicles for security.
- The BFVs remain on the same defensive position as the squads when the terrain provides good observation, fields of fire, and cover and concealment to both Infantry squads and BFVs.
- The proximity of both the BFVs and Infantry squads and their orientation on the same avenue of approach facilitates command and control.

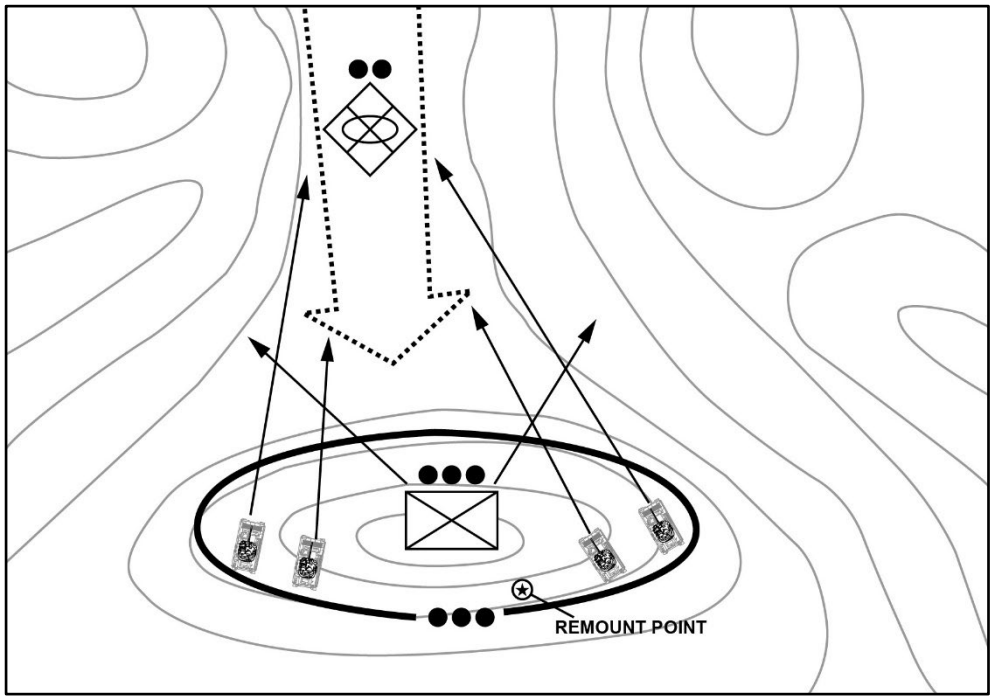


Figure 4-6. One defensive position, same avenue of approach

ONE DEFENSIVE POSITION COVERING DIFFERENT AVENUES OF APPROACH

4-96. When the defensive position has two equally dangerous avenues of approach, one with long-range and one with short-range fields of fire, the BFVs position to take advantage of their long-range fires while the Infantry squads are placed for short-range fires. Each element is positioned on terrain best suited to its capabilities. During reduced visibility, the PL may direct repositioning of some Infantry squad elements to provide local security for the BFVs. This method requires that plans be made to shift BFVs if a dismounted avenue of approach becomes the most dangerous avenue of approach. BFVs and Infantry squads on the same defensive position covering different avenues of approach (see figure 4-7).

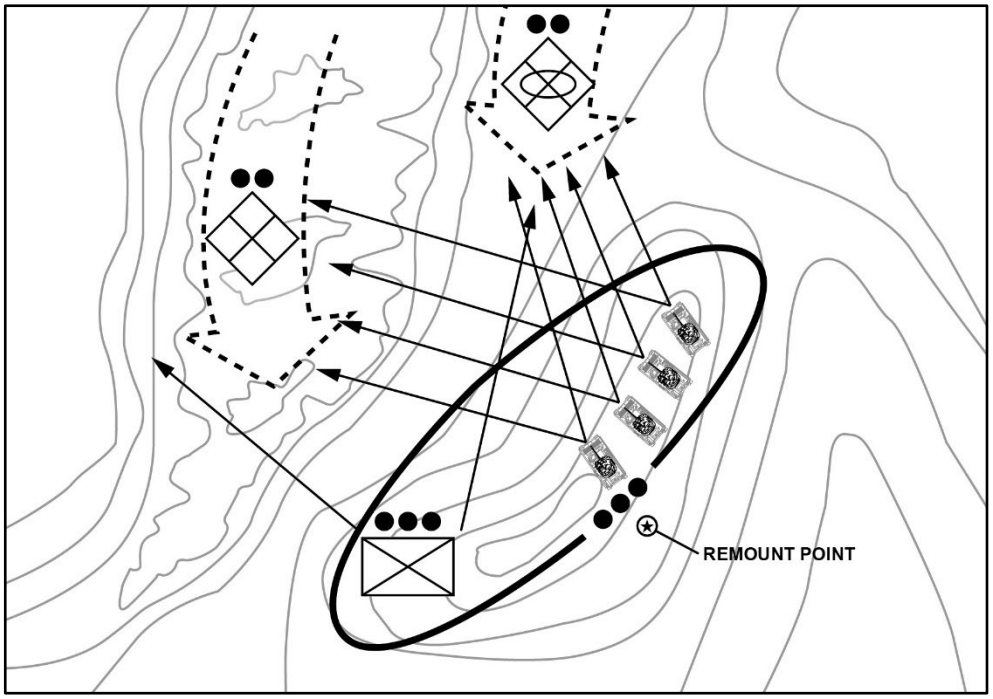


Figure 4-7. One defensive position, different avenues of approach

TWO DEFENSIVE POSITIONS COVERING THE SAME AVENUE OF APPROACH

4-97. BFVs and Infantry squads are on different BPs covering the same avenue of approach (see figure 4-8 on page 144). If positioned on separate defensive positions, BFVs and Infantry squads must fight with each other when covering the same avenues of approach. BFVs can provide supporting fires to the Infantry squads from their primary, alternate, or supplementary positions. Both elements are positioned to engage enemy forces on the same avenue of approach, but at different ranges. The three techniques to accomplish this include the following:

- Place the Infantry squads close enough to the EA to employ all their weapons.
- Place the BFVs in depth to enhance the antiarmor fires and to engage the enemy formation in depth because this technique enables the platoon to mass its fires on an enemy formation.
- Place the BFVs to engage the enemy in a specific EA and place the Infantry squads in the most probable route the enemy Infantry will use.

4-98. This allows the platoon to take advantage of the long-range firepower of BFVs. The disadvantage is that Infantry squads may not get into the fight and the platoon's firepower is not massed on the entire enemy formation.

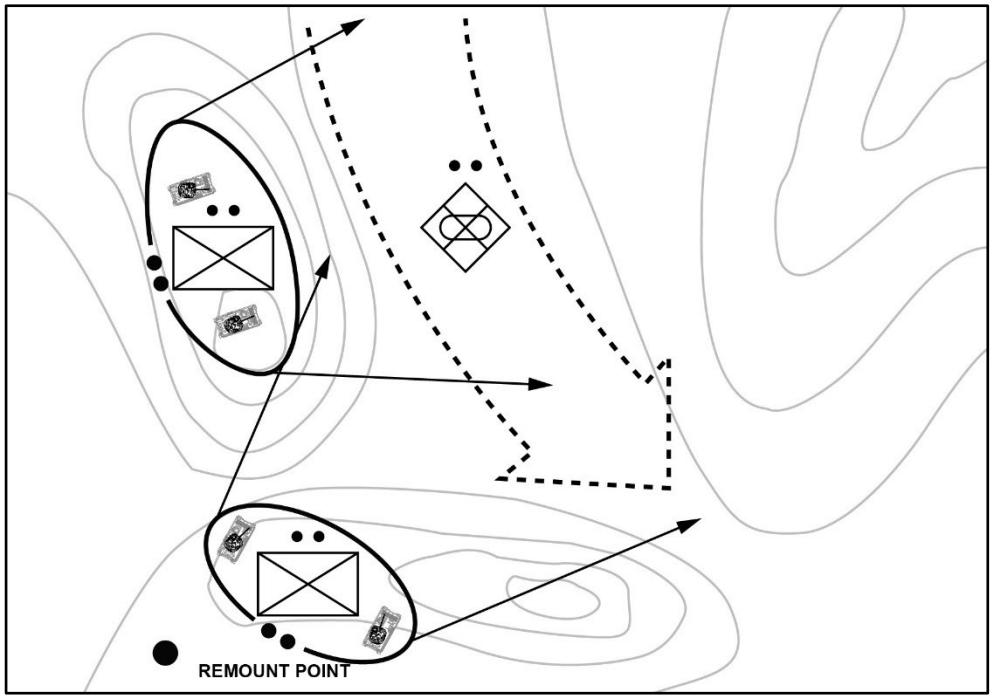


Figure 4-8. Two defensive positions, same avenue of approach

4-99. When placing the Infantry squads at choke points or in an urban environment, the PL places the BFVs to support the Infantry and destroy enemy armored vehicles as they seek to bypass the chokepoints by engaging in a supplemental EA or by firing into the same EA as the Infantry squads. The BFVs can be employed forward of the Infantry squads on the same avenue of approach. Then move to subsequent positions. This technique is especially useful in restrictive/severely restrictive terrain, or in urban operations. Figure 4-9 shows BFVs displacing to support Infantry squads.

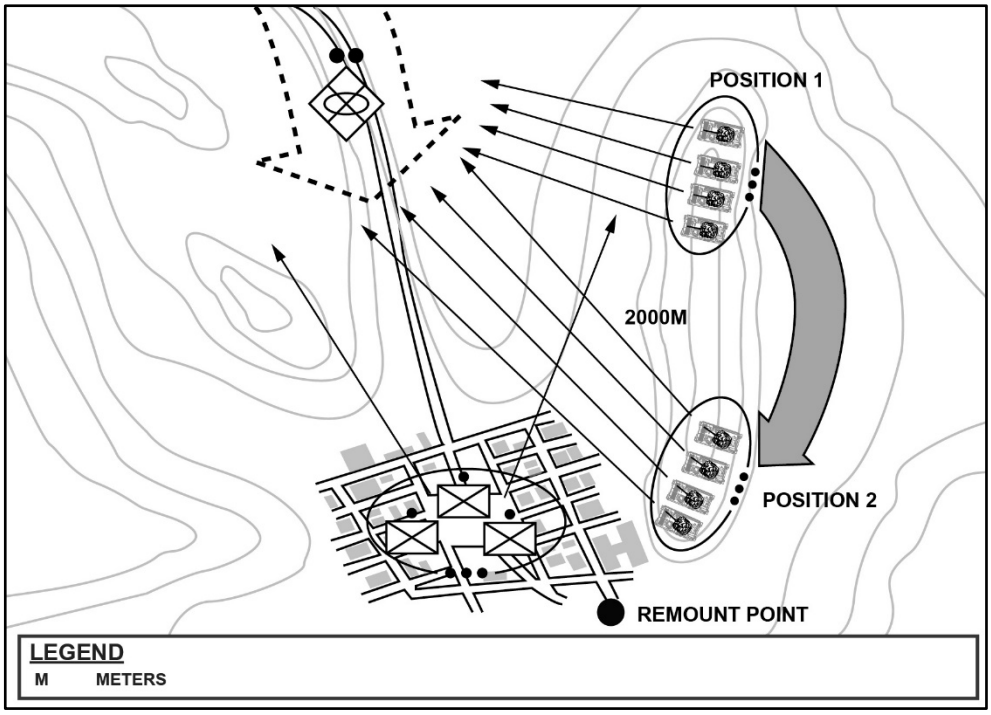


Figure 4-9. Bradley's displacing to support Infantry squads

TWO DEFENSIVE POSITIONS COVERING DIFFERENT AVENUES OF APPROACH

4-100. BFVs and Infantry squads may be employed on different defensive position covering different avenues of approach. If the platoon's BFVs and Infantry squads are fighting in relationship to each other, then the PL will likely locate with the dismounted Infantry squads, but always goes with the main effort and the PSG will locate with the mounted element. When the BFVs and Infantry squads are separated due to tactical situation or terrain the control of both elements can be consolidated at company level. If necessary, a technique is to use the XO to assist with control. The commander may consolidate all Infantry squads in one location and deploy only the platoon's BFVs with the PLs if—

- Multiple Infantry squads must hold a position.
- Primary positions for the Infantry squads do not allow adequate fields of fire for BFV weapons.
- The Infantry squads must occupy heavily wooded or rugged terrain the BFVs cannot traverse.
- Both a mounted and dismounted avenue of approach must be defended, and the terrain cannot be defended from the same BP.

SECTION V – EXAMPLE OF EVENTS FOR AREA DEFENSE

4-101. The mechanized Infantry platoon may assume a defensive operation following an attack of its own or in anticipation of an enemy attack. Depending on how much time is available, most defenses will typically follow some variation of the following. In a hasty defense, the platoon may assume defensive positions in and around the most favorable terrain that is immediately available at the end of an ongoing operation. Typically, there is some amount of time available for defensive preparations prior to execution of the defense. In a deliberate defense, the PL will most likely move the platoon to a hide position or tactical AA before participating in the commander's reconnaissance of the company's BPs and receiving the commander's final OPORD. Once the PL receives the order, they should conduct their own leader's recon, complete, and issue their order, and use the remaining available time to develop the EA, prepare BPs, emplace obstacles, and rehearse. The platoon will remain in hide positions or the AA and maintain local security for the duration of this time it takes to prepare defensive positions, the platoon must be prepared to defend at the directed time. This sequence of events is used for discussion purposes and is not the only way to sequence an area defense. Some events may be performed simultaneously or in an order different from shown in the example sequence. With any defense, the PL and platoon subordinate leaders understand events will vary depending on the mission variables of METT-TC (I) and events will overlap.

LEADERS RECONNAISSANCE

4-102. Before occupying any position, to include those in the forward security area, leaders at all echelons conduct reconnaissance (building on the company commander's reconnaissance plan) of their assigned position(s). *Reconnaissance* is a mission undertaken to obtain information about the activities and resources of an enemy or adversary, or to secure data concerning the meteorological, hydrographic, geographic, or other characteristics of a particular area, by visual observation or other detection methods (JP 2-0). The reconnaissance effort is as detailed as possible regarding the mission variables of METT-TC (I). Reconnaissance can consist of a simple map reconnaissance, or a more detailed leader's reconnaissance and initial layout of the new position. When feasible, the PL and subordinate leaders conduct a leader's reconnaissance of the complete sector to develop plans based on their view of the actual terrain. When available and dependent upon the situation, aviation assets may be used to conduct the leader's reconnaissance.

4-103. The PL's reconnaissance is informed by having participated in the company commander's reconnaissance. The PL's reconnaissance should focus on the specifics of how to accomplish the commander's directed tasks, or identifying where the higher commander's plan needs to be modified. Once commanders plan is verified the PL can begin developing the platoon order and subordinate leaders can begin priorities of work based on leaders' reconnaissance.

4-104. An effective leader's reconnaissance allows the platoon to rapidly occupy defensive positions and immediately start priorities of work. Participants in the platoon's reconnaissance include the PL, subordinate squad leaders, and security personnel. The goals are, but not limited to, identification of enemy avenues of approach, EAs,

appropriate platoon BPs with associated individual vehicle positions and sectors of fire for squads, vehicles, and crew-served or anti-armor weapons, assigned final protective lines (FPLs) or fires, the plan for directed obstacles, a tentative obstacle plan for both tactical and protective obstacles, the plan for direct fires (including probable DFCMs), the plan for indirect fires, OP locations, CP locations, Class V prestock locations, and CCPs. When complete, the PL should understand where and how to position the platoon to enable them to mass fires on the enemy, and how terrain will influence the operation (for instance, intervisibility lines). The PL must also conduct reconnaissance of any assigned or tentative subsequent or supplementary BPs and associated routes. The PL must report to the commander anything that limits their ability to accomplish the assigned mission. The PL develops a plan for the leader's reconnaissance that includes the following:

- Provisions for security.
- Areas to reconnoiter.
- Plan for guides to include Infantry squads and vehicle positions.
- Priorities and time allocated for the reconnaissance.
- Considerations for fire support, communications, and CASEVAC and MEDEVAC plans.
- Contingency plan if the reconnaissance is compromised.

ESTABLISH SECURITY

4-105. When the mechanized Infantry platoon is part of a larger unit's area defense, the higher-level commander establishes a forward security area before the unit moves to defend. Even with this forward security area established, subordinate platoons of the company must still provide for their own local security, especially over large geographical areas or in complex terrain and noncontiguous assigned area.

SECURITY OPERATIONS WITHIN THE SECURITY AREA

4-106. In order to prevent the enemy from observing and interrupting defensive preparations and identifying unit positions, the higher-level commander establishes the security area well forward of the planned main battle area, but within indirect fire and communications range. When the commander is unable to push the security area forward to achieve this objective, they may have to hold positions initially, and then transition and withdraw units to the defensive main battle area, establishing a forward security force in the process. The platoon may be called upon to act as any of these forces in the conduct of the defense.

SECURITY OPERATIONS WITHIN THE MAIN BATTLE AREA

4-107. As the security forces forward of the battalion's main battle area are arrayed, the company commander and PLs plan security operations within the main battle area, to prevent enemy reconnaissance, reduction of obstacles, targeting of friendly positions, and other disruptive actions. Subordinate platoons and squads secure obstacles, BPs, CPs, and sustainment sites (company trains) throughout the assigned area.

ACTIVE AND PASSIVE MEASURES TO AVOID DETECTION

4-108. Security in the defense includes all active and passive measures taken to avoid detection by the enemy, deceive the enemy, and deny enemy reconnaissance elements accurate information on friendly positions. The two primary tools available to the PL are OPs and patrols. In planning for security in the defense, the PL considers the military aspects of OAKOC. The leader uses the map to identify terrain that will protect the platoon from enemy observation and fires, while providing observation and fires into the EA. The leader uses intelligence and combat information updates to increase situational understanding, reducing the possibility of the enemy striking at a time or in a place for which the platoon is unprepared. The platoon's leaders must apply signature discipline across all spectra. Additional considerations include the following:

- Minimize radio traffic and utilize wire communications (if available) or runners to the OPs so that leaders receive reports through personal circulation in the battle area rather than by radio.
- Minimize vehicle traffic in and around the defensive positions.
- Reduce thermal signatures.
- Refresh camouflage on vehicles and equipment.
- Erect camouflage nets and tie them into the terrain.
- Minimize trash and other visible signatures.
- Reduce spoil and other visible signatures from digging in.
- Utilize shade and shadow to reduce visible signatures and reposition vehicles to ensure they remain in shadow.
- Cover or eliminate glare from windows, lights, goggles, or other reflective surfaces.
- Avoid creating large visible signatures at LOGPAC or other times.
- Emplace air guards.

4-109. Current mission commands systems (if equipped) allow mechanized squads to digitally transmit enemy situation and observation reports. This simplifies the reporting process without compromising security. Dismounted OPs still render reports by FM radio transmission.

OBSERVATION POSTS

4-110. An OP provides the primary security in the defense. OPs provide early warning of impending enemy contact by reporting direction, distance, and size. It detects the enemy early and sends accurate reports to the platoon. The PL establishes OPs along the most likely enemy avenues of approach into the position or into the assigned sector. Leaders ensure that OPs (mounted or dismounted) have communication with the platoon.

4-111. Early detection reduces the risk of the enemy overrunning the OP. OPs may be equipped with a Javelin command launch unit to increase its ability to detect the enemy. They may receive IR trip flares, IR parachute flares, IR M320 rounds, and even IR mortar round support to illuminate the enemy. The PL weighs the advantages and disadvantages of using IR illumination when the enemy is known to have night vision devices that detect IR light. Although IR and thermal equipment within the platoon

enables the platoon to see the OP at a greater distance, dismounted OPs should not be positioned outside supporting range of the platoon's small-arms weapons.

4-112. To further reduce the risk of fratricide, OPs use GPS to navigate to the exit and entry point in the platoon's position. The PL ensures their location and submits the OP location to the company commander to ensure a no fire area is established around each OP position. OPs must be positioned so it can identify and report enemy formations early enough that the platoon can come to a ready posture and if necessary, move from hides to BPs, before the enemy can initiate an attack.

PATROLS

4-113. A *patrol* is a detachment sent out by a larger unit to conduct a specific mission that operates semi-independently and return to the main body upon completion of mission (ATP 3-21.8). Platoons actively patrol in the defense. Patrols enhance the platoon's ability to fill gaps in security between OPs and deny the enemy freedom of movement in gaps or seams between BPs. Patrol leaders must know the friendly obstacle plan and should inspect the platoon’s obstacles to ensure they are still intact and have not been covertly breached. The PL forwards their tentative patrol route to the commander to ensure they do not conflict with other elements within the company. The commander forwards the entire company's patrol routes to the task force. This allows the operations and intelligence staff officers to ensure all routes are coordinated for fratricide prevention and no gaps are present. The patrol leader may use a GPS to enhance their basic land navigational skills as they track their patrol's location. The patrol plan and times for departure and reentry must be disseminated to the company and platoon to avoid the risk of fratricide.

PREPARATION AND OCCUPATION

4-114. Preparation and occupation of the BPs begins when the security force deploys to the forward edge of the battle area. During the occupation of the security area, the security force establishes OPs forward, and uses these OPs to conduct long-range precision fires onto the enemy forces. This disruption of the enemy enables the preparation and occupation of the main battle area. When conducting a deliberate defense, the platoon generally occupies an AA and builds the defensive positions from there. Time is a critical factor when constructing defensive positions and the occupation time is based on how much prep time the platoon has and enemy activity in the defensive sector. Following the completion of defensive positions and occupation of the forward security force, the main element moves to begin occupation of the main battle area. Platoons within the main battle area establish local security continue with priorities of work, refining the plan, EA development (See section III), position of forces and key weapons systems, preparing positions, constructing obstacles, planning, and synchronizing fires, logistics, and conducting inspections and rehearsals.

PLAN FOR OCCUPATION OF SECURITY AND MAIN BATTLE AREA

4-115. The plan of occupation for the platoon must be thoroughly understood to maximize the time available for occupation and preparation of the defense. When occupying/establishing the security area, the battalion commander may lead with the scout platoon to conduct reconnaissance and establish OPs along the forward edge of

the security area. Company commanders must ensure that subordinate forces understand security force locations forward of the main defenses.

4-116. Within the security area, platoons within the company may be called to assist or augment forward security forces from the scout platoon or conduct security force operations in support of the battalion. During occupation of the security area, security forces establish OPs forward, and from these OPs, the security forces use long-range fires to hinder the enemy's preparations, to reduce the force of the enemy's initial blows, and to start the process of wresting the initiative from the enemy. Throughout the security area, security forces position and reposition (though most movement should be limited to avoid detection) to—

- Prevent enemy observation of defensive preparations.
- Defeat infiltrating enemy reconnaissance forces.
- Prevent the enemy from delivering direct fires or observed indirect fires into the battalion area defense.
- Provide early warning of the enemy's approach.

4-117. Within the main battle area, and depending on the situation, commanders at all levels may send a subordinate force to initially secure positions prior to the main body's arrival. The mission of this force is to continue to conduct reconnaissance and surveillance of key terrain and obstacles, guide and provide local security as the defenses main body occupies the defense and initiates priorities of work. As all elements within the main battle area establish local security and continue with priorities of work.

PRIORITIES OF WORK

4-118. Priority of work is a set method of controlling the preparation and conduct of a defense. SOPs should describe priority of work including individual duties. The PL changes priorities based on the situation. All leaders in the platoon should have a specific priority of work for their duty position. Although listed in sequence, several tasks are performed at the same time. An example of priorities of work sequence are as follows:

- Post local security.
- Set and then maintain a designated level of security.
- Establish the platoon's reconnaissance and surveillance plan.
- Plan and develop EAs (see section III of this chapter).
- Position BFVs and key weapons systems.
- Position Infantry squads.
- Emplace chemical alarms.
- Prepare hasty fighting positions.
- Clear fields of fire and prepare Standard Range Card and sector sketches.
- Plan indirect fire TRPs and FPFs.
- Emplace early warning devices.
- Modify hasty fighting positions to deliberate fighting positions as the enemy situation allows.
- Install wire communications, if applicable.
- Emplace obstacles and mines.
- Mark (or improve marking for) TRPs and DFCMs.
- Improve primary fighting positions (including overhead cover) and BFV fighting positions.

- Prepare alternate and supplementary positions.
- Conduct maintenance (specifically, weapons and communications equipment).
- Reconnoiter movements and routes (for example, trafficability and timing).
- Rehearse engagements, disengagements or displacements, and communications plan.
- Adjust positions and control measures as required.
- Stockpile ammunition, food, and water.
- Plan and rehearse logistic resupply point procedures.
- Conduct PCC/PCI and test fire weapons systems.
- Continue to improve positions (for example, replace camouflage concealment if it changes color or dries out).
- Establish sleep and rest plan.

4-119. The PL will dictate the priorities of work for the platoon based on the METT-TC (I) variables. Several actions must be accomplished simultaneously to meet directed times. Leaders must constantly supervise the preparation of fighting positions and maintain a checklist or tracking system of completed tasks. The PL will keep the company commander informed on the progress levels of the defense. The key to success in defensive preparation is planning and rehearsals.

DUTIES AND RESPONSIBILITIES DURING DEFENSIVE PREPARATIONS

4-120. Many PL duties and responsibilities during the defense can be delegated to subordinates, but the PL ensures they are done. These tasks include—

- Establishing platoon timeline nested with company commander.
- Ensuring local security and assigning OP responsibility.
- Conducting a leader's reconnaissance with the PSG and selected leaders.
- Confirming or denying significant deductions or assumptions from the mission analysis.
- Understanding/confirming the initial terrain analysis (for example, avenues of approach, potential gaps and seams, and dead space) made prior to arrival.
- Confirming/revising the direct fire plan, to include EA, sectors of fire, position BFVs and key weapons, and fire control measures based on the reality of the terrain.
- Having the platoon FO develop the indirect fire plan to support the platoon defensive plan.
- Designating primary, alternate, supplementary, and subsequent positions supporting the direct fire plan, for platoons, sections, and supporting elements.
- Preparing and issuing a platoon operations order.
- Requiring squads and BFV commanders to conduct coordination.
- Integrating indirect fire plan and obstacles to support the direct fire plan.
- Briefing the PSG on the situation and logistics requirements.
- Upon receipt of the squads' sector sketches, making two copies of the platoon defensive sector sketch and fire plan, retaining one copy, and forwarding the other copy to the company.
- Confirming the direct fire plan for BFVs and squad positions before digging starts.
- Confirming (or establishing) adjacent unit coordination's.

- Checking with the company commander for all changes or updates in the orders.
- Finishing the security, deception, counterattack, and obstacle plans.
- Walking the platoon positions after they are dug.
- Confirming clear fields of fire and complete coverage of the platoon's entire sector by all key weapons.
- Looking at the defensive plan from an enemy point of view, conceptually and physically.
- Checking dissemination of information, interlocking fires, and dead space.
- Ensuring rehearsals are conducted and obstacle locations reported.
- Ensuring routine report status of and completion of defensive preparations to the company.

4-121. PSGs duties and responsibilities are not limited to but may include—

- Overseeing execution of defensive priorities of work.
- Supervising execution of the platoon's obstacle plan.
- Establishing the platoon wire communications linking the platoon, squads, sections, and attached elements, if applicable.
- Establishing CCPs, platoon logistics release points, and reconnaissance of company-level points.
- Briefing squad and section leaders on all plans, location of leaders, logistics plan, and routes between positions and routes to company locations.
- Requesting and allocating engineer and dig assets, barrier material, rations, water, and ammunition.
- Walking the positions with the PL.
- Supervising emplacement of BFVs, squads, key weapons.
- Checking Standard Range Cards and sector sketches.
- Establishing routine security or alert plans, radio watch, rest plans, and briefing the PL.

4-122. BCs and section leader's duties and responsibilities are not limited to but may include—

- Emplacing local security.
- Confirming positioning and assigning sectors of fire, priority targets, FPFs for BFV weapons systems.
- Confirming EA and targets with PL.
- Clearing fields of fire, preparing Standard Range Card, and giving copies to section and PL.
- Marking (or improving markings) for TRPs and other DFCMs.
- Helping in the placement (sighting in) of tactical and protective obstacles.
- Supervising digging in primary BFV fighting position.
- Controlling engineer and dig assets for allotted time and passing assets off to the next position.
- Preparing alternate and supplementary positions (same procedure as the primary position).
- Establishing engagement criteria with the PL and BFV gunner.

- Briefing crew on logistics plan, CASEVAC plan, maintenance plan, and rest plan.

4-123. FO's duties and responsibilities are not limited to but may include—

- Assisting the PL in planning the indirect fires to support defensive missions.
- Advising the PL on the status of all firing units, and on the use of obscurants or illumination.
- Coordinating with the company FSO, firing units, squad leaders, and section leaders to ensure the fire plan is synchronized and fully understood.
- Ensuring the indirect fire plan is rehearsed and understood by all.
- Ensuring all FPFs are adjusted as soon as possible.
- Recommending and assisting the PL with an observation plan.
- Coordinating and rehearsing all repositioning of observers within the platoon AO to ensure they can observe targets or areas of responsibility.
- Developing triggers.
- Reporting information collection activities.
- Ensuring redundancy in communications.

4-124. For Infantry squad duties and responsibilities, standards for crew served, and individual fighting positions see ATP 3-21.8.

ADJACENT UNIT COORDINATION

4-125. The goal of adjacent unit coordination is to ensure unity of effort in accomplishment of the platoon mission. Items adjacent units coordinate include—

- Unit positions, location of key leaders, call signs, and frequencies.
- Locations of OPs and patrols.
- Overlapping fires (to ensure direct fire responsibility is clearly defined).
- Identification and coverage of dead space and exploitable gaps or seams between units.
- TRPs (to ensure identification/coordinated method of target handoff).
- Coverage of terrain features (roads, trails, and dead space) that lay along boundaries.
- Alternate, supplementary, and subsequent BPs.
- Indirect fire information.
- Obstacles (location and type).
- Air defense considerations.
- Routes to be used during occupation and repositioning.
- Sustainment considerations.
- Method of handing off targets that move from, or into, an adjacent unit's EA.

COORDINATION

4-126. In the defense, coordination ensures that units provide mutual support and interlocking fires. In most circumstances, the PL conducts face-to-face coordination (the preferred method due to reduced signal emissions) to facilitate understanding and to resolve issues effectively. However, when time is extremely limited, digital coordination may be the only means of sending and receiving this information. The PL should send

and receive the following information using the radio or command and control system before conducting face to face coordination:

- Location of key leaders.
- Location of fighting positions.
- Location of observations posts and withdrawal routes.
- Location and types of obstacles.
- Location of contact points.
- Location of coordination points.
- Location, activities, and passage plan for scouts and other units forward of the platoon's position.
- Platoon's digital sector sketch.
- Location of all Soldiers and units operating in and around the platoon's sector.

4-127. Current techniques for coordination hold true for units that are digitally equipped. If a digitized and a nondigitized unit are conducting adjacent unit coordination, face-to-face is the preferred method. The leader of the digitized unit has the option to enter pertinent information about the nondigitized unit into command-and-control systems for later reference. The digitally equipped PL should show the adjacent unit leader the digital sector sketch. If face-to-face coordination is not possible, leaders share pertinent information by radio.

Note. A *coordination point* is a point that indicates a specific location for the coordination of tactical actions between adjacent units (FM 3-90).

OCCUPATION OF DEFENSIVE POSITIONS

4-128. The platoon occupies defensive positions following the PL's plan and the results of the leader's reconnaissance. To ensure an effective and efficient occupation, each BFV and Infantry squad moves to a location marked by the reconnaissance element or is put in position by a designated guide, all positions are annotated on the operational graphics. Time is a critical factor, and leaders must make the most of the time available. Platoons may have several other defensive positions and EAs to develop or may be preparing for a counterattack. If time is a factor platoons may plan for a deliberate occupation but must conduct a hasty occupation of defensive positions. Paragraphs below describe techniques for a hasty verses' deliberate occupation (See chapter 3 for definitions of hasty and deliberate).

DELIBERATE OCCUPATION

4-129. The platoon conducts deliberate occupation of defensive positions when time is available, when enemy contact is not expected, and when friendly elements are positioned forward in the sector to provide security for forces in the main battle area. Establishing defensive positions is accomplished concurrently with the development of the EA. The PL directs the initial reconnaissance from the EA and then tentatively emplaces vehicle and weapon system positions.

4-130. Once the defensive positions are established, subordinate leaders can begin to develop their sector sketches and fire plans based on the tentative plan developed during the leader's reconnaissance. BFV positions are improved while the direct fire plan is

finalized and proofed. Depending on factors of METT-TC (I), particularly the enemy's anticipated timeline for attack, the platoon may occupy hide positions when preparations are completed, then occupy the defensive positions just before initiating the defensive operation.

HASTY OCCUPATION

4-131. The platoon may conduct a hasty occupation in the defense during a counterattack or after disengagement and movement to alternate, supplementary, or subsequent defensive positions. The PL issues a FRAGORD covering the following minimum information:

- Changes in the enemy and or friendly situation.
- Platoon task and purpose (what the platoon must accomplish and why).
- Task and purpose for each subordinate element.
- Direct fire plan, including TRPs, sectors of fire, likely fire patterns, and any anticipated methods of engagement such as volley fires by platoon, triggers, or disengagement criteria.
- Designated TRPs or other necessary DFCMs
- Coordinating instructions.

4-132. At a minimum, the following actions must be taken:

- If there is time, the PL may choose to do a hasty reconnaissance of the BP before occupying.
- The platoon approaches the defensive positions from the rear or flank, occupying turret defilade positions if available.
- The platoon confirms the tentative direct fire plan and makes any required updates to the direct fire plan.
- The PL brings up all four vehicles into a hull defilade position, and gunners visually inspect the defensive sector to confirm line of sight and identify dead space before individually backing down into turret defilade.
- The PL reports SET to the company commander.
- The PL continues to improve the defensive positions, including emplacing chemical alarms, preparing sector sketches, coordinating with adjacent units, and implementing appropriate security measures.

DEFENSIVE POSITION PREPARATION

4-133. The PL, with guidance from the company commander, designates the level of preparation for each defensive position based on the time available and other tactical considerations for the mission. The three levels of defensive position preparation are listed here in descending order of thoroughness and time required:

Occupy

4-134. Complete the preparation of the position from which the platoon will initially defend. The position is fully reconnoitered, prepared, and occupied before the "defend no later than" time specified in the company order. The platoon must rehearse the occupation, and the PL must establish a trigger for occupation of the position.

Prepare

4-135. Squad and BFV positions in the defensive positions should be marked, along with DFCMs in the EA. Survivability positions may be dug, ammunition caches pre-positioned, and protective obstacles emplaced.

Reconnoiter

4-136. Both the EA and defensive positions will be fully reconnoitered. Tentative weapon positions should be planned in the defensive positions and limited DFCMs should be established in the EA.

4-137. The company commander assigns platoon defensive positions to allow each platoon to concentrate its fires or to place it in an advantageous position for the counterattack. The size of the platoon defensive position can vary, but it should provide enough depth and maneuver space for subordinate elements to maneuver into alternate or supplementary positions and to counterattack.

4-138. The defensive position is a general position on the ground. The PL places their BFVs on the most favorable terrain based on the higher unit mission and commander's intent. The platoon then fights to retain the position unless ordered by the company commander to counterattack or displace.

POSITIONS FORMED BY NATURAL TERRAIN

4-139. Positions formed by natural terrain are usually best because they are easy to modify. If preparation is necessary, extensive engineer support is required. Each position is camouflaged with either natural vegetation or a camouflage net, and the spoil is flattened out or hauled away. All fighting positions for the platoon are planned as deliberate positions. Since the lack of time usually does not allow full construction of a deliberate position, only some parts of the position are prepared. For example, the complete fighting position for a BFV requires the construction of a hull defilade, turret defilade, concealed access ramp or route, and hide location all within the same position.

4-140. Digging hide locations and concealed routes between fighting positions is normally not practical due to the lack of engineer assets and time. Engineer assets are used to dig the hull and turret defilade positions. The ramps and concealed routes require only partial clearing and leveling with blade tanks or engineer equipment because natural concealed routes and hide locations are used. If time permits, the commander expands the fighting position to all four parts, to include a hide and turret defilade location. The access ramp from the hide location to the hull defilade position usually provides turret defilade for a vehicle at some point on the ramp. This location can be marked with engineer tape and a chemical light, so the driver knows when to stop.

BRADLEY FIGHTING VEHICLE EMPLACEMENT

4-141. Leaders should position BFVs where they can engage attacking enemy forces from their flanks. This means placing fighting positions on the flank of enemy mounted avenues of approach.

4-142. BFVs use defilade positions when in the defense. Defilade positions are classified as either turret-defilade or hull-defilade. A turret-defilade position uses terrain

to mask most of the BFV with only the integrated sight unit or improved BFV acquisition system exposed to the enemy. Because the TOW, when erected, is above the integrated sight unit, it may be fired from this position without exposing more of the BFV than necessary as long as the missile has 18 inches of clearance. The BFV cannot engage the enemy with the 25-mm main gun from this position. A hull-defilade position exposes only as much of the BFV as needed to engage the enemy with the three primary weapon systems. If time and blade assets are available, each vehicle fighting position may have a hide position dug in the rear of the BP. The hide position is dug deeper than turret defilade and offers additional cover.

4-143. Flank positions in restrictive terrain provide windows of opportunity to engage the enemy and afford the BFV additional protection from enemy overwatching fire. The basis for this technique is to limit exposure only to the targets at which it is firing. It then shifts to other firing positions as enemy vehicles are destroyed. These positions restrict observation and vulnerability to only one segment of the platoon's EA; therefore, only those enemy vehicles that can be seen and engaged by the BFV can return fire.

4-144. Leaders should consider the following when employing BFVs in the defense:

- Use a hide position when possible and stay in it until the enemy is in the EA.
- Use a keyhole position to provide a window to engage the enemy and afford the BFV additional protection from enemy overwatching fires.
- Have a backdrop and avoid anything that may catch the enemy's eye.
- Position to the flank of an enemy mounted approach and behind frontal cover because it is easier for the attacker to acquire and destroy a target to their front than those to their flank or rear.
- Use covered routes into and out of firing positions.
- Plan multiple positions for each vehicle:
  - Use a guideline of 75 meters or more between primary and alternate BFV positions.
  - This decreases the enemy's ability to acquire the BFV following an engagement.
- Conserve dig assets by ensuring vehicles use the natural terrain as the SP to achieve hull or turret defilade.
- Do not construct berms, since berms make it easier for the attacker to spot the position.
- Dig hull and turret fighting positions instead of berms.
- Ensure positions can engage one or two of the enemy vehicles at the same time.
- Be prepared to shift from assigned sector of fire to engage other portions of the enemy formation (see figure 4-10 on page 158).
- Use care in the orientation of individual vehicle positions because it is difficult to maintain a wide sector of scan without exposing the turret.

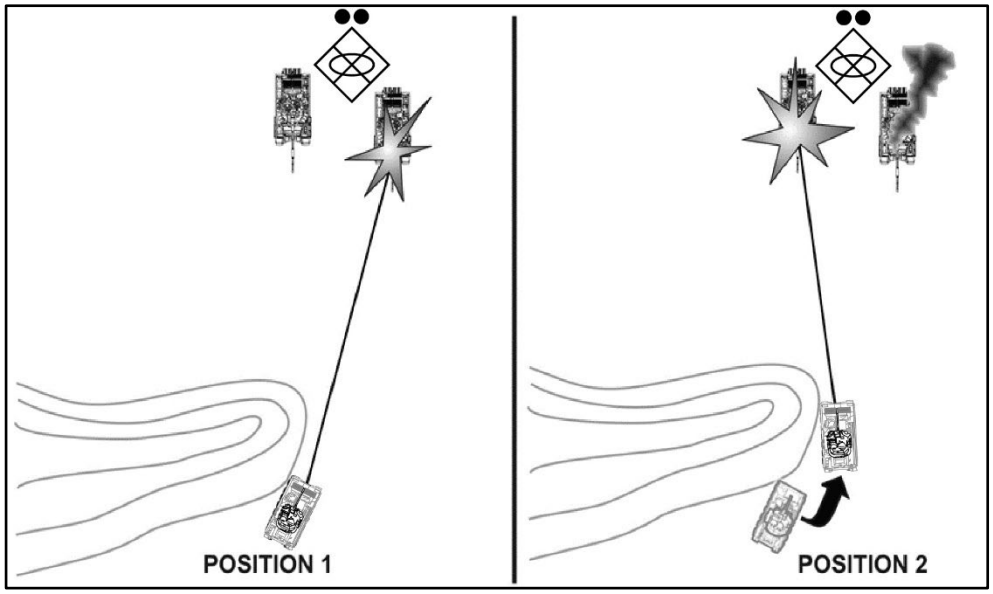


Figure 4-10. Hidden position with smaller fields of fire

4-145. Battlefield dust, smoke, fog, and darkness normally limit observation. When engagement ranges are reduced, flanking fires, obstacles, mutual support with Infantry squads, and covered and concealed positions increase in importance. Because of battlefield obscuration, weapons should be positioned to fight during limited visibility or be able to quickly move to alternate positions.

Note. PLs will mark and prioritize BPs with the attached engineers PL who also considers obstacle emplacement and survivability improvements. When limited time is available, engineer prioritization of work should be prioritized on hull and turret defilade positions. Each D7 dozer team can emplace a deliberate hull defilade BP in 1 hour and each turret defilade BP in approximately 1.5 to 2 hours. (ATP 3-34.10)

DELIBERATE FIGHTING POSITIONS

4-146. Deliberate fighting positions are required to protect a vehicle from kinetic energy and hypervelocity projectiles and extensive engineer support is required. Deliberate vehicle fighting positions are holes in the ground that provide cover and concealment, reducing the target signature. The position is constructed in four parts: hull defilade, turret defilade, hide location, and concealed access ramp or route. Positions formed by natural terrain are best because of easy modification. Each position is camouflaged with natural vegetation or a camouflage net, and the spoil is flattened out or hauled away. Fighting positions for fighting vehicles are planned as deliberate positions. Figures 4-11 and 4-12 on pages 160 and 161 are examples of deliberate positions. The maneuver commander directs engineer earthmoving assets to construct the following types of fighting positions (See ATP 3-34.10):

Hull Defilade

4-147. This position leaves the vehicle turret aboveground, allowing for the observation and engagement of targets.

Turret Defilade

4-148. The entire vehicle is belowground level; however, a hull defilade position is required in front of the vehicle to allow it to move forward and elevate in the position to engage targets. Turret defilade position is also achieved while acquisition sight, such as Improved Target Acquisition System (also called ITAS), and Commander's Independent Viewer, is exposed. Provides vehicle concealment from enemy observation and fire while providing the vehicle observation of the enemy.

Hide Location

4-149. The hide location allows the vehicle to be concealed away from the fighting position and includes overhead concealment, when possible.

Concealed Access Ramp or Route

4-150. A concealed route (natural or constructed) allows the vehicle to move from its hide position to its fighting positions.

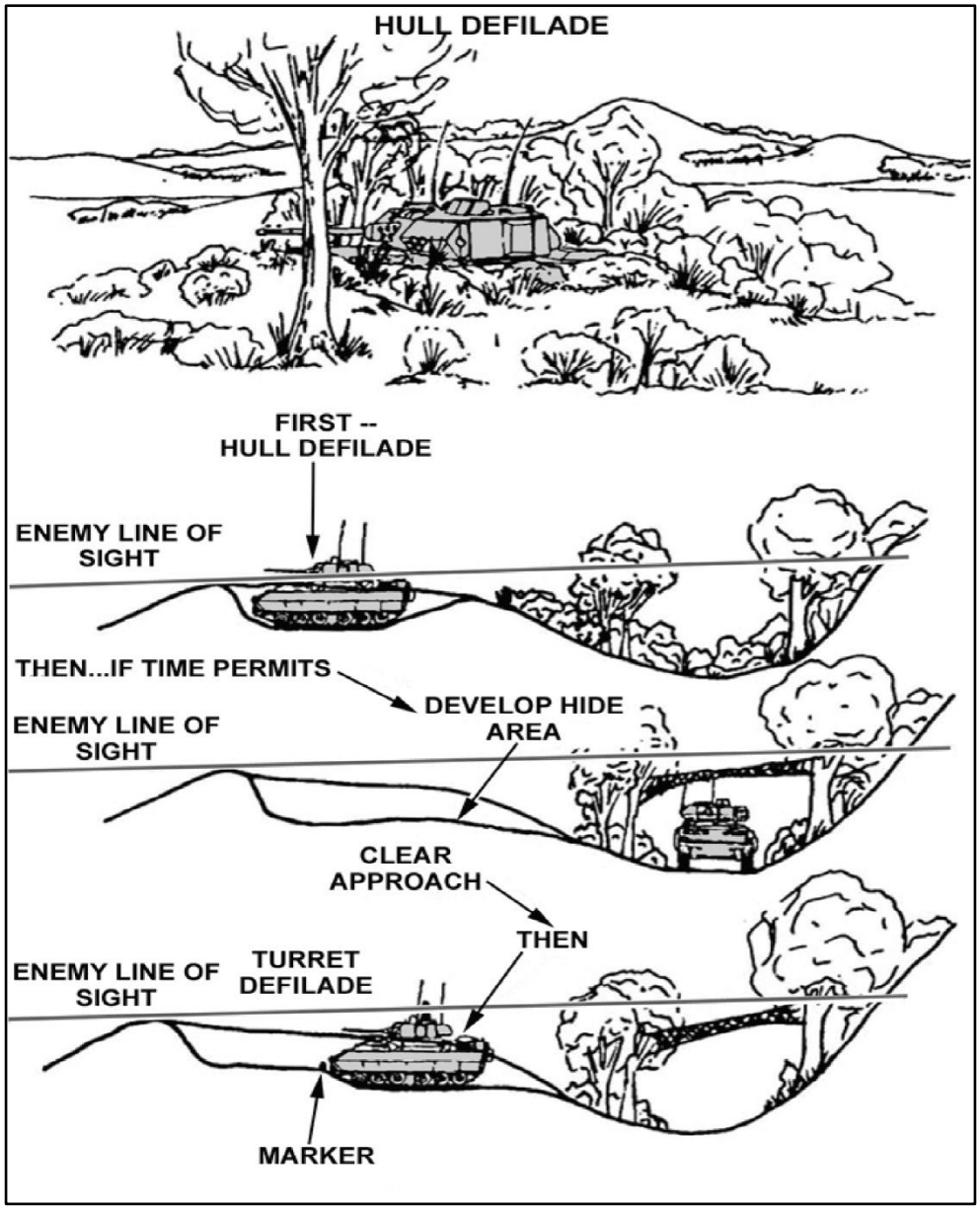


Figure 4-11. Developing deliberate fighting positions

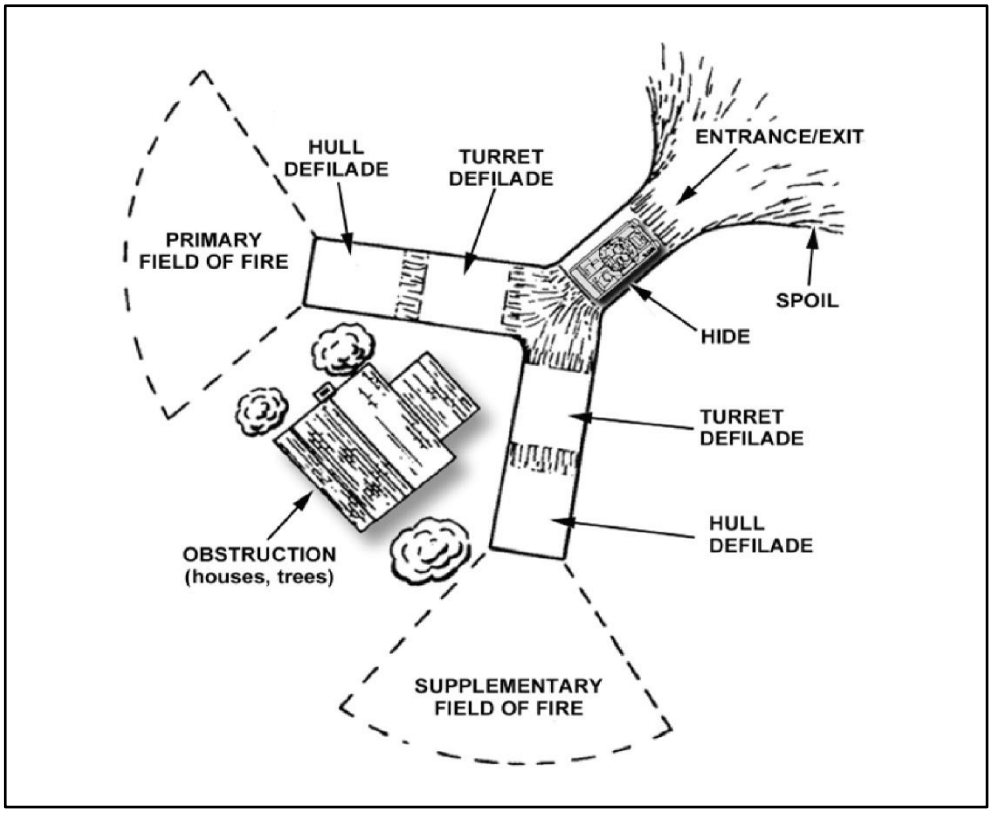


Figure 4-12. Top view of Y-shaped fighting position

MOVE INTO POSITION

4-151. If the situation permits, a ground guide can be used to assist the driver. The driver moves the BFV in position under control of the BC and ground guide if provided. Once the BFV is in position, the gunner should index the range and azimuth for one of the planned TRPs and begin preparing the Standard Range Card. Once leaders inspect the placement of the vehicle and the gunner completes the Standard Range Card the crew begins staking the position (see stake the position next paragraph). If the stakes become lost and the position is not otherwise marked, the vehicle is moved to the approximate location. The BFV commander or gunner can use a compass to find the left and right limits or index the range and azimuth to one of the TRPs to make sure the vehicle is positioned correctly. The vehicle should remain in the hide position until enemy engagements are expected.

STAKE THE POSITION

4-152. Three stakes must effectively mark the position as shown in figure 4-13 on page 162.

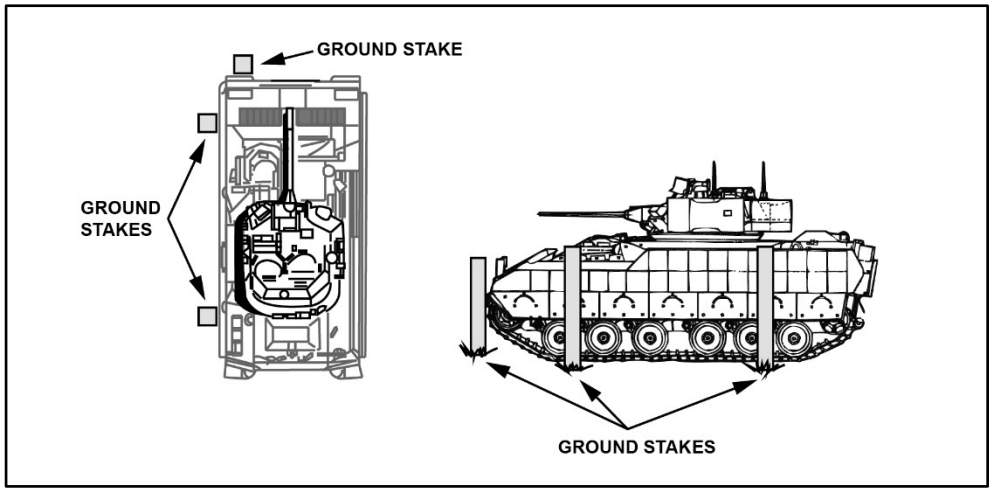


Figure 4-13. Stake the position

4-153. One stake is placed in front of the BFV, centered on the driver's station and just touching the hull. The stake should be long enough for the driver to see it when in position. The other two stakes are placed parallel to the left track and lined up with the hub on the front and rear wheels. The stakes should be placed close to the BFV with only enough clearance to move the BFV into position.

4-154. The stakes should be driven firmly into the ground. Engineer tape or luminous tape can be placed on the friendly side of the stakes so that the driver can see them. A rock is placed at each of the front two corners of the vehicle to assist in reoccupation if the stakes are lost.

INFANTRY SQUAD CONSIDERATIONS

4-155. Infantry squads use available time to prepare fighting positions (See ATP 3 21.8 for standards of individual and crew served weapons fighting positions). When the enemy attacks, BFVs normally engage enemy formations and, at a prearranged signal or event, move to alternate positions to the flank or to the rear of the Infantry squads. The timing of this move is critical. While maximum advantage can often be gained by employing the mounted element forward, the BFVs become more vulnerable to enemy fire as the enemy closes. Infantry squads must be able to conduct operations without the support of the BFVs. The quantity and type of weapons, ammunition, mines, equipment, and supplies for Infantry squads must be considered (See ATP 3-21.8 for more information). Additional consideration include:

- Infantry squads should be positioned on reverse-slopes or in restricted terrain where they cannot be engaged before they fire on the enemy.
- Infantry squads can supplement the antiarmor fires of tanks and BFVs with Javelin missiles, which have a maximum range of 2,500 meters.
- Infantry squads can retain or deny key terrain if employed in strong points or well-covered positions.

- Infantry squads can protect obstacles or flank positions that are tied into severely restricted terrain.
- Infantry squads can cover dead space and heavily wooded areas impassable to mechanized forces.
- Infantry squads can camouflage and conceal their positions and achieve surprise on enemy forces.

INFANTRY SQUAD WEAPONS EMPLACEMENT

4-156. To position Infantry squad weapons effectively, leaders must know the capabilities, limitations of the weapons, and the effects of each type of round. Some examples are using M320 grenade launcher with HE rounds to cover dead space and use illumination rounds to illuminate suspected enemy infiltration routes, also using the light and medium machine guns for engaging enemy infantry and light skinned vehicles. The platoon must develop a detailed direct fire engagement plan using the capabilities of squad weapons systems and dismounted anti-armor systems. PLs should position weapons where they have protection, avoid detection, and surprise the enemy with accurate and lethal direct fires. Additionally, the PL must consider whether their primary threat will be armored vehicles or Infantry. Their plan should address both mounted and dismounted threats.

CLOSE COMBAT MISSILE SYSTEM EMPLACEMENT

4-157. Mechanized Infantry platoons use the Javelin's range and lethality to complement the firepower of the BFVs. This technique creates a much more effective EA, especially when the platoon is fighting without tanks. Without the Javelin, mechanized Infantry units have difficulty defending when the enemy attacks with both tanks and personnel carriers (known as PC). If the PL focuses the BFV fires on the tanks, the enemy PCs are free to maneuver close enough to engage with their weapons, dismount their Infantry, and begin the assault. If the PL focuses all the fires on the enemy PCs, the risk is letting enemy tanks get close enough to engage the BFVs. The Javelin gives the mechanized PL the ability to distribute effective fires on both tanks and PCs throughout the EA and to destroy enemy PCs before they can close to assault range (See TC 3-22.37 or ATP 3-21.8 for Javelin fighting positions). Below are some options for Javelin emplacement.

Centralized Control

4-158. The PL can control the fires of their Javelin gunners, by either physically locating the weapons in their vicinity and personally directing their fires, or by grouping them together under the control of the PSG or another designated leader.

Decentralized Control

4-159. Javelin gunners operate with and are controlled by their squad leaders. The squad leader may need to employ one fire team with a Javelin. The squad leader normally gives the command to fire. See TC 3-22.37 and ATP 3-21.8 for more information.

DA FORM 5517 (STANDARD RANGE CARDS)

4-160. A Standard Range Card is a sketch of an area that a direct fire weapon system is assigned to cover. A Standard Range Card aids in planning and controlling fires and aids the crew in acquiring targets during limited visibility. It is an aid for replacement personnel or platoons or squads to move into the position and to orient on their sector. During good visibility, the gunner should have no problems maintaining orientation in their sector. During poor visibility, they may not be able to detect lateral limits. If the gunner becomes disoriented and cannot find or locate reference points or area limit markers, they can use the Standard Range Card to locate the limits. The gunner should make the Standard Range Card so that they become more familiar with the terrain in their area. They should continually assess the area and if necessary, update their Standard Range Card. See appendix A direct fire planning for detailed description of the Standard Range Card.

SECTOR SKETCHES

4-161. Detailed sketches aid in the planning, distribution, and control of the platoon fires. Squad leaders prepare squad sector sketches, section leaders prepare section sketches, and the PL prepares the platoon sketch. See appendix A for detailed description of sector sketch.

SECTION VI – ACTIONS IN DEFENSIVE POSITIONS

4-162. Once in position, each squad leader and BC checks their location on map to ensure they are complying with the PL's graphics. As the platoon occupies its positions the PL ensures that each squad and vehicle is located according to their plan. If the PL notes discrepancies between actual positioning of the squads or vehicles and their plan, they correct or adjust the plan based on the terrain.

SECURITY AREA ENGAGEMENT

4-163. When the platoon is operating as part of the higher echelon's security area defense, the PL integrates engagements within the higher echelon's defense. Security forces within the defense can come in the form of the scout platoon, or sniper squad. The mechanized Infantry platoon may have these units attached to them as part of the security area force. This can be in support of the higher HQ scheme of fires using ABCT or higher echelon artillery, or in support of the CAB, and company scheme with the use of organic mortars and allocated artillery fires.

4-164. The scheme of fires within the security area combined with the use of tactical obstacles serve to disrupt the enemy and canalize the enemy in the EAs, and to force the enemy to commit enemy engineer assets prior to the main battle area engagement. Tactical obstacles (for example, situational obstacles) and fire support tasks are planned and triggered relative to specific enemy COAs. They are essential, allowing for more effective engagements within the security area. Forward security forces may cover these situational obstacles with direct fires or indirect fires prior to their withdrawal to positions within the main battle area.

4-165. A platoon may support a higher echelon or its own scheme of maneuver by fighting a delay through the depth of the security area and into the main battle area. The purpose may be to take advantage of restrictive avenues of approach, to set the conditions for a counterattack, or to avoid a decisive engagement until favorable conditions are set. As security forces complete the rearward passage of lines, main battle area forces assume control of the battle at the BHL. Battle handover from forward security forces to forward main battle area forces requires firm, clear arrangements—

- For assuming command of the action.
- For coordinating direct and indirect fires.
- For the security force's rearward passage of lines.
- For closing lanes in obstacles.
- For movement of the security force with minimal interference to main battle area actions.

4-166. As security area engagements transition into the main battle area, security area forces withdraw to BPs within the main battle area and counterattack or reserve positions. Security area forces may move to a flank or to the rear of the main battle area to provide security. (See ATP 3-90.1 for additional information.)

MAIN BATTLE AREA ENGAGEMENT

4-167. The PL seeks to defeat, disrupt, or neutralize the enemy's attack forward of or within the main battle area. The PL integrates direct and indirect fires with the obstacle plan, local counterattacks, and, when established, reserve forces to destroy the enemy in designated EAs or to force the enemy transition to a retrograde or hasty defense. The leader uses planned EAs and BPs to engage the enemy throughout the depth of the defense. DFCMs allow the platoon to focus, shift, or distribute their fires as necessary However, fire support may be limited to critical points and times. Control measures allow the leader to rapidly concentrate the use of combat power at the decisive point(s), provide flexibility to respond to changes, and allocate responsibility of terrain and obstacles to synchronize the employment of combat power.

4-168. As attacking forces reach the forward edge of the battle area, the enemy will try to find weak points in the defense and attempt to force a passage, possibly by a series of probing attacks. Forward elements engage the enemy's lead forces as the enemy attack develops along identified enemy avenues of approach. The platoon arrays forces and establishes EAs using obstacles and fires to canalize enemy forces. When shaping efforts allow for the canalization the enemy, the enemy advance slows, and the increased density of forces present good targets for defensive fires within EAs. The maximum effects of these simultaneous and sequential fires, brought to bear at this stage of the battle, enable the destruction of the attacking enemy force. Additional considerations and key leader duties may include:

- Recognizing and taking advantage of opportunities to mass the platoon's fires; (for example, engaging the enemy's initial appearance, when set in a SBF position, or when delayed by terrain, obstacles, or other battlefield conditions).
- Understanding when to fight by sections to reduce exposure and increase survivability.
- Utilizing planned DFCMs to focus, shift, or distribute the platoon's direct fires within the enemy formation or between different formations and target sets.

- Controlling the platoon's rates of fire.
- Looking for opportunities to reload TOWs or upload ready racks from covered positions by section.
- Being alert to threats posed by a following enemy echelon, and opportunities to mass fires in depth.
- Being alert for opportunities to displace between primary and alternate positions and controlling displacement by platoon, section, or individual vehicles.
- Being alert for emerging conditions that meet displacement criteria and executing controlled movements to subsequent or supplementary positions by platoon, section, or individual vehicles.
- Being alert to emerging conditions that indicate the platoon is at risk of being fixed in positions by enemy fires or their rapid advance.
- Being alert to conditions that warrant release of friendly situational obstacles.
- Reporting enemy actions that answer PIR or inform commanders' decision-making.
- Reporting enemy situation and being alert to emerging threats or opportunities, or the changing nature of the situation.
- Monitoring consumption of Class V and alert to opportunities to resupply from pre-positioned stocks.
- Providing periodic SITREPs, or assessments of enemy progress and friendly ability to complete the mission to the company commander.
- Reacting to enemy fires (for example, artillery and/or aviation) and CBRN attacks.
- Reporting to higher, monitoring stockage levels and cross leveling or resupply.
- Following CASEVAC and MEDEVAC procedures.
- Meeting criteria to commit the reserve.

SECTION VII – TRANSITION

4-169. During the planning for the defensive operation, the PL must discern from the company OPORD what the potential follow-on missions are and begin to plan how to achieve them. During this planning, the leader determines the possible timeline and location for defeat in detail, consolidation, reorganization, and transition which best facilitate future operations and provide adequate protection.

CONSOLIDATION AND REORGANIZATION

4-170. For consolidation the PL and platoon subordinate leaders prepare an initial plan for consolidation during TLP. The following actions are usually a part of consolidate:

- Eliminating remaining enemy resistance in BPs, noncontiguous assigned areas, and the security area.
- Reestablishing, reoccupying fighting positions and adjusting unit boundaries.
- Preparing for enemy counterattack.
- Reestablishing local security including OPs and patrols to deny enemy direct or indirect fire on defensive positions.
- Preparing for and assist the passage of follow-on forces (if required).

- Continuing to improve security by conducting other necessary defensive actions, such as EA development, direct fire planning, and BP preparation.
- Adjusting FPFs and register targets along likely mounted and dismounted avenues of approach.
- Closing gaps or lanes in obstacles, repairing or replacing damaged or breached obstacles, and replacing expended mines.
- Securing enemy detainees.

4-171. Reorganization usually is conducted concurrently with consolidation. It consists of actions taken to prepare the unit for follow-on tasks. As with consolidation, the PL and platoon subordinate leaders plan and prepare for reorganization during TLP. During reorganization, the PL ensures the following actions are taken:

- Provide essential medical treatment and evacuate casualties, as necessary.
- Treat and evacuate wounded detainees and process the remainder of detainees.
- Reestablish key leaders using the designated succession of command.
- Reestablish manning of key weapons and equipment, vehicle crews, close combat missile systems, machine guns, grenade launchers, and RTOs.
- Reestablish communications within the organization, with higher, and with adjacent units.
- Cross-level personnel and adjust forces as required to support operations.
- Conduct resupply operations.
- Redistribute ammunition.
- Conduct required maintenance.
- Continue improving defensive positions, as necessary.

CONTINUING OPERATIONS

4-172. At the conclusion of an engagement, the platoon may continue the defense, or if ordered, transition to the offense. The PL considers the higher commander's concept of operations, friendly capabilities, and enemy situation when making this decision. All missions should include plans for exploiting success or assuming a defensive posture. The platoon should assume that the enemy will continue to engage known friendly positions with indirect fires even if their attack has culminated.

4-173. A company commander may order a defending platoon to conduct a hasty operation (for example, counterattack or retrograde) or participate in a movement to contact. As part of a reserve force, the platoon may execute a counterattack to destroy exposed enemy elements and free decisively engaged friendly elements. A base-of-fire element suppresses or fixes the enemy force while the counterattack element moves on a concealed route to firing positions from which it can engage the enemy in the flank and rear. The counterattack force must maneuver rapidly, often fighting through enemy flank security elements, to complete the counterattack before the enemy can bring follow-on forces forward to influence the fight. PLs remain flexible and prepared for follow-on mission or plan to execute contingency plans in the commander's order.

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Chapter 5
Enabling Operations and Activities

Enabling tasks are specialized missions that platoons plan and conduct to seize or retain a tactical advantage. Operations are conducted as a platoon or part of a larger force. Enabling operations can be part of the offense, defense, or focused on stability operations. The fluid nature of the modern battlefield increases the frequency with which the platoon or company conduct enabling operations. This chapter establishes techniques and procedures the mechanized Infantry platoon can apply to these specialized missions.

SECTION I – ASSEMBLY AREA

5-1. An *assembly area* is an area a unit occupies to prepare for an operation (FM 3-90). Certain tasks are associated with planning, occupying, and operating an assembly area, largely as a matter of tactical SOPs. The circumstances in which the AA is occupied dictate to what extent these tasks are performed. (See ATP 3-90.1 for more information.) AA tasks include—

- Site selection.
- Quartering party.
- Occupation.
- Actions and security in AA.
- Departure.

5-2. Additional circumstances for occupation of a platoon AA. The platoon may occupy an AA independently or as part of a company or larger formation. The platoon may establish a hasty AA by transitioning from a tactical movement formation directly into a platoon coil, this is often called occupying by force (See offense chapter for coil formation). When platoons have time, and the situation permits platoons conduct detailed planning for a deliberate occupation. This often incorporates additional measures such as reconnaissance, site selection, quartering party, and a planned occupation. Whether alone or as part of a company, the PL will plan as if occupying a perimeter defense.

SITE SELECTION

5-3. Although AAs are generally secure from enemy interference, commanders must consider the possibility of enemy attacks or observation. AAs should provide the following:

- Concealment from ground and air.
- Terrain masking of electromagnetic signal signature.
- Sufficient area for the dispersion of subunits and their vehicles consistent with the enemy and friendly tactical situation.

- Areas for unit trains, maintenance operations, and CPs.
- Suitable entrances, exits, and internal routes.
- Terrain allowing the observation of ground and air avenues of approach into the AA.
- Good drainage and soil conditions that support unit vehicle movement.
- Cover from direct fire.
- Suitable to defensive operations.

QUARTERING PARTY OPERATIONS

5-4. The mechanized Infantry platoon participates in the higher HQ quartering party (also known as an advance party) assist in the occupation of an AA. A *quartering party* is a group dispatched to a new assigned area in advance of the main body (FM 3-90). They secure, reconnoiter, and organize the site before the main body's arrival and occupation. In the event the platoon occupies an independent AA, the PSG will lead the quartering party with select individuals.

5-5. The mechanized Infantry platoon and squad participates in the quartering party according to their unit SOP. For example, a company level quartering party could be led by the XO, 1SG, or a senior NCO and consist of one vehicle per platoon and a vehicle from the HQ section. The quartering party's actions at the AA include the following:

- Reconnoitering for enemy forces and CBRN contamination.
- Establishing security throughout the depth of the AA.
- Evaluating the condition of the route leading into the AA and suitability of the area (drainage, space, internal routes).
- Organizing the area based on the commander's guidance; designate and mark tentative locations for platoons' vehicles, CP vehicles, and trains.
- Improving and marking entrances, exits, and internal routes.
- Marking bypasses or removing obstacles (within the party's capabilities).
- Developing digital AA overlay and sending overlays to the platoon, company main body, and CAB main CP.
- Designating platoon and/or individual vehicle guides that are prepared to support occupation.

OCCUPATION OF AN ASSEMBLY AREA

5-6. Once the quartering party finishes preparing the AA, the quartering party awaits the arrival of the main body, maintaining surveillance and providing security of the area within its capabilities. The main body is the principal part of a tactical command or formation. It does not include detached elements of the command, such as advance guards, flank guards, and covering force. Guides assist BCs to quickly find their positions, clear the route, and assume designated positions in the AA.

5-7. The mechanized Infantry platoon may occupy a platoon AA as an independent element or as part of the company (see figure 5-1). If the platoon occupies as an independent element the platoon occupies its positions based on the PLs plan or occupies using procedures for hasty occupation. The PL establishes local security and coordinates with adjacent units. They assign weapons orientation and sector for each squad and

essential weapons systems in their AO. If the platoon occupies the AA alone, it establishes a perimeter defense. Some considerations include—

- Locations selected to afford dispersion and hide positions.
- Vehicles oriented or positioned to facilitate defense.
- OPs established to provide security.
- Communications established (by wire or messenger if necessary).
- Detailed adjacent unit coordination.
- Coverage of roads, trails, other avenues of approach, and dead space is established.
- Overlapping coverage at boundaries to prevent gaps or seams is accomplished.

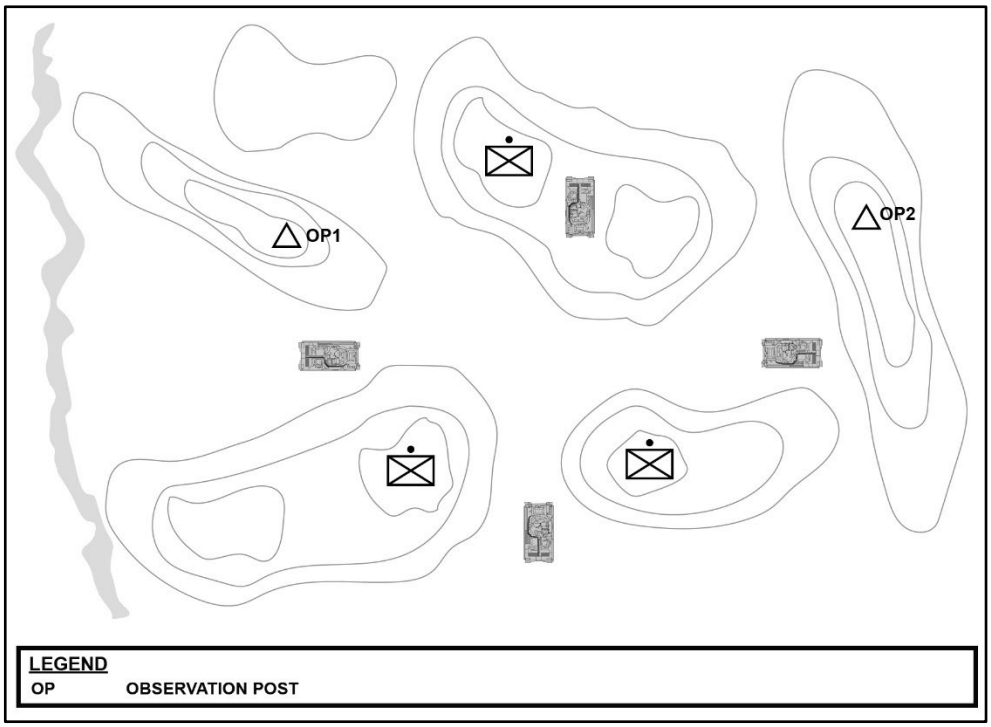


Figure 5-1. Mechanized Infantry platoon assembly area

ACTIONS AND SECURITY IN ASSEMBLY AREA

5-8. Following occupation of the AA, the platoon prepares for future operations by conducting TLP and priorities of work according to the company and platoon OPORD. These preparations include the following:

- Establish and maintain security (at the appropriate readiness level).
- Account for personnel, to include attachments and sensitive items.
- Complete Standard Range Cards and sector sketches.
- Develop a defensive fire plan with Standard Range Cards and forward to higher HQ via Mission Command Systems if equipped.
- Select alternate, supplementary positions, and rally points.

- Conduct dismounted security patrols to clear dead space and restrictive terrain.
- Emplace OPs.
- Establish communications.
- Camouflage vehicles.
- Develop an obstacle plan.
- Emplace CBRN alarms.
- Conduct TLP.
- Conduct PCCs and a PCI based on time available.
- Perform maintenance on vehicles and communications equipment.
- Verify weapons system status, conduct boresight adjustment, prepare-to-fire checks, test-firing, and other necessary preparations.
- Conduct resupply, refueling and rearming operations.
- Conduct rehearsals and other training for upcoming operations.
- Adjust task organization as necessary.
- Reestablish vehicle load plans as needed.
- Conduct personal care and hygiene activities.
- Conduct Class I and rest plan as necessary.

READINESS CONDITIONS

5-9. REDCON allow changing situations and ensure completion of necessary work and rest plans. The commander uses the REDCON status as a standardized method to adjust the unit's readiness to move and fight. REDCON normally consists of the following four levels.

REDCON LEVEL 1

5-10. Full alert: Unit ready to move and fight. CBRN alarms and hot loop equipment are stowed, dismounted OPs have been pulled in, all personnel are mounted with weapons manned, engines started, and the platoon is ready to move immediately.

REDCON LEVEL 2

5-11. Full alert: Unit ready to fight. Equipment is stowed (except hot loop and CBRN alarms), PCCs are complete, personnel alert and ready to mount vehicles, dismounted OPs may remain in place (pending guidance from the commander), and the platoon is ready to move within 15 minutes of notification.

REDCON LEVEL 3

5-12. Reduced alert: The platoon is in 50 percent security while the other 50 percent executes priorities of work and rest plan, and the platoon is ready to move within 30 minutes of notification.

REDCON LEVEL 4

5-13. Minimum alert: Dismounted OPs are manned, one Soldier per platform monitors the radio and provides security with turret weapons, Infantry squads reduce to 33 percent security, and remaining Soldiers execute priorities of work and rest plan. Platoon maintains digital and FM communications with the company and adjacent platoons. The platoon is ready to move within 1 hour of notification.

DEPARTURE

5-14. Departing the AA is oftentimes the first step of a mission. If occupying a company AA, the PL must understand the commander's scheme for departing the AA, often referred to as uncoiling from the AA. This step in the operation must be planned for and rehearsed by key leaders at a minimum. Leaders must understand the sequence and timing of the departure as the number of vehicles, moving in a potentially relatively confined area may result in confusion, congestion, and loss of tempo, especially during limited visibility. The PL must factor this timeline and conditions into the mission timeline. Readiness levels ensure that platoon is ready to move when required without needlessly wasting time and fuel. The AA is occupied with the follow-on mission in mind to preclude congestion on departure. Routes from positions within the AA follow mission graphics and typically the SP for a directed route is reconnoitered and timed. Subordinate units designate a linkup point, and units move to and through that point based on their reconnaissance and depending on threat.

SECTION II – PASSAGE OF LINES

5-15. A *passage of lines* is an operation in which a force moves forward or rearward through another force's combat positions with the intention of moving into or out of contact with the enemy (JP 3-18). This type of operation becomes necessary when the moving unit(s) cannot bypass the stationary unit and must pass through it. The primary purpose of the passage is to maintain the momentum of the moving elements. A passage of lines may be designated as either forward or rearward. (See ATP 3-90.1 for more information).

5-16. The controlling company conducts planning and coordination of a passage of lines involving the platoon, they establish the passage lanes and coordination points for the passing unit. A *lane* is a route through, over, or around an enemy or friendly obstacle that provides passage of a force (ATP 3-90.4). In some situations, as when the platoon is using multiple passage points, the PL must take responsibility for planning and coordinating each phase of the operation.

PLANNING CONSIDERATIONS

5-17. In planning a passage of lines, the PL must consider the following tactical factors and procedures:

- The passage should facilitate transition to follow-on missions through multiple lanes or lanes wide enough to support doctrinal formations for the passing units.
- The controlling commander must clearly define the battle handover criteria and procedures used during the passage.
- Deception techniques, such as smoke, may be employed to enhance security during the passage.

5-18. A *battle hand-over* is a coordinated mission between two units that transfers responsibility for fighting an enemy force from one unit to another (FM 3-90). The order should cover the roles of both the passing unit and the stationary unit and direct and

indirect fires. If necessary, they specify the location of the BHL as part of the unit's graphic control measures as follows:

- For a forward passage, the BHL is normally the LD for the passing force.
- In a rearward passage, it is normally a location in direct fire range of the stationary force.
- In general, a defensive handover is complete when the passing unit is clear of stationary units' sector and the stationary unit is ready to engage the enemy.
- Offensive handover is complete when the passing unit has deployed and crossed the BHL.

5-19. The passing and stationary units coordinate obstacle information to include the locations of enemy and friendly obstacles, existing lanes and bypasses, and guides for the passage.

5-20. Air defense coverage is imperative during the high-risk passage operation. Normally, the stationary unit will be responsible for providing air defense, allowing the passing unit's air defense assets to move with it.

5-21. To enhance command and control during the passage, the platoon will colocate an element, normally the PL or PSG with a similar element from the stationary or moving unit. Responsibility for sustainment actions, such as vehicle recovery or CASEVAC in the passage lane, must be clearly defined for both passing and stationary units.

RECONNAISSANCE AND COORDINATION

5-22. Detailed reconnaissance and coordination are critical in a passage of lines, both dealing with the planning factors outlined previously and ensuring the passage is conducted quickly and smoothly. The PL normally conducts all necessary reconnaissance and coordination for the passage.

5-23. At times, they may designate the PSG or squad leader to conduct liaison duties for reconnaissance and coordination. The following items of information are coordinated:

- Unit designation and composition, to include type and number of passing vehicles.
- Fratricide prevention measures to be taken:
  - FSCM.
  - TRPs
  - Coordinated fire lines.
  - RFL.
  - Gun tube orientation.
  - Combat identification panels.
  - SPs.
  - Release points (RPs).
- Passing unit arrival time(s).
- Location of movement routes, contact points, passage points, and passage lanes using GPS or position navigation waypoints that may simplify this process and speed the passage.
- Location of attack positions or AAs, which reconnaissance should confirm.
- Current enemy situation.

- Stationary unit's mission and plan (to include OP, patrol, and obstacle locations).
- Guide requirements.
- Order of march.
- Anticipated actions on enemy contact.
- Requirements for supporting direct and indirect fires, to include the location of the RFL, which reconnaissance should confirm.
- CBRN conditions.
- Available support and sustainment assets and their locations, which reconnaissance should confirm.
- Communications information, to include—
  - Frequencies.
  - Digital data.
  - Near and far recognition signals.
  - Criteria for battle hand-over and location of the battle hand-over line.
  - Additional procedures for the passage.

FORWARD PASSAGE OF LINES

5-24. A *forward passage of lines* occurs when a unit passes through another unit's positions while moving toward the enemy (ADP 3-90). During a forward passage, the passing unit first moves to an AA or an attack position behind the stationary unit. Designated liaison personnel move forward to link up with guides and confirm coordination information with the stationary unit. Guides lead the passing elements through the passage lane.

5-25. The platoon conducts a forward passage by employing tactical movement. It moves quickly, uses appropriate dispersal and formations whenever possible, and keeps radio traffic to a minimum. It bypasses disabled vehicles, as needed. Once committed to the passage lanes, the unit does not stop and makes every effort to move rapidly through to the passage lane RP.

5-26. The platoon holds its fire until it passes the battle hand-over line or designated fire control measure unless the commander has coordinated fire control with the stationary unit. Once clear of passage lane restrictions, the unit may temporarily halt at the designated attack position or continue its tactical movement according to its orders. (See figure 5-2 on page 176.)

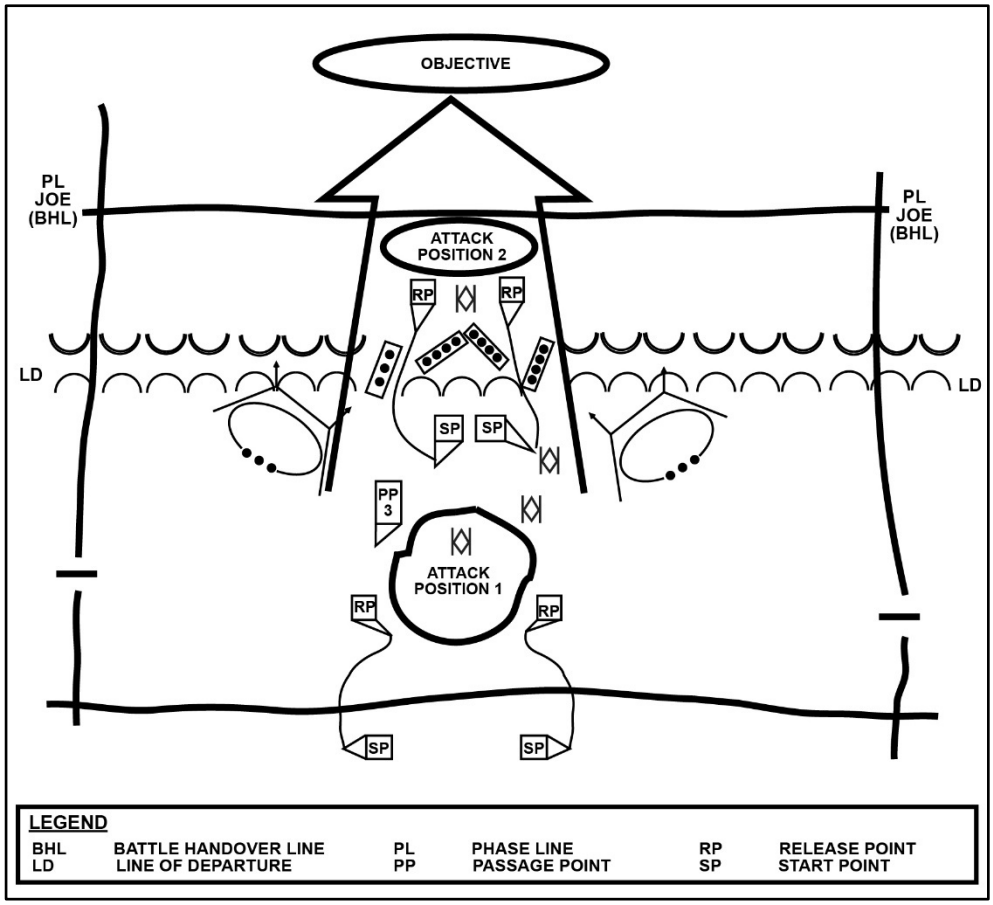


Figure 5-2. Forward passage of lines

REARWARD PASSAGE OF LINES

5-27. A *rearward passage of lines* occurs when a unit passes through another unit's positions while moving away from the enemy (ADP 3-90). During the rearward passage the passing unit contacts the stationary unit while it is still beyond direct fire range and conducts coordination as discussed previously. Near recognition signals and location of the BHL are emphasized. Additional fire control measures, such as RFLs, may be employed to further minimize the risk of fratricide. (See figure 5-3.)

5-28. Because of the increased risk of fratricide during a rearward passage, coordination of recognition signals and fire restrictions is critical. Rehearsals and training can help reduce fratricide. The passing unit should make FM contact with the stationary unit in sufficient time to disseminate information to subordinate units. The passing unit should remain well outside the range of direct fire weapons until radio contact is established. Once radio contact is established the stationary and passing units confirm the plan for near recognition signal before they begin the passage. Detailed plans, coordination and rehearsals can help reduce the risk of fratricide.

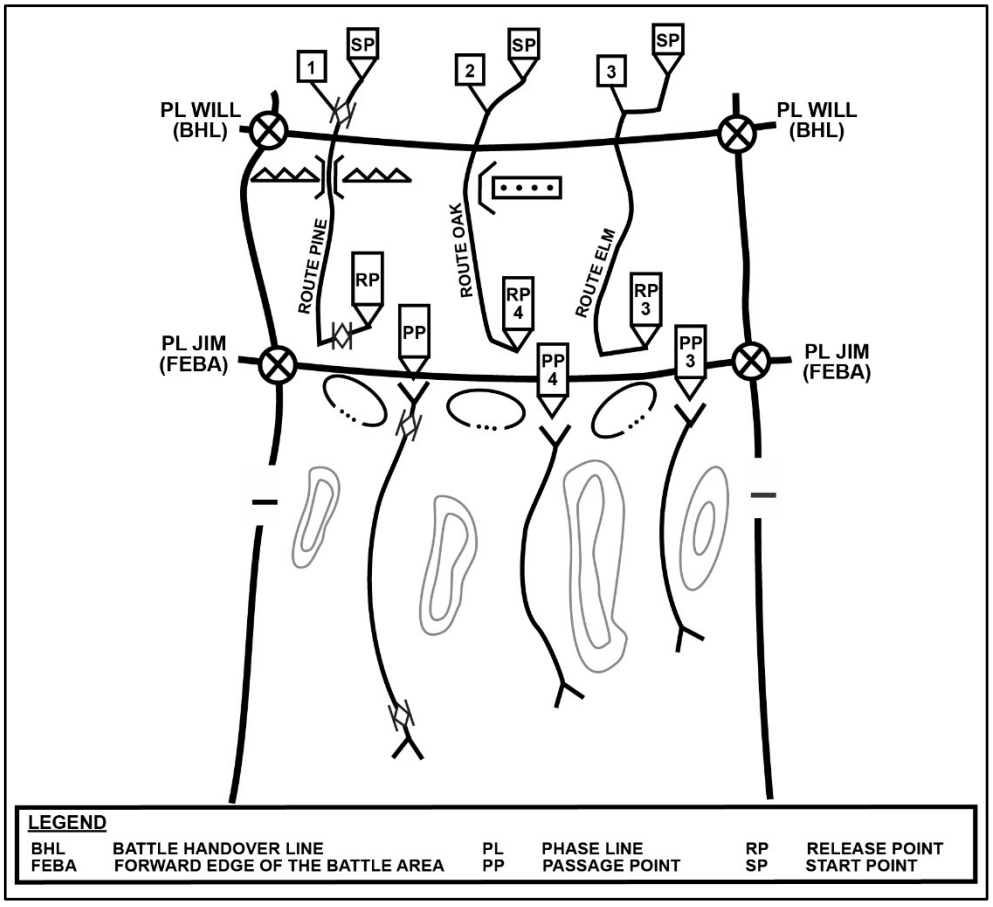


Figure 5-3. Rearward passage of lines

5-29. Following coordination, the passing unit continues tactical movement toward the passage lane. Weapon systems are oriented toward the enemy, and the passing unit maintains its own security until it passes the BHL. If the stationary unit provides guides, the passing unit may conduct a short halt to link up and coordinate with them. The passing unit moves quickly through the passage lane to a designated location behind the stationary unit. (See table 5-1 on page 178.)

Table 5-1. Stationary and passing unit responsibilities

Stationary Unit	*Passing Unit*
Clears lanes or reduces obstacles along routes.	May assist with reducing obstacles.
Provides obstacle and friendly units locations.	Provides order of movement and scheme of maneuver. Provides times, number of vehicles, and personnel.
Clears and maintains routes up to the BHL	May assist with maintaining routes.
Provides traffic control for use of routes and lanes.	Augments the traffic control capability of the stationary unit as required.
Provides security for passage up to the BHL.	Maintains protection measures, turret orientation, and weapons control status.
Identifies locations for the passing unit to use as an AA.	Reconnoiters from its current location to its AA designated by the stationary unit.
Provides the passing unit previously coordinated or emergency logistics assistance within its capabilities.	Assumes full responsibility for its own sustainment support forward of the BHL.
Controls all fires in support in of the passage.	Positions available artillery to support the passage.
Disseminates information.	Confirms combat identification markings.
Legend AA—assembly area; BHL—battle handover line	

SECTION III – RELIEF IN PLACE

5-30. A *relief in place* is an operation in which, by the direction of higher authority, all or part of a unit is replaced in an area by the incoming unit and the responsibilities of the replaced elements for the mission and the assigned zone of operations are transferred to the incoming unit (JP 3-07.3). The responsibilities of the replaced elements for the mission and the assigned area are transferred to the incoming unit. The incoming unit continues the operations as ordered. A platoon conducts a relief in place as part of a larger operation, primarily to maintain the combat effectiveness of committed units. The higher HQ directs when and where to conduct the relief and establishes the appropriate control measures. Normally, the unit relieved is defending. However, a relief may set the stage for resuming offensive operations. (See ATP 3-90.1 for more information.)

5-31. A relief can be characterized as either deliberate or hasty, depending on the amount of planning and preparations associated with the relief. The major differences are the depth and detail of planning and, potentially, the execution time. Detailed planning generally facilitates shorter execution time by determining exactly what the commander believes needs to be done and the resources needed to accomplish the mission. Deliberate planning allows the PL and commander to identify, develop, and coordinate solutions to most potential problems before they occur and to ensure the availability of resources when and where they are needed.

PLANNING CONSIDERATIONS

5-32. Once ordered to conduct a relief in place, the PL of the relieving unit contacts the leaders of the unit to be relieved. The collocation of platoon HQ elements help achieve the level of coordination required. If the relieved unit's forward elements can defend the assigned area, the relieving unit executes the relief in place from the rear to the front. This facilitates movement and terrain management.

5-33. In planning a relief in place, the PL takes the following actions:

- Issues a FRAGORD.
- Goes with or sends another key leader with the platoon advance party to conduct detailed reconnaissance and coordination.
- Adopts the outgoing unit's normal pattern of activity as much as possible.
- Determines when the platoon will assume responsibility for the outgoing unit's position.
- Colocates platoon HQ with the relieved unit's HQ.
- Maximizes OPSEC to prevent the enemy from detecting the relief operation.
- Plans to transfer excess ammunition; wire; petroleum, oil, and lubricants, and other material of tactical value to the incoming unit.
- Controls movement by reconnoitering, designating, and marking routes, and providing guides.

COORDINATION

5-34. The incoming and outgoing leaders must meet to exchange tactical information, conduct a joint reconnaissance of the area, and complete other required coordination for the relief. The two leaders must address passage of command and jointly develop contingency actions for enemy contact during the relief. The relief will be conducted on the communications nets of the outgoing unit. This process will normally include coordination of the following:

- Location of vehicle and individual fighting positions, to include hide, alternate, and supplementary positions.
- Enemy situation.
- Outgoing unit’s tactical plan, to include graphics, platoon and squad fire plans, and individual vehicle’s sector sketches.
- Fire support, to include indirect fire plans and the time of relief for supporting artillery and mortar units.
- Types of weapon systems being replaced.
- Time, sequence, and method of relief.
- Location and disposition of obstacles and the time responsibility will be transferred.
- Supplies and equipment to be transferred.
- Movement control, route priority, and placement of guides.
- Command and signal information.
- Maintenance, sustainment support, and evacuation for disabled vehicles.
- Limited visibility considerations.

5-35. Since a relief in place is often conducted during hours of limited visibility, IR or thermal equipment may speed the operation. Units follow prescribed SOP to mark

positions and routes with IR lights to facilitate the occupation of or withdrawal from the position. These marking signals should be incorporated into the PL's OPORD and SOP.

Note. Threat forces may have peer night vision or thermal capabilities. Units should be aware and exercise caution when marking positions with IR or heat sources. Platoons still need to mark positions during limited visibility, but they ensure markings are only visible to friendly forces by using directional markings.

5-36. During the coordination, graphics are exchanged digitally to reduce time and increase accuracy. Sector sketches are exchanged between units. Transferring digital information does not relieve the leader of physically coordinating between units. During the exchange of positions, the departing unit hands over vehicle or individual position Standard Range Cards to the relief element.

EXECUTION

5-37. The outgoing leader retains responsibility for the assigned area and the mission. They exercise operational control over all subordinate elements of the incoming unit while they complete their portion of the relief. Responsibility passes to the incoming commander when all elements of the outgoing unit are relieved and adequate communications are established. The three relief methods are sequential, simultaneous, and staggered. Relief of individual elements can be conducted in one of the following two ways:

- By using separate vehicle and individual position, with the relieving element occupying a position separate from the relieved element but still covering the same sector.
- By using the same vehicle and or individual position, with the relieving element occupying vehicle or individual fighting positions in the same BP as the relieved element.

SEQUENTIAL RELIEF

5-38. Sequential relief is the most time-consuming method. The relieving unit moves to an AA to the rear of the unit to be relieved. Subordinate elements are relieved one at a time. This can occur in any order, with the relief generally following this sequence:

- The outgoing and incoming units colocate their HQ elements to facilitate command and control and the transfer of equipment, ammunition, fuel, water, and medical supplies.
- The first element being relieved moves to its alternate fighting position or BP while the relieving element moves into the outgoing element's primary positions, and the incoming element occupies individual fighting positions.
- Incoming and outgoing elements complete the transfer of equipment and supplies.
- The relieved element moves to the designated AA behind the position.
- Once each outgoing element clears the RP in route to its AA, the next relieving element moves forward.

SIMULTANEOUS RELIEF

5-39. Simultaneous relief is the fastest, but least secure, method. All outgoing elements are relieved at once, with the incoming unit normally occupying existing positions, to include BPs and vehicle and individual fighting positions. The relief takes place in this general sequence:

- Outgoing elements move to their alternate BPs and or vehicle and individual positions.
- Incoming elements move along designated routes to the outgoing elements' primary positions.
- Units complete the transfer of equipment and supplies.
- Relieved elements move to the designated unit AA.

STAGGERED RELIEF

5-40. A staggered relief in place occurs when each element is relieved in a sequence determined by the tactical situation, not its geographical orientation. As with a sequential relief, staggered reliefs can occur over a significant amount of time. Separate routes to the rear of the relieved platoons' locations are planned and labeled for each platoon and placed on the operations overlay. When relieving platoons reach their RPs, vehicles and squads are guided to the positions they are occupying. Information exchanges and transfers of supplies are the same as in the other two techniques. Once the relief occurs, relieved units move to the rear to occupy their next location. When the first platoon moves in position, the next platoon is identified to move along its designated route(s) to relieve its counterpart, thereby repeating the relief process. This process repeats until each platoon has been relieved.

SECTION IV – BREACHING

5-41. A *breach* is a synchronized combined arms activity under the control of the maneuver commander conducted to allow maneuver through an obstacle (ATP 3-90.4). The platoon may have to breach an obstacle in front of their objective or may be part of a larger operation. Whenever possible, units should attempt to find a bypass, enabling them to maintain the momentum of the operation. Leaders must ensure that conducting the bypass provides a tactical advantage without exposing the unit to unnecessary danger. Breaching operations begin when friendly forces detect an obstacle. Breaching operations end when friendly forces destroy the enemy on the far side of the obstacle, or when battle handover has occurred between a unit conducting the breaching operation and follow-on forces. The breach could be a deliberate breach on a known obstacle or a hasty breach if the platoon encounters an unknown obstacle during an offensive operation. Obstacles may be of such size and complexity that the platoon conducts a separate breach mission as part of a larger force. Platoons should be prepared to be the breach, support, or assault force in support of a company or larger operation. The Infantry squads should be trained in each element of the breach and be prepared to execute a planned or unplanned breach (see ATP 3-90.4 for more information).

BREACH TYPES

5-42. Breaching activities must be adapted to best exploit the situation. The level and type of planning distinguish which of the three general types of breaching.

- Deliberate.
- Hasty.
- Covert.

DELIBERATE BREACH

5-43. A *deliberate breach* is the systematically planned and executed creation of a lane through a barrier or obstacle (ATP 3-90.4). Typically, a unit uses a deliberate breach against a strong defense or complex obstacle system. It is characterized by the most planning, preparation, and buildup of combat power on the near side of obstacles. It is like a deliberate attack, requiring detailed knowledge of the defense and obstacle systems. Subordinate units are task-organized to accomplish the breach. The breach may require securing the far side of the obstacle with an assault force before or during reduction.

HASTY BREACH

5-44. A *hasty breach* is the creation of lanes through enemy minefields by expedient methods such as blasting with demolitions, pushing rollers or disabled vehicles through the minefields when the time factor does not permit detailed reconnaissance, deliberate breaching, or bypassing the obstacle (JP 3-15). A hasty breach is an adaptation to the deliberate breach and is conducted when less time is available. It may be conducted during a deliberate or hasty attack due to lack of clarity on enemy obstacles or changing enemy situations.

5-45. An in-stride breach is a type of hasty breach used to describe the situation when a subordinate unit is expected to be able to organize for the conduct of a hasty breach with its organic or task-organized assets, without affecting the higher unit scheme of movement and maneuver or commander's intent. In-stride breach is generally not used below the company level since a platoon is unable to form effective support, breach, and assault forces with its squads.

COVERT BREACH

5-46. A covert breach is the creation of lanes through minefields or other obstacles that is planned and intended to be executed without detection by an adversary. Its primary purpose is to reduce obstacles in an undetected fashion to facilitate the passage of maneuver forces. A covert breach is conducted when surprise is necessary or desirable and when limited visibility and terrain present the opportunity to reduce enemy obstacles without being seen. Through surprise, the commander conceals their capabilities and intentions and creates the opportunity to position support and assault forces to strike the enemy while unaware or unprepared. The support force does not usually provide suppressive fire until the initiation of the assault or if the breach force is detected. Covert breaches are usually conducted during limited visibility. It uses elements of deliberate and hasty breaching, as required.

BREACH CONTROL MEASURES

5-47. The *breach area* is a defined area where a breach occurs (ATP 3-90.4). It is established and fully defined by the higher HQ of the unit conducting the breach. Within the breach area is the point of breach (known as POB), the reduction area, the far side objective, and the point of penetration (known as POP). Their definitions follow:

POINT OF BREACH

5-48. *Point of breach* is the location at an obstacle where the creation of a lane is being attempted (ATP 3-90.4). Initially, POBs are planned locations only. Normally, the breach force determines the actual POBs during the breach.

REDUCTION AREA

5-49. *Reduction area* is a number of adjacent points of breach that are under the control of the breaching commander (ATP 3-90.4). The commander conducting the attack determines the size and location of the reduction area that supports the seizure of a POP. The reduction area is indicated by the area located between the arms of the control graphic for breach. The length and width of the arms extend to include the entire depth of the area that must be reduced.

FAR SIDE OBJECTIVE

5-50. *Far side objective* is a defined location oriented on the terrain or on an enemy force that an assaulting force seizes to eliminate enemy direct fires to prevent the enemy from interfering with the reduction of obstacles and allows follow-on forces to move securely through created lanes (ATP 3-90.4). A far side objective can be oriented on the terrain or on an enemy force. The higher HQ assigns the objective; however, the attacking unit normally subdivides the objective into smaller objectives to assign responsibilities and to control and focus the assault of subordinate forces. When breaching as part of a larger force, seizing the far side objective provides the necessary maneuver space for the higher unit follow-on forces to move securely through the lanes, assemble or deploy, and continue the attack without enemy interference.

POINT OF PENETRATION

5-51. *Point of penetration* is the location, identified on the ground, where the commanders concentrate their efforts to seize a foothold on the far side objective (ATP 3-90.4). This is achieved along a narrow front through maneuver and direct and indirect fires that are accurately placed against enemy forces. A commander conducting a breach establishes a POP that supports planning locations for the reduction area and the seizure of the far side objective.

BREACHING TENETS

5-52. The leaders apply the tenets of breaching when planning breaching operations. Breaching tenets apply whenever an obstacle is encountered, whether the unit is conducting an attack or route clearance operations. These tenets are integrated during planning. (See ATP 3-90.4 for more information.) The tenets are—

- Intelligence.

- Breaching fundamentals, which are suppress, obscure, secure, reduce, and assault (use SOSRA mnemonic).
- Breaching organization.
- Mass.
- Synchronization.

INTELLIGENCE

5-53. Critical to the platoon's success depends largely on the leader's ability to see the assigned area. They must identify how the enemy applies obstacles to the terrain and how to counter the enemy's use of obstacles. This is done with the intelligence preparation of the operational environment (IPOE) process. During the IPOE process, the situation template is developed. The situational template is a graphic depiction of expected threat dispositions and capabilities based on threat doctrine for a particular enemy COA. Reconnaissance efforts prior to the operation should confirm enemy obstacles which may require a deliberate breach. Appropriate IPOE and analysis of the situation template should highlight potential enemy obstacle locations requiring a hasty breach. Analysis of defending enemy forces helps to identify the most effective POP to support the attack. The location of the desired POP is the point from which planning begins. Once the POP is identified the PL can begin to reverse plan beginning with actions on the objective, pinpointing the POB and complete the planned breach. Required obstacle information gathered from reconnaissance should include—

- Location of existing or reinforcing obstacles.
- Orientation of long axis of obstacles.
- Width and depth of obstacles (in meters), particularly obstacle belts.
- Soil conditions.
- Potential breach lane locations, with depth at those points.
- Potential bypass locations.
- Composition of minefields (buried or surface-laid antitank and antipersonnel mines).
- Types of mines and fuses (determines effectiveness of mechanical or explosive reduction techniques).
- Composition of complex obstacles (combination of wire, mines, and tank ditches).
- Location of direct and indirect fire systems overwatching obstacle.
- Estimate of likely planned obstacle effect.

BREACHING FUNDAMENTALS

5-54. PLs use fundamentals of SOSRA that must be applied to ensure success when breaching against a defending enemy. These fundamentals will always apply, but they may vary based on the mission variables METT-TC (I).

Suppress

5-55. *Suppress* is a tactical mission task in which a unit temporarily degrades a force or weapon system from accomplishing its mission (FM 3-90). The mission of the support force is to suppress the enemy overwatching the obstacle or breach area. Effective suppression protects friendly forces as they reduce and then maneuver through an

obstacle. Suppression must occur from a position that can range enemy forces in-depth well beyond the obstacle, which may mean planning a SBF that is close to enemy forces. Successful suppression generally triggers subsequent actions in the breach area. The PL plans for direct and indirect fire control measures that ensure that forces at the POB are not impacted by those fires. This location can be anticipated but must be refined by the breach force in execution. The breach force also provides additional suppressive fires as the situation dictates; however, its primary focus is on reducing the obstacle. Indirect fires also support suppression. The PL should plan fires that both suppress forces in overwatch of the breach area and serve to isolate them from enemy reinforcements.

Obscure

5-56. Obscuration degrades observation and target acquisition by enemy forces while concealing friendly force reduction and assault activities. Obscuration planning factors include the length and duration of required obscuration, plus the weather and environment. In urban areas, indirect delivered obscuration and suppressive fires will be more restricted. Movement is obscured using mortars (due to their ability to fire high-level trajectory) and artillery-fired obscurants. After obscuring movement with indirect fire, Soldiers can then screen with smoke grenades or smoke pots (smoke pots have a longer duration but take time to place and build). Typically, the most effective placement of obscuration is between the obstacle and the overwatching enemy forces. Leaders should consider employing obscuration in multiple locations and at various times as this may confuse the enemy as to the specific location and timing of the breach. (See ATP 3 11.50 for additional information on obscuration.)

Secure

5-57. *Secure* is a tactical mission task in which a unit prevents the enemy from damaging or destroying a force, facility, or geographical location (FM 3-90). Identifying the extent of the enemy defense is critical in selecting the appropriate technique to secure the POB. The POB must be secured before reducing the obstacle. Friendly forces secure the POB to prevent enemy forces from interfering with the reduction of lanes and passage of assault forces. The breach force must be resourced with sufficient maneuver assets to provide local security against the enemy that the support force cannot adequately engage. Elements within the breach force that secure the reduction area may also be used to suppress the enemy once reduction is complete. The reduction area is a number of adjacent points of breach that are under the control of the breaching commander (see ATP 3-90.4).

Reduce

5-58. *Reduction* is the creation of lanes through a minefield or obstacle to enable passage of the attacking ground force (JP 3-15), it cannot be accomplished until effective suppression and obscuration is achieved and the POB secured. Once the breach force is committed to the POB, the breach force leader must assess the effectiveness of mortar or artillery smoke and, if necessary, make adjustments based on wind speed and direction, and the location of actual threat forces. The breach force will reduce, proof, and mark the required number of lanes to pass the assault force through the obstacle. *Proof* is the verification that a lane is free of mines or explosive hazards and that the

width and trafficability at the point of breach are suitable for the passing force (ATP 3-90.4). The number and width of lanes needed depend on the enemy situation, terrain, size and composition of the assault force, and scheme of movement and maneuver. Follow-on forces will continue to improve the lane or clear obstacle if required.

Assault

5-59. A breach is complete when the attacking force has assaulted through the obstacle, seized the far side objective, eliminated enemy direct and observed indirect fires on the reduction area, and performed a battle handover with follow-on forces (if planned). The assault force's primary mission is to seize the far side of the breach lane(s) to enable the attacking force to build combat power on the far side of the breach. The assault force should be committed as soon as the breach is open and feasible. Assault force does not wait for the breach force to continue to reduce and mark. They immediately secure the far side. Moving BFVs forward and using follow-on forces will require planning and rehearsing lane turn-over tasks.

BREACH ORGANIZATION

5-60. Establishing the breach organization facilitates the application of the breaching fundamentals. PLs develop COAs that organize friendly forces into a support force, a breach force, and an assault force to execute the breach fundamentals quickly, and effectively. The support force's primary responsibility is to eliminate the enemy's ability to interfere with a breach operation. The breach force assists in the passage of the assault force by reducing, proofing, and marking lanes. The assault force's primary responsibility is to seize the far side objective. Table 5-2 shows the relationship between the breach organization as well as the responsibilities of each force.

Table 5-2. Breaching organization and responsibilities

Breach Organization	*Responsibilities*
Support Force	Suppress enemy forces capable of placing direct fires on the reduction area. Prevent the enemy from repositioning or counterattacking to place direct fires on the breach force. Control indirect fires and obscuration within the breach area.
Breach Force	Reduce, proof, and mark the necessary number of lanes through the obstacle. Report the status and location of created lanes. Provide local security on the near side and far side of the obstacle. Provide additional suppression of the enemy overwatching the obstacle. Provide additional obscuration in the reduction area. Assist the passage of the assault force through created lanes.
Assault Force	Seize the far side objective. Reduce the enemy protective obstacles. Provide clear routes from the reduction area to the battle handover line for follow-on forces. Prevent the enemy from placing direct fires on follow-on forces as they pass through the created lanes. Conduct battle handover with follow-on forces. Provide reinforcing fires for the support force. Destroy the enemy on the far side of the obstacle that can place direct fires on the reduction area.

5-61. When planning to conduct a deliberate breach the mechanized PL organizes the platoon using the breaching fundamentals. For tactical obstacle breaches, platoons and squads are normally assigned as either one or part of the following elements:

- Support force.
- Breach force.
- Assault force.

Support Force

5-62. The support force usually leads movement of the attacking force from the LD. It must be prepared to respond (by bypass or breach) along the axis of advance. Upon

arrival at the templated support-by-fire position(s) the support force makes any adjustments necessitated by the conditions on the ground and reports the adjustments to the higher HQ. The primary responsibility of the support force is to suppress the enemy's ability to place direct and observed indirect fire on the breach area. It must—

- Isolate the area with fires and establish a support-by-fire position to destroy, fix, or suppress the enemy and, depending on METT-TC (I) variables, this could include the entire platoon if necessary.
- Use BFVs and available Infantry to support breach and assault forces.
- Use direct and indirect fires to suppress the enemy and to neutralize weapons that can bring fires on the breach force.
- Request suppressive artillery fires and smoke for obscuration.
- As the breach and assault forces execute their missions, the support force lifts or shifts supporting fires.
- The support force must be prepared to shift positions either for survivability, to gain additional range, or to maintain effective suppression on enemy forces that displace or adjust their firing positions.

5-63. The PL must understand how long the breach will likely take and plan for an appropriate allocation of ammunition and planned rates of fire to establish and maintain suppression for an allotted time. For an example of using time of suppression see direct fire planning appendix A.

Breach Force

5-64. The breach force assists in the passage of the assault force by reducing, proofing, and marking lanes. The breach force may be a combined-arms force. It may include engineers, reduction assets, and enough maneuver forces to provide additional suppression and local security. As part of the larger organization, the platoon may be part of the breach force.

5-65. The breach force may apply portions of a number of breaching fundamentals as it reduces an obstacle:

Suppress

5-66. The breach force must be allocated enough combat power to provide additional suppression against various threats, to include—

- Any enemy direct fire systems that cannot be effectively observed and suppressed by the support force.
- Terrain or the masking of the support force's fires, and the breach force may need internal forces to suppress as it moves forward to reduce the obstacle.
- Counterattacking or repositioning forces that cannot be engaged by the support force.

Obscure

5-67. Upon arrival at the POB, the breach force assesses the effectiveness of artillery or mortar smoke and makes necessary adjustments as follows:

- The breach force employs smoke grenades and smoke pots if necessary.

- Smoke is used for screening and to cover lanes while breaching and when the assault force is passing.

Secure

5-68. The breach force secures itself from threat forces that are providing close-in protection of the obstacle. The breach force secures the lanes through the tactical obstacles once they are created to allow safe passage of the assault force.

Reduce

5-69. The breach force performs its primary mission by reducing the obstacle, and the following are considerations:

- To support the development of a plan to reduce the obstacle, the composition of the obstacle system must be an information requirement.
- If the obstacles are formidable, the Infantry platoon is augmented with engineers to conduct reduction.

Assault Force

5-70. The primary mission of the assault force is to seize the far side objective to prevent the enemy from placing direct fires on the created lanes. The security element of the breach force can be used to move through the lane to the far side of the obstacle and establishes far side security. The assault force may be tasked to assist the support force with suppression both during the obstacle reduction and upon completion of the assault.

5-71. The assault force must be sufficient in size to seize the POP. Combat power is allocated to the assault force to achieve a minimum 3:1 ratio in the breach area POP. The breach and assault assets may maneuver as a single force when conducting breaching operations. The platoon may be tasked as the assault force when conducting a company attack.

5-72. If the obstacle is defended by a small enemy force, the missions of the assault force and the breach force may be combined. This simplifies control and provides more immediate combat power for security and suppression.

MASS

5-73. Breaching is conducted by rapidly applying concentrated efforts at a point to reduce obstacles and penetrate the defense. Massed combat power is directed against the enemy's weakness. The location selected for breaching depends largely on the weakness in the enemy's defense, where its covering fires are minimized. If friendly forces cannot find a natural weakness, they create one by fixing the majority of the enemy force and isolated a small portion of it for attack.

SYNCHRONIZATION

5-74. Breaching operations require precise synchronization of the breaching fundamentals by the support, breach, and assault forces. Failure to synchronize effective suppression and obscuration with obstacle reduction and assault can result in rapid and devastating losses of friendly troops in the obstacles or the enemy's EA).

5-75. The company and platoon best achieve synchronization in a breaching operation best by using detailed reverse planning, clear instructions to subordinate elements, effective command and control, and extensive rehearsals. The emphasis is on the steps of suppress, obscure, secure, reduce, and assault. Planning considerations for synchronization during breaching, listed in reverse order, include the following:

- The planned actions on the objective influence the size and composition of the assault force and includes the number and location of lanes the team must create.
- Analysis of the enemy objective determines the most likely POP.
- The relationship between the POP and the enemy's obstacle effort determines the breach area and the most likely POB.
- Lane requirements, topography, and the type of obstacles determine the type and number of reduction assets task organized to the breach force.
- The ability of the enemy to interfere with the breach determines whether friendly forces will secure the breach site by fires or by force.
- The enemy's ability to mass fires at the breach site dictates the nature of the required suppression fire (including the composition of the support force and the type and amount of supporting fires).
- The location of the enemy and the availability of clear fields of fire determine the location of the support force and its SBF position.

CONDUCTING THE BREACH

5-76. The PL designates a support force or base of fire element using BFVs and Infantry squads. The PL designates one squad as the breach force and remaining squad as an assault force. The assault force's task is to assault through the obstacle once the breach has been made. The designated support force squad with vehicles move to the support position and establishes a base of fire. The PSG moves forward to the SBF position and adjusts BFV and medium machine gun positions if necessary and assumes control of the support force. On the PL's signal, the platoon's support, assault, and breach force take the following actions (see figures 5-4 and 5-5 on page 192 and platoon battle drill 07-PLT-D9412 on page 343):

- The platoon suppresses or destroys known or suspected enemy positions that are capable of engaging the breach force.
- The platoon obscures the enemy position with smoke.
- The platoon maintains fire superiority while conserving ammunition and minimizing forces in contact.
- The PL leads the breach and assault force along the covered and concealed route to the breach point.
- The platoon FO calls for and adjusts indirect fires, as directed by the PL to support the breach and assault.
- The breach force executes actions to breach the obstacle (footpath) and reports to the PL.
- The PL leads the assault force through the breach in the obstacle and positions it on the far side.
- On the PL's orders and using the same covered and concealed route as the breaching squad, the platoon's support force moves through the breach to a covered and concealed position on the far side.

- The breaching force continues to widen the breach, as directed, to allow vehicles to pass through and secure the far side.
- The PL provides a SITREP to the company commander.

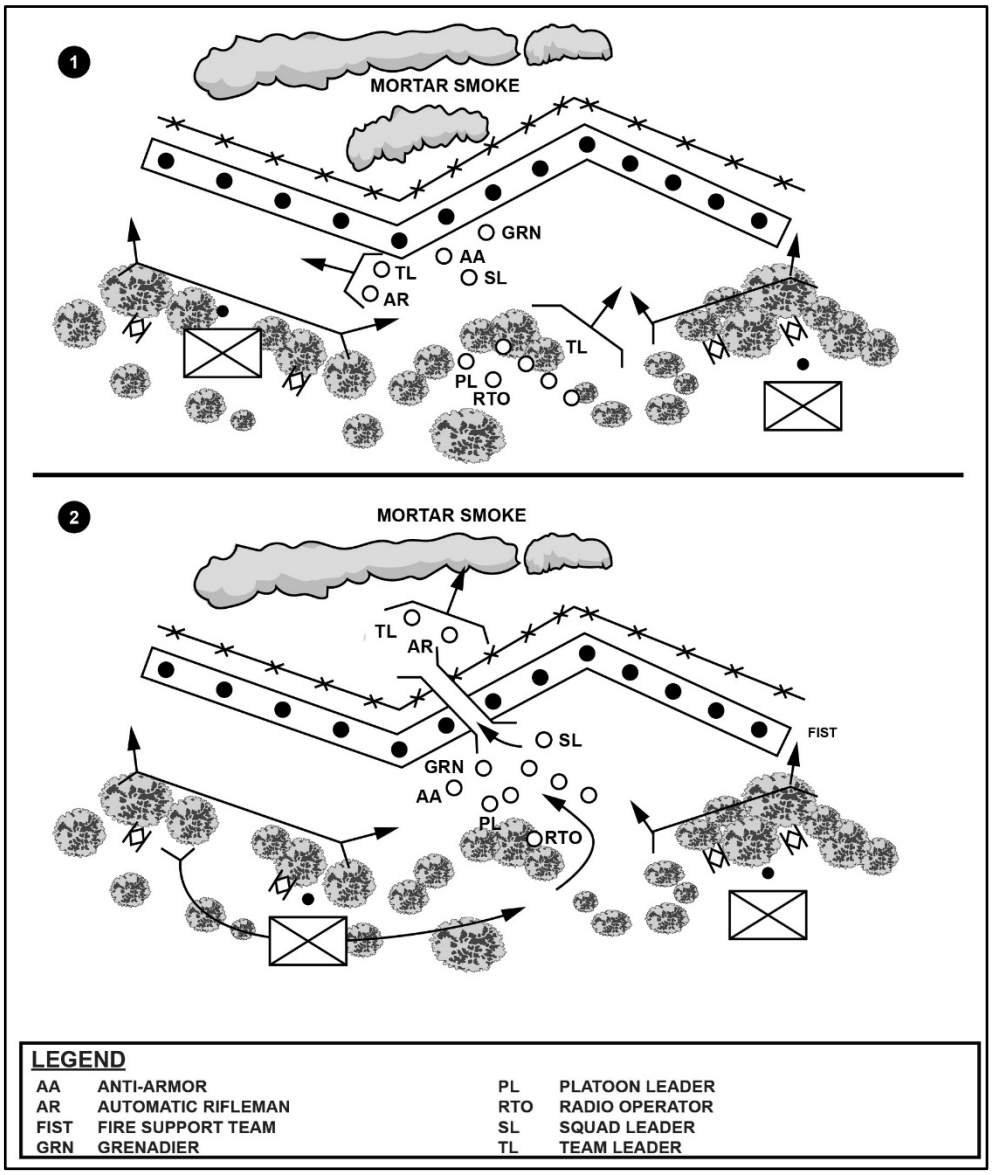


Figure 5-4. Conduct initial breach of a mined wire obstacle, part 1

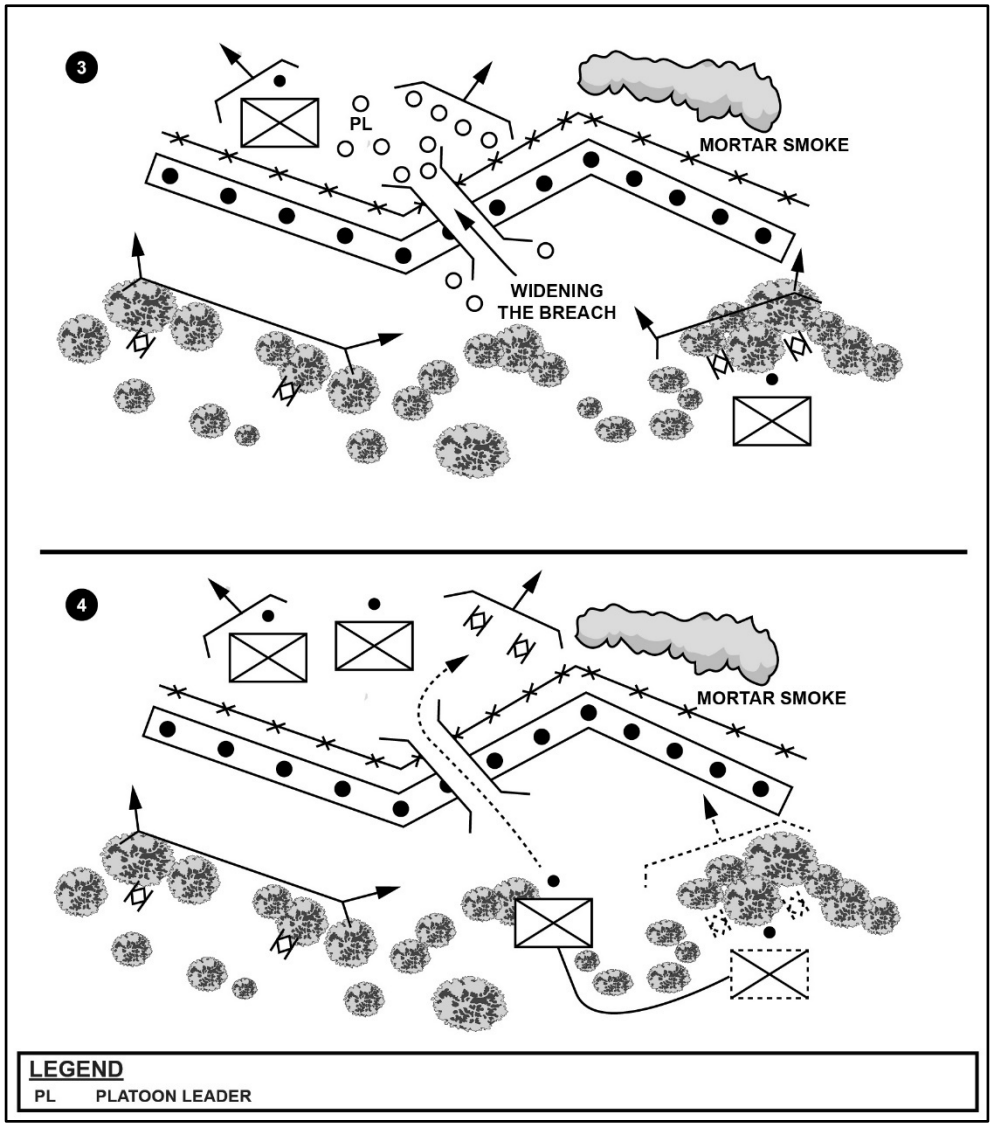


Figure 5-5. Conduct initial breach of a mined wire obstacle, part 2

OBSTACLE REDUCTION TECHNIQUES

5-77. Soldiers use obstacle reduction tools and techniques to breach specific types of obstacles. The three obstacle reduction techniques are explosive, mechanical, and physical. The PL will have to select the best option available based on METT-TC (I) and equipment and assets available. At the same time, however, employment of the platoon organization in breaching operations has distinct disadvantages. The pace of the breach is slow, and the operation leaves the platoon vulnerable to enemy attack (See ATP 3-90.4 for more information.)

EXPLOSIVE

5-78. When employing explosives during breaching operations, leaders must consider overpressure and minimum safe distance requirements. Explosive breaching tools include—

- Bangalore torpedoes.
- Material from demolition kits.
- Prepared explosive charges, such as flexible linear and water impulse charges.
- M183 satchel charge.
- Man-portable line charge.
- Antipersonnel obstacle breaching system (known as APOBS).
- Mine-clearing line charge.

Note. Different types of demolitions can be used for mine and wire obstacle reduction. ATP 3-90.4 Combined arms mobility covers each different type of breaching devices available to support all Infantry missions.

MECHANICAL

5-79. Mechanical breaching is vehicles, tools, or other non-ballistic or nonexplosive devices to make the breach. Mechanical breaches can be used for wire obstacles or buildings and doors in an urban environment. Mechanized platoons can use:

- Surface mine plows, clearing blades, and rollers (if available).
- BFVs to pull away wire obstacles.
- Dynamic entry tools.
- Onboard basic issue items.

PHYSICAL

5-80. While mechanical and explosive reduction procedures are normally preferred, a unit may need to use physical procedures for the following reasons:

- Assets are unavailable (not on hand, not mission capable).
- Assets are ineffective because of the type of obstacle or terrain limitations.
- The platoon is trying to reduce the obstacle undetected, and stealth is required.

5-81. Physical procedures involve dismounted personnel (engineers if available) using simple equipment to create a lane through an obstacle or to clear an obstacle. These procedures expose personnel to fire and may be personnel- and time-intensive. Some examples of physical procedures are:

- Grappling hook, hand-thrown and weapon-launched.
- Urban obstacle reduction.
- Probing.
- Wire/bolt cutters or snips.
- Breachers blanket.

REDUCE AN URBAN OBSTACLE

5-82. Understanding how to employ and incorporate reduction techniques is an important part of urban operations. Gaining quick access to targeted rooms is integral to

room clearing. Reduction teams need to be supported by fires or obscurants. Reduction operations should be performed during hours of limited visibility whenever possible. Reduction techniques vary based on construction encountered and munitions available. The three urban reduction methods have already been discussed in this chapter they are explosive, mechanical, and physical. (See TC 3-34.85 for more information.)

BRADLEY FIGHTING VEHICLE

5-83. The primary role of the BFV during combat in urban operations is to provide suppressive fire and fire support for Infantry. The BFV also has the capability to breach exterior walls and fortifications. (See figure 5-6 and figure 5-7 on page 196.) It can protect Soldiers when they move during urban operations. Although the penetration achieved by the three combat rounds differ slightly, all are eventually effective. However, a technique is to use the target practice with tracer training round, it is significantly more effective against urban structures, although it has little utility against enemy armored vehicles. Soldiers should consider using more effective weapons before expending large amounts of 25 mm ammunition to breach walls. The armament of the BFV consists of a 25-mm main gun, the 7.62-mm coaxial machine gun, and TOW missile launcher and the following information applies:

- Main gun is the 25-mm automatic chain gun and is an effective weapon for urban combat.
  - The BFV can elevate its 25-mm gun to +60 degrees but can only depress to -10 degrees.
  - Elevation creates considerable dead space at street level.
- On a 12-meter-wide street, this dead space will extend 1-2 meters from the buildings on each side.
- There is a zone overhead in which the BFV cannot fire due to elevation constraints.
- The 25-mm gun fires:
  - Three types of combat rounds, which are APFSDS-T, APDS-T for engaging enemy armor, and HEI-T.
  - Two training rounds, which are target practice with tracer and target practice discarding sabots with tracer.
- Use the BFV 25-mm with HE and fire in a spiral pattern to create a breach in exterior walls.
- The 7.62-mm coaxial machine gun is used to engage dismounted Infantry, crew-served weapons, ATGM teams, rocket propelled grenade launcher teams, thin-skinned vehicles, and lightly constructed positions.
- The TOW missile (especially when using the TOW bunker buster) is extremely effective against fortified positions.
- Within urban areas, the TOW is best employed along major thoroughfares to attain long-range fields of fire (see TC 3-22.32 for additional information).

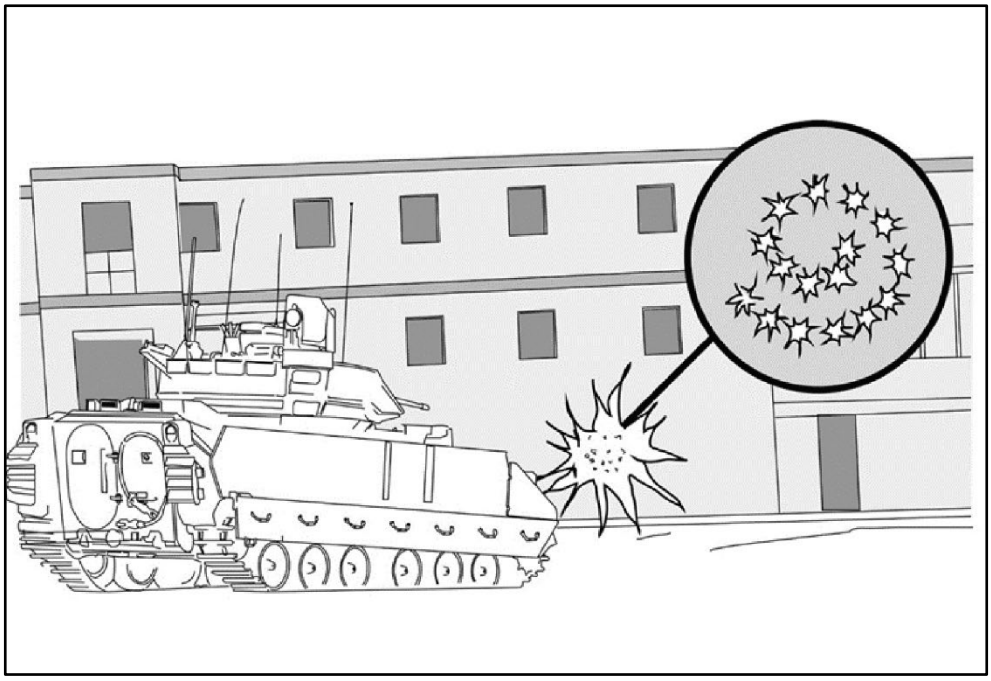


Figure 5-6. BFV urban obstacle breach firing spiral pattern with 25-mm gun

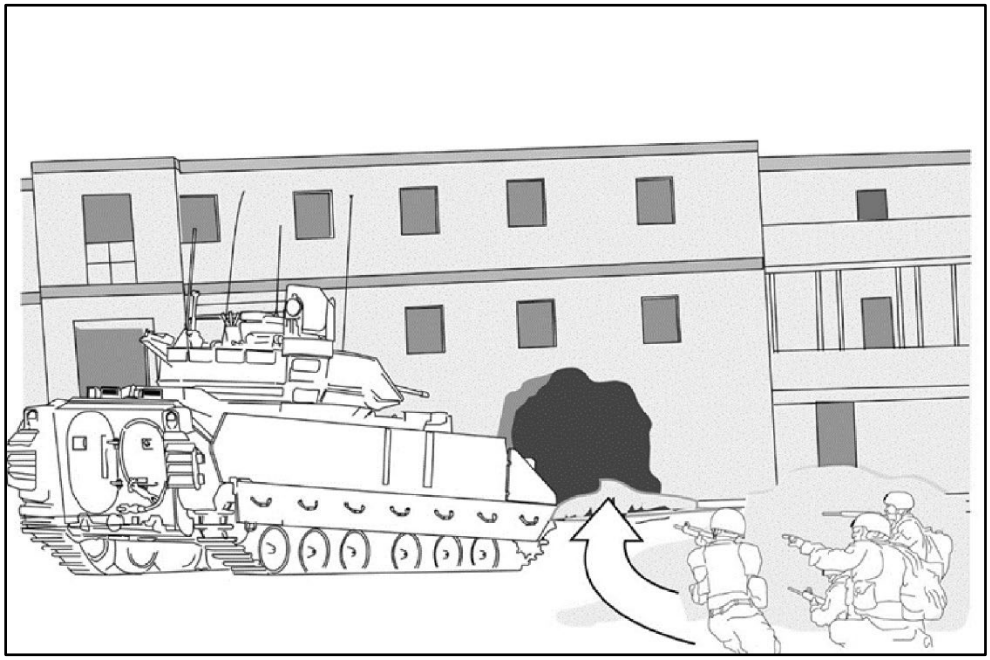


Figure 5-7. BFV urban obstacle breach troops gain entry

BREACH LOCATIONS

5-84. The success of the assault element often depends on the speed with which it gains access into the building. It is important the breach location provide the assault element with covered or concealed access, fluid entry, and ability to be overwatched by the support element. Some common entry methods used in an urban environment are—

- Creating mouseholes.
- Expedient entry and reduction methods that use—
  - Windows and restrictive entrances.
  - Existing doors and entrances.

MECHANICAL BREACHING

5-85. Mechanical breaching requires increased physical exertion by one or more Soldiers using hand tools such as axes, saws, crowbars, hooligan's tools, or sledgehammers to gain access. Although most Soldiers are familiar with these tools, practice on various techniques increases speed and effectiveness. The mechanical reduction is not the preferred primary method because it may be time-consuming and defeat the element of surprise. However, the ROE and situation may require the use of these tools, so Soldiers should be proficient in their use.

BALLISTIC BREACHING

5-86. Ballistic reduction requires the use of a weapon firing a projectile at the breach point. Ballistic reduction is not a positive means of gaining entry and should not be considered the primary method for gaining initial entry into a structure. Some ballistic reduction examples are—

- Rifle launched entry munitions.
- Shotgun reductions.

EXPLOSIVE BREACHING

5-87. One of the most difficult breaching operations of the assault team is reducing masonry and reinforced concrete walls or steel doors. Composition C-4 is normally used for explosive reduction because it is safe, easy to use, and readily available. Engineers usually are attached to the platoon or squad if explosive reduction operations are expected. The attached engineers will conduct the reduction themselves or provide technical assistance to the Infantry Soldiers involved. Different types of construction and areas for using explosive charges include the following:

- Exterior walls.
- Solid wood or steel entry doors.
- Compound walls or concrete building entry points.
- Some internal walls (can be reduced by claymores or grenades).
- Steel doors or concrete walls (can be breached with C-4).

SECTION V – CBRN DEFENSE OPERATIONS

5-88. *Chemical, biological, radiological, and nuclear environment* is an operational environment that includes chemical, biological, radiological, and nuclear threats and hazards and their potential resulting effects (JP 3-11). Operationally, CBRN passive

defense enables the unit to conduct military operations in a CBRN environment by minimizing the vulnerability of the force to the degrading effects of CBRN threats and hazards. CBRN doctrine is organized around the key activities of CBRN protection and contamination mitigation (See ATP 3-11.32 for detailed discussion of the CBRN environment).

ASSESS CBRN THREATS AND HAZARDS

5-89. *Chemical hazard* is any chemical manufactured, used, transported, or stored that can cause death or other harm through toxic properties of those materials, including chemical agents and chemical weapons prohibited under the Chemical Weapons Convention as well as toxic industrial chemicals (JP 3-11).

5-90. *Biological hazard* is an organism, or substance derived from an organism, that poses a threat to human or animal health (JP 3-11). This can include medical waste or samples of a microorganism, virus, or toxin from a biological source or medical waste that can impact human health. Biological hazards are difficult to detect initially as most symptoms, upon onset, may mimic cold and flu symptoms.

5-91. *Radiological hazards* are ionizing radiation that can cause damage, injury, or destruction from either external irradiation or due to radiation from radioactive materials within the body (JP 3-11). Radiological hazards also include toxic industrial materials. Protection against radiation depend on the type of radioactive particle. Various actions are required to keep radioactive exposure as low as reasonably achievable. Beta, gamma, and neutron radiation require external protection such as distance and shielding. Individual protective equipment also protects against beta hazards. Alpha radiation is primarily an inhalation and ingestion hazard which can spread downwind. Efforts should be made to minimize alpha particle dispersion by protecting equipment including masks, minimizing movement that raises dust, and avoid contaminated areas.

5-92. *Nuclear hazards* are dangers associated with the blast, thermal, and radiation effects from nuclear explosion (JP 3-11). The nature and intensity of nuclear detonation effects are determined by the type of weapon, its yield, and the physical medium in which the detonation occurs. Thermal radiation causes severe burns and secondary fires. Ionizing radiation is a significant threat to personnel and materiel. Fallout is residual radiation and may be a lingering, widespread hazard that limits military operations.

CBRN PROTECTION

5-93. CBRN protection measures prevent CBRN threats and hazards from having an adverse effect on Soldiers, equipment, and facilities. Protecting Soldiers from CBRN hazards in an assigned area is essential to preserving combat power. Tasks that enable CBRN protection include the following:

- Employ individual protective equipment and other CBRN defense equipment.
- Establish CBRN alarm conditions.
- Exercise personal hygiene and force health protection programs.
- Utilize shielding and protective cover.

5-94. CBRN protection is an integral part of all operations. CBRN protection involve providing filtration and or hardening positions, and facilities, assuming appropriate MOPP levels (see table 5-3), reacting appropriately to CBRN hazards, maintaining

dispersion, overhead cover, employing alarms upwind, and having personnel trained to operate CBRN alarms, detection, and monitoring capabilities. Individual protective equipment includes the protective mask, joint service lightweight integrated suit technology, overboots, and gloves. The higher-level commander establishes the minimum level of protection. Subordinate units may increase this level but may not decrease it. Regardless of the directed MOPP level, in the event of an actual or suspected chemical, biological and some radiological hazards, Soldiers will immediately don their protective mask and then the remainder of their individual protective equipment to attain MOPP 4 (see ATP 3-11.32 for more details on CBRN protection).

5-95. The joint service lightweight integrated suit technology provides protection for 45 days with up to 6 launderings or up to 120 days after being removed from packaging if not laundered. The joint service lightweight integrated suit technology still provides protection for up to 24 hours after it is contaminated.

Table 5-3. Mission-oriented protective posture levels

Level/ Equipment	*MOPP Ready*	*MOPP0*	*MOPP1*	*MOPP2*	*MOPP3*	*MOPP4*	*Mask Only*
Mask	Carried	Carried	Carried	Carried	Worn	Worn	Worn ***
JSLIST	Ready*	Avail**	Worn	Worn	Worn	Worn	
Overboots	Ready*	Avail**	Avail**	Worn	Worn	Worn	
Gloves	Ready*	Avail**	Avail**	Avail**	Avail**	Worn	
Helmet Cover	Ready*	Avail**	Avail**	Worn	Worn	Worn	
Notes. *Items available to Soldier within 2 hours with replacement available within 6 hours. **Items must be positioned within arms-reach of the Soldier. ***Never "mask only" if nerve or blister agents are used in area of operation.							
Legend: JSLIST—joint service lightweight integrated suit technology; MOPP—mission-oriented protective posture: Avail—available.							

5-96. Leaders determine the appropriate MOPP level by assessing mission variables and weighing the impact of increased protection levels on mission requirements. Generally, the higher HQ provide the minimum MOPP-level directives to subordinate units. Leaders understand that they can expect lower work rates in MOPP4 than they achieved in MOPP0. They reevaluate the ability to meet mission requirements and communicate impacts to higher HQ.

CBRN MITIGATION

5-97. Passive measures can be used to monitor for the presence of CBRN hazards. Depending on the threat and probability of use, units select periodic or continuous CBRN monitoring. An area array of CBRN detectors and/or monitors can be positioned within a given area for detection and early warning of a CBRN incident.

5-98. When a CBRN hazard is identified, everyone in the platoon and company must be notified and assume the appropriate MOPP level. Soldiers in immediate danger need warnings they can see or hear. The alarm or signal must be simple and unmistakable if it is to produce a quick and correct reaction.

5-99. If a CBRN hazard is located, the contaminated area should be marked with standardized contamination markers and reported. The CBRN warning and reporting system contribute to hazard awareness and understanding. Warning methods include automatic alarms, vocal alarms (such as shouting GAS), nonvocal alarms (such as horn blasts or banging of metal-to-metal objects), and visual alarms, (such as the appropriate hand-and-arm signal).

CHEMICAL HAZARDS

5-100. A chemical hazard is any chemical manufactured, used, transported, or stored that can cause death or other harm through toxic properties of those materials, including chemical agents and chemical weapons prohibited under the chemical weapons convention as well as toxic industrial chemicals. This includes—

- Chemical weapons or toxic chemicals specifically designed as a weapon.
- Chemical agents or chemical substances intended for use in military operations to kill, seriously injure, or incapacitate, mainly through physiological effects.
- Toxic industrial chemicals developed or manufactured for use in industrial operations or research.

5-101. A chemical weapon is a munition or device, specifically designed to cause death or other harm through the toxic properties of specified chemicals. Chemicals are released as a result of the employment of such munition or device; any equipment specifically designed for use directly in connection with the employment of munitions or devices.

5-102. A chemical agent is a chemical substance that is intended for use in military operations to kill, seriously injure, or incapacitate mainly through its physiological effects. Chemical hazards cause casualties, degrade performance, slow maneuver, restrict terrain, and disrupt operations (see table 5-4). They can cover large areas and may be delivered as liquid, vapor, or aerosol. They can be delivered by various means including artillery, mortars, rockets, missiles, aircraft spray, bombs, land mines, and covert means.

Table 5-4. Characteristics of chemical agents

Agent	*Nerve*	*Blister*	*Blood*	*Choking*
Protection	Mask and IPE	Mask and IPE	Mask	Mask
Detection	JCAD, M256A2, CAM, and M8 and M9 paper	JCAD, M256A2, CAM, and M8 and M9 paper	JCAD, M256A2	Odor (freshly mowed hay)
Symptoms	Difficult breathing, drooling, nausea, vomiting, convulsions, and blurred vision	Burning eyes, stinging skin, irritated nose	Convulsions and coma	Coughing, nausea, choking, headache, and tight chest
Effects	Incapacitates	Blisters skin, damages respiratory tract	Incapacitates	Floods and damages lungs
First Aid	ATNAA and CANA DECON	Treat for 2nd and 3rd degree burns	None	Keep warm and avoid movement
DECON	RSDL and flush eyes with water	RSDL and flush eyes with water	RSDL	RSDL

Legend: ATNAA—antidote treatment nerve agent auto-injector; CAM—chemical agent monitor; CANA—convulsive antidote nerve agent; DECON—decontamination; IPE—individual protective equipment; JCAD—joint chemical agent detector; RSDL—reactive skin decontamination lotion; DECON—Decontamination

UNMASKING PROCEDURES AND DECONTAMINATION

5-103. During an actual or suspected chemical attack, Soldiers will go to MOPP 4. Once masked, Soldiers will not unmask until there is no remaining chemical threat, and only under the approval of their commander Soldiers will use the unmasking procedures found in paragraphs 5-105 and 5-106.

5-104. MOPP reduction decisions are difficult to make because of the many considerations that affect Soldiers and equipment before making the final decision to give all clear. Commanders must evaluate the situation from the Soldier and mission perspectives. Factors include the criticality of the current mission, potential effects of personnel exposure, and the impact on the casualty care system.

UNMASKING WITH M256/M256A1 DETECTOR KIT

5-105. If an M256/M256A1 detector kit is available, use it to supplement unmasking procedures. The kit does not detect all agents; therefore, proper unmasking procedures, which take approximately 15 minutes, must still be used. If all tests with the kit (to

include a check for liquid contamination using M8 detector paper) have been performed and the results are negative, use the following procedures:

- The senior person should select one or two Soldiers to start the unmasking procedures.
- If possible, Soldiers move to a shady place because bright, direct sunlight can cause pupils in the eyes to constrict as they unmask, giving false symptoms.
- Selected Soldiers unmask for 5 minutes, then clear and reseal masks.
- The senior person should observe the Soldiers for 10 minutes and, if no symptoms appear, request permission from higher HQ to signal ALL CLEAR.
- Watch all Soldiers for possible delayed symptoms and, as always, have first-aid treatment immediately available in case it is needed.

UNMASKING WITHOUT M256/M256A1 DETECTOR KIT

5-106. If an M256/M256A1 kit is not available, the unmasking procedures take approximately 35 minutes. When a reasonable amount of time has passed after the attack, find a shady area, and use M8 paper to check the area for possible liquid contamination. Conduct unmasking using these procedures:

- The senior person selects one or two Soldiers who take deep breaths and break their mask seals, keeping their eyes wide open.
- After 15 seconds, the Soldiers clear and reseal their masks, and they should be observed for 10 minutes.
- If no symptoms appear, the same Soldiers break seals, take two or three breaths, and clear and reseal masks, and they should be observed for 10 minutes.
- If no symptoms appear, the same Soldiers unmask for 5 minutes, then re-mask.
- If no symptoms appear in 10 minutes, request permission from higher HQ to signal ALL CLEAR.

ALL-CLEAR SIGNAL

5-107. Units pass the all-clear signal through their chain of command. Leaders initiate the signal after testing for contamination is negative and unmasking procedures are successful. The commander designates the specific all-clear signal and includes it in the unit SOP or the OPORD. If required, standard sound signals may be used, such as a continuous, sustained blast on a siren, vehicle horn, or similar device. When ALL CLEAR is announced on the radio, the receiving unit must authenticate the transmission before complying.

DECONTAMINATION

5-108. During continuous operations in contaminated areas, decontamination is essential in preventing casualties and severe combat degradation. The platoon gains maximum benefit from the available time and decontamination resources by observing these considerations:

- Speed: The platoon should execute decontamination as soon as possible and as far forward as possible.
- Need: Decontamination should be conducted only to the extent necessary to ensure the platoon’s safety and operational readiness.
- Priority: Decontaminate the most essential capabilities first.

- Limited area: Decontaminate near the contaminated area to limit the spread of contamination.

5-109. These principles are consistent with doctrine that places the burden of decontamination at battalion or company level. For this reason, the platoon must develop a thorough SOP covering decontamination methods and priorities, using all available assets to the maximum extent possible. Paragraphs 5-110 to 5-117 address immediate and operational levels (see table 5-5) of decontamination. (See ATP 3-11.32 for a more information on decontamination procedures and higher level [thorough/clearance] decontamination.)

Table 5-5. Immediate and operational levels of decontamination tasks

Levels	*Purpose*	*Tasks*	*Best Start Time*	*Performed By*
Immediate	- Saves lives - Stops agent from penetrating - Limits agent spread	Skin decontamination	Before 1 minute	Individual
		Personal wipe down	Within 15 minutes	Individual or buddy
		Operators wipe down	Within 15 minutes	Individual or crew
		Spot decontamination	Within 15 minutes	Individual or crew
Operational	- Continues operations in a contaminated environment - Limits agent spread	MOPP gear exchange CCS and/or CCA	Within 6 hours	Contaminated unit
			Within 6 hours (CARC)	
		Vehicle wash down	Or within 1 hour (non-CARC)	Battalion or decontamination unit
Legend: CARC—chemical agent resistance coating; CCA—contamination control area; CCS—contamination control station; MOPP—mission-oriented protective posture				

IMMEDIATE DECONTAMINATION

5-110. Immediate decontamination minimizes casualties and limits the spread or transfer of contamination. This action is carried out by the contaminated individual and the purpose is to save lives and reduce penetration of agent into surfaces. This may include decontamination of Soldiers, clothing, and equipment. Immediate decontamination should help prevent casualties and permit the use of individual equipment and key systems.

SKIN DECONTAMINATION

5-111. Skin decontamination is a basic survival skill and should be performed within 1 minute of being contaminated. Decontamination of the eyes by flushing with water as soon as possible following contamination. During skin decontamination and Soldier personal wipe down, Soldiers carry their own skin decontamination kit. The skin decontamination kit should be stored in the individual's mask carrier or if issued, in the individual equipment carrier bag. Personal wipe down is also done with these kits.

Personal Wipe Down

5-112. Personal wipe down decontamination is performed within 15 minutes of contamination to remove contamination from individual equipment with a M295 decontamination kit. Use detector paper or a chemical monitor to locate chemical contamination. Use the individual equipment decontamination kit, squad decontamination kit, or an expedient device such as a stick or brush to remove the chemical hazard. Use a radiation detection, indication, and computation set to locate radiological contamination; and then brush, wipe, or shake it off.

5-113. Teams and crews use joint chemical agent detectors to monitor potential chemical contamination and then use the M100 Sorbent Decontamination System for immediate decontamination of chemically contaminated surfaces, for example, weapon systems and communications equipment. In the event of chemical or biological contamination of optics, crews conduct tactical decontamination of vision blocks and optics including machine gun and close combat missile system optics, using the M334 Decontamination Kit Individual Equipment which augments the M295.

Operator Wipe Down

5-114. Operators wipe down decontamination is done within 15 minutes of contamination of surfaces that operators need to touch or contact to operate the equipment. Operators wipe down uses the sorbent decontamination system to remove chemical hazards. Radiological contamination in the form of dust particles may be wiped, scraped, or brushed off.

OPERATIONAL DECONTAMINATION

5-115. Operational decontamination removes gross contamination from vehicles and equipment which provides forces temporary relief from MOPP level 4. The two parts of operational decontamination are MOPP gear exchange and vehicle wash down operations.

5-116. The contaminated unit is responsible for operational decontamination. Operational decontamination is restricted to the specific parts of contaminated, operationally essential equipment and material to minimize contact and transfer hazards and to sustain operations.

5-117. MOPP gear exchange is time critical. It should be performed as soon as the mission allows but is optimal within 24 hours of being contaminated. A MOPP gear exchange allows a unit to remove the gross contamination from Soldiers and equipment to increase operational readiness (see ATP 3-11.33 for more details on CBRN contamination mitigation).

SECTION VI – COUNTER UAS AND ELECTROMAGNETIC WARFARE

5-118. The platoon should assume they are being observed by enemy reconnaissance and targeting systems, and not assume they are under a protective umbrella of friendly air and missile defense units. UAS are everywhere. While not all hostile air threats require engagement using air defense measures from air and missile defense units, there

is still a requirement to detect, identify and be prepared to counter and defeat all classes of UASs. (See ATP 3-01.81 for groups of UASs.)

COUNTER UNMANNED AIRCRAFT SYSTEMS

5-119. The adversary's use of commercial off-the-shelf technology to gain a tactical advantage compromises the platoon's ability to conduct operations without revealing their intentions and making themselves vulnerable to attack. Not all encounters with unknown UAS means the unit is at risk or under attack. However, spotting unidentified UASs either stationing on, or transiting through the unit's location may indicate an imminent attack. The platoon must react quickly and appropriately respond and report when recognizing signs of possible enemy observation or attack. Whether a counter response is available or not units must implement passive air defense measures to include camouflage, cover, concealment, and hardening to protect lives and equipment. (See ATP 3-01.81 for counter UAS operations.)

UAS GROUPS

5-120. UASs are categorized into Groups 1 through Group 5, this designation is based on weight, operating altitude, and speed. The bigger the platform the more robust its suite of capabilities. While group designations help in understanding UASs and their capabilities, it is important that leaders understand the lines of differentiation between different groups operationally are not rigid. See table 5-6 on pages 206 through 208 for a brief description of the UAS Groups.

5-121. All UASs should be considered threats, but the immediate threat to the mechanized Infantry platoon is the sUAS. UAS Groups 1 and 2 are commonly known as sUASs. A sUAS has a lower radar cross-section than Group 3, 4, and 5 UASs. Integrated air and missile defense capabilities can effectively counter larger classes (Groups 3, 4, and 5). Air and missile defense assets have difficulty tracking, identifying, and defeating sUASs. The low radar cross-section is harder to detect by friendly forces' early warning and detection capabilities. Launch and recovery requirements allow sUASs launching capability from unimproved areas by a single person or small team, making them more difficult to find. Advances in technological capabilities enable the employ of sUAS with little to no operator interaction. The challenge is at the brigade and below level with planning for and defending against sUAS threats.

Table 5-6. UAS groups

Group	*Weight (lbs)*	*Speed (kts)*	*Normal Operating Altitudes (ft)*	*Notes*	*Threat & COTS Examples*	*Friendly Examples*
Group 1: micro/ mini UAS	0-20	<100	< 1,200 AGL	Generally, hand launched commercial-off-the-shelf, radio-controlled platforms. Limited ranges and small payload capabilities. Real time video. Operated within line of sight of the user.	DJI MAVIC, Enterprise Dua	RQ-11 Raven
Group 2: small tactical	21-55	101-250	<3,500 AGL	Small airframes with low radar cross sections provide medium range and endurance. Launched from unimproved areas with a small number of people involved. Requires line of sight to the ground control station.	SKY-09Ps	Scan Eagle

Table 5-6. UAS groups (continued)

Group	*Weight (lbs)*	*Speed (kts)*	*Normal Operating Altitudes (ft)*	*Notes*	*Threat & COTS Examples*	*Friendly Examples*
Group 3: tactical	56-1,320	101-250	< FL 180	Like Group 1 and 2 UAS, requires a larger logistical footprint. Range and endurance vary significantly among platforms.	Shahed	RQ-7B Shadow
Group 4: Strategic or theater	> 1,320	Any speed	< FL 180	Relatively large systems operated at medium to high altitudes. Has extended range and endurance capabilities. Normally requires a runway for launch and recovery.	Forpost	MQ-1C Gray Eagle MQ-1A/B Predator

Table 5-6. UAS groups (continued)

Group	*Weight (lbs)*	*Speed (kts)*	*Normal Operating Altitudes (ft)*	*Notes*	*Threat & COTS Examples*	*Friendly Examples*
Group 5: Strategic	> 1,320	Any speed	> FL 180	Operates at medium to high altitudes having the greatest range, endurance, and airspeed. Requires large logistical footprint like that of manned aircraft and has a suite of optics for targeting and weaponry for engagements.	Wing Loong II	RQ-4 Global Hawk MQ-9 Reaper
Legend: AGL—above ground level; COTS—commercial-off-the-shelf; FL—flight level; ft—feet; kts—knots; lbs—pounds; UAS—unmanned aircraft system						

5-122. UAS groups 1 and 2 are abundant and difficult to detect on the battlefield. They constitute one of the most significant threats facing friendly ground forces when integrated with direct and indirect fire capabilities. The technological enhancements, accessibility, and economic feasibility of the sUAS systems make them an area of interest for potential adversaries. When planning for threat UASs leaders should assume that all UAS platforms may be capable of being outfitted with a suite of capabilities. These may include intelligence, surveillance, reconnaissance, and targeting capabilities. UAS payloads may utilize some form of electro-optical or IR optics, radar, signals intelligence, or laser designation supporting delivery of electromagnetic warfare, air-to-surface weapons, or one-way lethal payloads.

COUNTER-UNMANNED AIRCRAFT SYSTEM PLANNING

5-123. PLs must plan for the threat environment where the units will conduct operations. Passive air defense, combined arms for air defense and counter-reconnaissance tasks training should be an integral part of the units' C-UAS practices. The unit should develop and refine C-UAS planning and tailored to the expected threat environment. The platoon and company must plan and execute operations as an integrated combined arms team employing all forms of passive air defense techniques when active air defense

is limited or not available. IPOE provides the commander with specific threat information on known enemy locations, tactics, and threat capabilities.

5-124. Examples of key tasks to integrate into plans and combined arms unit training strategies addressing sUAS threats include the following:

- Employ dedicated observers (conducting air guard techniques).
- Perform visual aircraft recognition training.
- Conduct air threat avoidance techniques.
- Establish a security force and quick reaction force.
- Establish an early warning organic sensor network.
- Conduct UAS reporting procedures.
- Perform cover and concealment.
- Select appropriate sUAS defeat mechanisms.
- Conduct hardening of unit positions.
- Disseminate the air defense warning and weapon control status.
- Employ counter tracking techniques.

5-125. PLs must understand the plan for friendly UAS employment. This assists the platoon in differentiating from friendly and threat UAS, and disseminating the information when one is launched at platoon/company/battalion.

TECHNIQUES FOR CONDUCTING C-UAS AIR GUARD

5-126. Platoon security operations are complemented by employing air guard techniques. An air guard may assist with mitigating the threat's use of aerial assets against the unit. Air guards need to be vigilant, eyes on the horizon. Air guards will perform actions such as search and scan techniques for approaching threat UASs while observing their assigned sectors. Air guards should position themselves where they can best observe and more importantly listen for threat UAS. When listening, OPs should exercise noise discipline, ensure all engines are off and remove their headgear to listen. Early warning is the key for air guards since it is their job to alert the formation of any possible air threats. Reporting threat UAS activity should include an estimate of the threat location from the air guard position. The air guard reports the approximate distance, time, duration, size, estimated elevation, and direction the UAS was heading when detected. Reporting of a threat UAS should utilize a standard reporting format. (See Table 5-7 on page 210 for an example reporting format in accordance with ATP 3-01.81) Leaders should always have a plan for air guards to include—

- Plan for air guards while moving and at halts.
- Plan for air guards in AAs and defensive positions.
- Plan for air guards when in overwatch positions.

Table 5-7. UAS reporting format

Line	*Information*	*Example*
1	Size	Report the number of UASs (unmanned aircraft systems), or size of the formation.
2	Activity	Report detailed account of actions: • What is the UAS's direction of movement? • Was there any hostile action? • Is the threat UAS loitering in one spot? • Is it flying straight? • Was the threat UAS approach observed or was it spotted overhead?
3	Location	Report the location of the activity. Include six to eight-digit grid coordinate of reporting element and either grid or distance and direction from reporting element location (known point).
4	Unit (Description of UAS)	Include details such as— • Fixed-wing or rotor/multi-rotor. • If fixed wing— ▪ Estimated length of wingspan. ▪ Tail configuration. • If rotor/multi-rotor— ▪ Number of rotors. ▪ Height. ▪ Payload, sensors, and weapons. ▪ Any lights ▪ Other distinguishable markings.
5	Time	Report the time the activity was observed.
6	Equipment	If possible, report all equipment associated with the UAS, such as payload or weapons.

5-127. Based on threat activity and mission tasks relative to C-UAS observers (air guards) should consider developing quick reference or predeployment and combat checklists to focus the team on C-UAS. The checklist should be available through standard military digital devices or in hardcopy form and include—

- Current UAS trends (type classification).
- Specific data on local air threats and named areas of interest.
- Secure radio operations and frequencies.
- Unit call signs to request support (quick reaction force or reconnaissance and information collection support).
- Military map of area.
- Binoculars and night vision devices.
- Orientation techniques (location, heading, speed, and line-of-sight).
- C-UAS spot report.

PASSIVE DEFENSE

5-128. Platoons should be ready to employ passive defense measures to protect themselves from detection, observation, and attack. Passive defense measures decrease the effectiveness of enemy attacks using UAS. Damage-limiting and attack avoidance measures are passive defense measures that are used to avoid detection from aerial threats and limit damage if attacked. Platoons must use caution when exercising C-UAS passive measures. PLs should select positions of advantage that provide concealment for Soldiers, equipment, and unit activities. When planning damage-limiting and attack avoidance measures, the PL should concentrate their forces on the following passive defense tasks:

- When operating at night or during limited visibility, practice light restrictions and discipline during times of limited visibility and night operations.
- Disseminating early warning of air threats to the lowest echelon is essential to countering the UAS threat.
- Practice good OPSEC:
  - OPSEC is essential part of the planning process.
  - Leaders must always enforce their units' operational security measures.
- Using emission control to limit electromagnetic and acoustic footprint includes the selective and controlled use of electromagnetic, acoustic, or other emitters to optimize mission command systems and controlling capabilities while minimizing OPSEC.
- Use camouflage and concealment:
  - Camouflage is the use of natural or artificial materials to disguise personnel and/or equipment.
  - Concealment is used to reduce the factors of recognition.
  - Hiding, blending, and disguising are some techniques of concealment.
- Employ counter tracking measures:
  - When moving a mechanized platoon, avoid leaving multiple sets of tracks when occupying an AA or BP.
  - Multiple sets of tracks leave a large overhead signature.
- Use decoys and deception to set up false locations with smoke to draw attention away from an operation or emitters and emulators to confuse collection activities can conceal unit activities from enemy detection.
- Use hardening tactics:
  - Use protective construction and overhead cover to provide damage-limiting cover for friendly forces and equipment.
  - The hardening and fortifying of cover will limit the threat UAS's ability to visually see and limit the damaging effects of an aerial attack.
- Use obscurants:
  - Use optical and noise reducing measures to limit the glare or noise of equipment.
  - Place mud on headlights and use camouflage nets to obscure the glare of windshields to prevent drawing attention to the unit's position.
- Unit dispersion:
  - Disperse assets to minimize detection and damage if attacked.
  - Dispersion may be the best damage-limiting measure.

  - Proper dispersion of units and equipment lessens target density and reduces the lethal effects of threat ordnance.
- Maintain vigilance:
  - Platoons must assume they are always vulnerable to enemy targeting attempts.
  - This is especially true when conducting troop movements or performing supply actions or moving through open areas or concentrate at choke points.
- Establish early warning network using the radios and digital networks.
- Minimize heat signature, such as turning off engines when stationary.

ACTIVE DEFENSE

5-129. PLs have the responsibility to take whatever action is necessary to protect their forces and equipment against attack and ensure their Soldiers operate in accordance with established ROE. Active measures for the platoon must include basic rules that assist in the identification and defeat process for threat UASs. For example, establish SOPs for disseminating weapons control status (WCS) and hostile criteria. The PL should consider training their forces on the following active measures:

- Define characteristics for threat UAS, which include the following factors:
  - Speed.
  - Altitude.
  - Location.
  - Heading.
- Develop and transmit WCS.

Weapons Control Status

5-130. Weapon control status is a control measure designed to establish procedures for forces using surface-to-air weapons (including small arms weapons) to engage threats. Weapon control statuses can apply to weapon systems, volumes of airspace, or types of air platforms. This includes established restricted and engagement zones. Categories of WCS include the following definitions and actions:

- Weapons-free is the least restrictive weapon control status and indicates that weapons systems may fire at any target not positively identified as friendly.
- Weapons-tight indicates that weapons systems may only fire at targets identified as hostile in accordance with current ROE.
- Weapons-hold is the most restrictive weapon control status and indicates that weapons systems may only fire in self-defense or when ordered by proper higher authority.

Use Air Guards

5-131. Designate air guards for every vehicle and position to establish 360-degree security and execute the following:

- React to threat UASs by determining distance and bearing to the threat and take pictures if possible.
- Immediately report sightings of threat UAS (Spot Report) as prescribed by the SOPs.

- If the air guards' positions and personnel become threatened execute the following actions:
  - Respond in accordance with established unit SOP that could include moving to alternate positions.
  - Engaging the threat UAS with small arms using combined arms for air defense firing techniques.
  - Request engagement support with air and missile defense weapon systems and aviation assets.

5-132. Platoons should always post an air guard day and night for all operations. If two or more teams are posted, then assign sectors. Air guards must be trained to watch but also listen for adversary UAS. Listening and Ops should also be assigned the air guard mission. While moving or stationary all members of the platoon should be vigilant and on the watch for threat UAS.

ELECTROMAGNETIC WARFARE

5-133. *Electromagnetic warfare* is military action involving the use of electromagnetic and directed energy to control the electromagnetic spectrum or to attack the enemy (JP 3-85). Commanders and subordinate leaders at each echelon integrate electromagnetic warfare activities into operations through cyberspace electromagnetic activities. Electromagnetic warfare capabilities are applied from the air, land, sea, space, and cyberspace by manned, unmanned, attended, or unattended systems. Cyberspace electromagnetic activities are the process of planning, integrating, and synchronizing cyberspace and electromagnetic warfare operations. *Cyberspace operations* are the employment of cyberspace capabilities where the primary purpose is to achieve objectives in or through cyberspace (JP 3-0).

ELECTROMAGNETIC WARFARE CAPABILITIES

5-134. Electromagnetic warfare capabilities assist in shaping the OE to gain an advantage. For example, electromagnetic warfare may be used to set favorable conditions for cyberspace operations by stimulating networked sensors, denying wireless networks, or other related actions. Operations in cyberspace and the electromagnetic spectrum depend on electromagnetic warfare activities maintaining freedom of action in both. Electromagnetic warfare consists of three functions, electromagnetic attack, electromagnetic protection, and electromagnetic support. In any environment, the primary focus at the platoon and company level is on electromagnetic protection considerations as it relates to communications within small-unit operations.

5-135. During planning units must prepare for denied, degraded, and disrupted command and control systems and reduced access to cyberspace and space operations capabilities. Enemy force electronic warfare activities, when they are most effective, may simply look like nothing is wrong. Key indicators that command-and-control systems are being degraded include—

- Degraded voice communications.
- Uncharacteristically few voice or digital transmissions.
- Increased latency for data transmissions.
- Frequent and accurate targeting by threat lethal and nonlethal effects.
- Increased pings/network intrusions.

- Inconsistent digital common operational picture, for example, spoofing.
- Inaccurate GPS data/no satellite lock and inconsistency between inertial navigation aids and GPS-enabled systems.

ELECTROMAGNETIC PROTECTION

5-136. *Electromagnetic protection* is a division of electromagnetic warfare involving actions taken to protect personnel, facilities, and equipment from any effects of friendly or enemy use of the electromagnetic spectrum that degrade, neutralize, or destroy friendly combat capability (JP 3-85). For example, electromagnetic protection includes actions taken by the commander and subordinate leaders to ensure friendly use of the electromagnetic spectrum, such as frequency agility in a radio or variable pulse repetition frequency in radar. They avoid confusing electromagnetic protection with self-protection. Both defensive electromagnetic attack and electromagnetic protection protect personnel, facilities, capabilities, and equipment. (See ATP 3-12.3 for a detailed discussion on electromagnetic warfare functions and activities.)

5-137. Efforts to increase survivability and prevent degraded command and control systems include the following actions:

- Reduce radio power settings.
- Use hand and arm signals or pyrotechnics for routine communications.
- Minimize length of frequency modulation transmissions through brevity codes and execution checklists.
- Use terrain to mask transmission signatures.
- Employ directional antennas.
- Use remote antennas and carry spare antennas.
- Require physical presence of leaders at orders (for example, distribute information via analog means in person).
- Use camouflage and deception in all environments.
- Dig in CP.
- Use communications windows to reduce transmissions.
- Employ encryption/cypher techniques.
- Occupy hardened facilities when available.
- Plan to displace or make routine survivability moves.
- Ensure signature discipline across all energy spectrums.
- Practice leader discipline by assuming that the platoon is always visible and able to be targeted and behave accordingly.

5-138. Efforts that counter the effects of degraded command and control systems include the following actions:

- Establish and disseminate a viable PACE plan.
- Train to recognize indicators.
- Develop and rehearse contingency plans during the planning process and preparations.
- Maintain analog common operational pictures at all echelons.
- Train to operate from the commander’s intent and use analog graphics and synchronization matrixes.
- Keep plans as simple as possible that are less susceptible to friction.

EMISSION CONTROL

5-139. Leaders are responsible for EMCON as an element of electromagnetic protection that inhibits enemy electromagnetic warfare capabilities from detecting, intercepting, finding, fixing, or engaging emitters. *Emission control* is the selective and controlled use of electromagnetic, acoustic, or other emitters to optimize command and control capabilities while minimizing, for operations security: a. detection by enemy sensors; b. mutual interference among friendly systems; and/or c. enemy interference with the ability to execute a military deception plan (JP 3- 85).

5-140. In large-scale combat operations against near-peer competitors, the enemy is expected to use electromagnetic warfare capabilities to detect, intercept, deny, degrade, disrupt, destroy, or manipulate friendly communications, command and control, and intelligence capabilities. Emissions control is a planning aid designed to help leaders develop standard procedures and battle drills for their unit's unique suite of emitters using an appropriate mix of the EMCON considerations listed in Table 5-8.

Table 5-8. Emission control considerations

Techniques and Procedures	
Minimize length and frequency of radio transmissions. *	Use satellite communications (SATCOM) information on these practices.
Use appropriate power settings. *	Use high frequency (HF) transmissions.
Use electronic terrain masking. *	Train while employing radio silence.
Establish and enforce a primary, alternate, contingency, and emergency (PACE) communications plan. *	Ensure electronic equipment is properly grounded and has shield cables.
Use remote antennas.	Train on land navigation (without GPS)
Use brevity codes and proword execution matrixes.	Train on hand and arm signals.
Use secure landlines.	Execute survivability moves.
Use directional antennas.	Ensure equipment is grounded.
Use line-of-sight communications parallel to the forward line of own troops.	Understand the impact of terrain composition on emissions.

Table 5-8. Emission control considerations (continued)

Techniques and Procedures	
Use alternate means of communications for planning/preparation; use primary for execution.	Recognize communications jamming (reporting criteria).
Use data-burst transmissions.	Recognize GPS jamming (reporting criteria).
Mask with camouflage netting.	Recognize radar jamming (reporting criteria).
Use encrypted GPS.	Recognize satellite jamming (reporting criteria).
Note: *These emission control considerations should always be practiced, but leaders emphasize them more as threats involving the electromagnetic spectrum elevate.	
Legend: GPS—Global Positioning System	

5-141. EMCON prevents the threat discovering and attacking the locations of friendly forces with electromagnetic warfare. When establishing EMCON best practices, it is important to understand the general categories and status criteria for EMCON levels. Based on the tactical situation, the commander can dictate the appropriate EMCON level to the platoon. During operations, commanders consider EMCON level 3 (amber) as the baseline condition. Even if given no guidance, the PL should implement EMCON measures within the platoon. Table 5-9 captures the five EMCON levels and the general descriptive criteria associated with each level. (See ATP 3-12.3 and ATP 6-02.53 for additional information.)

Table 5-9. Emission control status

EMCON Status	*Description*
EMCON 5 Green	Describes a situation where there is no apparent hostile activity against friendly emitter operations. Operational performance of all EMS-dependent systems is monitored, and password encryption enabled systems are used as a layer of protection.
EMCON 4 Yellow	Describes an increased risk of attack after detection. Increased monitoring of all EMS activities is mandated, and all end users must make sure their systems are secure, encrypted, power levels monitored, and transmissions limited. EMS usage may be restricted to certain emitters, and rehearsals for elevated EMCON is ideal.
EMCON 3 Amber	Describes when a risk has been identified. Counter ECM (encryption, FH, directional antennas) on important systems is a priority, and the CEWO's alertness is increased. All unencrypted systems are disconnected.

Table 5-9. Emission control status (continued)

EMCON 2 Red	Describes when an attack has taken place, but the EMCON system is not at its highest alertness. Nonessential emitters may be taken offline, alternate methods of communication may be implemented, and modifications are made to standard lower EMCON configuration (for example, power levels and antenna types).
EMCON 1 Black	Describes when attacks are taking place based on the use of the EMS. The most restrictive methods of EP are enforced. Any compromised systems are isolated from the rest of the network.
Legend: EMCON—emission control; ECM—electromagnetic countermeasures; EMS—electromagnetic spectrum; FH—frequency hop; EP—electromagnetic protection; CEWO—cyber electromagnetic warfare officer	

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Chapter 6
Sustainment

In a mechanized Infantry unit, sustainment operations maintain the force during continuous combat operations. The mechanized Infantry platoon can deploy in either the mounted or dismounted roles. In the mechanized Infantry platoon, the PL oversees and aids in the sustainment planning however, the PSG is the platoon's main sustainment planner and executer. The PSG works closely with the company XO and 1SG to forecast anticipated sustainment requirements for future missions and ensures the platoon receives the required support for its assigned mission. Sustainment responsibilities and procedures in the mechanized platoon remain basically the same as other formations. The company normally forecasts supplies and "pushes" rather than "pulls" them to the platoon.

SECTION I – PLANNING AND RESPONSIBILITIES

6-1. Planning sustainment operations is primarily a company, FSC and CAB-level operation. The company commander and XO plan the concept of support for the company's operation. The PL and PSG are responsible for sustainment planning, preparation, execution, and assessment at the platoon level. Sustainment is characterized by the eight principles: integration, anticipation, responsiveness, simplicity, economy, survivability, continuity, and improvisation. (See FM 3-96 and FM 4-0 for additional information.) The PL, with the assistance of the PSG, integrates these guiding principles to shape the sustainment concept of support for the platoon. This section describes sustainment operations in support of the platoon, specifically responsibilities, functions, tasks, and activities, and unit relationships throughout high operating tempo of decentralized operations.

PLANNING CONSIDERATIONS

6-2. The PL develops their sustainment plan by determining exactly what they have on hand to accurately predict their support requirements. The sustainment plan is based on the five following considerations:

- How will the platoon come to 100 percent stockage on all supplies prior to the mission?
- Can it complete the assigned mission with the quantity of supplies, or will it require resupply prior to the end of the mission?
- How will the platoon manage its ready- and semi-ready stowage?
- How will the platoon cross-level and resupply at the end of the mission?
- Which section is the priority for resupply at any time in the operation?

6-3. The sustainment plan should provide answers to operational questions such as the following:

- Quantities:
  - What quantities will the platoon require?
  - Will emergency resupply (Classes III and V) be required during the battle?
  - Does this operation require prestocked supplies?
- Threat:
  - What is the composition, disposition, and capabilities of the expected enemy threat?
  - How will these affect the platoon sustainment plan during execution?
  - Where and when will the platoon expect contact to occur?
  - What is the platoon's anticipated Class V expenditure to manage these contacts?
  - What are the platoon's expected casualties and vehicle losses based on the nature and location of expected contact?
- Terrain and weather:
  - How will terrain and weather affect sustainment plan during the battle?
  - What terrain will provide the best security for vehicle recovery and CCPs?
  - What is the platoon's vehicle and CASEVAC routes?
  - What are the platoon's dirty routes for evacuating contaminated personnel, vehicles, and equipment?
- Time and location:
  - When and where will the platoon need sustainment support?
  - Where and when in the operation should the platoon pause to transfer Class V from semi-ready to ready boxes?
  - Based on the nature and location of expected contact, what are the best sites for the CCP?
  - How will the platoon move detainees, and where are the collection points?
- Requirements:
  - What are the support requirements by element and type of support?
  - Which section has priority for emergency Class III resupply?
  - Which section or squad has priority for emergency Class V resupply?
- Risk:
  - Will lulls in the battle permit support elements to conduct resupply operations in relative safety?

6-4. After this initial analysis, the PL and PSG should have an understanding of how much Classes III and V the platoon will consume and when in the mission that will occur; whether it can achieve the assigned mission using onboard stowage or whether it will have to be resupplied, whether internally (cross-level, prestock, upload from semi-ready stowage) or externally; where casualties are most likely to occur, with the associated CCPs; and what, if any, external resources are required and how they will be allocated or controlled. With this understanding, the platoon's leaders make a detailed plan.

INDIVIDUAL RESPONSIBILITIES

6-5. The platoon must plan, prepare, and execute its portion of the company sustainment plan. Concurrent with other operational planning, the platoon develops its sustainment

plan during the mission analysis and refines it in the war-gaming portion of the TLP. Rehearsals normally are conducted at each echelon to ensure the smooth, continuous flow of materiel and services.

6-6. Sustainment responsibilities for the platoon and squad include report and request support requirements through the company and ensure sustainment operations are properly executed when support elements arrive in the platoon area. The PSG is normally in charge of these functions, with guidance and oversight provided by the PL. The PSG must submit timely and accurate personnel and logistical reports, along with other necessary information and requests. Early and accurate sustainment reporting ensures that necessary supplies can be requested for a specific operation and continues during an operation all the way through consolidation and reorganization.

PLATOON LEADER

6-7. The PL is ultimately responsible for the sustainment plan and for the condition and performance of the platoon's equipment and materiel. The PL works directly with the PSG to determine specific sustainment requirements based on the tactical plan and reports those requirements to the company XO. The PL must anticipate sustainment requirements and ensures arrangements are made to provide the necessary support requirements to the platoon during all phases of the operation. In that role, the duties include the following:

- Ensuring that the platoon's vehicles and weapons systems are maintained and operational, within the platoon's maintenance capabilities.
- Ensuring that equipment that cannot be repaired at platoon level is reported to the FMT as soon as possible.
- Reporting maintenance and repair needs using the DA Form 5988-E *(Equipment Maintenance and Inspection Worksheet)* or DA Form 2404 *(Equipment Inspection and Maintenance Worksheet)*.
- Knowing the status of platoon maintenance activities, including corrective actions for equipment faults, maintenance work orders, and requisition of repair parts.
- Keeping the commander informed of the platoon's maintenance status.
- Coordinating with the XO in planning, directing, and supervising unit maintenance for the platoon.
- Ensuring that Bradley crews have appropriate technical manuals on hand and are trained and supervised to complete operator maintenance properly.
- Ensuring that unit PMCS are performed on all assigned equipment per the appropriate operator's manuals.
- Planning and rehearsing a maintenance evacuation plan for every mission.
- Knowing the current logistic status of the platoon and how quickly each resource (water, fuel, ammunition, subsistence) is being expended.
- Ensuring the PSG reports the logistics status report to the company XO or 1SG as required.
- Knowing the basic load and total carrying capacity of—
  - Class I water in gallons and number of rations.
  - Class III bulk fuel in gallons and Class III (P) in quarts for each critical type.
  - Class IV and Class V by type of ammunition in the platoon.

PLATOON SERGEANT

6-8. The PSG is the platoon's primary sustainment executer, they keep the PL abreast on all logistic reports and sends the reports to the XO or 1SG. The PSG executes the platoon's logistical plan, relying heavily on platoon and company SOPs. The PSG directly supervises and controls the platoon's assets when available. During preparations for the mission, the PSG works closely with the PL, section, and squad leaders to determine specific support requirements of the tactical plan. The PSG then ensures proper arrangements are made to provide those support requirements. The PSG also performs these logistical functions:

- Attending company sustainment rehearsals and ensuring the platoon knows what actions to take at the company's resupply points.
- Directing and supervising unit maintenance of platoon equipment, vehicles, and weapon systems.
- Developing a schedule to ensure all weapons and vehicles are checked daily at a minimum and, based on operational tempo, a PMCS is conducted daily.
- Assisting the PL with the responsibilities and assuming these responsibilities in the PL's absence.
- Supervising and accounting for platoon personnel during maintenance periods.
- Ensuring that repair parts are used or stored as they are received.
- Collecting reports of the platoon's maintenance status in the field and sending the appropriate consolidated reports to maintenance personnel.
- Tracking changes in status for all classes of supply and reports to XO or 1SG.
- Maintaining accountability and serviceability of all equipment including hand receipts, shortage annexes, and direct exchange of broken equipment.
- Ensuring that vehicles are always topped off with fuel and that they receive adequate fuel in the field.
- Monitoring actions during resupply on site and ensuring each BC is tracking actions at the resupply point.
- Rehearsing (to include under CBRN conditions) and directing the platoon's CASEVAC plan that includes the following:
  - The wounded and dead are not evacuated together.
  - The deceased and wounded are collected at the company CCP in opposite areas with deceased outside of line of sight of wounded.
- Directing and supervising the collection, initial identification, and evacuation of human remains to the company CCP.
- Keeping the PL informed of the platoon's maintenance and logistics status.
- Knowing the basic load and total carrying capacity of Class I water in gallons, Class III bulk fuel in gallons, Class III (P) in quarts for each critical type, Class IV, and Class V by type of ammunition in the platoon.

BRADLEY COMMANDERS AND SECTION LEADERS

6-9. BCs and section leaders are responsible for requesting appropriate classes of supplies in a timely manner. They are responsible for vehicle and weapons maintenance for their section or vehicle. The platoon's maintenance status, and thus its combat readiness, depends on their commitment to proper maintenance procedures. Their duties in this area include the following:

- Ensuring that each DA Form 5988-E or DA Form 2404 is filled out accurately and updated with parts ordered on valid requisition (see DA Pam 750-8).
- Ensuring that each DA Form 2408-4 *(Weapon Record Data)* is updated following engagements.
- Ensuring that dispatch records are completed accurately and turned in on schedule.
- Ensuring that the crew is properly trained in PMCS procedures as follows:
  - PMCS is performed on the vehicle per the appropriate technical manual.
  - Crews must use the technical manual to ensure correct checks are being completed.
- Ensuring that all crewmembers are trained on all crew drills when preparing for continuous operations.
- Ensuring that repair parts are installed upon receipt or are stored in authorized locations.
- Ensuring that all components of end item and basic issue items are properly marked, stored, maintained, and accounted for.
- Ensuring that each vehicle is always topped off with fuel in garrison and that it receives as much fuel as possible at every opportunity in the field.
- Updating the PSG constantly on the maintenance and logistics status of the vehicle.
- Conducting vehicle crew drill rehearsals (to include under CBRN conditions).

Note. Detailed vehicle and equipment checks are outlined in every operator's manual and should always be conducted as stated in the manual. Although operators must learn to operate the equipment without referring to the manual, maintenance must be performed using the appropriate manual, not from memory.

SQUAD LEADER

6-10. The squad leader's sustainment duties include—

- Ensuring Soldiers perform proper maintenance on all assigned weapons and equipment.
- Ensuring that each DA Form 5988-E or DA Form 2404 is filled out accurately and updated (see DA Pam 750-8).
- Compiling personnel and logistics reports of the squad and submitting them to the PSG as directed or in accordance with unit SOP.
- Obtaining all classes of supplies, equipment (except Class VIII), and mail from the PSG and ensuring proper distribution.
- Cross-leveling supplies and equipment throughout the squad.
- Ensuring Soldiers maintain personal hygiene.

COMBAT MEDIC

6-11. The medic provides TCCC for sick, injured, or wounded platoon personnel. This includes routine sick call, management of minor sick or injured personnel for immediate return to duty, as well as casualty collection from the POI and preparation of casualties

for evacuation to the rear. Ensures Class VIII (medical supplies) are requested or on hand for medic's aid bag and all other stocks, including CLS bags, and so forth. Provides sustainment training for CLS. Supervises operations at CCP and integrates CLS-trained Soldiers into CCP operations. Ensures (the medical documents) are completed and accurate on all evacuees.

UNIT COMBAT AND BASIC LOADS

6-12. There are few, if any, contingencies in which U.S. Forces have all the supplies they need for an operation. Because of this, every unit's daily logistical reports must accurately reflect not only its operational needs but what supplies, and equipment are on hand. As much as possible, logistics planners try to standardize "push" packages, providing all units with enough of each supply item in anticipation of their requirements.

6-13. During planning, units assess their basic load to determine its adequacy to support an operation. A *basic load* is the quantity of supplies required to be on hand within, and moved by a unit or formation, expressed according to the wartime organization of the unit or formation and maintained at the prescribed levels (JP 4-09). Units further configure their basic load into combat loads for specific missions. ***Combat load*** **is the minimum mission-essential equipment and supplies as determined by the commander responsible for carrying out the mission, required for Soldiers to fight and survive immediate combat operations.** Combat loads are not standardized nor are quantities established since all are mission dependent. Basic and combat loads are directed by the company commander and are generally prescribed by unit SOP.

INFANTRY SQUAD LOAD CONSIDERATIONS

6-14. Loads and load plans are essential for providing Soldiers the right capabilities to carry out the mission. The Infantry squad must consider the loads required to conduct both mounted and dismounted operations. Maximum planning effort should be placed on combat loads for specific types of operations. Commanders should resist the mindset to carry everything for every contingency. Leaders at all levels enforce load discipline to ensure that Soldiers do not carry excess weight. Supplies and equipment not carried in a combat load are secured and transported in sustainment loads and contingency loads (see ATP 3-21.18 for sustainment and contingency loads).

6-15. The commander directs minimum requirements for the combat load. Three types of combat loads are fighting load, approach march load, and emergency approach march load (see ATP 3-21.18 for combat loads). The commander specifies in the OPORD which items of equipment are carried. The commander specifies the amount of ammunition required for the operation.

BRADLEY FIGHTING VEHICLE LOAD CONSIDERATIONS

6-16. When planning BFV loads the PL considers Classes I, III (Bulk), III (Package), IV, and V requirements depending on the type of operation they are conducting. The PL refers to the unit SOPs for their different classes of supply requirements.

6-17. The basic load includes ammunition and supplies kept by the platoon for use in combat and physically carried into the fight. The quantity of most basic load supply items depends on how many days in combat the platoon might have to sustain itself without resupply. BFV-equipped platoons have an advantage over dismounted Infantry

units because of its ability to carry additional classes of supplies on the fighting vehicle. For class V ammunition, the higher commander OPORD or SOP specifies the platoon's basic load. For all other classes of supply leaders do a METT-TC (I) analysis based on mission duration. (See specific technical manual for BFV basic loads.) The platoon BFVs can each carry—

- 900 rounds of 25-mm ammunition with 600 stowed and 300 ready.
- Additional HE rounds or armor piercing (AP) rounds, based on the anticipated threat.
- Best type of rounds for the likely threat when deciding how to upload the 2 ready boxes (70 rounds and 230 rounds).
- 3,600 rounds of 7.62-mm, with 800 rounds ready and the rest stowed.
- Two TOW rounds ready or three to five rounds each stowed based on the number of Javelins carried.
- Three Infantry squads with organic weapons systems.

6-18. The combat load includes Classes III and IV requirements for the BFVs, and Infantry squads determined by the commander for a specific operation.

CLASSES OF SUPPLY

6-19. The PSG obtains supplies and delivers them to the platoon. The PL establishes priorities for delivery; however, combat demands that Classes I, III, V, and IX supplies and equipment take priority because they are the most critical to successful operations. Table 6-1 on page 226 explains the classes of supply.

Table 6-1. Classes of Supply

Class	*Type of Supply*
Class I	Rations, water, and ice
Class II	Clothing, individual equipment MOPP suits, tentage, tool sets, administrative and housekeeping supplies, and equipment
Class III (B)	Bulk petroleum, oils, and lubricants
Class III (P)	Packaged petroleum, oils, and lubricants
Class IV	Construction materials, such as pickets, sandbags, and concertina wire
Class V	Ammunition and mines, to include explosives
Class VI	Mail and personal-demand items normally sold through the exchange system, which may include candy, soaps, cameras, and film
Class VII	Major end items, such as BFVs
Class IX	Repair parts and documents required for equipment maintenance operations
Class X	Materials to support nonmilitary programs
Miscellaneous	Anything that does not fall in one of the existing classes of supply

6-20. Class III bulk: (bulk petroleum products) includes liquid petroleum product transported by various means (such as pipeline, hose line, rail tank car, tank truck, barge, or tanker) and stored in tanks or containers having an individual fill capacity greater than 55 gallons. Class III Packaged: (packaged petroleum products) includes petroleum products and chemical products generally (lubricating oils, greases, and specialty items) that are normally packaged by the manufacturer and procured, stored, transported, and issued in containers of 55-gallon capacity or less. (An exception is that various-sized collapsible containers such as the 240-gallon totes or larger may also be considered packaged products.)

RESUPPLY OPERATIONS

6-21. There are two methods of resupply operations; planned and emergency. Normally planned resupply operations that are rehearsed and synchronized with the maneuver plan are essential to conducting operations. Emergency resupply should only be used in critical situations where the supply is essential to mission success. The company SOP specifies cues and procedures for each method, The actual method used for resupply in the field depends on mission variables. (See ATP 3-90.1 and ATP 4-90.)

PLANNED RESUPPLY

6-22. Planned resupply operations cover items in Classes I, III, V, and IX, mail, and other items requested by the platoon. When possible, the platoon should conduct planned resupply daily. Ideally, it does so during periods of limited visibility. BFVs and other large combat vehicles use large amounts of fuel, so the platoon must resupply Class III

at every opportunity. Platoon should have a plan for all classes of supply for both the mounted sections and the Infantry squads. Planned resupplies can occur during an operation if they are well thought out and planned. An effectively planned resupply enables the mechanized Infantry platoon to continue the operation unimpeded.

6-23. Leaders must be alert to opportunities to deconflict sustainment operations with the scheme of maneuver to ensure the company and platoons are able to refuel/rearm before they commit to the fight, as opposed to afterwards. The company may plan for specific platoons to be refueled/rearmed during the operation. The PL must fully comprehend the company sustainment plan in order to effectively executive a resupply during an operation. Before requesting emergency resupply, the first step is to cross-level supplies as much as possible on systems (for example cross-leveling ammunition from semi-ready to ready racks/from under floor in the Bradley to upload/ready boxes) and then cross-leveling within sections.

6-24. There are multiple techniques for the resupply of supplies, personnel, and equipment. The following are examples of techniques for planned resupply:

- LOGPAC.
- Pre-positioned.
- Cache.

LOGISTICS STATUS REPORT

6-25. The logistics status is an internal status report that identifies logistics requirements, provides visibility on critical shortages, and allows commanders to project mission capability. Accurate reporting of the logistics and Army Health System support status is essential for keeping units combat ready. The PSG compiles reports from all the squads and sections, to include attachments, and completes the unit's logistics status report. Once completed, reports are forwarded to the company 1SG or XO. Logistics status reports should be completed at least daily (based off unit SOP) but may be required more frequently during periods of increased intensity or high operating tempo. (See ATP 3-90.1 and FM 4-0 for additional information.)

6-26. The PSG continually monitors the platoon's supply status through logistical reports and automated SITREPs. The PSG notifies the 1SG before a specific vehicle, or the platoon is critically short of these major classes of supply. The PSG must ensure each vehicle crew maintains a stock of oil, grease, and hydraulic fluid, replenishing petroleum, oils, and lubricants products every time refueling takes place. When planning refueling operations, the unit must top off vehicles whenever the tactical situation permits. The 1SG and XO should balance the range and fuel capacity of the unit vehicles against the requirements of future operations.

LOGISTICS PACKAGE OPERATION

6-27. The LOGPAC technique offers a simple, efficient way to accomplish routine sustainment operations. The key feature, a centrally organized resupply convoy, originates at the task force trains. The convoy carries all items needed to sustain the platoon for a specific period (usually 24 hours) or until the next scheduled LOGPAC. The CAB SOP will specify the LOGPAC's exact composition and march order.

6-28. As directed by the commander or XO, the 1SG establishes the company resupply point. They use the service station or tailgate methods and briefs each LOGPAC driver on which method to use. When they have the resupply point ready, the 1SG informs the commander. The company commander then directs each platoon or element to conduct resupply based on OPORD and tactical situation.

Service Station Method

6-29. The service station method (see Figure 6-1) allows the platoon with their squads to move to and pass through a centrally located resupply point. The service station method is very flexible and may be used in conjunction with any platoon movements, from a screen line or defensive positions, from an AA, or during a planned lull in offensive operations. Depending on the tactical situation, a vehicle, section, or platoon moves out of its position, conducts resupply operations, and moves back into position. This process continues until the entire platoon has received its supplies.

6-30. If done in conjunction with a movement, such as a tactical road march, the platoon sets local security on the near side, passes through the service station, establishes security on the far side, and then continues movement until all vehicles and Infantry squads are complete.

6-31. In using this method, vehicles enter the resupply point following a one-way traffic flow. Only vehicles that require immediate maintenance stop at the maintenance holding area. Vehicles move through each supply location to receive Classes I, II, VI, VII, IX and mail from the company's supply sergeant, and refuel and draw Class III (P) and Class V from the distribution platoon. Typically, one or two crew or dismounted Soldiers will pick up prepared meals and collect other necessary supplies, such as exchanging water cans. If there is more time available, the crews and Infantry squads may rotate individually to eat and pick up mail and sundries. Due to the decentralized nature of combat operations, the service station resupply is a good method for the platoon's leaders to see and visually assess the platoon's Soldiers, vehicles, and equipment. If time is available, the PL may choose to complete a full PCI.

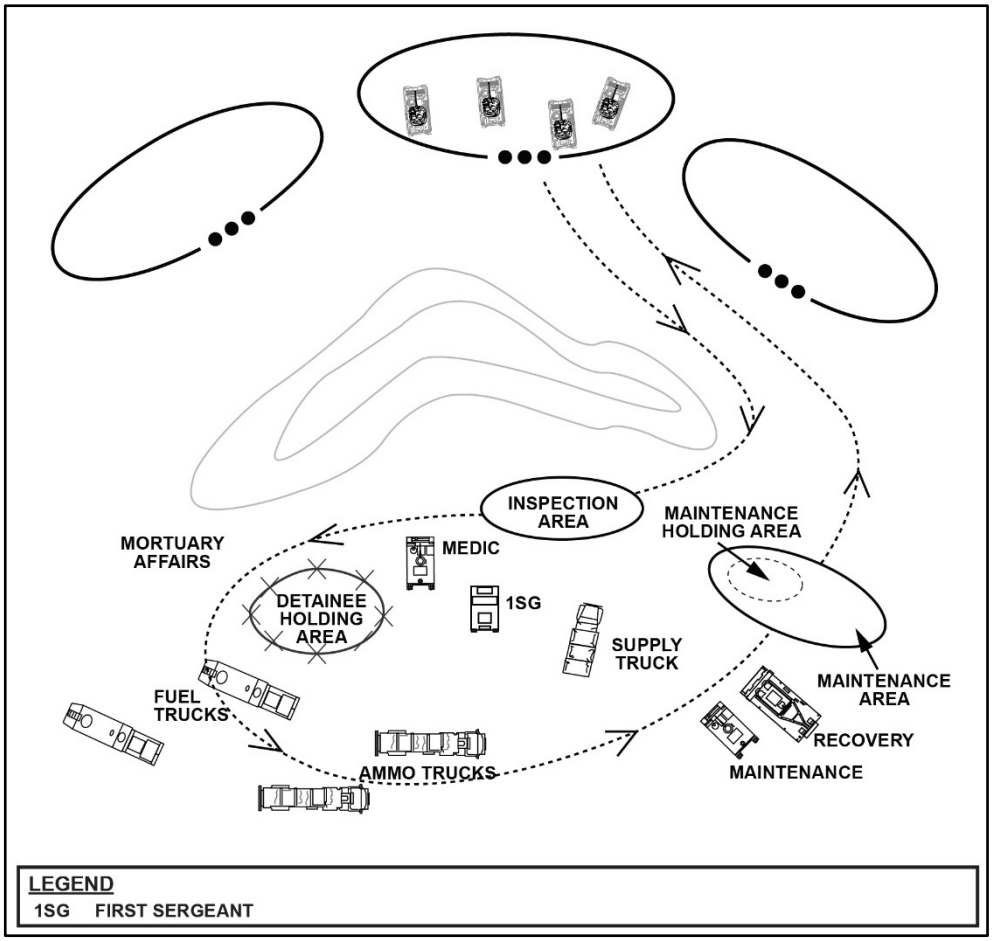


Figure 6-1. Service station resupply method

Tailgate Method

6-32. In AAs the company and platoon may use the tailgate method to minimize movement (see figure 6-2 on page 230). Combat vehicles remain in their vehicle positions, or they back out a short distance to allow trucks carrying Classes III and V supplies to reach them. The supply sergeant may also accompany the distribution platoon's vehicles, issuing Class I and all other required classes of supplies from the tailgate to each vehicle, or else establishes a centralized feeding area through which the crews and Infantry squads individually rotate. While there, they pick up mail and sundries, and refill or exchange water cans. They centralize and turn over detainees. They take Soldiers killed in action and their personal effects to the holding area, where the company leaders assume responsibility for them.

6-33. If the AA is constrained for space, the company 1SG may decide to use a combination of service station and tailgate in which the distribution platoon's trucks

conduct service station resupply outside of the AA while the supply sergeant conducts other aspects of resupply from a centralized location within the AA.

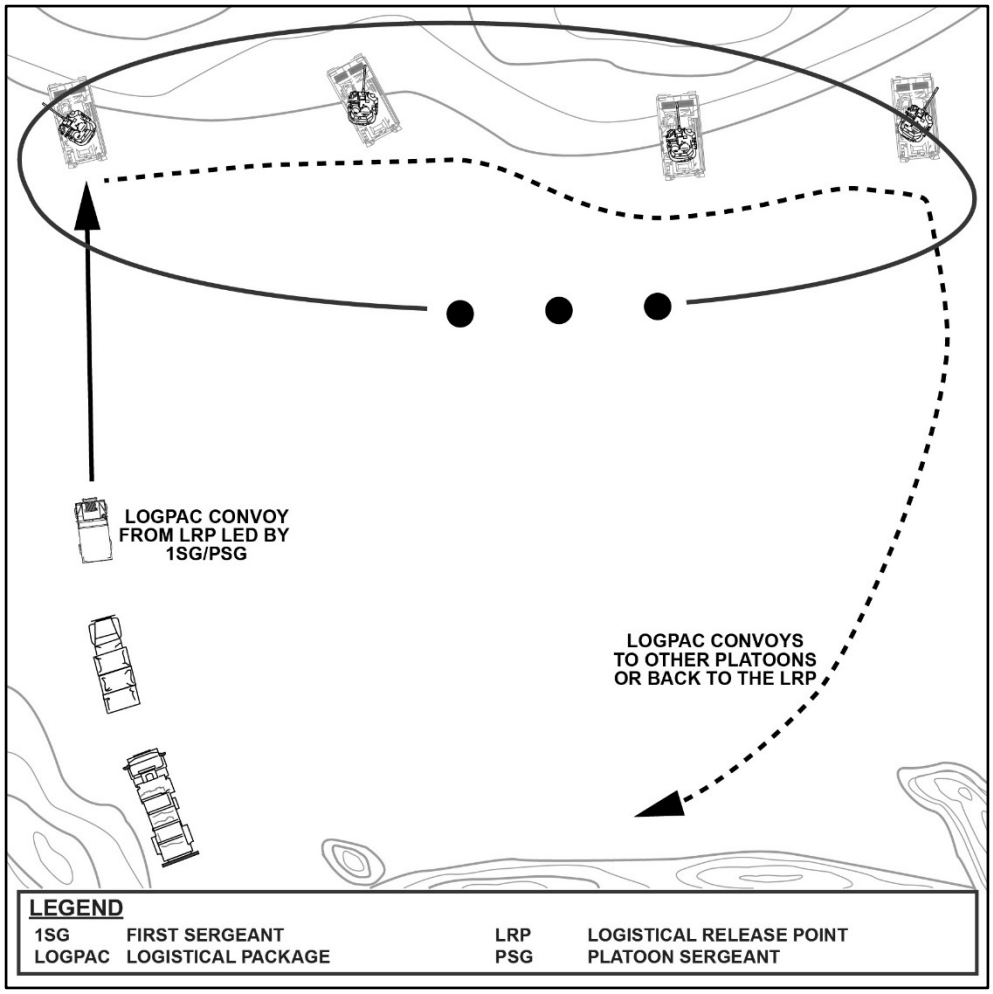


Figure 6-2. Tailgate resupply method

PRE-POSITIONED SUPPLIES

6-34. In defensive operations, or other times as appropriate, the platoons will most likely need prestocked supplies, also known as pre-positioned or "cached" resupply. Normally, the platoon only pre-position Classes IV and V items, but they can pre-position Class III supplies. However, they must refuel platoon vehicles before they move into fighting positions, while first occupying the BP, or while moving out of their fighting position to refuel.

6-35. All levels must carefully plan and execute prestock operations. All leaders, down to BCs and squad leaders must know the exact locations of pre-positioned sites. During reconnaissance or rehearsals, they verify these locations. The platoon takes steps to

ensure the survivability of the pre-positioned supplies. These measures include selecting covered and concealed positions and digging in the prestock positions. The PL must have a removal and destruction plan to prevent the enemy from capturing pre-positioned supplies.

6-36. During offensive operations, the platoon can pre-position supplies on trucks or BFVs well forward on the battlefield. This works well if the platoon expects to use a large volume of fire, with corresponding ammunition and fuel requirements, during a fast-moving operation.

CACHE

6-37. A cache is a pre-positioned and concealed supply point. Caches are different from standard pre-positioned supplies because the supported or supporting units conceal the supplies from the enemy whereas units might not conceal other pre-positioned supplies. Caches can reduce Soldiers' loads, and units can establish caches for a specific mission or as a contingency measure. Units may conceal cache sites above or below ground. Above ground caches are easier to access but are more vulnerable to discovery by the enemy, civilians, or animals.

EMERGENCY RESUPPLY

6-38. Occasionally (normally during combat operations), the platoon might have such an urgent need for resupply that it cannot wait for a routine LOGPAC. Emergency resupply could involve CBRN supplies, equipment, Classes III, V, VIII, and water.

6-39. The PL must understand the CAB's and company's priority of support in the sustainment plan. If they platoon is not priority for support during that phase of an operation, they will likely not receive an emergency resupply. This is why it is of the upmost importance that the PL does a thorough sustainment analysis with their PSG during TLP.

6-40. Emergency resupply can be conducted using either the service station or tailgate method, although procedures may have to be adjusted when the company is in contact with the enemy. In the service station method, individual vehicles pull back during a lull in combat on order of the commander or PL; they conduct resupply and then return to the fight. With tailgate resupply, the company brings limited supplies forward to the closest concealed position behind each vehicle or element.

AERIAL DELIVERY

6-41. *Aerial delivery* is the air transport of cargo, equipment and/or personnel to a desired location on the ground by aircraft (ATP 4-48). *Air movements* are an air transport of units, personnel, supplies, and equipment including airdrops and air landings (JP 3 36). Overland resupply might not work, due to terrain or the existing enemy threat. The platoon must initiate a request for resupply and must push it through company to CAB. The platoon must prepare to receive the supplies at the specified time and location.

SECTION II – MAINTENANCE

6-42. The maintenance of weapons and equipment is continuous. Every Soldier must know how to maintain their weapon, vehicle, and equipment according to the applicable technical manual. Maintenance includes inspecting, testing, servicing, repairing, requisitioning, recovering, and evacuating vehicles and equipment. Maintenance at the platoon and squad level comprises thorough PMCS and accurate reporting of maintenance problems to the company, and taking necessary actions to resolve maintenance problems, such as installing requested parts.

MAINTENANCE REPAIR FLOW

6-43. Maintenance and the early identification of problems prevent equipment down-time and the reduction of combat effectiveness. The result of good routine PMCS is fully mission capable equipment. The PMCS results are logged on the DA Form 2404 or the DA Form 5988-E. These forms are the primary means through which the platoon and squads obtain maintenance support or repair parts. The forms follow a pathway from Infantry squad and crew level to the FSC maintenance section, maintenance control section to the brigade support area and back. Per unit SOP, the company XO or 1SG supervises the flow of these critical maintenance documents and parts. The flow of reporting and repairing equipment includes the following:

6-44. The PL and PSG receive the hard copy DA Form 5988-E from the XO or 1SG during the LOGPAC. The PL and PSG review the DA Form 5988-E to ensure correctness prior to distribution. If there are discrepancies, they notify the XO immediately.

6-45. Each DA Form 5988-E or DA Form 2404 is distributed to the Infantry squads and BCs, and they oversee their squads and crews conducting the PMCS of the BFVs, squad individual weapons, and equipment. Typically, the driver will PMCS the hull and the gunner will PMCS the turret. The crew utilizes the proper -10 level Technical Manual to conduct a thorough PMCS. The crew follows the before, during, or after PMCS procedures depending on the guidance from their BC.

6-46. The crews and squads annotate faults on the DA Form 5988-E or DA Form 2404 in accordance with the technical manual. The faults annotated will either be a non-dead lining fault, or a dead lining fault. If the fault renders the vehicle or piece of equipment nonmission capable the crew or squad member notifies the squad leader or BC and then continues with the PMCS.

6-47. Once the crew or squad member is complete with the PMCS, the BC or squad leader coordinates with the FMT to verify the faults. If a fault renders the BFV or piece of equipment nonmission capable, the FMTs utilize the parts on hand to bring the vehicle to fully mission capable status. If they do not have the part on hand, the part will have to be sent forward from the field or combat trains CP, brigade support area, or ordered by the CAB's equipment records parts NCO/clerk at the maintenance collection point (known as MCP).

6-48. When the faults have been verified by the FMT, the PL collects every DA Form 5988-E or DA Form 2404 and reviews them to understand the status of their vehicles and equipment. Then the PL gives every DA Form 5988-E or DA Form 2404

to the XO. The XO reviews the forms and updates the company status then gives them to the 1SG.

6-49. The 1SG transports every hard copy DA Form 5988-E and DA Form 2404 on the next LOGPAC to be submitted to the FSC maintenance section. The FMT chief will verify the faults and annotate the correct national stock number for the part to be ordered. The company's parts NCO/clerk will order the part and print off a new DA Form 5988 E with the new faults and parts ordered and provided to the 1SG on the following LOGPAC.

6-50. If the repair or installation of the part requires more time than the operation allows, the BFV or piece of equipment may be transported to the unit MCP for further repair.

6-51. The unit SOP should detail when maintenance is performed, to what standards, and who inspects it. The squad and section leader are most often the one who inspects maintenance work, with the PSG and PL conducting spot-checks. Besides operator maintenance, selected Soldiers are trained to perform limited maintenance on damaged weapons and battle damage assessment and repair.

6-52. Inoperative equipment is fixed as far forward as possible. When a piece of equipment is damaged, it should be inspected to see if it can be repaired on the spot. If equipment cannot be repaired forward, it is evacuated immediately or returned with a LOGPAC. Even if the item cannot be evacuated at once, the maintenance system is alerted to prepare for repair or replacement. If a replacement is available (from an evacuated Soldier or inoperative equipment), it is sent forward. If not, the leader must work around it by prioritizing remaining equipment. For example, using a squad radio for the company command net if the platoon radio is broken.

SCHEDULED SERVICES

6-53. Used to maintain equipment reliability, scheduled services are performed on all platoon, company, and CAB equipment. Equipment services are specified maintenance actions performed qualified mechanics and assisted by equipment operators when required. Where equipment, components, and systems are routinely checked, adjusted, lubed, and so on, according to engineer specifications. Maintenance personnel use scheduled services to replace faulty items and avoid projected component failures based on analysis and engineering documentation. The PL and the XO adjust the service schedule to fit the company training schedule. Services may be conducted sooner than the prescribed interval but cannot be conducted later. The PL refers to the technical manuals for all pieces of equipment in their platoon to determine the prescribed service schedule. Services may occur on a quarterly, semiannual, or annual basis. Equipment that is delinquent on services may be nonmission capable. In a garrison environment, units may conduct fleet-wide vehicle services simultaneously; however, in a combat environment, units should conduct individual vehicle services sequentially.

LEVELS OF MAINTENANCE

6-54. The Army has two levels of maintenance: field and sustainment. Field maintenance consists primarily of troubleshooting, repairing, or replacing parts and assemblies on the user's system or platform. Sustainment maintenance is performed by U.S. Army Materiel Command elements normally comprised of civilians and

contractors who return equipment to a national standard, after which the equipment is placed back into the Army's overall supply system.

6-55. The link between the using organization and maintenance support is a trained operator/crew who can properly use and maintain the equipment. The continued demand for equipment requires that the operator and/or crew perform PMCS. Maintainers usually diagnose down to the major component failure. They then replace that component and return the system to operational condition. Based on METT-TC (I), the Soldier can diagnose and replace subcomponent items depending on the availability of tools, parts, and time.

6-56. Replace forward means a Soldier performs "on-system" maintenance. "On-system" refers to replacing components or subcomponents at the point of repair, the breakdown site, or the MCP. Repair rear means that Soldiers perform "off-system" maintenance. "Off-system" refers to those actions taken to return components and subcomponents of weapons systems to serviceable condition. These repairs are performed at designated places throughout the battlefield.

Field Maintenance

6-57. Field maintenance is on-system maintenance and mainly involves preventive maintenance and replacement of defective parts. The goal of field maintenance is to repair and return equipment to the Soldier. It covers tasks previously assigned to operator/crew, organization/unit, and direct support maintenance levels. It includes some off-system maintenance critical to mission readiness.

6-58. PLs ensure that vehicle crews and equipment operators perform PMCS. To provide quick turnaround of maintenance problems, each maneuver company has a FMT from the supporting FSC team dedicated to support them. These FMTs have forward repair systems and mechanics trained to work on the company's equipment. The company 1SG usually positions the FMT in the company trains.

Sustainment Maintenance

6-59. Sustainment maintenance comprises repairing components off the user's platform. Those repaired components then go back into the supply system. Echelons above brigade combat team perform this level of maintenance. To maximize unit combat readiness, maintenance personnel must repair and return the equipment to the user as quickly as possible. Repairs should be made as far forward as possible.

Location of the Field Maintenance Team

6-60. During offensive operations, the FMT usually follows one terrain feature behind the company in the company trains. In the defense, it is usually located in a static location one terrain feature behind the company. This positioning enhances security and enables the FMT to react quickly when platoons request support. In some situations, METT-TC (I) factors dictate that the FMT be positioned at the MCP to further enhance security and survivability.

MAINTENANCE COLLECTION POINT OPERATIONS

6-61. When a vehicle or piece of equipment cannot be fixed quickly on site, it is moved to the CAB's MCP, where it is repaired by the FSC. The platoon may provide operators to go with the vehicle to the MCP. When not involved in on-site actions, the FMT can assist with operations in the MCP.

VEHICLE RECOVERY TECHNIQUES

6-62. Recovery is the process of freeing or retrieving immobile, inoperative, or abandoned equipment from its current position and returning it to service or to a maintenance site for repairs. These actions typically involve extracting, towing, lifting, or winching. Limit towing usually to a field maintenance site or the nearest MCP (See ATP 4-31)

6-63. If a BFV is disabled, immobile, gets stuck or will not start, the platoon and section must repair or recover it as quickly as possible. A stationary vehicle is vulnerable to direct fire, indirect fire, and air attack. During large-scale combat operations, the immobilized BFV presents a large target for the enemy; personnel not involved in the recovery operation should move a safe distance away and provide security. If the turret is still operational, both the gunner and driver remain with the vehicle. The gunner can still scan and engage targets until the vehicle is recovered.

6-64. If the vehicle cannot be recovered quickly, the PL may decide to reorganize Soldiers and equipment among the other vehicles and continue mission. The driver and gunner may be left with the disabled vehicle to wait for help, or the vehicle may have to be abandoned or destroyed in place if the enemy situation warrants and the crew has chain of command approval.

Note. Recovery operations on the battlefield and in general can be extremely hazardous. Conduct a risk assessment and safety must remain a top priority for each recovery mission. Proper maintenance of recovery vehicles and serviceability of authorized rigging and other equipment is essential to ensure safe recovery missions.

6-65. During the planning phase the PL and PSG should develop a plan of action for repair and or recovery of damaged and disabled equipment. This information is disseminated during the platoon OPORD and through subsequent rehearsals. Ensure PCCs include platoon recovery equipment such as tow bars, tow cables, and extraction straps. Ensure equipment is complete and are rated for the types of vehicles operating in the platoon. The PL and PSG need to know the location of the closest maintenance control point. Depending on the level or the severity of battle damage, recovery is usually by the following methods:

- Self-recovery.
- Like-vehicle recovery.
- Dedicated recovery.
- Expedients.

SELF-RECOVERY

6-66. Self-recovery starts at the location where the equipment becomes mired or disabled. The operator and crew use the basic issue items and additional authorized list or on-vehicle equipment items to perform self-recovery. When the equipment has a mechanical failure, the operator and crew will use the equipment's technical manual to perform troubleshooting procedures with the tools available in the basic issue items and additional authorized list or on-vehicle equipment. When self-recovery fails, the operator and crew can request assistance from available like vehicles. (See the appropriate technical manual.)

LIKE RECOVERY

6-67. Use like-vehicle recovery when self-vehicle recovery fails. The principle is to use another piece of equipment "of the same weight class or heavier" to extract the mired, disabled, or damaged equipment by using tow bars, chains, tow cables, and or approved recovery equipment. When self-recovery and like-recovery are not practical or are unavailable, put in a request to use dedicated recovery assets.

6-68. The most common form of self-recovery is recovery of like vehicle with a tow bar. Before using a tow bar (or any piece of recovery equipment), leaders and operators must answer the following questions:

- Is the tow bar safe to use?
- Does it have all the safety pins and clips?
- Is the tow bar approved and have the capacity to tow the disabled vehicle?
- Is the towing vehicle equal to or greater than the weight of the vehicle being towed?
- If towing vehicle is not sufficient, do not use (see appropriate technical manual).

DEDICATED RECOVERY

6-69. Dedicated recovery vehicles are specifically designed and equipped for recovering other vehicles. Wheeled wreckers and tracked recovery vehicles are examples. These are used when self-recovery or like-vehicle recovery is not possible because of the severity of the situation, safety considerations, or the inability to use like-vehicle assets employed in their primary mission. In general, wheel recovery systems recover wheeled vehicles, and track recovery systems recover tracked vehicles. Requests from the PSG or PL for dedicated recovery systems located with the FSC team go to the XO.

Note. Check the appropriate vehicle technical manual prior to recovery and towing operations. Crewmembers need to check technical manual towing requirements for safe recovery operations and use of tow bar and or cables. Technical manuals list vehicle operator requirements for moving the BFV, vehicle speeds and towing distances.

SECTION III – TACTICAL COMBAT CASUALTY CARE

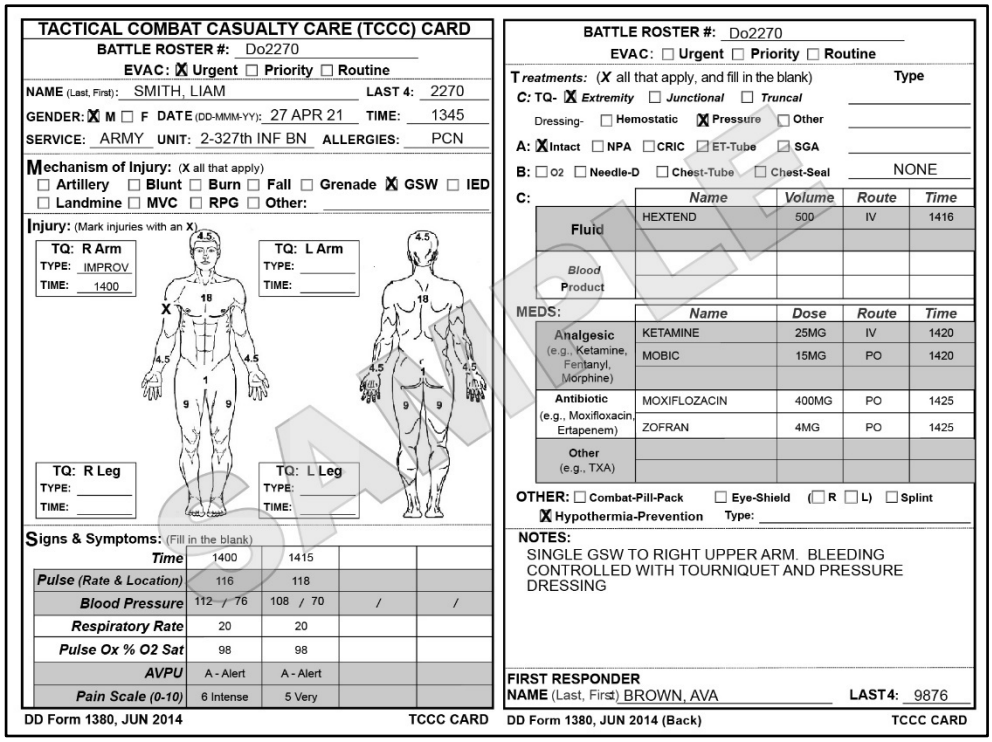
6-70. TCCC is divided into the three phases-care under fire, tactical field care, and tactical evacuation care. TCCC occurs during a combat mission and is the military counterpart to prehospital emergency medical treatment. (See FM 4-02 for additional information.)

CARE UNDER FIRE

6-71. In the care under fire phase, combat medical personnel and their units are under effective hostile fire and are very limited in the care they can provide. In essence, only those lifesaving interventions that must be performed immediately are undertaken during this phase. Casualty care under fire has a positive impact on the morale of a unit. Casualties are cared for at the POI (or under nearby cover and concealment) and receive self- or buddy-aid, advanced first aid from the CLS, and/or emergency medical treatment from the platoon or company combat medics.

Note. Nonmedical personnel, specifically individuals performing self-aid and buddy-aid and CLSs within the platoon, assist combat medics within platoons and the company senior combat medic in their duties. Individuals (self-aid and buddy-aid) and CLS administer appropriate TCCC. If needed, Soldiers are evacuated to the Role 1 medical treatment facility (MTF) (BAS) in the CAB support area, or the Role 2 MTF (brigade support medical company of the brigade support battalion in the brigade support area of the ABCT. (See ATP 3 90.1 and ATP 3-90.5 additional information.)

6-72. All platoon CLSs and the combat medic carry multiple blank versions of DD Form 1380 (see figure 6-3 on page 238) to document pre-MTF care at the POI, completing all entries as fully as possible. Such care relates to both battle and nonbattle injuries. Once completed, DD Form 1380 is visibly attached to the patient when transferred to the CCP and/or to a Role 1 or Role 2 MTF. All entries on the DD Form 1380 will be made using a non-smearing pen or marker. All entries on the DD Form 1380 should be printed clearly, including the first responder’s name.



TACTICAL COMBAT CASUALTY CARE (TCCC) CARD

BATTLE ROSTER #: Do2270

EVAC: [X] Urgent [ ] Priority [ ] Routine

NAME (Last, First): SMITH, LIAM LAST 4: 2270

GENDER: [X] M [ ] F DATE (DD-MMM-YY): 27 APR 21 TIME: 1345

SERVICE: ARMY UNIT: 2-327th INF BN ALLERGIES: PCN

Mechanism of Injury: (X all that apply)

[ ] Artillery [ ] Blunt [ ] Burn [ ] Fall [ ] Grenade [X] GSW [ ] IED

[ ] Landmine [ ] MVC [ ] RPG [ ] Other:

Injury: (Mark injuries with an X)

TQ: R Arm TYPE: IMPROV TIME: 1400

TQ: L Arm TYPE: TIME:

TQ: R Leg TYPE: TIME:

TQ: L Leg TYPE: TIME:

Signs & Symptoms: (Fill in the blank)

Time	1400	1415		
Pulse (Rate & Location)	116	118		
Blood Pressure	112 / 76	108 / 70	/	/
Respiratory Rate	20	20		
Pulse Ox % O2 Sat	98	98		
AVPU	A - Alert	A - Alert		
Pain Scale (0-10)	6 Intense	5 Very		

DD Form 1380, JUN 2014 TCCC CARD

BATTLE ROSTER #: Do2270

EVAC: [ ] Urgent [ ] Priority [ ] Routine

Treatments: (X all that apply, and fill in the blank) Type

C: TQ- [X] Extremity [ ] Junctional [ ] Truncal

Dressing- [ ] Hemostatic [X] Pressure [ ] Other

A: [X] Intact [ ] NPA [ ] CRIC [ ] ET-Tube [ ] SGA

B: [ ] O2 [ ] Needle-D [ ] Chest-Tube [ ] Chest-Seal NONE

C:

	Name	Volume	Route	Time
Fluid	HEXTEND	500	IV	1416
Blood Product				

MEDS:

	Name	Dose	Route	Time
Analgesic (e.g., Ketamine, Fentanyl, Morphine)	KETAMINE	25MG	IV	1420
	MOBIC	15MG	PO	1420
Antibiotic (e.g., Moxifloxacin, Ertapenem)	MOXIFLOZACIN	400MG	PO	1425
	ZOFRAN	4MG	PO	1425
Other (e.g., TXA)				

OTHER: [ ] Combat-Pill-Pack [ ] Eye-Shield ([ ] R [ ] L) [ ] Splint

[X] Hypothermia-Prevention Type:

NOTES:

SINGLE GSW TO RIGHT UPPER ARM. BLEEDING CONTROLLED WITH TOURNIQUET AND PRESSURE DRESSING

FIRST RESPONDER

NAME (Last, First) BROWN, AVA LAST4: 9876

DD Form 1380, JUN 2014 (Back) TCCC CARD

SAMPLE

Figure 6-3. DD Form 1380 (Tactical Combat Casualty Care [TCCC] Card)

6-73. During the fight, casualties should remain under cover where they received initial treatment (self-aid or buddy-aid). As soon as the situation allows, casualties are moved to the platoon CCP when established. Once treated by the combat medic in the platoon area, patients are normally evacuated to the company CCP and then back to the BAS. Unit SOPs address these activities, to include the marking of casualties in limited visibility operations. Small, standard, or IR chemical lights work well for this purpose. Once the casualties are collected, evaluated, and treated, they are prioritized for evacuation back to the company CCP. Once they arrive at the company CCP, the above process is repeated while awaiting their evacuation back to the CAB support area.

6-74. An effective technique, particularly during an attack, is to task-organize a logistics/aid and litter team under the 1SG. This team carries additional ammunition forward to the platoons and evacuates casualties to either the company CCP or the BAS. The commander determines the size of the team during mission analysis.

6-75. When the platoons are widely dispersed, casualties might be evacuated directly from the platoon CCP by nonmedical or medical vehicle or helicopter. Helicopter evacuation might be restricted due to the threat of enemy ground to air small arms, shoulder fired or other air defense weapons (surface to air). In some cases, the casualties must be moved to the company CCP before evacuation. If the capacity of the CAB's organic ambulances is exceeded, unit leaders may reassign supply or other nonmedical, nonstandard evacuation vehicles to backhaul or otherwise transport non-urgent

casualties to the BAS. In other cases, the PSG may direct platoon aid and litter teams to carry the casualties to the rear.

6-76. Leaders minimize the number of Soldiers required to evacuate casualties. Casualties with minor wounds can walk or even assist with carrying the more seriously wounded. Soldiers should use approved litters when available (rigid-litter, pole-less litter, collapsible/folding litter, or skid). Soldiers can make a travois which is field-expedient litters by cutting small trees and putting the poles through the sleeves of buttoned uniform blouses. A travois, or skid, might be used for CASEVAC. Wounded are strapped on this type of litter, then one person can pull it. It can be made locally from durable, rollable plastic. In rough terrain, or on patrols, litter teams evacuate casualties to the company CCP or BAS. They remain at the BAS until transportation is available to a Role 2- or 3-level care facility.

6-77. Unit SOP and OPORD address casualty treatment and evacuation in detail. They cover the duties and responsibilities of key personnel, the evacuation of contaminated casualties (on separate routes from noncontaminated casualties), and the priority for operating key weapons and positions. They specify preferred and alternate methods of evacuation and make provisions for retrieving and safeguarding the weapons, ammunition, and equipment of casualties. Slightly wounded personnel are treated and returned to duty by the lowest echelon possible. Platoon combat medics evaluate (under the control to the PSG) sick Soldiers and either treat or evacuate them as necessary. MEDEVAC and CASEVAC are rehearsed like any other critical part of an operation.

6-78. As casualties occur, the nearest observer informs the PSG who then informs the 1SG via the most expedient method available (for example, radio voice). The 1SG then submits a personnel status report to the CAB personnel staff officer section. This report documents duty status changes on all casualties. A casualty report is filled out when a casualty occurs, or as soon as the tactical situation permits. This usually is done by the Soldier's squad leader and turned into the PSG, who forwards it to the 1SG. A brief description of how the casualty occurred (including the place, time, and activity being performed) and who or what inflicted the wound is included. If the squad leader does not have personal knowledge of how the casualty occurred, the squad leader gets this information from Soldiers who have the knowledge.

6-79. DA Form 1156 *(Casualty Feeder Card)* (see figures 6-4 and 6-5 on page 240) are used to report those Soldiers who have been killed and recovered, and those who have been wounded. This form also is used to report captured or killed in action Soldiers who are missing or not recovered. The Soldier with the most knowledge of the incident should complete the witness statement. During lulls in the battle, the platoon forwards casualty information to the company HQ. The 1SG ensures a completed DA Form 1156 is forwarded to the CAB personnel staff officer, who then enters the data into the Defense Casualty Information Processing System.

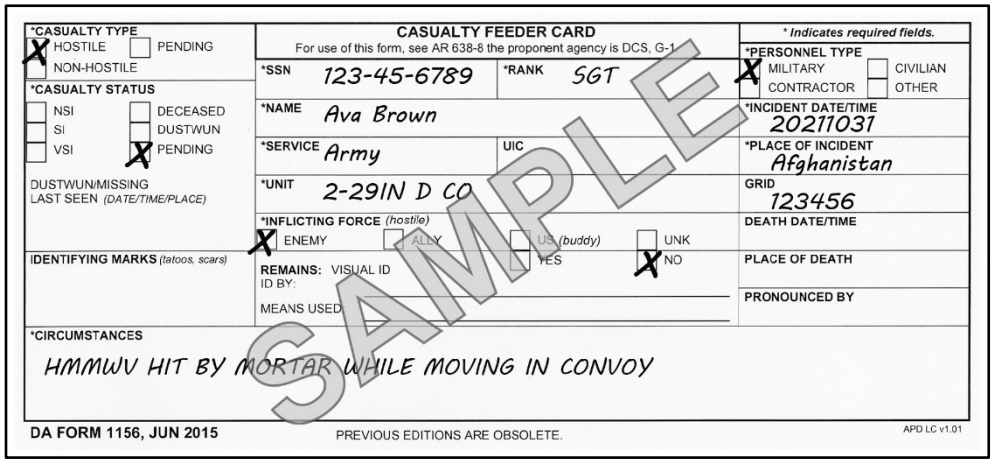


Figure 6-4. DA Form 1156 (Casualty Feeder Card [front])

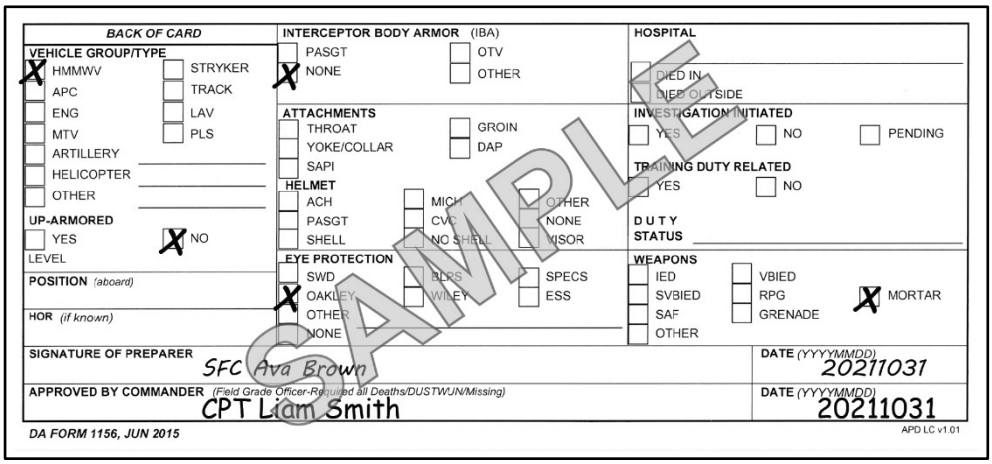


Figure 6-5. DA Form 1156 (Casualty Feeder Card [back])

6-80. Before casualties are evacuated to the CCP or beyond, leaders remove all key operational or sensitive items and equipment, including communications security devices or signal operating instructions, maps, position location devices. Every unit should establish an SOP for handling the weapons and ammunition of its wounded or killed in action. Protective masks must stay with the individual.

6-81. Casualties are taken to CCP for classification based on their medical condition, assigned evacuation precedence (urgent, priority, routine, and convenience), and availability of MEDEVAC platforms. Within a CCP, the combat medic conducts triage of all patients, takes the necessary steps to stabilize their conditions, and initiates the process of evacuating them to the rear for further treatment. Within a CCP, the combat medic conducts triage of all patients, takes the necessary steps to stabilize their conditions, and initiates the process of evacuating them to the ambulance exchange point/BAS for further treatment.

Note. See FM 4-02 and ATP 4-02.2 for a detailed discussion of evacuation precedence for Army operations at Roles 1 through 3 MTFs.

6-82. The ambulance team supporting the company or platoon works in coordination with the PSG and platoon combat medic. In mass casualty situations, nonmedical vehicles can be used to assist in CASEVAC as directed by the PL or company commander. Plans for the use of nonmedical vehicles to perform CASEVAC should be included in the unit SOP. Ground ambulances from the brigade support medical company or other supporting ambulances evacuate patients from the BAS back to the brigade support medical company MTF located in the brigade support area.

TACTICAL FIELD CARE

6-83. During the tactical field care phase, medical personnel and their patients are no longer under effective hostile fire and medical personnel can provide more extensive patient care. In this phase, interventions directed at other life-threatening conditions, as well as resuscitation and other measures to increase the comfort of the patient may be performed. The physician and physician assistant at the BAS or during tailgate medicine support provide TCCC. Tailgate medical support refers to an economy of force device employed primarily to retain maximum mobility during movement halts or to avoid the time and effort required to set up a formal, operational treatment facility (for example, during rapid advance and retrograde operations) (see FM 4-02). During tactical field care, personnel must be prepared to transition back to care under fire or to prepare the casualty for tactical evacuation, as the tactical situation dictates. (See FM 4-02 and ATP 4-02.4 for more information on tactical field care.)

6-84. The CABs organic medical resources within its HQ and HQ company include a medical platoon staffed with a field surgeon, physician assistant, and numerous combat medics. The mission of the battalion medical platoon is to provide Role 1 Army Health System support to the Soldiers of the Infantry battalion. Role 1 (also referred to as unit-level medical care) is the first medical care a Soldier receives. The medical platoon within the CAB is configured with a HQ section, medical treatment squad, ambulance squad (ground), and combat medic section. The treatment squad consists of two teams (treatment team alpha and team bravo). The treatment squad operates the BAS and provides Role 1 medical care and treatment (to include disease and nonbattle injury prevention, sick call, emergency medical treatment [including TCCC], and patient decontamination). Team alpha is clinically staffed with the physician assistant while team bravo is clinically staffed with the field surgeon. Medical platoon ambulances provide MEDEVAC and enroute care from the Soldiers' POI, the CCP, or an ambulance exchange point to the BAS. The ambulance squad is four teams of two ambulances composed of one emergency care sergeant and two ambulance aide/drivers assigned to each ambulance. (See ATP 4-02.4 for additional information on the medical platoon.)

TACTICAL EVACUATION

6-85. In the tactical evacuation phase, casualties are transported from the battlefield to an MTF, which provide medical treatment. The MTFs include the Role 1 facility (BAS), Role 2 facility brigade support medical company of the brigade support battalion, dispensaries, clinics, and hospital. Evacuation can be by either MEDEVAC (dedicated

platforms [ground or air] manned with dedicated medical providers) or CASEVAC (ranging from nondedicated, but tasked, platforms [ground or air] augmented with medical equipment and providers to platforms of opportunity without medical equipment or providers).

6-86. *Medical evacuation* is the timely and effective movement of the wounded, injured, or ill to and between medical treatment facilities on dedicated and properly marked medical platforms with en route care provided by medical personnel (ATP 4-02.2). MEDEVAC includes the provision of enroute medical care, whereas CASEVACs may not provide proper medical care during movement. MEDEVAC is the key factor to ensuring the continuity of care to Soldiers by providing care during evacuation and facilitating the transfer of patients between MTFs to receive required specialty care. This ensures that medical resources (personnel, equipment, and supplies [to include blood]) can be rapidly transported to areas of critical need on the battlefield.

6-87. *Casualty evacuation* is the movement of casualties aboard nonmedical vehicles or aircraft without en route medical care (FM 4- 02). CASEVAC encompasses a wide spectrum of potential capability depending on the mix of transport platform, medical equipment, and medical providers allocated to the mission. At the upper end of the spectrum, nondedicated platforms can be outfitted with the requisite medical equipment and MEDEVAC assets. At the lower end of the spectrum, CASEVAC can be no more than the transport of casualties using platforms of opportunity with no medical equipment or medical providers (in using such assets, the risk of not moving the casualty must outweigh the risk evacuating the casualty in such a manner). Effective CASEVAC complements MEDEVAC by providing additional evacuation capacity when number of casualties (workload) or reaction time exceeds the capabilities of MEDEVAC assets. CASEVAC requires detailed assessment and planning to achieve an effective integration of MEDEVAC and CASEVAC capabilities. (See ATP 4-02.13 for more information on CASEVAC.)

WARNING

Casualties transported in nonmedical vehicles may not receive proper enroute medical care or be transported to the appropriate MTF to address the patient's medical condition. If the casualty's medical condition deteriorates during transport or the casualty is not transported to the appropriate MTF, an adverse impact on their prognosis and long-term disability or death may result.

6-88. The Army MEDEVAC system is comprised of dedicated, standardized MEDEVAC platforms (ground and air ambulances). These ground and air ambulances have been designed, staffed, and equipped to provide enroute medical care to patients being evacuated and are used exclusively to support the medical mission, in accordance with the law of armed conflict and the Geneva Conventions (see FM 6-27).

6-89. Dedicated air MEDEVAC aircraft include specifically trained medical personnel to provide enroute care. The 9-line MEDEVAC Request Card (GTA 08-01-004) is the standard method to request air ambulance MEDEVAC (see figures 6-6 and 6-7 on page 244). For additional information on the MEDEVAC request, refer to FM 6-99 and ATP 4-02.2.

MEDEVAC REQUEST CARD GTA 08-01-004

LINE	ITEM	EVACUATION REQUEST MESSAGE
1	Location of Pickup Site.	16SGL05608320
2	Radio Frequ., Call Sign, & Suffix.	32.000; H7
3	No. of Patients by Precedence.	x1-A; x1-C
4	Special Equipment Required.	D
5	Number of Patients by Type.	L+1; A+1
6	Security of Pickup Site (Wartime).	P
6	Number and Type of Wound, Injury, or Illness (Peacetime).	L+1 Gunshot wound to the chest, bleeding stopped, A+. A+1 Shrapnel to the shoulder, bleeding stopped, B+.
7	Method of Marking Pickup Site.	C
8	Patient Nationality and Status.	A
9	NBC Contamination (Wartime).	None
9	Terrain Description (Peacetime).	Leyte helipad, paved.

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SAMPLE

Figure 6-6. GTA 08-01-004 (MEDEVAC Request Card [front])

LINE ITEM	EXPLANATION
1. Location of Pickup Site.	Encrypt grid coordinates. When using *DRYAD Numeral Cipher, the same SET line* will be used to encrypt grid zone letters and coordinates. To preclude misunderstanding, a statement is made that grid zone letters are included in the message (unless unit SOP specifies its use at all times).
2. Radio Frequency, Call Sign, Suffix.	Encrypt the frequency of the radio at the pickup site, *not* a relay frequency. The call sign (and suffix if used) of person to be contacted at the pickup site may be transmitted in the clear.
3. No. of Patients by Precedence.	Report only applicable info & encrypt brevity codes. A = Urgent, B = Urgent-Surg, C = Priority, D = Routine, E = Convenience. (If 2 or more categories reported in same request, insert the word "break" btwn. each category.)
4. Spec Equipment.	Encrypt applicable brevity codes. A = None, B = Hoist, C = Extraction equipment, D = Ventilator.
5. No. of Patients by Type.	Report only applicable information and encrypt brevity code. If requesting MEDEVAC for both types, insert the word "break" between the litter entry and ambulatory entry: L + # of Pnt -Litter; A + # of Pnt - Ambul (sitting).
6. Security Pickup Site (Wartime).	N = No enemy troops in area, P = Possibly enemy troops in area (approach with caution), E = Enemy troops in area (approach with caution), X = Enemy troops in area (armed escort required).
6. Number and type of Wound, Injury, Illness (Peacetime).	Specific information regarding patient wounds by type (gunshot or shrapnel). Report serious bleeding, along with patient blood type, if known.
7. Method of Marking Pickup Site.	Encrypt the brevity codes. *A* = Panels, *B* = Pyrotechnic signal, *C* = Smoke Signal, *D* = None, *E* = Other.
8. Patient Nationality and Status.	Number of patients in each category need not be transmitted. Encrypt only applicable brevity codes. A = US military, B = US civilian, C = Non-US mil, D = Non-US civilian, E = EPW.
9. NBC Contamination, (Wartime).	Include this line only when applicable. Encrypt the applicable brevity codes. N = nuclear, B = biological, C = chemical.
9. Terrain Description (Peacetime).	Include details of terrain features in and around proposed landing site. If possible, describe the relationship of site to a prominent terrain feature (lake, mountain, tower).

Reference: ATP 4-02.2, *Medical Evacuation.*

SAMPLE

Figure 6-7. GTA 08-01-004 (MEDEVAC Request Card [back])

Appendix A

Direct Fire Planning and Control

Direct fire planning is fundamentally the same for both offensive and defensive operations. The challenge for mechanized Infantry platoons in the offense is to control the focus and distribution of fires on the move against a generally static enemy. In the defense, the goal is to build an EA where the leaders can mass fires by properly focusing and distributing the platoon's firepower. The PL must be able to mass the fires of all available resources at critical points and times to be successful on the battlefield. To achieve this, the Mechanized Infantry PL must understand how to integrate the fires of both the BFVs and the Infantry squads. These fires must be controlled so that the platoon can effectively distribute the effects of fires through the width and depth of planned, or unplanned, targets or EAs. Effective planning also allows the platoon to focus their fires on portions of a planned target or rapidly shift between targets as the need arises. This appendix discusses principles of fire control process, direct fire planning, and direct fire control.

SECTION I – FIRE CONTROL TECHNIQUES

A-1. The mechanized Infantry PL must effectively plan to focus, distribute, and shift the overwhelming mass of their direct fire capability at critical locations and times to succeed on the battlefield. Effective and efficient fire control means that the platoon acquires the enemy and masses the effects of direct fires to achieve decisive results in the close fight. Paragraphs below describe in detail how to focus, distribute, control, and shift fires.

A-2. Focus: An effective direct fire plan uses designated DFCM assigned targets, or known man-made or natural objects, or terrain features to allow the platoon to tightly focus fires on a concentrated point. For instance, the platoon directs all its fires at TRP 1.

A-3. Distribute: An effective direct fire plan uses DFCM or directed engagement priorities to ensure the platoon's fires are distributed throughout the width and depth of an enemy formation or a planned EA. For instance, designating a quadrant, or directing the Alpha section to fire between TRPs 1-2 while the Bravo section fires between TRP 2-3. Assigning fire patterns or sectors of fire also helps ensure fires are distributed appropriately. The leader should develop engagement priorities to assist in distributing fires. For example, designating the leader vehicles to engage heavy armor and the wing vehicle to engage light armor is another way of distributing fires to reduce overkill.

A-4. Control: The PL builds and rehearses a plan and then, in execution, the PL (or PSG) controls the fires through actively monitoring and directing fires through the use of fire commands to fight the platoon.

A-5. Shift: An effective direct fire plan uses DFCM to allow the leaders to shift fires from one place to another within the assigned area as the need arises. This shift could be between planned DFCM or ad hoc control measures designated to engage unplanned threat targets. For instance, the platoon has focused their fires at TRP 1; however, a new threat emerges at TRP 3, or in an unanticipated area for which the leader designates a target array (Section III). Shifting fires also occurs in the normal context of serving as a control measure to protect friendly forces as they advance within a target area.

A-6. *Target acquisition* is the detection, identification, and location of a target in sufficient detail to permit the effective employment of capabilities that create the required effects (JP 3-60). Target acquisition is further described as the discovery of any object in the OE such as personnel, vehicles, equipment, or objects of potential military significance. Target acquisition occurs during target search as a direct result of observation and the detection process.

A-7. Massing of fires is not simply the number of systems or rounds fired but entails focusing fires at critical points and distributing the fires for optimum effect in terms of both destructive and psychological impacts on the enemy while minimizing overkill. The ideal mass for a mechanized Infantry platoon would be synchronizing fires using BFVs for enemy tanks and armored vehicles, and Infantry squads for enemy dismounts. Platoons should mass fires on the immediate threat but should have a plan to control fires to avoid target overkill. (See ATP 3-90.1.)

FIRE CONTROL PROCESS

A-8. To bring direct fire against an enemy force successfully, leaders must continuously apply the steps of the fire control process. At the heart of this process are two critical actions: rapid, accurate target acquisition and the massing of fire to achieve decisive effects on the target. Target acquisition is the detection, identification, and location of a target in sufficient detail to permit the employment of weapons. Massing entails focusing fires at critical points and distributing the fires for optimum effect.

A-9. The following examines target acquisition and massing of fires using these basic steps of the fire control process (see ATP 3-90.1 for detailed description):

- Identify probable enemy locations and determine the enemy scheme of maneuver.
- Determine where and how to mass fires.
- Orient forces to speed target acquisition.
- Shift fires to refocus or redistribute.

IDENTIFY PROBABLE ENEMY LOCATIONS AND DETERMINE THE ENEMY SCHEME OF MANEUVER

A-10. Leader's plan and execute direct fires based on their mission analysis. An essential part of this process is the analysis of the terrain and enemy force, which aids the leader in visualizing how the enemy will attack or defend a particular piece of terrain. A defending enemy's defensive positions or an attacking enemy's support positions are normally driven by intervisibility. Typically, there are limited points on a piece of terrain providing both good fields of fire and adequate cover for a mechanized Infantry platoon.

Similarly, an attacking enemy will have only a limited selection of avenues of approach providing adequate cover and concealment.

A-11. Coupled with available terrain analysis products and intelligence products and assessments, an understanding of the effects of a specific piece of terrain on maneuver (see figure A-1) will assist leaders in identifying probable enemy locations and likely avenues of approach, both before and during the fight. Leaders may use all the following products or techniques in developing and updating the analysis:

- Enemy situational template based on the analysis of terrain and enemy.
- Spot or contact report of enemy locations and activities.
- Information collection within the assigned area.

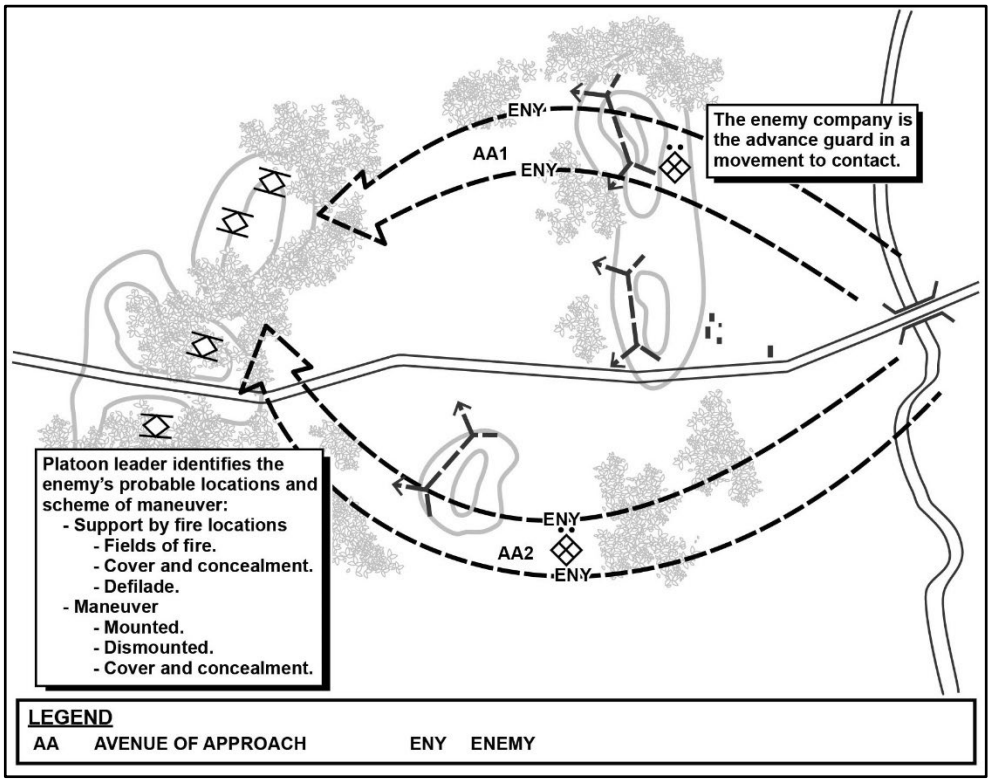


Figure A-1. Identify probable enemy locations and scheme of maneuver

DETERMINE WHERE AND HOW TO MASS FIRES

A-12. To achieve decisive effects, friendly forces must mass their fires. (See figure A-2 on page 248.) Massing requires leaders to focus the fires of subordinate elements and to distribute the effects of the fires. Based on their mission analysis and their concept of operations, leaders identify points where they want to, or must, focus the unit's fires. Most often, these are locations they have identified as probable enemy positions or points along likely avenues of approach where the unit can mass fires. Because subordinate elements may not initially be oriented on the point where leaders want to mass fires, they may issue a fire command to focus the fires. At the same time, leaders

must use DFCM to distribute the fires of subordinate elements, which now are focused on the same point.

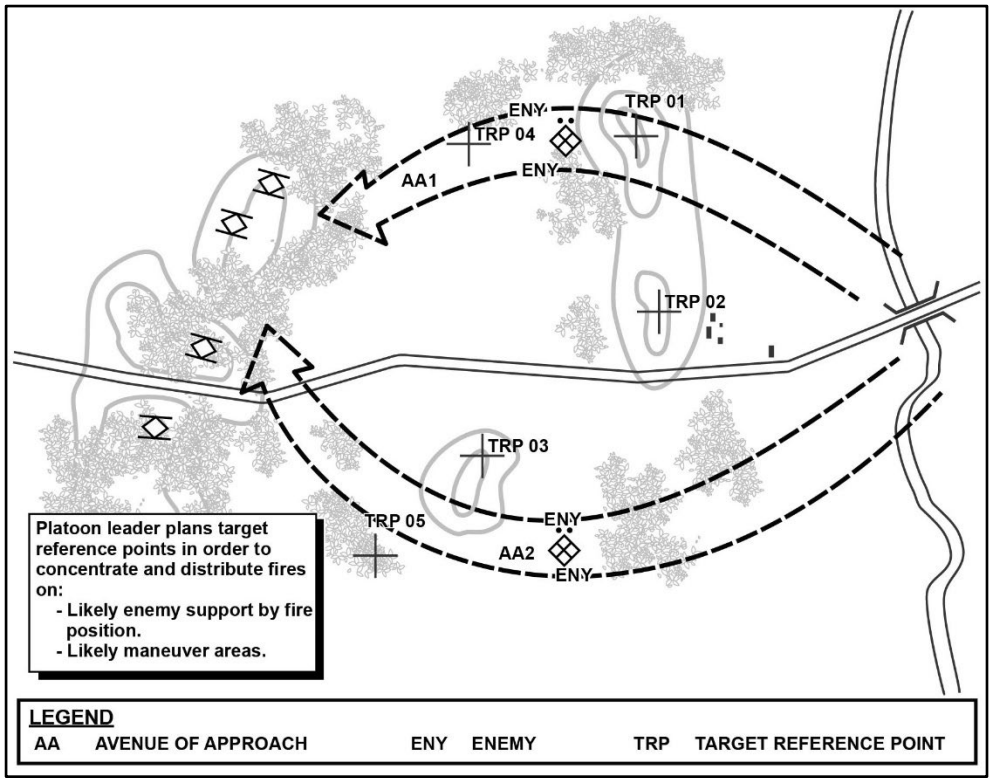


Figure A-2. Determine where and how to mass fires

ORIENT FORCES TO SPEED TARGET ACQUISITION

A-13. To engage the enemy with direct fires, friendly forces must rapidly and accurately acquire enemy elements. (See figure A-3.) Orienting friendly forces on probable enemy locations and on likely avenues of approach will speed target acquisition. Failure to orient subordinate elements will result in slower acquisition; this greatly increases the likelihood enemy forces will be able to engage first. The clock direction orientation method, which is prescribed in most unit tactical SOPs, is adequate for achieving all-around security and works well for dismounted Infantry. However, due to the spacing of BFVs, the clock method is not the most accurate way to orient friendly forces to the enemy. To achieve this critical orientation, leaders typically designate TRPs on or near probable enemy locations and avenues of approach; they orient subordinate elements using directions of fire or sectors of fire. Normally, BFV gunners and dismounted Infantry scan the primary designated direction or sector, while other selected Infantry and crewmembers observe alternate sectors or areas to provide all-around security.

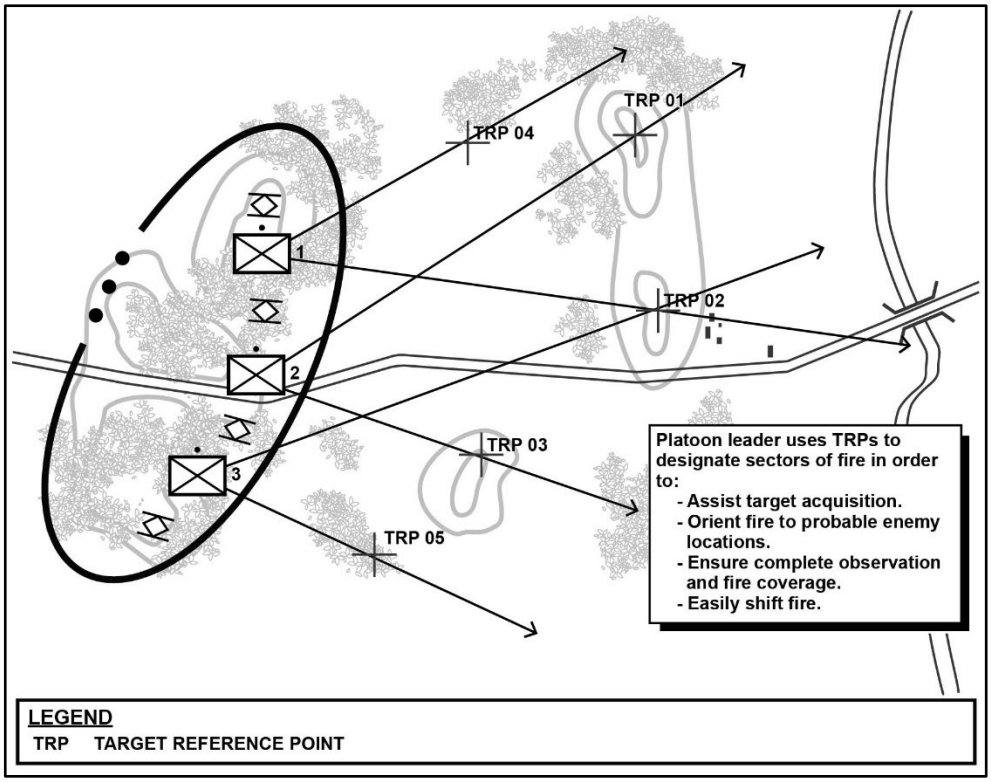


Figure A-3. Orient forces to speed target acquisition

SHIFT FIRE TO REFOCUS AND REDISTRIBUTE

A-14. As the engagement proceeds, leaders must shift fire to refocus and redistribute the effects based on their evolving mission analysis. Situational awareness becomes an essential part of the fire control process at this point. Leaders apply the same techniques and considerations, including fire control measures they used earlier to focus and distribute fires (see figure A-4 on page 250). A variety of situations will dictate shifting of fires, including the following:

- Appearance of an enemy force posing a greater threat than the one currently being engaged.
- Extensive attrition of the enemy force being engaged, creating the possibility of target overkill.
- Attrition of friendly elements engaging the enemy force.
- Change in the ammunition status of the friendly elements engaging the enemy force.
- Maneuver of enemy or friendly forces resulting in terrain masking.
- Increased fratricide risk as a maneuvering friendly element closes with the enemy force being engaged.

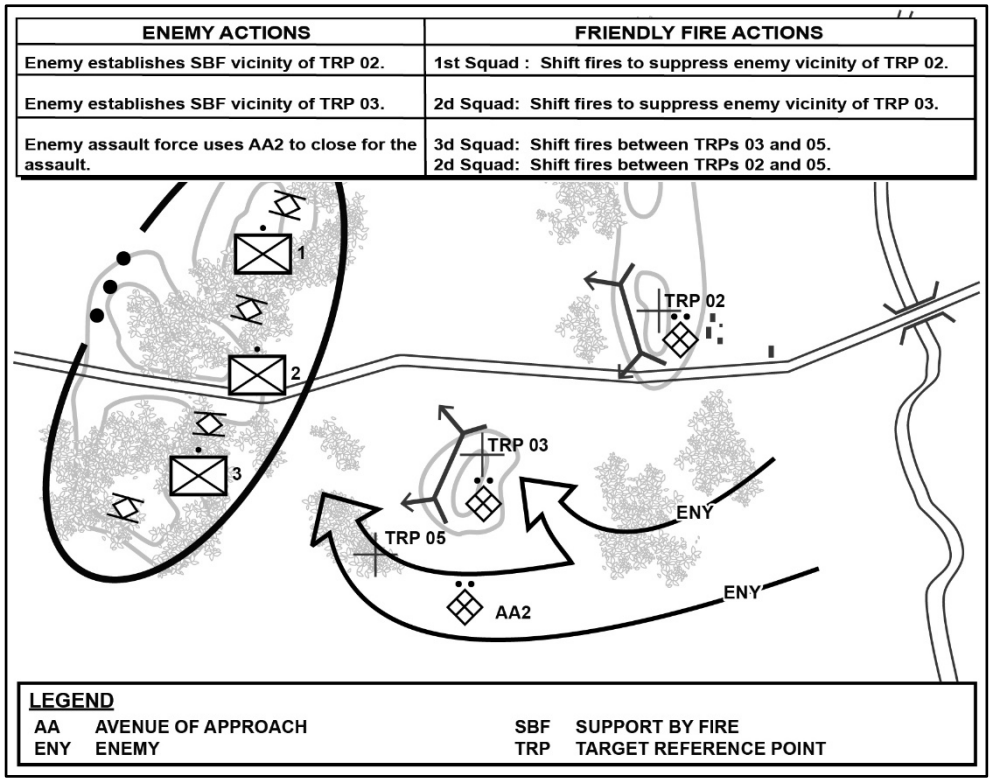


Figure A-4. Shift fire to refocus and redistribute

PRINCIPLES FOR DIRECT FIRE PLANNING AND CONTROL

A-15. When planning and executing fires, Infantry leaders must know how to apply fundamental principles. These principles allow the platoon and squad to destroy the enemy while protecting itself and expending the least amount of ammunition. These principles are not to restrict the actions of subordinates but to facilitate their ability to acquire and to engage with direct fire against the threat. These principles are—

- Destroy the greatest threat first.
- Mass the effects of direct fire.
- Employ the best weapon for the specific target.
- Avoid target overkill.
- Minimize exposure.
- Plan and implement control measures.
- Plan for limited-visibility conditions.
- Plan for degraded capabilities.

DESTROY THE GREATEST THREAT FIRST

A-16. The order in which the platoon engages enemy forces directly relates to the danger they present and how the engagement will seize the initiative. PLs should assess the greatest threat not only in terms of capability, but also how a given target nests within the enemy's capabilities and desired friendly end state. The enemy forces' threat depends on their weapons, range, and positioning in relation to and comparison to the platoon. In general, a platoon when presented with multiple targets, should initially concentrate fires to destroy the greatest threat, and then distribute fires over the remainder of the enemy force. At the tactical unit level, the greatest threat may be an enemy command and control system, which directs the fires and maneuver of the enemy force.

MASS THE EFFECTS OF FIRE

A-17. PL's mass direct fires to achieve decisive results. Massing direct fires entails focusing available direct fires at critical points and distributing the effects. Random application of direct fires is unlikely to have a desired effect on the enemy.

EMPLOY THE BEST WEAPON FOR SPECIFIC TARGET

A-18. Using the appropriate weapon for the target increases the probability of rapid enemy destruction or suppression; at the same time, it saves ammunition. The platoon has many weapons with which to engage the enemy. Target type, range, and exposure are key factors in determining the weapon and ammunition that should be employed, as are weapons and ammunition availability and desired targets effects. Additionally, PLs should consider individual crew capabilities and proficiency when deciding on the employment of weapons systems. The PL task-organizes, and arrays forces based on the terrain, enemy, and desired effects of fires. For example, if an enemy dismounted assault is expected in restricted terrain, the PL would employ Infantry squads, taking advantage of their ability to best engage numerous targets, using the BFVs in support.

AVOID TARGET OVERKILL

A-19. Target overkill—the overuse of weapon systems to achieve an effect—wastes ammunition and ties up weapons that are better employed acquiring and engaging other threats. Having every weapon engage a different threat, however, must be tempered by the requirement to destroy the greatest threats first. PLs use only the amount of fire required to achieve the necessary effects. There may be reasons to demonstrate target overkill as a method directed against enemy morale in specific conditions related to commander's intent.

MINIMIZE EXPOSURE

A-20. Platoons increase their survivability by exposing themselves to the enemy only to the extent necessary to engage them effectively. Natural or artificial defilade provides the best cover from lethal direct fire munitions. BFV Crews and Infantry squads minimize their exposure by constantly seeking effective available cover, attempting to engage the enemy from the flank, remaining dispersed, firing from multiple positions, and limiting engagement times. Conversely, the overreliance on covered positions can result in individual vehicles or the entire platoon becoming fixed in position. The PL

must develop displacement criteria and carefully monitor the platoon to ensure they don't become fixed in place by an aggressive enemy force.

PLAN AND IMPLEMENT CONTROL MEASURES

A-21. The PL has numerous tools to assist in the planning and implementation of controlling direct fires. These tools include graphic control measures for friendly forces, engagement criteria, identification training for combat vehicles and aircraft, unit weapons safety posture, WCS, recognition markings, and a situational understanding to include Standard Range Cards, sector sketches, and rehearsals. Knowledge and employment of applicable control measures are the primary means of preventing fratricide and noncombatant casualties.

PLAN FOR LIMITED VISIBILITY CONDITIONS

A-22. Platoons operating during hours of limited visibility can engage enemy forces at nearly the same range as during daylight hours with limited-visibility fire control equipment. Platoons should inspect and bring their limited-visibility equipment prior to conducting operations. This prevents Soldiers from becoming unprepared to the changes in the weather and from daylight to nighttime.

A-23. Obscurants such as dense fog, heavy smoke, and blowing sand can reduce the capabilities of thermal and IR equipment. Although decreased acquisition capabilities have minimal effect on area fire, point target engagements can occur at decreased ranges. The platoon develops contingency plans for such extreme limited-visibility conditions, such as establishing listening posts, trigger lines, and TRPs capable of visual contact with thermals.

PLAN FOR DEGRADED CAPABILITIES

A-24. PLs initially develop plans based on their units' maximum capabilities; they make backup plans for implementation if casualties occur or if weapons are damaged or fail. While leaders cannot anticipate or plan for every situation, they should develop plans for what they view as the most probable occurrences. Building redundancy into these plans, such as having two systems observe the same sector, is an invaluable asset when the situation (and the number of available systems) permits. Designating secondary sectors of fire provides a means of shifting fire if adjacent elements are out of action.

SECTION II – DIRECT FIRE PLANNING

A-25. Platoon and squad leaders must plan how to employ their units to destroy and defeat the enemy. They must maneuver their unit to bring the maximum fire on the enemy. The PL must plan how to organize, sequence, and maneuver their platoon to obtain the best effect on enemy forces.

A-26. Direct fire planning is fundamentally the same for both offensive and defensive operations. The challenge for the platoon in the offense is to control the focus and distribution of fires on the move against a generally static enemy. While in the defense, the goal is to build an EA where the leaders can mass fires by properly focusing and distributing the platoon's firepower.

LEADER PLANNING OVERVIEW

A-27. The PL plans direct fire in conjunction with development of their estimate of the situation and completion of the plan. Determining where and how the platoon can and will mass fires are an essential step as the leaders develop the concept of the operation.

A-28. After identifying probable enemy locations, the PL determines points or areas where they will focus combat power. The visualization of where and how the enemy will attack or defend will assist in determining the volume of fire they must focus on points to have a decisive effect. If leaders intend to mass the fires of more than one subordinate element, they must establish the means for distributing fires effectively.

A-29. Based on where and how they want to focus and distribute fires, PL and subordinate leaders select appropriate DFCM, engagement criteria and priorities, establish the weapons ready postures for BFVs and dismounted Infantry elements, and triggers for initiating fires. Leaders understand probable methods of engagement and anticipate how they will initiate and control direct fire. Using this understanding, leaders develop likely fire commands based on anticipated enemy target arrays. Leaders refine that understanding by considering how the enemy formation will change after initial engagements. Leaders must evaluate the risk of fratricide and establish controls to prevent it; these measures include designation of recognition markings, WCS, and weapons safety posture.

A-30. Having determined where and how they will mass and distribute fires; the PL must orient sections and squads so they can rapidly and accurately acquire the enemy. They can rehearse the selected COA or concept of the operation to determine probable requirements for refocusing and redistributing fires and to establish other required control measures. During mission preparation, the PL and subordinate leaders plan and conduct rehearsals of direct fire (and of the fire control process) based on the estimate of the situation.

A-31. The end state of direct fire planning is an understanding of how the leaders will fight the platoon in contact, linked to the enemy's anticipated scheme of maneuver. The completed plan is disseminated, rehearsed, and refined during TLP. The completed plan takes the principles of direct fire planning into account and ensures understanding of—

- Required DFCM.
- Where the platoon will mass fires to achieve success.
- How and where the platoon will distribute, focus, and shift direct fire.
- Engagement priorities and engagement criteria.
- Methods of control.
- Probable or potential fire commands for the platoon, sections, and squads.
- How to respond if the enemy situation deviates from the plan.

A-32. Failure to have a detailed plan for direct fires results in the platoon's inability to effectively mass fires and generally manifests in the form of vehicle crews or squads engaging the enemy as individual elements rather than part of platoon plan.

STANDARD OPERATING PROCEDURES

A-33. A well-rehearsed direct fire SOP ensures quick, predictable actions by all members of the platoon and company. The direct fire SOP can be standardized to include

TRP numbering conventions, labeling of target arrays, establishing 'floating' TRPs, sectors of fire, planned WCS, anticipated threat, and battle sight ranges.

A-34. If the commander does not issue any other instructions, the company begins the engagement using the SOP. The PL can subsequently use a fire command to refocus or redistribute fires. Paragraphs A-35 to A-39 discuss specific elements for focusing fires, distributing fires, orienting forces, and preventing fratricide that should be included in the SOP.

FOCUSING FIRE

A-35. TRPs are a common means of focusing fire in both offensive and defensive operations. One technique is to establish a standard respective position for TRPs in relation to friendly elements and then to consistently number the TRPs, such as from left to right. This allows leaders to determine and communicate the location of the TRPs quickly. Unless tied to specific terrain features (as in the defense), these "floating" TRPs may be designated by SOP with TRP 1 generally at a 45-degree angle to the left front, or 10 o'clock, TRP 2 at 12 o'clock, and TRP 3 at a 45-degree angle to the right front or 2 o'clock, and those TRPs advance as the platoon advances. This is useful for rapid general orientation or reporting. Also in the offense, platoons may designate TRPs on anticipated threat positions; for example, the PL may designate a TRP on a templated enemy anti-armor position covering the route of advance, and task a specific BFV to orient on it when it comes into view.

DISTRIBUTING FIRE

A-36. Platoons distribute fires by establishing engagement priorities and target arrays. Leaders designate engagement priorities by using the appropriate weapon system on select targets. Example is using the BFVs for enemy armored vehicles, wheeled vehicles, and heavy weapons positions (BFVs engage armored vehicles first, then other antitank or heavy weapons). Then using the dismounted Infantry to engage personnel. DFCMs aid in distributing fires as well. For example, Alpha Section may be tasked to engage enemy forces between TRP 1 and 2 while Bravo section engages between TRP 2 and 3. The target array technique can assist in distribution by assigning specific friendly elements to engage enemy elements of approximately similar capabilities. Used in either the offense or defense, a quadrant is another useful SOP item for distributing fires.

ORIENTING FORCES

A-37. A standard means of orienting friendly forces is to assign a primary direction of fire or using TRPs to orient each element on a probable enemy position or likely avenue of approach. To provide all-around security, the SOP can supplement the primary direction of fire with primary and alternate sectors or establish quadrants. The following example SOP elements illustrate these techniques:

- The left flank section or squad primary direction of fire is TRP 1 until otherwise specified.
- The left flank is responsible for left quadrants (overlapping with center).
- The center section or squad primary direction of fire is TRP 2 until otherwise specified.

- The center section is responsible for center quadrants (overlapping with left and right).
- The right flank section or squad primary direction of fire is TRP 3 until otherwise specified.
- The right flank is responsible for right quadrant (overlapping with center).
- Platoons should establish SOPs for offensive fire commands that orient forces during contact front, left, right, and rear while moving (see fire commands).
- Platoons should establish SOPs for bringing vehicles out of defilade in the defense to engage targets.

AVOIDING FRATRICIDE

A-38. The SOP must address the most critical requirement of fratricide prevention and maintaining situational awareness. It must direct subordinate leaders to inform the commander, adjacent elements, and subordinates whenever a friendly force is moving or preparing to move.

A-39. A primary means of avoiding fratricide is to establish a standing WCS of WEAPONS TIGHT, which requires positive enemy identification before engagement. The SOP must dictate ways of identifying friendly vehicles, squads, and other dismounted elements. Techniques include marking positions, heat source for thermal identification, combat identification panels, restricted fire lines, IR light source or detonating a smoke grenade of a designated color at the appropriate time. Minimizing the risk of fratricide in the platoon or company can be accomplished through a digital command and control system (if equipped); however, this does not replace the PL's responsibility to plan for fratricide avoidance.

SURFACE DANGER AREAS

A-40. Mechanized Infantry PLs must consider the SDZs of combat vehicle weapon systems operating within their units. This information is crucial for leaders to develop safe direct fire control plans. Application of SDZs prevents fratricide and maximizes direct fire upon the enemy.

A-41. Each weapon system has a unique SDZ, and SDZs are the minimum safe distance and angles considered when operating in close proximity to weapon systems. SDZs take into consideration a round's maximum distance, lateral dispersion, and back blast (if applicable). This information allows leaders to plan for safe and effective maneuver of forces. Figures A-5 and A-6 give examples of BFV and TOW SDZs. (See DA Pam 385-63 for more information on SDZs). When working with tanks see ATP 3-20.15 for SDZs.

BRADLEY FIGHTING VEHICLE

A-42. The APDS-T round creates a hazardous situation for exposed personnel because of the discarding petals of sabot that are thrown off the round. These discarding petals could injure or kill personnel not under cover forward of the 25-mm gun's muzzle and within the danger zone. Crew members must consider the safety of the Soldiers on the ground prior to firing any ammunition with discarding sabot projectiles. The danger

zone extends at an angle of about 10 degrees below the muzzle level, out to at least 100 meters, and about 30 degrees left and right of the muzzle. (See figure A-5.)

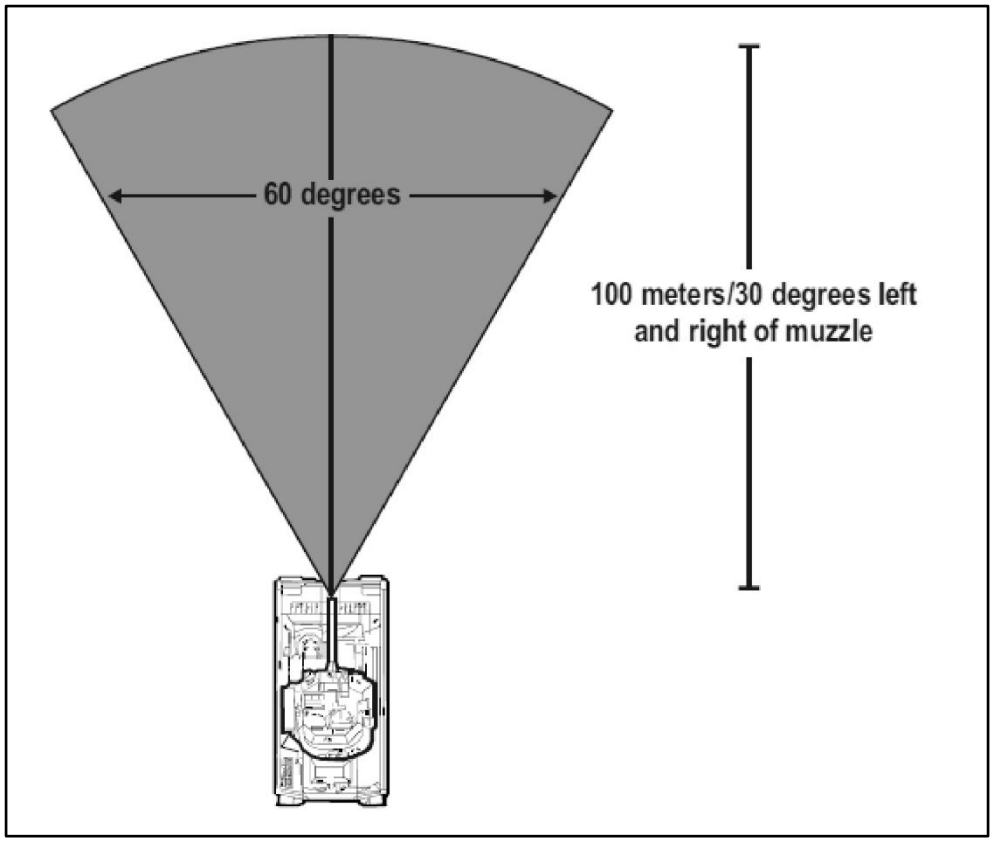


Figure A-5. Sabot petal danger area

A-43. The TOW weapon system has a backblast area that extends 75 meters to the rear of the vehicle in a 90-degree cone. This area comprises both a 50-meter danger zone and an additional 25-meter caution zone. The Bradley must be positioned so that no personnel, unarmored vehicles, or obstructions (such as walls, embankments, or large trees) remain in the backblast area for its missile. (See figure A-6.)

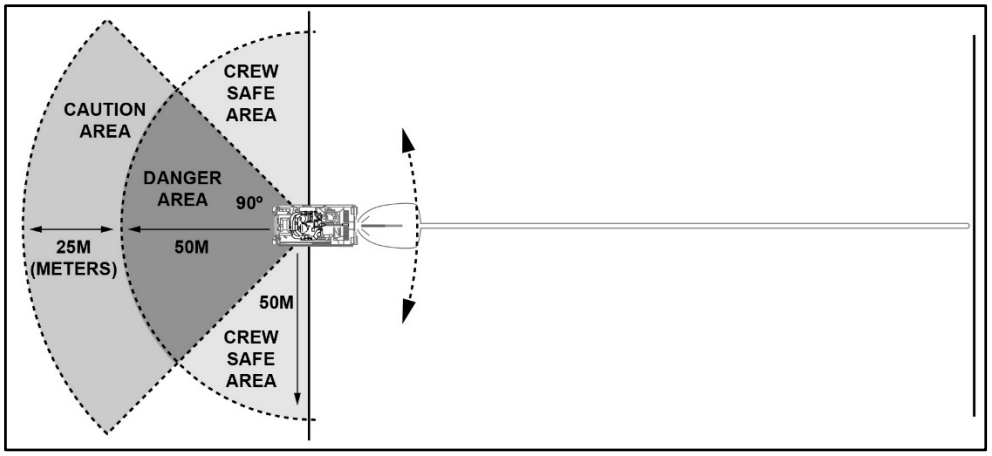


Figure A-6. TOW danger zone

SECTION III – DIRECT FIRE CONTROL

A-44. The PL, section, and squad leaders communicate to subordinates the manner, method, and time to initiate, shift, and mass fires, and when to disengage by using DFCMs. Leaders control fires so they can direct the engagement of enemy systems and gain the greatest effect. Leaders IPOE and information collection to determine the best way to use DFCMs to mass the effects on the enemy and reduce the risk of fratricide.

FIRE CONTROL MEASURES

A-45. Fire control measures are the framework on which the PL builds the plan, and by which the platoon's leaders control direct fire (See Table A-1 on page 258). Application of these concepts, procedures, and techniques assist the unit in acquiring the enemy, focusing fires on the enemy, and preventing fratricide and friendly fire. At the same time no single measure is sufficient to control fires. At platoon level fire control measures will be effective only if the entire unit has a common understanding of what they mean and how to employ them. Paragraphs A-46 to A-81 focus on the various fire control measures employed by the mechanized Infantry platoon. Standard DFCM are terrain-based, and threat based (See ATP 3-90.1 for more information.)

Table A-1. Common fire control measures

Terrain-Based Fire Control Measures	*Threat-Based Fire Control Measures*
Target Reference Point	Rules of Engagement
Engagement Area	Weapons Ready Posture
Sector of Fire	Weapons Safety Posture
Direction of Fire	Weapons Control Status
Terrain-Based Quadrant	Engagement Priorities
Friendly Based Quadrant	Trigger line
Maximum Engagement Line	Engagement Techniques
Final Protective Line	Target Array
Restrictive Fire Line	Fire Patterns

TERRAIN-BASED FIRE CONTROL MEASURES

A-46. The PL uses terrain-based fire control measures to focus and control fires on a particular point, line, or area rather than on a specific enemy element. Terrain-based fire control measures include—

- TRPs.
- EAs.
- Sector of fire.
- Direction of fire.
- Terrain-based quadrant.
- Friendly-based quadrant.
- Maximum engagement lines.
- RFLs.
- FPL.

Target Reference Point

A-47. A *target reference point* is a predetermined point of reference, normally a permanent structure or terrain feature that can be used when describing a target location (JP 3-09.3). A TRP is an easily recognizable point on the ground (either natural or man-made) used to initiate, distribute, and control direct fire. In addition, when leaders designate TRPs as indirect fire targets, they can use the TRPs when calling for and adjusting indirect fires. Leaders designate TRPs at probable enemy locations and along likely avenues of approach. TRPs should also serve to delineate left or right limits; for example, two sections will tie in their fires at TRP 2, and the platoon's right limit is at TRP 3. These points can be natural or artificial but should be fixed and relatively permanent. A TRP can be an established site (for example, a hill or a building), or an impromptu feature designated as a TRP on the spot (for example, a burning enemy vehicle or smoke generated by an artillery round). Friendly units can construct markers to serve as TRPs. (See figure A-7.) Ideally, TRPs should be visible in three observation modes (unaided, light intensifying, and thermal) so that all forces can see them, and constructed TRPs should have directional markings so only friendly forces can see the TRP. TRPs should have a numbering system so units don't confuse who established and owns the TRP. Units should have an established SOP that's clearly understood by all to

avoid using the wrong TRP. Examples of TRPs include the following features and objects:

- Prominent hill mass.
- Distinctive building.
- Observable enemy position.
- Destroyed vehicle.
- Ground-burst illumination.
- Thermal panels or battlefield recognition markers.
- Reverse polarity markers or numbers.
- Engineer pickets with chemical light stick (IR), VS-17 (daylight), and 9-volt battery (thermal) inside the U-shaped picket, with the U-shape toward friendly forces.
- Ammo cans filled with sand and diesel or charcoal and lit on fire.
- Smoke round for immediate engagements only; this is the least preferred method.

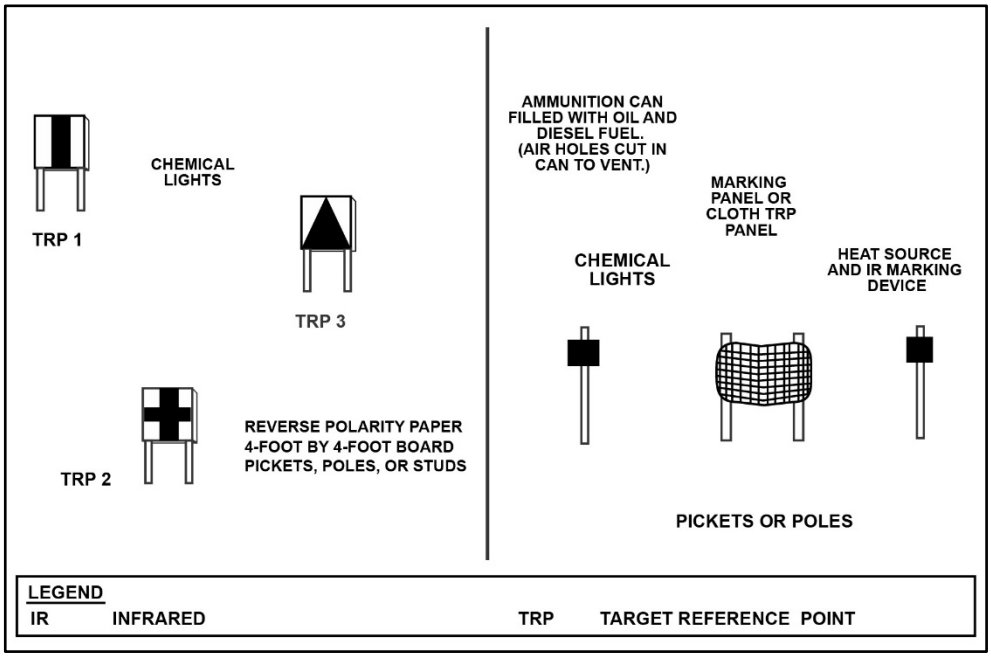


Figure A-7. Constructed TRP markers

Engagement Area

A-48. An EA is where the leader intends to contain and destroy an enemy force. The size and shape of the EA is determined by the degree of relatively unobstructed intervisibility available to the unit's weapons systems in their firing positions and by the maximum range of those weapons. Typically, PLs delineate responsibility within the EA by assigning each squad and section both primary and alternate sectors of fire. They may further refine the EA with additional measures such as a quadrant or a target array.

The far side of the EA will generally be designated as the maximum engagement line. Other distinct lines within the EA may serve as trigger lines. Portions of the nearside boundary of the EA will typically be designated as the FPL.

Sector of Fire

A-49. A *sector of fire* is the area assigned to a unit or weapon system in which it will engage the enemy according with established engagement priorities (FM 3-90). PLs assign primary and secondary sectors of fire to squad leaders, section leaders, and key weapon systems. Squad leaders assign sectors of fire for individual positions and ensure they have interlocking fire and are tied in with the platoon direct fire plan. When assigning primary and secondary sectors of fire leaders ensure individual Soldiers understand when to use primary sector or when to transition to secondary sector. Fire shifts to the secondary sector on order or when there are no targets in the primary sector, or when the movement of another friendly element needs covering. Leaders must also assign sectors of fire for alternate and supplementary positions. They may limit the sector of fire of an element or weapon to prevent accidental engagement of an adjacent unit. In assigning sectors of fire, PLs and subordinate leaders consider the number and types of weapons available. They consider acquisition system type and field of view in determining the width of a sector of fire. For example, while unaided vision has a wide field of view, its ability to detect and identify targets at range and in limited-visibility conditions is restricted. Conversely, most fire control acquisitions systems have greater detection and identification ranges than the unaided eye, but their field of view is narrow. Means of designating sectors of fire include the following:

- TRPs.
- Clock direction.
- Fire patterns.
- Terrain-based quadrants.
- Friendly-based quadrants.
- Azimuth or cardinal direction.

Direction of Fire

A-50. A direction of fire is an orientation or point used to assign responsibility for a particular area on the battlefield that must be covered by direct fire. Leaders designate directions of fire for the purpose of acquisition or engagement by subordinate elements, crew-served weapons, or individual Soldiers. Direction of fire is most employed when assigning sectors of fire would be difficult or impossible because of limited time, insufficient reference points, or when the width of the sector is narrow, such as a trail exiting the woods, a gap between two buildings, or other focused points. A principal direction of fire may also serve as the left or right limit to a sector of fire. Means of designating a direction of fire include the following:

- Leader description or orientation.
- Closest TRP.
- Clock direction.
- Cardinal direction.
- Tracer on target.
- IR laser pointer.

- M320 obscuration round.

Quadrants

A-51. Quadrants are subdivisions of an area created by superimposing an imaginary pair of perpendicular axes over the terrain to create four separate areas or sectors. Establish quadrants on the terrain, friendly forces, or on the enemy formation. The method of quadrant numbering is established in the unit SOP; however, care must be taken to avoid confusion when quadrants based on terrain, friendly forces, and enemy formations are used simultaneously. This issue can become even more complex if multiple echelons designate quadrants.

Terrain-Based Quadrant

A-52. A terrain-based quadrant entails the use of a TRP, either existing or constructed, to designate the center point of the axes dividing the area into four quadrants. This technique can be employed in both the offense and defense. In either case, the PL will designate the center of the quadrant by use of a known point or otherwise designating a TRP. In the defense, the PL may physically establish the TRP, while in the offense, the PL will have to plan that TRP by designating a fixed point on the objective prior to arriving. If there are no suitable TRPs, the PL may use a ground burst illumination round, an obscurant marking round (smoke), or a fire ignited by incendiary or tracer rounds. The axes delineating the quadrants run parallel and perpendicular to the direction of movement. In the defense, PLs designate the center of the quadrant using an existing or constructed TRP.

A-53. In examples shown in figure A-8 on page 262, quadrants are marked using the letter “Q” and a number (Q1 to Q4); quadrant numbers are in the same relative positions as on military map sheets (from Q1 as the upper left-hand quadrant clockwise to Q4 as the lower left-hand quadrant).

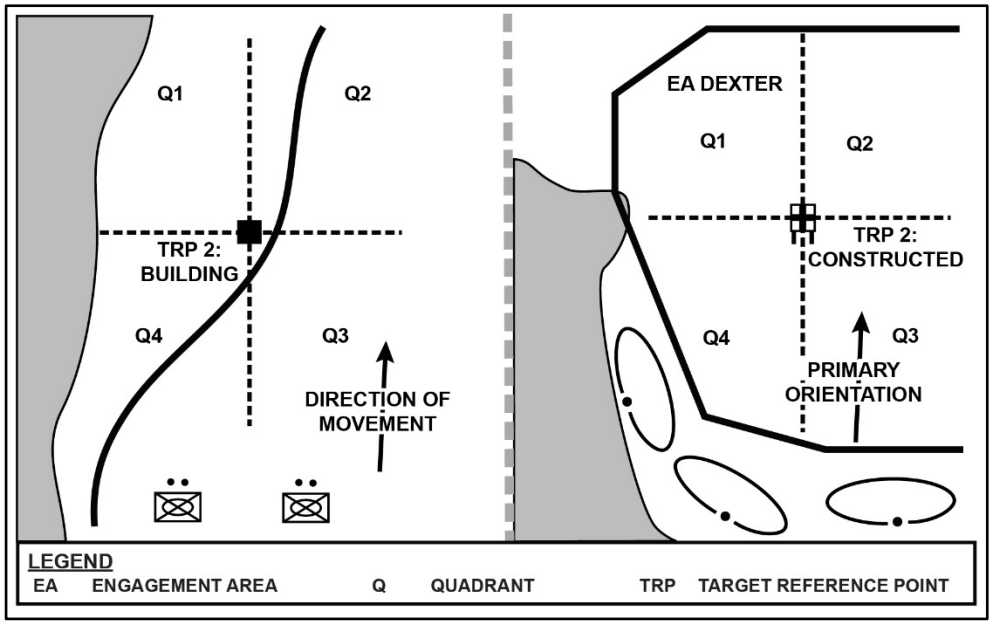


Figure A-8. Terrain-based quadrant

Friendly-Based Quadrant

A-54. The friendly-based quadrant technique entails superimposing quadrants over the unit's formation. The center point is based on the center of the formation, and axes run parallel and perpendicular to the general direction of travel. Much like "floating TRPs" the quadrant moves with the formation as it advances. For rapid orientation, the friendly quadrant technique may be better than the clock direction method; because different elements of a large formation rarely are oriented in the same exact direction and the relative dispersion of friendly forces causes parallax to the target. The friendly-based quadrant is effective at designating sectors of scan and fire in 360 degrees around the platoon formation. However, the platoon may be designated to provide direct fire into a single portion of the company's quadrant, such as the A1 (front left) or B1 (rear left) in the offense. Figure A-9 illustrates use of friendly-based quadrants.

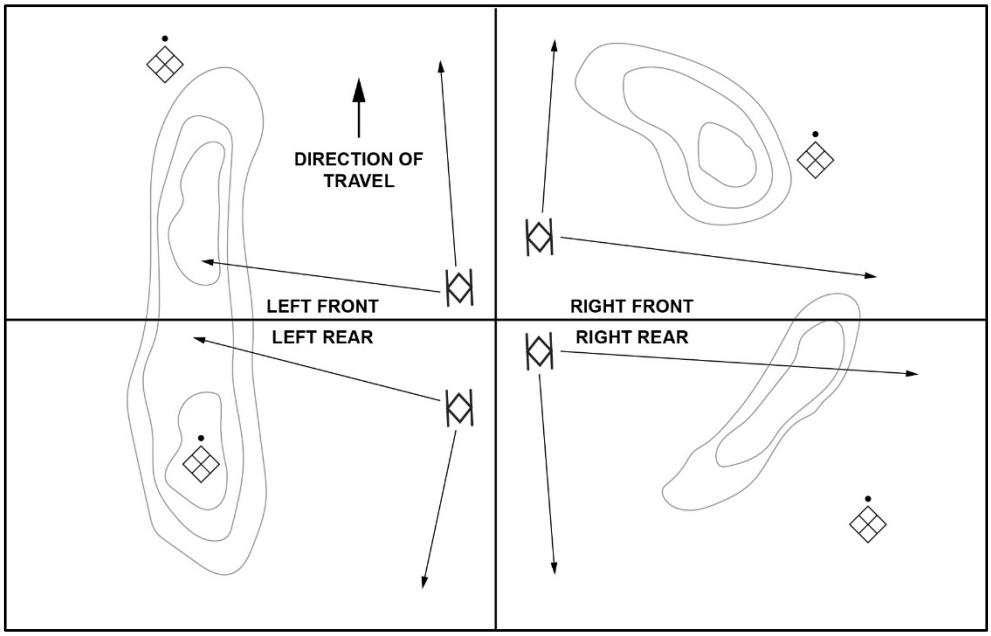


Figure A-9. Friendly-based quadrant

Maximum Engagement Line

A-55. Maximum engagement line is the linear depiction of the farthest limit of effective fire for a weapon or unit. This line is determined by both the weapons, unit's maximum effective range and by the effects of terrain. For example, slope, vegetation, structures, and other features provide cover and concealment preventing the weapon from engaging to the maximum effective range. A maximum engagement line serves several purposes. PLs can use it to prevent crews from engaging beyond the maximum effective range, to define criteria of the establishment of triggers, and to delineate the maximum extent of sectors on the assigned area sketch.

Restrictive Fire Line

A-56. A *restrictive fire line* is a specific boundary established between converging, friendly surface forces that prohibits fires or their effects from crossing (JP 3-09). The RFL is a linear fire control measure beyond which engagement is prohibited without coordination. In the offense, PLs can designate an RFL to prevent a base-of-fire element from firing into the area where an assaulting element is maneuvering. This technique is particularly important when BFVs support the maneuver of Infantry squads. In the defense, PLs may establish an RFL to prevent the unit from engaging a friendly Infantry squad positioned in restricted terrain on the flank of an avenue of approach.

Final Protective Line

A-57. *Final protective line* is a selected line of fire where an enemy assault is to be checked by interlocking fire of all available weapons and obstacles (FM 3-90). The unit reinforces this line with protective obstacles and with FPFs whenever possible. Initiation of the FPFs is the signal for elements, crews, and individual Soldiers to shift fire to their assigned portion of the FPL. They spare no ammunition in repelling the enemy assault, a particular concern for heavy weapons systems and automatic weapons.

THREAT BASED FIRE CONTROL MEASURE

A-58. The PL uses threat-based fire control measures to focus and control fires by directing the unit to engage a specific, templated enemy element rather than a point or area. Threat-based control measures are not used instead of terrain-based control measures but are used in conjunction with them. Threat-based fire control measures include—

- ROE.
- Weapons ready posture.
- Weapons safety posture.
- WCS.
- Engagement priorities.
- Trigger.
- Engagement techniques.
- Fire patterns.
- Target array.

Rules of Engagement

A-59. ROE specify the circumstances and limitations under which forces may engage; they include definitions of combatant and noncombatant elements and prescribe the treatment of noncombatants. Factors influencing ROE are national command policy, mission, commander's intent, the OE, and the law of armed conflict. ROE always recognize a Soldier's right of self-defense, but at the same time, they clearly define circumstances in which the Soldier may fire. ROE may provide limitations in terms of proportionality, the use of lethal force, a requirement for hostile acts/hostile intent, positive identification, the caliber or effect of friendly weapons, or limitations on what infrastructure may be targeted.

Weapons Ready Posture

A-60. The weapons ready posture is a means by which leaders use their estimate of the situation to specify the ammunition and range for the most probable anticipated engagement. The ammunition selection is dependent on the target type, but the leader may adjust it based on engagement priorities, desired effects, and effective range. Range selection is dependent on the anticipated engagement range; it is affected by terrain intervisibility, weather, and light conditions. Within the platoon weapons ready posture affects the types and quantities of ammunition loaded in ready boxes, stowed in ready racks, and carried by Infantry squads. The following considerations apply:

- For BFVs, weapons ready posture covers selected ammunition, rate (high, low), and designated target and range.
- For Infantry squads, weapons ready posture is the selected ammunition and indexed range for individual and crew served weapons.

A-61. An example is a M320 grenadier whose most likely engagement is to cover dead space at 200 meters from the position might load HE dual purpose and set 200 meters on the quadrant sight. To prepare for an engagement in a wooded area where engagement ranges are extremely short.

Weapons Safety Posture

A-62. Weapons safety posture is an ammunition-handling instruction that enables the PL to control the safety of owned unit's weapons precisely. Leaders' supervision of the weapons safety posture, as well as Soldiers' adherence to it, minimizes the risk of accidental discharge and fratricide. The statuses are—

- Green, fully safe.
- Amber, substantially safe.
- Red, marginally safe.
- Black, not safe.

A-63. When setting and adjusting the weapons safety status, the PL must weigh the desire to prevent accidental discharges against the requirement for immediate action based on the enemy threat. If the threat of direct contact is high, for example, the PL could establish the weapons safety status as, Black. If the requirement for action is less immediate, the decision to lower the status to Red or Green might be given. Additionally, the PL can designate different weapons safety status for different elements of the unit. For example, in the attack position fire commands are given and gunner is ready for command to fire, then the BFV is black, while the Infantry squads riding in the BFV remain red (see table A-2 on pages 266 and 267).

Table A-2. Weapon safety posture

Weapons Safety Status	***Bradley Fighting Vehicle Weapons and Ammunition***	***Infantry Squad Weapons and Ammunition***
Green	• All weapons cleared of ammunition. • Coaxial: chamber cleared, bolt assembly forward, mechanical safe on fire, electrical safe. • 25-mm: feeder cleared of ammunition, mechanical and electrical safe. • TOW: TML cleared, electrical safe, TOW mode unselected. • Smoke: cleared of grenades, unselected.	• All weapons cleared of ammunition. • Rifle and carbine: chamber cleared, magazine well empty, on safe. • Machine gun: chamber cleared, bolt forward on fire, weapon on safe. • Grenade launcher: weapon is clear, cocking lever to the rear, firing assembly on safe.
Amber	• Coaxial: ammunition on feed tray, bolt assembly locked to rear, mechanical and electrical safe. • 25-mm: ammunition in feeder assembly, mechanical arm, electrical safe, ammunition unselected. • TOW: TML loaded, electrical safe, TOW mode unselected. • Smoke grenades: loaded, unselected.	• Rifle and carbine: chamber is empty, bolt forward, magazine locked in the magazine well, on safe. • Machine gun: M249 and M240 series machine gun does not have Amber status. • Grenade launcher: Does not have an Amber status.

Table A-2. Weapon safety posture (continued)

Weapons Safety Status	*Bradley Fighting Vehicle Weapons and Ammunition*	*Infantry Squad Weapons and Ammunition*
Red	• Coaxial: ammunition on feed tray bolt assembly locked to rear position, mechanical fire, electrical arm. • 25-mm: ammunition in feeder assembly, mechanical arm, electrical arm, ammunition selected. • TOW: TML loaded, TML raised, electrical arm, TOW mode and missile selected. • Smoke: grenades loaded, selected. • Ghost round cycled.	• Rifle and carbine: round is chambered, magazine locked in the magazine well, on safe. • Machine gun: ammunition is on the feed tray, bolt locked to the rear, on safe. • Grenade launcher: weapon is loaded, cocking lever is cocked, safety catch on the firing mechanism is on safe.
Legend: BC—Bradley commander; mm—millimeter; TML—tow missile launcher; TOW—tube-launched, optically-tracked, wire/wireless guided		

Weapons Control Status

A-64. The three levels of WCS outline the conditions, based on target identification criteria, under which friendly elements can engage. The commander sets and adjusts the WCS based on friendly and enemy disposition, and the clarity of the situation. The higher the probability of fratricide, the more restrictive the WCS. The three levels, in descending order of restrictiveness, are—

- WEAPONS HOLD—engage only if engaged or ordered to engage.
- WEAPONS TIGHT—engage only targets that are positively identified as enemy.
- WEAPONS FREE—engage any targets that are not positively identified as friendly (subject to the ROE and law of armed conflict).

A-65. As an example, the PL may establish the WCS as WEAPONS HOLD, when friendly forces are conducting a passage of lines. By maintaining situational understanding of owned elements and adjacent friendly forces, however, the WCS may be lowered. In such a case, WEAPONS FREE status may be set when the PL knows there are no friendly elements in the vicinity of the engagement. This permits elements to engage targets at extended ranges even though it is difficult to distinguish targets accurately at ranges beyond 2,000 meters under battlefield conditions. The WCS directly applies to the air threat as well. The platoon's higher HQ may direct WCS specifically for engagement of aircraft based on the anticipated likelihood of aerial attack. The PL must clearly differentiate between a general WCS and WCS specifically for air threat.

Engagement Priorities

A-66. An *engagement priority* identifies the order in which the unit engages enemy systems or functions (FM 3-90). This entails the sequential ordering of targets to be engaged, can serve one or more of the following critical fire control functions described in paragraphs A-67 through A-70.

A-67. Prioritize high-priority targets. In conjunction with the planned concept of the operation, the PL determines which target types provide the greatest payoff; the PL then can set these as a unit engagement priority. A *priority target* is a target, based on either time or importance, on which deliver of fires takes precedence over all the fires for the designated firing unit of element (FM 3-09). For example, the PL may decide that destroying enemy engineer assets is the best way to prevent the enemy from breaching an obstacle.

A-68. Employ the best weapons for the target. Establishing engagement priorities for specific friendly systems increases the effectiveness with which the unit employs its weapons. As an example, the engagement priority for the BFVs could be light armor first, then wheeled vehicles and Infantry squads, this would decrease the chance that the platoon's lighter systems will have to engage enemy armored vehicles.

A-69. Distribute the unit's fires. Establishing different priorities for similar friendly systems helps to prevent overkill and achieve effective distribution of fires. For example, the PL may designate the enemy's tanks as the initial priority for one BFV section, while making the enemy's light armored vehicles the priority for another section. This would decrease the chances of units launching multiple TOWs against two enemy tanks, while ignoring the dangers posed by the light armored vehicles.

A-70. Controlling direct fire. When assigning priorities of fire, the PL must make specific decisions linked to other engagement criteria. For example, if the priority of fires is breaching assets as above, but those assets all appear in alpha section's sector of fire, the PL can choose to have both sections mass fires in alpha's sector or direct bravo section to engage other priority targets in their own sector. The ability to shift fire via DFCMs is essential to enable massing. Have plans in place for handing a moving target off to another section or adjacent platoon.

Trigger Line

A-71. A *trigger line* is a phase line located on identifiable terrain used to initiate and mass fires into an engagement area at a predetermined range (FM 3-90). Trigger lines are located on identifiable terrain, examples are phase lines that cross the EA, the enemy direction of attack, or an enemy axis of advance. PLs can designate one trigger line for all weapon systems or separate trigger lines for each weapon or type of weapon system. PLs specify the engagement criteria for this situation. The criteria may be either time or event driven, such as when a certain number or certain types of vehicles cross the trigger line before initiating engagement. PLs can use a time-based fires delivery method or a geography-based fires delivery. Leaders may reserve the authority to initiate an engagement by signaling or giving the command to fire.

A-72. The trigger line can be any natural or artificial linear feature, such as a road, ridgeline, or stream. It may be a line perpendicular to the unit's orientation, delineated

by one or more reference points. When developing trigger lines, the PL considers both weapons actual ranges, crew proficiency, the impact of terrain and maximum engagement lines.

Engagement Techniques

A-73. Engagement techniques are effects-oriented fire distribution measures. The following engagement techniques are common in platoon operations:

- Point fire.
- Area fire.
- Simultaneous (volley) fire.
- Alternating fire.
- Observed fire.
- Sequential fire.
- Time of suppression.
- Reconnaissance by fire.

A-74. Point fire. Point fire entails concentrating the effects of a unit's fire against a specific, identified target such as a vehicle, machine gun bunker, or ATGM position. When leaders direct point fire, all unit weapons engage the target, firing until it is destroyed, or the required time of suppression has expired. Employing converging fires from dispersed positions makes point fire more effective because the target is engaged from multiple directions. The unit may initiate an engagement using point fire against the most dangerous threat, and revert to area fire against other, less threatening point targets. The platoon may also direct a subordinate element such as the Bravo section or the Infantry squads to employ point fire while the other elements continue to deliver area fires.

A-75. Area fire. Area fire involves distributing the effects of a unit's fire over an area in which enemy positions are numerous or are not obvious. If the area is large, leaders assign sectors of fire to subordinate elements using a terrain-based distribution method such as the quadrant technique. Typically, the primary purpose of the area fire is suppression; however, sustaining suppression requires judicious control of the rate of fire.

A-76. Simultaneous (volley) fire. Units employ simultaneous fire to rapidly mass the effects of their fires or to gain fire superiority. For example, a unit may initiate a SBF operation with simultaneous fire, then revert to alternating or sequential fire to maintain suppression. Simultaneous fire is employed to negate the low probability of the hit and kill of certain antiarmor weapons. As an example, a mechanized Infantry platoon may employ simultaneous fire with its weapons systems to ensure rapid destruction of the enemy section that is engaging a friendly position. Simultaneous fire should be employed with a designated fire pattern to reduce the likelihood of overkill. Once a platoon establishes fire superiority, or has maximized the effects of massed fires, the platoon should transition to alternating fires.

A-77. Alternating fire. Pairs of elements continuously engage the same point or area target one at a time. For example, a mechanized Infantry company may alternate fires of two platoons; an Infantry platoon may alternate the fires of its squads and BFVs, or an Infantry platoon may alternate the fires of a pair of medium machine guns.

Alternating fire permits the unit to maintain suppression for a longer duration than does volley fire; it also forces the enemy to acquire and engage alternating points of fire. Alternating fires is a good technique to maintain fires on an enemy force while allowing subordinate elements to take cover; displace to alternate, supplementary, or subsequent firing positions; or upload or cross-level ammunition under cover. Key to successful alternating fires is that it is executed under the leader's control.

A-78. Observed fire. Observed fire is usually used when a platoon is in protected positions with engagement ranges more than 2,500 meters. Observed fires can be employed by using vehicles with laser range finders to establish range for weapons systems without range finding capability or vehicles with inoperable laser range finders that are firing in degraded mode. The PL directs one element or section to engage. The remaining elements or sections observe fires and prepare to engage on order in case the engaging element consistently misses its targets, experiences a malfunction, or runs low on ammunition. Observed fire allows for mutual observation and assistance while protecting the location of the observing elements. In observed fire, the observing element announces the range, or applied corrections to the range allowing the engaging element to immediately apply effective fire.

A-79. Sequential fire. Sequential fire entails the subordinate elements of a unit engaging the same point or area target one after another in an arranged sequence. For example, a mechanized Infantry platoon may sequence the fires of its four BFVs to gain maximum time of suppression. Sequential fire can help to prevent the waste of ammunition, as when an Infantry squad waits to see the effects of the first Javelin before firing another.

A-80. Time of suppression. Time of suppression is the period, specified by the PL, during which an enemy position or force is required to be suppressed. Suppression time is typically dependent on the time it will take a supported element to maneuver. Normally, a unit suppresses an enemy position using the sustained rate of fire of its automatic weapons. In planning for sustained suppression, leaders must consider several factors to include the estimated time of suppression, the size of the area being suppressed, the type of enemy force to be suppressed, range to the target, rates of fire, and available ammunition quantities. The following example lists steps that a unit might take in calculating time of suppression capabilities:

- The BFVs are given the task of suppressing an area to support the assault of another element.
- One BFV, firing 25-mm HEI-T ammunition at a sustained rate of 60 rounds per minute, expends 180 rounds (capacity of the large ready box, minus sufficient rounds for easy reloading) in 3 minutes.
- Given an adjusted basic load of 720 rounds of HE, a single BFV can sustain fire for 4 periods of 3 minutes, requiring three reloads of 180 rounds into the large ready box.
- A BFV crew, using a loader in the troop compartment, can reload the large ready box with 180 rounds in about 3 minutes if the ammunition is already prepared for loading.
- Using an individual BFV's sustained rate of fire of 60 rounds per minute and alternating the fire of sections to permit reloading (1 section fires for 3 minutes while the other reloads), the platoon can sustain 120 rounds per minute for 24 minutes.

A-81. *Reconnaissance by fire* is a technique in which a unit fires on a suspected enemy position (FM 3-90). This response permits PLs and their subordinate leaders to make target acquisition and to mass fires against the enemy element. Typically, PLs direct a subordinate element to conduct the reconnaissance by fire. For example, they may direct an overwatching BFV section and squads to conduct the reconnaissance by fire against a probable enemy position before initiating movement by a bounding element.

Fire Patterns

A-82. Fire patterns are a threat-based measure designed to distribute the fires of a unit simultaneously among multiple, similar targets. They are most often used by platoons to distribute fires across an enemy formation. Leaders designate and adjust fire patterns based on terrain and the anticipated enemy formation. (See figure A-10 on page 272.) The fire patterns are as follows:

- Frontal.
- Cross.
- Depth.

Frontal fire

A-83. Leaders may initiate frontal fire when targets are arrayed in front of the unit in a lateral configuration. Weapons systems engage targets to their respective fronts. For example, the left flank weapon engages the left-most target; the right flank weapon engages the right-most target. As weapons systems destroy targets, weapons shift fire toward the center of the enemy formation from near to far or far to near as appropriate. With a mounted element, the wing BFVs initiate fire at the outer edge of the visible enemy and work inwards, while the leader BFVs start at the center of the visible enemy and work outwards.

Cross fire

A-84. Leaders initiate cross fire when targets are arrayed laterally across the unit's front in a manner that permits diagonal fires at the enemy's flank, or when obstructions prevent unit weapons from firing frontally. Right flank weapons engage the left-most targets; left flank weapons engage the right-most targets. Firing diagonally across an EA provides more flank shots, thus increasing the chance of kills; it reduces the possibility of the enemy detecting friendly elements should the enemy continue to move forward. As friendly elements destroy targets, weapons shift fire toward the center of the enemy formation. Like the frontal pattern, the wing BFVs engage the farthest visible target and work inwards, while the leader tracks engage the opposite center and work outwards.

Depth fire

A-85. Leaders initiate depth fire when enemy targets disperse in-depth, perpendicular to the unit. Center weapons engage the closest targets; flank weapons engage deeper targets. As the unit destroys targets, weapons shift fire toward the center of the enemy formation.

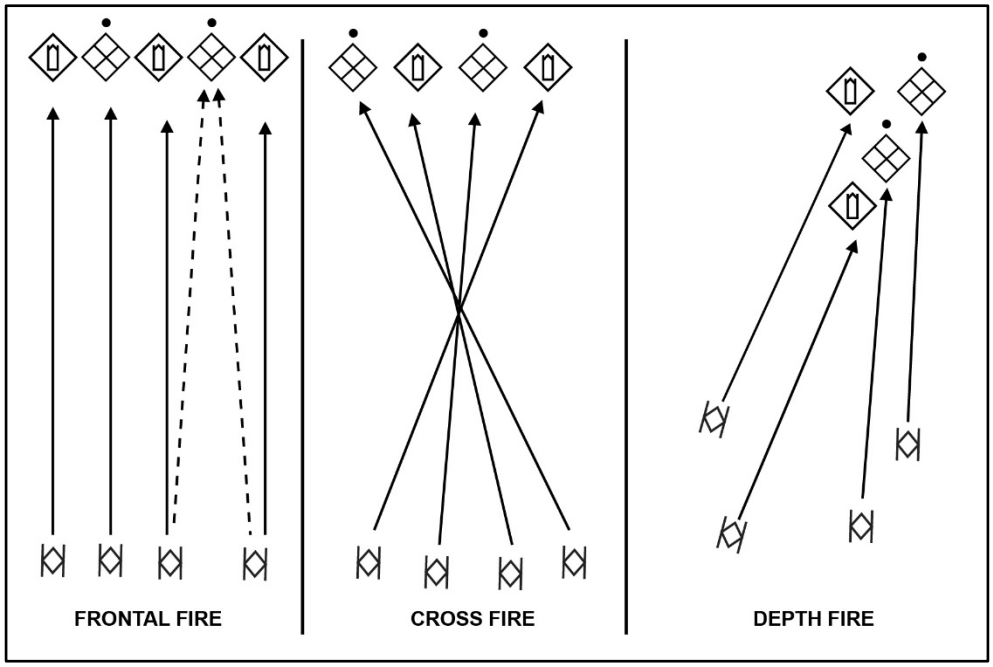


Figure A-10. BFV fire patterns

Target Array

A-86. Target array enables leaders to distribute fires when an enemy force is concentrated, and terrain-based controls are inadequate. Forces create this threat-based distribution measure by superimposing a simple geometric pattern on the enemy formation. Unlike the quadrant, the leader may designate other options such as near/far, left/right, or near/far left/far right. Soldiers center the pattern on the center of the visible enemy formation, with the axes running parallel and perpendicular to the enemy's direction of travel. The target array fire control measure is effective against an enemy with a well-structured organization and standardized doctrine. The target array can be preplanned in either the defense or offense at a point where the leader anticipates significant focused enemy contact may emerge. The leader may also designate a target array on any emerging threat without prior planning by simply designating the location and directing subordinate elements to engage targets within a directed portion of the array. The examples in figure A-11 illustrate the target array technique.

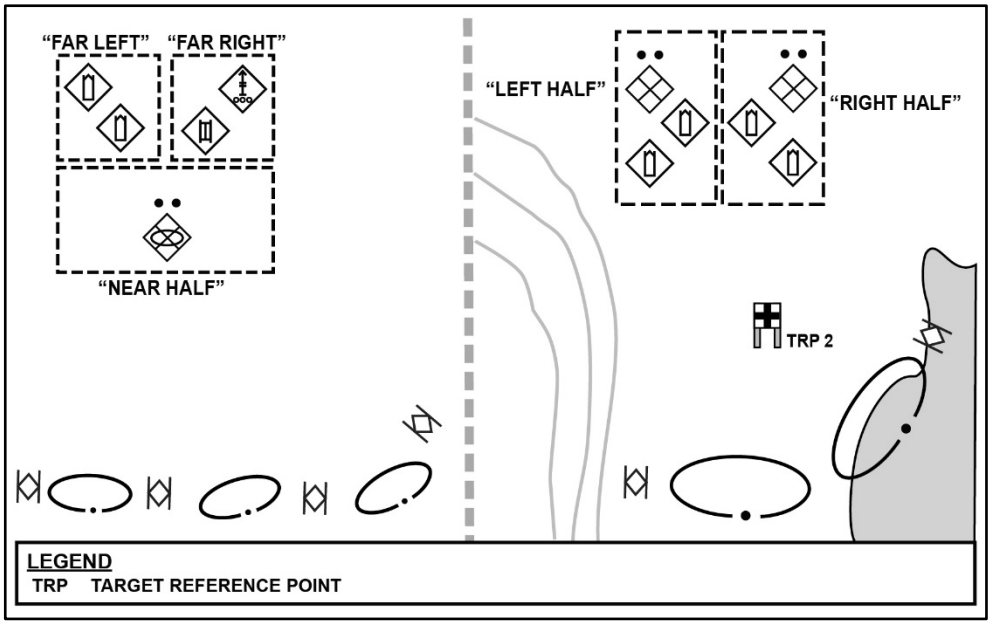


Figure A-11. Target array

SECTION IV – TYPES OF FIRE COMMANDS

A-87. There are three types of fire commands initial, subsequent, and supplemental. They establish a common conduct of fire to engage individual and multiple threats and assist in rapid adjustment to defeat threats.

INITIAL FIRE COMMAND

A-88. Initial fire commands initiate a direct fire engagement on a target. The initial fire command contains all the elements required to alert the firing element, select a weapon or ammunition to fire, state the target description, provide any direction/elevation information, announce critical range information, provide a method or technique, identify any controls required, and execute the engagement.

SUBSEQUENT FIRE COMMAND

A-89. Subsequent fire commands direct the firing element to continue engaging the same target by delivering subsequent rounds against the same target. They can only be given after the initial fire command is executed. These fire commands specifically direct the fires of the selected weapon when the desired effect from the previous round(s) has not been achieved. In the event the initial round or burst does not have the desired effect on the target where additional rounds or bursts are required, the leader or BC directs the firer to reengage using a subsequent fire command. If rounds fired at a target from a subsequent command fail to achieve the desired target effect, additional subsequent commands are given.

SUPPLEMENTAL FIRE COMMAND

A-90. Supplemental fire commands are used in multiple target engagements. They are given after the initial fire command is executed and the initial target has been adequately serviced, or the leader wishes to transition to another target. Supplemental commands by the leader, BC, or in some cases, the gunner, shifts fire to another target described during the initial fire command or at targets that present themselves during the engagement. Supplemental commands contain all elements necessary to direct the gunner or firer onto a secondary target, the ammunition or weapon to be used, and a command of execution.

ELEMENTS OF A FIRE COMMAND

A-91. Fire commands are oral orders issued by commanders and leaders to focus and distribute fires when necessary, achieving decisive effects against the enemy. They allow leaders to articulate their firing instructions using a standard format rapidly and concisely. Fire commands are used for both the BFVs and Infantry squads. Fire commands are complex, and leaders should use every element, so gunners understand the leader's intent. The leader uses only the minimum necessary elements to ensure clarity. The following shows the elements of fire commands with examples (see TC 3-20.31-4 for detailed description). Unit fire commands include—

- Alert.
- Weapon or ammunition.
- Target description.
- Direction.
- Range (optional).
- Method.
- Control (optional).
- Execution.
- Termination.

ALERT

A-92. The alert specifies the elements directed to fire. It does not require leaders initiating the command to identify the unit. Examples of the alert element (call signs and code words based on unit SOP) include the following:

- GUIDONS (all subordinate elements).
- RED 1 (1st squad only).

WEAPON OR AMMUNITION

A-93. This element identifies the weapon and ammunition to be employed by the alerted elements. Leaders may designate the type and number of rounds to limit expenditure of ammunition. Examples of this element include the following:

- JAVELIN TOP OR DIRECT ATTACK.
- COAX.
- 25-MM HE.
- TOW.

TARGET DESCRIPTION

A-94. Target description designates which enemy elements are to be engaged. Leaders may use the description to focus fires or achieve distribution. Examples of target description include the following:

- TROOPS.
- TROOPS IN TRENCH.
- BUNKER.
- ARMORED PERSONNEL CARRIER.
- TANK.

DIRECTION

A-95. This element identifies the location of the target. There are several ways to designate the location of target, including the following:

- Closest TRP, example: TRP 13.
- Clock direction, example: ONE O'CLOCK.
- Terrain quadrant, example: QUADRANT ONE.
- Friendly quadrant, example: LEFT FRONT.
- Target array, example: FRONT HALF.
- Tracer on target, example: ON MY TRACER.
- Laser pointer, example: ON MY POINTER.

RANGE (OPTIONAL)

A-96. The range element identifies the distance to the target. Announcing range is not necessary for systems ranging finder-equipped or employing command-guided or self-guided munitions. For systems requiring manual range settings, leaders have a variety of means for determining range, including the following:

- Predetermined ranges to TRPs or phase lines.
- Handheld range finders.
- Range stadia.
- Mil reticle.

METHOD

A-97. Method describes to the firer the way or method the target(s) are engaged. Leaders use this element when presented with multiple targets to identify which target to engage first. For collective fire commands, this can also indicate the fire pattern used to engage the threats. (See example of PLs' fire commands to engage multiple targets in paragraph A-102.) Multiple methods may be used in one fire command, including the following:

- RED 1-1: ENGAGE ARMOR.
- WHITE 1-1: ENGAGE PERSONNEL CARRIER.
- BLUE 1: ENGAGE TROOPS.

CONTROL (OPTIONAL)

A-98. The PL may use this optional element to direct desired target effects, distribution methods, or engagement techniques. Provides the leader the ability to manage ammunition, friendly exposure to the threat, reinforce the ROE, or provide conditions

that are met before engaging the threat. Multiple controls may be used within the fire command, as necessary. Controls in a collective fire command can delegate the authority to give the command of execution to an authorized subordinate leader. Subordinate leaders may include the control element to supplement the PL's instructions and achieve distribution. Examples of information specified in the control element include the following:

- Target array, example: FRONT HALF.
- Fire pattern, example: FRONTAL.
- Terrain quadrant, example: QUADRANT ONE.
- Engagement priorities, example: M320/SHOULDER-LAUNCHED MUNITIONS ENGAGE BUNKERS; MACHINE GUNS ENGAGE TROOPS.
- Engagement technique, example: VOLLEY.
- Target effect, example: AREA.

EXECUTION

A-99. The execution element specifies when fires will be initiated. The PL may wish to engage immediately, delay initiation, or delegate authority to engage. Examples of this element include the following:

- FIRE.
- AT MY COMMAND.
- AT YOUR COMMAND.
- AT PHASE LINE ORANGE.

TERMINATION

A-100. Termination is the ninth element of the fire command. It informs the Soldiers to stop firing all weapons and systems in their control. All fire commands are terminated. This command may be given by any Soldier or crewmember for any reason, but typically safety.

A-101. The leader that issued the fire command is required to terminate the fire command at the completion of every engagement, regardless of another Soldier or crewmember announcing it. All fire commands, regardless of type or who issued them, are terminated by the announcement of CEASE FIRE (See figure A-12 on page 278 for fire commands). Some examples include:

- CEASE FIRE.
- CEASE FIRE SHIFT.
- PL issues fire command to initiate an ambush, a squad leader may tell a crew served weapon to CEASE FIRE prior to the assault.
- A BFV section leader may issue fire command, a BC may give the command CEASE FIRE.

COMBINED COMMANDS

A-102. Mechanized Infantry platoons have multiple weapons systems and capabilities to control during offensive and defensive operations. PLs and subordinate leaders may be required to issue combined or multiple fire commands while controlling the BFVs and Infantry. This following is an example of the PL alerting section A (Red 1-1) of

BFVs and an Infantry squad (Red 1), which indicated section A to fire at a PC and troops but specified that the 1st Squad would engage the dismounted Infantry in the command:

- Alert: RED 1-1 AND RED 1 THIS IS RED 6.
- Weapons and ammunition: RED 1-1 ARMOR PIERCING, COAX.
- Weapons and ammunition: RED 1 M240, M320 HE.
- Target Description: PERSONNEL CARRIER, TROOPS.
- Direction: TRP 2.
- Range: 350 METER.
- Method: ENGAGE PC FIRST WITH AP, THEN TROOPS WITH COAX. RED 1 ENGAGE TROOPS FIRST WITH MACHINE GUN AND GRENADES.
- Control: RED 1-1, NINE ROUNDS AP.
- Execution: AT MY COMMAND.
- Termination: CEASE FIRE.

Element	Company	Platoon	Squad	Crew
Alert	GUIDONS, GUIDONS, GUIDONS, THIS IS BLACK SIX	RED THIS IS RED 1	FIRST SQUAD	GUNNER
Weapon / Ammunition		AP AND MISSILE	JAVELIN	SABOT
Target Description	ARMOR AND LIGHT ARMOR MOVING INTO EA COLORADO	MULTIPLE ARMOR MOVING IN SECTOR	MULTIPLE ARMOR	TANKS
Direction / Elevation	VICINITY TRPS W05 AND S10	VICINITY TRP S10	VICINITY TRP S10	VICINITY TRP S10
Range			BRAVO - FIVE HUNDRED	
Method	RED ENGAGE ARMOR, WHITE ENGAGE PC, BLUE OBSERVE FIRES	ARMOR TARGETS FIRST, ALPHA SECTION NEAR, BRAVO SECTION FAR	BRAVO - NEAR ARMOR, CHARLIE - FAR ARMOR, ALPHA - OBSERVE	FAR ARMOR FIRST
Controls	ENGAGE UPON CROSSING PHASE LINE DENVER, WAIT FOR ROUNDS COMPLETE ON AB6900	WAIT FOR ROUNDS COMPLETE ON AB6900	STAND BY FOR ROUNDS COMPLETE ON AB6900	STAND BY
Execution	ROUNDS COMPLETE, ENGAGE UPON CONTACT	ROUNDS COMPLETE, ENGAGE UPON CONTACT	FIRE AND ADJUST	FIRE AND ADJUST
Termination	CEASE FIRE	CEASE FIRE	CEASE FIRE	CEASE FIRE

LEGEND

AP	ARMOR PIERCING	PC	PERSONNEL CARRIER
EA	ENGAGEMENT AREA	TRP	TARGET REFERENCE POINT

Figure A-12. Fire command

SECTION V – DA FORM 5517 (STANDARD RANGE CARD) AND SECTOR SKETCHES

A-103. A Standard Range Card is used to record firing data for individual or crew-served weapons, and sector sketches are used to record a unit's positioning of its weapons and DFCM. This section describes and shows an example of the Standard Range Card for a BFV. See ATP 3-21.8 for instructions and standards of the individual Standard Range Card to include the Javelin and medium machine gun.

DA FORM 5517 (STANDARD RANGE CARDS)

A-104. A Standard Range Card is used to create a sketch of the assigned area for a direct fire weapon system on a given sector of fire. A Standard Range Card aids in planning and controlling fires and aids the BFV crews and squad gunners in acquiring targets during limited visibility. The individual Soldier or BFV gunner prepares two copies of the Standard Range Card. If alternate and supplementary firing positions are assigned, two copies are required for these as well. A copy is kept with the vehicle or weapons position, and the other is given to the PL for the sector sketch.

TARGET AREAS AND TERRAIN FEATURES

A-105. Standard Range Cards show possible target areas and terrain features plotted with a firing position. The process of walking and sketching the terrain to create a Standard Range Card allows the individual Soldier, BFV gunner, machine gun or Javelin crew become more familiar with their sector of fire, and familiar with the terrain in their sector. Gunners should continually assess the area and, if necessary, and update the Standard Range Card. The Standard Range Card is an aid for replacement personnel or platoons and squads to move into the position and orient on their sector of fire. To prepare a Standard Range Card, the individual Soldier or BFV gunner must know the following information:

- Sector of fire is a piece of the battlefield for which a gunner is responsible.
- TRPs:
  - Leaders designate natural or man-made features as reference points.
  - A Soldier uses these reference points for target acquisition and range determination.
- Dead space is an area that cannot be observed or covered by direct-fire systems within the sector of fire.
- Maximum engagement line is the depth of the area and is normally limited to the maximum effective engagement range of the weapons systems.
- Weapons reference point is an easily recognizable terrain feature on the map used to assist leaders in plotting the vehicle, squad, or weapon position.

PREPARATION PROCEDURES

A-106. The individual Soldier or BFV gunner prepares two copies of the Standard Range Card. If alternate and supplementary firing positions are assigned, two copies are required for these as well. A copy is kept with the vehicle or weapons position, and the other given to the PL for their sketch. The Soldier or BFV gunner prepares the Standard Range Card according to ATP 3-21.8.

A-107. An example Standard Range Card for a BFV is shown in figure A-13 on page 282. It incorporates all the standard components of a Standard Range Card but with more detail for the maximum engagement line and data section.

Maximum Engagement Line

A-108. Although the maximum engagement line is typically limited to the maximum effective engagement range of the weapons systems, it can be less if objects prevent the Soldier from engaging targets at maximum effective ranges of their assigned weapon.

Use the 2/3 rule or two thirds of the maximum range of the weapons system when planning the maximum engagement line. This technique increases the probability hit/kill ratio. The BFV's Standard Range Card includes three different weapons and their maximum engagement line: the 25-mm, the TOW, and the 7.62-mm coaxial machine gun.

Data Section

A-109. The gunner and crew served weapons complete the position identification, date, weapon, and circle value according to ATP 3-21.8. See paragraphs A-110 through A 116 for data section information.

Number

A-110. Numbers will start with left and right limits, then list TRPs and reference points in numerical order

Direction and Deflection

A-111. The direction is in degrees and taken from a compass. The following actions apply:

- The most accurate technique is—
  - Gunner aims at the terrain feature.
  - Drivers dismount and align themselves with the gun barrel and the terrain feature to measure the azimuth.
- To achieve correct deflection and elevation readings of the terrain feature—
  - Select TOW.
  - Use the deflection reading taken from the BFV's azimuth indicator.

Elevation

A-112. The gun elevation reading must be shown in tens or hundreds of mils. The smallest increment of measure on the elevation scale is tens of mils and the following apply:

- Any number other than "0" is preceded by a "plus" or "minus" symbol to show whether the gun needs to be elevated or depressed.
- Ammunition and range must be indexed to have an accurate elevation reading.

Range

A-113. Range is the distance, in meters, from vehicle position to left (L) and right (R) limits and TRPs and reference points.

Ammunition

A-114. The types of ammunition used must be listed.

Description

A-115. The names of the objects must be listed.

Remarks

A-116. In the remarks block enter the weapons reference point data. As a minimum, weapons reference point data include a description of the weapons reference point, and a six-digit or eight-digit grid coordinate of the weapons reference point, the magnetic azimuth, and the distance from the weapons reference point to the vehicle position. (See figure A-13 on page 282.)

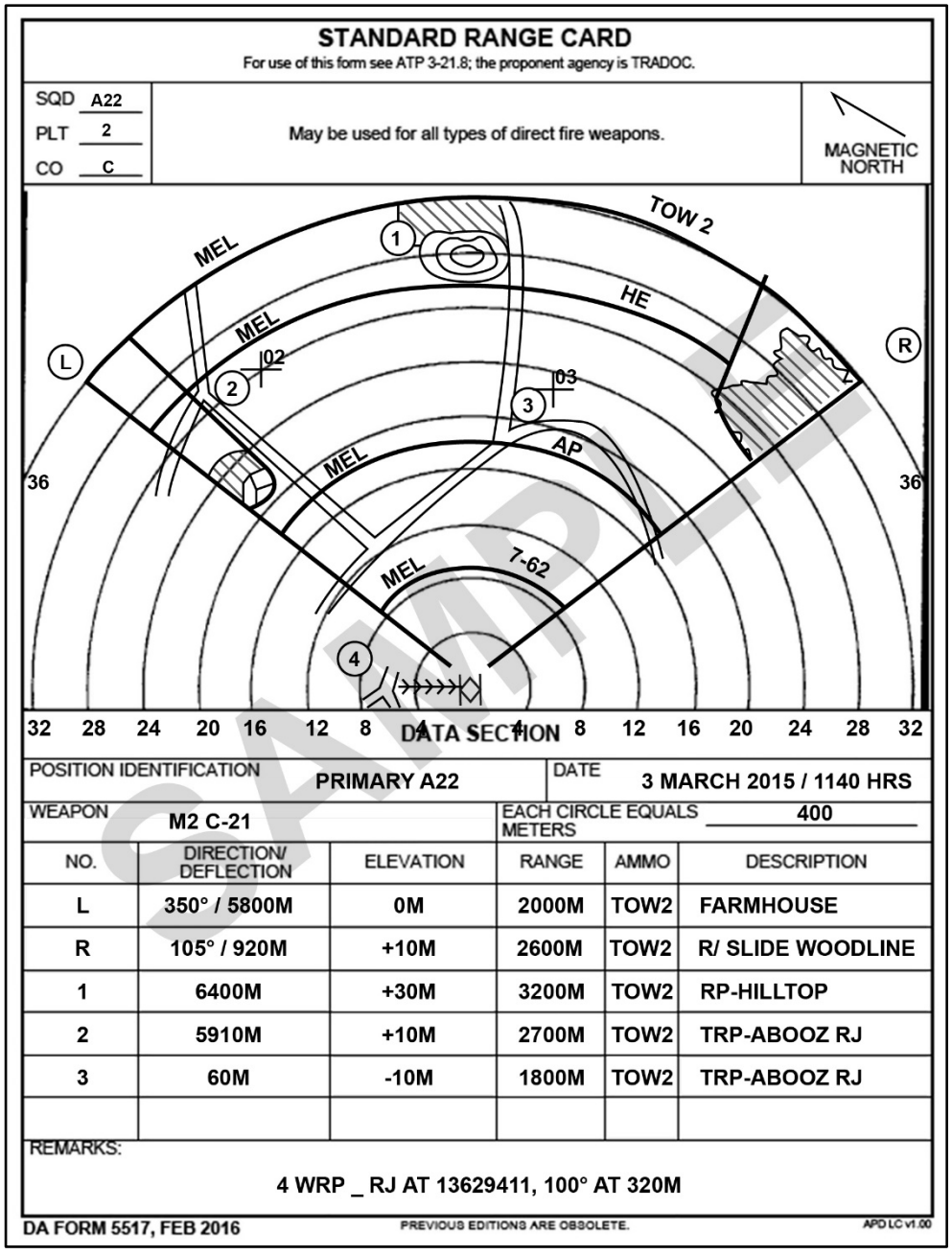


Figure A-13. DA Form 5517 (Standard Range Card)

SECTOR SKETCHES

A-117. Individual Soldiers in squads and BFV gunners prepare Standard Range Card. Squad leaders prepare sector sketches. Section leaders may have to prepare separate sector sketches only if assigned separate positions from the platoon or squad. The PL reviews the squads, and if applicable section's sector sketches and ensures the sketches are accurate and meet standard requirements. If the PL finds gaps or other flaws, the PL adjusts weapons locations within the sector. The PL or PSG physically prepares the platoon sector sketch. Once the PL approves the squad and section sector sketches, the PL prepares a consolidated platoon sector sketch for the company commander. The sector sketch can be on acetate taped to a map or it can be a hand drawn sketch. Accurate and detailed sketches aid in direct fire planning, and in direct fire control and distribution.

SQUAD SECTOR SKETCHES

A-118. The squad leaders and section leaders make two copies of their sector sketches; one copy goes to the PL; the other remains at the position. The squad leaders and section leaders draw sector sketches (see figure A-14 on page 284) as close to scale as possible, showing the following:

- Main terrain features in the sector and the range to each.
- EA or primary and secondary sectors of fire covering each position.
- Medium machine gun FPL or principal direction of fire.
- Squad automatic weapon FPLs or principal direction of fire.
- Type of weapon in each position.
- Reference points and TRPs in the sector.
- OP locations.
- Dead space.
- Obstacles.
- Maximum engagement lines for Javelin (if applicable) and AT4s.
- Indirect fire targets.

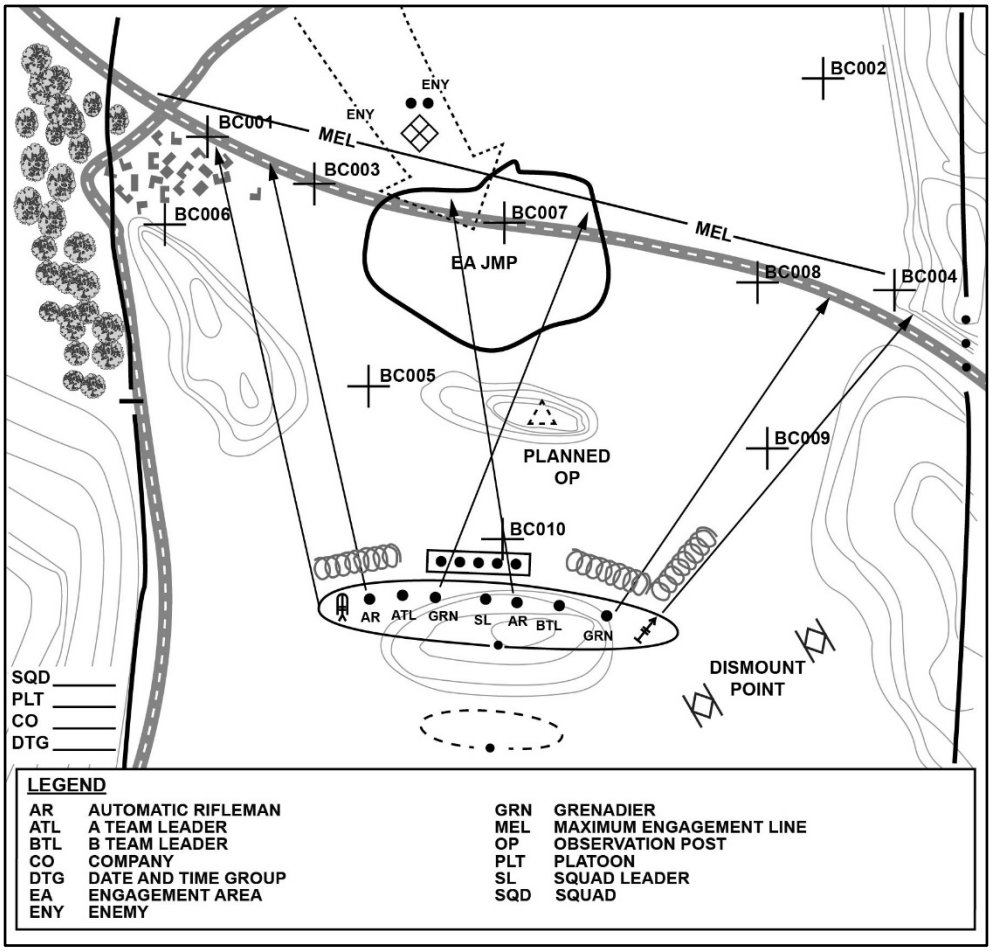


Figure A-14. Squad sector sketch

PLATOON SECTOR SKETCH

A-119. Squad leaders and section leaders prepare their sketches and submit them to the PL. The PL combines all sector sketches (and possibly separate Standard Range Cards) to prepare a platoon sector sketch, which is drawn as close to scale as possible and includes a target list for direct and indirect fires. (See figure A-15.) One copy is submitted to the company commander, one copy is given to the PSG (controlling the mounted element), and one copy is given to the leader of the dismounted element (usually the PL). Unit SOP determines the sector sketch requirements, the platoon sector sketch may show:

- Primary and secondary sectors of fire or EAs.
- Primary, alternate, and supplementary BFV and squad positions.
- Remount points.
- Javelin, medium machine gun, and squad automatic weapons positions with FPLs or PDFs.

- Maximum engagement lines for 25-mm, M240C, and TOW.
- OPs.
- TRPs.
- Mines and other obstacles.
- Indirect fire target locations and locations of FPF.
- Other relevant DFCM.

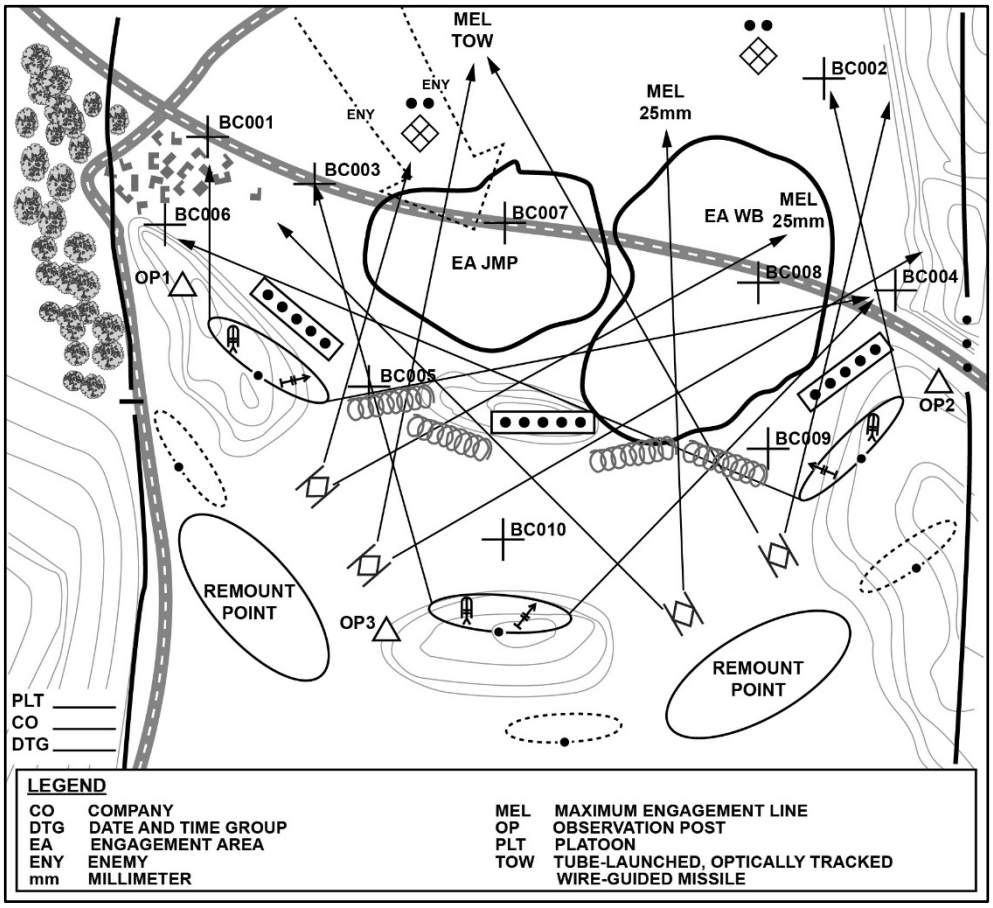


Figure A-15. Platoon sector sketch

COORDINATION WITH ADJACENT UNITS

A-120. PLs coordinate with adjacent platoons. Squad leaders coordinate with adjacent squads so that all positions and all platoon and squads are mutually supporting. The PL must ensure that this coordination takes place. Coordination is usually initiated from left to right. Gaps between positions are covered by fire as a minimum. Contact points are established to ensure friendly forces meet at some specific point on the ground to tie in their flanks. In many cases, the exchange of sector sketches will accomplish most of this. Typical information that is exchanged includes—

- Locations of primary, alternate, and supplementary positions; sectors of fire for BFVs, medium machine guns, and Javelins.
- Location of dead space between platoons and how it is to be covered.
- Agreement on which unit owns responsibility for areas that split both, such as roads or trails.
- Agreement about how to hand off targets moving into or out of adjacent unit sectors.
- Location of OPs.
- Location and types of obstacles and how to cover them.
- Patrols (size, type, time of departure and return, and routes).
- Call signs and frequencies.
- Anticipated routes, SBF positions, or other locations.

Appendix B

Fire Support Planning

Fire support planning is the continual process of selecting targets on which fires are prearranged to support a phase of the concept of operations. Fire support planning is accomplished concurrently with maneuver planning at all echelons. Leaders conduct fire support planning to suppress, isolate, obscure, neutralize, destroy, deceive, or disrupt known, likely, or suspected targets, and to support the actions of the maneuver forces. Fires are planned for all phases of an operation. This appendix addresses the lethal fires coming from the ABCT indirect fires, mortars, artillery, and supporting aviation assets.

SECTION I – FIRES PLANNING

B-1. *Fire support planning* is the continuous process of analyzing, allocating, integrating, synchronizing, and scheduling fires to describe how the effects of fires facilitate supported force actions (FM 3-09). Fire support planning starts as soon as the leader receives a mission. Once initiated, fire support planning continues through the operation's completion. The primary aim of fire planning is to develop how fire is to be massed, distributed, and controlled to best support the leader's concept of operations. Within the ABCT, the FA battalion has three batteries of six M109A6 Paladin self-propelled 155-mm howitzers. Each battery has two three-gun platoons. Within the CAB, there is a 120-mm mortar platoon with a fire direction center (FDC) and four tracked mounted 120-mm mortars. Rotary wing attack aviation or CAS can be requested. Mechanized Infantry PLs need to understand assets available and how to incorporate fires planning into the ground tactical plan. (See ATP 3-90.5, ATP 3-90.1, ATP 3-09.24 for additional information.)

CONCEPT OF FIRES

B-2. Fire planning begins with the concept of fires. This essential component of the concept of operations complements the leader's scheme of maneuver detailing the leader's plan for direct and indirect preparatory and supporting fires. Fire planning requires a detailed knowledge of weapon characteristics and logistical capabilities of those providing the fire support. Although leaders may be augmented with personnel to assist in planning and controlling attached or supporting assets, the responsibility for planning and execution of fires lies with the leader. Leaders do not wait to receive the higher HQ plan to begin their own fires planning but begins as soon as possible to integrate fires into concept of operations and concept of operations of the higher HQ.

FIRE SUPPORT TEAMS

B-3. *Fire support team* is field artillery team provided for each maneuver company/troop and selected units to plan and coordinate all supporting fires available to

the unit, including mortars, field artillery, naval surface fire support, and close air support integration (JP 3-09.3). FISTs provide the platoon with an FO, fire support coordination, precision targeting, targeting information in support of Type 2 and 3 CAS terminal attack controls, and effects assessment capabilities (see JP 3-09.3 for more info on the three types of CAS terminal attack controls). Effective fires require qualified observers to call for and adjust fires on located targets. FOs, forward air controllers (airborne) (FAC [A]), naval gunfire spotter teams, joint fires observers, and JTACs train together and work effectively as a team to request, plan, coordinate, and place accurate fires on targets that create the desired effects.

Fire Support Officer

B-4. *Fire support officer* is the operational to tactical level field artillery officer responsible for advising the supported commander or assisting the fire support coordinator on fires functions and fire support (FM 3-09). The company FSO extracts information from the CAB's fire support plan to develop the company's fire support plan per the commander's intent and concept of the operation. The FSO refines the company fire support plan then passes the targets to the platoon FOs.

Forward Observer

B-5. *Forward observer* is an observer operating with front line troops trained to adjust ground or naval gunfire and pass battlefield information. (JP 3-09). Platoon FOs are equipped with target acquisition devices that assist in accurately locating targets and the communications equipment needed to call for fire and conduct terminal guidance operations. A FO is the primary fire support observer in the platoon and is frequently collocated with the PL. They provide target refinement, nominate targets to the company fire plan (limited fire planning), advise the PL on all indirect fire support matters; prepare, maintain, and use situation maps, designate targets for precision-guided munitions, report combat information, execute planned fires, and request or adjust fires for their supported platoons.

B-6. The PL and the platoon FO should always be together during planning and mission execution. This ensures close synchronization of the scheme of maneuver and fire support plan. To ensure that indirect fire can be called on a specific target, PLs and FOs plan and select platoon priority targets and have them approved by the FSO and commander. Any Soldier can perform this function if the Soldier understands the mission and has the communications capability and training. Additional responsibilities include—

- Keeps the PL informed of the capabilities and limitations of all fire support assets that may be made available to the platoon and advises the PL on all fire support matters.
- Keeps the fire support plan current and adjusts the fire support plan as required when intelligence and spot reports are received.
- Fully understands responsibility within the observation plan and provides refinement or submits key targets for inclusion in the company fire plan.
- Prepares, maintains, and uses situation maps.
- Establishes and maintains digital and voice communications with the company FIST.

- Uses target coordinate mensuration tools.
- Provides target information for Army attack aviation, CAS execution, and naval surface fire support if available.
- Provides purpose and location of target, observers (primary and alternate), trigger lines, communications, and the unit providing the fires.
- Applies the law of armed conflict and ROE when employing fire support.
- Reports.

SURFACE DANGER ZONES

B-7. Risk-estimate distance is what FOs, JTACs, or any Soldier uses to determine safe distances from friendly fire. They will pass the phrase DANGER CLOSE, during a fire mission, with the method of engagement or the CAS attack brief remarks. DANGER CLOSE alerts FDCs, ground commanders, and aircrew of the proximity of the closest friendly troops to the intended point of weapon impact. DANGER CLOSE is a warning of the proximity of friendly forces and possibility of an increased risk to them. (See ATP 3-09.32 for risk-estimate distance.)

FIRE SUPPORT PLANNING IN THE DEFENSE

B-8. In the defense, fires are generally planned in three locations-in front of the unit positions, on the position's FPFs, and behind positions. To develop a defensive fire plan, the PL within the company defense—

- Redefines designation of unit point or area targets and other control measures, such as TRPs, to coordinate the fire when more than one subordinate is firing into the same EA or sector.
- Identifies likely enemy SBF positions or other areas where the enemy will likely mass.
- Identifies FPFs, targets to support displacement, and targets on behind positions.
- Masses fires on choke points and key terrain (for example, obstacles, water crossings, and dead space) to canalize, slow, and block the enemy's movements.
- Ensures fires are integrated into the obstacle plan.
- Considers the use of obscurants to support the obstacle plan.
- Refines and bases fire plans on the commander's guidance for fires and allocation of resources.
- Identifies requirements for positioning primary and alternate observers forward of friendly maneuver forces.
- Ensures that extraction guidelines are established and understood.
- Develops alternate plans in case these FOs are forced to withdraw prior to execution of fire support tasks.
- Determines the time needed for all fire support systems to be ready based on the scheme of maneuver and ensure that these times are met.
- Determines how and recommends when to shift the priority of fires and what will be the trigger to shift the priority of fires.
- Plans for the use of obscurants during periods of limited visibility to degrade enemy night vision capabilities.

- Receives target information from subordinates (normally provided on sector sketches or individual weapon Standard Range Cards).
- Reviews target information to ensure fires are equally distributed across the entire unit's assigned area and sufficient control measures are established.
- Completes the unit's fire plan and gives sector sketch to the higher HQ.

B-9. In the defense the EA is the place where the PL intends to destroy an enemy force using the massed fires of all available weapons. The success of engagements depends on how the PL can integrate the obstacle and indirect fire plans with the direct fire plan in the EA to achieve the unit's purpose. Completing the steps of EA development is not a lengthy process, EA development can occur rapidly without an elaborate decision-making process (See chapter 4 EA development).

Final Protective Fire

B-10. A *final protective fire* is an immediately available prearranged barrier of fire designed to impede enemy movement across defensive lines or areas (JP 3-09.3). The FPFs target the highest type of priority targets and takes precedence over all other fire targets. The FPFs differ from a standard priority target in that fire is conducted at the maximum rate until the mortars and artillery are ordered to stop, or until ammunition is depleted. If possible, the FPFs should be registered. In the fire support plan, an FPF is continuous artillery or mortar fires—

- Fired on a predetermined target.
- Fired at the maximum rate of fire until the firing unit is requested to stop, ammunition is exhausted, or the firing unit is forced to move.
- Allocated FA FPF, normally from the ABCT to the CAB level, which may allocate to the company and platoon level.
- Allocated mortar platoon FPF, normally from CAB to the company and platoon level.
- Authorized to shoot at the lowest maneuver commander's level (or that commander's authorized representative) in the area where the FPF is placed.

B-11. The risk estimate distance for a given delivery system (see ATP 3-09.32) is a factor in how close the FPF can be placed in front of friendly front lines. Closer FPFs are easier to integrate into direct-fire FPLs. The high rate of fire achievable by mortars creates effective barriers of fire. The normal allocation of FPFs is identical to the allocation of priority targets (one for each battery/platoon and one for each mortar platoon). While firing FPFs, mortar sections are not normally allowed to cease fire and displace. Due to counter mortar fires, they must take precautions to avoid or withstand counter mortar fire when firing an FPF. (See table B-1.)

Table B-1. Final protective fire data planning

Size	*Number of Mortars or Guns*	*Approximate Width (meters)**	*Approximate Depth (meters)*
120-mm	4	280	70
120-mm	2	140	70
155-mm	3	150	50
155-mm	6	300	50
Note: *measurements are approximate			
Legend: mm—millimeter			

Priority Target Versus Final Protective Fire

B-12. A *priority target* is a target, based on either time or importance, on which delivery of fires takes precedence over all the fires for the designated firing unit or element (FM 3-09). FPF differ from standard priority target in that an FPF is fired at the maximum rate of fire until mortars are ordered to stop or until all ammunition is expended while a priority target simply fires the planned number of rounds for that mission, for example a battery three (three rounds per gun in a six-gun battery). Firing units lay the guns on the priority target when not actively firing another mission.

Defensive echelonment

B-13. In the defense the company FSO will plan how to echelon fires and hand off select targets to the platoon FO. Echeloning fires are scheduled based on their optimum ranges and delivery systems to maintain continuous fires on the enemy, disrupting the formation and maneuver. Echelonment of fires in the defense places the enemy under increasing volumes of fire as they approach a defensive position. Aircraft and long-range indirect fire rockets and artillery deliver deep supporting fires. Close supporting fires, such as FPFs, are integrated closely with direct fire weapons such as BFV's Infantry squads, tank support, and antiarmor weapon systems.

FIRE SUPPORT PLANNING IN THE OFFENSE

B-14. Offensive fire planning follows the same methodology as defensive fire planning within constraints of the situation. The main difference is offensive fire planning always includes the synchronization between the base of fire and maneuver element. Inevitably, the leader's plan will not be as detailed as the defensive plan, but the presence of a maneuver element requires a baseline of planning and control to ensure indirect fire support is effective and efficient. Offensive fire planning may not be as detailed in some respects; however, the individual targets, such as obscuration in support of a breach will be every bit as complex as defensive fires.

B-15. Leaders must plan how they will engage known or suspected enemy targets, where friendly suppressive fire may be needed, and how they will control their unit's' fires against both planned targets and targets of opportunity. Fire planning should include a thorough analysis of the type of threat expected. This will aid the supporting friendly element in tailoring the weapon and ammunition requirements to suit the situation.

B-16. Offensive fire planning supports four phases: planning and preparation, approach to the objective, actions on the objective, and follow through. The degree of completeness and centralization of offensive fire planning depends on the time available to prepare the offensive. Fires are planned in four locations on the battlefield, short of the LD/line of contact to the objective, on the objective, and behind the objective. (See table B-2.)

Table B-2. Fires offensive planning considerations

Phase	***Plan fires to***
Planning and Preparation (Short of the LD/LC).	• Support unit in AA. • Support units' movement to the LD/LC. • Disrupt enemy reconnaissance forces. • Disrupt enemy defensive. • Disrupt enemy spoiling attacks.
Approach to the Objective (LD/LC to the Objective).	• Begin echeloning fires for maneuver unit. • Suppress and obscure for friendly breaching operations. • Suppress and obscure enemy security forces throughout movement. • Provide priority of fires to lead element. • Screen/guard exposed flanks.
Actions on the Objective (On the Objective).	• Fires to block enemy reinforcements. • Fires to suppress enemy direct fire weapons. • Suppress and obscure point of penetration. • Suppress and obscure enemy observation of friendly forces. • Fix targeted forces for engagement with direct fire weapons. • Isolate the objective.

Table B-2. Fires offensive planning considerations (continued)

Phase	*Plan fires to*
Follow Through (Beyond the Objective).	• Disrupt movement of enemy reinforcements during the assault. Screen friendly forces from enemy counterattacks during the assault. • Block avenues of enemy approach. • Disrupt enemy withdrawal. • Screen friendly forces from enemy counterattacks during the assault. • Consolidate objective after the assault. • Disrupt enemy counterattack. • Prepare a hasty defense.
Legend: AA—assembly area; LC—line of contact; LD—line of departure	

B-17. During offensive fire planning the PL should plan preparation fires and supporting fires (mortars, FA). *Preparation fires* is a brief, intense bombardment on selected targets or a prolonged effort over time covering a large number of targets (FM 3-09). The concept of fires has artillery and mortars in support of an attack to neutralize, suppress or destroy enemy positions on the objective until the last possible moment. When this indirect fire ceases, the enemy should be stunned and ineffective for a few moments. Take full advantage of this period by executing any or all the following:

- Maintaining fire superiority:
  - Soldiers use main weapons systems on BFVs.
  - Dismounted small-arms fire from local and internal SBF is continued as long as possible.
- Maneuver elements:
  - Assaulting troops must try to fire as they advance.
  - Troops must observe fire discipline, as in many cases fire control orders will be selective.
  - They must arrive at the objective with ammunition.

- Audacity: Where the ground and vegetation do not prohibit movement, leading sections and Infantry squads should move quickly to the enemy positions to minimize exposure.
- Fighting vehicles: BFVs used in the attack, or as direct fire support, continue to give close support.

B-18. When planning fires for the offense, leaders verify with the supporting unit that systems are positioned or repositioned to ensure continuous fires throughout the operation. Mutual support of fire systems promotes responsive support and provides maneuver commanders freedom of maneuver during each critical phase of the engagement or battle.

OFFENSIVE ECHELONMENT

B-19. When planning echelonment of fire in the offense, weapons are scheduled based on the point of a predetermined safe distance away from maneuvering friendly troops. When scheduled, fires provide protection for friendly forces as they move to and assault an objective. They also allow friendly forces to get in close with minimal casualties and prevent the defending enemy from observing and engaging the assault by forcing the enemy to take cover. The overall objective of offensive scheduled fires is to allow the friendly force to continue the advance unimpeded. PLs need to understand danger close distances for indirect fire systems used. PLs use risk estimate distance, SDZs, and minimum safe distance to manage associated risks.

TARGET EFFECTS

B-20. There exists a diverse variety of munitions and weapon systems, direct and indirect, to support close offensive missions. To integrate direct and indirect fire support, the leader must understand the mission, commander's intent, concept of operations, and critical tasks to be accomplished. Leaders plan fires to focus on enemy capabilities and systems being neutralized. Critical tasks include the following:

- When using indirect fire, the FDC relies on target description:
  - Identify the target: tanks, light armored vehicles, trucks, or troops.
  - Identify if target is in the open, in the woods, in bunkers, trenches, or with or without overhead cover.
- FDC selects correct fuze combination and type of round to achieve desired effect.
- Leaders need to understand the capabilities of Army attack aviation in the direct support role.

B-21. Not only must indirect fire support planners determine what enemy targets to hit, and when, but also must decide how to attack each enemy target. Leaders should consider all the aspects of target effects when planning fires. Although this section is specific to mortars, paragraphs B-22 to B-33 discuss concepts that generally apply to most indirect fires. (See ATP 3-09.32 for more information.)

High-Explosive Ammunition

B-22. When mortar rounds impact, they throw fragments in a pattern never truly circular, and may even travel irregular, based on the round's angle of fall, the slope of the terrain, and type soil. However, for planning purposes, each mortar HE round is

considered to have a circular lethal bursting area. (Figure B-1 shows a scale representation of the lethal bursting areas of mortar rounds if equipped.)

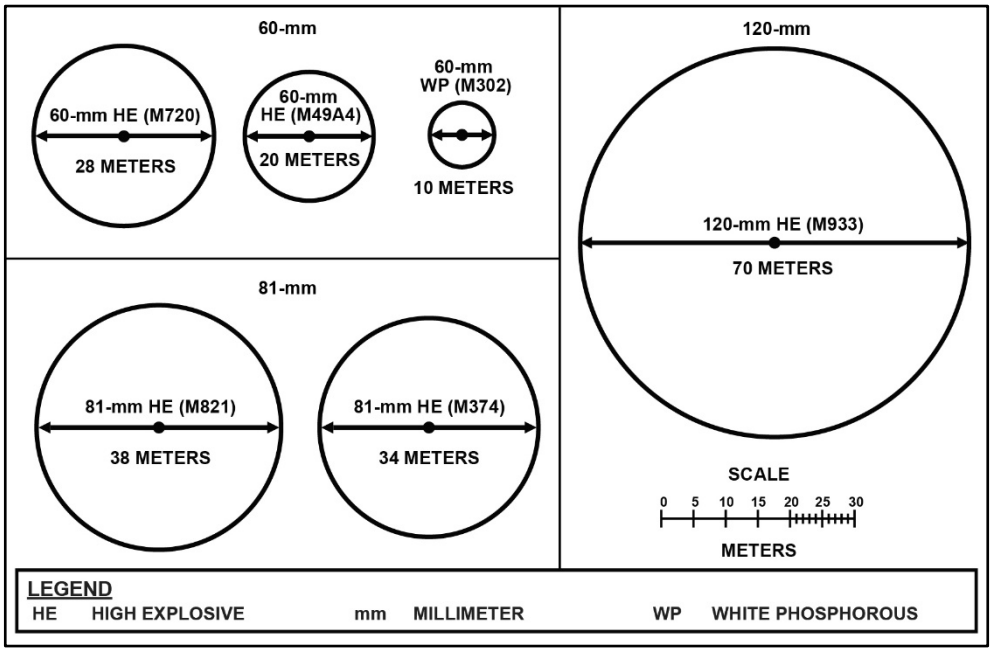


Figure B-1. Mortar bursting area for U.S. mortar rounds

Fuze Setting

B-23. The decision concerning what fuze setting to use depends on the position of the enemy. Exposed enemy troops standing up are best engaged with impact or near surface burst fuze settings. The round explodes on, or near, the ground. Shell fragments travel outward perpendicular to the long axis of the standing target. (See figure B-2 on page 296.)

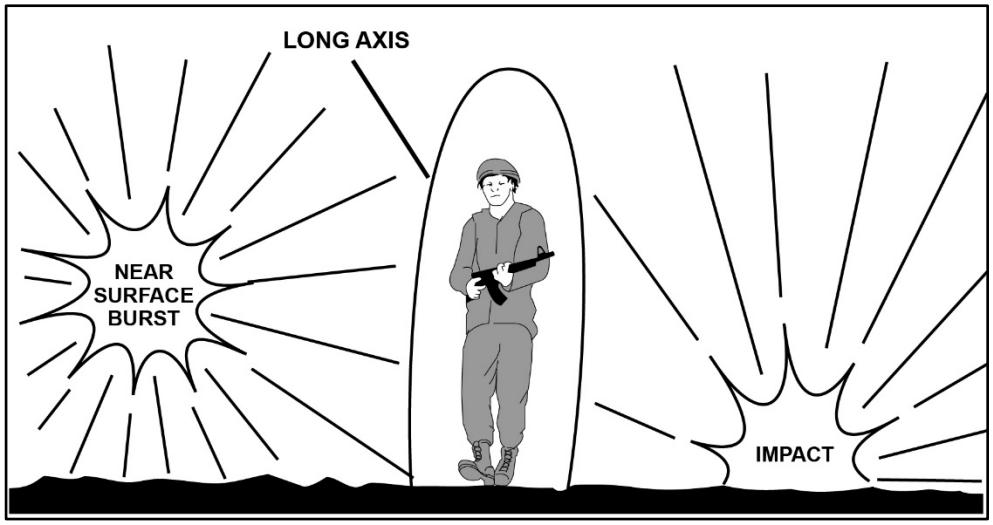


Figure B-2. Standing targets

B-24. If exposed enemy troops are lying prone, the proximity fuze setting is most effective. The rounds explode high above the ground, and fragments coming downward are traveling once again perpendicular to the long axis of the targets. (See figure B-3.)

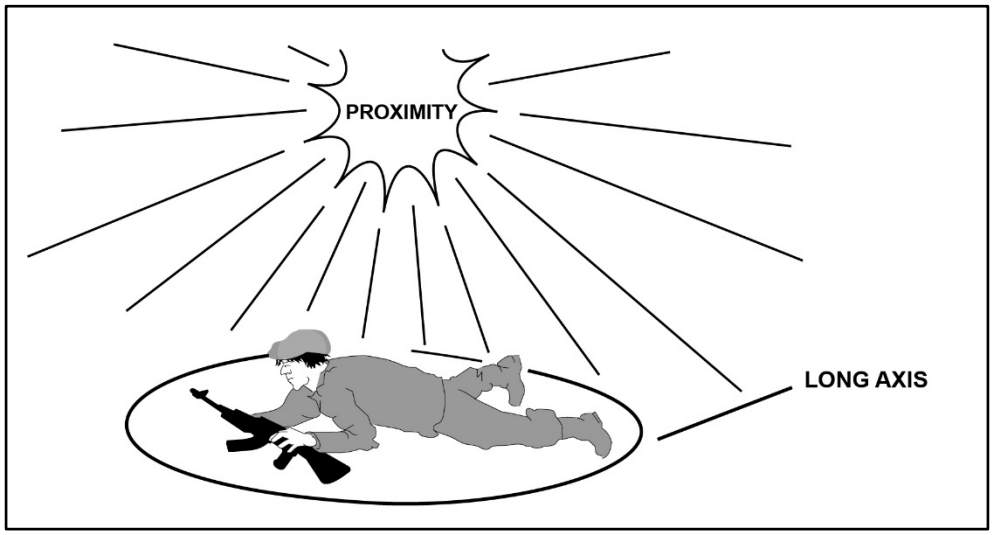


Figure B-3. Prone targets

B-25. The proximity setting is the most effective if the enemy is in open fighting positions without overhead cover. Even proximity settings will not always produce effects if the positions are deep. (See figure B-4.)

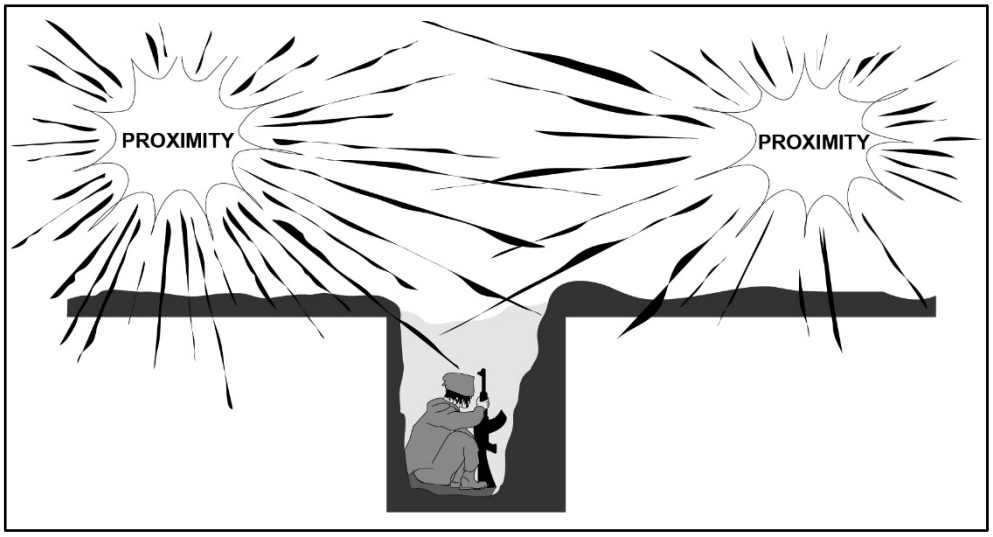


Figure B-4. Targets in open fighting positions

B-26. The delay fuze setting is most effective when the enemy is below triple canopy jungle or in fighting positions with over-head cover. Heavy mortars can destroy a bunker, or enemy troops beneath jungle canopy with a hit or near miss. (See figure B-5.)

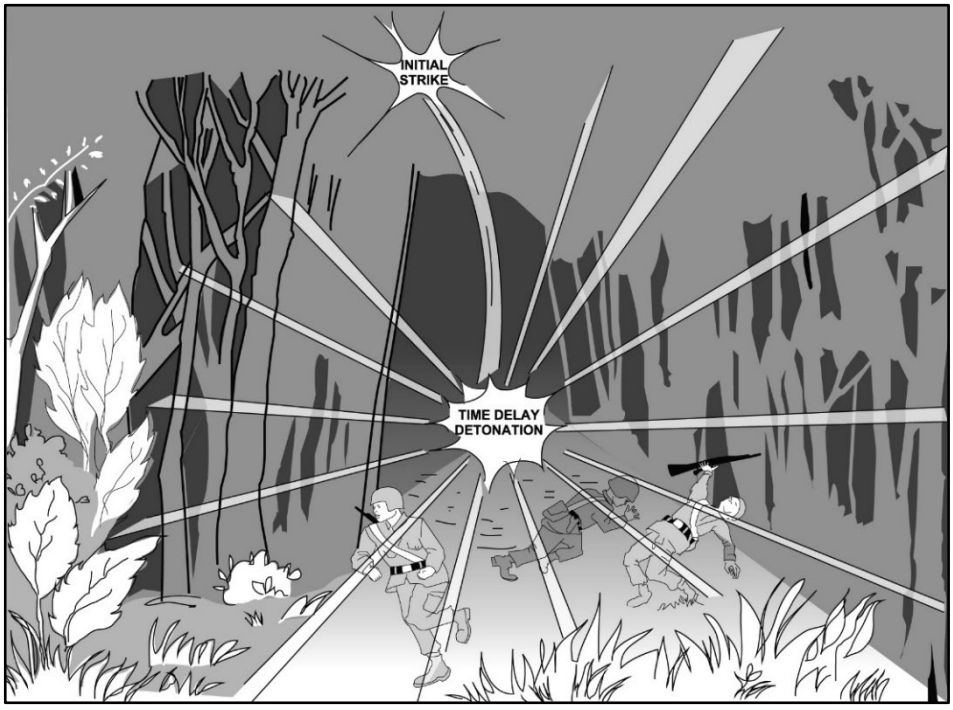


Figure B-5. Targets in triple canopy jungle

Suppressive Effect of High-Explosive Mortar Rounds

B-27. Suppression from mortar fire is not easily measured as a target effect since it is impossible to determine the psychological impact it may have on enemy soldiers. Inexperienced or surprised Soldiers are more easily suppressed than experienced, warned Soldiers. Soldiers in the open are much more easily suppressed than those with overhead cover. Suppression is most effective when mortar fires first fall; as they continue, their suppressive effects lessen. HE rounds normally produce the greatest psychological impact. This can be amplified by mixing rounds. For instance, a mixture of HE and white phosphorous (WP) can have a profound psychological effect on the enemy. CABs are equipped with the 120-mm mortars, and the suppressive effects of 120-mm, 81-mm, and 60-mm mortars include the following effects (see figure B-6):

- The impact of a 60-mm mortar round within 20 meters of a target will likely suppress or damage it.
- If a 60-mm mortar round lands within 35 meters of a target, there is a 50-percent chance it will be suppressed and beyond 50 meters, little suppression takes place.
- If an 81-mm mortar round lands within 30 meters of a target, the target will likely be suppressed or damaged.
- If an 81-mm mortar round lands within 75 meters of a target, there is a 50-percent chance the target will be suppressed and beyond 125 meters, little suppression takes place.
- If a 120-mm mortar round (proximity-fuzed) lands within 65 meters of a target, the target will likely be suppressed, if not hit.
    - Within 125 meters of a target, there is a 50-percent chance the target will be suppressed.
    - Beyond 200 meters, little suppression takes place.

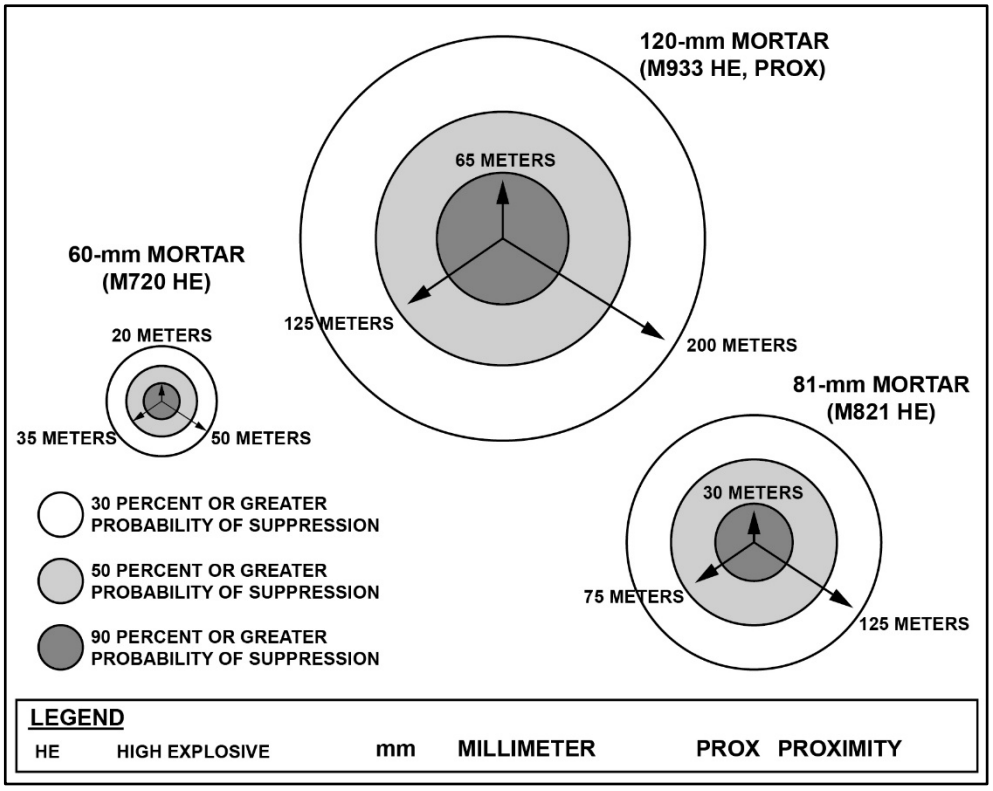


Figure B-6. Suppressive effects of common U.S. mortar rounds

Obscurants and White Phosphorous

B-28. Illumination and obscuration missions are important functions for mortar platoons or sections. Atmospheric stability, wind velocity, and wind direction are the most important factors when planning target effects for obscurants and WP mortar rounds. The terrain in the target area also affects obscurants and WP rounds.

B-29. The bursting WP round provides a screening, incendiary, marking, and casualty-producing effect. It produces a localized, instantaneous obscurant cloud by scattering burning WP particles.

B-30. The WP round is used mainly to produce immediate, close point obscuration. It can be used to screen the enemy's field of fire for short periods, which allows the unit to maneuver. When using WP as an obscurant the unit should take into consideration wind direction and dissipation time of the round. The 120-mm WP round from the heavy mortar is sufficient to produce a long-lasting, wide-area obscurant for screening.

B-31. WP rounds generally should not be used solely to produce casualties due to the law of armed conflict principle of humanity, which forbids the infliction of suffering, injury, or destruction unnecessary to accomplish a legitimate military purpose. Unnecessary suffering would be implicated because of the persistent burning WP causes

in the wounds. Generally, more casualties can be produced by firing HE ammunition than by firing WP. A few WP rounds mixed into a fire mission of HE rounds for a valid purpose (that is target marking) may increase the suppressive effect of the fire because of the significant psychological effect a WP burst may have on exposed troops.

Illumination

B-32. Illumination rounds can be used to disclose enemy formations, to signal, or to mark targets. There are illumination rounds available for all mortars. The medium and heavy mortars can provide excellent illumination over wide areas. The 120-mm mortar illumination round provides 1 million candlepower for 60 seconds. The M320 grenades, as well as all mortars have the capability to deliver IR illumination rounds in addition to the more common white light.

Special Illumination Techniques

B-33. Illumination is always planned for attacks to be conducted in limited visibility. The following are three mortar special illumination techniques:

- An illumination round fired extremely high over a general area will not always alert an enemy force that it is being observed, but it will provide enough illumination to optimize the use of night vision devices.
- An illumination round fired to burn on the ground will prevent observation beyond the flare into the shadow:
  - This is one method of countering enemy use of night vision devices.
  - A friendly force could move behind the flare with greater security.
- An illumination round fired to burn on the ground can be used to mark targets during day or night:
  - Illumination rounds have an advantage over WP as target markers during high winds.
  - The obscurant cloud from a WP round will be blown quickly downwind.
  - The obscurants from the burning illumination round will continue to originate from the same point, regardless of the wind.
- By requesting a range spread, the observer can spread illumination through the depth of a target.
- By requesting a lateral spread, the observer can spread illumination across the width of the target.
- Using a range and lateral spread, the observer can combine the effects to spread illumination across the width and depth of a target.
- If there is insufficient light, the observer can use coordinated illumination to adjust HE missions.
- The observer requests continuous illumination if there is a need to maintain illumination.

SECTION II – FIRE SUPPORT ASSETS

B-34. Mortars and FA are the main indirect fire support available to the mechanized platoon in an ABCT. During large-scale combat operations, rotary wing attack aircraft and joint or coalition CAS are typically planned at the BCT level, and sorties may be

allocated to the CAB for refined planning in order to shape combat operations. On a limited basis, if assets are available, they may be requested for the platoon. This section discusses the considerations, and procedures for employing all the indirect fire assets (table B-3 shows ABCT indirect capabilities).

Table B-3. Indirect fire weapons capabilities

Caliber	120-mm Mortar	155-mm Self-Propelled
Location	CAB	ABCT
Max Range (HE)	7,200 meters	24,000 meters
Planning Range	(2/3 max)	14,600 meters
Projectiles	HE Smoke (WP) Illumination IR Illumination AMPI	HE Smoke (WP) Illumination Smoke (HC) RAP M982A1 (Excalibur) ICM DPICM APICM RAAMS ADAM FASCAM
Max Rates of Fire	16 RPM for 1 minute	4 RPM for 3 minutes
Sustained Rates of Fire	4	2
Minimum Range	200 meters	Direct fire

Legend:
ABCT—Armored brigade combat team; ADAM—Area Denial Artillery Munitions; APICM—Antipersonnel Improved Conventional Munitions; APMI—advanced precision mortar initiative; CAB—combined arms battalion; DPICM—Dual Purpose Improved Conventional Munitions; FASCAM—family of scatterable mines; HC—hexachloroethane; HE—high-explosive; ICM—Improved Conventional Munitions; IR—infrared; max—maximum; mm—millimeter; RAAMS—Remote Anti-Armor Mine System; RAP—rocket assisted projectile; RPM—rounds per minute; WP—white phosphorous

MORTARS

B-35. Mortars are high-angle, relatively short-range, high rate-of-fire, area fire weapons. Their mobility makes them well suited for close support of maneuver and can rapidly be brought into action. The mortar platoon is the CAB commander's most responsive fire support asset, and the only one under their direct control. Typically, the CAB commander employs the mortar platoon in support of the battalion's main effort or uses it to offset the lack of FA. Mortars are ideal weapons for attacking targets on reverse slopes, in gullies, in ditches, in built up areas, and in other areas that are difficult to reach with low-angle fire (See ATP 3-21.90 and ATP 3-90.5 for more information).

MORTAR CAPABILITIES

B-36. Mortars can suppress enemy forces and enhance the platoon's mobility which allows the platoon to gain a tactical advantage over enemy forces. Mortars provide the platoon with responsive, organic indirect fire support at a higher rate of fire than FA units. Although the mechanized Infantry platoon does not have organic mortars, they can request support from the CAB 120-mm mortar platoon. Additional employment considerations include the following:

- Mortars provide the maneuver leader with immediately available and responsive indirect fires in support of combat missions, and they reinforce direct fires during close combat.
- Mortars are integrated with FA assets in an echelonment of fires.
- In the offense, mortars establish conditions for the maneuver elements in conducting their combat missions by:
  - Assisting in suppressing and fixing the enemy and providing close support fires during the assault.
  - Providing obscurants for screening and friendly movements.
  - Using mortars to penetrate buildings and destroy enemy field fortifications.
- In the defense, mortars can—
  - Force the enemy in armored vehicles to button up.
  - Obscure the enemy's ability to employ supporting fires.
  - Deny enemy's use of defilade terrain.
  - Break up enemy concentrations and formations.
  - Separate enemy dismounted Infantry from their PCs and accompanying tanks.
  - Destroy synchronization, reduce enemy mobility, and canalize enemy units into EAs.

MUNITIONS

B-37. Mortars employ a wide variety of munitions to support the maneuver platoon which include but not limited to the following:

- HE ammunition is used against enemy personnel, light materiel targets, and PCs with a variety of fuze combinations.
- Illumination ammunition is used for battlefield illumination and signaling with both IR and light illumination cartridges.
- Smoke cartridges with WP filler are used for screening and spotting.

FIELD ARTILLERY

B-38. *Field artillery* is equipment, supplies, ammunition, and personnel involved in the use of cannon, rocket, or surface-to-surface missile launchers (FM 3-09). FA is the maneuver commander's principal means for providing indirect fire support to the maneuver forces if allocated by the ABCT commander. The mission of the FA is to destroy, defeat, or disrupt the enemy with integrated fires to enable maneuver commanders to dominate in large-scale combat operations. FA elements within maneuver organizations serve as the integrating center for all elements of fire support. FA delivery systems include cannons, rockets, and missiles. These systems can provide

fires under all weather conditions and in all types of terrain. They can shift and mass fires rapidly without having to displace. (See ATP 3-90.5 and FM 3-09.)

B-39. The mechanized Infantry platoon must know how to use artillery support to its best advantage. Artillery often offers the best way to impede and disrupt enemy formations and suppress enemy positions. It can provide immediate, responsive, and accurate fires with a wide variety of munitions. Mechanized Infantry platoons may have artillery support when designated the main effort and should understand the capabilities within the ABCT. (See ATP 3-90.5 and ATP 3-09.70).

ARTILLERY CAPABILITIES

B-40. In support of the platoon, FA elements can—

- Provide fires in all weather conditions and types of terrain.
- Shift and mass fires rapidly.
- Support the operations in depth with long-range fires.
- Provide a variety of conventional shell and fuze combinations.
- Provide continuous fires by careful positioning and timely displacement.
- Accurately engage stationary point targets with 155-mm M982A1 (also called Excalibur) guided munitions.

B-41. Limitations of FA support include high dud rates for some munitions, observer-induced target location error (TLE), its limited capability against moving targets, and its vulnerability to detection and counterbattery fires due to its firing signature. (See ATP 3-09.70.)

MUNITIONS

B-42. FA employs a wide variety of munitions that the platoon can tailor to engage different types of targets. These include, but are not limited to—

- HE is best against personnel, field fortifications, and light armored vehicles.
- Smoke is best for obscuring the enemy's vision and screening friendly Soldiers.
- Illumination includes both white light and IR illumination and ideally, these illuminate the enemy, not friendly forces.
- White or red phosphorus effectively screens friendly Soldiers or actions, marks locations, obscures enemy vision, and burns obstacles and equipment.
- Precision munitions such as M982A1 guided munitions best used on point targets that require a high degree of accuracy, especially in urban areas where collateral damage is a concern.
- Improved conventional munitions are best against personnel targets.
- Dual-purpose improved conventional munitions are best against personnel and light armored vehicles in the open.
- Anti-Personnel Improved Conventional Munition (also called APICM).
- Area Denial Artillery Munition (also called ADAM).
- Remote Anti-Armor Mine System (also called RAAMS).

MORTAR AND ARTILLERY CALL FOR FIRE

B-43. *Call for fire* is a standardized request for fire containing data necessary for obtaining the required fire on a target (FM 3-09). (See figure B-7.) The ability for

mortars and artillery to engage targets from reverse-slopes and areas of defilade is a tremendous advantage, especially in adverse terrain. As with other operations, employing indirect fires in adverse terrain and climate does have its challenges. (See ATP 3-21.90, ATP 3-09.30, and FM 3-09 for additional information.) Unique challenges include—

- TLE when using analog tools, such as map, binoculars, and compass.
- Requirements to frequently displace firing units for survivability.
- Deconflicting the battlefield geometry:
  - Ground and air clearance.
  - Gun-target lines.
- Unpredictable weather conditions affecting accuracy of rounds.
- Targets located on peaks and steep terrain making round adjustments difficult.
- Intervening crests requiring placement of observers on dominating heights for overwatch.
- Limited terrain suitable for firing positions to cover a particular movement.
- Mortar and artillery locations ideal for range and coverage unsuitable due to intervening adverse terrain features.
- Locations that are tactically positioned but in an area that has difficult or limited access.
- Shifting mortar and artillery assets to alternate locations requiring significant time and logistical efforts.

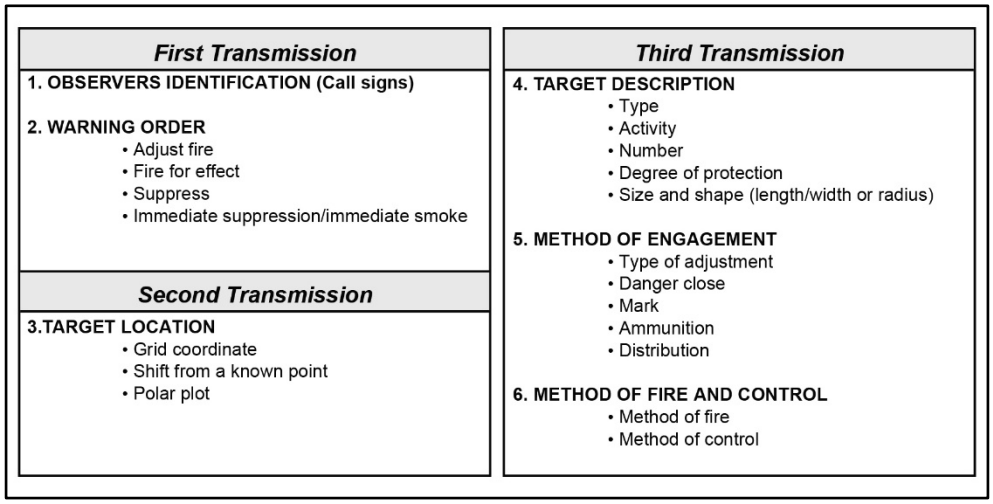


Figure B-7. Artillery and mortar call for fire format

INITIAL CALL FOR FIRE

B-44. The six elements of a call for fire include: observer identification, WARNORD, target location, target description, method of engagement and method of fire and control. Regardless of the method of target location used, the call for fire is normally sent in three transmissions, consisting of six elements, with a break and read back after each transmission. Send the information for each transmission as it is determined, rather than

waiting until a complete call for fire has been prepared (See ATP 3-09.30 for detailed description). The transmissions and elements are organized in the following sequence:

- Observer identification and WARNORD.
- Target location.
- Target description, method of engagement, and method of fire and control.

Observer Identification and Warning Order

B-45. Observer identification tells the FDC who is calling. The WARNORD clears the net for the fire mission and tells the FDC the type of mission, size of element, and the method of locating the target. Example: the observer says, STEEL–1 - THIS IS RED–1 - followed by type of mission (ADJUST FIRE, FIRE FOR EFFECT, SUPPRESS) - OVER. The types of indirect fire missions are the following:

Adjust Fire

B-46. This is used when the observer is uncertain of the exact target location. The firing unit will shoot one round and the observer will make corrections. The observer announces, ADJUST FIRE.

Fire for Effect

B-47. The observer can bypass adjustments and initiate a fire for effect when the observer is positive of the target location. The observer should also be sure the rounds of the first volley have the desired effect on the target so little or no adjustment is required. The observer announces, FIRE FOR EFFECT.

Suppress

B-48. The word SUPPRESS is used to quickly bring fire on a preplanned target when unable to observe. This is a simplified call for fire and is sent in one transmission. Example: STEEL 1-THIS IS RED 1-SUPPRESS GRID ND1234567890 1-OVER.

Immediate Suppression

B-49. This is used to bring fire quickly on a planned target or a target of opportunity that is firing at a friendly unit or aircraft. As an example, the observer says, STEEL 1- THIS IS RED 1-IMMEDIATE SUPPRESSION GRID ND1234567890 -OVER.

Immediate Smoke

B-50. This is used to place smoke quickly on a planned target or a target of opportunity that is firing at a friendly unit. Example: STEEL 1-THIS IS RED 1-IMMEDIATE SMOKE GRID ND1234567890 -OVER.

Target Location

B-51. The third element of the call for fire is target location. There are five methods of establishing target location. They are grid, laser grid, polar plot, laser polar and shift from known point. When utilizing precision targeting devices to establish location, it is required to transmit the TLE in the target location portion of the call for fire request.

Grid

B-52. The observer sends the most accurate target location possible. The minimum acceptable standard is a six-digit grid when calling for fire on a map spotted target location. Send a minimum eight- or ten-digit grid location for registration points or other points for which greater accuracy is required. Altitude is included immediately after the grid. The observer-target direction is normally sent after the entire initial call for fire, since the FDC does not need the direction to locate the target.

B-53. The observer announces GRID. For example, ADJUST FIRE, GRID ND1234567890, OVER.

Laser Grid

B-54. A laser grid mission is the same as a grid mission with the following exceptions:

- A target grid can be sent to a greater level of precision (eight or ten-digit grid depending on observer or OP location error).
- In an adjust fire mission, corrections are sent in the form of a grid to the burst location.

B-55. The observer announces LASER GRID, for example FIRE FOR EFFECT, LASER GRID, OVER. After the read back by the FDC, the FO announces the grid and altitude as normal, followed by the TLE if known. For example, GRID ND1234567890, ALTITUDE 390, TLE 2.9 OVER.

Polar Plot

B-56. In a polar plot mission, the word polar in the WARNORD alerts the FDC that the target will be located with respect to the observer's position. The FDC must know the observer's location. The observer then sends the direction and distance. A vertical shift tells the FDC how far, in meters, the target is located above or below the observer's location. Vertical shift may also be described by a vertical angle in mils, relative to the observer's location.

B-57. The observer announces POLAR. For example, ADJUST FIRE POLAR, OVER.

Laser Polar

B-58. Laser polar differs from a polar mission in that laser data is sent to the nearest one mil for direction (instead of the normal 10 mils) vertical angle and the nearest 10 meters for distance.

B-59. The observer announces LASER POLAR. For example, ADJUST FIRE, LASER POLAR, OVER.

Shift from a Known Point

B-60. In a shift from a known point mission, the target will be in relation to a preexisting known point or recorded target. In the WARNORD, identify the point or target from which to shift. (The observer and the FDC must know the location of the point or recorded target.) The observer then sends the observer-target direction. Normally, mils are the preferred unit of measure for a shift. However, the FDC can accept degrees or

cardinal directions, whichever the observer specifies. The corrections are sent next and include—

- Lateral shift in meters (how far left or right the target is) from the known point.
- Range shift (how much farther [ADD] or close [DROP] the target is in relation to the known point, to the nearest 100 meters).
- Vertical shift:
  - This is how much the altitude of the target is above [UP] or below [DOWN] the altitude of the known point, expressed to the nearest 5 meters.
  - Vertical shift is usually only significant if it is greater than or equal to 35 meters.

B-61. The observer announces SHIFT, followed by the designation of the known point or by the target number. For example, ADJUST FIRE, SHIFT KNOWN POINT AB0001, OVER.

Target Description

B-62. The observer must describe the target in enough detail that the FDC can determine the most appropriate amount and type of ammunition to use. The FDC selects different ammunition for different types of targets. The observer should be brief but accurate. The description should contain the following:

- What the target is (troops, equipment, supply depot, trucks).
- What the target is doing (digging in, in an AA).
- The number of elements in the target (squad, platoon, three trucks, six tanks).
- The degree of protection (in the open, in foxholes, in bunkers with overhead protection).
- The target size and shape if these are significant.
  - For a rectangular target, give the length and width (in meters) and the attitude in mils, such as 400 BY 300, ATTITUDE 2800.
  - For a circular target, give the radius, such as RADIUS 200.
  - For a linear target, give the length and attitude.

Method of Engagement

B-63. The observer may indicate how to attack the target. This element consists of the type of adjustment, trajectory, ammunition, and distribution. DANGER CLOSE and MARK are included as appropriate. For a smoke mission, the observer would request SMOKE AND EFFECT here. The observer may control the pattern of bursts in the target area, this is distribution. This pattern of bursts is called a sheaf and can be used on a specific target. See ATP 3-09.30 observed fires for more information on converged and open sheafs.

Method of Fire and Control

B-64. The method of fire and control element indicates the desired manner of attacking the target, whether the observer wants to control the time or delivery of fire, and whether the target can be observed. The most common methods of control are AT MY COMMAND and time on target which are especially useful in massing fires. The AT MY COMMAND and time on target missions are designed to achieve surprise and

maximize the effects of the initial volley on a target. When used by the observer, these methods of control can reduce the sporadic engagement of the target, which can be the result of rounds fired when ready. (See figure B-8 call for fire flow chart.)

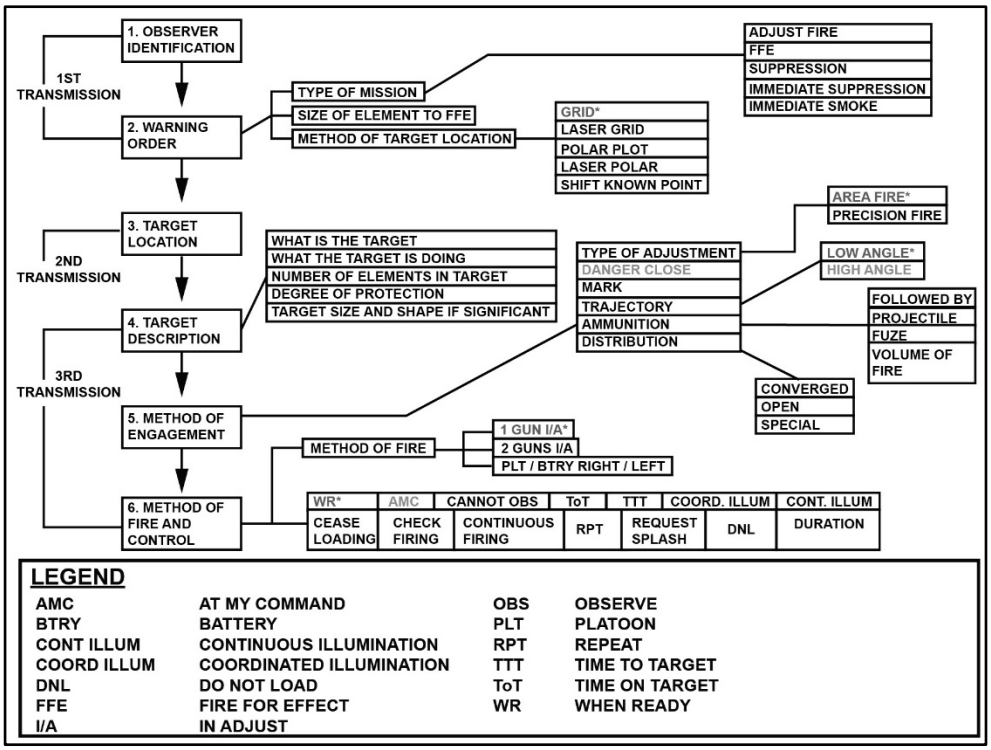


Figure B-8. Call for fire flow chart mortars and artillery

AIR-GROUND OPERATIONS

B-65. *Air-ground operations* are the simultaneous or synchronized employment of ground forces with aviation maneuver and fires to seize, retain, and exploit the initiative (FM 3-04). Employing the combined and complimentary effects of air and ground maneuver and fires through air-ground operations presents the enemy with multiple dilemmas and ensures that aviation assets are positioned to support ground maneuver. Air-ground operations increase the overall combat power, mission effectiveness, agility, flexibility, and survivability of the entire combined arms team. Air-ground operations ensure that all members of the combined arms team, whether on the ground or in the air, work toward common and mutually supporting objectives to meet the higher commander's intent.

ARMY AVIATION

B-66. Army aviation attack and reconnaissance units use maneuver to concentrate and sustain combat power at critical times and places to find, fix, and destroy enemy forces. During the planning process, Army aviation attack and reconnaissance units are integrated into the units' scheme of maneuver to ensure responsiveness, synergy, and

agility during actions on the objective or upon contact with the enemy. Pre-mission development of control measures provides a foundation for the successful integration of Army aviation into all operations. In large-scale combat operations, army attack aviation is typically planned at the BCT in support of BCT or CAB tactical maneuver. Attack aviation elements will typically be employed at the company level to achieve massed effects at the decisive point by integrating the air scheme of maneuver (such as air routes and air BPs) with the ground scheme of maneuver and scheme of fires. The mechanized Infantry platoon should be aware of aviation units operating adjacent to or forward of their positions or providing fires from an over-the-shoulder position and understand that aviation units in the area will always slow the responsiveness of indirect fire systems, and leaders should be prepared to deconflict indirect fires with aviation support by way of time, altitude, boundaries, or other control measures. Integrating attack aviation into tactical maneuver is contingent upon the use of commonly understood graphics and planning considerations. Among these control measures are engagement criteria; the triggers and conditions for execution; FSCMs, such as TRPs, EAs, and airspace coordinating measures, such as aerial ingress and egress routes and restricted operations zones.

ARMY AVIATION ATTACK CALL FOR FIRE

B-67. The more platoons are decentralized in their operations, the more likely they are to receive, or utilize, supporting army attack aviation. Platoons must be prepared to contact and request fires from supporting aviation. Army aviation attack targets are planned on probable enemy locations. Army aviation attack call for fire is a coordinated attack by Army aviation attack against enemy forces in close proximity to friendly units (see figure B-9 on page 310). Army aviation attack call for fire is not synonymous with CAS flown by joint and multinational aircraft. Terminal control from ground units or controllers is not required due to aircraft capabilities and enhanced situational understanding of the aircrew. Depending on the enemy situation and the higher commander's intent for aviation employment, Army aviation attack may be on station during times when contact is most likely to occur. Air-ground integration ensures frequencies are known and markings are standardized to prevent fratricide.

B-68. Coordination between ground maneuver units and aviation attack units maximizes the capabilities of the combined arms team while minimizing the risk of fratricide and friendly fire. To ensure adequate air-ground integration, the following major problem areas should be addressed:

- Ensure aircrews understand ground tactical plan and unit commander's intent.
- Ensure adequate common control measures are used to allow both air and ground unit's maximum freedom of maneuver.
- Ensure aircrews and ground forces understand methods of differentiating between enemy and friendly forces on the ground.

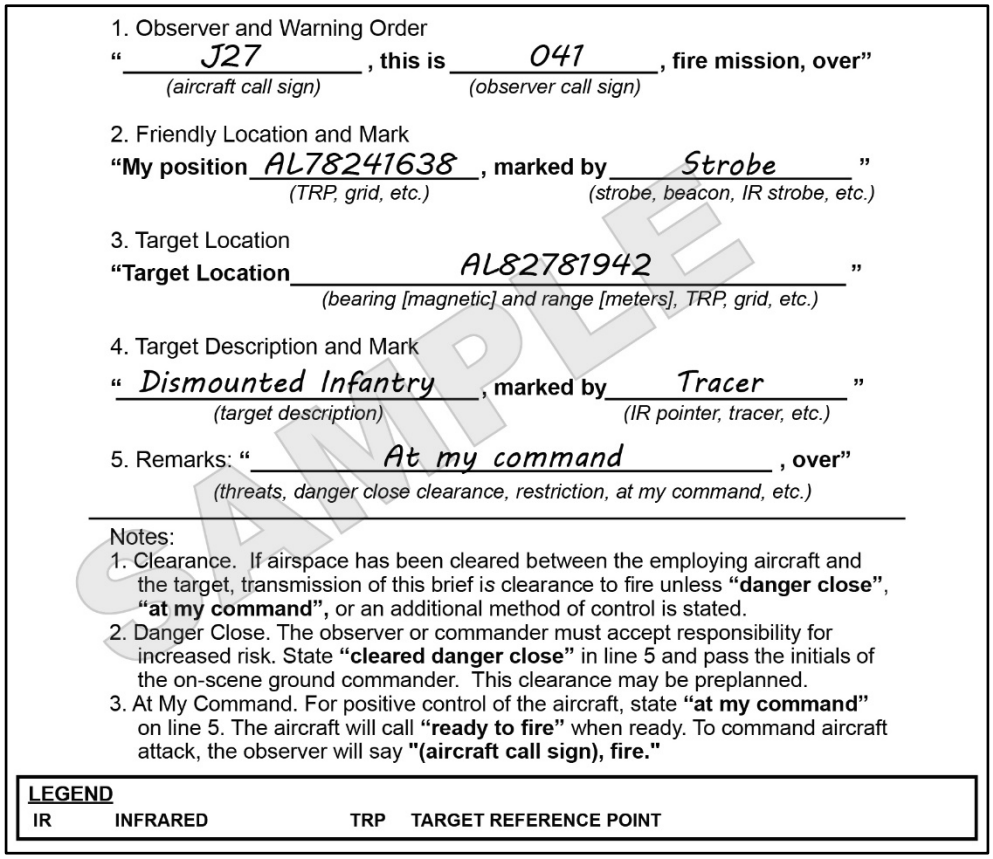


Figure B-9. Army aviation attack request call for fire

CLOSE AIR SUPPORT

B-69. CAS distributed to CABs may be further distributed to companies. CAS can be employed to blunt an enemy attack; to support the momentum of the ground attack; to help set conditions for operations as part of the overall counterfire fight; to disrupt, delay and destroy enemy second echelon forces and reserves; and to provide cover for friendly movements. The effectiveness of CAS is related directly to the degree of local air superiority attained. Until air superiority is achieved, competing demands between CAS and counterair operations may limit sorties apportioned for the CAS role. CAS is the primary support given to committed CAB and ABCT by joint or coalition aircraft.

Mission

B-70. *Close air support* is air action by aircraft against hostile targets that are in close proximity to friendly forces and that require detailed integration of each air mission with the fire and movement of those forces (JP 3-09.3). Based on threats and the availability of other means of fire support or supporting arms, synchronizing CAS in time, space,

and purpose with supported ground forces may be the most detailed and continuous integration task performed by commanders and staffs.

Planned Close Air Support

B-71. BCT tactical planners, in coordination with CAB maneuver battalions submit CAS requests in conjunction with the Joint Air Tasking Cycle (normally 72-96 hours in advance). These requests for CAS normally do not include detailed timing information because of the lead time involved. Preplanned CAS requests involve any information about planned subordinate schemes of maneuver, even general information, which can be used in the apportionment, allocation, and distribution cycle. As requests mature in the process, they gain specificity in terms of weaponizing and timing. CAS is retained by the BCT or allocated to CABs for execution.

Immediate Close Air Support

B-72. Immediate requests are used for air support mission requirements identified too late to be included in the current air tasking order. Those requests initiated below CAB level, and without a JTAC and access to the Joint Air Request Net, are forwarded to the CAB main CP by the most rapid means available. At CAB level, the commander, FSO, air liaison officer, and CAB operations staff officer consider each request. Immediate CAS requests are transmitted by the tactical air control party over the Joint Air Request Net directly to the air support operations center that is the primary control agency of the Theater Air Control System for execution of air operations in direct support of land operations. Immediate CAS requests may be generated in support of operations still in the planning process or in support of ongoing combat operations.

Executing Close Air Support

B-73. Units having a reasonable expectation of utilizing CAS will need to have a qualified JTAC available. In certain circumstance where CAS is needed and a JTAC or forward air controller (airborne) FAC (A) is not available, aircrews bear increased responsibility for the detailed integration required to minimize fratricide normally done by a JTAC/FAC (A). Joint fires observers also support CAS by providing targeting data to JTACs/FAC (A)s, but they cannot perform terminal attack control of CAS missions and do not replace a trained and certified JTAC or FAC (A). In these rare circumstances, the aircrews providing CAS assist the ground movement commander to the greatest extent possible to bring fires to bear.

B-74. The flow and prosecution of CAS targets normally begins with a check-in briefing between the aircrew and the JTAC or the FAC (A) (See ATP 3-09.32 for information on check-in brief). The JTAC will give a ground situation update followed by a game plan, then a 9-line CAS brief (See figure B-10 on page 312 for game plan 9-line CAS brief). A game plan is a concise situational awareness-enhancing tool to inform all players of the flow of the CAS mission. At a minimum, the game plan will contain the type of control and method of attack. The type of terminal attack control and method of attack are separate and independent constructs. The method of attack is broken down into two categories: bomb on target and bomb on coordinate. The method of attack conveys the JTAC's/FAC (A)'s intent for the aircrew prosecution of the target; either the aircrew will be required to visually acquire the target (bomb on target) or not (bomb on

coordinate). These two categories define how the aircraft will acquire the target or mark the target. Any type of control can be utilized with either method of attack, or no type of control is attached to one method of attack (JP 3-09.3).

Do not transmit the numbers. Units of measure are standard unless briefed. Lines 4, 6 and any restrictions are mandatory readbacks.The joint terminal attack controller (JTAC) may request an additional readback.

JTAC: "J27 (aircraft call sign), **advise when ready for game plan."** JTAC "**Type (1,2,3) control (method of attack, effects desired or ordnance, interval). Advise when ready for 9-line."**

1. Initial Point / Battle Position "AL78241638"
2. Heading: "280 DEGREES" *(degrees magnetic, initial point or battle position-to-target)* Offset: "LEFT." *(left or right, when requested)*
3. Distance: "4000 METERS" *(initial point-to-target in nautical miles, battle position-to-target in meters)*
4. Target elevation: "794 FEET" *(in feet, mean sea level)*
5. Target description "DISMOUNTED INFANTRY"
6. Target location: "AL82781942" *(latitude and longitude or grid coordinates, or offsets or visual)*
7. Type mark / terminal guidance: "VIPER 27, CODE 888" *(description of the mark, if laser handoff, call sign of lasing platform and code)*
8. Location of friendlies: "4000 METERS EAST OF TARGET" *(from target, cardinal direction and distance in meters) Position marked by: "SMOKE"*
9. **" Egress** SOUTHWEST "

Remarks / Restriction (***** Items are Restrictions):

- *Final attack headings or attack direction.
- Laser to target line (LTL) / pointer target line (PTL).
- Surface-to-air threat, location, and type of suppression of enemy air defense (SEAD).
- *Airspace coordination areas (ACAs).
- *Danger close and initials (if applicable).
- *Post launch abort restriction (if applicable).
- Additional remarks (e.g., gun-to-target line, weather. hazards, friendly marks).
- Desired type and number of ordnance or weapons effects (if not previously coordinated).
- *Time on target (TOT) / time to target (TTT).
- Additional calls requested.
- *Approval out of battle position for rotary-wing aircraft (if applicable).

EXAMPLE

Figure B-10. Game plan and 9-line CAS brief

Appendix C
Battle Drills

Mechanized Infantry battle drills describe how platoons and squads apply immediate action and fire and maneuver to commonly encountered situations. They require leaders to make decisions rapidly and to issue brief oral orders quickly. A platoon's ability to accomplish its mission often depends on Soldiers, leaders, and squads and sections executing key actions quickly. All Soldiers and their leaders must know their immediate reaction to enemy contact as well as follow-up actions.

Drills are limited to situations requiring instantaneous response; therefore, Soldiers must execute drills instinctively, which results from continual practice. Drills provide platoons with standard procedures essential for building strength and aggressiveness. They identify key actions that leaders and Soldiers must perform quickly. They provide for a smooth transition from one activity to another (for example, from movement to offensive action to defensive action). They provide standardized actions that link Soldier and collective tasks at platoon level and below. Drills must be understood by each Soldier and leader, and continually practiced by the platoon.

While this publication does not include all battle drills, the remaining drills can be found in the Combined Arms Training Strategies within the Army Training Network, Digital Training Management System, and the Central Army Registry (See websites under references section for link to Army's definitive sources for Army training).

SECTION I – BATTLE DRILLS

C-1. A *battle drill* is rehearsed, and well understood actions made in response to common battlefield occurrences (ADP 3-90). Battle drills are the actions of individual Soldiers and small units, typically when they meet the enemy. They require minimal leader orders to accomplish and are initiated on a cue, such as an enemy action or a leader's order, and are a trained response to that cue. Battle drills are designed to be quickly executed without the application of a deliberate decision-making process. Battle drills are commonly initiated when enemy contact is made during close combat, they can also occur within CPs when a specific type of information is received, and action needs to be taken to support those units in contact. Leaders develop or use battle drills specific to their capabilities and operations.

C-2. This section identifies essential battle drills that a mechanized Infantry platoon and squad must train on to ensure success. (See the Army Training Network or the Central Army Registry to view battle drills.)

REACT TO DIRECT FIRE CONTACT WHILE DISMOUNTED-SQUAD (DRILL 07-SQD-D9501)

CONDITIONS

The squad is conducting operations in a live training environment independently or as part of a platoon or larger force. The squad is dismounted. While stationary or moving, the enemy engages the squad with direct fire.

TASK STEPS

1. The element in contact immediately returns well aimed suppressive fire on known or suspected covered enemy position while taking up a covered position.
2. The team not in contact assumes the nearest covered and concealed position. (See figure C-1.)

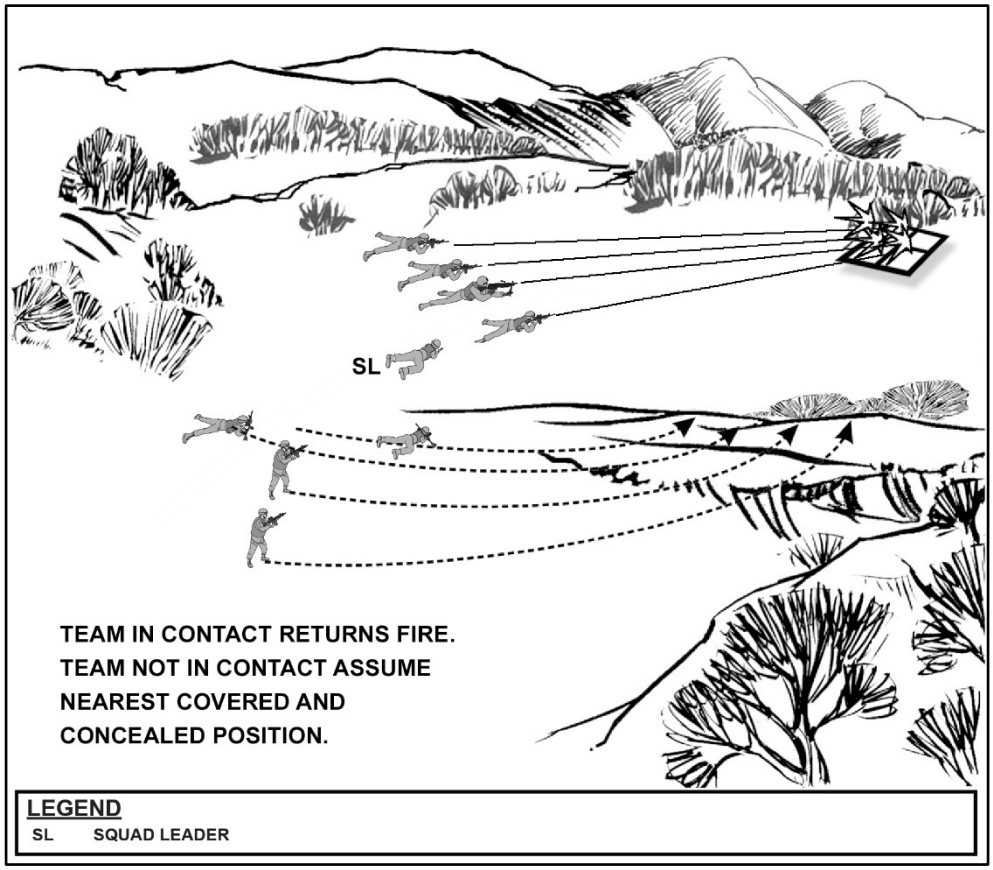


Figure C-1. Return fire and move to nearest covered and concealed position

3. The team leaders engage known or suspected enemy positions with well-aimed suppressive fire and report information to the squad leader.
4. Fire team leaders control fire using standard fire commands (initial and supplemental) containing the following information:
   a. Alert.
   b. Weapon or ammunition (optional).
   c. Target description.
   d. Direction.
   e. Range.
   f. Method of fire (manipulation and rate of fire).
   g. Control (optional).
   h. Execution.
   i. Termination.
5. Soldiers maintain visual or vocal contact with their team leader and the other Soldiers on their left and right.
6. Soldiers maintain contact with their team leaders and indicate the location of enemy positions.
7. Leaders (visually or verbally) check the status of their personnel.
8. The team leader maintains visual contact with the squad leader.
9. The squad leader moves up to a covered and concealed position where best to observe, communicate, and control the engagement. (See figure C-2 on page 316.)

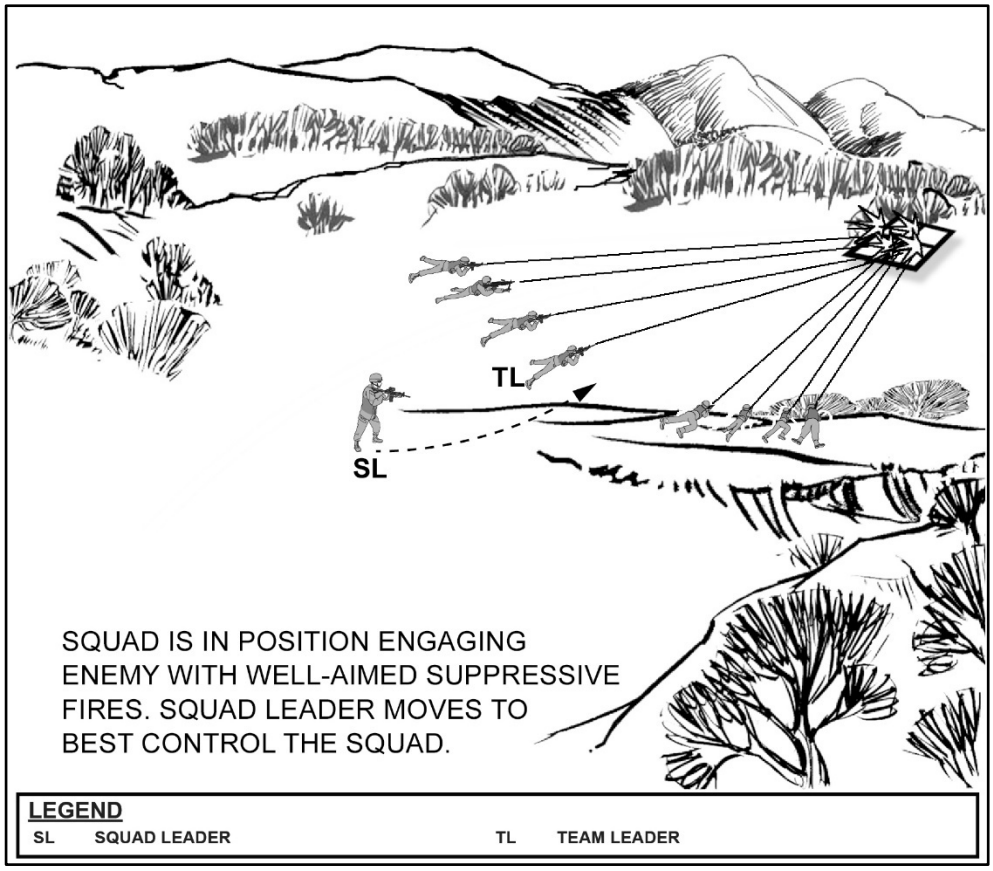


Figure C-2. Well-aimed fire and squad leader control

10. The squad leader determines whether the squad can gain and maintain suppressive fires with the team already in contact (based on the volume and accuracy of enemy fires against the team in contact).
11. The squad leader confirms the commander's criteria to disengage and determines whether the squad must move out of the EA.
12. The squad leader assesses the situation and identifies:
    a. Location of the enemy position and obstacles.
    b. Size of the enemy force engaging the team in contact.
    c. The number of enemy automatic weapons, the presence of any vehicles, and the employment of indirect fires are indicators of enemy strength.
    d. Vulnerable flanks.
    e. Covered and concealed flanking routes to the enemy positions.
13. The squad leader decides whether to conduct an assault, bypass (if authorized by the PL), or break contact.
14. The squad leader reports the situation to the PL and begins to maneuver the squad.

Note. Once the squad leader has executed the React to Direct Fire Contact drill, the PL makes a quick assessment of the situation (for example, enemy size, location). The PL decides on a COA. The PL may elect to bypass, if permitted by the company commander. The PL reports the situation to the company commander.

REACT TO DIRECT FIRE CONTACT WHILE MOUNTED-MECHANIZED INFANTRY PLATOON (DRILL 17-PLT-D9701)

CONDITION

While mounted, the platoon conducts operations as part of a company or larger force. The platoon is mounted and while moving and contact is made with small arms fire and non-armor defeating weapons.

TASK STEPS

1. A member of the platoon identifies enemy contact and provides the direction, distance, and description of the enemy's actions, capabilities (if able to determine), and composition.
2. The PL initiates the contact drill. (See figure C-3 on page 318.)

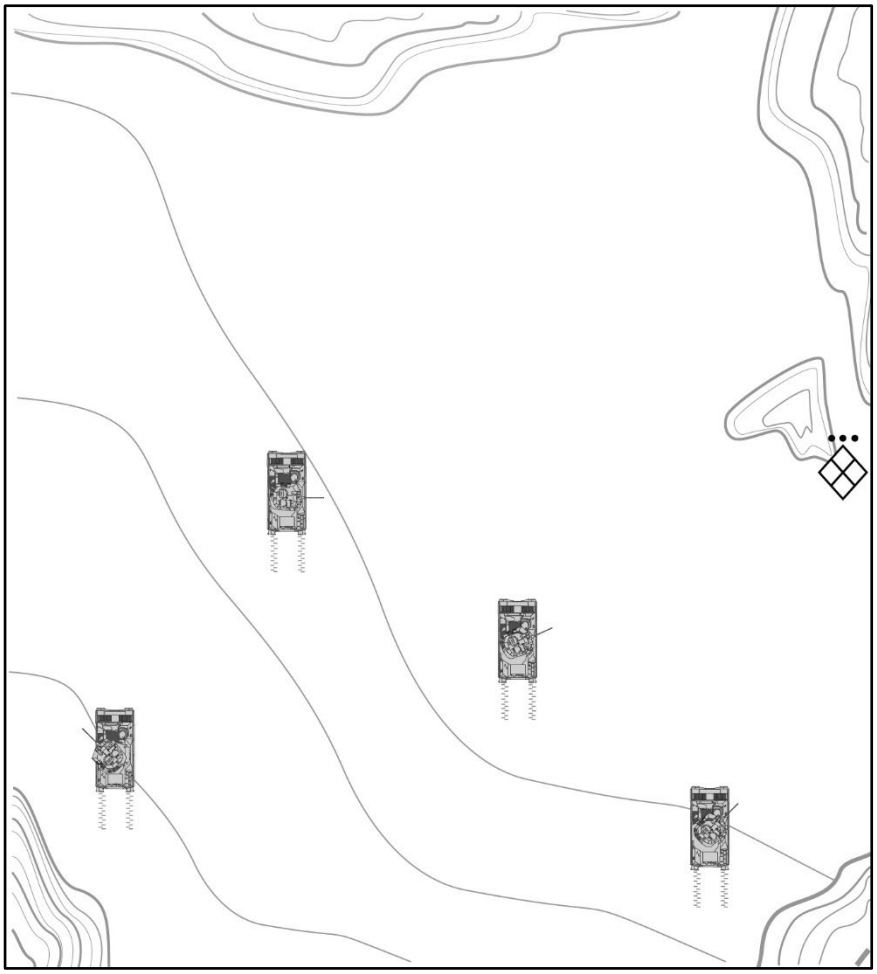


Figure C-3. React to direct fire contact mounted

3. The platoon engages enemy forces by using standard fire commands containing the following elements:

> ***Note.*** If a BFV primary weapon systems are masked by another BFV, the masked BFV maintains weapons orientation and flank security as prescribed in the OPORD; this helps to prevent fratricide.

a. Alert.
b. Weapon or ammunition (optional).
c. Target description.
d. Orientation.
e. Range.
f. Control.

g. Execution.
h. Weapon control status.

4. The platoon engages and then suppresses, reduces, or destroys the enemy.
5. The PL reports contact to the company commander and continues mission as directed.

Note. Platoons should be prepared to dismount the Infantry Soldiers to maneuver squads and fire teams to engage, suppress, reduce, and destroy the enemy contact if directed from higher.

BREAK CONTACT-SQUAD (DRILL 07-SQD-D9505)

CONDITIONS

The squad is conducting operations in a live training environment independently or as part of a platoon or larger force. The squad is moving as part of a larger force, conducting a movement to contact or an attack. Following direct fire contact with the enemy, the squad leader decides to break contact.

TASK STEPS

1. While receiving direct fire from the enemy or on orders, the squad leader orders the squad to break contact.
2. The squad leader directs one team to suppress by fire to support the disengagement of the remainder of the squad.
3. The squad leader orders a distance and direction, terrain feature, or last rally point of the movement of the team in contact. The distance should not exceed small arms fire range to ensure supporting fires.
4. The squad leader employs direct fire to suppress enemy positions. (See figure C-4 on page 320.)

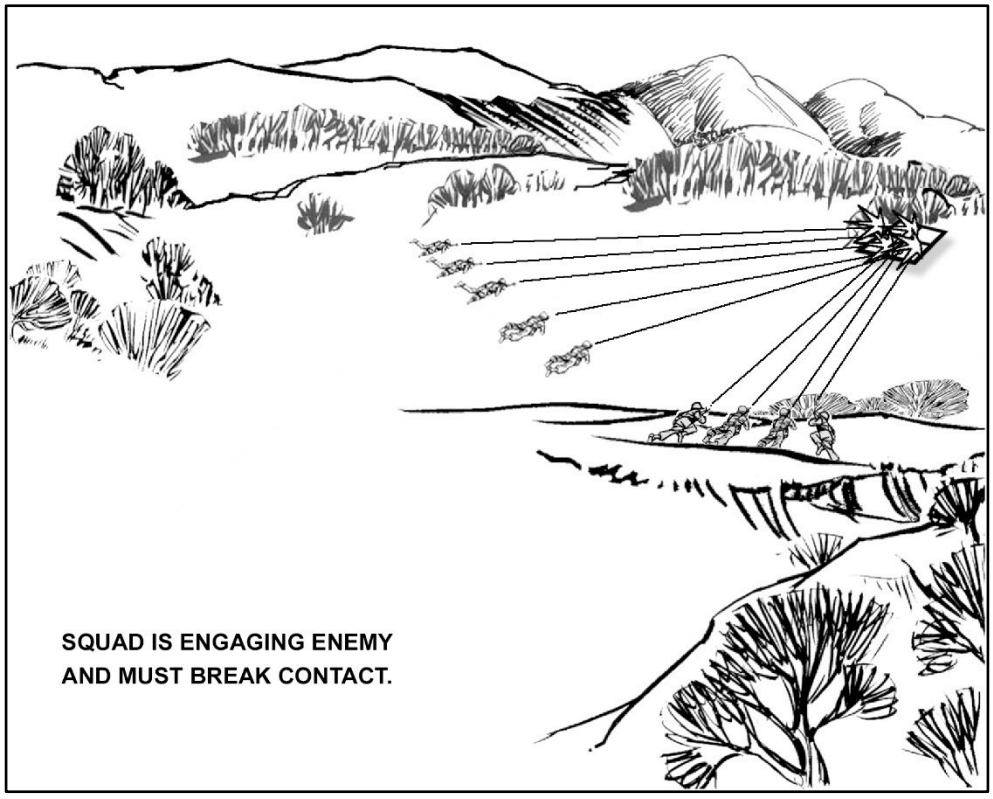


Figure C-4. Employing direct fire to suppress enemy

5. The moving team moves to occupy the overwatch position, employs smoke (M320, smoke grenades, and other options) to screen movement. If necessary, employs fragmentation and concussion grenades to facilitate breaking contact.
6. The base-of-fire team continues to suppress the enemy.
7. The moving team occupies their overwatch position and engages enemy positions. (See figure C-5.)

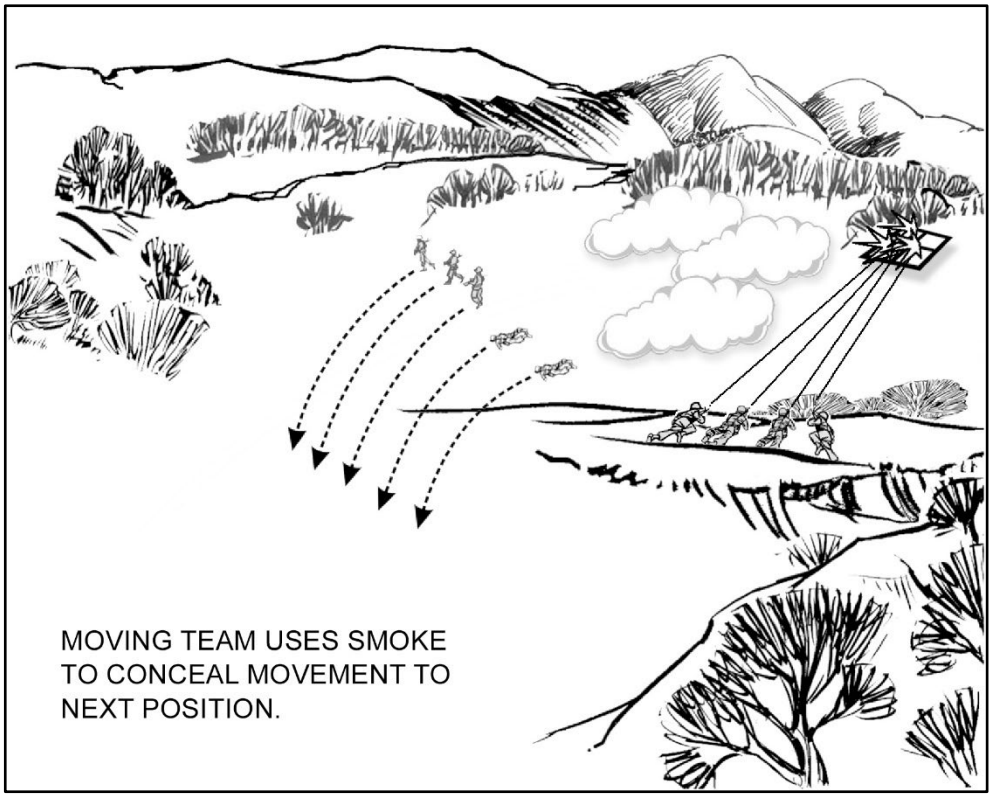


Figure C-5. Moving element occupies overwatch and engages enemy

8. The squad leader directs the base-of-fire team to move to its next covered and concealed position. Based on the terrain, and volume and accuracy of the enemy's fire, the moving team may need to use fire and movement techniques. (See figure C-6 on page 322.)

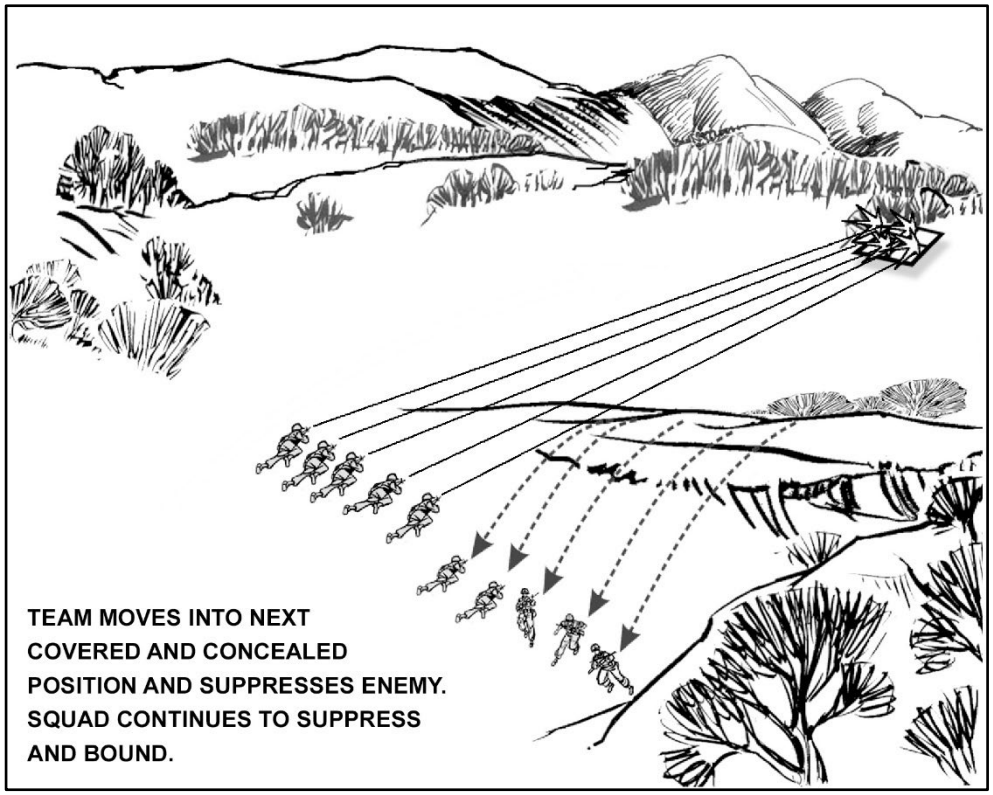


Figure C-6. Fire and movement technique

9. The squad continues to move away from the enemy until:
   a. It breaks contact (the squad must continue to suppress the enemy until it breaks contact).
   b. Its fire teams are in the assigned position to continue mission.
10. Leaders account for Soldiers, report the situation, reorganize, and reconstitute as necessary, then continue the mission.
11. The squad leader moves the squad onto an azimuth or alternate route away from enemy forces. The squad leader should consider changing the unit's direction of movement once contact is broken. This reduces the ability of the enemy to place effective indirect fire on the squad.
12. Teams and Soldiers that become divided stay together and move to the last designated rally point.
13. Squad leader reports situation and squad status to PL.

BREAK CONTACT-MECHANIZED INFANTRY PLATOON (DRILL 17-PLT-D9705)

CONDITIONS

The platoon conducts operations in a live training environment independently or as part of a company or larger force. The platoon moves as part of a larger force while conducting movement to contact or an attack. Following direct fire contact with the enemy, the PL decides to break contact. Indirect fires are available.

TASK STEPS

1. While receiving direct fire from the enemy or on orders, the PL orders the platoon to break contact.
2. The PL directs BCs to support the disengagement or displacement of the designated section.

Note. If the BC cannot support the disengagement or displacement of the section, the PL requests indirect fires to suppress the enemy in support of the disengagement or displacement of the remainder of the element.

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3. The PL orders a distance and direction, terrain feature, or last overwatch position of the element in contact.
4. The PL employs direct fire to suppress enemy positions. (See figure C-7 on page 324.)

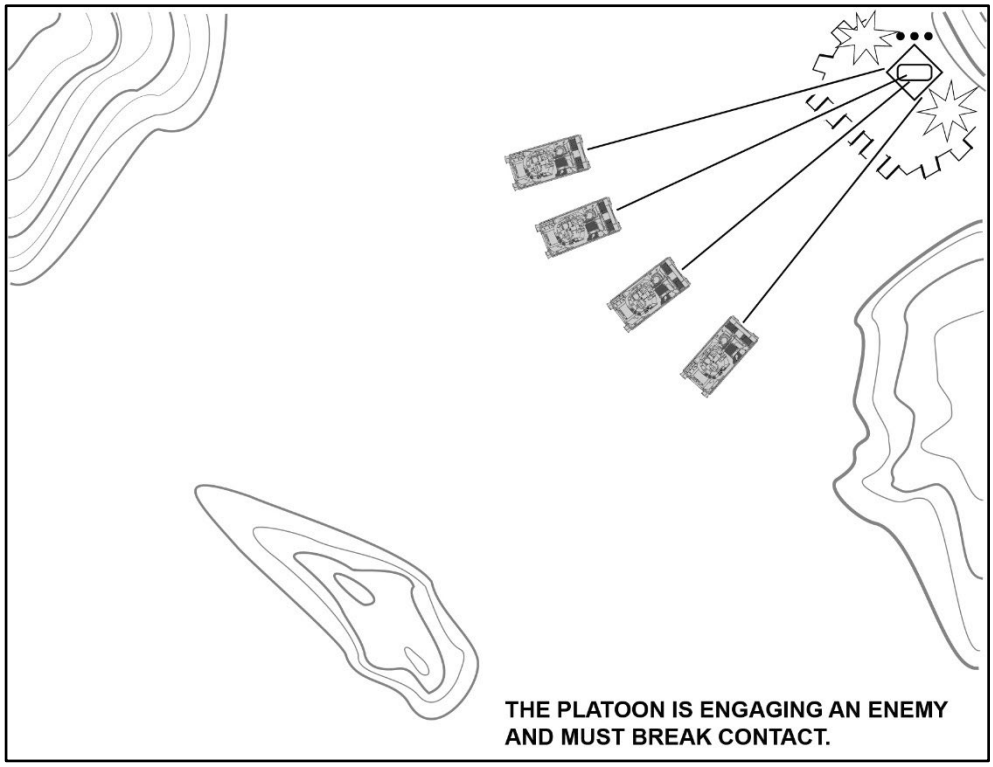


Figure C-7. Employing direct and indirect fire to suppress enemy

5. The moving section moves to occupy the overwatch position. The moving section also employs smoke, indirect fires, and other options to obscure the enemy's vision, slow their progress, or screen the defender's movement out of the BP or along their displacement route.
6. The base-of-fire element continues to suppress the enemy.
7. The moving section occupies their overwatch position and engages enemy positions. (See figure C-8.)

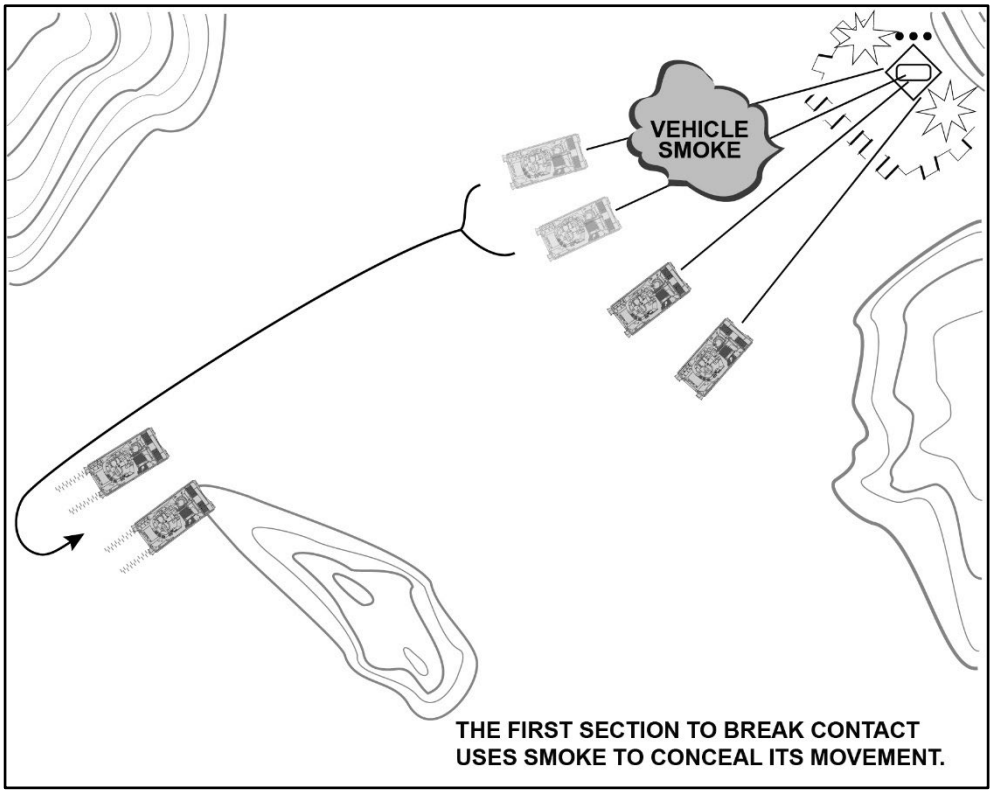


Figure C-8. Moving element occupies overwatch and engages enemy

8. The PL directs the base-of-fire element to bound back to its next covered and concealed position. (See figure C-9 on page 326.)

> ***Note.*** Based on the type of terrain, and the volume and accuracy of the enemy's fire, the bounding element may need to use fire and movement techniques.

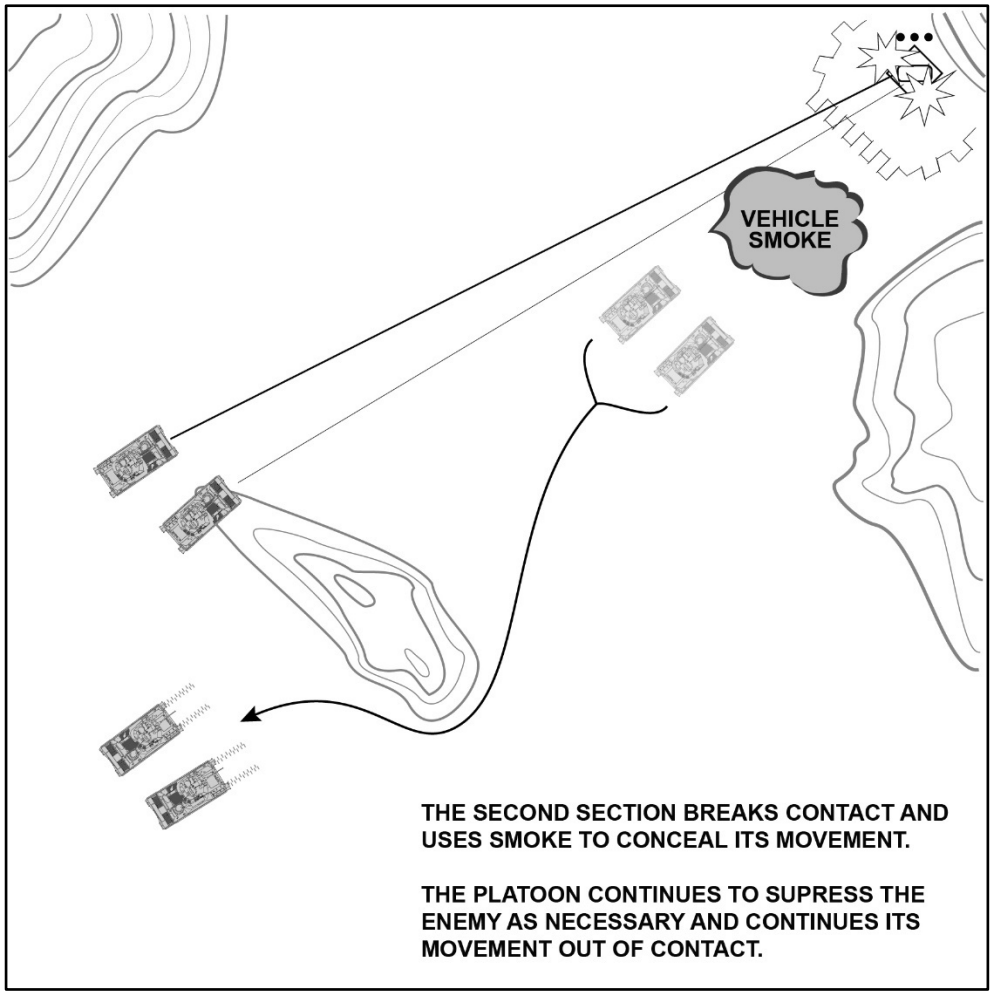


Figure C-9. Movement and fire technique

9. The platoon continues to move away from the enemy until:
    a. It breaks contact (the platoon continues to suppress the enemy as it breaks contact).
    b. Its sections seek covered and concealment positions (if available).
10. Leaders account for crew members, PL reports the situation, reorganize, and reconstitute as necessary, and continue the mission.
11. The PL moves the platoon onto an alternate route away from enemy forces. The PL should consider changing direct of movement once contact is broken.
12. BFVs that become separated move to the last designated overwatch position.

REACT TO AMBUSH (DISMOUNTED)-SQUAD (DRILL 07-SQD-D9502)

CONDITIONS

The squad is conducting operations in a live training environment independently or as part of a platoon or larger force. The squad is moving tactically dismounted in close terrain. The squad moves into an enemy prepared kill zone. The enemy initiates contact with the most casualty-producing weapon or detonation of explosives and a high volume of well-aimed fire from covered and concealed positions.

TASK STEPS

1. The squad is moving dismounted, receives a high volume of well-aimed fire from the enemy, and takes the following actions. (See figure C-10.)

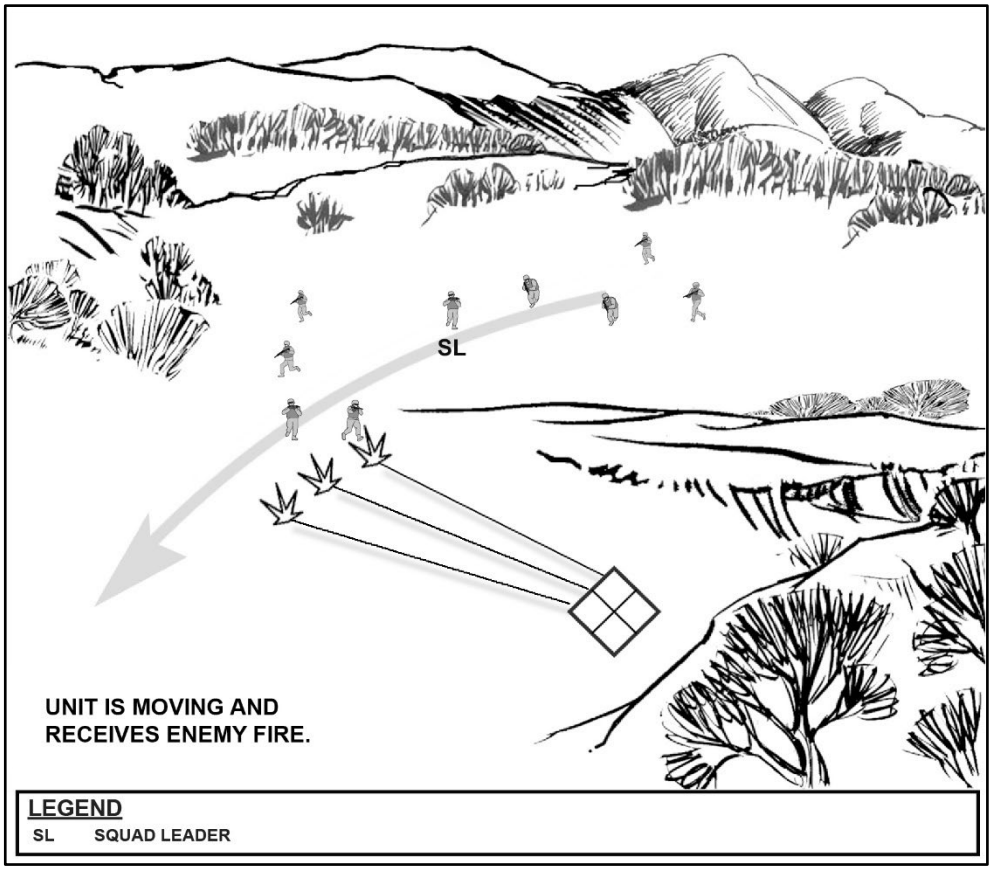


Figure C-10. Squad receives enemy fire

   a. React to a Near Ambush in which the enemy is within hand grenade range.

i. The Soldiers/team in the kill zone execute one of the following two actions:
    1. Return fire immediately, and if cover is not available, without order or signal immediately assume the prone position, and throw smoke grenades.
    2. Return fire immediately and, if cover is available, without order or signal, occupy the nearest covered position, immediately assume the prone position, and throw smoke grenades. (See figure C-11.)

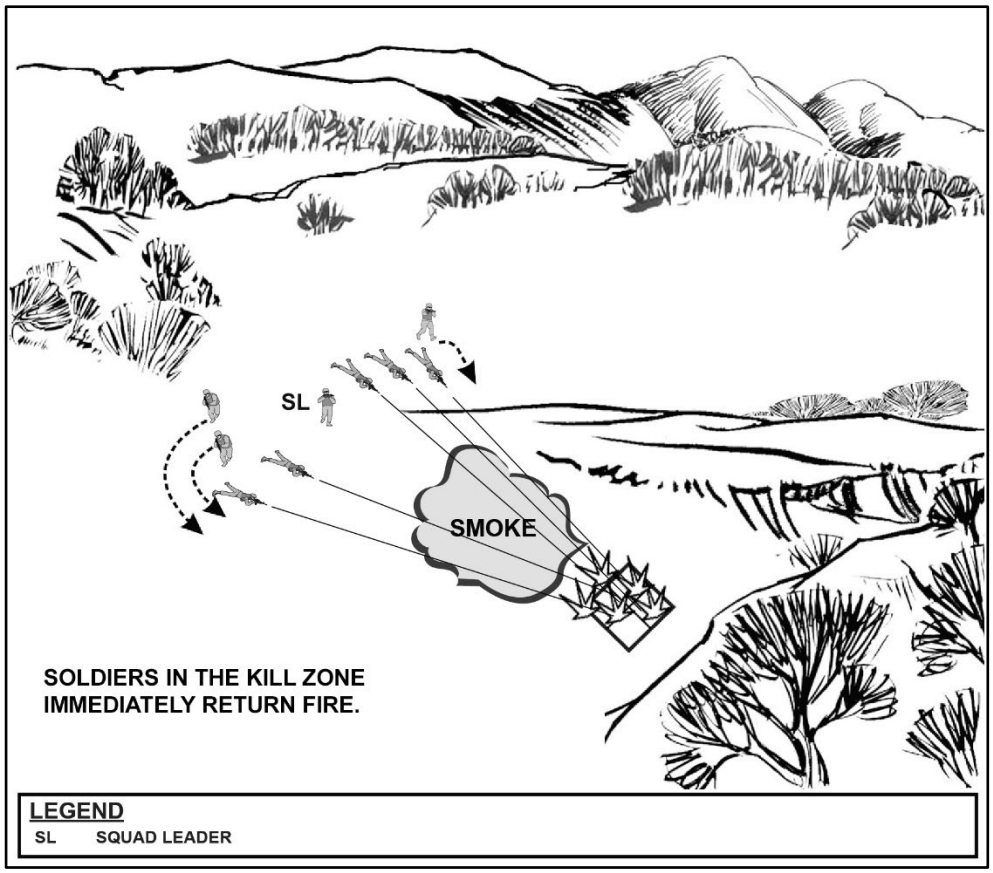


Figure C-11. Squad immediately returns fire

ii. The Soldiers/team in the kill zone, immediately after the explosion of the smoke grenades, assault through the ambush using fire and movement.
iii. The Soldiers/team not in the kill zone identify the enemy location, place well-aimed suppressive fire on the enemy's position, and shift fire as Soldiers assault the objective.
iv. The Soldiers/team in the kill zone continue to assault through and destroy the enemy position. (See figure C-12.)

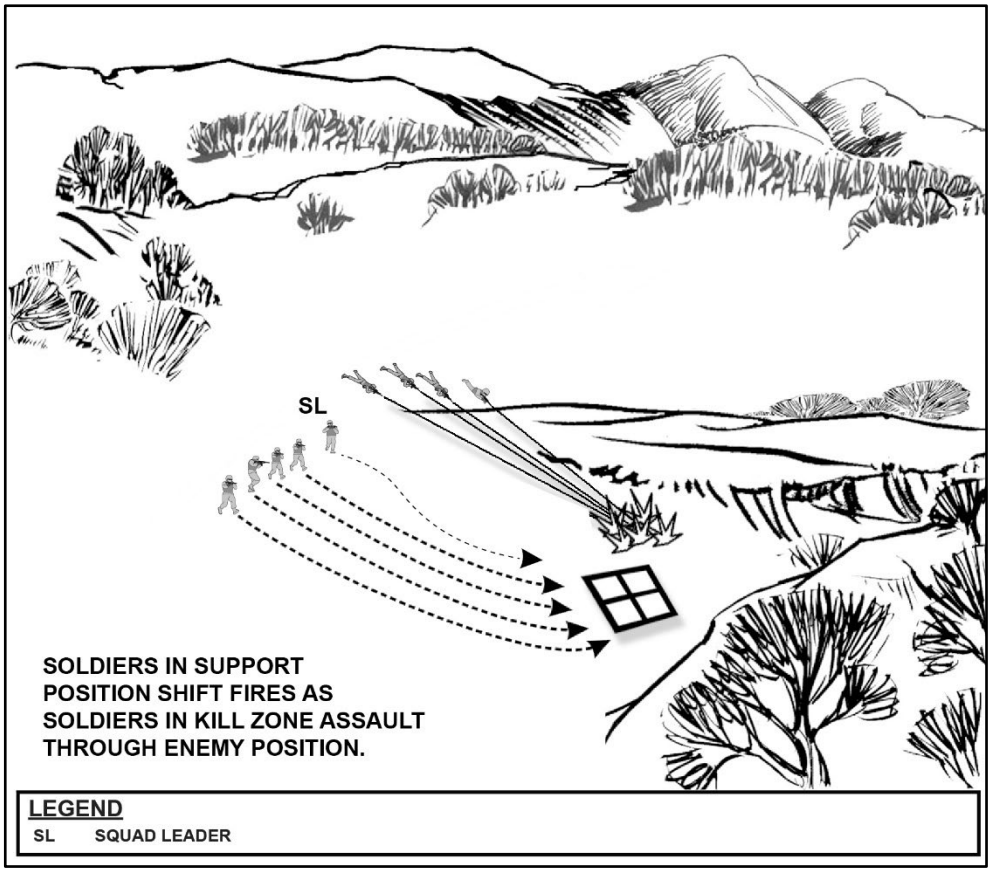


Figure C-12. Squad assaults through enemy positions

b. React to a Far Ambush in which the enemy is beyond hand grenade range:
    i. Soldiers/team receiving fire immediately return fire, seek cover, and place well-aimed suppressive fire on the enemy's position.
    ii. Team Leader or Squad Leader lead the Soldiers/Team not receiving fire along a covered and concealed route to the enemy's flank to assault the enemy using fire and movement.
    iii. Soldiers/team in the kill zone shift suppressive fires as the assaulting Soldiers fight through and destroy the enemy.

2. The squad leader reports the contact.

REACT TO INDIRECT FIRE WHILE MOUNTED-MECHANIZED INFANTRY PLATOON (DRILL 17-PLT-D9704)

CONDITIONS

The platoon conducts operations in a live training environment as part of a company or larger force. The platoon is mounted. While stationary or moving, the alert, INCOMING comes over the radio or intercom or a round impacts nearby.

TASK STEPS

1. A member of the platoon observes artillery impacting near the platoon and alerts the platoon with the announcement, INCOMING! The platoon member provides the distance, direction, and description of the artillery strike then:
    a. The BCs repeat the alert over the radio.
    b. The BCs place their hatches in the open protected or closed position.
    c. All other vehicle crewman closes their hatches.
2. If the platoon is moving when it receives suppressive artillery fire, the platoon executes the following actions: (See figure C-13.)

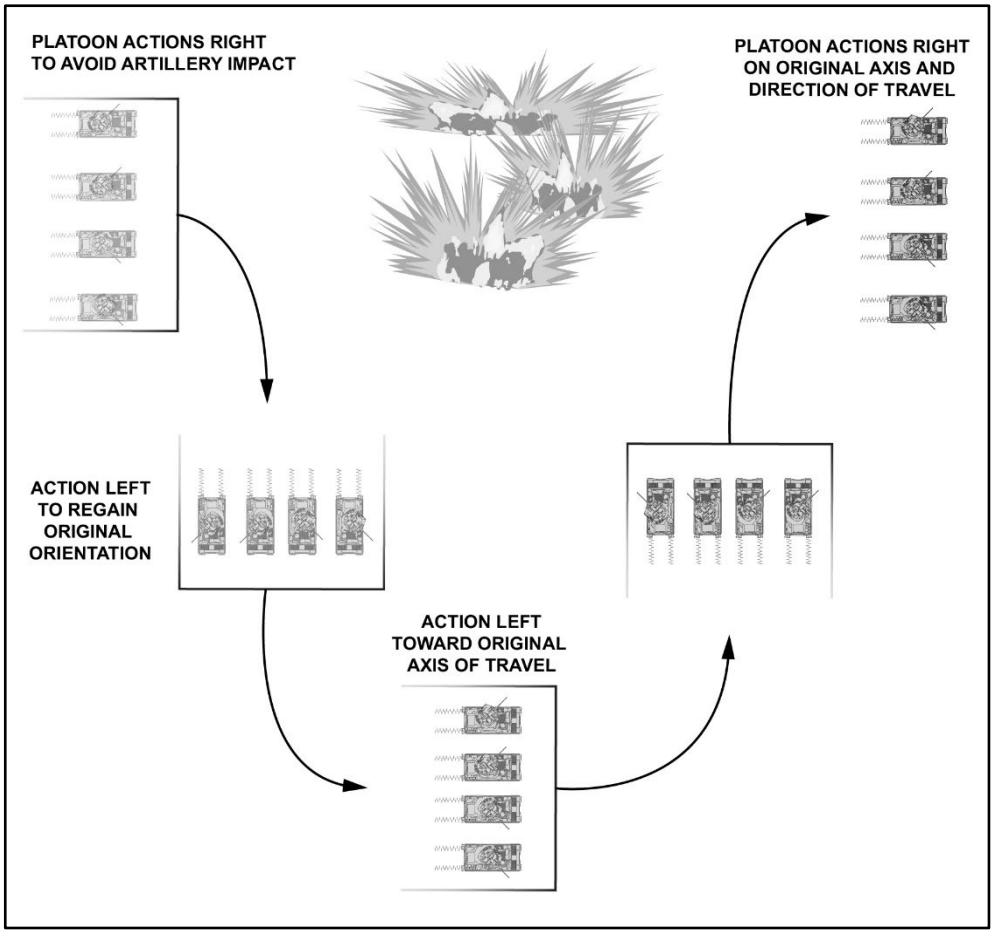


Figure C-13. React to indirect fire while mounted

a. The PL orders an action drill (action left, right, or rear) to avoid the impact area and orders an increase in speed.
b. Once clear of the impact area, crews place their hatches in the appropriate position, open ballistic doors, and check antennas.

3. If the platoon is stationary and its mission or situation allows it the option to move out of the impact area, the PL and the platoon take the following action:
   a. The PL provides a distance and direction for the platoon to link up.
   b. The BCs rapidly maneuver their vehicle to the location specified by the PL.
   c. Once the artillery barrage is complete, individual crews place their hatches in the appropriate position, open ballistic doors, check antennas, and return to positions or continue the mission.
4. The PL reports the contact to the company.

ENTER AND CLEAR A ROOM-SQUAD (DRILL 07-SQD-D9509)

CONDITIONS

The squad is conducting operations in a live training environment as part of a platoon or larger force. The squad receives an order to clear a room. Enemy personnel are believed to be in the building. Noncombatants may be present in the building and are possibly intermixed with the enemy personnel. The squad has support and security elements positioned at the initial foothold and outside the building.

TASK STEPS

1. The squad leader—
    a. Occupies a position to best control the security and clearing teams.
    b. Directs a security team to secure corridors or hallways outside the room with appropriate firepower.
    c. Identifies the entry point.
    d. Gives the clearing team leader an order to clear the room.

    Note. If the squad is conducting high-intensity combat operations and grenades are being used, the squad must comply with the ROE and consider the building structure. A Soldier of the clearing team prepares at least one grenade (fragmentation, concussion, or stun grenade), throws the grenade into the room, and announces, FRAG OUT or STUN OUT. Soldiers can be injured from fragments if walls and floors are thin or damaged.

2. The team leader (normally the number two Soldier) does the following:
    a. Takes a position to best control the clearing team outside the room.
    b. Determines the method of entry into the room.
    c. Gives the signal to enter and clear the room.
3. The first two Soldiers enter the room with the second Soldier immediately after the first Soldier as follows: (See figure C-14.)

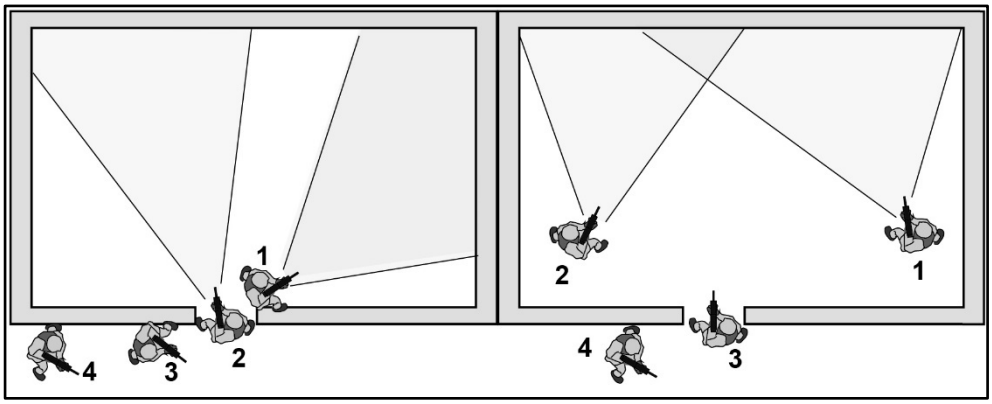


Figure C-14. Clear a room, first Soldier enters immediately followed by second Soldier

a. The first Soldier enters the room, moves left or right along the path of least resistance to one of two corners, and assumes a position of domination facing into the room. During movement, the Soldier scans the sector and eliminates all immediate threats.
b. The second Soldier (normally the clearing team leader) enters the room immediately after the first Soldier and moves in the opposite direction of the first Soldier to a point of domination. During movement, the Soldier eliminates all immediate threats in the sector.

Note. During high-intensity combat, the Soldiers enter immediately after the grenade detonates. Both Soldiers enter while firing aimed shots into their sectors, engaging all threats or hostile targets to cover their entry. If the first or second Soldier discovers the room is small or a short room (such as a closet or bathroom), the Soldier announces, SHORT ROOM or SHORT. The clearing team leader informs the third and fourth Soldiers whether or not to stay outside the room or to enter.

4. The third Soldier moves in the opposite direction of the second Soldier while scanning and clearing the sector and assuming the point of domination. (See figure C-15.)

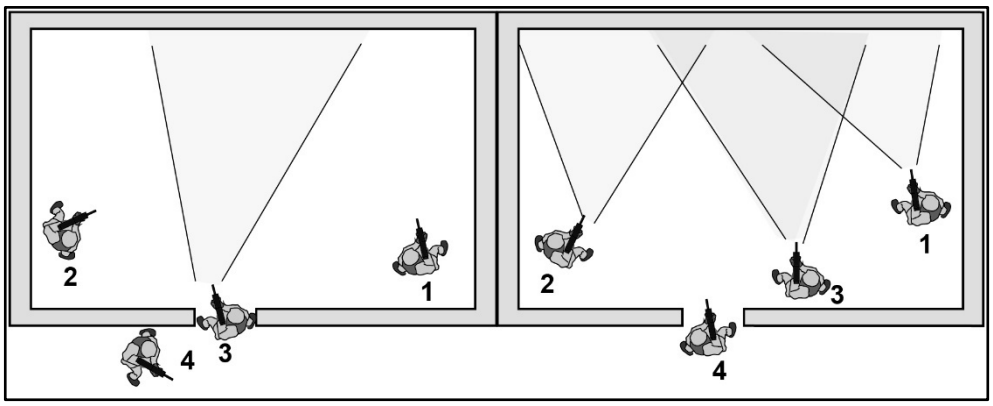


Figure C-15. Clear a room, third Soldier enters clearing their sector

5. The fourth Soldier moves opposite of the third Soldier to a position dominating their sector. (See figure C-16 on page 334.)

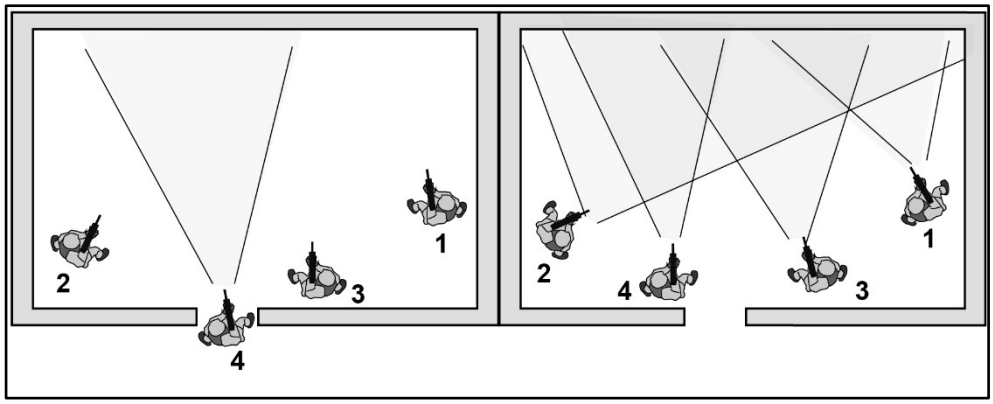


Figure C-16. Clear a room, fourth Soldier enters clearing their sector

6. All Soldiers engage enemy combatants with precision-aimed fire and identify noncombatants to avoid collateral damage.

Note. If necessary or on order, number one and two Soldiers of the clearing team may move deeper into the room while overwatched by the other team members.

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7. The clearing team leader scans and clears the room by:
    a. Ensuring all threats are neutralized.
    b. Ensuring all noncombatants are secured.
    c. Announcing CLEAR to the squad leader when the room is clear.
    d. Establishing security.
8. The squad leader directs the security team to continue to secure the corridor or hallway.
9. The squad leader enters the room and:
    a. Makes a quick assessment of the room and threat.
    b. Determines if the squad has firepower to continue clearing their assigned sector.
    c. Reports to the PL that the room is clear.
    d. Requests needed sustainment to continue clearing the squad's sector.
    e. Marks entry point according to the unit SOP.
10. The squad reorganizes and reconstitutes, as needed.

ENTER A TRENCH TO SECURE A FOOTHOLD-PLATOON (DRILL 07-PLT-D9510)

CONDITIONS

The platoon is conducting operations in a live training environment as part of a company or larger force. The platoon is moving and receives fire from an enemy trench. The platoon is ordered to secure a foothold in the trench. Only organic weapons support is available.

TASK STEPS

1. The platoon receives direct fire contact from an enemy in a trench and takes the following actions:
    a. The squad in contact executes actions on contact to reduce fires by:
        i. Returning well-aimed fire.
        ii. Seeking cover.
        iii. Establishing fire superiority.
        iv. Establishing local security.
    b. The squad leader in contact and PL reports:
        i. The squad leader, in contact, report's location of hostile fire to PL from base-of-fire position using the size, activity, location, unit, time, equipment (SALUTE) format.
        ii. The PL sends contact report followed by a SALUTE report to commander.
2. The PL evaluates and develops the situation taking the following actions:
    a. Evaluates the situation using the SITREPs from the squad in contact and their personal observations, including the following:
        i. Number of enemy weapons or volume of fire.
        ii. Presence of vehicles.
        iii. Employment of indirect fires.
    b. Develops the situation by taking the following actions:
        i. Conducts a quick reconnaissance to determine enemy flanks.
        ii. Locates mutually supporting positions.
        iii. Locates obstacles impeding the assault or provides some type of cover or concealment.
        iv. Determines whether the force is inferior or superior.
        v. Analyzes reports from squad leaders, teams in contact, or adjacent units.
3. The PL prepares the platoon to enter the trench and takes the following actions:
    a. Selects the entry point of the trench line.
    b. Selects a covered and concealed route to the entry point.
    c. Directs the assault element to secure the near side of the entry point and reduce the obstacle.
    d. Directs the PSG to reposition the remaining squads and BFVs, if applicable, to provide additional observation and supporting fires.
4. The platoon prepares to enter the trench and secure a foothold using SOSRA and takes the following actions (see figure C-17 on page 336):

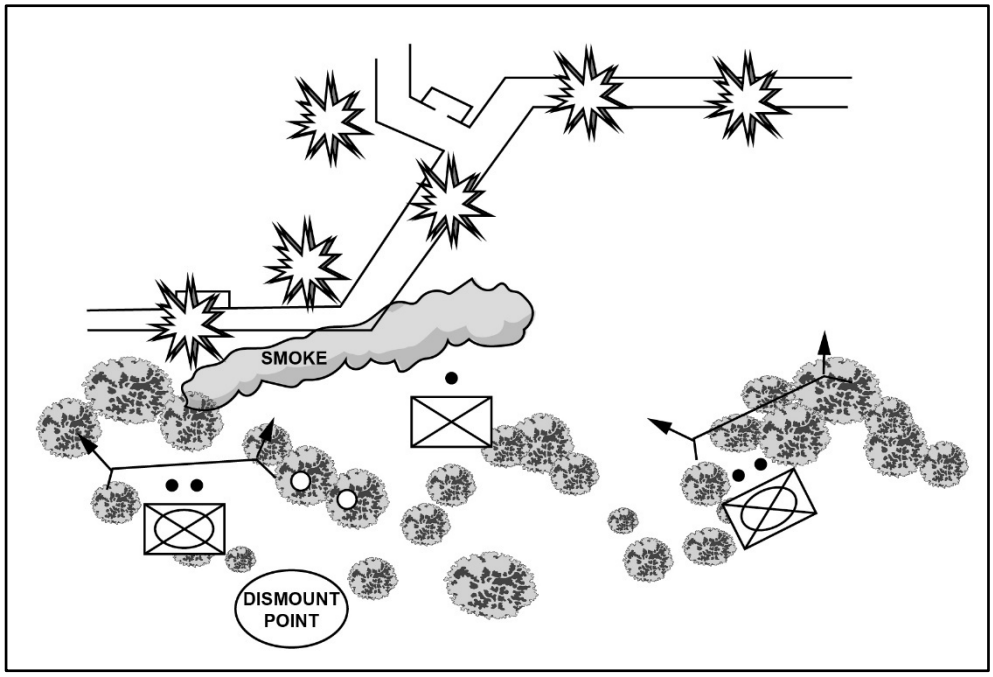


Figure C-17. Platoon prepares to enter a trench and secure a foothold

a. The PL or FO calls for and adjusts indirect fire to suppress and obscure the trench.
b. The PSG directs base-of-fire squad to cover the assault squad.
c. The platoon obscures the assault element's movement with smoke (handheld/320).

5. The PL directs the assault squad to enter the trench and the squad leader positions themselves where they can best control their teams. (See figure C-18.)

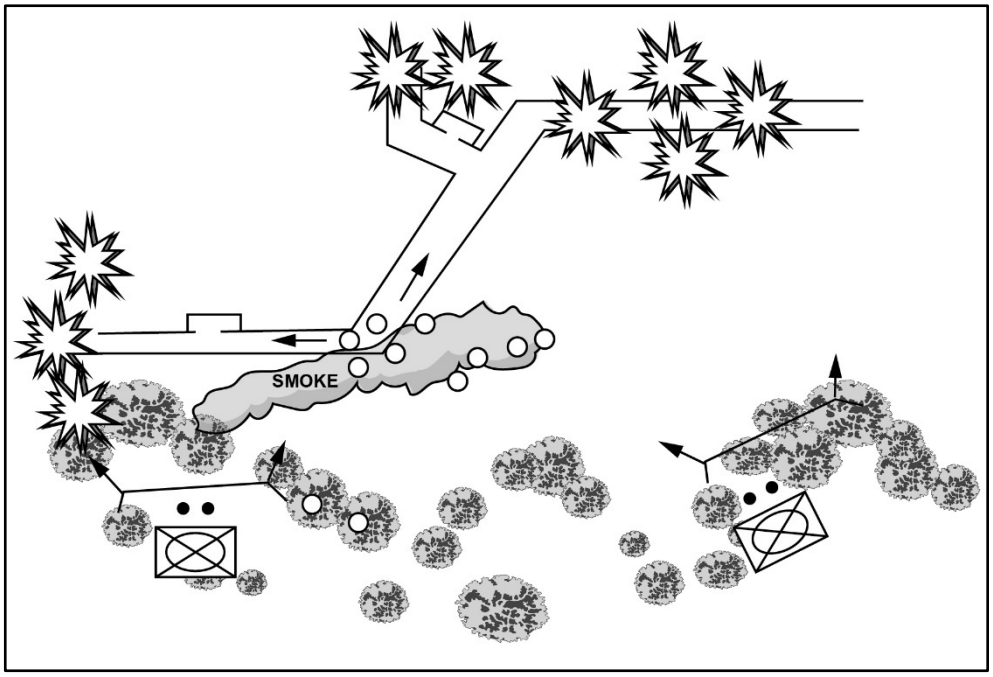


Figure C-18. Assault squad enters the trench

a. The assault squad secures the near side and reduces the obstacle by:
    i. The squad leader moves the assaulting squad to last covered and concealed position short of the protective obstacle.
    ii. The squad leader directs one fire team to assault and one fire team to suppress the enemy at the obstacle and entry point.
    iii. The squad leader designates the entry point.
    iv. The assault team creates an opening in the protective obstacle and clears to the entry point of the trench.
b. The assaulting squad secures the far side of the protective obstacle and establishes a foothold.
    i. The assault fire team leader and the automatic rifleman remain in a position short of the trench and add suppressive fire for the initial entry.
    ii. The two remaining Soldiers of the assault fire team continue toward the entry point, moving in rushes or crawls.
    iii. The two Soldiers of the assault fire team closest to the entry point position themselves against the edge of the trench; parallel to the trench on their backs; on the squad leader's command, prepares grenades, shouts FRAG OUT, and throw the grenades into the trench.
    iv. After ensuring that both grenades detonate, the Soldiers roll into the trench, landing on their feet, back-to-back.

Immediately, both Soldiers move in opposite directions down the trench firing three-round bursts clearing to the first corner or intersection.

v. Both Soldiers halt and take up positions to block any enemy movement toward the entry point.

c. Upon detonation of the grenades, the assault fire team leader and the automatic rifleman immediately move to the entry point and enter the trench. The squad leader directs them to one of the secured corners or intersections to relieve the rifleman or grenadier who then rejoins their battle buddy at the opposite end of the foothold.

d. The assault team clears enough room for the squad or to the first trench junction and announces, CLEAR.

e. The platoon base-of-fire squad and BFVs shift fire away from entry point and continues to suppress adjacent enemy positions or isolate the trench, as required.

f. The PL directs the FO to shift indirect fires to isolate the objective and the base-of-fire squads to shift fire as the assault squad advances.

6. The platoon secures the foothold in the trench by:

a. The squad leader marks the entry point according to the platoon SOP, then sends the next assault team in to increase the size of the foothold by announcing, NEXT TEAM IN.

b. The next assault team moves into trench and secures assigned area. (See figure C-19.)

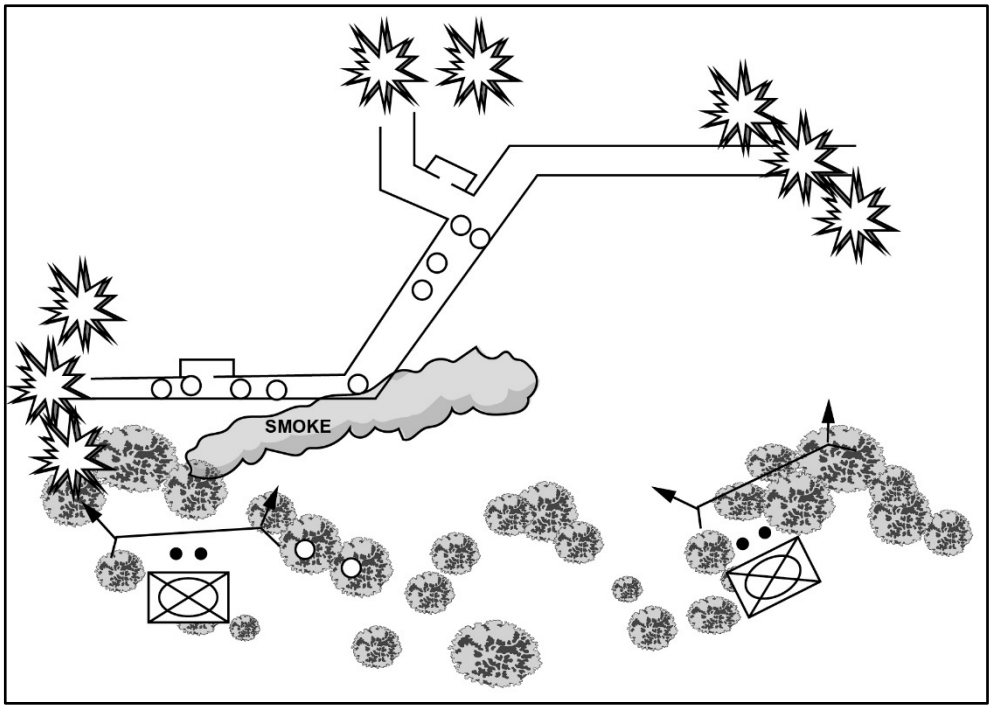


Figure C-19. Platoon secures a foothold

7. The squad leader reports to the PL the foothold is secure. The platoon follows the success of the seizure of the foothold with the remainder of the platoon, as part of the platoon actions to clear a trench line.

BREACH OF A MINED WIRE OBSTACLE-PLATOON (DRILL 07-PLT-D9412)

CONDITIONS

The platoon is conducting operations in a live training environment as part of a company or larger force. The platoon encounters a mine or wire obstacle that cannot be bypassed and preventing the platoon's forward movement. The enemy engages the platoon from positions on the far side of the obstacle.

TASK STEPS

1. The platoon encounters a mine wire obstacle and takes the following actions:
    a. The squad in contact executes actions on contact to reduce fires from the far side of the obstacle by:
        i. Returning well-aimed fire.
        ii. Seeking cover.
        iii. Establishing fire superiority.
        iv. Establishing local security.
    b. The PL moves forward to link up with the squad leader in contact.

c. The PSG repositions BFVs and other squads to focus supporting fires and increase observation.
d. The squad leaders and PL report:
    i. Squad leaders report location of hostile fire to PL using the SALUTE format.
    ii. PL sends a contact report followed by a SALUTE report to the commander.

2. The PL evaluates and develops the situation and taking the following actions:
    a. Quickly evaluates the situation using the SITREPs from the squad in contact and their personal observations. At a minimum the evaluation should include:
        i. Number of enemy weapons or volume of fire.
        ii. Presence of vehicles.
        iii. Employment of indirect fires.
    b. Quickly develops the situation by taking the following actions:
        i. Conducts a quick reconnaissance to determine enemy flanks.
        ii. Locates mutually supporting positions.
        iii. Locates any obstacles that impedes the assault or provides some type of cover or concealment.
        iv. Determines whether the force is inferior or superior.
        v. Analyzes reports from squad leaders, teams in contact, or adjacent units.
3. The PL directs the squad in contact, the lead vehicle, or both to support the movement of another squad to the breach point. The PL takes the following actions:
    a. Indicates the route to the base of fire position.
    b. Indicates the enemy position to be suppressed.
    c. Indicates the breach point and the route the rest of the platoon will take.
    d. Gives instructions for lifting and shifting fire.
4. The PL designates one squad as the breach squad and remaining squad as an assault squad to assault through the obstacle once the breach has been made. (The assault squad may add its fires to the SBF squad. Normally, it follows the covered and concealed route of the breach squad.)
5. The SBF squad moves to a position overwatching the breach point and establishes a base of fire.
6. The PSG moves the platoon BFVs forward and positions the vehicles, then assumes control of the platoon SBF element.
7. On the PL's signal, the platoon's SBF element, take the following actions:
    a. Suppresses or destroys enemy weapons that are firing effectively against the platoon.
    b. Obscures the enemy position with smoke.
    c. Maintains fire superiority while conserving ammunition and minimizing forces in contact.
8. The PL leads the breach and assault squads along the covered and concealed route to the breach point.
9. The platoon FO calls for and adjusts indirect fires, as directed by the PL to support the breach and assault.

10. The breach squad executes actions to breach the obstacle (footpath) (see figure C-20):

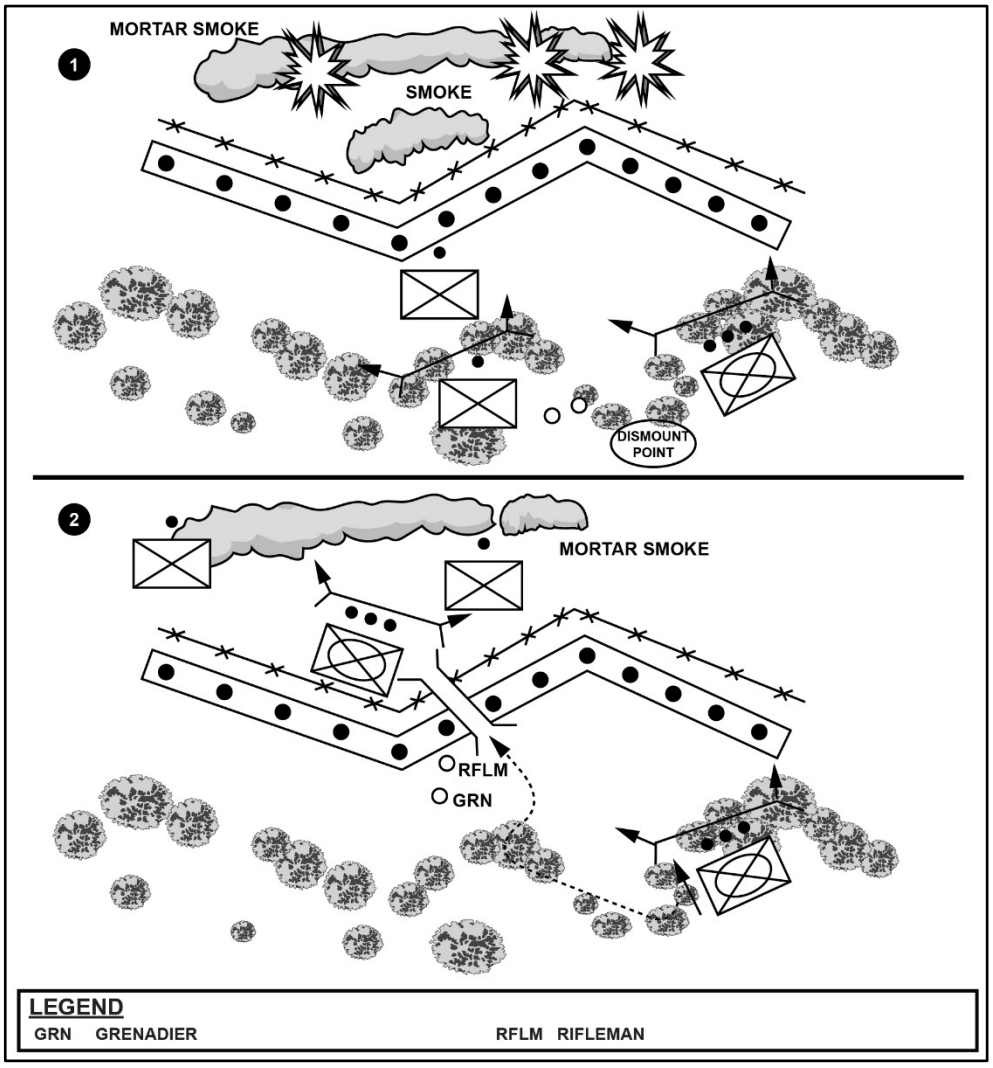


Figure C-20. Breach of a mined wire obstacle

a. The squad leader directs one fire team to support the movement of the other fire team to the breach point.
b. The squad leader designates the breach point.
c. The squad leader ensures the base of fire team continues to provide suppressive fires and to isolate the breach point.
d. The breaching fire team with the squad leader, moves to the breach point using the covered and concealed route and:
    i. The squad leader and breaching fire team leader employs smoke grenades to obscure the breach point. The platoon base of fire

element shifts direct fire away from the breach point and continues to suppress adjacent enemy positions.
ii. The breaching fire team leader positions themselves and the automatic rifleman on one flank of the breach point to provide close-in security.
iii. The grenadier and rifleman (or the anti-armor specialist) of the breaching fire team probe for mines and cut the wire obstacle, marking their path as they proceed. (APOBS or Bangalore torpedo is preferred, if available.)
iv. Once the obstacle is reduced, the breaching fire team leader and automatic rifleman move to the far side of the obstacle using covered and concealed positions. They signal the squad leader when they are in position and ready to support.

11. The squad leader signals the base of fire team leader to move the base of fire team up and through the breach. The base of fire team leader then moves through the obstacle and joins the breaching fire team, leaving the grenadier (or anti-armor specialist) and rifleman of the base of fire team on the near side of the breach to guide the rest of the platoon through.
12. The PL leads the assault squad through the breach in the obstacle and positions it on the far side.
13. On the PL's orders and using the same covered and concealed route as the breaching squad, the platoon dismounted base of fire element moves through the breach to a covered and concealed position on the far side.
14. The breaching squad continues to widen the breach, as directed, to allow BFVs to pass through and secure the far side, once complete the remaining platoon members, PSG, and the platoon BFVs move to a covered and concealed position on the far side of the breach.
15. The PL provides a SITREP to the company commander.

KNOCK OUT A BUNKER-SQUAD (DRILL 07-SQD-D9406)

CONDITIONS

The squad is conducting operations in a live training environment as part of a platoon or larger force. The squad receives an order to knock out a bunker. The enemy initiates contact from a concealed bunker network. All or part of the squad is receiving accurate enemy direct fire.

TASK STEPS

1. The squad receives orders to knock out a bunker and:
    a. The squad leader assigns a team as the assault team.
    b. The squad leader assigns a team as the SBF team.
2. The squad moves along the covered and concealed route to an assault position then:
    a. Ensures their movement do not mask fires.
    b. Constantly watches for other bunkers or enemy positions in support of the bunker being knocked out.

3. The squad establishes local security and adds suppressive fires against the enemy.
4. The squad leader positions where to best control the teams.
5. On order, the SBF team leader:
    a. Positions weapons and machine guns based on METT-TC (I).
    b. Suppresses the bunker and enemy supporting positions.
6. On order, the assault team leader:
    a. Directs buddy team #1 (team leader and automatic rifleman) remain where they can cover buddy team #2 (grenadier and rifleman).
    b. Signals buddy team #1 to lift or shift fire to the opposite side of the bunker from the buddy team #2 approach.
    c. Directs buddy team #2 moves to a blind spot and knock out the bunker.
    d. First Soldier takes up a covered position near the exit.
    e. Second Soldier announces, FRAG OUT, and throws a grenade through an aperture.
    f. After the grenade detonates, the first Soldier covering the exit enters first and the team clears the bunker.
    g. Buddy team #1 moves to linkup with buddy team #2.
    h. The assault team leader:
    i. Inspects the bunker.
    j. Marks the bunker according to unit SOP.
    k. Signals the squad leader that the bunker is clear.
7. The squad leader accounts for Soldiers, provide a SITREP to the PL, reorganizes and reconstitutes as necessary, and continues the mission.

DISMOUNT A VEHICLE UNDER DIRECT FIRE-SQUAD (DRILL 07-SQD-D9506)

CONDITIONS

The squad is conducting mounted operations in a live training environment as part of a platoon or larger force. The enemy initiates contact with direct fire weapons and the BC, or squad leader gives the command to dismount.

TASK STEPS

1. The gunner of the BFV under direct fire orients the turret and engages known or suspected enemy positions with well-aimed fire.
    a. The BC and squad leader receive the orders to prepare to dismount from the PL with the following instructions:
    b. Receives the warning, PREPARE TO DISMOUNT.
2. Receives dismount instructions for each vehicle; for example, RIGHT (or left), distance FIFTY METERS, and identifying terrain feature BACKSIDE OF HILL.
3. The squad leader and team leaders monitor commands and alerts the Soldiers in the troop compartment.
4. The BC directs the driver to move the vehicle to a designated dismount point seeking the best cover and concealment available.
5. The driver positions the BFV, and the BC or gunner orients the primary weapons system toward the enemy to provide supporting fire.
6. On the PL's order, the squad leader gives the command, DISMOUNT.

7. The driver stops the BFV and lowers the ramp, or the BC orders the ramp access door opened.
8. The squad dismounts in the specified order on the side of the vehicle that is not under direct fire and move to covered and concealed positions.
9. The squad engages enemy positions with well-aimed fire.
10. The squad leader reports the situation to the PL.

REACT TO AIR ATTACK WHILE MOUNTED – MECHANIZED INFANTRY PLATOON (DRILL 17-PLT-D9717)

CONDITIONS

The platoon conducts operations in a live training environment as part of a company or larger force. The platoon identifies an enemy high-performance aircraft, helicopters, or UAS which requires the platoon to take either passive or active air defense measures. Some iterations of this drill should be performed in MOPP 4 and at night.

TASK STEPS

1. A platoon member identifies an enemy aircraft and alerts the platoon with a contact report containing the following elements:
    a. CONTACT
    b. ENEMY AIRCRAFT
    c. CARDINAL DIRECTION (specify: NORTH, SOUTH, EAST, or WEST).
2. The PL analyzes the situation and determines whether the enemy aircraft is either a passive threat or an active threat.
    a. If the enemy aircraft is a passive threat, the PL will order passive air defense measures when the platoon is not in the target of the enemy aircraft.
    b. If the enemy aircraft is an active threat, the PL will order active air defense measures when the platoon is the target of the enemy aircraft.
3. The platoon executes passive air defense measures as necessary:
    a. On order of the PL, the platoon moves to covered and concealed positions, maintaining a minimum of 100 meters between BFVs and halts.

Note: The company may order the platoon to continue movement.

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    b. Prepares to engage when the PL orders.
    c. Scans for follow-on enemy aircraft.
4. The platoon executes active air defense measures as necessary: (See figures C-21. and C-22 on page 346.)

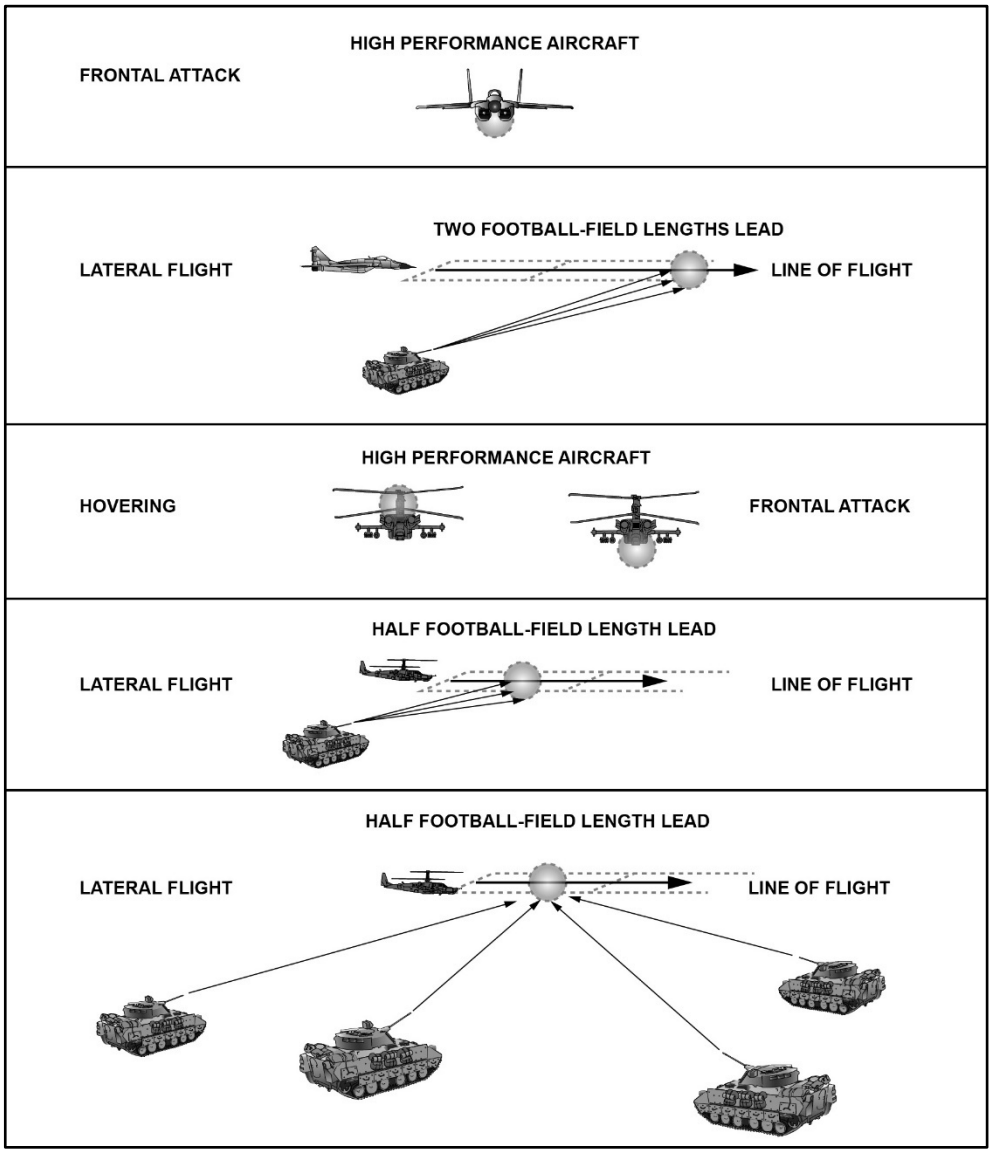


Figure C-21. Bradley's Engaging Enemy Aircraft

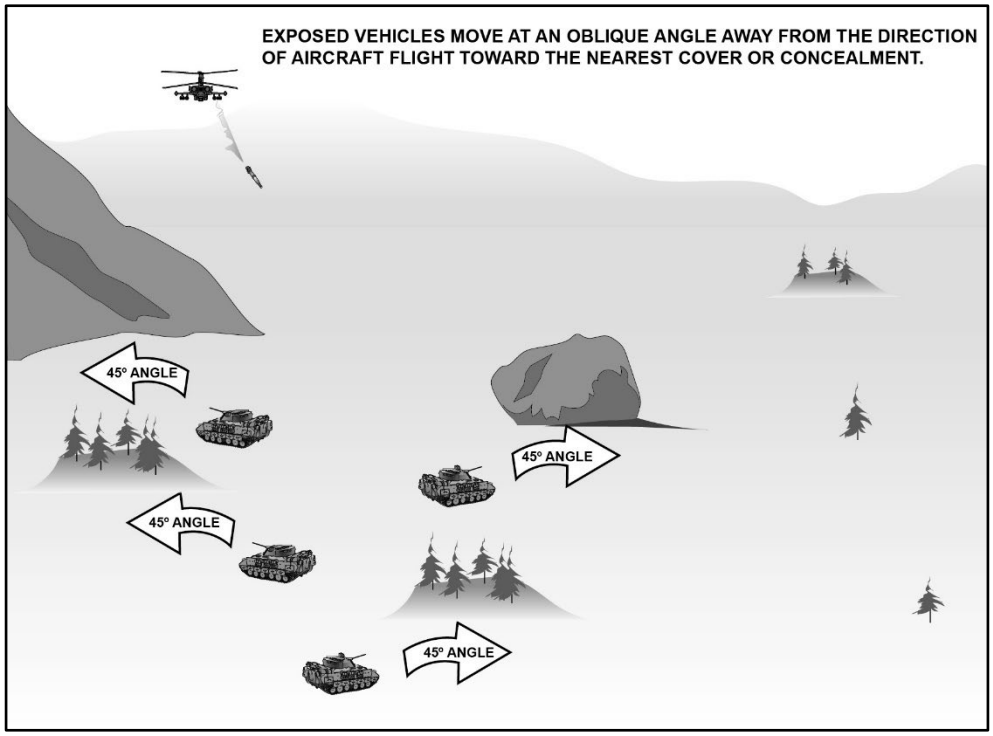


Figure C-22. Bradley's Evading Enemy Aircraft

a. The platoon initiate's fire.

Note. The primary intent of initiating fire is to force enemy aircraft to take self-defense measures that will alter their attack profile and reduce their effectiveness. The PL may use a burst of tracers to designate an aim point for the platoon machine gun antiaircraft fires. Volume is the key to effectiveness of these fires; platoon BFVs throw up a "wall of steel" through which the enemy aircraft must fly. The PL may also direct some BFVs to engage enemy high-performance aircraft with machine guns.

b. The platoon BFVs create a nonlinear target by moving as fast as possible at a 45-degree angle away from the path of flight and toward the attacking aircraft. The platoon maintains an interval of at least 100 meters between BFVs. (See figure C-22.)
c. The platoon BFVs move quickly to covered and concealed positions and freeze their movement for at least 60 seconds after the last flight of enemy aircraft has passed.
d. The platoon BFVs remain in covered and concealed positions as required.
e. The platoon scans for follow-on enemy aircraft.

5. The PL reports the situation to the company as necessary.

REACT TO AIR ATTACK WHILE DISMOUNTED– PLATOON (DRILL 07-PLT-D8015)

CONDITIONS

The platoon is conducting operations in a live training environment as part of a company or larger force. The platoon uses visual or audio to detect an unknown or adversary aircraft (rotary-wing, fixed-wing, UASs). The platoon identifies an unknown or adversary aircraft and gives the vocal or visual signal alerting the platoon to possible attack. Some iterations of this drill should be performed in MOPP 4 and at night.

TASK STEPS

1. The platoon detects (visually or audibly) an unknown or adversary aircraft:
    a. A member of the platoon detects (visually or audibly) an unknown or adversary aircraft and alerts their squad leader with a contact report and does the following:
        i. Announces contact.
        ii. Identifies type of aircraft (if possible).
        iii. Provides distance and direction to aircraft (elevation, if possible).
    b. The squad halts in position and continues to observe, the squad leader reports the contact information to the PL. Upon hearing the contact report, the remainder of the platoon halts in position and scans their sector.

Note. If the squad is being fired upon, immediately return fire and break contact.

---

2. The PL receives the contact report from the squad leader:
    a. If receiving fire, the PL directs the platoon to return fire against the aircraft.

Note. UAS defeat capabilities are prioritized over organic weapons, when available.

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    b. If not receiving fire, the PL issues one or more further orders to the platoon such as:
        i. Halt - do not move.
        ii. Go prone and camouflage.
        iii. Seek cover and concealment.

Note. The unknown or adversary aircraft may not have seen the platoon, do NOT increase the signature of the unit. If in open area, go prone, minimize shadows, conceal best as possible. If in a wooded area, utilize cover to put something between unit and adversary aircraft. Avoid looking up immediately, upturned face (visual and thermal signature), eye protection and optics reflect light.

---

c. The PL sends a SPOT report to the company.

3. The PL determines if the unknown aircraft is friendly:
   a. Guidance received from higher that unknown aircraft is a friendly element.
   b. Proper identification of the unknown aircraft.
   c. Continues operations according to the order.
4. The PL assesses the situation:

Note. When making the decision of whether to fire at unknown or adversary aircraft with small arms, take into consideration the assigned mission, tactical situation, and adjacent unit positions to prevent fratricide. These decisions may cause the enemy to use tactics, techniques, and procedures that may provoke reactions to unmask locations or suppress, disrupt, and fix units.

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   a. Determines if the adversary aircraft is directly engaging the platoon AO by (see figure C-23):

Note. The primary intent is to force adversary aircraft to take self-defense measures that alter their attack profile and reduce their effectiveness. The PL may use a burst of tracers to designate an aim point for platoon machine gun antiaircraft fires. Volume is the key to effectiveness of these fires; the platoon throws up a "wall of steel" through which aircraft must fly.

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      i. Occupying hasty fighting positions or defensive positions with cover and concealment if available.
      ii. Employing UAS defeating systems if available.
      iii. Engaging adversary aircraft with small arms as follows:

Note. Once the decision to engage has been made, continue to scan for additional adversary aircraft as the engagement takes place.

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         1. Firers utilize all the basic firing positions for air defense.
         2. Automatic weapon firers will assume a supported firing position with cover if available, firing three round burst fire of 90 rounds per minute.
         3. Machine gun firers will assume a supported firing position utilizing cover if available, firing a cyclic rate of approximately 850 rounds per minute, fired in continuous burst, with a barrel change every minute.
         4. If necessary, firers use fellow team members, trees, debris, and man-made structures as hasty firing supports.

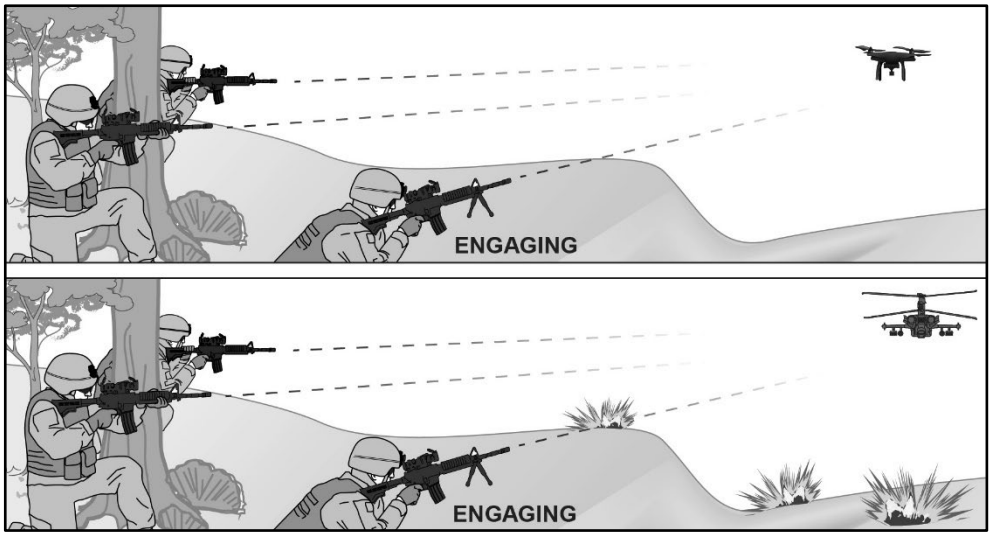


Figure C-23. React to Aircraft Engaging

b. Determines if the adversary aircraft is stationing (hovering/orbiting) the platoon AO by (see figure C-24 on page 350)—
    i. Occupying hasty fighting positions or defensive positions with cover and concealment if available.
    ii. Conducting evasive movement techniques as necessary.

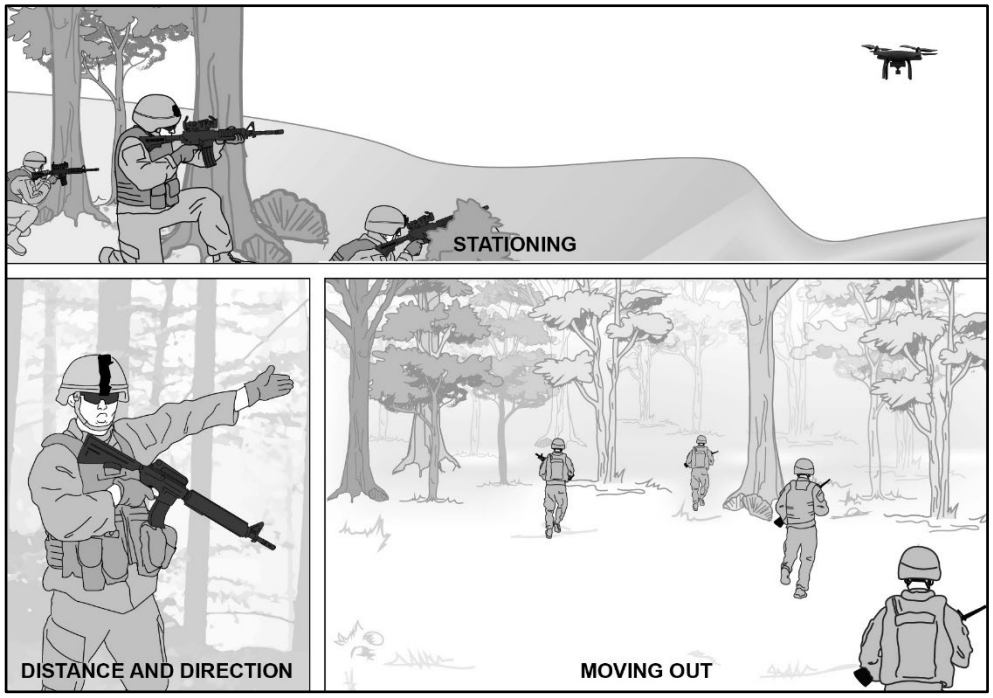


Figure C-24. React to Aircraft Stationing

c. Determines if the adversary aircraft is transiting the platoon AO by—
   i. Assuming the prone position.
   ii. Seeking camouflage, cover, and concealment, and if available deception measures.
   iii. During defensive operations, ensuring no movement between fighting positions and proper camouflage, to include thermal blankets.

5. The squad leader provides an updated SPOT report to the PL (see figure C-25 format example) that includes:

Note. This format will differ at different unit locations.

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a. Unit location (6 to 8 grid coordinate.)
b. Location of threat (Grid or distance and direction from reporting unit location.)
c. Time threat was spotted/detected.
d. Estimated time on site (Was threat approach observed or was it spotted overhead? How long might it have been there?)
e. Flight characteristics, Example: Is threat loitering in one spot (possibly already spotted reporting unit), is it flying straight (enroute to loitering location), what is the direction of flight, or is it flying randomly (searching)?

f. Estimated size, elevation, and physical description (wingspan, height, color, tail configuration, other distinguish markings).

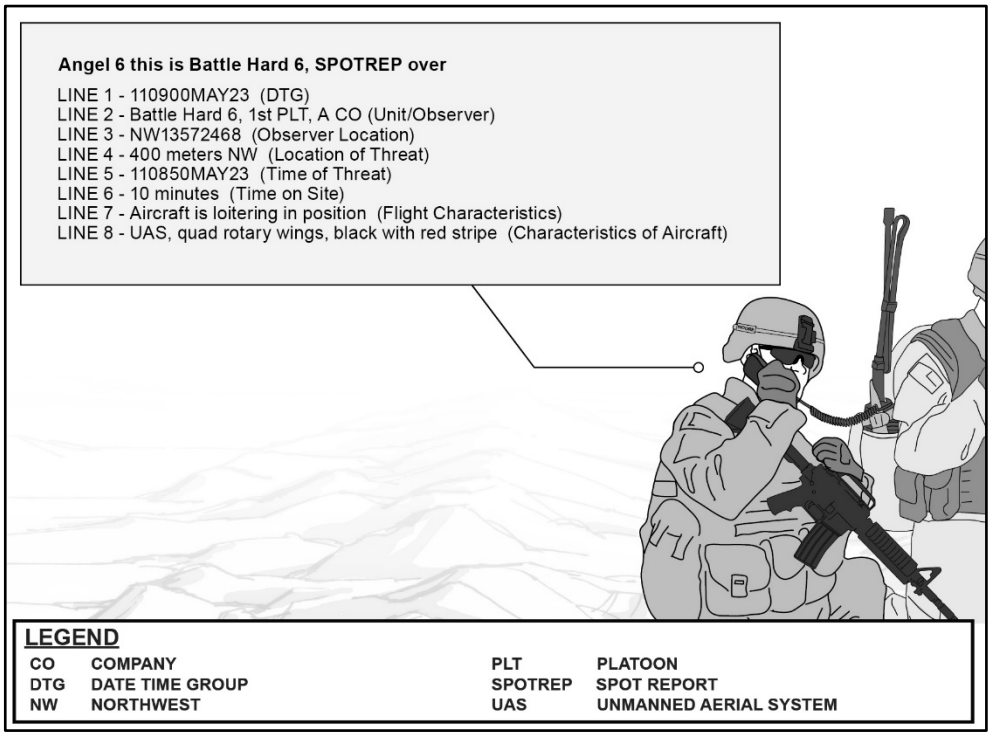


Figure C-25. Spot Report

6. The PL directs protective actions (see figure C-26 on page 352):
    a. Requests immediate suppression on identified threat (unit, OP, or UAS operator), if necessary.
    b. Requests immediate obscuration to enable repositioning, if necessary.
    c. Repositions the platoon, as needed, if observed or threatened.
    d. Requests radar critical friendly zone over position.

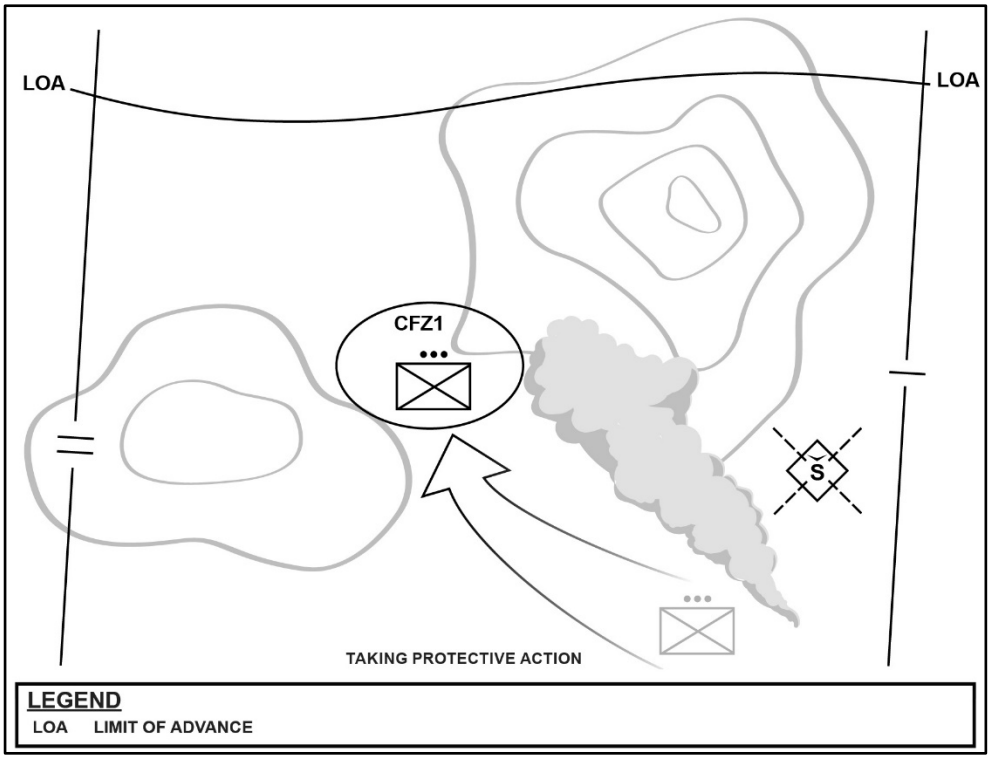


Figure C-26. Protective Action

7. The PL reports the platoon's status then continues operations according to the order and the commander's guidance.

Appendix D

Crew Drills

Mechanized Infantry crew drills describe how platoons and squads apply immediate action drills and equipment malfunctions. A platoon's ability to conduct crew drills often depends on Soldiers, leaders, and squads and sections executing actions quickly. All Soldiers and their leaders must know their immediate reaction to equipment malfunction as well as follow-up actions, to include mount, dismount, and CASEVAC drills.

While this publication does not include all crew drills, the remaining drills can be found in the Combined Arms Training Strategies within the Army Training Network, Digital Training Management System, and the Central Army Registry (See websites under references section for link to Army's definitive sources for Army training).

SECTION I – CREW DRILLS

D-1. A crew drill is a collective action that the crew of a weapon or piece of equipment must perform to successfully use the weapon or equipment in combat or to preserve life. This action is a trained response to a given stimulus such as a simple leader's order or the status of the weapon or equipment. It requires minimal leader orders to accomplish and is standard throughout the Army.

DISMOUNT A BRADLEY FIGHTING VEHICLE-PLATOON (DRILL 07-PLT-D9731)

CONDITIONS

The platoon is conducting operations in a live training environment as part of a company or larger force. The platoon is moving in BFVs while conducting operations. The platoon is ordered to dismount.

TASKS STEPS

1. The PL selects a dismount point that provides the best cover and concealment.
2. The PL prepares the platoon to dismount and:
    a. Gives the warning, PREPARE TO DISMOUNT.
    b. Designates the dismounted platoon's weapons composition; for example, NO JAVELINS, HEAVY ON AT-4s, or ALL M240L.
    c. Gives dismount instructions for each vehicle; for example, RIGHT (or left), distance FIFTY METERS, and identifying terrain feature BACKSIDE OF HILL.

Note. The BC may also give dismount instructions to the squad aboard. The BC can identify the location to the squad and team leader through the squad leader's display (M2A3 only).

3. The squad and team leaders monitor the commands and then alert the Soldiers in the troop compartment as necessary.
4. The drivers move the BFVs to the designated dismount point, orient the front of the vehicle toward the enemy, and stop the vehicle.
5. The gunners orient the turret to provide overwatching support and supporting fire, if necessary.
6. The PL gives the command, DISMOUNT.
7. The BC orders the driver to lower the ramp, or all Soldiers exit the vehicle through the ramp access door.
8. The fire team members dismount in the specified order and then move to covered and concealed positions (see figures D-1 and D2:

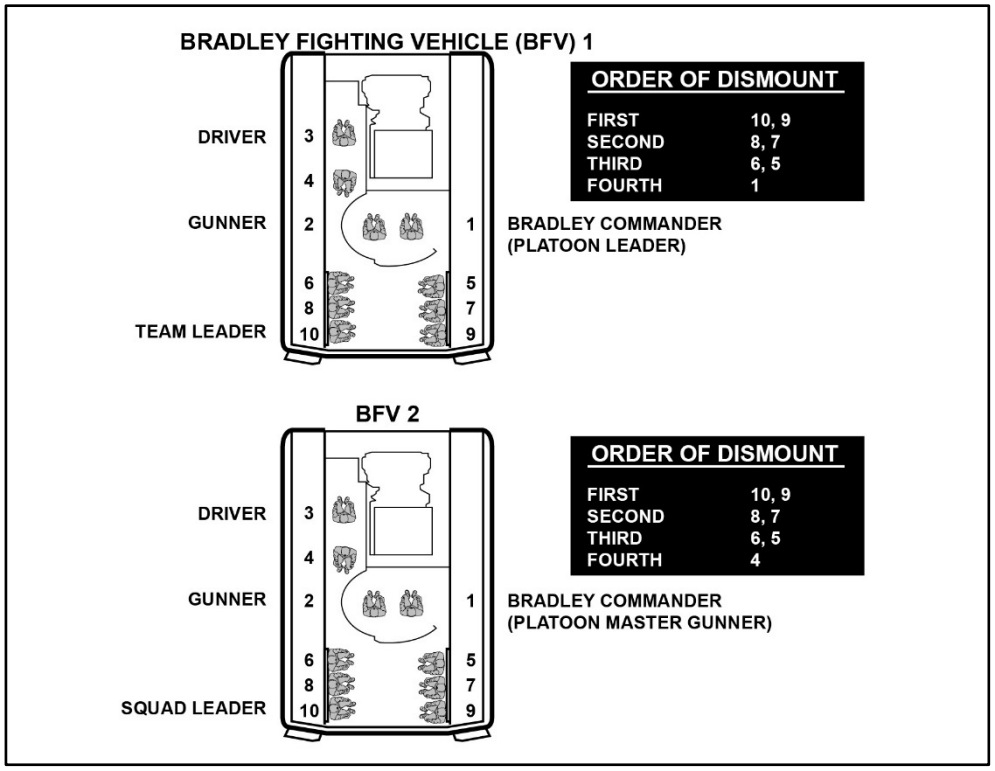


Figure D-1. Order of dismount, first and second

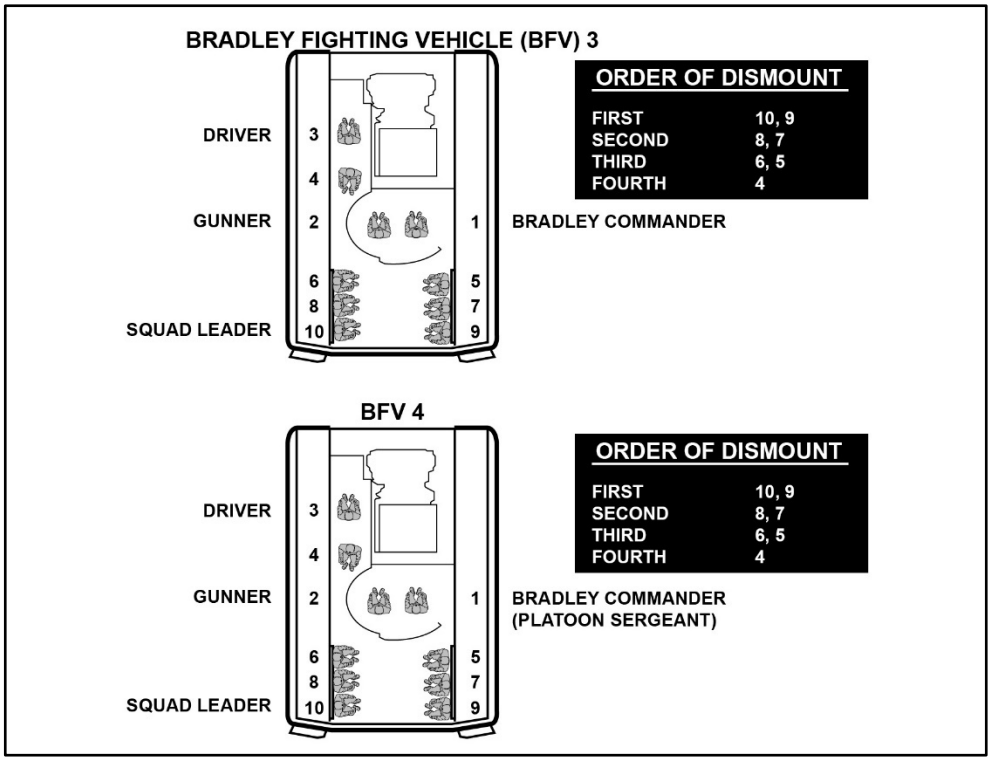


Figure D-2. Order of dismount, third and fourth

9. The fire teams link up with the squads, and the squad leaders establish contact with the PL.
10. The squad and fire team leaders' position or reposition squad members according to METT-TC (I).
11. The mounted element occupies appropriate covered and concealed positions and:
    a. Overwatches the dismounted element with primary weapons.
    b. Maintains a hide position.
12. The PSG or section leader repositions BFVs according to METT-TC (I).

MOUNT A BRADLEY FIGHTING VEHICLE-PLATOON (DRILL 07-PLT-D9732)

CONDITIONS

The platoon is conducting operations in a live training environment as part of a company or larger force. The PL receives an order to move to a new location. The squads are dismounted and ordered to remount their BFV.

TASK STEPS

1. The PL selects a mount point that provides the best cover and concealment.

2. The PL prepares the platoon to mount and:
    a. Gives the warning, PREPARE TO MOUNT.
    b. Gives additional mount instructions for each vehicle.
3. The platoon, both mounted and dismounted, moves to the mount point using covered and concealed routes.
4. The vehicle crews, using the appropriate weapons, overwatch primary enemy avenues of approach and provide supporting fire and smoke, if necessary.
5. The PL gives the command, MOUNT.

Note. The order to mount may come with clarifying instructions such as, FIRST SQUAD PROVIDE A BASE OF FIRE UNTIL SECOND SQUAD IS MOUNTED.

6. The BC orders the driver to lower the ramp, or all Soldiers enter the vehicle through the ramp access door.
7. Each squad mounts in the order specified and the squad leader designates which fire team mounts first; for example, Team A mounts first; Team B provides overwatching fires.
8. Soldiers remount the vehicle in the specified order. (See figures D-3 and D-4.)

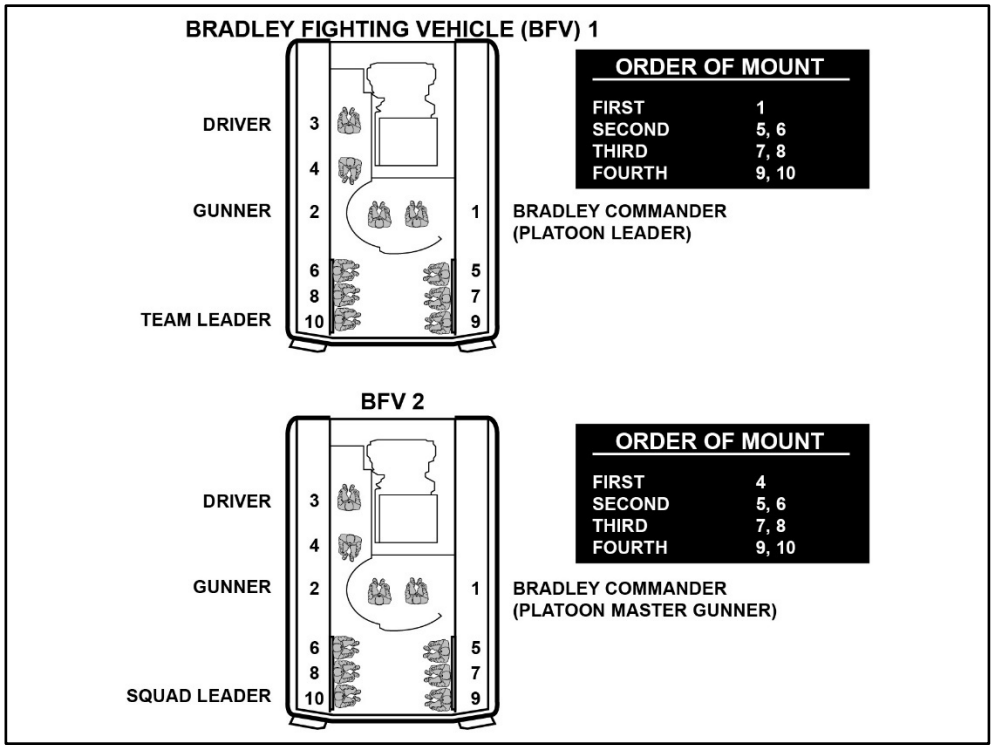


Figure D-3. Order of mount, first and second

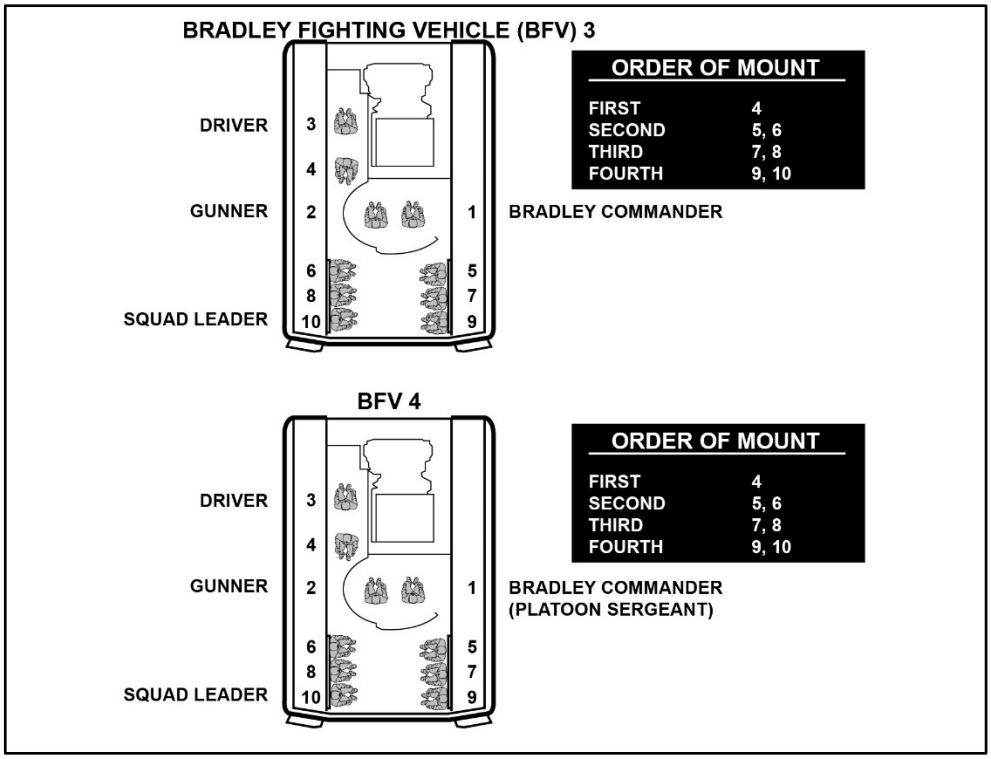


Figure D-4. Order of mount, third and fourth

9. The PL and squad leaders prepare to move the platoon to include the following:
    a. The senior leader accounts for all personnel and equipment, ensures weapons are on SAFE in the vehicle, and reports to the BC. The senior leader announces ALL UP.
    b. The BC orders the driver to raise the ramp or the fire team to close the ramp access door.
    c. The PL establishes visual or radio contact with the other BC and designates a direction of movement, formation, and movement technique from the mount point.

EXTRACT INJURED PERSONNEL FROM A BRADLEY FIGHTING VEHICLE-CREW (DRILL 17-CW-D9431)

CONDITIONS

The crew is conducting operations in a live training environment and the BFV sustains extensive damage from enemy contact and is disabled. An occupant of the vehicle has been injured and must be extracted.

TASK STEPS

1. Extracts BC or gunner as listed below:

a. BC, or senior Soldier if the BC is the casualty, gives the command, EXTRACT THE GUNNER.
b. The driver shuts down the engine if still running.

2. BC takes the following actions:
   a. Attempts to rotate the turret to 6400 mil position.
   b. Engages the turret travel lock.
   c. Sets the TURRET DRIVE SYSTEM switch to OFF.
3. Crew members take the following actions:
   a. Exits the vehicle through the ramp access door, the ramp, or if necessary, the cargo hatch.
   b. Moves to the outside of the turret to assist in extracting the injured gunner or BC.
   c. BC takes the following actions:
   d. Places the gunner in position for removal from the vehicle.
   e. Adjusts the seat to the raised position, if necessary.
   f. Unfastens the seat belt.
   g. Crew members take the following actions:
   h. Places a pistol belt around the gunner's chest and slowly pulls the gunner out. If the gunner cannot be extracted through the hatches, extract through the turret shield door.
   i. Moves the gunner to the front of the vehicle.

Note. If the gunner and BC are wearing flame-resistant fiber suits, grasp the straps on the back of the suit and pull the gunner or BC out of the vehicle.

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   j. Lowers the gunner or BC from the vehicle to crew members on the ground.
   k. Places the gunner or BC on the ground and administered first aid.
4. Extracts driver as listed below:
   a. BC gives the command, EXTRACT THE DRIVER.
   b. Gunner takes the following actions:
   c. Ensures the turret exposes the driver's hatch.
   d. Engages the turret travel lock.
   e. Sets the TURRET DRIVE SYSTEM switch to OFF.
   f. BC takes the following actions:
   g. Moves to the front of the vehicle.
   h. Releases the trim vane.

Note. The M2A3 BFV does not have a trim vane attached to the vehicle's front slope. The BC must determine the urgency to extract the driver and treat the driver's wounds before deciding to install the work platform.

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5. Crew members take the following actions:
   a. Moves forward behind the driver and lowers the backrest of the driver's seat using the backrest release handle.
   b. Assists the BC in removing the driver from the vehicle.
6. BC takes the following actions:

a. Opens the driver's hatch.

Note. 1. If the drivers hatch is damaged and will not open, the crew member pulls the driver back into the troop compartment. 2. The gunner can perform the BC's duties.

b. Disconnects the combat vehicle crewman (also called CVC) helmet and the safety belt.
c. Crosses the driver's arms over their chest. (If this is not possible, wraps a belt around the driver's chest to raise them.)
d. Pulls the driver out of the vehicle and hands them to the crew members on the ground.

7. Fire team members take the following actions:
   a. Assists the BC in pulling the driver from the vehicle.
   b. Two crew members dismount to the left front of the vehicle to assist by taking the driver from the BC.
   c. Lays them on the ground and administer first aid.
   d. One crew member remains in the vehicle and assists in the removal of the driver by untangling their legs, as necessary.
8. Extracts a crew member as follows:
   a. Squad leader informs the BC that a crew member is injured.
   b. BC gives the command, EXTRACT CREW MEMBER.
   c. Driver moves to the nearest covered position, halts the vehicle, and lowers the ramp.

Note. Depending on which crew member is injured, the squad leader designates which crew member will assist in extracting the casualty. If the squad leader is injured, then the next senior crew member in the troop compartment takes charge.

9. Two crew members remove the injured crew member, lay them on the ground, and perform first aid.
10. The BC reports the situation to the PL.

REACT TO ATGM FIRE WHILE MOUNTED-SECTION (DRILL 07-SEC-D9401)

CONDITIONS

The section is conducting operations in a live training environment as part of a platoon or larger force. The section is mounted and is moving or stationary. The section detects the signature of a weapon or detects ATGM rounds.

TASK STEPS

1. Any section member gives the warning, MISSILE, LEFT (RIGHT, FRONT or FLANK).

2. The BC receiving or observing fire, sends a contact report to alert the other vehicles.
3. When moving, BC directs driver to move to a covered and concealed position as follows:
    a. If the distance to cover is 50 meters or less, the driver moves in a straight line to a covered and concealed position.
    b. If the distance to cover is greater than 50 meters, the driver takes evasive action while moving to a covered and concealed position as follows:
    c. At varying speeds, zigzags, and changes direction frequently.
    d. Moves directly towards the missile; turns and brakes to the right or left at the last possible moment.
    e. Directs the use of smoke to obscure movement.
4. When stationary, use indirect fire to suppress the suspected enemy position or when in range, use small arms for suppression.
5. Locates and destroys the ATGM position with TOW, 25-mm main gun, or M240C. Uses one or a combination of the weapon systems.
6. The BC or section leader accounts for section members and sends a SITREP to higher HQ.
7. The BC or section leader reorganizes, as necessary, and continues mission.

LOAD THE 25-MM AMMUNITION READY BOX–CREW (DRILL 17-CW-D9438)

CONDITIONS

The crew is conducting operations in a live training environment as part of a larger force. The crew is conducting the initial loading or re-loading when the low ammunition light comes on. The BFV has the ramp up, master power ON, and 300 rounds of 25-mm ammunition in 30-round boxes stored according to the load plan (25-mm HE or AP).

TASK STEPS

1. The BC gives the command, LOAD HE READY BOX.
2. The gunner prepares for HE loading and—
    a. Traverses turret to HE load position (2,150 mils).
    b. Sets turret travel lock.
    c. Moves TURRET DRIVE SYSTEM switch to OFF.
    d. Moves TURRET POWER switch to OFF and announces, UPLOAD HE READY BOX.
3. A crew member opens the turret shield door.
4. The gunner turns handle and removes 25-mm ammo can door and:
    a. Turns handle and removes access door.
    b. Cleans loading rails.
5. A crew member turns handle and removes HE ammo can door.
6. A crew member prepares ammo boxes and:
    a. Stows squad seats.
    b. Unstows HE ammo boxes from floor.
    c. Unstows HE ammo boxes from ammo racks, if necessary.

d. Stacks HE ammo boxes.
e. Unstows squad seats.

7. A crew member prepares ammo boxes and:
   a. Unstows HE ammo boxes from hinged ammo racks.
   b. Unstows HE ammo boxes from floor plates, if necessary.
   c. Unstows HE ammo boxes from ammo racks, if necessary.
   d. Unstows HE ammo boxes from floor, if necessary.
   e. Stacks HE ammo boxes.
8. A crew member prepares HE ammo belts and:
   a. Prepares first ammo belt.
   b. Prepares second ammo belt.
   c. Removes first round from second ammo belt.
   d. Joins second ammo belt to first ammo belt.
   e. Checks for misaligned rounds.
   f. Joins ammo belts, as required.
9. A crew member loads rounds into HE ammo can and:

Note. Ammo belt must be loaded with links on top and rounds pointed to the right of vehicle. Rounds are counted as they are loaded.

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   a. Loads the first 44 rounds.
   b. Releases upper roller.
   c. Forwards ammo belt.
   d. Locks upper roller.
   e. Loads next group of rounds on ammo belt into HE ammo can.
   f. Lifts ammo belt loops over baffle.
   g. Lifts ammo belt loops over roller.
   h. Loads ammo belt until HE ammo can is full.

Note. There must be a single empty link at end of ammo belt. This link must be positioned below loading rail at all times.

---

10. A crew member installs HE ammo can door and turns handle and:
    a. Installs access door and turns handle.
    b. Installs 25-mm ammo can door and turns handle.
    c. Moves HE/AP selector switch to HE.

Note. 25-mm rounds may land off target and kill or seriously injure personnel. Make sure HE/AP selector switch is set correctly for ammunition loaded in ammo can.

---

    d. Stows empty HE ammo boxes.
    e. Closes turret shield door and announces, HE UPLOADED.
11. The gunner moves TURRET POWER switch to ON and:

Note. Turret and weapons may move suddenly and strike or crush personnel and equipment when palm grips are engaged. Make sure that personnel and equipment are clear of turret and weapons before turret drive power is turned on and palm grips are engaged.

a. Moves TURRET DRIVE SYSTEM switch to ON.
b. Releases turret travel lock.
c. Traverses' turret to 6400 mils.

12. The BC gives the command, LOAD AP READY BOX.
13. The gunner prepares for AP loading and:
    a. Traverses' turret to AP load position (4,350 mils).
    b. Sets turret travel lock.
    c. Moves TURRET DRIVE SYSTEM switch to OFF.
    d. Moves TURRET POWER switch to OFF and announces, UPLOAD AP READY BOX.
14. A crew member opens turret shield door and:
    a. Opens and removes AP ammo can door from AP ammo can.
    b. Turns handle and removes AP ammo can door.
    c. Cleans loading rails.
15. A crew member prepares ammo boxes and:
    a. Crew member stows squad seats.
    b. Unstows AP ammo boxes from floor.
    c. Unstows AP ammo boxes from ammo racks, if necessary.
    d. Stacks AP ammo boxes.
    e. Unstows squad seats.
16. A crew member prepares ammo boxes and:
    a. Unstows AP ammo boxes from hinged ammo racks.
    b. Unstows AP ammo boxes from floor plates, if necessary.
    c. Unstows AP ammo boxes from ammo racks, if necessary.
    d. Unstows AP ammo boxes from floor, if necessary.
    e. Stacks AP ammo boxes.
17. A crew member prepares AP ammo belts and:
    a. Prepares first ammo belt.
    b. Prepares second ammo belt.
    c. Removes first round from second ammo belt.
    d. Joins second ammo belt to first ammo belt.
    e. Checks for misaligned rounds.
    f. Joins ammo belts, as required.
18. A crew member loads rounds into AP ammo can and:
    a. Aligns ammo belt with ammo can and hangs first double linked round onto loading rail.
    b. Counts out the first 25 rounds, Hangs both 25th and 26th rounds onto loading rail.
    c. Forwards ammo belt.
    d. Loads ammo belt until AP ammo can is full.
19. A crew member installs and closes AP ammo can door and:
    a. Installs AP ammo can door and turns handle.

b. Moves HE/AP selector switch to AP.

Note. 25-mm rounds may land off target and kill or seriously injure personnel. Make sure HE/AP selector switch is set correctly for ammunition loaded in ammo can.

c. Stows empty AP ammo boxes.
d. Closes turret shield door and announces, AP UPLOADED.

20. The gunner moves TURRET POWER switch to ON and:

Note. Turret and weapons may move suddenly and strike or crush personnel and equipment when palm grips are engaged. Make sure that personnel and equipment are clear of turret and weapons before turret drive power is turned on and palm grips are engaged.

a. Moves TURRET DRIVE SYSTEM switch to ON.
b. Releases turret travel lock.
c. Traverses turret to 6400 mils.

RELOAD TOW LAUNCHER ON A BRADLEY FIGHTING VEHICLE–CREW (DRILL 17-CW-D9440)

CONDITIONS

The crew is conducting operations in a live training environment as part of a larger force. The BFV has fired two TOW missiles and needs to reload the launcher. The TOW castings are in the launch tubes. The TOW launcher is raised.

TASK STEPS

1. The BC commands, PREPARE TO LOAD MISSILE.
2. The gunner prepares for TOW reloading and:
    a. Traverses the turret to the TOW load position (5,950 mils).
    b. Elevates TOW launcher to 500 mils.
    c. Sets turret travel lock.
    d. Moves TURRET DRIVE SYSTEM switch to OFF.
3. A crew member prepares TOW launcher for reloading and:
    a. Opens cargo hatch cover to mid position.
    b. Pushes and holds lock latch on loading handle.
    c. Pulls downloading handle. Releases lock hatch. If loading handle does not go all the way down, pushes loading handle up until it locks.
4. The gunner retracts umbilical connectors from TOW launcher tubes and:

Note. With TOW missile casing in TOW launcher, umbilical connectors cannot be seen. Illuminated TOW indicator light on TOW control box indicates umbilical connectors extend into TOW launcher. TOW indicator light will go out when umbilical connectors retract from TOW launcher.

a. Moves ARM-SAFE-RESET switch to RESET, then to SAFE and then waits 10 seconds.
b. If umbilical connector still extends down into TOW launcher tube, do not load TOW launcher.

5. A crew member continues to prepare TOW launcher for reloading and:
   a. Pulls spent TOW missile casing from TOW launcher tube.
   b. Discards spent TOW missile casing.
   c. Unstows TOW missiles.
   d. Removes forward handling ring from nose end of TOW missile.
   e. Releases clamp and removes forward handling ring. Saves forward handling ring until TOW missiles are fired.
   f. Removes electrical connector cover from TOW missile electrical connector. Saves cover until TOW missiles are fired.
   g. Inspects nose end diaphragm for damage.
   h. Inspects rear diaphragm for damage.
   i. Inspects humidity indicator for pink color. If pink, do NOT load TOW missile.
   j. Inspects electrical connector. If black ring is dented or out of round, center pin is bent, or green cover is cracked or missing, do NOT load TOW missile.
6. The BC commands, LOAD MISSILE.
7. A crew member reloads TOW missile launcher and:
   a. Announces, UPLOADING TOW.
   b. Lifts TOW missile out of cargo hatch nose end first, with electrical connector at top.
   c. Slides lugs on sides of TOW missile nose end into TOW launcher lug channels.
   d. Carefully slides TOW missile all the way into TOW launcher.
   e. Holds TOW missile in TOW launcher and pushes up loading handle until it locks.
   f. Closes cargo hatch cover.
   g. Announces, TOW UPLOADED.
8. The gunner prepares to lower TOW missile launcher and:
   a. Releases turret travel lock.
   b. Moves TURRET DRIVE SYSTEM switch to ON.
   c. Traverses' turret to 6400 mils.
   d. Lowers TOW launcher.

REMOVE A MISFIRED TOW ON A BRADLEY FIGHTING VEHICLE–CREW (DRILL 17-CW-D9442)

CONDITIONS

The crew is conducting operations in a live training environment as part of a larger force. Upon recognition of enemy targets or on the BC's order, the crew identifies and engages the enemy targets. The TOW fails to fire and forces the crew to take the appropriate action.

TASK STEPS

1. The gunner announces a misfire and—
    a. Moves the ARM-SAFE-RESET switch to RESET, then to SAFE.
    b. Ensures the stabilization switch is set to ON to keep the weapon pointed downrange while the driver rotates the vehicle.
2. The BC directs the driver to seek a covered or hull-down position.
3. The driver pivot steers the vehicle either left or right according to the BC's instructions. The turret remains pointed downrange.
4. The BC—
    a. Instructs the gunner to traverse the turret until the turret is at 1,600 or 4,800 mils.
    b. Instructs the gunner to elevate the TOW launcher to maximum elevation.
    c. Engages the turret travel lock.
    d. Moves the turret drive system switch and turret power switch to OFF.
5. Two Soldiers, as designated by the BC or squad leader, execute the following:
    a. Dismount to the rear of the vehicle.
    b. One Soldier mounts the vehicle from the left side, keeping away from the front and rear of the vehicle.
    c. The Soldier on top removes the misfired TOW from the launcher.
    d. The Soldier on top of the BFV hands the misfired missile to the Soldier on the ground.
    e. The Soldier on the ground carries the missile a safe distance (at least 200 meters) and marks the location with a stake and if tactically feasible, a yellow flag.
    f. The Soldier on the ground places the missile so that the backblast area (75 meters) is oriented in the least destructive direction.
6. The BC notifies the chain of command of the existence and location of the misfired TOW.

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Glossary

SECTION I – ACRONYMS AND ABBREVIATIONS

1SG	first sergeant
AA	assembly area
ABCT	Armored brigade combat team
ADP	Army doctrine publication
AFTTP	Air Force tactics, techniques, and procedures
AO	area of operations
AP	armor piercing
APFSDS-T	armor-piercing fin-stabilized discarding sabot tracer
APDS-T	armor-piercing discarding sabot with tracer
APOBS	antipersonnel obstacle breaching system
ATGM	antitank guided missile
ATP	Army techniques publication
BAS	battalion aid station
BC	Bradley commander
BFV	Bradley fighting vehicle
BHL	battle handover line
BP	battle position
CAB	combined arms battalion
CAS	close air support
CASEVAC	casualty evacuation
CBRN	chemical, biological, radiological, and nuclear
CCP	casualty collection point
CP	command post
CLS	combat lifesaver
COA	course of action
C-UAS	counter-unmanned aircraft system
DA	Department of the Army
DD	Department of Defense
DFCM	direct fire control measures

DOD	Department of Defense
EA	engagement area
FA	field artillery
FAC (A)	forward air controller (airborne)
FDC	fire direction center
FIST	fire support team
FM	field manual, frequency modulation
FMT	field maintenance team
FO	forward observer
FPF	final protective fire
FPL	final protective line
FRAGORD	fragmentary order
FSC	forward support company
FSCM	fire support coordination measures
FSO	fire support officer
GPS	Global Positioning System
GTA	graphic training aid
GTAO	graphic terrain analysis overlay
HE	high-explosive
HEI-T	high explosive incendiary-tracers
HOPE-LW	higher echelon's timeline, operational, planning and preparation, enemy timeline, light and weather
HQ	headquarters
IBAS	Improved Bradley Acquisition System
IPOE	intelligence preparation of the operational environment
IR	infrared
JP	joint publication
JTAC	joint terminal attack controller
LD	line of departure
LOA	limit of advance
LOGPAC	logistics package
MCP	maintenance collection point
MCRP	Marine Corps reference publication
MCTP	Marine Corps tactical publication
MCWP	Marine Corps warfighting publication
MEDEVAC	medical evacuation

METT-TC (I)	mission, enemy, terrain and weather, troops and support available, time available, civil considerations, and informational considerations.
mm	millimeter
MOPP	mission-oriented protective posture
MTF	medical treatment facility
NCO	noncommissioned officer
NTTP	Navy tactics, techniques, and procedures
OAKOC	observation and fields of fire, avenues of approach, key terrain, obstacles, and cover and concealment
OE	operational environment
OP	observation post
OPORD	operation order
OPSEC	operations security
PACE	primary, alternate, contingency, and emergency communications
PC	personnel carrier
PCC	precombat check
PCI	precombat inspection
PIR	priority intelligence requirement
PL	platoon leader
PLD	probable lines of deployment
PMCS	preventive maintenance checks and services
POB	point of breach
POI	point of injury
POP	point of penetration
PSG	platoon sergeant
REDCON	readiness condition
RFL	restrictive fire line
RM	risk management
ROE	rules of engagement
RP	release point
RTO	radio-telephone operator
SALUTE	size, activity, location, unit, time, equipment
SBF	support by fire
SDZ	surface danger zone
SITREP	situation report
SOP	standard operating procedure

SOSRA	suppress, obscure, secure, reduce, and assault
SP	start point
sUAS	small unmanned aircraft system
TC	training circular
TCCC	tactical combat casualty care
TLE	target location error
TLP	troop leading procedures
TOW	tube-launched, optically tracked, wire-guided
TRP	target reference point
UAS	unmanned aircraft system
WARNORD	warning order
WCS	weapons control status
WP	white phosphorous
XO	executive officer

SECTION II – TERMS

actions on contact

A process to help leaders understand what is happening and to take action. (FM 3-90)

air-ground operations

The simultaneous or synchronized employment of ground forces with aviation maneuver and fires to seize, retain, and exploit the initiative. (FM 3-04)

alternate position

A defensive position that the commander assigns to a unit or weapon system for occupation when the primary position becomes untenable or unsuitable for carrying out the assigned task. (FM 3-90)

ambush

A variation of attack from concealed positions against a moving or temporarily halted enemy. (FM 3-90)

area defense

A type of defensive operation that concentrates on denying enemy forces access to designated terrain for a specific time rather than destroying the enemy outright. (ADP 3-90)

area of interest

That area of concern to the commander, including the area of influence, areas adjacent to it, and extending into enemy territory. (JP 3-0)

assembly area

An area a unit occupies to prepare for an operation. (FM 3-90)

attack

A type of offensive operation that defeats enemy forces, seizes terrain, or secures terrain. (FM 3-90)

avenue of approach

(Army) A path used by an attacking force leading to its objective or to key terrain. Avenues of approach exist in all domains. (ADP 3-90)

basic load

The quantity of supplies required to be on hand within, and moved by a unit or formation, expressed according to the wartime organization of the unit or formation and maintained at the prescribed levels (JP 4-09)

battle drill

Rehearsed and well understood actions made in response to common battlefield occurrences. (ADP 3-90)

battle position

A defensive location oriented on a likely enemy avenue of approach. (ADP 3-90)

biological hazard

An organism, or substance derived from an organism, that poses a threat to human or animal health. (JP 3-11)

bounding overwatch

A movement technique used when contact with enemy forces is expected. (FM 3-90)

breach

Is a synchronized combined arms activity under the control of the maneuver commander conducted to allow maneuver through an obstacle (ATP 3-90.4).

breach area

A defined area where a breach occurs. (ATP 3-90.4)

call for fire

A standardized request for fire containing data necessary for obtaining the required fire on a target. (FM 3-09)

casualty evacuation

(Army) The movement of casualties aboard nonmedical vehicles or aircraft without en route medical care. (ATP 4-02.13)

chemical, biological, radiological, and nuclear environment

An operational environment that includes chemical, biological, radiological, and nuclear threats and hazards and their potential resulting effects. (JP 3-11)

chemical hazard

Any chemical manufactured, used, transported, or stored that can cause death or other harm through toxic properties of those materials, including chemical agents and chemical weapons prohibited under the Chemical Weapons Convention as well as toxic industrial chemicals. (JP 3-11)

close air support

Air action by aircraft against hostile targets that are in close proximity to friendly forces and that require detailed integration of each air mission with the fire and movement of those forces. (JP 3-09.3)

combat lifesaver

A nonmedical Soldier of a unit trained to provide enhanced first aid as a secondary mission. (FM 4-02)

***combat load**

The minimum mission-essential equipment and supplies as determined by the commander responsible for carrying out the mission, required for Soldiers to fight and survive immediate combat operations.

combat power

The total means of destructive and disruptive force that a military unit/formation can apply against an enemy at a given time. (JP 3-0)

combined arms

The synchronized and simultaneous application of arms to achieve an effect greater than if each element was used separately or sequentially. (ADP 3-0)

commander's intent

A clear and concise expression of the purpose of an operation and the desired objectives and military end state. (JP 3-0)

consolidate

To organize and strengthen a captured position to use it against the enemy. (FM 3-90)

constraint

(Army) A restriction placed on the command by a higher command. A constraint dictates an action or inaction, thus restricting the freedom of action of a subordinate commander. (FM 5-0)

contact point

In land warfare, a point on the terrain, easily identifiable, where two or more units are required to make contact. (JP 3-50)

control measure

A means of regulating forces or warfighting functions. (ADP 6-0)

coordination point

A point that indicates a specific location for the coordination of tactical actions between adjacent units. (FM 3-90)

cordon and search

A variation of movement to contact where a friendly force isolates and searches a target area. (FM 3-90)

counterattack

A variation of attack by a defending force against an attacking enemy force. (FM 3-90)

countermobility

(Arm/Marine Corps) A set of combined arms activities that use or enhance the effects of natural and man-made obstacles to prevent the enemy freedom of movement and maneuver. (ATP 3-90.8)

cyberspace operations

The employment of cyberspace capabilities where the primary purpose is to achieve objectives in or through cyberspace. (JP 3-0)

decisive point

Key terrain, key event, critical factor, or function that, when acted upon, enables commanders to gain a marked advantage over an enemy or contribute materially to achieving success. (JP 5-0)

defensive operation

An operation to defeat an enemy attack, gain time, economize forces, and develop conditions favorable for offensive or stability operation. (ADP 3-0)

deliberate operation

An operation in which the tactical situation allows the development and coordination of detailed plans, including multiple branches and sequels. (ADP 3-90)

directed obstacle

An obstacle directed by a higher commander as a specified task to a subordinate unit. (ATP 3-90.8)

domain

A physically defined portion of an operational environment requiring a unique set of warfighting capabilities and skills. (FM 3-0)

echelon formation

A movement formation with elements arranged on an angle to the left or to the right of the direction of attack (echelon left, echelon right). (FM 3-90)

electromagnetic protection

Division of electromagnetic warfare involving actions taken to protect personnel, facilities, and equipment from any effects of friendly or enemy use of the electromagnetic spectrum that degrade, neutralize, or destroy friendly combat capability. (JP 3-85)

electromagnetic warfare

Military action involving the use of electromagnetic and directed energy to control the electromagnetic spectrum or to attack the enemy. (JP 3-85)

emission control

The selective and controlled use of electromagnetic, acoustic, or other emitters to optimize command and control capabilities while minimizing, for operations security: a. detection by enemy sensors, b. mutual interference among friendly systems, and/or c. enemy interference with the ability to execute a military deception plan. (JP 3-85)

enabling operation

An operation that sets the friendly conditions required for mission accomplishment. (FM 3-90)

enemy

A party identified as hostile against which the use of force is authorized. (ADP 3-0)

engagement area

An area where the commander masses effects to contain and destroy an enemy force. (FM 3-90)

engagement priority

Identifies the order in which the unit engages enemy systems or functions. (FM 3-90)

envelopment

A form of maneuver in which an attacking force avoids an enemy's principal defense by attacking along an assailable flank. (FM 3-90)

essential task

(Army) A specified or implied task that must be executed to accomplish the mission. (FM 5-0)

exploitation

(Army) A type of offensive operation that usually follows a successful attack to disorganize the enemy in depth. (FM 3-90)

far side objective

A defined location oriented on the terrain or on an enemy force that an assaulting force seizes to eliminate enemy direct fires to prevent the enemy from interfering with the reduction of obstacles and allows follow-on forces to move securely through created lanes. (ATP 3-90.4)

field artillery

(Army) Equipment, supplies, ammunition, and personnel involved in the use of cannon, rocket, or surface-to-surface missile launchers. (FM 3-09)

final protective fire

An immediately available, prearranged barrier of fire designed to impede enemy movement across defensive lines or areas. (JP 3-09.3)

final protective line

A selected line of fire where an enemy assault is to be checked by interlocking fire from all available weapons and obstacles. (FM 3-90)

fires

The use of weapon systems or other actions to create specific lethal or nonlethal effects on a target. (JP 3-09)

fire support

Fires that directly support land, maritime, amphibious, space, cyberspace, and special operations forces to engage enemy forces, combat formations, and facilities in pursuit of tactical and operational objectives. (JP 3-09)

fire support officer

(Army) The operational to tactical level field artillery officer responsible for advising the supported commander or assisting the fire support coordinator on fires functions and fire support. (FM 3-09)

fire support plan

A plan that addresses each means of fire support available and describes how Army indirect fires, joint fire support, and target acquisition are integrated into operations to facilitate success. (FM 3-09)

fire support planning

The continuous process of analyzing, allocating, integrating, synchronizing, and scheduling fires to describe how the effects of fires facilitate supported force actions. (FM 3-09)

fire support team

A field artillery team provided for each maneuver company/troop and selected units to plan and coordinate all supporting fires available to the unit, including mortars, field artillery, naval surface fire support, and close air support integration. (JP 3-09.3)

fix

1. A tactical mission task in which a unit prevents the enemy from moving from a specific location for a specific period. (FM 3-90)

fixing force

A force designed to supplement the striking force by preventing the enemy from moving from a specific area for a specific time. (ADP 3-90)

forward passage of lines

Occurs when a unit passes through another unit’s positions while moving toward the enemy. (ADP 3-90)

fragmentary order

An abbreviated operation order issued as needed to change or modify an order or to execute a branch or sequel. (JP 5-0)

frontal attack

A form of maneuver in which the attacking force seeks to destroy a weaker enemy force or fix a larger enemy force in place over a broad front. (FM 3-90)

hasty breach

The creation of lanes through enemy minefields by expedient methods such as blasting with demolitions, pushing rollers or disabled vehicles through the minefields when the time factor does not permit detailed reconnaissance, deliberate breaching, or bypassing the obstacle. (JP 3-15)

hasty operation

An operation in which a commander directs immediately available forces, using fragmentary orders, to perform tasks with minimal preparation, trading planning and preparation time for speed of execution. (ADP 3-90)

hybrid threat

The diverse and dynamic combination of regular forces, irregular forces, terrorists, or criminal elements unified to achieve mutually benefitting effects. (ADP 3-0)

implied task

A task that must be performed to accomplish a specified task or mission but is not stated in the higher headquarters' order. (FM 5-0)

infiltration

A form of maneuver in which an attacking force conducts undetected movement through or into an area occupied by enemy forces. (FM 3-90)

key terrain

(Army) An identifiable characteristic whose seizure or retention affords a marked advantage to either combatant. (ADP 3-90)

kill zone

The location where fires are concentrated in an ambush. (FM 3-90)

lane

(Army/Marine Corps) A route through, over, or around an enemy or friendly obstacle that provides passage of a force. (ATP 3-90.4)

large-scale combat operations

Extensive joint combat operations in terms of scope and size of forces committed, conducted as a campaign aimed at achieving operational and strategic objectives. (ADP 3-0)

line formation

A movement formation in which elements move abreast of each other. (FM 3-90)

main body

The principal part of a tactical command or formation. It does not include detached elements of the command, such as advance guards, flank guards, and covering forces. (ADP 3-90)

main effort

A designated subordinate unit whose mission at a given point in time is most critical to overall mission success. (ADP 3-0)

medical evacuation

The timely and effective movement of the wounded, injured, or ill to and between medical treatment facilities on dedicated and properly marked medical platforms with en route care provided by medical personnel. (ATP 4-02.2)

meeting engagement

A combat action that occurs when a moving force engages an enemy at an unexpected time and place. (FM 3-90)

mobile defense

A type of defensive operation that concentrates on the destruction or defeat of the enemy through a decisive attack by a striking force. (ADP 3-90)

movement formation

An ordered arrangement of forces for a specific purpose and describes the general configuration of a unit on the ground. (ADP 3-90)

movement to contact

(Army) A type of offensive operation designed to establish or regain contact to develop the situation. (FM 3-90)

multidomain operations

The combined arms employment of joint and Army capabilities to create and exploit relative advantages to achieve objectives, defeat enemy forces, and consolidate gains on behalf of joint force commanders. (FM 3-0)

nuclear hazard

Dangers associated with the blast, thermal, and radiation effects from nuclear explosion. (JP 3-11)

obstacle

Any barrier designed or employed to disrupt, fix, turn, or block the movement and maneuver, and to impose additional losses in personnel, time, and equipment. (JP 3-15)

offensive operation

An operation to defeat or destroy enemy forces and gain control of terrain, resources, and population centers. (ADP 3-0)

operation

A sequence of tactical actions with a common purpose or unifying theme. (JP 1,Vol 1)

operational environment

The aggregate of the conditions, circumstances, and influences that affect the employment of capabilities and bear on the decisions of the commander. (JP 3-0)

operational framework

A cognitive tool used to assist commanders and staffs in clearly visualizing and describing the application of combat power in time, space, purpose, and resources in the concept of operations. (ADP 1-01)

operation order

A directive issued by a commander to subordinate commanders for the purpose of effecting the coordinated execution of an operation. (JP 5-0)

passage of lines

An operation in which a force moves forward or rearward through another force's combat positions with the intention of moving into or out of contact with the enemy. (JP 3-18)

patrol

A detachment sent out by a larger unit to conduct a specific mission that operates semi-independently and return to the main body upon completion of mission. (ATP 3-21.8)

penetration

A form of maneuver in which a force attacks on a narrow front. (FM 3-90)

point of breach

The location at an obstacle where the creation of a lane is being attempted. (ATP 3-90.4)

point of penetration

(Army) Point of penetration is the location, identified on the ground, where the commander concentrates their efforts to seize a foothold on the far side objective. (ATP 3-90.4)

primary position

(Army) The position that covers the enemy's most likely avenue of approach into the assigned area. (FM 3-90)

priority target

A target, based on either time or importance, on which delivery of fires takes precedence over all the fires for the designated firing unit or element. (FM 3-09).

proof

The verification that a lane is free of mines or explosive hazards and that the width and trafficability at the point of breach are suitable for the passing force. (ATP 3-90.4)

protection

Preservation of the effectiveness and survivability of mission-related military and nonmilitary personnel, equipment, facilities, information, and infrastructure deployed or located within or outside the boundaries of a given operational area. (JP 3-0)

pursuit

A type of offensive operation designed to catch or cut off a hostile force attempting to escape, with the aim of destroying it. (FM 3-90)

quartering party

A group dispatched to a new assigned area in advance of the main body. (FM 3-90)

radiological hazard

Ionizing radiation that can cause damage, injury, or destruction from either external irradiation or due to radiation from radioactive materials within the body. (JP 3-11)

raid

(Army) A variation of attack to temporarily seize an objective with a planned withdrawal. (FM 3-90)

rearward passage of lines

Occurs when a unit passes through another unit's positions while moving away from the enemy. (ADP 3-90)

reconnaissance

A mission undertaken to obtain information about the activities and resources of an enemy or adversary, or to secure data concerning the meteorological, hydrographic, geographic, or other characteristics of a particular area, by visual observation or other detection methods. (JP 2-0)

reconnaissance by fire

A technique in which a unit fires on a suspected enemy position. (FM 3-90)

reduction

The creation of lanes through a minefield or obstacle to enable passage of the attacking ground force. (JP 3-15)

reduction area

A number of adjacent points of breach that are under the control of the breaching commander. (ATP 3-90.4)

rehearsal

A session in which the commander and staff or unit practices expected actions to improve performance during execution.(ADP 5-0)

relief in place

An operation in which, by the direction of higher authority, all or part of a unit is replaced in an area by the incoming unit and the responsibilities of the replaced elements for the mission and the assigned zone of operations are transferred to the incoming unit. (JP 3-07.3)

reorganization

All measures taken by the commander to maintain unit combat effectiveness or return it to a specified level of combat capability. (ATP 3-94.4)

reserve

(Army) That portion of a body of troops that is withheld from action at the beginning of an engagement to be available for a decisive movement. (ADP 3-90)

reserved obstacle

(Army) Obstacles of any type, for which the commander restricts execution authority. (ATP 3-90.8)

restrictive fire line

A specific boundary established between converging, friendly surface forces that prohibits fires or their effects from crossing. (JP 3-09)

retrograde

A type of defensive operation that involves organized movement away from the enemy. (ADP 3-90)

risk management

The process to identify, assess, and mitigate risks and make decisions that balance risk cost with mission benefits. (JP 3-0).

search and attack

A variation of a movement to contact where a friendly force conducts coordinated attacks to defeat a distributed enemy force. (FM 3-90)

sector

An operational area assigned to a unit in the defense that has rear and lateral boundaries with interlocking fires. (FM 3-0)

sector of fire

That area assigned to a unit or weapon system in which it will engage the enemy according to the established engagement priorities. (FM 3-90)

secure

A tactical mission task in which a unit prevents the enemy from damaging or destroying a force, facility, or geographical location. (FM 3-90)

security operations

Those operations performed by commanders to provide early and accurate warning of enemy operations, to provide the forces being protected with time and maneuver space within which to react to the enemy, and to develop the situation to allow commanders to effectively use their protected forces. (ADP 3-90)

situational obstacle

An obstacle that a unit plans and possibly prepares prior to starting an operation, but does not execute unless specific criteria are met. (ATP 3-90.8)

situational understanding

The product of applying analysis and judgment to relevant information to determine the relationships among the operational and mission variables. (ADP 6-0)

specified task

(Army) A task specifically assigned to a unit by its higher headquarters. (FM 5-0)

spoiling attack

A variation of an attack employed against an enemy preparing for an attack. (FM 3-90)

stability operation

An operation conducted outside the United States in coordination with other instruments of national power to establish or maintain a secure environment and provide essential governmental services, emergency infrastructure reconstruction, and humanitarian relief. (ADP 3-0)

standard operating procedure

A set of instructions applicable to those features of operations that lend themselves to a definite or standardized procedure without loss of effectiveness. (JP 3-31)

striking force

A dedicated counterattack force in a mobile defense constituted with the bulk of available combat power. (ADP 3-90)

strong point

A heavily fortified battle position tied to a natural or reinforcing obstacle to create an anchor for the defense or to deny the enemy decisive or key terrain. (ADP 3-90)

subsequent position

A position that a unit expects to move to during the course of battle. (ADP 3-90)

supplementary position

A defensive position located within a unit's assigned area that provides the best sectors of fire and defensive terrain along an avenue of approach that is not the primary avenue where the enemy is expected to attack. (FM 3-90)

suppress

A tactical mission task in which a unit temporarily degrades a force or weapon system from accomplishing its mission. (FM 3-90)

survivability

(Army/Marine Corps) A quality or capability of military forces which permits them to avoid or withstand hostile actions or environmental conditions while retaining the ability to fulfill their primary mission. (ATP 3-37.34)

survivability operations

(Army/Marine Corps) Those protection activities that alter the physical environment by providing or improving cover, camouflage, and concealment. (ATP 3-37.34)

sustainment

The provision of the logistics, financial management, personnel services, and health service support necessary to maintain operations until successful mission completion. (ADP 4-0)

tactical movement

A movement in which troops and vehicles are arranged to protect combat forces during movement when a threat of enemy interference is possible. (FM 3-90)

target acquisition

The detection, identification, and location of a target in sufficient detail to permit the effective employment of capabilities that create the required effects. (JP 3-60)

target reference point

A predetermined point of reference, normally a permanent structure or terrain feature that can be used when describing a target location. (JP 3-09.3)

task

A clearly defined action or activity specifically assigned by an appropriate authority to an individual or organization, or derived during mission analysis, that must be accomplished. (JP 1, Vol 1)

tempo

The relative speed and rhythm of military operations over time with respect to the enemy. (ADP 3-0)

threat

Any combination of actors, entities, or forces that have the capability and intent to harm United States forces, United States national interests, or the homeland. (ADP 3-0)

traveling

A movement technique used when speed is necessary and contact with enemy forces is not likely. (FM 3-90)

traveling overwatch

A movement technique used when contact with enemy forces is possible. (FM 3-90)

trigger line

A phase line located on identifiable terrain used to initiate and mass fires into an engagement area at a predetermined range. (FM 3-90)

troop leading procedures

A dynamic process used by small-unit leaders to analyze a mission, develop a plan, and prepare for an operation. (ADP 5-0)

troop movement

The movement of Soldiers and units from one place to another by any available means. (FM 3-90)

turning movement

(Army) A form of maneuver in which the attacking force seeks to avoid the enemy's principal defensive positions by attacking to the rear of their current positions forcing them to move or divert forces to meet the threat. (FM 3-90)

unity of effort

Coordination and cooperation toward common objectives, even if the participants are not necessarily part of the same command or organization that is the product of successful unified action. (JP 1, Vol 2)

vee formation

A movement formation with two elements abreast and one or more elements trailing. (FM 3-90)

warning order

A preliminary notice of an order or action that is to follow. (JP 5-0)

wedge formation

A movement formation with one lead element and the trail elements are paired off abreast of each other on the flanks. (FM 3-90)

withdraw

To disengage from an enemy force and move in a direction away from the enemy. (ADP 3-90)

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