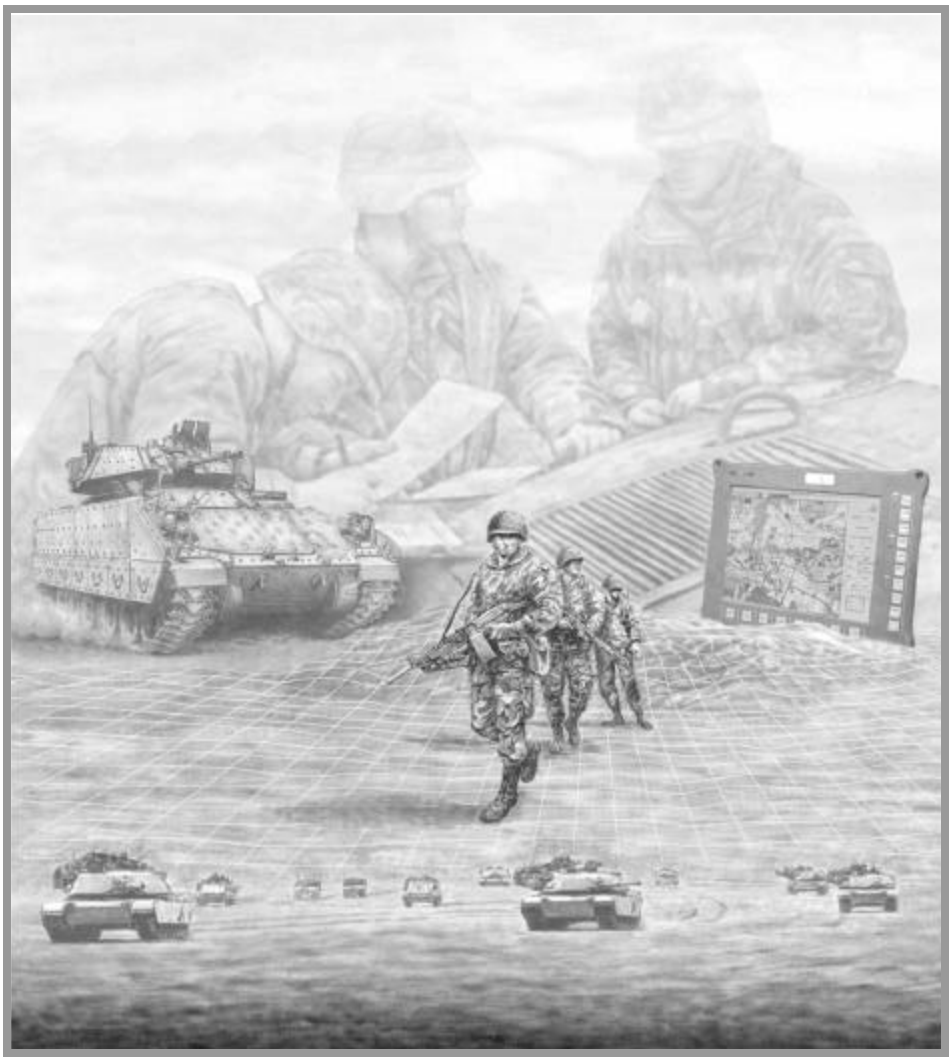
DECEMBER 2002 **FM 3-90.1** (FM 71-1)

TANK AND MECHANIZED INFANTRY COMPANY TEAM



HEADQUARTERS, DEPARTMENT OF THE ARMY

DISTRIBUTION RESTRICTION: Distribution authorized only to US Government agencies and their contractors to protect technical or operational information that is for official government use.

DESTRUCTION NOTICE: Destroy by any method that will protect disclosure of contents or reconstruction of the document.

Field Manual
No. 3-90.1

Headquarters
Department of the Army
Washington, DC, 9 December 2002

TANK AND MECHANIZED INFANTRY COMPANY TEAM

CONTENTS

		Page
	PREFACE	**v**
Chapter 1	**THE ROLE OF THE TANK/MECHANIZED COMPANY TEAM**	**1-1**
	Operational Environment	1-1
	Operational Framework	1-3
	Battlefield Organization	1-6
Chapter 2	**ORGANIZATION AND CAPABILILITIES**	**2-1**
	Mission, Organization, Capabilities, and Limitations	2-1
	Company Team	2-8
	Duties and Responsibilities of Key Personnel	2-9
Chapter 3	**BATTLE COMMAND**	**3-1**
	Command	3-1
	Company Team Troop-Leading Procedures	3-12
	Control	3-53
Chapter 4	**RECONNAISSANCE AND SURVEILLANCE**	**4-1**
	Reconnaissance	4-1
	Security Operations	4-7
	Operations Security	4-19

DISTRIBUTION RESTRICTION: Distribution authorized to US Government agencies and their contractors only to protect technical or operational information that is for official government use. This determination was made on 1 March 2002. Other requests for this document will be referred to Commander, US Army Armor Center, ATTN: ATZK-TDD-CA, Fort Knox, Kentucky 40121-5000.

DESTRUCTION NOTICE: Destroy by any method that will protect disclosure of contents or reconstruction of the document.

---

*This publication supersedes FM 71-1, 26 January 1998

Chapter 5 OFFENSIVE OPERATIONS 5-1
Planning Considerations 5-2
Tactical Movement 5-6
Maneuver 5-16
Actions on Contact 5-19
Types of Offensive Operations 5-33
Offensive Tactical Tasks 5-51
Chapter 6 DEFENSIVE OPERATIONS 6-1
Sequence of the Defense 6-1
Defensive Planning Considerations 6-3
Preparation and Integration 6-16
Defensive Techniques 6-27
Reserve Operations in the Defense 6-33
Retrograde Operations 6-38
Chapter 7 URBAN OPERATIONS 7-1
Urban Operations Planning Considerations 7-1
Offensive Urban Operations 7-16
Defensive Urban Operations 7-41
Chapter 8 STABILITY OPERATIONS AND SUPPORT OPERATIONS 8-1
Planning Considerations 8-2
Types of Stability Operations 8-3
Company Team Tasks 8-5
Support Operations 8-27
Considerations for Support Operations 8-31
Chapter 9 SUPPORTING COMPANY TEAM OPERATIONS 9-1
Fire Support 9-1
Engineer Support 9-11
Air Defense 9-23
Nuclear, Biological, and Chemical Support 9-29
Intelligence 9-30
Aviation Combat Support Missions 9-31
Chapter 10 COMBAT SERVICE SUPPORT 10-1
Responsibilities 10-1
Trains 10-5
Supply Considerations 10-8
Resupply Operations 10-10
Maintenance Operations 10-17
Health Service Support 10-19
Personnel Services 10-24
Reorganization and Weapons Replacement 10-25
Combat Service Support Planning Considerations 10-26

	Aviation Combat Service Support Missions	10-28
Chapter 11	**TACTICAL ENABLING OPERATIONS**	**11-1**
	Linkup	11-1
	Passage of Lines	11-3
	Relief in Place	11-7
	Breaching Operations	11-10
	Hasty Water Crossing and Gap Crossing Operations	11-26
	Road Marches and Assembly Areas	11-28
Appendix A	**COMBAT ORDERS**	**A-1**
	Operation Order	A-1
	Execution Matrix	A-6
Appendix B	**DIRECT FIRE CONTROL**	**B-1**
	Unitwide Surveillance and Target Acquisition	B-1
	Principles of Fire Control	B-2
	Fire Control Measures	B-4
	Fire Commands	B-17
	Fire Control Process	B-19
	Direct Fire Planning	B-24
	Direct Fire Standing Operating Procedure	B-24
Appendix C	**HEAVY/LIGHT INTEGRATION**	**C-1**
	Organization of Light Forces	C-1
	Planning Considerations	C-5
	Operations and Tasks	C-8
	Task Organization Considerations	C-9
	Additional Operational Considerations	C-11
	Combat Service Support Operations	C-13
Appendix D	**LIMITED VISIBILITY OPERATIONS**	**D-1**
	Equipment	D-1
	Navigation	D-4
	Vehicle Identification	D-4
	Tactical Movement and Offensive Operations	D-4
	Defensive Operations	D-5
Appendix E	**NBC AND SMOKE OPERATIONS**	**E-1**
	Contamination Avoidance	E-1
	NBC Protection	E-4
	Movement in an NBC Environment	E-10
	Decontamination	E-11
	Smoke Operations	E-17
Appendix F	**SNIPER OPERATIONS**	**F-1**
	Sniper Teams	F-1

Offensive Employment F-4
Defensive Employment F-6
Retrograde Employment F-7
Urban Operations Employment F-7
Appendix G DEPLOYMENT G-1
Force Deployment G-1
Deployment Phases G-2
Appendix H DIRECTED-ENERGY WEAPONS H-1
Characteristics of Directed-Energy Weapons H-1
Defense Against Directed-Energy Weapons H-2
Attack Reporting H-3
Laser Mission-Oriented Protective Posture H-4
Appendix I RISK MANAGEMENT/FRATRICIDE AVOIDANCE I-1
Risk Management I-1
Fratricide I-7
Appendix J TACTICAL MISSION TASKS J-1
Appendix K ENVIRONMENTAL PROTECTION K-1
Environmental Risk Management Process K-1
Environmental Risk Assessment Worksheet K-2

GLOSSARY Glossary-1
BIBLIOGRAPHY Bibliography-1
INDEX Index-1

PREFACE

Because of its mix of weaponry, personnel, and supporting elements, the company team is one of the most versatile combat assets on the modern battlefield. Whether it fights "pure" as a tank or mechanized infantry rifle company or is task organized as a tank-heavy or mechanized-heavy company team, it gives the commander a powerful combination of firepower, mobility, and shock effect. This manual describes how the company team fights. It focuses on the principles of company team operations and the tactics, techniques, and procedures (TTP) the company team uses to exploit its combat power and minimize its limitations and vulnerabilities.

FM 3-90.1 is for leaders at all levels of the company team. Because weapons and equipment vary among the different company-level organizations (pure tank and mechanized infantry rifle companies and tank- and mechanized-heavy company teams), users should adapt information presented in the manual to fit their specific requirements. Where capabilities of the various company team systems differ significantly, the manual examines alternative considerations and techniques for their employment.

The proponent of this publication is HQ TRADOC. Submit comments and recommended changes and the rational for those changes on DA Form 2028 (Recommend Changes to Publications and Blank Forms) to: Commander, US Army Armor Center, ATTN: ATZK-TDD-CA, Fort Knox, Kentucky 40121-5000 or e-mail the DA Form 2028 to Doctrine Division, Chief Combined Arms at: http://www.knox.army.mil/center/dtdd.

Unless this publication states otherwise, masculine nouns and pronouns do not refer exclusively to men.

Chapter 1

The Role of the Tank/Mechanized Company Team

Tank and mechanized infantry companies and company teams fight and win engagements on any battlefield in a conventional, nuclear, or chemical environment. The company team is normally task organized by the battalion task force commander, based on his estimate of the situation, to perform full spectrum missions as part of task force operations. In filling this full spectrum role, the company team integrates with combat, combat support (CS) and combat service support (CSS) elements. Company teams are capable of deploying in a condensed deployment timeline as part of the Army's force projection mandate across the full spectrum of operations. (See FM 3-0 [FM 100-5], FM 3-90.2 [FM 71-2], and FM 3-90.3 [FM 71-3] for a more detailed discussion of deployment in full spectrum operations in contiguous and noncontiguous environments.)

CONTENTS

Operational Environment....1-1
Full Spectrum Operations....1-2
Operational Framework....1-3
Area of Operations....1-4
Area of Influence....1-5
Area of Interest....1-5
Information Environment....1-5
Battlespace....1-5
Battlefield Organization....1-6
Decisive Operations....1-6
Shaping Operations....1-7
Sustaining Operations....1-8
Main Effort....1-9
Supporting Effort....1-9

SECTION I – OPERATIONAL ENVIRONMENT

1-1. Company teams are trained and equipped to conduct full spectrum operations. Company team commanders may combine different types of operations simultaneously and sequentially to accomplish missions in war and military operations other than war (MOOTW). The Army's tank and mechanized infantry company teams are optimized for operations in a major theater of war (MTW), but retain the ability to conduct smaller-scale contingencies (SSC) and participate in peacetime military engagements (PME).

1-2. During the Cold War, most nations patterned their doctrine after those of the two super powers. Consequently, many military operations around the world demonstrated a high degree of consistency. Standard company team TTPs at that time focused on destroying threat that employed coherent offensive formations and predictable defensive patterns *(Doctrinal and Situational Templates).* Foreign military forces

are evolving differently today with states learning from US operations and incorporating adaptive military strategies within their professional militaries or paramilitary forces.

1-3. Threats recognize that defeating the US is not always a matter of winning battles, rather it is a factor of not losing operationally or tactically the military means necessary to remain in power, while pursuing strategic victory through other instruments. Systems and tactics to offset the effects of precision long-range air and missile attacks give an adversary operational freedom and a way to preserve his military capabilities. Overall potential adversaries are basing their investments in military technologies on their perception on how the US has historically operated. They are developing adaptive strategies and tactics to take advantage of these technologies to exploit perceived vulnerabilities and to counter or alleviate US strengths.

1-4. The US military is primarily a power projection force, it is tied to an operational construct requiring entry operations and a deliberate build-up of force capabilities for contingency response. Today, this strategy demands airfields and seaports in the area of operations (AO), forward operating bases for air forces, significant in-theater logistical stockpiles, secure air and sea lines of communication (LOC), technical intelligence, surveillance and reconnaissance (ISR) capability as well as long distance communications for command and control (C2)—all of which can be interdicted or denied to some degree.

1-5. From these perceptions some common emerging trends appear for dealing with US Forces:

- Capability developments to deny, limit, interrupt, or delay US entry and disrupt subsequent actions within the AO.
- Deliberate actions designed to create mass casualties.
- Employment of multiple means—political, economic, military, and informational—to undermine the coherence of alliances and coalitions.
- Offsetting US strengths by countering high-tech advantages, often with low-tech methods or specific “niche” capabilities.
- Adoption of unpredictable operational methods with rapid transition to conventional operations when decision is assured.
- Conducting technical exploitation of C2 nodes, networks and systems.
- Increasing standoff distances through exclusion or other means to protect forces and capabilities.
- Maintaining and preserving viable conventional military capabilities to destroy enemy forces, secure territory, and maintain regime security.

FULL SPECTRUM OPERATIONS

1-6. In the operational environment (OE) the company will be tasked to perform the same basic missions as it was in the 20th century. However, the possibility that the company will fight in new and unique conditions is almost guaranteed. The company team will fight a

conventional enemy, an unconventional enemy, or an enemy that employs both conventional and unconventional methods. The company team will fight in complex and restricted terrain with a myriad of combat multipliers. These multipliers will assist in gaining situational understanding of the AO and in planning, preparing, executing, and assessing full spectrum operations.

1-7. Full spectrum operations include offensive, defensive, stability, and support operations. Missions in any environment require company teams to conduct or be prepared to conduct any combination of these primary operations as a larger force:

- **Offensive.** Offensive operations aim at destroying or defeating an enemy. Their purpose is to impose US will on the enemy for decisive victory.
- **Defensive.** Defensive operations defeat an enemy attack, buy time, economize forces, or develop conditions favorable for offensive operations. Their purpose is to create conditions for a counteroffensive that regains the initiative.
- **Stability.** Stability operations promote and protect US national interests by influencing the diplomatic, civil, and military environments.
- **Support.** Support operations employ Army forces to assist civil authorities, foreign or domestic, as they prepare for or respond to crises and relieve suffering.

SECTION II – OPERATIONAL FRAMEWORK

1-8. Commander's at the brigade and task force level visualize their battlespace and determine how to arrange their forces. Battlefield organization is the arrangement of subordinate forces according to purpose, time, and space to accomplish a mission. The purpose-based framework centers on decisive, shaping, and sustaining operations. Company team commanders arrange their platoons by assigned task and purpose focused on the decisive point of the operation. Whereas brigades and task force commanders arrange their forces in terms of decisive, shaping and sustaining, company teams focus on close combat and all elements within a company team share interpersonal relationship around mission accomplishment. Purpose unifies all elements of the battlefield organization by providing the common focus for all actions. However, forces act in time and space to accomplish a purpose. (See FM 3-90.3 [FM 71-3] for further discussion on decisive, shaping, and sustaining operations.)

1-9. The task force level is the lowest level in which a commander can organize his forces into decisive, shaping, and sustaining elements. The task force commander may develop his concept of the operation based on this operational framework. There may only be one decisive operation for any phase mission for echelon down to task force level.

1-10. Regardless if a task force is involved in decisive, shaping, or sustaining operations the task force commander will designate a main effort. The main effort is identified as the unit performing the most important task at the time.

1-11. For example during a deliberate attack involving a complex obstacle breach the task force commander designates one company assigned to seize the enemy objective as the decisive force, the company conducting the deliberate breach is the shaping force and the headquarters and headquarters company (HHC)/forward support company (FSC) is the sustaining force for the attack. Within this operation the initial main effort may be the breach or support force and then shift to the force assaulting the objective. Upon consolidation and reorganization, the main effort may shift to the sustaining assets conducting resupply and casualty evacuation (CASEVAC).

1-12. Regardless if the company team is designated the decisive, shaping or sustaining force, the company team commander must designate a main effort. For instance in the defense the main effort platoon may be given priority of digging assets, priority of fires, and may be charged with securing the fixing obstacle within the engagement area (EA). The platoon is given extra Class V and priority of Class III resupply.

AREA OF OPERATIONS

1-13. A company team's AO is the geographical area assigned by a higher commander, in which the company team commander has responsibility and the authority to conduct military operations. AOs should allow the commander to employ his organic, assigned, and supporting systems to the limit of their capabilities. The company commander normally designates AOs for subordinate units. Commanders use control measures to describe AOs and design them to fit the situation and take advantage of the unit's capabilities. Commanders specify the minimum control measures necessary to focus combat power, delineate responsibilities, assign geographic responsibility, and promote unity of effort. At a minimum, control measures include boundaries on all sides of the AO. The company team employs maneuver (fire and movement) and integrates CS and CSS assets to complete tactical tasks in support of the battlefield purpose specified by the controlling task force commander. In doing this, the company team commander develops the situation, gaining sufficient information on the enemy situation to make prudent tactical decisions; the team then closes with and destroys enemy forces. The AO defined by this principle varies widely according to the nature of the battle and other mission, enemy, terrain and weather, troops and support available, time available, and civil considerations (METT-TC) factors. It may be less than 100 meters in any direction during operations in forested areas, urban areas, close terrain, or trench lines. In more open terrain, the AO may extend up to 4 kilometers from the team's direct fire weapons.

1-14. Commanders typically subdivide some or all of the assigned AO by assigning subordinate unit areas. These subordinate AOs may be contiguous or noncontiguous (see Figure 1-1). When friendly forces are contiguous, a boundary separates them (zones and sectors are examples of contiguous AO). When friendly forces are noncontiguous, the concept of

operation links the elements of the force, but the AOs do not share a boundary. The intervening area between noncontiguous AO remains the responsibility of the higher headquarters. In order for a company team to operate in a noncontiguous AO additional assets must be assigned to the company team such as scouts or military police (MP) for the company commander to effectively influence the terrain that surrounds a noncontiguous platoon AO.

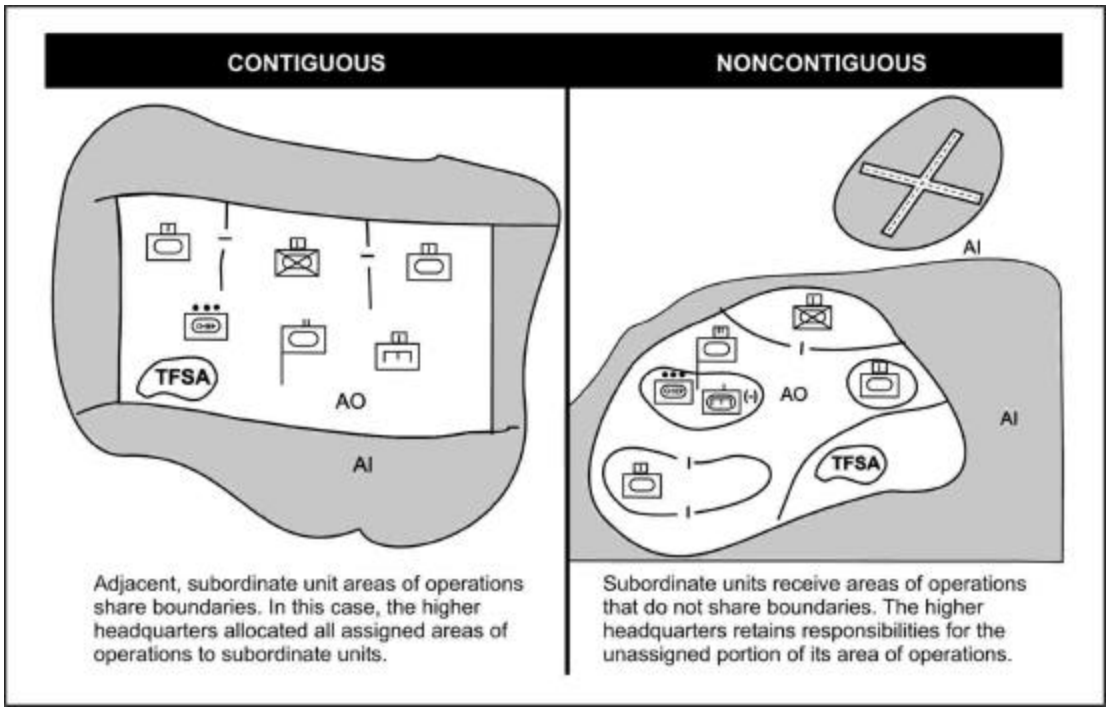


Figure 1-1. Contiguous versus Noncontiguous

AREA OF INFLUENCE

1-15. The company team's area of influence is a geographical area in which a commander can directly influence operations by maneuver systems normally under the commander's C2. Areas of influence surround and include the associated AO.

AREA OF INTEREST

1-16. The company team's area of interest (AI) is that area of concern to the commander, including the area of influence and areas adjacent to it. It extends into enemy territory, to the objectives of current or planned operations. This area also includes areas occupied by enemy forces that could jeopardize the accomplishment of the mission.

INFORMATION ENVIRONMENT

1-17. A commander's battlespace includes that part of the information environment that encompasses information activity affecting the operation. It includes space-base systems that provide data and information to Army forces. To envision that part of the information

environment that is within their battlespace, commanders determine the information activities that affect their operation and the capabilities of their own and opposing C2 and information systems (INFOSYS).

BATTLESPACE

1-18. Battlespace is the environment, factors, and conditions that must be understood to successfully apply combat power, protect the force, and complete the mission. This includes land, air, sea, space, enemy and friendly forces, facilities, weather, terrain, the electromagnetic spectrum, and information environment within the AO and AI.

1-19. Battlespace is conceptual—a higher commander does not assign it. Commanders determine their battlespace based on their concept of operations. Commanders use their experience, professional knowledge, and understanding of the situation to visualize their battlespace as current operations transition to future operations. Battlespace visualization begins with a picture of the ground and successively layers enemy, friendly and environment over terrain visualization. Battlespace is not synonymous with AO. Commanders visualize their battlespace to analyze all the factors that may impact on current and future operations, even if they can only directly affect those factors inside their AO (see FM 3-90.2 [FM 71-2] and FM 3-90.3 [FM 71-3] for additional information on battlespace visualization).

SECTION III – BATTLEFIELD ORGANIZATION

1-20. Task force commanders organize forces according to purpose by determining whether each unit's operation will be decisive, shaping, or sustaining. These decisions form the basis of the concept of operations. Task force commanders also synchronize operations in time and space. When circumstances require a spatial reference between friendly and enemy forces, task force commanders may describe them in terms of deep, close, and rear areas. These spatial categories are especially useful in combat operations that are generally contiguous, linear, and feature a clearly defined enemy force.

DECISIVE OPERATIONS

1-21. Decisive operations directly achieve the mission and intent of the higher headquarters. Decisive operations conclusively determine the outcome of battles and engagements. There is only one decisive operation for any phase of an operation for any given echelon. For example, the company team tasked with the final assault and destruction of an enemy company on a task force objective is conducting the decisive operation for the task force. However, the decisive operation may include multiple actions conducted simultaneously throughout the depth of the AO. An example of multiple decisive actions during a stability mission is three simultaneous raids on suspected illegal weapons storage sites within the task force AO. Whatever environment a unit operates in, task force commanders weigh the decisive operation while economizing on the effort allocated to shaping operations.

1-22. In the offense and defense, decisive operations normally focus on maneuver. Conversely, logistics may be decisive during the mobilization and deployment phases of an operation or in support operations, particularly if the mission is humanitarian in nature.

1-23. A reserve is a portion of a body of troops that is kept to the rear or withheld from action at the beginning of an engagement, available for a decisive movement. Reserves shape through their placement within the AO while planning for and preparing to conduct operations until committed. For example, if a company team is designated as the brigade combat team (BCT) reserve force, the company team commander must plan for several contingencies (such as reinforce a task force defense through a series of attack by fire positions or during a deliberate attack). When a task force has achieved penetration of an enemy defense, the BCT commander may attach the reserve company team to the main effort task force to assume or reinforce the decisive mission. Commanders can use reserves to influence circumstances or exploit opportunities. When commanders anticipate uncertainty, they hold a greater portion of the force in reserve, posturing the force to seize and maintain the initiative as a situation develops. Reserves deploy and reposition as necessary to ensure their protection, availability, and prompt reaction (see Chapter 5 and Chapter 6 of FM 3-90.2 [FM 71-2] and FM 3-90.3 [FM 71-3]).

SHAPING OPERATIONS

1-24. Shaping operations create and preserve the conditions for the success of the decisive operation. Shaping operations include lethal and nonlethal activities conducted throughout the AO. They support the decisive operation by affecting the enemy's capabilities and forces or influencing the opposing commander's decisions. Shaping operations use the full range of military power to neutralize or reduce enemy capabilities. They may occur simultaneously with, before, or after initiation of the decisive operation. They may involve any combination of forces and occur throughout the depth of the AO. Some shaping operations, especially those that occur simultaneously with the decisive operation, are economy of force actions. If the force available does not permit simultaneous decisive and shaping operations, the commander sequences shaping operations around the decisive operation. An example of a company team in a shaping role is the unit designated as the task force breach element during a deliberate attack. Shaping the attack is defined by successful penetration of the enemy defenses and direct and indirect fire suppression on the objective. By achieving this, the breach force enables the decisive force to destroy the enemy forces and seize the task force objective. A shaping operation may become the decisive operation if circumstances or opportunity demand. In that case, commanders weigh the new decisive operations at the expense of other shaping operations. The concept of the operation clearly defines how shaping operations support the decisive operation.

1-25. Security is an important shaping operation. Security enables the decisive operation of the next higher headquarters. Security protects the force and provides time for friendly forces to react to enemy or hostile activities. It also blinds the enemy's attempts to see friendly forces and protects friendly forces from enemy observation and fires.

SUSTAINING OPERATIONS

1-26. The purpose of sustaining operations is the generation and maintenance of combat power. Sustaining operations are operations at any echelon that enable shaping and decisive operations by providing CSS, rear area and base security, movement control, terrain management, and infrastructure development. Sustaining operations include the following elements:

- CSS generates and sustains combat power. At the company team level, the company team trains, as part of the task force CSS element, are responsible for sustaining the company. While the task force trains are the primary sustaining element for the task force, the company team XO, 1SG, maintenance team chief and senior medic, must provide timely accurate reports as well as anticipation to ensure that the company team is rearmed, refueled and its combat power is regenerated quickly and as far forward as possible.
- Rear area and base security include measures taken by a military unit, an activity or an installation to defend and protect itself against all acts that may impair its effectiveness. It has four components—intelligence, base and base cluster self-defense, response force operations, and combined arms tactical combat force (TCF) operations (see FM 3-93 [FM 100-7]). Rear area and base security primarily in the brigade support area (BSA) is the most common role a company team will play within a sustaining operation.
- Movement control includes the planning, routing, scheduling, controlling, and security of the movement of personnel and materiel into, within, and out of the AO. At the company team level convoy security, presence patrols, and checkpoint operations are the most common movement control missions involved in sustainment operations.
- Terrain management includes the process of allocating terrain, designating assembly areas, and specifying locations for units and activities. The process includes grouping units together to form bases and designated base clusters as necessary. A company team most often plays a role in terrain management by providing advanced parties and quartering parties as part of task force terrain management.
- Infrastructure development applies to all fixed and permanent installations, fabrications, or facilities that support and control military forces. Infrastructure development focuses on facility security modifications and includes area damage control (ADC) and repairs. Company teams play a small role in infrastructure development. Company team leadership provides input and expertise into facility security and force protection.

1-27. Sustaining operations are inseparable from decisive and shaping operations, although they are not by themselves decisive or shaping. Failure to sustain normally results in mission failure. Sustaining operations occur throughout the AO, not just within the rear area.

Sustaining operations determine how fast forces reconstitute and how far forces can exploit success. At the tactical level, sustaining operations underwrite the tempo of the overall operation; they assure the ability to take advantage of any opportunity immediately.

MAIN EFFORT

1-28. Within the battlefield organization of decisive, shaping, and sustaining operations, commanders designate and shift the main effort. The main effort is the activity, unit, or area that the commanders determine constitutes the most important task at that time. Commanders weigh the main effort with resources and priorities. Within shaping and decisive operations, the task force commander may designate a main effort for each operation; however, he will designate only one main effort per operation and shift the main effort as circumstances and intent demand. When designating a main effort, the company team commander must consider providing additional assets to assist the main effort platoon in accomplishing the mission. Priority of fire, priority of engineer support, priority of resupply, and priority of recovery are some considerations that the commander must address when designating a main effort.

1-29. The main effort and the decisive operation are not always identical. Identification of the main effort in shaping operations is a decision based on the factors of METT-TC. A shaping operation may be the main effort before execution of the decisive operation. However, the decisive operation becomes the main effort upon execution. Shifting the main effort does not normally require changing or adjusting the plan. Commanders anticipate shifts of main effort throughout the operation. In contrast, changing the decisive operation from the plan requires execution of a branch, sequel, or new plan.

SUPPORTING EFFORT

1-30. The supporting effort at company level is similar to a shaping or sustaining force at task force and brigade level. For example during a deliberate attack, the platoon tasked to provide suppression on the objective facilitating the maneuver of the remainder of the company to a position of advantage in order to destroy the enemy force is the company supporting effort. A company team will have (depending on task organization) several supporting efforts execute tasks that relate to a purpose that is nested with the purpose of the main effort. Some of these tasks include support by fire, follow and assume, isolate, fix, and protect.

Chapter 2

Organization and Capabilities

The organization and capabilities of the tank and mechanized infantry company team continues to be viable and lethal. While overall organizations of the mechanized infantry company and armor company has not dramatically changed its capabilities have dramatically increased. In addition to the current lethality of the Army of Excellence (AOE) company teams, the ongoing fielding of the M1A2SEP and M2A3 Bradley Fighting Vehicle (BFV), both equipped with Force XXI Battle Command Brigade and Below (FBCB2), will provide the company team commander with increased situational understanding and increased lethality across the full spectrum of operations.

CONTENTS

Mission, Organization, Capabilities, and Limitations 2-1
Tank Company Headquarters 2-2
Mechanized Infantry Company Headquarters 2-2
Tank Platoon 2-3
Mechanized Infantry Platoon 2-5
Combat Support Assets 2-8
Combat Service Support Assets 2-8
Company Team 2-8
Battlefield Focus 2-8
Duties and Responsibilities of Key Personnel 2-9
Commander 2-9
Executive Officer 2-9
First Sergeant 2-10
Platoon Leader 2-11
Platoon Sergeant 2-11
Fire Support Officer 2-11
Communications Specialist 2-12
Supply Sergeant 2-13
Nuclear, Biological, Chemical NCO 2-13
Armorer 2-14
Master Gunner 2-14
Maintenance Team Chief 2-14
Senior Company Medic 2-15

SECTION I – MISSION, ORGANIZATION, CAPABILITIES, AND LIMITATIONS

2-1. The mission of the tank and mechanized infantry company team is to close with the enemy by means of fire and movement to destroy or capture him or to repel his assault by fire, close combat, or counterattack. In accomplishing its assigned missions, the company team employs CS and CSS assets within its capabilities.

2-2. The company team is an organization whose effectiveness increases with synergy of its subordinate elements, including tanks, BFVs, infantry, engineers, and support elements. These components have a broad array of capabilities; individually, however, they also have a number of vulnerabilities. Effective application of the company team as a combined arms force can capitalize on the strengths of the team's elements while minimizing their respective weaknesses.

TANK COMPANY HEADQUARTERS

2-3. Figure 2-1 illustrates the organization of a tank company. The company headquarters includes the following personnel and equipment:

- Two tanks with full crews, commanded by the company commander and the XO.
- An M113A3 armored personnel carrier (APC) with crew under the command of the 1SG.
- Two M998 high mobility multipurpose wheeled vehicles (HMMWV) with drivers. These vehicles carry the company master gunner and the company nuclear, biological, chemical (NBC) NCO.
- One cargo truck with 400-gallon water trailer. Manning this vehicle is the company supply section, which comprises the supply sergeant and the armorer.

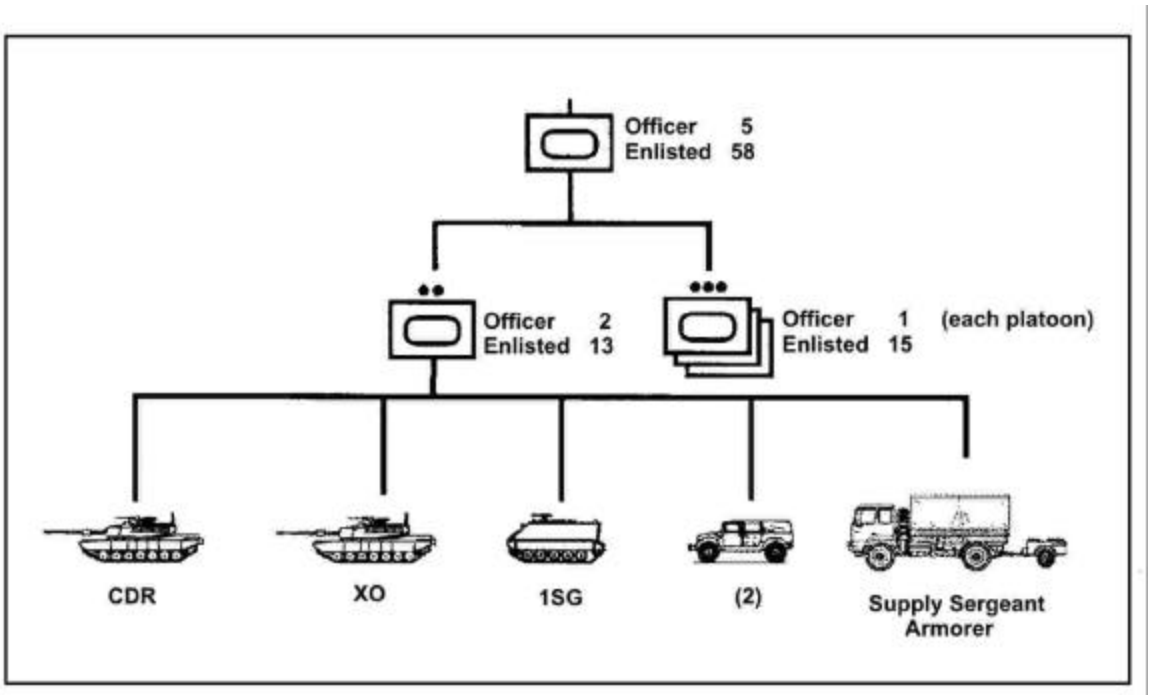


Figure 2-1. Tank Company Organization

MECHANIZED INFANTRY COMPANY HEADQUARTERS

2-4. Figure 2-2 illustrates the organization of a mechanized infantry company. The company headquarters includes the following personnel and equipment:

- Two BFVs with full crews under the command of the company commander and the XO.
- An M113A3 APC with crew under the command of the 1SG.

- Two M998 HMMWVs with drivers.
- Two cargo trucks with one 400-gallon water trailer and one cargo trailer. The company supply section mans these vehicles.

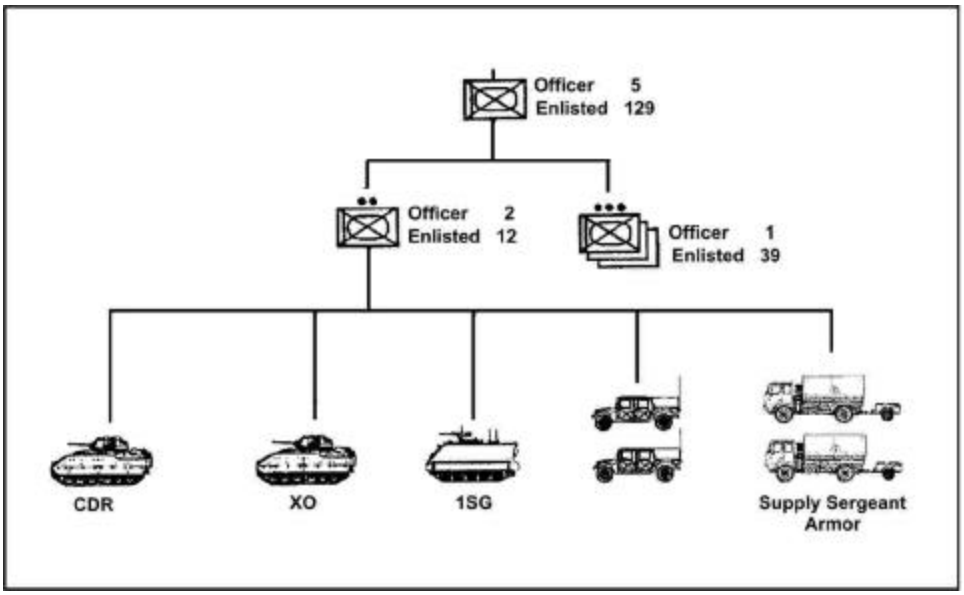


Figure 2-2. Mechanized Infantry Company Organization

TANK PLATOON

2-5. The tank platoon is considered the smallest maneuver element in the company. It normally fights as a unified element, with its sections fighting in concert with one another. Based on METT-TC factors, however, tank sections may be task organized with other elements. Examples include the task organization of a tank section with an infantry company during light/heavy operations or the task organization of a tank section with a mechanized infantry platoon during urban operations.

PERSONNEL AND EQUIPMENT

2-6. As noted, the tank platoon comprises four tanks, normally M1-series vehicles, organized in two sections. The platoon leader (Tank 1) and platoon sergeant (PSG) (Tank 4) are the section leaders. Tank 2 is the wingman in the platoon leader's section, and Tank 3 is the wingman for the PSG's tank. Each four-man crew consists of the tank commander (TC), gunner, loader, and driver (See FM 3-20.15 [FM 17-15] for a detailed description of the tank platoon's organization and personnel responsibilities.) Figure 2-3 illustrates tank platoon organization.

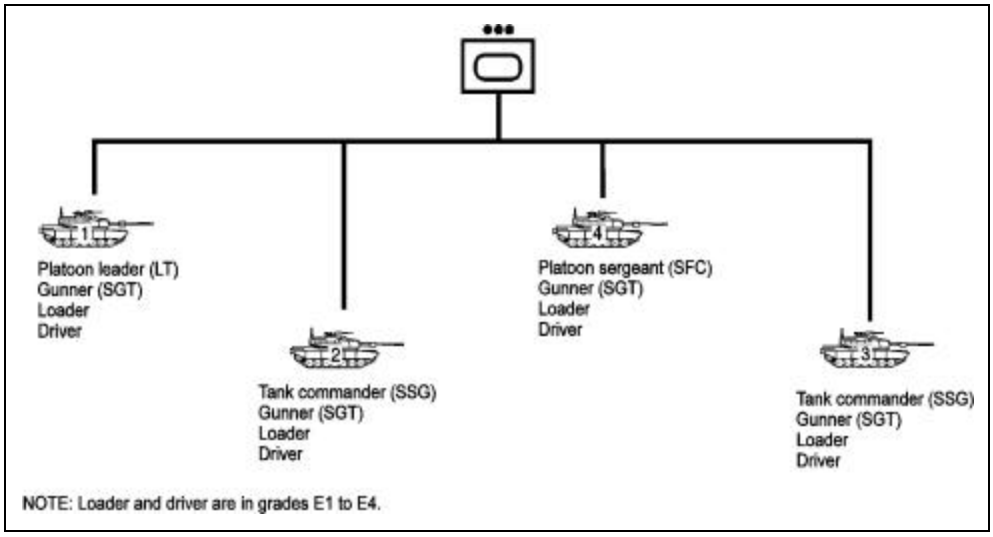


Figure 2-3. Tank Platoon Organization

CAPABILITIES AND LIMITATIONS

2-7. The tank platoon has the following capabilities:

- It can conduct operations requiring firepower, mobility, armor protection, and shock effect.
- When equipped with mine rollers and mine plows, it can reduce mine and wire obstacles.
- It can employ maneuver (a combination of fire and movement) to destroy enemy tanks, fighting vehicles, anti-armor systems, and emplacements (such as strongpoints and bunkers).
- It can assault enemy positions.
- It can secure terrain.
- It can defend, repelling enemy attacks with fires.
- It can conduct combat operations under limited visibility conditions.
- It can conduct mounted patrols.
- It can provide support, in the form of armor protection and fires, to infantry and engineer elements in restricted terrain or during an assault.
- It can suppress enemy positions with machine gun and/or main gun fire.
- It can ford water obstacles up to 4 feet in depth.
- It can operate in an NBC environment.
- It can operate in a stability and support environment.
- Each tank can carry up to 42 rounds of ready and semi-ready main gun ammunition as well as 900 rounds of caliber .50 ammunition and up to 11,400 rounds of 7.62-mm (exact quantities of ammunition varies between models of the M1 series tanks).

2-8. The tank platoon has these limitations:

- Built-up areas, wooded areas, and other types of restricted or rugged terrain can severely limit the platoon's maneuverability.
- Tanks are vulnerable to anti-armor weapons.
- Water crossing operations present a variety of difficulties because of the weight of the platoon's tanks and requirements for fording sites and/or bridges that can support them.
- The tank's weight and size limit its mobility over soft ground and prevent it from crossing many bridges.
- During offensive operations, the platoon is vulnerable to dug-in enemy infantry elements, which are especially dangerous when equipped with anti-armor systems.
- In defensive operations in restricted terrain, the tank platoon is vulnerable to dismounted infantry elements attacking from well-covered positions.
- The platoon requires large amounts of Class III (Bulk and Package) during extended operations. It can operate for eight hours without refueling.
- It has limited capability to retain ground without infantry support.

MECHANIZED INFANTRY PLATOON

2-9. The mechanized infantry platoon can fight as a unified maneuver element or as two distinct elements, one mounted and one dismounted. The platoon must be prepared to operate in a variety of situations, both mounted and dismounted, conducting missions to attack, defend, delay, and move.

PERSONNEL AND EQUIPMENT

2-10. The mechanized infantry platoon is equipped with four BFVs. For mounted operations, it is organized in two sections of two vehicles each. The dismounted element consists of three squads of nine soldiers each. The dismounted infantry squads ride in the BFVs, which serve as the base of fire during dismounted infantry operations. (See FM 3-21.71 [FM 7-7J] for a detailed description of the mechanized infantry platoon's organization and personnel responsibilities.)

2-11. Figure 2-4 illustrates the organization of the mechanized infantry platoon.

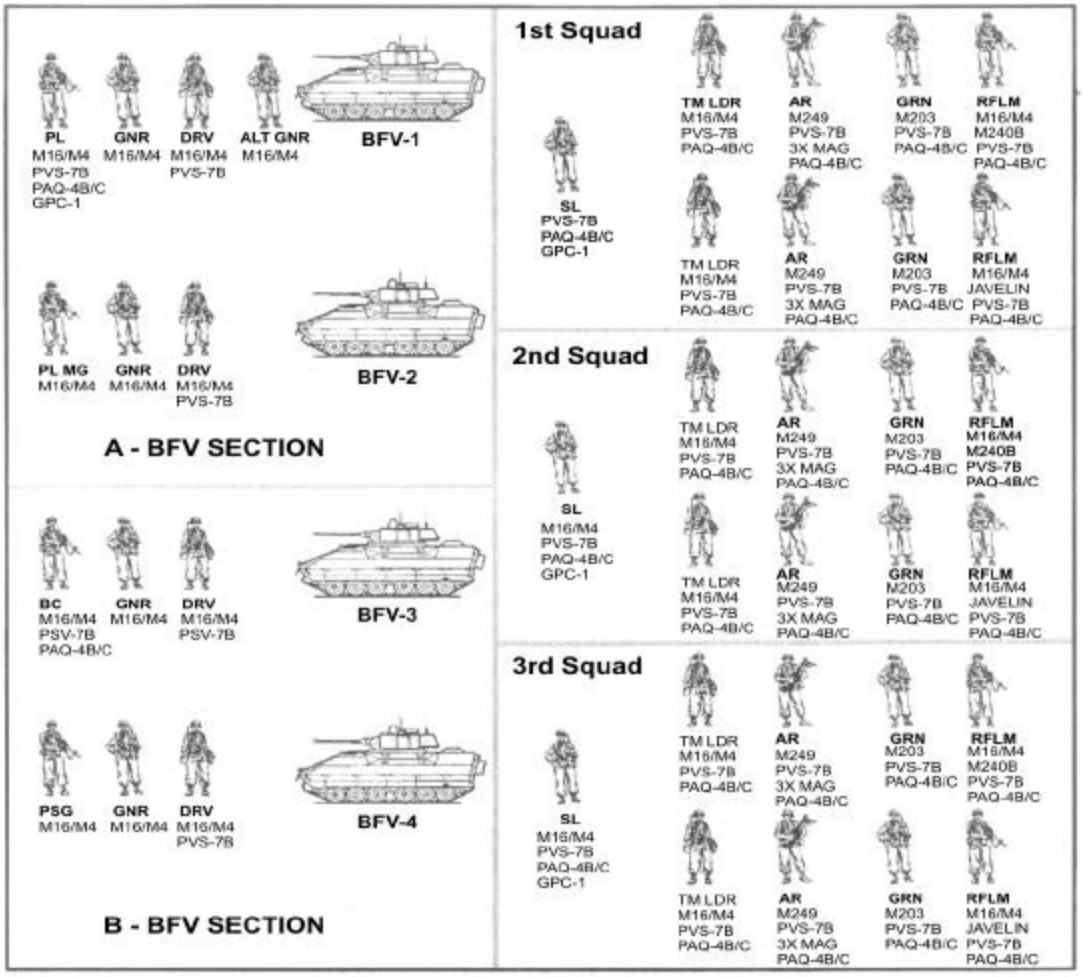


Figure 2-4. Mechanized Infantry Platoon Organization

CAPABILITIES AND LIMITATIONS

2-12. The following paragraphs list capabilities of the mechanized infantry platoon in mounted and dismounted operations, as well as the platoon's tactical limitations.

2-13. The mechanized infantry platoon has these capabilities:

- It can seize and or retain key terrain.
- It can clear danger areas.
- It can block dismounted avenues of approach.
- It can assault enemy positions.
- It can infiltrate enemy positions.
- It can repel enemy attacks with close combat.
- It can establish strongpoints to deny the enemy key terrain or flank positions.

- It can protect obstacles and prevent enemy breaching operations.
- It can conduct dismounted or mounted patrols.
- It can establish observation posts (OP).
- If provided with helicopter support, it can participate in air assault operations.
- It can operate in an NBC environment.
- The infantry rifle squads can maneuver in restricted and severely restricted terrain.
- The infantry rifle squads can clear rooms in urban operations.
- The infantry rifle squads can augment the anti-armor fires of BFVs and tanks with the Javelin missile system.
- The infantry rifle squads can employ the Javelin Command Launch Unit (CLU) for observation.
- The BFVs can assault through small arms and indirect fires to deliver the infantry rifle squads to an objective.
- The BFVs can suppress and or destroy enemy dismounted elements with cannon and machinegun fire.
- The BFVs can destroy enemy fighting vehicles with the 25-mm cannon.
- The BFVs can fix, suppress, or disrupt enemy tanks, fighting vehicles and anti-armor systems at a range of up to 2,500 meters.
- The BFVs can destroy enemy tanks and fighting vehicles with long-range tube-launched, optically tracked, wire guided (TOW) fires.

2-14. The mechanized infantry platoon has these limitations:

- The platoon's BFVs are vulnerable to enemy anti-armor fires.
- The platoon's infantry squads are vulnerable to small arms and indirect fires. Infantry squads should not be positioned where they will be exposed to long-range fires before they are able to take the enemy under fire.
- TOW engagements up to 3,750 meters require a tracking time of 12 to 14 seconds.
- The pace of dismounted offensive operations is limited to the foot speed of the dismounted infantryman.
- When mounted, the platoon poses a variety of difficulties during water crossings, including the requirement for adequate fording sites or bridges with sufficient weight classification. The BFV does not swim.

COMBAT SUPPORT ASSETS

2-15. The company team may be task organized with the following CS elements:

- The company team fire support team (FIST).
- Engineer assets, such as an engineer platoon or squad and/or special equipment.
- Either a Stinger team, which rides on a dedicated Bradley Stinger Fighting Vehicle (BSFV) or another company team vehicle, or a Bradley Linebacker.
- A task force scout platoon during some security operations.
- A task force mortar platoon or section during some tactical operations.
- Sensor teams, such as those using ground surveillance radar (GSR) or the Improved Remotely Monitored Battlefield Sensor System (IREMBASS), during some security operations.
- Counterintelligence (CI), civil affairs (CA), and linguistic support teams during some stability and support operations.

COMBAT SERVICE SUPPORT ASSETS

2-16. The tank or mechanized infantry company team has an organic supply section. In addition, it is normally task organized with the following CSS attachments:

- A maintenance team from the AOE task force maintenance platoon or FSC maintenance platoon in Force XXI units.
- Senior company medic, platoon medics (mechanized infantry platoon) and with armored ambulance M113 with crew from the battalion medical platoon.

SECTION II – COMPANY TEAM

BATTLEFIELD FOCUS

2-17. The company team employs maneuver (fire and movement) and integrates CS and CSS assets to complete tactical tasks in support of the battlefield purpose specified by the controlling task force commander. In doing this, the company team commander develops the situation, gaining sufficient information on the enemy situation to make prudent tactical decisions; the team then closes with and destroys enemy forces. The AO defined by this principle varies widely according to the nature of the battle and other METT-TC factors. It may be less than 100 meters in any direction during operations in forested areas, urban areas, close terrain, or trench lines. In more open terrain, the AO may extend up to 4 kilometers from the team's direct fire weapon systems and out to 6 kilometers with support from the task force's indirect fire systems.

2-18. Regardless of the operation (offensive or defensive) it is conducting at any given moment, the company team must remain focused on continuing or returning to the offense. The team commander must aggressively seek and employ the appropriate offensive options in any situation.

SECTION III – DUTIES AND RESPONSIBILITIES OF KEY PERSONNEL

COMMANDER

2-19. The commander is responsible for everything the company team does, or fails to do, in executing the mission assigned to it by the task force and/or brigade. His responsibilities include leadership, discipline, tactical employment, training, administration, personnel management, supply, maintenance, communications, and sustainment activities. These duties require the commander to understand the capabilities of the team's soldiers and equipment and to know how to employ them to best tactical advantage. At the same time, he must be well versed in threat organizations, doctrine, and equipment.

2-20. Using this knowledge, the commander prepares his unit for combat operations using troop-leading procedures (TLP). Ultimately, he must know how to exercise the art and science of battle command effectively and decisively. He must be flexible, using sound judgment to make correct decisions quickly and at the right time based on the higher commander's intent and the tactical situation. He must be able to visualize, describe, and direct his subordinate leaders in the form of clear, complete combat orders. (See Chapter 3 for more information concerning visualize, describe, and direct.)

EXECUTIVE OFFICER

2-21. The XO is the company team's second in command and its primary CSS planner and coordinator. He and his crew may serve as the team net control station (NCS) for both radio and digital traffic. The XO's other duties include—

- Ensuring accurate, timely tactical reports are sent to the task force.
- Assuming command of the company team as required.
- In conjunction with the 1SG, planning and supervising the company team CSS effort prior to the battle.
- Assisting in preparation of the operation order (OPORD), for example paragraph 4 (service support).
- Conducting tactical coordination with higher, adjacent, and supporting units.
- As required, assisting the commander in issuing orders to the company team headquarters and attachments.

- Conducting additional missions as required. These may include serving as officer in charge (OIC) for a quartering party or as the leader of the detachment left in contact (DLIC) in a withdrawal.
- Assisting the commander in preparations for follow-on missions to include rehearsal site preparation.
- Positioning himself with supporting effort during the battle to assist the commander in command and control (C2).
- Assisting the commander in refining intelligence preparation of the battlefield (IPB) products during planning and portrays the enemy force during combined arms rehearsals.
- Managing the company timeline.
- Managing survivability assets when in direct support (DS) (armored combat earthmover [ACE]/Dozer) during defensive operations.

FIRST SERGEANT

2-22. The 1SG is the team's senior NCO and normally is its most experienced soldier. He is the commander's primary tactical advisor and he is an expert in individual and NCO skills. He is the team's primary CSS operator; he helps the commander to plan, coordinate, and supervise all logistical activities that support the tactical mission. He operates where the commander directs or where his duties require him.

2-23. The 1SG's specific duties include the following:

- Execute and supervise routine operations. The 1SG's duties may include enforcing the tactical standing operating procedures (TSOP); planning and coordinating training; coordinating and reporting personnel and administrative actions; and supervising supply, maintenance, communications, and field hygiene operations.
- Supervise, inspect, and/or observe all matters designated by the commander. For example, the 1SG may observe and report on a portion of the team's sector or zone, proof fighting positions, or assist in proofing an EA.
- Plan, rehearse, and supervise key logistical actions in support of the tactical mission. These activities include resupply of Class I, III, and V products and materials; maintenance and recovery; medical support and CASEVAC; and replacement/return to duty (RTD) processing.
- Assist and coordinate with the XO in all critical functions.
- Assist the XO in CSS planning for the company.
- As necessary, serve as quartering party NCOIC.
- Conduct training and ensure proficiency in individual and NCO skills and small-unit collective skills that support the company team's mission essential task list (METL).
- In conjunction with the commander, establish and maintain the foundation for company team discipline.

PLATOON LEADER

2-24. The platoon leader is responsible to the commander for leadership, discipline, training, and sustainment activities related to the platoon; for maintenance of its equipment; and for its success in combat. He must be proficient in the tactical employment of the platoon and his section (mounted or dismounted) in concert with the rest of the company team.

2-25. In many ways, the platoon leader's responsibilities parallel those of the team commander. Like the commander, he must have a solid understanding of TLP and develop his ability to apply them quickly and efficiently. He must know the capabilities and limitations of the platoon's personnel and equipment and be well versed in enemy organizations, doctrine, and equipment. An effective platoon leader is characterized by his tactical flexibility and his ability to execute disciplined initiative within the commander's intent and the tactical situation.

PLATOON SERGEANT

2-26. The PSG is second in the platoon's chain of command and is accountable to the platoon leader for the leadership, discipline, training, and welfare of the platoon's soldiers. He coordinates the platoon's maintenance and logistical requirements and handles the personal needs of individual soldiers. The PSG fights his section in concert with the platoon leader's section.

FIRE SUPPORT OFFICER

2-27. The company team fire support officer (FSO) helps the commander to plan, coordinate, and execute the team's fire support requirements and operations. During operational planning, he develops and refines a fire support plan based on the commander's concept and guidance. He then coordinates the plan with the battalion FSO. The team FSO—

- Advises the commander on the capabilities and current status of all available fire support assets.
- Serves as the commander's primary advisor on the enemy's indirect fire capabilities.
- Assists the commander in developing the OPORD to ensure full integration of fires as well as assisting the commander on analysis of terrain, weather, light data and enemy composition and disposition.
- Recommends targets and fire control measures, and determines methods of engagement and responsibility for firing the targets.
- Determines the specific tasks and instructions required to conduct and control the fire plan.
- Develops an observation plan, with limited visibility contingencies, that supports the company team and task force missions.

- Develops the fire support plan with the company team commander to include locations of final protective fires (FPF) and priority targets allocated to the team and coordinates with the task force FSO.
- Assists the commander in briefing the fire support plan as part of the company team OPORD and coordinate with platoon forward observers (FO) (when attached during heavy-light operations) to ensure they understand their responsibilities.
- Refines and integrates the company team target worksheet; submit the completed worksheet to the task force fire support element (FSE).
- Assists the commander in incorporating execution of the indirect fire plan into each company team rehearsal. This includes integrating indirect fire observers into the rehearsal plan.
- In tactical situations, alerts the company team commander if a request for fires against a target has been denied.
- In tactical situations, monitors the location of friendly units and assist the commander in clearance of indirect fires.
- Requests counterbattery support in response to enemy artillery and/or mortar attacks.

COMMUNICATIONS SPECIALIST

2-28. The communications specialist supervises the operation, maintenance, and installation of organic digital, wire, and FM communications. During tactical operations, he normally travels with the company maintenance team (CMT)/combat repair team (CRT). His responsibilities include sending and receiving routine traffic and making required communications checks. The communications specialist may also have these duties:

- Perform limited troubleshooting of the company team's organic communications equipment, and provide the link between the company team and the task force for maintenance of communications equipment.
- Supervise all activities in regard to the company team's communications security (COMSEC) equipment. This usually will entail requisition, receipting, training, maintenance, security, and employment of this equipment and related materials.
- Assist the commander in planning and employment of the team's communications systems. Using the commander's guidance, the communications specialist may assist in preparation of paragraph 5 (command and signal) of the OPORD.
- Supervise or assist in company team CP operations. Responsibilities may include relaying information, monitoring the tactical situation, establishing the CP security plan and radio watch schedule, and informing the commander and

subordinate elements of significant events. (**NOTE:** In many situations, the communications specialist will be a soldier with the rank of specialist or below; he may or may not have the experience to take on additional duties such as NCOIC of the CP.)

SUPPLY SERGEANT

2-29. The supply sergeant requests, receives, issues, stores, maintains, and turns in supplies and equipment for the company team. He coordinates all supply requirements and actions with the 1SG and the battalion S4. Normally, the supply sergeant will be positioned with the task force field trains. The HHC or FSC commander or the support platoon leader (depending on the CSS organization of the battalion) supervises him. He communicates with the company team using the task force administration/logistics (A/L) radio net or FBCB2. (See Chapter 10 for a detailed discussion of CSS operations and requirements.) The supply sergeant's specific responsibilities include the following:

- Control the company team cargo truck and water trailer, and supervise the supply clerk/armorer.
- Monitor company team activities and/or the tactical situation.
- Anticipate and report logistical requirements.
- Coordinate and monitor the status of the company team's logistics requests.
- Coordinate and supervise the organization of the company team logistics package (LOGPAC) in the task force field trains.

NUCLEAR, BIOLOGICAL, CHEMICAL NCO

2-30. The NBC NCO assists and advises the company team commander in planning for and conducting operations in an NBC environment. He is normally located with the company trains. He plans, conducts, and/or supervises NBC defense training, covering such areas as decontamination procedures and use and maintenance of NBC-related equipment. Specific duties include the following:

- Assist the commander in developing company team operational exposure guidance (OEG) in accordance with OEG from higher headquarters.
- Make recommendations to the commander on NBC survey and/or monitoring, decontamination, and smoke support requirements.
- Requisition NBC-specific equipment and supply items.
- Assist the commander in developing and implementing the company team NBC training program.
- Inspect company team elements to ensure NBC preparedness.
- Process and disseminate information on enemy and friendly NBC capabilities and activities, including attacks.

- Advise the commander on contamination avoidance measures.
- Coordinate, monitor, and supervise decontamination operations.

ARMORER

2-31. The armorer performs organizational maintenance on the company's small arms and is responsible for evacuating weapons as necessary to the direct support (DS) maintenance unit. In addition, he normally assists the supply sergeant in the BSA. (**NOTE:** As an option, the armorer may serve as the driver of the 1SG's vehicle to make him more accessible for weapons repair and maintenance in forward areas or some units may train multiple soldiers trained in small arms repair and assign them to command vehicles.)

MASTER GUNNER

2-32. The master gunner is the company team's expert in vehicle gunnery. He assists the commander in gunnery training and preparations for combat to ensure that every crew and platoon can make effective, lethal use of their firepower assets. These preparations include assisting tank and BFV crews by establishing or coordinating boresight lines, plumb and sync ramps (for M1A2 units), and/or use of live-fire screening ranges and zero ranges. The master gunner also assists turret mechanics from the CMT/CRT in troubleshooting and repairing turret main armament and fire control systems. As the company team's direct fire weapons expert, he can assist in EA development and direct fire planning for both offensive and defensive operations. Additional duties in the planning and preparation phases may include assisting in CSS coordination and execution, serving as NCOIC of the command post (CP), and assisting the commander in designating/determining the location and emplacement of target reference points (TRP) for both day/night visibility.

2-33. During combat operations, the master gunner advises the commander on applicable battlesight ranges. He may serve as the gunner on one of the command tanks or BFVs, as a CSS operator riding on the APC, or as a section NCOIC in the company team's wheeled vehicles with responsibility for facilitating communications with the task force.

MAINTENANCE TEAM CHIEF

2-34. The maintenance team chief (attached from the task force/FSC maintenance platoon) supervises the CMT/CRT. He decides whether damaged vehicles and equipment can be repaired in place or must be evacuated. Other key responsibilities include coordinating evacuation and repair operations; managing requisition of Class IX supplies in conjunction with the task force maintenance officer; and managing the employment of the CMT/CRT mechanics and evacuation assets. The maintenance team chief monitors the tactical situation and directs maintenance team personnel during combat repair and recovery operations. If necessary, he leads the company team combat trains in the 1SG's absence.

Chapter 3

Battle Command

Battle command is the art of decision-making and leading on the battlefield. It covers the knowledge, techniques, and procedures necessary to control operations and to motivate soldiers and their organizations into action to accomplish assigned missions. As part of battle command, commanders visualize the current state of the battlefield as well as future states at different points in the operation; they then formulate concepts of operations that allow their units to progress from one state to the other at the least cost. Other elements of the battle command process include assigning missions, prioritizing and allocating resources, selecting the critical times and places to act, and knowing how and when to make adjustments during the fight.

The company team commander employs a variety of means to prepare for operations, issue orders, employ the company team, and communicate. The success of this C2 process rests mainly on effective training; thorough (and thoroughly understood) SOPs; accurate, timely communications; and, most of all, decisive leadership.

CONTENTS

Command 3-1
Mission Command....3-2
Plans and Orders....3-4
Company Team Troop-Leading Procedures 3-12
Step 1 – Receive and Analyze the Mission 3-13
Step 2 – Issue the Warning Order....3-30
Step 3 – Make a Tentative Plan 3-32
Step 4 – Initiate Movement....3-36
Step 5 – Conduct Reconnaissance....3-36
Step 6 – Complete the Plan 3-37
Step 7 – Issue the Order....3-43
Step 8 – Supervise and Refine 3-44
Considerations for Accelerated TLPs 3-50
Succession of Command 3-51
Command and Support Relationships 3-51
Control....3-53
Relevant Information 3-53
Operational Picture and COP....3-53
Seeing the Battlefield 3-53
Situational Understanding 3-54
Reporting 3-60
Standing Operating Procedures....3-62
Communications 3-63
Communications Security....3-69
Company Team Command Post....3-71

SECTION I - COMMAND

3-1. Command is the authority that a commander in military service lawfully exercises over subordinates by virtue of rank and assignment. It is vested in an individual who possesses total responsibility and accountability for the actions of his unit. It is the authority that empowers this individual, the commander, to effectively use available resources in planning assigned missions and in organizing, coordinating, employing, and directing the

necessary military forces to accomplish these missions at the least possible expense in manpower and material.

3-2. Command, however, is more than the simple exercise of constitutional, legal authority; it goes beyond merely the practiced application of a set of managerial skills. The essence of command authority is the sum of many intangible personal assets: the commander's knowledge, experience, and personality and how he interacts with his own unit and with others.

3-3. Above all, command is an art. It is the art of effective decision-making and of motivating and leading both individual soldiers and larger organizations. It is the art of turning decisions, motivation, and leadership into actions that impose the will of the commander on his unit and, ultimately, the will of the nation on its enemies.

MISSION COMMAND

3-4. This philosophy of directing military operations encourages and assists subordinates in taking action consistent with the intent and concept of higher headquarters. Mission command requires a clear understanding by subordinate elements of the unit purpose; at the same time, it provides them with the freedom to react to enemy actions without further guidance. The following paragraphs outline the underlying guidelines of this philosophy of C2.

EXPECT UNCERTAINTY

3-5. The commander must understand the environment of combat. The battle will be dynamic and the enemy uncooperative. Communications may be degraded, and the chaos of battle may prevent the commander from knowing what is happening beyond the reach of his own senses. The situation the unit anticipates during the planning phase will inevitably change before and during execution.

REDUCE LEADER INTERVENTION

3-6. When soldiers expect the commander to make every decision or initiate every action, they may become reluctant to act. To counter this tendency, the commander must plan and direct operations in a manner requiring a minimal of intervention. He operates on the principle that some loss of precision is better than inactivity.

3-7. The commander still must be prepared to provide subordinates with the criteria and guidance for making decisions when precise control is required for synchronization. During the planning process, he should identify those few critical decisions that will be required during the battle and then determine the criteria for initiation of actions associated with these decisions. Examples include the use of engagement criteria, trigger lines, and disengagement criteria. The commander then disseminates the decision criteria throughout the company team.

NOTE: The commander must keep in mind that changing conditions and unexpected situations will require him to make decisions continuously once the battle begins. His preparations related to critical decisions will allow him, and his subordinates, to react more effectively when changes become necessary.

OPTIMIZE PLANNING TIME FOR SUBORDINATES

3-8. The company team commander must ensure that the timelines he develops for mission planning and preparation provide adequate troop-leading time for the subordinate elements. An effective way to optimize the use of the available time, no matter how short, is to conduct training of the company team orders process under tough, realistic conditions at every available opportunity.

ALLOW MAXIMUM FREEDOM OF ACTION FOR SUBORDINATES

3-9. Given the expected battlefield conditions, leaders at every level must avoid placing unnecessary limits on their soldiers' freedom of action. The leader at the point of decision must have the knowledge, training, and freedom necessary to make the correct choice in support of the commander's intent. This concept must be emphasized at every opportunity at every level of leadership. Soldiers win battles; their leaders can only place them in a position where they are able to seize the opportunity to do so. Subordinates will be successful on the battlefield only if their commanders and leaders have fostered the necessary confidence and initiative before the battle begins.

ENCOURAGE CROSS-TALK

3-10. Subordinate leaders do not always require guidance from the commander to address a change in the situation. In some instances, because of their position on the battlefield, two or more subordinates, working together, may have the clearest view of what is happening and may be better suited than the commander to develop a tactical solution. This type of problem-solving, involving direct coordination between subordinate elements, is critical to mission-oriented C2. In addition to its obvious impact on mission accomplishment, it empowers subordinates to take decisive action and teaches them the value of close cooperation in achieving the unit's overall purpose.

COMMAND AND LEAD WELL FORWARD

3-11. The commander positions himself where he can best fight his company team and make critical decisions to influence the outcome of the fight. This position is normally with the main effort to allow the commander to exert his leadership and to shift or retask the main effort as necessary. He must be far enough forward to "see" the battlefield using all available resources; these assets include not only visual observation but also radio reports and, in digitized units, information provided over digital systems. The team XO is normally with the supporting effort and must be able to rapidly assume command if needed.

PLANS AND ORDERS

3-12. Plans are the basis for any mission. The company team commander develops his concept of the operation summarizing how best to accomplish his mission within the scope of the task force and brigade commanders' intents. The team commander uses troop-leading procedure (TLP) to turn the concept into a fully developed plan and to prepare a concise, accurate OPORD. He assigns additional tasks (and outlines their purpose) for subordinate elements, allocates available resources, and establishes priorities to make the concept work.

3-13. The following discussion, covering important aspects of orders development, serves as an introduction to the discussion of TLP and delegation skills later in this chapter. The first portion focuses on the mission statement and the commander's intent that provide the doctrinal foundation for the OPORD. Also included are basic discussions of the three types of orders (warning orders (WARNO), OPORDs, and FRAGOs) used by the team commander. It is important for the company team commander to have a thorough understanding of these elements because they are the building blocks for everything else that he does during the troop-leading process. (See Appendix A for more detailed information on orders formats.)

MISSION STATEMENT

3-14. The commander uses the mission statement to summarize the upcoming operation. This brief paragraph (sometimes a single sentence) describes the form of operation, the unit's task and purpose, the actions to be taken, and the reasons for these actions. It is written in a format based on the five "Ws": **who** (unit), **what** (tasks/operations), **when** (date-time group), **where** (grid location/geographical reference for the area of operations and/or objective), and **why** (purpose). The commander must ensure that the mission is thoroughly understood by all leaders and soldiers two echelons below (section or squad). The following paragraphs cover considerations that apply in development of the mission statement.

Operations

3-15. Operations are groupings of related activities in four broad categories: offense, defense, stability, and support. Each category is subdivided into types of operations, with different types further divided into forms of operations. (**NOTE:** For example, as shown in Table 3-1, the attack is a type of offensive operation. Forms of the attack include the spoiling attack, counterattack, raid, feint, demonstration, and search and attack. Retrograde operations are a type of defensive operation; forms are the delay, withdrawal, and retirement.) Operations are the building blocks of higher unit missions.

Table 3-1. Operations

CATEGORY	OFFENSE	DEFENSE	STABILITY	SUPPORT
Types of operations (Forms of operations are listed under types)	Movement to contact - Search and attack - Meeting engagement Attack Special purpose attacks * Spoiling attack * Counterattack * Raid * Ambush * Feint * Demonstration Exploitation Pursuit	Area defense Mobile defense Retrograde - Delay - Withdrawal - Retirement	Peace operations Peacekeeping operations Peace enforcement operations Support of diplomatic efforts Foreign internal defense - Indirect support - Direct support - Combat operations Security assistance Humanitarian and civil assistance Support to insurgencies Support to counterdrug operations Combatting terrorism - Counterterrorism - Antiterrorism NEOs Arms control Show of force	Domestic support operations Foreign humanitarian assistance

3-16. The company team may also take part in a variety of other operations; these may be conducted as part of any operation in the four general categories outlined above. The following are examples of these additional operations:

Reconnaissance	Security	Other operations
- Zone	- Screen	- Troop movement
- Area	- Guard	- Breach
- Route	- Cover	- Water/gap crossing
	- Area	- Relief in place
		- Deception

Tactical Mission Tasks

3-17. Tactical tasks are specific activities performed by the unit while it is conducting a form of tactical operation or a choice of maneuver. (**NOTE:** The title of each task can also be used as an action verb in the unit's mission statement to describe actions during the operation.) Normally, the commander will assign each subordinate element only one mission essential task. This task will appear in that elements mission statement and be closely tied to its purpose. Tactical tasks should be definable, attainable, and measurable. Tactical tasks that require specific TTP for the company team are covered in detail throughout this manual

(See Appendix J for tactical task definitions). The following list gives examples of tactical tasks the team and its subordinate elements may be called upon to conduct:

Assault	Defeat	Isolate	Support by fire
Attack by fire	Destroy	Link up	Suppress
Block	Disengage	Occupy	
Breach	Disrupt	Protect	
Bypass	Fix	Reduce	
Canalize	Follow and assume	Retain	
Clear	Follow and support	Rupture	
Contain	Hold	Secure	
Counter-reconnaissance	Interdict	Seize	

NOTE: For clarity, the commander normally lists tasks and operations together in the OPORD mission statement.

Purpose

3-18. A simple, clearly stated purpose improves understanding of the commander's intent. It will also assist subordinate leaders in adjusting their tasks during execution of the mission, allowing them to stay within the parameters of the higher commander's intent. The purpose should tell the subordinates **why** the company team is conducting the mission and **how** the team will operate with or provide support for other units. The following list provides examples of purposes that the company team may be called upon to achieve:

Prevent	Create	Protect	Deceive
Enable	Influence	Cause	Draw
Deny	Allow	Divert	Support

Placement

3-19. The commander has several options as to where in the OPORD he outlines his subordinates' mission-essential tasks and purpose. His overriding consideration is that placement of the mission statement should assist subordinate leaders in understanding exactly each of the five "W" elements.

Example Mission Statement

3-20. The following is an example of a mission statement the company team commander might include in his order:

> Team D (**who**) attacks at 040600Z FEB 02 (**when**) to breach (**what**) the obstacle belt at NX330159 (**where**), enabling Team B (task force main effort) to penetrate the enemy's positions vicinity OBJ BOB (**why**).

COMMANDER'S INTENT

3-21. The commander's intent is a clear, concise statement of what the company team must do to succeed in relation to the enemy, the terrain, and the desired end state. It provides the link between the mission statement and the concept of the operation by stating the key tasks that, along with the mission, are the basis for subordinates to exercise initiative when

unanticipated opportunities arise or when the original concept of the operation no longer applies. The commander can also use the intent statement to explain a broader purpose for the operation beyond that outlined in the mission statement. The intent, which is mandatory in all orders, may be expressed in several "bullets" or in complete sentences; these presentation methods are covered later in this discussion. As with the mission, the commander must ensure that the intent statement is thoroughly understood by all leaders and soldiers two echelons below (section or squad). The following paragraphs focus on considerations that apply in development and presentation of the intent statement.

How to Use the Intent Statement

3-22. The purpose of the intent at the company team level is to provide vehicle commanders and squad leaders with a summary of the most important details of what the company team is supposed to achieve during the operation. The intent statement must be developed and presented so they can remember this critical information, recognize specific situations while in contact on the battlefield, and act in accordance with the commander's intent to achieve the desired end state.

3-23. The focus of the intent is on the company team's key tasks during the operation. Key tasks are those that the team must perform to achieve the stated purpose of the operation, as outlined in paragraph 2 of the OPORD; they may also specify conditions that must be met for mission accomplishment. Key tasks are not tied to a specific COA; rather, they identify actions or conditions that are fundamental to the unit's success. In the ever-changing operational environment, such as when significant opportunities present themselves or when the original concept or COA does not apply, subordinate elements use these tasks to ensure their efforts continue to support the commander's intent. Examples of critical areas that key tasks may cover include the tempo of the operation, the desired effect of fires on the enemy, and terrain that must be controlled.

3-24. At the same time, the intent statement does not specify the technique or method by which the unit will achieve the commander's projected end state; the method is covered in the concept of the operation. Nor does the intent cover "acceptable risk"; risk factors are part of the commander's guidance and are addressed in the evaluation of all COAs for the operation. In addition, the purpose addressed in the intent is not merely a restatement of the **why** (purpose) from the mission statement, which focuses on the company team's immediate operation. Instead, the commander uses the intent to examine the broader operational context of the company team and higher missions.

"BULLET" METHOD OF PRESENTATION

3-25. One technique in presentation of the commander's intent is to condense it to three to five "bullet" comments (instead of reciting a lengthy paragraph). This can make it easier for the team's subordinate leaders to recall each point and recognize related situations. As an example, the following could summarize the commander's intent for a mechanized infantry team with the task of seizing a choke point for the purpose of allowing the remainder of the task force to pass.

3-26. My intent is to accomplish these actions during the operation:

- Control the choke point until the entire task force has passed.
- Prevent effective enemy anti-armor fires against the task force as it passes through the choke point.
- Be prepared to defend the choke point against a counterattack from the southeast.

Paragraph Method of Presentation

3-27. The company team commander can also summarize his intent in paragraph form. He should keep the intent statement as concise as possible; at the same time, however, he must ensure that the paragraph covers all pertinent details of the operation. The following example shows how he might explain the team's mission to provide support by fire as the support force in a task force deliberate attack:

> *We must suppress all enemy forces that can place effective direct fires against Team Bravo as it assaults. We will maintain this suppression until Team Bravo begins its maneuver. Additionally, we must be prepared to assume Team Bravo's assault to seize the choke point.*

NOTE: The examples provided here should not be interpreted as the only "correct" methods of presenting the intent statement. The company team commander must determine the most effective way to summarize his intent based on such factors as the complexity of the mission, the applicable METT-TC factors, and the conditions under which the order is being issued.

COMBAT ORDERS

3-28. Combat orders are the means by which the company team commander receives and transmits information, from the earliest notification that an operation will occur through the final phases of execution. These basic tools are absolutely critical to mission success. In a tactical situation, the team commander and subordinate leaders work with combat orders on a daily basis; obviously, they must have precise knowledge of the correct format for each type. At the same time, they must ensure that every soldier in the company team understands how to receive and respond to the various types of orders. Because of these requirements, the commander must take every opportunity to train the team in the use of combat orders. The skills associated with orders development and dissemination are highly perishable; they can be lost without constant, realistic practice. (See Appendix A for examples of company team orders formats.)

Warning Order

3-29. During the planning phase of an operation, commanders use WARNOs as a shorthand method of alerting their subordinate leaders. WARNOs also initiate the commander's most valuable time management tool, the parallel planning process. The company team commander usually sends a series of WARNOs to his subordinate leaders to help them prepare for new missions. The directions and guidelines in the WARNO allow subordinates to begin their own planning and preparation activities.

3-30. The content of WARNOs is based on two major variables—information about the upcoming operation that is available to the company team from the task force and what the team commander ultimately wants to achieve by issuing the WARNO (what he wants his subordinates to do with the information). The commander normally issues his WARNOs either as he receives additional orders from the task force or as he completes his own analysis of the situation.

3-31. In addition to alerting the unit to the upcoming operation, WARNOs allow the commander to put out tactical information incrementally and, ultimately, to shorten the length of the actual OPORD. In the example in Table 3-2, the commander uses three WARNOs to issue information that otherwise would make up paragraphs 1 and 2 and most of paragraph 3 in the OPORD. As a result, when he issues the OPORD, he can simply review previously issued information or brief the changes or earlier omissions. He will then have more time to concentrate on visualizing his concept of the fight for his subordinates.

3-32. Table 3-2 summarizes an example of how the company team commander might use a series of WARNOs both to alert the team to an upcoming operation and to provide tactical information and initial planning guidance. The left-hand column lists actions the commander takes before issuing each of the three WARNOs in the example. The center column describes specific elements included in each WARNO, with the right-hand column outlining the commander's purpose for each order.

NOTE: The numbering system used in Table 3-2 (WARNOs #1, #2, and #3) recurs in the discussion of TLP to explain how WARNOs are used at various phases of the troop-leading process.

Operation Order

3-33. When time and information are available, the company commander will normally issue a complete OPORD as part of his TLP. As noted, he does not need to repeat information covered previously in his WARNOs. The commander may also issue an execution matrix, either to supplement the OPORD or as a tool to aid in the execution of the mission; however, the matrix order does not replace a five-paragraph OPORD.

3-34. Techniques for presentation of the OPORD and visualization of the operation are covered in detail in the discussion of step 7 of TLP (issue the order) later in this chapter. See Appendix A for more detailed information on the five-paragraph OPORD format and for an example matrix order.

Table 3-2. Example of a Commander's Use of Multiple Warning Orders

COMPANY TEAM COMMANDER'S ACTION	POSSIBLE CONTENT OF WARNING ORDER	COMMANDER'S PURPOSE
Receive the task force WARNO	WARNO #1 covers the following: • Security plan. • Movement plan. • Task organization. • Tentative timeline. • Battle drill or SOP rehearsals to be conducted.	• Prepare platoons for movement to the tactical assembly area. • Obtain map sheets. • Specify company team task organization (if already determined).
Conduct METT-TC analysis	WARNO #2 covers the following: • Friendly situation. • Enemy situation. • Terrain analysis. • Company team mission.	• Initiate platoon-level mission analysis. • Initiate generic rehearsals (drill- and task-related). • Prepare for combat.
Develop and analyze COAs	WARNO #3 covers the following: • Commander's intent. • Concept of the operation. • COA analysis/selection. • Concept of fires. • Subordinate unit tasks and purposes. • R&S guidance. • Updated SITEMP/ draft graphics.	• Initiate platoon-level COA development. • Identify platoon-level reconnaissance requirements. • Direct leader's reconnaissance. • Prepare for combat.

Fragmentary Order

3-35. The FRAGO is a brief oral or written order that can serve any of the following purposes:

- Implement timely changes to existing orders.
- Provide pertinent extracts from more detailed orders.
- Provide instructions until a detailed order is developed.
- Provide specific instructions to subordinates who do not require a complete order.

3-36. A written FRAGO follows the five-paragraph OPORD structure; however, it includes only the information required for subordinates to accomplish their mission. To enhance understanding of voice FRAGOs, digitally equipped units can quickly develop hasty graphics and transmit digital overlays.

3-37. During the execution of an operation, FRAGOs are the medium of battle command. The company team commander uses them to communicate changes in the enemy or friendly situation and to retask his subordinate elements based on changes in the situation. The company team FRAGO normally includes the following information:

- Updated enemy or friendly situation.
- Changes to company team or platoon tasks and/or purposes.
- Changes to the scheme of maneuver.
- Specific instructions as necessary.

3-38. Table 3-3 illustrates the various transmissions that might be sent as part of an oral company team FRAGO.

Table 3-3. Example Company Team FRAGO

TYPE/PURPOSE OF ORDER	RADIO TRANSMISSION
Alert	"GUIDONS, THIS IS BLACK 6; FRAGO FOLLOWS."
Situation	"THREE T-80s, TEN BMPs, AND SUPPORTING VEHICLES VICINITY CP 17, MOVING EAST TOWARD CP 11."
Mission	"WE WILL DESTROY THE ENEMY VICINITY CP 11 TO MAINTAIN THE FREEDOM OF MANEUVER OF THE TASK FORCE WHICH IS MOVING TO OUR SOUTH."
Intent	• "I WANT TO ESTABLISH AN ENGAGEMENT AREA VICINITY CP 11, INITIALLY BLOCKING THE ENEMY WITH TWO PLATOONS." • "I THEN WANT TO DESTROY THE ENEMY BY ATTACKING HIM BY FIRE FROM THE NORTH." • "I WANT MORTAR FIRES TO SCREEN THE TASK FORCE'S MOVEMENT SOUTH OF CP 11."
Tasks to Subordinate Units	• "RED AND WHITE, MOVE TO CP 9 TO BLOCK THE ENEMY, ALLOWING BLUE TO DESTROY HIM." • "ESTABLISH THE BLOCKING POSITION WITH RED ON THE RIGHT; RED, EMPLOY YOUR INFANTRY TO SECURE THE RIGHT FLANK OF THE POSITION." • "BLUE AND BLACK 5, MOVE TO CP 10 VIA CP 8 AND ATTACK THE ENEMY BY FIRE TO MAINTAIN THE FREEDOM OF MANEUVER OF THE TASK FORCE." • "REDLEG, MOVE TO A POSITION VICINITY CP 8 FROM WHICH TO CALL FOR SCREENING FIRES TO PREVENT THE ENEMY FROM OBSERVING THE TASK FORCE."
Coordinating Instructions	• "I WANT THE BLOCKING FORCE TO INITIATE FIRES WHEN FIVE OR SIX VEHICLES HAVE CROSSED PL ABRAMS." • "BLUE, BEGIN THE ATTACK BY FIRE WHEN THE ENEMY IS AT CP 11 OR IF THE ENEMY BEGINS MOVEMENT SOUTH TOWARD CP 10."
CSS	"COMPANY TRAINS MOVE TO CP 4."
Command and Signal	"I WILL BE WITH RED."
Acknowledgment	"ACKNOWLEDGE. OVER."

SECTION II - COMPANY TEAM TROOP-LEADING PROCEDURES

3-39. TLPs are a dynamic process that enables the company commander to use available time effectively and efficiently in the planning, preparing, executing and assessing of combat missions. TLPs are integrally coupled with the military decision-making process (MDMP), and achieve the same tactical problem solving results as the MDMP (see Figure 3-1). The two are different, however, in that the MDMP is designed to be executed by echelons with a coordinating staff. This difference is significant for two reasons. First, the commander has no coordinating staff, which places the responsibility for planning primarily on his shoulders. Secondly, under most conditions the commander will only have time to develop one good COA in Step 3, Make a Tentative Plan. By developing one COA, the commander is able to husband more time for the other steps in the TLP. Of course, as more time permits, the commander can explore several COAs.

3-40. The process, although discussed here with the eight steps in traditional order, is not rigid, and the steps are not necessarily sequential. The tasks involved in some steps (such as initiate movement, issue the WARNO, and conduct reconnaissance) may recur several times during the process. Although listed as the last step, activities associated with supervising and refining the plan and other preparations occur throughout the TLP.

3-41. Regardless of the time available, leaders must always remember this principle: “See the terrain, see the enemy, see yourself.” Only after they view and evaluate the terrain and the enemy can they determine what their own actions should be in that given situation. They update this visualization continuously throughout the troop-leading process, basing this new “picture” of the battlefield on their own refinements to the plan, additional information from the task force and other sources, or developments in the battalion task force ISR operation.

3-42. TLP begins when the leader receives the first indication of an upcoming operation (often a WARNO from higher headquarters) and continue throughout the planning, preparation, and execution phases of the mission. Starting as the first bit of information becomes available allows the leader to maximize the available planning time.

3-43. The WARNO is the most important time-management tool the commander has and is also his most effective means of delegating responsibility. In addition, by immediately passing information to subordinate leaders through the use of WARNOs, he can ensure that they develop their plans concurrently with his. Under no circumstances should leaders delay the start of the troop-leading process, even if initial information is incomplete or vague.

NOTE: In many cases, the commander can initially make most effective use of his troop-leading time by conducting physical actions on the ground, such as developing an EA, preparing BPs, or conducting other preparations. He then can move on to the other troop-leading steps.

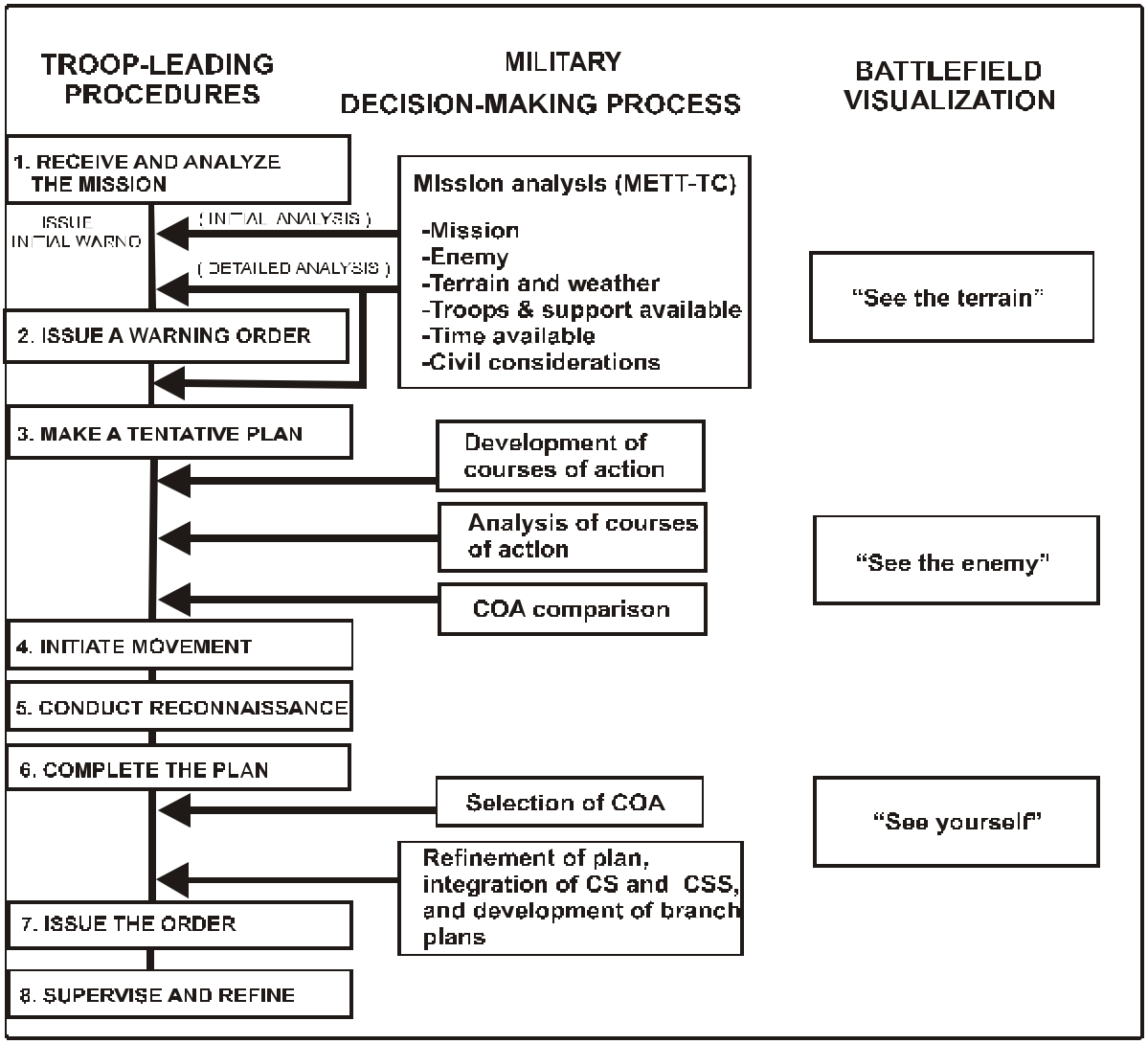


Figure 3-1. Troop-leading Procedures and Related Activities

3-44. The following discussion provides a step-by-step overview of TLPs. Figure 3-1 illustrated the process, along with some of the considerations and procedures involved in the eight steps.

STEP 1 - RECEIVE AND ANALYZE THE MISSION

3-45. This step normally begins with the receipt of an initial WARNO from the task force, although it may begin when the company team commander receives the task force OPORD (if the task force did not use WARNOs). If he receives the task force OPORD, he will normally be required to give a confirmation brief to the task force commander to ensure that he understands the higher commander's concept of the operation and his intent for the company team. The team commander must also, as necessary, obtain clarification of the information from the higher headquarters and conduct initial coordination with other units.

COLLECT INITIAL INFORMATION

3-46. Although mission analysis is continuously refined throughout the troop-leading process, the company team commander's initial analysis is normally based only on the initial task force WARNO. During this step, the commander conducts his initial METT-TC analysis, collecting information about the terrain and the friendly and enemy situations. Additionally, he conducts his initial time analysis, develops his initial security plan, and issues an initial WARNO to provide guidance and planning focus for his subordinates. (**NOTE:** The initial analysis is normally conducted as quickly as possible to allow the commander to issue the initial WARNO in a timely manner. He then conducts a more detailed METT-TC analysis after the initial WARNO is put out.)

ISSUE THE INITIAL WARNING ORDER (WARNING ORDER #1)

3-47. The step begins with the commander and his subordinate leaders gathering information about enemy and friendly forces, terrain, and weather as they prepare to receive the task force plan. They should focus on available information of all types—details provided in the task force WARNO; terrain and weather data; their knowledge of the enemy's doctrine. As the task force develops its plans, the company team commander remains proactive, calling the TOC or sending a runner to obtain information, such as updated SITEMPs and graphics, as it becomes available. With each piece of information, he and his leaders continue to build and refine the company team plan. (**NOTE:** In many instances, the tactical situation will still be vague because the reconnaissance and security plan has not been executed, because the task force or brigade has not received its orders, or because the unit has just arrived in the AO.)

3-48. Upon receipt of the initial task force WARNO, the commander immediately passes on the information to the company team's subordinate leaders. At a minimum, the initial team WARNO should include the following:

- Enemy situation as stated in the task force order (if available).
- Friendly situation (usually the type of operation, higher unit mission statement, task organization, and boundaries).
- Movement instructions (such as routes to the tactical assembly area, movement times, and formations).
- Coordinating instructions, including an initial timeline, map requirements, initial security plan and battle drill or SOP rehearsals to conduct. (**NOTE:** The security plan should cover initial movement to and occupation of the assembly area or BP and address the readiness condition (REDCON) levels applicable at various times during the planning and preparation phases.)

Analyze the Mission

3-49. The commander conducts mission analysis using the factors of METT-TC. Mission analysis is a continuous process. The commander constantly receives information (during the planning phase, en route to the objective, or just prior to assaulting an enemy force) and must decide if the information affects his mission. If it does, he then decides how to adjust his plan to meet this new situation. METT-TC is not necessarily analyzed sequentially. How and when the commander analyzes each factor depends

on when information is made available to him. The following discussion covers the six factors of METT-TC in detail.

NOTE: The acronym METT-TC is a common mnemonic device for the factors of mission analysis; the following discussion presents these elements in the traditional order (mission, enemy, terrain and weather, troops and support available, time available, and civil considerations). Mission is always the first factor to be analyzed. The second factor in the analysis, however, should be terrain rather than the enemy. By analyzing the terrain first, the leader gains a clear picture of factors that influence the enemy situation; this enables him to develop a better understanding of the enemy's capabilities and limitations.

Mission Analysis

3-50. After receiving an essential task and purpose, either in a WARNO or the OPORD, the commander can begin the analysis of his own mission. He may use a refined product, such as the modified combined obstacle overlay (MCOO) and/or the SITEMP (if available), to better visualize the interrelationships of the terrain, the enemy, and friendly forces. His goal in this analysis is to clarify what the unit is to accomplish, why the unit is to accomplish it, and what COA(s) it will take to achieve its overall purpose.

3-51. **Analysis of Higher Unit Mission and Intent.** Leaders at every echelon must have a clear understanding of the intent and concept of operation of the commander two levels higher. For additional details on intent and concept, refer to the discussion of mission statements and commander's intent earlier in this chapter.

NOTE: A useful tool the company commander can employ to assist in his analysis of higher mission and intent is to draw a thumbnail concept sketch. This assists him in visualization of the operation and also serves as a medium for briefing later at the company team OPORD (see Figure 3-2).

3-52. **Analysis of Own Mission.** Once he understands the operation at the task force and brigade levels, the commander can analyze the company team mission. Key considerations in this analysis include the following:

3-53. **Purpose.** Identify the company team's purpose. Determine how the team's purpose relates to the purposes of the task force and its other company teams and elements. (**NOTE:** The purpose of the main effort company team usually matches the task force purpose. Purposes of the supporting effort company teams must relate directly or indirectly to the purpose of the main effort company team.)

3-54. **Specified tasks.** What tasks (such as reconnoiter a route or assist a passage of lines) does the OPORD specify for the company team to accomplish.

3-55. **Essential tasks.** What essential tasks specified in the task force OPORD must be accomplished for mission success? Are any implied tasks essential? What specific results must the team achieve in terms of the terrain and the enemy and/or friendly forces?

3-56. **Constraints.** What constraints does the OPORD place on the team's freedom of action?

NOTE: There are two types of constraints—requirements and prohibitions. Requirements dictate actions that the unit must take (such as retain one platoon in reserve). Prohibitions specify actions or areas from which the unit is prohibited (such as no direct fires beyond PHASE LINE DOG).

3-57. **Restated Mission.** The commander writes his restated mission, ensuring that it includes the five "W" elements: who, what, when, where, and why. If the unit must accomplish more than one essential task, he lists them as on-order missions in the order in which they will occur. For an in-depth discussion of the mission statement and its components, refer to the discussion earlier in this chapter.

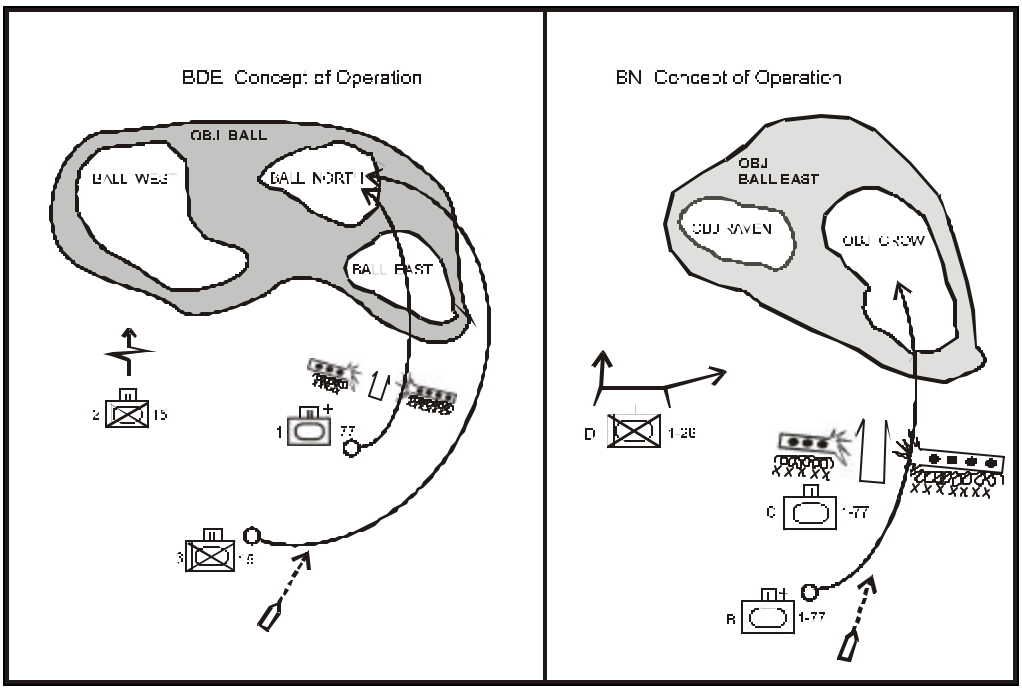


Figure 3-2. Example Concept Sketches for Mission Analysis

Terrain and Weather Analysis

3-58. In this step of mission analysis, the commander focuses not only on the impact of terrain and weather on the company team and other friendly forces, but also on how they will affect enemy operations.

3-59. **Terrain Analysis.** Normally, the task force staff will provide the company team with a MCOO, which depicts the physical effects of the battlefield on military operations. Ideally, the MCOO is developed early in the troop-leading process to allow leaders at all levels to take advantage of the information. In developing this product, the task force staff applies the five military aspects of terrain, known as

OAKOC. These factors, summarized later in this discussion, are the following:

- Obstacles.
- Avenues of approach.
- Key terrain.
- Observation and fields of fire.
- Cover and concealment.

NOTE: The acronym OAKOC is a common mnemonic device for the military aspects of terrain. The following discussion presents these factors in a logical sequence to support the terrain analysis.

3-60. Because the MCOO is focused at the task force level, the company team commander must further refine it using considerations that are applicable at his level. As noted, key terrain for the task force may not be as critical to the company team and vice versa. For example, an intervisibility line near an objective area may be key terrain for an assault force within the company team, but may not be considered as key by other companies in the task force operation. In the absence of a task force MCOO, the company team commander can develop his own product. Figure 3-3 shows an example MCOO.

3-61. The commander normally must prioritize his analysis of the terrain based on time constraints that influence orders development at the company team level. For example, in the conduct of an assault, his priority may be the area around the objective, followed by analysis of the team's specific axis leading to the objective. Time permitting, he might then analyze the rest of the task force area of operations.

3-62. The following discussion examines OAKOC in detail.

3-63. **Obstacles.** In analyzing the terrain, the commander first identifies existing and reinforcing obstacles that may limit mobility (affecting such features as objectives, avenues of approach, and mobility corridors) and affect the company team's countermobility effort.

3-64. Existing obstacles include, but are not limited to, the following:

- Gullies, ravines, gaps, and ditches over 3 meters wide.
- Streams, rivers, and canals over 1 meter deep.
- Mountains or hills with a slope in excess of 60 percent.
- Lakes, swamps, and marshes over 1 meter deep.
- Tree stumps and large rocks over 18 inches high.
- Forests or jungles with trees 8 inches or more in diameter and with less than 4 meters of space between trees.
- Man-made existing obstacles, including built-up areas such as towns, cities, or railroad embankments.

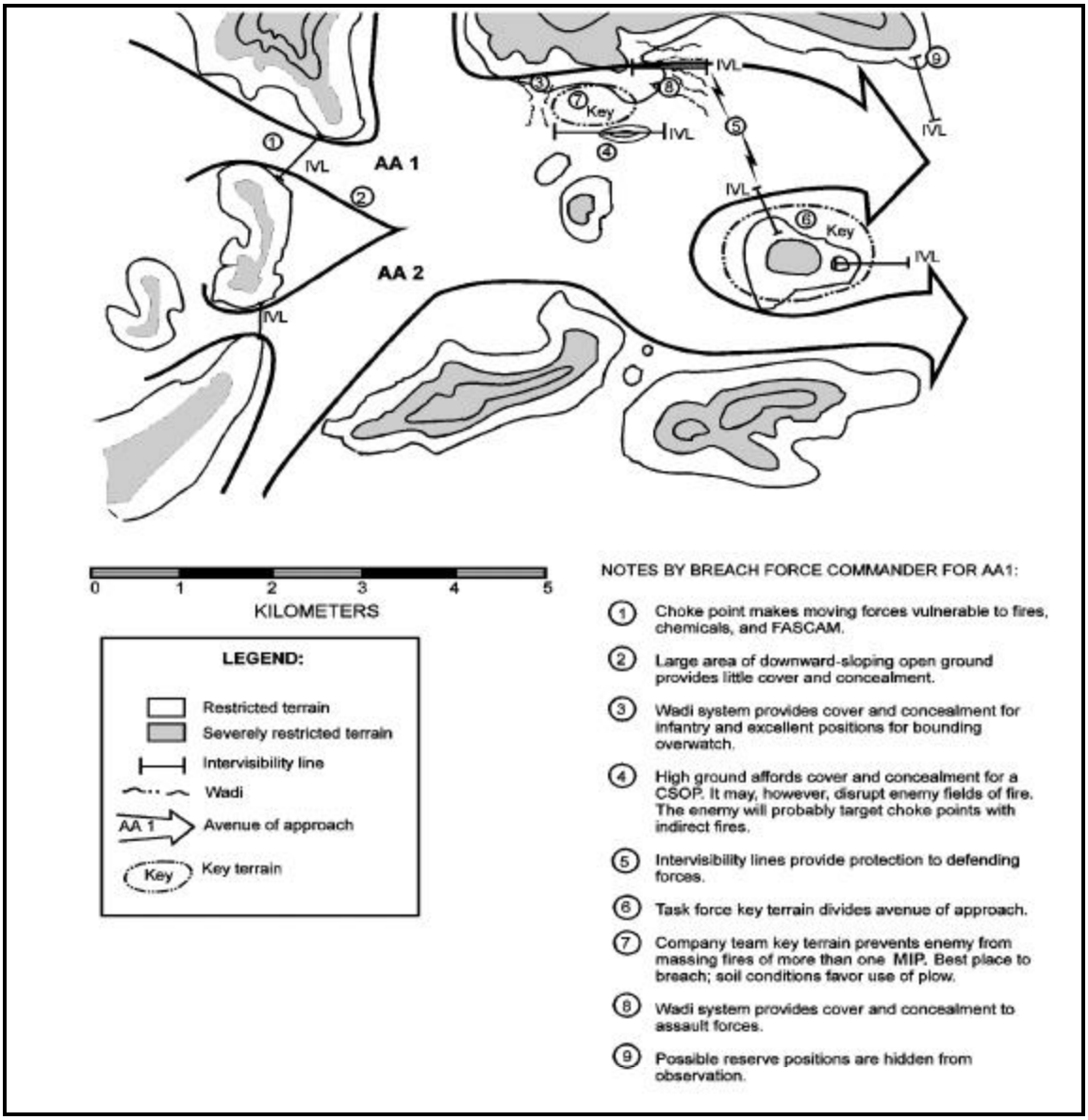


Figure 3-3. MCOO Showing Restricted Terrain, Avenues of Approach, and Key Terrain

3-65. Reinforcing obstacles include, but are not limited to, the following:

- Minefields (conventional and situational).
- AT ditches.
- Road craters.
- Abatises and log cribs.
- Wire obstacles.
- Infantry strongpoints.

3-66. Based on the degree of obstruction posed by obstacles, terrain is further classified in one of the following categories:

- **Unrestricted.** This is terrain free of any restriction to movement; no actions are required to enhance mobility. For armored and mechanized forces, unrestricted terrain is typically flat or moderately sloped, with scattered or widely spaced obstacles such as trees or rocks. This type of terrain generally allows wide maneuver and offers unlimited travel over well-developed road networks.
- **Restricted.** This terrain hinders movement to some degree. Little effort is needed to enhance mobility, but units may have to zigzag or make frequent detours. They may have difficulty maintaining optimum speed, moving in some types of combat formations, or transitioning from one formation to another. For armor and mechanized forces, restricted terrain typically encompasses moderate to steep slopes and/or moderate to dense spacing of obstacles such as trees, rocks, or buildings. Swamps and rugged ground are examples of restricted terrain for dismounted infantry forces. Logistical or rear area movement may be hampered by poorly developed road systems.
- **Severely restricted.** This terrain severely hinders or slows movement in combat formations unless some effort is made to enhance mobility. It may require commitment of engineer forces to improve mobility or deviation from doctrinal tactics, such as using a column rather than a line formation or moving at speeds much lower than otherwise preferred. For armor and mechanized forces, severely restricted terrain is typically characterized by steep slopes, densely spaced obstacles, and/or the virtual absence of a developed road system.

3-67. Friendly and enemy elements will usually take advantage of unrestricted terrain in situations requiring rapid movement. In other instances, such as when security is the paramount concern, they may move in more restricted terrain, which may provide more cover and concealment.

3-68. Figure 3-4 lists several offensive and defensive considerations the commander can include in his analysis of obstacles and restricted terrain.

OFFENSIVE CONSIDERATIONS

- How is the enemy using obstacles and restricted terrain features?
- What is the composition of the enemy's reinforcing obstacles?
- How will obstacles and terrain affect my movement and/or maneuver?
- If necessary, how can the company team avoid such features?
- How do we detect and, if desired, bypass the obstacles?
- Where has the enemy positioned weapons to cover the obstacles, and what type of weapons is he using?
- If I must support or execute a breach, where is the expected breach site?

DEFENSIVE CONSIDERATIONS

- Where do I want to kill the enemy? Where do I want him to go?
- How will existing obstacles and restricted terrain affect the enemy?
- How can I use these features to force the enemy into my EA, deny him an avenue, or disrupt his movement?

Figure 3-4. Considerations in Obstacle Analysis (Including Terrain Considerations)

3-69. **Avenues of approach.** These are areas through which a unit can maneuver. The definition of an avenue of approach is an area that provides sufficient ease of movement and enough width (for dispersion) to allow passage of a force large enough to significantly affect the outcome of the battle. In turn, avenues of approach are composed of mobility corridors, which are areas through which the force will be canalized by terrain features and constrictions. In making his terrain analysis, the company team commander can use the following process to identify avenues of approach:

- Identify mobility corridors.
- Categorize each corridor by the size or type of force it will accommodate.
- Group mobility corridors to form avenues of approach.

3-70. The commander must identify mounted, dismounted, and air avenues of approach within the sector or AO. Mounted forces may move on avenues along unrestricted or restricted terrain (or both). Dismounted avenues and avenues used by reconnaissance elements normally include restricted terrain and, at times, severely restricted terrain. In addition, the terrain analysis must identify avenues of approach for both friendly and enemy units.

3-71. After identifying avenues of approach, the commander must evaluate each avenue. He determines the size and/or type of force that could use the avenue and evaluates the terrain that the avenue traverses as well as the terrain that bound or otherwise influences it. Figure 3-5 lists several offensive and defensive considerations that the commander can include in his evaluation of avenues of approach.

OFFENSIVE CONSIDERATIONS

- How can I use each avenue of approach to support my movement and/or maneuver?
- How will each avenue support movement techniques, formations, and (once we make enemy contact) maneuver?
- Will variations in trafficability or lane width force changes in formations or movement techniques or require defile drills?
- What are the advantages and/or disadvantages of each avenue?
- What are the enemy's likely counterattack routes?
- Do lateral routes exist that we can use to shift to other axes or that the enemy can use to threaten our flanks?

DEFENSIVE CONSIDERATIONS

- What are all likely enemy avenues into my sector?
- How can the enemy use each avenue of approach?
- Do lateral routes exist that the enemy can use to threaten our flanks?
- Which avenues would support a friendly counterattack?

Figure 3-5. Considerations in Avenue of Approach Analysis

3-72. **Key terrain.** Key terrain is any location or area whose seizure, retention, or control affords a marked advantage to either combatant. As an example, a prominent hilltop overlooking an avenue of approach may or may not be key terrain. Even if the hill offers clear observation and fields of fire, it will be of no marked advantage to the unit that controls it if the opposition can easily bypass it on another avenue of approach. On the other hand, if the hilltop can influence the area through which a force must pass regardless of which avenue of approach it uses, the unit that controls the higher terrain has a definite advantage.

3-73. Designation of an area as key terrain depends largely on the characteristics of the avenue of approach (such as the width or length and the restrictiveness of terrain along the avenue) and the size of the unit required to control it. Other contributing factors include maneuver space, fields of fire, and cover and concealment afforded by the key terrain itself. For example, an area where several trails converge may be key terrain for a company team, whereas an area in which several battalion-size avenues of approach join may prove key for a brigade.

3-74. At the company team level, the commander must assess what terrain is key to his mission accomplishment. An example of key terrain for a company team in the attack could be a small hill or tree line that overlooks the enemy's reverse slope defense. Securing this area may be critical in establishing a support by fire position to protect the breach force.

3-75. The company team commander may also identify decisive terrain, which is key terrain that will have an extraordinary impact on the mission. Decisive terrain is relatively rare; it will not be present in every situation.

3-76. Figure 3-6 lists several considerations that the commander can include in his analysis of key terrain. (See Figure 3-6 that illustrates a sample MCOO with restricted terrain, avenues of approach, key terrain, and graphic control measures.)

OPERATIONAL CONSIDERATIONS

- What terrain is key to the company team and to the task force and why?
- Is the enemy controlling this key terrain?
- What terrain is key to the enemy and why?
- How do I gain or maintain control of key terrain?
- What terrain is key for friendly observation, both for C2 and for calling for fires?

Figure 3-6. Considerations in Key Terrain Analysis

3-77. **Observation and fields of fire.** The commander must determine what locations along each avenue of approach provide clear observation and fields of fire for both the attacker and the defender. He analyzes the area surrounding key terrain, objectives, and obstacles. He locates intervisibility lines (terrain that allows observation from one point to another) and assesses the ability of the attacking force to overwatch or support (with direct fire) the movement of its elements.

3-78. In analyzing fields of fire, the commander focuses on the ability of friendly and enemy units to cover terrain with direct fires from known or likely positions. In addition, he must identify positions that afford clear observation for FIST personnel, allowing them to employ indirect fires effectively.

3-79. Whenever possible, the commander conducts a reconnaissance from the enemy and friendly perspectives. This will help him to determine where both friendly and enemy fires can be concentrated. (**NOTE:** See the discussions of actions on contact in Chapter 5 of this manual and of EA development in Chapter 6.)

3-80. Figure 3-7 lists several offensive and defensive considerations that the commander can include in his analysis of observation and fields of fire.

OFFENSIVE CONSIDERATIONS

- Are clear observation and fields of fires available on or near the objective for enemy observers and weapon systems?
- Where can the enemy concentrate fires?
- Where will the enemy be unable to concentrate fires?
- Where is he vulnerable?
- Where are positions from which friendly forces can conduct support by fire or attack by fire?
- Where are the natural TRPs?
- Where do I position indirect fire observers?

DEFENSIVE CONSIDERATIONS

- What locations afford clear observation and fields of fire along enemy avenues of approach?
- How obvious are these positions to the enemy?
- Where will the enemy set firing lines and/or antitank weapons?
- Where will I be unable to mass fires?
- Where is the dead space in my sector? Where am I vulnerable?
- Where are the natural TRPs?
- Where do I position indirect fire observers?

Figure 3-7. Considerations in Analysis of Observation and Fields of Fire

3-81. **Cover and concealment**. The commander looks at the terrain, foliage, structures, and other features on the avenues of approach to identify sites that offer cover and concealment. In the defense, weapon positions must be both lethal and survivable, with effective cover and concealment just as vital as clear fields of fire.

3-82. Figure 3-8 lists offensive and defensive considerations that the commander can include in his analysis of available cover and concealment.

OFFENSIVE CONSIDERATIONS

- What axes afford both clear fields of fire and effective cover and concealment?
- Which terrain provides bounding elements with cover and concealment while facilitating lethality?

DEFENSIVE CONSIDERATIONS

- What locations afford effective cover and concealment as well as clear fields of fire?
- How can the enemy use the available cover and concealment?

Figure 3-8. Considerations in Analysis of Cover and Concealment

3-83. **Weather Analysis.** Consideration of the effects of weather conditions is an essential part of the mission analysis. The commander should review the results of his terrain analysis and determine the impact of the following factors on terrain, personnel, and equipment and on the projected friendly and enemy COAs.

3-84. **Visibility.** How will weather conditions (including light conditions, precipitation, temperature, and wind speed and direction) affect visibility?

Will friendly forces have the sun in their eyes? Will the wind blow dust or smoke away from the route of march (making it easier to see) or back toward friendly forces? Under such conditions, what is the maximum observation range? How will that range affect the enemy

3-85. **Light data.** At what times are BMNT, sunrise, sunset, EENT, moonrise, and moonset? Is the sun to the back of friendly forces or the enemy? What effect will this have on either force's ability to see? Will friendly forces have to remove or install driver's night periscopes during movement? When during the operation will they have to use night vision goggles? What effect will long periods of darkness (such as during winter nights) have on soldiers' ability to stay awake and alert?

3-86. **Precipitation.** How will precipitation affect the terrain along each avenue of approach? Will some restricted terrain become severely restricted if it rains or snows? Will moist air cause foggy conditions? Will lack of precipitation cause extremely dusty conditions? How will fog, dust, or stormy conditions affect visibility?

3-87. **Temperature and humidity.** What will the temperature be during the operation and what effect will this have on soldiers? Will they be able to sustain a long fight in extreme conditions? Will the ground freeze or thaw during the operation? What effect will this have on trafficability? What effect will extremes in temperature and humidity effect dismounted operations? How will extreme heat or cold affect the optical images in the vehicle sights? Will changes in the temperature and barometric pressure require MRS updates on the tanks? How often? Are temperature dispersions favorable for the use of smoke or chemicals?

3-88. **Wind speed and direction.** What is the expected wind speed and direction during the operation? What effect will wind conditions have on use of smoke, flares, or chemical agents? Will the wind affect dust, fog, and other battlefield conditions?

3-89. **Cloud cover.** What is the expected cloud cover? Cloud cover effects ground operations by limiting illumination and the solar heating of targets. How will cloud cover effect night operations? How will it affect the enemy? How will cloud cover affect the CLU?

Troop Analysis (Available Assets)

3-90. Analyze the combat readiness of troops and equipment task organized to the team, including attachments. Direct subordinate leaders to outline the readiness status of their elements; if possible, inspect each element to verify readiness. Compile updates of each vehicle's maintenance, fuel, ammunition, and personnel status. Determine the anticipated readiness status, as of the time the operation is to start, of vehicles and equipment that are currently nonmission capable (NMC).

Time Analysis

3-91. Identify the specific and implied times governing actions that must occur throughout the planning, preparation, and execution phases of the operation. Assess the impact of limited visibility conditions (including darkness) on the troop-leading process and other time-sensitive preparations for the company team and its subordinate elements. (Figure 3-9 illustrates a method of analyzing usable light and limited light conditions.) Analyze the timing for the execution phase in terms of the terrain and enemy and friendly forces. Update previous timelines, listing all events that affect the

company team and all subordinate elements. (See Figure 3-12 for a sample company team planning timeline.)

Analysis of Civilian Considerations

3-92. Identify any civil considerations that may affect the company team mission. These factors may include refugees, humanitarian assistance requirements, or specific considerations related to the applicable rules of engagement (ROE) and/or rules of interaction (ROI).

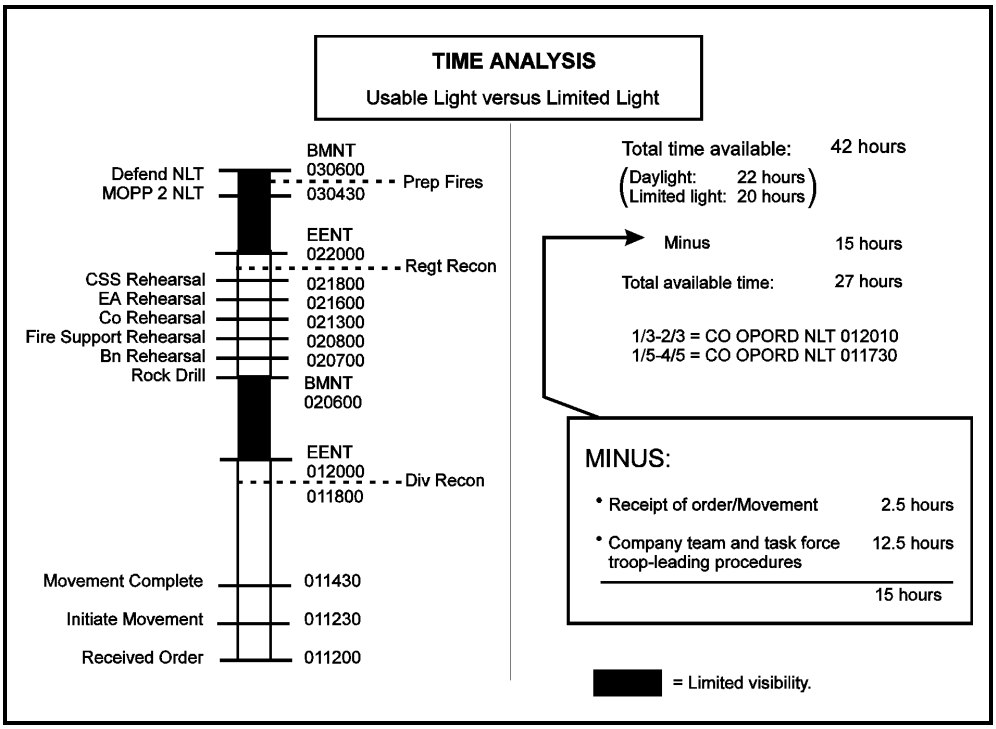


Figure 3-9. Use of Time Analysis to Assess Light Conditions for an Operation

Enemy Analysis

3-93. The following paragraphs examine areas the commander should cover in his analysis of the enemy.

3-94. **Doctrinal Analysis.** This step normally begins with a study of the enemy's tactical doctrine, his weapons and equipment, and his supporting battlefield functional systems. The result of this evaluation is a doctrinal template illustrating how the enemy force might look and act without the effects of weather and terrain. Early in the planning process, the commander reviews the enemy's doctrine. He looks at specific enemy actions during a given operation (such as an integrated attack, dispersed attack, or a planned defense). It is not enough simply to know the number and types of vehicles the enemy has. The commander and his subordinate leaders must thoroughly understand when, where, and how the enemy will use all assets down to squad level.

3-95. In the OE some opponents may not have a doctrinal template. When facing an asymmetrical, unconventional enemy, the company team commander must take into consideration after-action reports from units

who have engaged the enemy in the past, cultural and religious characteristics of the enemy. Additionally, since arriving in theater has the commander developed an enemy pattern analysis of his AO and finally he must apply his own experience and judgment to his mission analysis.

3-96. The commander will normally not have time to develop a doctrinal template during TLP, and he may not have a task force product until he receives the SITEMP. In such situations, predeveloped templates can provide a baseline for planning at company team and platoon levels. Figure 3-10 illustrates an example of a doctrinal template for a mechanized infantry company (MIC) strongpoint. One technique is to develop 1:50,000-scale threat doctrinal templates on acetate for use as an "off-the-shelf" doctrinal resource. The commander may develop necessary doctrinal templates for each major operation he expects the enemy to conduct.

3-97. **Composition (Order of Battle).** Determine the number and types of threat vehicles and equipment in the company team AO. Analyze how the enemy organizes for combat, reviewing such areas as doctrinal formations and distances between units. Where does the enemy place his tanks and PCs within a formation or within a defense? Where and how many dismounted infantrymen and hand-held antitank systems does the enemy have, and how will he employ them? What CS and CSS assets does he have, where are they located, and how will he use them? How, when, and where does he use his reserve?

NOTE: A technique used to help the commander's enemy analysis is the acronym **OIDOCARE.** This mnemonic device is a derivative of the seven forms of contact. See pages 3-37 and 3-38 for a detailed discussion.

3-98. **Disposition (Known Enemy Locations).** Known enemy locations are facts about enemy locations that have been confirmed by higher ISR assets. Disposition should be included in the S2's SITEMP, and are one of the key factors in developing the enemy's COA.

3-99. **Capabilities.** Study the planning ranges for each threat weapon system. Assess the impact of doctrinal march rates and timelines (if they exist). (**NOTE:** One technique is to have these capabilities listed in the leader's books of the company team's key subordinate elements.)

3-100. **Doctrinal Objectives.** Based on the expected threat mission, identify the enemy's projected doctrinal objectives. In doctrinal terms, why will he conduct this type of operation? Does the enemy have sufficient combat power to conduct an integrated attack or will he conduct a dispersed attack to destroy a key command post or logistics node? What effect will this have on the way the enemy fights?

3-101. **Anticipated Enemy COAs.** To identify potential enemy COAs, the commander weighs the results of his initial analysis of terrain and weather against the enemy's composition, capabilities, and doctrinal objectives. The end product is a SITEMP that depicts graphically how he believes the enemy will fight under the specific conditions expected on the battlefield.

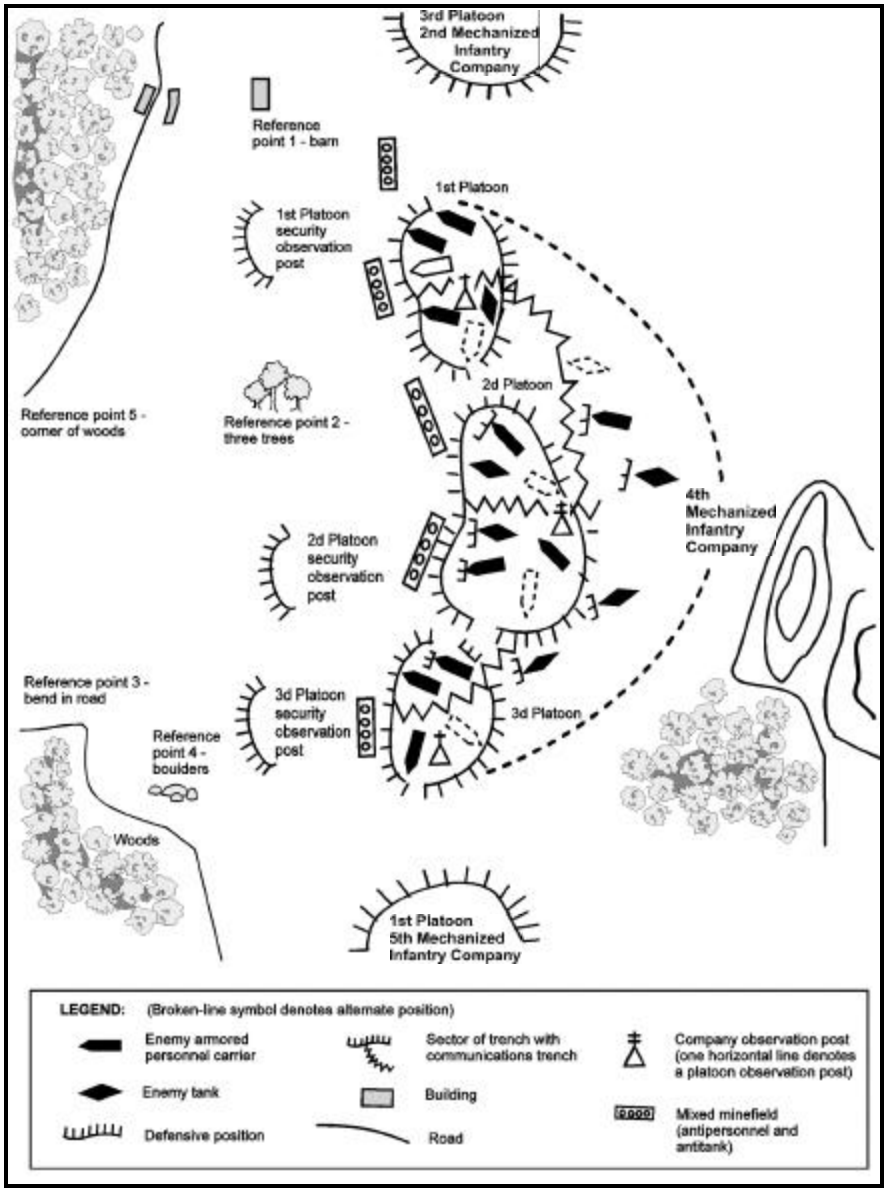


Figure 3-10. Doctrinal Template for a Mechanized Infantry Rifle Company Strongpoint

3-102. The task force S2 should have developed his own SITEMP at this point in the troop-leading process. The company team commander should obtain a copy to assist him in developing the threat COAs; he should not develop the company team SITEMP independently of the S2's product. If there are differences between the company team and task force products, he must resolve them before continuing with his analysis of the enemy.

3-103. The commander must apply his own analysis of the specific force the team will face to the existing task force product. As an example, the S2's SITEMP might identify the location of mechanized infantry platoons (MIP) on the objective area and provide generic weapons range lines. The commander would apply his knowledge of the enemy and terrain to identify individual vehicle positions and, based on intervisibility lines around the

objective area, to determine when and where enemy vehicles can engage the company team.

3-104. The commander uses the minimum SITEMP standards from FM 34-130 to ensure he displays a complete graphical representation of the enemy course of action. The following paragraphs examine key factors the commander should consider in refining (or developing) an accurate SITEMP for the enemy's likely COAs (see Figure 3-11).

3-105. **Mission.** Based on threat doctrine and knowledge of the situation, determine what the enemy's likely mission will be. Why is the enemy conducting this operation? Identify his likely task or objective. Is he trying to protect another threat unit, deceive friendly forces, allow another unit to bypass them, or prevent them from seizing terrain? Is the operation oriented on the terrain, on the enemy force, or on friendly forces? Specifically, what key terrain, enemy force, or friendly element is involved? How will this affect how the enemy attacks or defends?

3-106. **Objectives.** Based on the SITEMP and the projected threat mission, identify the enemy's march objectives (offense) or the terrain or force he intends to protect (defense).

3-107. **Avenues of approach.** Reanalyze the avenues of approach. If the enemy is attacking, which avenues will he use to reach his objectives in executing his likely COAs? How will terrain affect his speed and formations? How will he use the key terrain and locations with clear observation and fields of fire during the fight? Which avenues should friendly forces deny him or divert him from? If the enemy is in the defense, which avenues provide the most direct or fastest access to the terrain the enemy is defending or to the enemy force itself? How will that affect positioning of the enemy forces? From the enemy perspective, what is the most dangerous approach for friendly units (this is where he may weight his effort)?

3-108. **Known enemy locations (disposition).** Plot all known enemy positions in the task force AO (if not already provided on the S2's SITEMP).

3-109. **Assumed enemy locations.** In planning an attack on an objective, identify all threat platoons down to the vehicle level and in the company team area of interest and plot their locations on applicable templates. Using the S2's SITEMP as a framework, consider the situation from the enemy commander's perspective. Given his mission, where will he place vehicles in his position? How will he employ them? If it becomes necessary, where will he reposition his forces? Use the MCOO to assist in identifying such features as observation, fields of fires, and maneuver space. One technique is to draw a line representing the maximum engagement range for each enemy weapon system in the team's area of interest based on the fields of fire. In planning a defensive operation, consider where the threat commander will deploy, where he will position overwatch elements, and where he will move in the EA to avoid friendly direct fires. Based on weapons ranges and intervisibility factors, determine when the enemy can place effective fires on the company team defensive position.

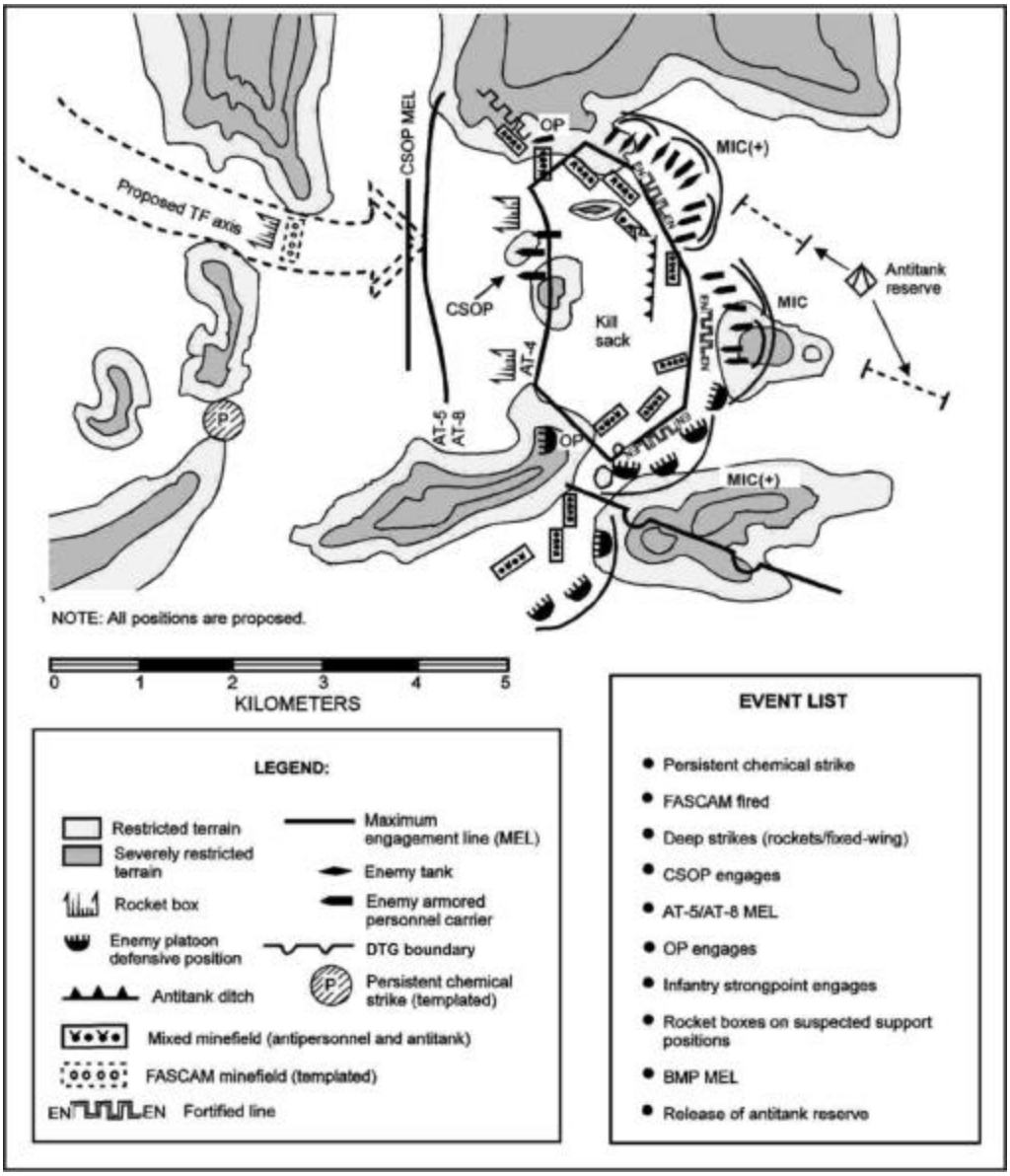


Figure 3-11. Example Company Team Enemy Sketch for an Mechanized Infantry Battalion Integrated Defense

3-110. **Boundaries, CPs, and reserves.** Identify likely boundaries, seams, or time separations between platoon-, company-, and battalion-size elements. Determine the location of the enemy's CPs and other C2 assets. Calculate the time required for reserves or reinforcing elements to influence the battle based on their initial positions.

3-111. **Engineer obstacles and fortifications.** Plot the likely locations of obstacles and fortifications based on the enemy's weapons ranges, fields of fires, and engineering capabilities.

3-112. **Enemy Sketch.** One way the commander can help subordinates understand the SITEMP is to develop a large sketch of enemy positions on the terrain. He can also use the sketch to illustrate the situation when he issues the company team OPORD later in the troop-leading process. Figure

3-11 is an example of a company team enemy sketch with an enemy mechanized infantry battalion (MIBN) conducting a integrated defense.

STEP 2 - ISSUE THE WARNING ORDER (WARNING ORDER #2)

3-113. Based on his restated mission and the information compiled thus far in the troop-leading process, the commander issues as detailed a WARNO as soon as possible. The company team WARNO, usually given orally, allows subordinate units to continue with the planning and preparation activities that started with the initial WARNO. The commander should not delay issuing the order while awaiting additional information; likewise, he should not withhold needed information, even if it is somewhat incomplete. He can send updates as needed using subsequent WARNOs. As a minimum, the company team WARNO should include the elements outlined in the following paragraphs.

SITUATION (ENEMY AND FRIENDLY)

3-114. At this point in the troop-leading process, the commander has normally had time to conduct a detailed mission analysis. The goal of the WARNO is to allow his subordinates to start their own mission analysis. Provide a layout of the terrain using the five military aspects of terrain (if this was not done earlier). Include results of the enemy analysis. Give the intent and mission statements of the commander two levels up. Brief the task organization and the higher concept of the operation. Allow subordinates to copy the draft SITEMP, if available, and all available operational graphics.

MISSION

3-115. Give the restated company team mission.

Coordinating Instructions

3-116. Provide any instructions that will allow for proactive planning and preparation, including priorities of work and the unit security plan. As part of the coordinating instructions, the commander may find it useful to provide a timeline that includes an assessment of the TLP conducted at the task force, company team, and platoon levels as a means of deconflicting leader responsibilities at each level. (See Figure 3-12 for an illustration of a timeline that could be used for this purpose.) In addition, specify what types of mission-specific rehearsals (for example, battle drill rehearsals [mounted and dismounted], actions on contact, breaching, or support by fire) that you expect subordinate units to conduct within the framework of their timelines.

SERVICE SUPPORT

3-117. Address any changes to the support requirements (such as the addition of an engineer platoon) for which the XO, 1SG, or subordinate leaders may have to plan.

	RECEIPT OF MISSION	MISSION ANALYSIS	COA DEVELOPMENT	COA ANALYSIS	COA COMPARISON	COA APPROVAL	ORDERS PRODUCTION	ASSESSMENT & REFINEMENT
BATTALION TASK FORCE MDMP:								
BATTALION TASK FORCE ACTION:	Issue task force initial WARNO	Develop Initial ISR Plan	Issue WARNO; Develop COA(s); Issue initial ISR OPORD	Analyze COA(s)	Compare COA(s)	Choose COA; Final COA Analysis; Finalize ISR OPORD; WARNO	Finalize order; Finalize annexes; Finalize graphics; Issue task force OPORD; Conduct confirmation briefs; Issue hard copy graphics	Conduct task force rehearsal; Update enemy SITEMP (per ISR operation results); Coordinate Supervise Refine
INFO TO COMPANY TEAM:	Type of operation; Initial timeline; Area of operations; Movement instructions.	Task force mission; Enemy situation; Friendly situation; Updated timeline; Brigade graphics.	Initial concept of the operation					
POTENTIAL DIGITAL PRODUCTS DISSEMI-NATED:	Initial WARNO; Brigade AO overlay; Initial intel overlay.	WARNO; Battalion OPS Base Graphic	ISR order + graphics				OPS graphics; Fire support graphics; CSS graphics; Obstacle overlay; ISR FRAGO; OPORD.	
COMPANY TEAM TROOP-LEADING STEP:	**RECEIVE & ANALYZE MISSION**	**INITIATE MOVE-MENT**	**ISSUE THE WARNING ORDER**	**INITIATE MOVE-MENT**		**MAKE TENTATIVE PLAN**	**CONDUCT RECONNAISSANCE**	**COMPLETE THE PLAN**
COMPANY TEAM ACTIONS:	Conduct initial METT-TC analysis	Move to TAA	Conduct in-depth METT-TC analysis; Issue WARNO	Move to attack position or BP; Initial ISR OPORD (as required)		Develop COA(s); Analyze COA(s); Issue WARNO (initial concept of the operation); WARNO	Conduct leader's recon	Attend OPORD; War game; Finalize order; Finalize graphics; Submit BOS requirements;
POTENTIAL DIGITAL PRODUCTS DISSEMI-NATED:	Initial WARNO; Brigade AO overlay; Initial intel overlay.		Battalion OPS Base Graphic; Enemy SITEMP					
	ISSUE THE OPORD	**SUPERVISE & REFINE**						
COMPANY TEAM ACTIONS:	Issue OPORD; Conduct confirmation briefs.	Attend task force rehearsal	Coordinate Supervise Refine	Conduct company team rehearsal				
POTENTIAL DIGITAL PRODUCTS DISSEMI-NATED:	Issue graphics; OPS graphics; Fire support graphics; CSS graphics; Obstacle overlay; ISR FRAGO; Company OPORD;							
PLATOON TROOP-LEADING STEP:	**RECEIVE & ANALYZE MISSION**	**INITIATE MOVE-MENT**		**INITIATE MOVE-MENT**	**ISSUE THE WARNING ORDER**		**MAKE A TENTATIVE PLAN**	**CONDUCT RECONNAISSANCE**
PLATOON ACTIONS:	Issue Initial WARNO	Move to TAA	Conduct preparations for combat (PCCs and PCIs); Analyze METT-TC factors; Initiate battle drill SOP rehearsals	Move as directed; Continue priorities of work	Issue WARNO (enemy & friendly situation)		Issue WARNO; Attend leader's recon; Develop plan; Continue priorities of work	Attend OPORD; Conduct leader's recon; Continue priorities of work
POTENTIAL DIGITAL PRODUCTS DISSEMI-NATED:		Enemy overlay including Enemy SITEMP; Initial ISR Plan		Battalion OPS Base Graphic; Enemy SITEMP;			WARNO	
	COMPLETE THE PLAN		**ISSUE THE OPORD**	**SUPERVISE & REFINE**				
PLATOON ACTIONS:	Finalize order; Finalize graphics; Submit BOS requirements	Attend company team rehearsal	Issue OPORD	Coordi-nate Super-vise Refine	Conduct additional platoon rehearsals			
POTENTIAL DIGITAL PRODUCTS DISSEMI-NATED:			OPS graphics; Fire support graphics; CSS graphics; Obstacle overlay; ISR FRAGO; Platoon OPORD.					

Figure 3-12. Troop-leading procedures in the parallel planning process

STEP 3 - MAKE A TENTATIVE PLAN

3-118. Using results of his METT-TC analysis, his knowledge of the situation, and other available resources, the commander begins development of his tentative plan. He can use the techniques and principles outlined in the following paragraphs.

SITUATION TEMPLATE UPDATES

3-119. The commander continues to update his SITEMP using refined versions of the S2's SITEMP and the intelligence annex from the task force OPORD (both should be available by this time). He can use additional information, including results of the company team's reconnaissance and of task force reconnaissance and security operations, as it becomes available during the troop-leading process.

COA DEVELOPMENT PROCEDURES

3-120. The purpose of COA development is simple—to determine one or more ways to achieve the mission, in most cases by applying the company team's combat power to defeat the enemy at the decisive point in the battle. Normally, the commander will have time to develop only one COA. As time permits, he may develop more than one COA. The commander develops his COA (s) with as much detail as necessary to describe clearly how he plans to use his forces to achieve the unit's tasks and purpose. He focuses on the actions the unit must take at the decisive point.

3-121. When time permits, the commander should develop several COAs for the company team. The spectrum of COAs should provide enough flexibility, and cover enough different possible situations, to achieve the unit purpose against each likely enemy COA that was identified previously in the troop-leading process. In developing COAs, the commander must ensure they meet the following criteria:

- Suitability. Each COA must enable the company team to accomplish its mission while complying with the higher unit order.
- Feasibility. The company team must have the capability to successfully accomplish the COA in terms of available time, space, and resources.
- Acceptability. The advantage gained by executing the COA must justify the cost in manpower and material resources.
- Distinguishability. Each COA must be sufficiently different from the others to justify full development and consideration.
- Completeness. Development of the COA must cover the operational factors of who, what, when, where, and how.

3-122. There are normally six steps in COA development. The following paragraphs describe each step in detail.

COA Step 1 - Analyze Relative Combat Power

3-123. Combat power is created by combining the elements of maneuver, firepower, protection, leadership and information in combat against the enemy. The commander applies the effects of these elements with other

potential CS and CSS assets. The purpose of analyzing relative combat power is to identify enemy strengths and weaknesses, to identify friendly strengths and weaknesses, and to determine whether the company team has adequate combat power to defeat the force against which it is arrayed. Table 3-4 is the relative combat power analysis (RCPA) matrix and is a technique the commander may use to help analyze relative combat power.

Table 3-4. Relative combat power analysis matrix

Combat Power	Friendly Strengths	Enemy Weaknesses	Friendly Weaknesses	Enemy Strengths	Conclusions	Tactics Techniques
Maneuver						
Firepower						
Protections						
Leadership						
Information						

COA Step 2 - Generate Options

3-124. The commander must first identify the decisive points or times at which the unit will mass the effects of overwhelming firepower to achieve a specific result (with respect to terrain, enemy, and/or time) that will accomplish the unit's purpose. This will be the company team's main effort. The commander must next identify any supporting efforts; these are tasks other than the main effort that must be accomplished to allow the main effort to succeed. The commander then determines the purposes of the main effort and the supporting efforts. (**NOTE:** The main effort's purpose is directly related to the mission of the unit, while the supporting efforts' purposes relate directly to the main effort.) The commander can then identify the essential tasks that will enable the main and supporting efforts to achieve their purposes. Figure 3-13 depicts company team purposes for a breaching operation.

COA Step 3 - Array Initial Forces

3-125. The commander must then determine the specific number of combat systems necessary to accomplish each task. He should allocate resources to the main effort and continue with supporting efforts in descending order of importance. For example, the main effort in a breaching operation may require four tanks and three plows, whereas a supporting assault force, required to fight for terrain, may call for BFVs and infantry squads.

COA Step 4 - Develop Schemes of Maneuver

3-126. Applying information from the analysis of terrain and enemy, the commander links the company team's tasks in schemes of maneuver. He determines how the achievement of one task will lead to the execution of the next. He identifies the best ways to use the available terrain and how best to

employ the team's strengths against the enemy's weaknesses. The commander then develops the maneuver control measures necessary to convey the commander's intent, enhance understanding of the schemes of maneuver, prevent fratricide, and clarify the tasks and purposes of the main and supporting efforts.

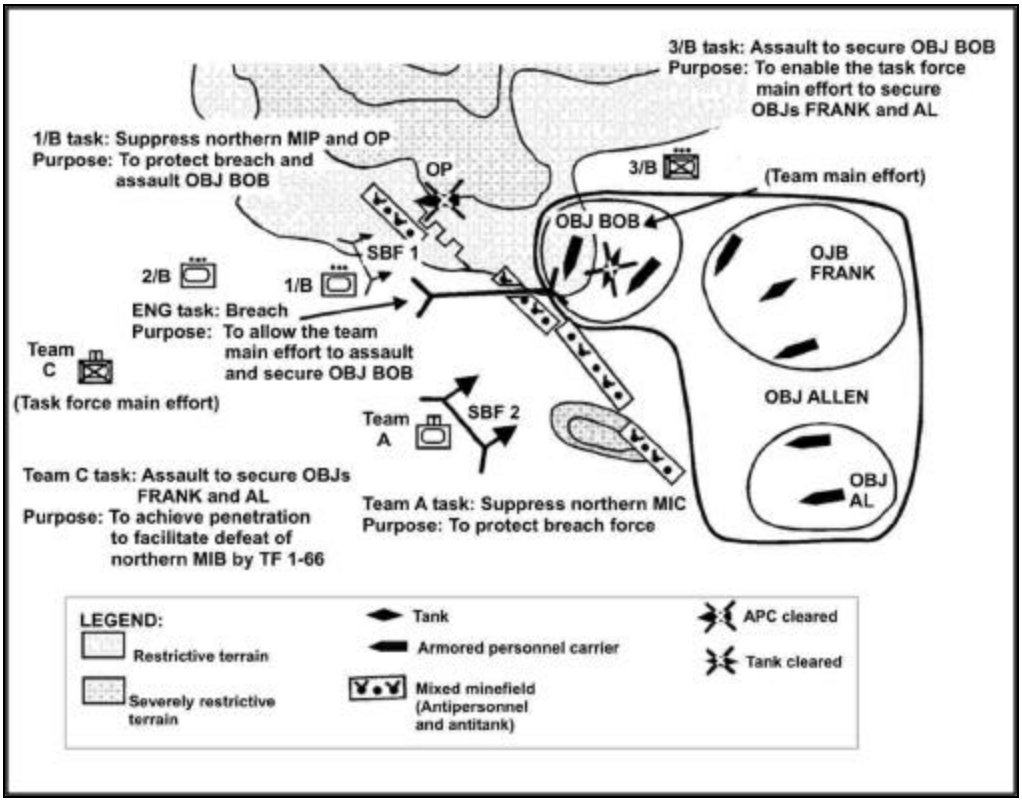


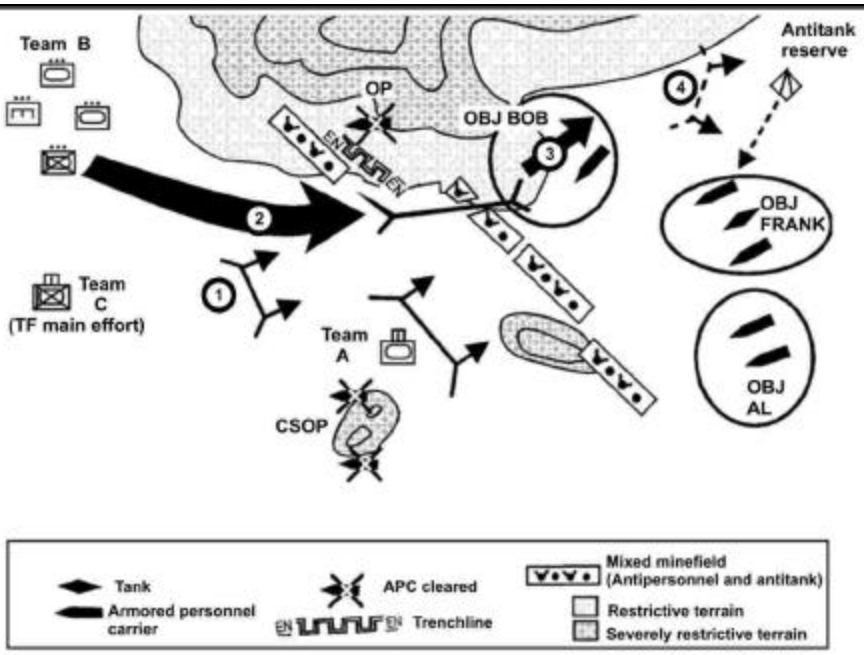
Figure 3-13. Identification of Company Team Purposes in a Breaching Operation

COA Step 5 - Assign Headquarters

3-127. The commander assigns specific elements as the main and supporting efforts.

COA Step 6 - Prepare COA Statements and Sketches

3-128. The commander's ability to prepare COA sketches and statements will depend on the amount of time available. Whenever possible, he should prepare a sketch showing each COA to clarify maneuver aspects of the COA; he should also prepare a statement describing specific actions that may occur. Figure 3-14 shows a sample COA sketch and COA statement.



COURSE OF ACTION STATEMENT

MISSION: Team B attacks at 040600 Feb 97 to breach enemy defenses vicinity OBJ BOB (NX 330159) to allow the task force main effort (Team C) to secure OBJs FRANK and AL.

COURSE OF ACTION: Team B crosses the LD at 0600 on AXIS RED behind Team A and transitions to bounding overwatch at PLD. Once Team A makes contact, Team B will support by fire to allow Team A to maneuver into position to suppress OBJs FRANK and AL. Once OBJs FRANK and AL are suppressed and obscured (precondition for execution), Team B will move forward to breach.

ACTION 1: The support force (a tank platoon from Team B, consisting of 4 M1A1s) and Team A will support by fire and suppress the security OP, infantry positions, and MIP on OBJ BOB to protect the breach force.

ACTION 2: The breach force, consisting of one tank platoon (4 tanks, 3 plows, 1 roller) followed by the engineer platoon (4 M113s, 2 MICLICs, 3 squads), will breach the obstacles on the enemy's northern flank to allow the team main effort to assault and secure OBJ BOB.

ACTION 3: Once the breach force reduces the obstacle(s), the team main effort, a mechanized infantry platoon (4 BFVs and 2 squads), will assault and clear enemy on OBJ BOB to enable the task force main effort to secure OBJs FRANK and AL.

ACTION 4: After the creation of the breach, the two tank platoons will establish support by fire to protect the eastern flank of the task force main effort as it secures OBJs FRANK and AL. The mechanized platoon and the engineer platoon will secure the breach lane to facilitate the passage of follow-on units. This is the end state of the mission.

NOTE: The COA statement is usually given orally.

Figure 3-14. Sample COA sketch and statement

ANALYSIS OF COURSE OF ACTION

3-129. If the commander has developed more that one COA, he must analyze the COAs to confirm that the criteria for valid COAs are met, to determine the advantages and disadvantages of each COA, and to visualize the flow of the battle. Typically, he war-games each friendly COA against each likely enemy COA. If time is limited, he may choose to employ the box technique of war-gaming, analyzing only the most critical event in each friendly COA against the corresponding enemy action. (**NOTE:** If the commander uses this technique, he must be prepared to conduct more detailed war-gaming later to complete the plan.)

COURSE OF ACTION COMPARISON

3-130. After war-gaming the COAs, the commander must compare them, weighing the specific advantages, disadvantages, strengths, and weaknesses of each course as noted during the war game. These attributes may pertain to the accomplishment of the company team purpose, the use of terrain, the destruction of the enemy, or any other aspect of the operation that the commander believes is important. (**NOTE:** If the commander has developed only one COA, this step is not applicable.)

3-131. The commander uses these factors as his frame of reference in tentatively selecting the best available COA. He makes the final selection of a COA (during completion of the plan) based on this comparison, taking into account results of the company team's reconnaissance and the ISR operations of the task force and brigade.

TENTATIVE PLAN WARNING ORDER (WARNING ORDER #3)

3-132. The commander may use a WARNO to outline his tentative plan for subordinates and to issue instructions for reconnaissance and movement (as necessary). The order should clearly and briefly cover key aspects of the tentative plan: the purpose and result (end state) of the operation; the company team's essential tasks; when the operation begins; the AO; the scheme of maneuver; and subordinate unit tasks and purposes.

3-133. In describing his concept, the commander should emphasize that the plan remains generally unrefined, with many of the details to be clarified through additional war-gaming and issued in the OPORD. This WARNO is important because it allows subordinates to see how the commander is developing the plan; it allows them to begin (or continue) mission analysis based on their elements' assigned tasks and purposes.

STEP 4 - INITIATE MOVEMENT

3-134. The commander initiates any movement that is necessary to continue preparations or to posture the unit for the operation. This may include movement to an assembly area, BP, or attack position; movement of reconnaissance elements; or movement to compute time-distance factors for the unit's mission.

STEP 5 - CONDUCT RECONNAISSANCE

3-135. This step covers the necessary reconnaissance that allows the commander to refine the unit's plan. Even if the company team commander has made a leader's reconnaissance with the task force commander and staff at some point during TLP, he should still conduct a reconnaissance of his own with the team's subordinate leaders. This will allow them to see as much of the terrain and enemy as possible; it should also help each leader to visualize the projected plan, and any related branch plans, more clearly.

3-136. At the team level, the leader's reconnaissance may include movement to or beyond the line of departure (LD) or a drive from the forward edge of the battlefield (FEBA) back to and through the EA along likely enemy routes. If possible, the commander should select a vantage point that provides the group with the best possible view of the decisive point.

3-137. In addition to the leader's reconnaissance, the company team may conduct more detailed reconnaissance operations. Examples include

surveillance of an area by subordinate elements, patrols by infantry squads to determine where the enemy is (and is not) located, and establishment of OPs to gain additional information. The nature of the reconnaissance, including what it covers and how long it lasts, depends on the tactical situation and time available. The commander should use the results of the COA development process to identify information and security requirements for the team's reconnaissance operations.

STEP 6 - COMPLETE THE PLAN

3-138. Completion of the plan includes several steps that transform the commander's intent and concept into a fully developed OPORD. These steps, examined in detail here, are the following:

- Select a COA.
- Conduct detailed war-gaming.
- Finalize the plan.
- Prepare the OPORD.

COMPLETE THE PLAN STEP 1 - SELECT A COA

3-139. The company team commander makes this selection based on his comparison of the alternative COAs (conducted earlier as part of troop-leading step 4, make a tentative plan), results of the team's reconnaissance, and information gained through task force and brigade ISR operations.

COMPLETE THE PLAN STEP 2 - CONDUCT DETAILED WAR-GAMING

3-140. Detailed war-gaming is normally a more time-intensive process than the initial war-gaming of the COAs and is conducted at the company team level only when the situation permits. By war-gaming the plan again, this time in more detail, the commander can better visualize how the fight will occur, determine when and where he will need to make decisions, and identify when and where he must employ CS and CSS assets. The end result of war-gaming is a fully integrated plan that includes a detailed operations overlay, a detailed direct fire plan, an integrated indirect fire plan, refined obstacle and ADA plans, and a complete company team CSS plan.

Purposes of War-gaming

3-141. The commander uses the detailed war-gaming process to assist him in accomplishing these planning and preparation objectives:

- Build additional flexibility into the plan by developing branch plans based on likely enemy COAs, or refine the COA so it addresses all likely enemy COAs.
- Develop graphic control measures (such as checkpoints, contact points, and TRPs) that facilitate control and flexibility.
- Integrate operating system assets (including fire support, engineers, air defense artillery [ADA], and NBC) with maneuver elements to support company team tasks and purposes identified in the scheme of maneuver.
- Conduct a bottom-up review of the task force plan, including integration of task force operating system assets at company

team level. This step may entail identifying required refinements, additions, and deletions to the task force plan and developing recommendations for later submission to the higher staff.

- Develop coordinating instructions.
- Complete paragraphs 3, 4, and 5 of the OPORD (as well as selected annexes if required).
- Assess on-order and be-prepared missions.
- Identify projected CSS expenditures.
- Identify projected casualties and resulting medical requirements.

War-gaming Guidelines

3-142. The commander and subordinate leaders should use the following procedures and considerations in conducting detailed war-gaming:

- The essential tasks identified during COA development can be used to drive the progress of the war game.
- Include all appropriate personnel in the war-gaming process; these may be the XO, 1SG, FSO, maintenance team chief, and others.
- Evaluate the COAs using a map, accurate sketch, or terrain model.
- Carefully consider actions on contact.
- As the war game continues, identify when and where to integrate CS and CSS assets.
- As necessary, make refinements to supplementary plans, such as those for fire support, obstacles, and ADA.
- Use additional graphic control measures to add clarity to the scheme of maneuver.

Limited War-gaming

3-143. In most instances at the company team level war-gaming must be limited to one friendly COA in order for the commander to issue an order in a timely fashion. He conducts enemy action/reaction as he determines how the company team accomplishes each task. The commander considers actions during mission execution to the expected forms of contact. As a minimum, the plan should address—

- Task and purpose to subordinate elements that support mission accomplishment.
- Task organization changes and specific tasks that attachments must conduct to support mission accomplishment.
- How the company team will maneuver based on the objective, terrain, and enemy disposition.
- Technique to control direct fires when physical contact is made.
- Effect and purpose for each fire support target.
- Graphic control measures that facilitate control and flexibility.
- Coordinating instructions.

- CSS activities to include casualty evacuation (CASEVAC) resupply, cache and vehicle maintenance and recovery.

War-gaming Techniques

3-144. The commander can choose among three basic war-gaming techniques (the box, the belt, and avenue in depth) in the analysis of friendly COAs. He and the subordinate leaders can use any one technique or a combination to help them visualize the battlefield or look at the battle in a logical sequence. In doing this, they should avoid becoming unduly concerned with the structure of the war game. Rather, they should remain focused on its purpose, adapting the war-gaming techniques as necessary to accomplish the purpose.

3-145. **Box Technique.** The box method focuses the war game on a specific area of the battlefield. This may be the objective area, the EA, or some other critical location where the decisive action will take place. Determine the size of the box based on the specific situation; it should include all of the units, friendly and enemy, that will have a direct impact on the decisive action. This technique is a good one to use when time is limited because of its focus on the decisive action. A key disadvantage, however, is that in considering only actions at the decisive point the commander may overlook other critical actions or events that could have a significant impact on the company team's mission.

3-146. **Belt Technique.** The belt technique allows the commander to divide the COA into phases or belts. This may be done in several ways, such as from PL to PL or by significant event. Each phase is then war-gamed in sequence. This approach is most effective for offensive COAs. As an example, an offensive operation can be divided into these phases or belts:

- Movement from tactical assembly areas to the LD or attack position.
- Movement from the LD to the probable line of deployment (PLD) or assault position.
- Actions at the PLD or assault position.
- Conduct of the assault or actions on the objective.
- Consolidation on the objective.

3-147. **Avenue in Depth Technique.** This method is most effective during war-gaming of a defensive COA, especially when there are several avenues of approach to consider. Using the enemy's most probable COA, the commander and subordinate leaders analyze friendly and enemy actions along one avenue of approach at a time.

3-148. **Additional war-gaming considerations.** In addition to the selected war-gaming technique, several other factors will have an impact on how the commander and subordinate leaders carry out the war game. The following discussion focuses on the participants, procedures, and other considerations for conducting the process.

3-149. ***Participants.*** As noted, the company team's subordinate leaders should assist the commander in conducting the war game. Participants may include the XO, 1SG, platoon leaders, PSGs, FSO, engineer platoon leader, ADA section leader, and company team master gunner. Ensure that

everyone who takes part thoroughly understands all projected friendly and enemy COAs and is ready to contribute to the process. At a minimum, the commander should conduct the war game with the XO playing the role of the enemy commander. (**NOTE:** Based on the team's priorities of work, some leaders listed here may not be available for the war-gaming session.)

3-150. ***Terrain.*** Incorporate the results of the leader's reconnaissance into the MCOO. Reevaluate the terrain to ensure that the classification (severely restricted, restricted, or unrestricted) is correct.

3-151. ***Enemy Capabilities.*** Update the SITEMP with new enemy information. Ensure that each participant thoroughly understands the enemy's capabilities and limitations and that each knows the difference between known and suspected enemy positions. One technique is to make leaders of the team's CS attachments responsible for learning and reporting their enemy counterparts' capabilities; for example, the FSO is responsible for threat artillery systems, the ADA section leader (if task organized to the team) for threat ADA, and so forth. Evaluate how and when the enemy can affect the company team using the seven forms of contact:

- Visual contact.
- Physical contact (direct fire contact).
- Indirect fire contact.
- Contact with obstacles of enemy or unknown origin.
- Contact with enemy or unknown aircraft.
- Situations involving NBC conditions.
- Situations involving EW tactics (such as jamming, interference, and imitative deception).

NOTE: A technique for evaluating how and when the enemy can affect the company team is the acronym OIDOCARE. This acronym is a mnemonic device ("O, I do care") used to examine potential forms of contact the company may encounter during the operation. Elements of OIDOCARE are the following:

- **Observation.** Where is the enemy likely to employ observation assets? Where and when will the company be under observation?
- **Indirect fires.** Based on the different echelons of observation where and when will the company come under indirect fires?
- **Direct fires.** Based on enemy weapon systems, terrain, and obstacles, where does the company expect to come under direct fires? From what weapon systems?
- **Obstacles.** Where and when does the company expect to encounter tactical and situational obstacles? Where does the company expect to encounter protective obstacles?
- **Chemical.** Where and when does the company expect threat NBC strikes?
- **Air.** Where and when does the company expect to encounter threat air?
- **Reserve.** Where and when does the company expect the enemy to commit its reserve?

- **EW.** Where does the company expect to receive EW attack? (**NOTE:** EW attack may occur at any point during the operation.)

3-152. ***Friendly Forces.*** Assess current maintenance and personnel status reports to determine whether the combat power of any adjacent units will affect the company team plan. For example, if the breach force (another task force element) has two inoperative plows while the team's are operational, the commander can assume that the task force will direct him to cross-attach two of his plows.

3-153. ***Assumptions.*** Specify assumptions that were made during the COA development process so that participants understand the underlying doctrinal principles and objectives.

COMPLETE THE PLAN STEP 3 - FINALIZE THE PLAN

3-154. After concluding the war-gaming process, the commander takes the actions outlined in the following paragraphs to complete the plan (including any branch plans) and wrap up preparations for the upcoming operations. He includes any additional activities that he and the team's subordinate leaders believe will contribute to unit readiness.

Begin Bottom-up Refinement

3-155. This process includes developing refinements, additions, and deletions to the task force plan and submitting them to the appropriate member of the task force staff. For example, if the task force fire support plan allocates a smoke target to screen company team movement, the commander may discover during war-gaming that the target is not in a correct position to support the team. He would then direct the team FSO to submit a change to the target list.

Finalize CSS Integration

3-156. After estimating how many casualties and disabled vehicles the company team will incur and pinpointing expected locations for these losses, the commander integrates the team's CSS requirements into paragraph 4 of the OPORD. This includes (but is not limited to) such factors as the location of unit casualty and maintenance collection points, times when company team assets will occupy them, routes to task force CSS sites, and security procedures for CSS assets. (See Chapter 10 for a more detailed discussion of CSS planning.)

Identify Command and Control Requirements

3-157. Based on their visualization of the fight, the commander and subordinate leaders identify other C2 requirements that will be necessary to ensure the success of the mission. Covered in paragraph 5 of the OPORD, these include graphic control measures, signals, locations of the commander and XO, and communications during the fight with other units and/or commanders.

Finalize Graphics

3-158. The commander must be sure to add company team graphics to the task force overlay. (**NOTE:** One technique is to use a different color to distinguish the team's operational graphics from existing task force

graphics.) Most of these additions should have been made during war-gaming. Examples could include the following:

- A designated PLD where the team will change to the bounding overwatch movement technique based on the location of an enemy combat security outpost (CSOP).
- A dismount point and corresponding entry point into a trench line.
- Additional direct fire control measures, such as TRPs.
- Additional key intervisibility lines identified during war-gaming. These may be designated as company team PLs.

COMPLETE THE PLAN STEP 4 - PREPARE THE OPORD

3-159. The company team commander begins this step by finalizing his orders products. Examples include the following items:

- The SITEMP.
- Supporting plans, including those covering maneuver, fire support, engineer support, and CSS.
- Operational graphics.
- "Visualization" products, such as maps, overlays, sketches, models, and matrices.

3-160. The commander must decide how these products will be produced and distributed to the company team's subordinate elements. One technique is to employ personnel from the team headquarters in production and distribution tasks, such as building terrain models and copying graphics or matrices. The commander must also establish a quality control system to ensure that all products are complete and accurate. (See the discussion of the functions of the company team CP later in this chapter.)

3-161. When time is short, the commander must weigh the need for a lengthy, thoroughly detailed written OPORD against the value of a relatively brief, but still well-developed, plan that he can explain orally and visualize through the use of maps and models. At the company team and platoon levels, there often is not enough time to write out every single detail of a thorough five-paragraph OPORD. Also, subordinates will find it difficult to copy pertinent information and still listen as the commander issues the order. It is advisable, therefore, to provide a detailed, but concise, document that summarizes the essentials of the order. Subordinates can then listen carefully as the commander explains (and illustrates) the details of the order, writing down only the most essential items.

STEP 7 - ISSUE THE ORDER

3-162. The OPORD should precisely explain, both verbally and visually, the commander's intent, providing enough information to ensure that all subordinate elements work toward the desired end state. When the commander has finished issuing the order, subordinate leaders should walk away with a clear mental picture of what he expects their elements to do.

OPORD FORMAT

3-163. The format of the five-paragraph OPORD is organized to help the commander paint a picture of all aspects of the operation, from the terrain to the enemy and finally to the unit's own actions from higher to lower. The format assists him in deciding what relevant details he must include and in providing subordinates with a smooth flow of information from beginning to end. At the same time, the commander must ensure that the order is not only clear and complete but also as brief as possible. If he has already addressed an item adequately in a previous WARNO, he then can simply state "no change" or provide any necessary updates. See Appendix A of this manual for a discussion of OPORD format.

LOCATION AND TIME

3-164. The commander should select a location from which to issue the OPORD that is secure and will help enhance understanding of the order. An ideal site, when time and security factors allow, is one that overlooks the battlefield. Whenever possible, the commander should avoid issuing the order during hours of darkness. If he must issue the order at night, he chooses a location (such as inside a well-lighted tent) that allows subordinates to see visual materials clearly. In daylight hours, he then takes the order group to a favorable vantage point to clarify the plan.

PRESENTATION TECHNIQUES

3-165. During the orders briefing, the commander should make use of visual materials developed earlier to help paint the picture of how the fight will unfold. Subordinates will better comprehend complex ideas and situations with the aid of a sketch, diagram, or model. The commander should further ensure that subordinates keep their maps, with graphics posted, on hand for reference. As noted, he may furnish copies of the written order (or a summary of key details). He then must present the plan clearly and logically, providing only updates (not complete restatement) of items he has covered in earlier WARNOs or FRAGOs.

CONFIRMATION BRIEF TECHNIQUES

3-166. At the conclusion of the OPORD briefing, the commander answers any questions, then conducts a walk-through confirmation brief (this is not a rehearsal) on a terrain model that provides accurate representations of the terrain, the enemy, and friendly graphics. The focus of the confirmation brief is on the elements of **what**, **why**, and **how** for execution of the company team's mission; it covers subordinates' specific tasks within the plan. The commander should avoid questioning subordinates specifically **how** they will execute their tasks because they have not yet formulated their own plans. Rather, he uses the confirmation brief to further clarify the scheme of maneuver for them and to give them a feel for how they will work in concert with one another to achieve the unit purpose. Subordinate leaders should use the confirmation brief to discuss issues related to the company team timeline and their own timelines.

STEP 8 - SUPERVISE AND REFINE

3-167. The best plan may fail if it is not managed effectively and efficiently. Throughout the troop-leading process, the commander must continue to refine the plan, conduct coordination with adjacent units, and

supervise combat preparation and execution. Inspections and rehearsals are critical elements of this step.

PRECOMBAT TRAINING

3-168. During continuous combat operations, units at all levels should have either formal or informal combat zone training programs to convert new ideas into actual practice. This allows soldiers to practice a variety of skills that will enhance their protection and endurance during extended combat. For example, after receiving his mission, the company team commander should assess the team's proficiency in the individual, leader, and collective tasks required for the upcoming mission. If he feels the team, or a subordinate element, cannot perform a task properly, he can then conduct precombat training during the planning and preparation phases.

INSPECTIONS

3-169. Inspections allow the commander to check the company team's operational readiness. The key goal is to ensure that soldiers and vehicles are fully prepared to execute the upcoming mission. Inspections also contribute to improved morale.

3-170. It is essential that the entire company team chain of command know how to conduct precombat checks (PCC) and precombat inspections (PCI) based on applicable unit SOPs and guidelines from FM 3-21.71 (FM 7-7J), ARTEP 71-1-MTP, and ARTEP 17-237-10-MTP. Leaders should focus on the readiness of mission-essential equipment and ammunition and on the mission understanding of all subordinate leaders and individual soldiers. Procedures for a comprehensive program of checks and inspections include the following:

- Perform before-operation maintenance checks; report or repair deficiencies.
- Perform prepare-to-fire checks for all weapons; report or repair deficiencies. Weapons are boresighted, and all sights are referred. Machine guns and individual weapons are test-fired, if possible.
- Perform communications checks of voice and digital systems.

- Ensure soldiers in each subordinate element understand the plan, have posted current graphics, and are in the correct uniform and mission-oriented protection posture (MOPP) level.
- Upload vehicles in accordance with unit SOP. The standardization of load plans allows the commander, XO, 1SG, or subordinate leader to quickly check accountability of equipment. It also ensures standard locations of equipment in each vehicle; this can be an important advantage when a leader is forced to switch to a different vehicle during an operation.
- Review the supply status of rations, water, fuel, oil, all types of ammunition, pyrotechnics, first-aid kits, combat lifesaver bags, MOPP suits, and batteries (for such items as flashlights, night vision devices [NVD], and NBC alarms). Direct resupply operations as necessary.
- Ensure vehicles are correctly camouflaged so they match the AO.

3-171. Each leader should observe his element throughout the process of preparation for combat. The commander should conduct the final inspection of each element once the leader reports that soldiers, vehicles, and equipment are prepared.

REHEARSALS

3-172. Rehearsals are practice sessions conducted to prepare units for an upcoming operation or event. They are essential in ensuring thorough preparation, coordination, and understanding of the commander's plan and intent. Company team commanders should never underestimate the value of rehearsals.

3-173. Effective rehearsals require leaders and, when time permits, other company team soldiers to **perform** required tasks, ideally under conditions that are as close as possible to those expected for the actual operation. At their best, rehearsals are interactive; participants maneuver their actual vehicles or use vehicle models or simulations while verbalizing their elements' actions. During every rehearsal, the focus is on the **how** element, allowing subordinates to practice the actions called for in their individual scheme of maneuver. (**NOTE:** A rehearsal is different from the process of talking through what is supposed to happen. For example, in a rehearsal, platoon leaders should actually send spot reports (SPOTREP) when reporting enemy contact, rather than simply saying, "I would send a SPOTREP now.")

Purposes of Rehearsals

3-174. The commander uses well-planned, efficiently run rehearsals to accomplish the following:

- Reinforce training and increase proficiency in critical tasks.
- Reveal weaknesses or problems in the plan, leading to further refinement of the plan or development of additional branch plans.
- Integrate the actions of subordinate elements.
- Confirm coordination requirements between the company team and adjacent units.

- Improve each soldier's understanding of the concept of the operation, the direct fire plan, anticipated contingencies, and possible actions and reactions for various situations that may arise during the operation.

3-175. **Rehearsal Considerations.** As a general guideline, rehearsals should follow the crawl-walk-run training methodology to prepare the team and subordinate elements for increasingly difficult conditions. The company team can prepare for operations using reduced-force rehearsals and/or full-dress rehearsals. These considerations apply:

- The commander conducts reduced-force rehearsals when time is limited or when the tactical situation does not permit everyone to attend. Team members who can take part practice their actions on mock-ups, sand tables, or actual terrain (usually over a smaller area than in the actual operation).
- The full-dress rehearsal is the most effective, but consumes the most time and resources. It involves virtually every soldier who will participate in the operation. If possible, it should be conducted under the same conditions (such as weather, time of day, and terrain) that the team can expect to encounter during actual operations.

3-176. **Rehearsal Types.** The company team commander may utilize several types of rehearsals in the same operation. The following paragraph discusses these types of rehearsals.

3-177. **Confirmation brief:** The commander may require the platoon leaders to conduct a confirmation brief to him immediately following the issue of a company OPORD or FRAGO in order to ensure the subordinate understands his assigned task and purpose, and his commander's intent.

3-178. **Back brief:** The commander may require the platoon leaders to back brief him once they have developed their plan to ensure it is nested with the company concept of operation, or identify problems with synchronization.

3-179. **Combined arms rehearsal.** This is the preferred rehearsal type for tank and mechanized infantry companies. The combined arms rehearsal is conducted when all subordinate OPORDs are complete. This rehearsal type involves all the elements of the company team and ensures that all subordinate plans are fully synchronized within the overall company plan. There are several techniques the commander can use in executing this type of rehearsal.

3-180. **Support rehearsal.** Support rehearsals are normally conducted by a single or limited number of battlefield operating systems, such as CSS or fire support. The company team does not normally conduct it's own support rehearsal, however the commander should be aware that his higher headquarters may, which will likely impact his 1SG/XO or his FSO. He should include this consideration in his overall company timeline.

3-181. **Battle drill or SOP rehearsal.** This rehearsal type is critical to the company team as many actions the company and platoons will take are drills and SOP. This type of rehearsal ensures that all participants understand specified technique or procedure. They are used most extensively by the platoon, squad and section. Battle drill rehearsals can effective be used early in the TLP once the commander has identified the type of mission the company will conduct. For example, if the company will be conducting an attack, the commander may require the platoons to begin some offensive battle drill rehearsals (contact drill, action drill, react to obstacle drill) while he continues the TLP. Other examples may include platoon breach procedures, clear a trench, or react to ambush. Lastly this type of rehearsal may be highly beneficial in confirming a newly attached platoon understands a specific company SOP or drill.

3-182. **Rehearsal Techniques.** Rehearsal techniques include the following:

- **Radio/Digital.** This is a reduced-force or full-force rehearsal conducted when the situation does not allow the company team to gather at one location. Subordinate elements check their communications systems (radio, FBCB2, intervehicular information [IVIS]) and rehearse key elements of the company team plan.
- **Map.** This is usually conducted as part of a confirmation brief involving subordinate leaders and/or portions of their elements. The leader uses the map and overlay to guide participants as they brief their role in the operation. If necessary, he can use a sketch map.
- **Sketch Map.** This technique can be used almost anywhere, day or night. The procedures are the same as with the terrain model rehearsal except the commander uses a sketch instead of a terrain model. This technique may be conducive to situations where a terrain model is not practical or visibility is limited. This technique may dictate a reduced force involving only key leaders.
- **Terrain Model.** This is the most preferred rehearsal technique for the company team as it helps subordinates visualize the battle in accordance with their commander's intentions. Terrain models can be constructed in a variety sizes and detail depending on the needs of the commander. Generally terrain models should be constructed where it overlooks the actual terrain the company operates on. This technique usually involves the company's key leaders but is not limited to key leaders.
- **Reduced Force.** This technique may require the same terrain as the full dress rehearsal. It differs from full dress in that it only involves key leaders of the directing unit and subordinates unit. In this technique, commander must first decide the level of leader involvement he desires. His selected leaders then rehearse the plan while traversing (usually mounted) the actual or like terrain.

- **Full-Dress.** This rehearsal recreates the entire operation on terrain similar to that over which the unit will operate. It involves every solider and system participating in the operation. Although this technique requires a significant expenditure of resources and time it also produces the most detailed understanding of the mission. This technique presents several options:
  - The company team may rehearse with platoons or other team elements going "force on force" against each other.
  - The company team trains can portray enemy forces to prompt action by the platoons or other team elements.
  - The entire team may go against another task force element.

3-183. **Rehearsal Guidelines.** The company team commander is responsible for most aspects of the team's rehearsals. The following paragraphs outline procedures and considerations that affect the rehearsal process.

3-184. **General.** The commander will select the tasks to be practiced and will control execution of the rehearsal. He will usually designate someone to role-play the enemy elements he expects to face during the operation.

3-185. **Conditions.** Rehearsal situations should be as close as possible to those expected during the actual operation. This includes the physical aspects of the rehearsal site as well as such factors as light and weather conditions.

3-186. **Actions before the OPORD is issued.** Initial WARNOs should provide subordinate leaders with sufficient detail to allow them to schedule and conduct rehearsals before the company team OPORD is issued. For example, if breach, support, and assault elements are identified in an early WARNO, leaders can begin rehearsing mission-specific tasks, drills, and SOPs for each element early in the troop-leading process. Rehearsals after the OPORD can then focus on tasks that cover integration of the entire team.

3-187. **Progression of rehearsal activities.** Rehearsals begin with soldier and leader confirmation briefs to ensure understanding of individual and unit tasks. Individual elements and the company team as a whole then use sand tables or sketches to talk through the execution of the plan. This is followed by walk-through exercises and full-speed mounted rehearsals.

3-188. **Rehearsal priorities.** The company team commander establishes a priority of rehearsals based on the time available and the relative importance of the actions to be rehearsed. As with COA development, the priority should begin at the decisive point of the operation and move on to actions that are less critical to the plan. As an example, the commander's priorities could call for rehearsal of tasks and drills in this order: actions on the objective, actions on contact, reaction to an air attack, movement formations and techniques, medical treatment and evacuation, and resupply operations.

Refinement

3-189. At all times, the company team commander must ensure that the team has an accurate picture of the enemy situation and that the plan to defeat the enemy is relevant to the enemy's current disposition. This means that the company team plan must continue to evolve as the enemy situation develops.

3-190. As discussed previously, the team will receive a constant stream of additional information about the enemy before the operation starts through a combination of team-, task force-, and brigade-level reconnaissance and security operations. The commander uses this information to continually adjust the plan as necessary. Changes to the plan and the enemy situation must be disseminated down to the lowest organizational level. Although these constant updates may cause some disruption of TLP at the platoon level, the refinement process is critical to the success of the company team plan.

NOTE: Refinement of the plan does not stop when the company team crosses the LD. Once the operation is under way, the commander continues to adjust the plan based on the enemy's actions and the terrain on which the team is operating. The commander gains additional information through reports and the company team's own development of the situation. He uses FRAGOs to update the team on refinements to the plan.

Additional Preparation Tasks

3-191. To assure himself of adequate time to focus on his own critical troop-leading tasks, the company team commander must effectively delegate the numerous preparation tasks that are part of the troop-leading process. One technique is to use members of the company team headquarters to assist in completion of these activities. Available personnel may include the company team master gunner, NBC NCO, and communications specialist and the crews from the commander's, XO's, and 1SG's vehicles. (**NOTE:** See the discussion of company team CP functions later in this chapter.) Additional preparations delegated by the commander may include, but are not limited to, the following tasks:

- Build terrain models.
- Assist in the production of visualization products such as sketches, strip maps, and overlays.
- Copy orders, graphics, and matrices.
- Create digital products based on other materials (including the SITEMP, orders, overlays, and reports).
- Record incoming information such as status reports (STATREP), WARNOs, and FRAGOs.
- Continuously refine the SITEMP using the latest intelligence.
- Distribute the updated SITEMP to all company team elements.
- Enforce the company team timeline.

- Receive standard reports from company team elements.
- Pass required reports to the task force.
- Track unit battle preparations and logistical and maintenance status.

CONSIDERATIONS FOR ACCELERATED TROOP-LEADING PROCEDURES

3-192. When there is not enough time to conduct all eight troop-leading steps in detail, such as when a change of mission occurs after an operation is in progress, the company team commander must understand how to trim the procedures to save time. Most steps of these abbreviated TLP are done mentally, but the commander skips none of the steps. Once the order is received, he conducts a quick map reconnaissance, analyzes the mission using the factors of METT-TC, and sends for the subordinate leaders. He makes sure each leader posts the minimum required control measures on his maps, then issues a FRAGO covering the key elements of the enemy and friendly situations, mission, commander's intent, and concept of the operation. The service support and command and signal paragraphs can be deleted if they are unchanged or covered by SOP. The commander and subordinate leaders may also conduct a quick walk-through rehearsal of critical elements of the maneuver plan using a hastily prepared terrain model or sand table.

3-193. In some cases, there may not be enough time even for these shortened procedures. The company team may have to move out and receive FRAGOs from the task force by radio or at the next scheduled halt. It then becomes critical for the team commander to send FRAGOs of his own to the subordinate leaders explaining the team's purpose within the overall task force maneuver plan.

3-194. At all times, the commander, XO, 1SG, and subordinate leaders share the responsibility for keeping the team informed of the ever-changing enemy and friendly situations. They accomplish this by monitoring the task force net and issuing frequent updates to their elements using available communications assets. Digital information systems (such as FBCB2, IVIS and Enhanced Position Location Reporting System [EPLRS]) and global positioning systems (GPS) are valuable tools when the company team is forced to use abbreviated TLP and FRAGOs. These systems allow the commander to communicate information quickly and accurately; he can also use them to designate waypoints to assist in navigation and TRPs to assist in weapons orientation.

3-195. Other keys to success when abbreviated procedures are in effect include a well-trained company team; clearly developed, thoroughly understood SOPs; and an understanding by all members of the team of the current tactical situation. Whenever time is available, however, there is no substitute for effective, thorough TLP. The odds of success increase still further when detailed planning and rehearsals are conducted prior to an operation, even if time is limited. Successful commanders and leaders make the most of every available minute.

SUCCESSION OF COMMAND

3-196. The company team must treat the succession of command as a type of drill. The commander must ensure that all leaders understand the procedures required for a smooth succession; ideally, he should conduct rehearsals of the succession process. The normal succession of command in a company team is the following:

- Commander.
- XO.
- Platoon leaders.
- FSO.
- 1SG.
- NCOs by seniority.

3-197. When casualties or other battlefield factors necessitate succession, the new commander acts quickly to reestablish the chain of command. He establishes communications with the task force and all elements of the company team and informs them of the situation. (**NOTE:** All elements of the company team should have preset their radios to facilitate a smooth transition in case a change of command becomes necessary.) The new commander compiles status reports within the company team, receives and analyzes any new orders from the task force, and continues operations. He issues FRAGOs as required.

NOTE: In most situations, the leader in the best position to control the company team fight should assume command. For example, the platoon leader of the assault force may have a better understanding of a critical part of the battle than does the XO and would be better suited to take command until the XO is in position to do so.

COMMAND AND SUPPORT RELATIONSHIPS

3-198. Nonorganic combat and CS assets can significantly enhance the company team's combat capability. These elements support the company team under established command and support relationships. Regardless of the nature of the relationship, the company team commander is responsible for the integration and synchronization of these assets within the team's scheme of maneuver.

COMMAND RELATIONSHIPS

3-199. The command relationship defines the degree to which a command owns, controls, and supports various elements of another unit, such as the company team. There are four types of command relationships:

- **Organic.** The subordinate unit is listed in the higher unit's table of organization and equipment (TOE) or modified table of organization and equipment (MTOE).
- **Assigned.** Units or personnel are placed in an organization on a relatively permanent basis. The gaining headquarters controls, administers, and provides logistical support to the subordinate units.

- **Attached.** This is the temporary placement of units or personnel in an organization. The gaining headquarters exercises the same degree of C2 as it does for organic units. This responsibility also includes logistical support, but rarely covers administrative actions.
- **OPCON.** OPCON authority allows the gaining commander to direct units or personnel to accomplish specific missions or tasks, usually limited by function, time, or location. The commander can deploy these units and retain or assign tactical control. OPCON does not include administrative or logistical support.

SUPPORT RELATIONSHIPS

3-200. Supporting and supported units share specific relationships and responsibilities. For example, the assigning headquarters retains both logistical support responsibility and the authority to reorganize or reassign all or part of a supporting force. Although support relationships usually do not occur at the company team level, it is important to understand how they affect the type of support the task force or brigade provides and/or receives. The following paragraphs discuss the four types of support relationships.

Direct Support

3-201. The DS unit provides support in response to a direct request from another unit. It is not attached to or under the command of the supported unit, but it is required to report directly to that unit and provide any requested support. DS units also must provide or arrange their own support. An example of this type of support unit during defensive operations is a task force DS engineer company. In the offense, operating system assets may be tasked to provide DS to the company team (normally when it is the task force main effort). In light/heavy operations, tank sections, platoons, and companies may serve as DS elements.

Reinforcing

3-202. In this type of support, a unit provides reinforcing fires or support for another unit; as a secondary mission, it remains responsive for DS requests.

General Support

3-203. The GS unit provides support to the supported force as a whole and not to any particular subunit. GS units are responsible for their own logistical support. From the company team perspective, these units provide area, not unit, support. An example of a GS unit would be BSFVs or Bradley Linebackers attached to the brigade but positioned in the task force AO to cover air avenues of approach into the brigade rear.

General Support Reinforcing

3-204. In addition to performing its primary support tasks, the supporting unit in this type of relationship has the secondary mission of providing reinforcing fires to another force. This relationship usually pertains to artillery units.

SECTION III - CONTROL

3-205. Control, the counterpart of command, is the process by which the commander follows up a decision and minimizes deviation from his concept. It entails supervision of all aspects of the operation, including synchronization of all systems and activities.

RELEVANT INFORMATION

3-206. Relevant information (RI) is all information of importance to the commander in the exercise of C2. Information is relevant to the company commander if it supports his exercise of C2 for the mission, and it is accurate, timely, usable, complete, precise, and reliable. RI consists of information from METT-TC that applies to accomplishing the mission. There are two categories of RI—commander's critical information requirements (CCIR) and information requirements (IR) (For a detailed discussion of CCIR and IR see the decision-making section in this manual).

3-207. Mutual exchange of information within the company occurs through FBCB2 or FM. Clarity of language, either written or spoken, is crucial in preventing misunderstanding or misinterpretation. All communications should use language that is simple, clear, and direct. A common understanding and use of doctrinal procedures, graphics, and terms shortens the amount of explicit communication needed to convey or explain orders and reports and facilitates information relevance.

OPERATIONAL PICTURE AND COMMON OPERATIONAL PICTURE

3-208. All commands maintain an operational picture based on the information they receive. An operational picture is a single display of RI within a commander's area of interest. A commander's operational picture is his map board or his FBCB2 screen if equipped. In a digital environment, the rapid sharing of information between the brigade, task force, company and supporting units creates a common operational picture (COP) throughout the force. The COP is an operational picture tailored to the user's requirements, based on information shared by more than one command. The COP is the basis for achieving situational understanding at all echelons. Subordinates use the COP in conjunction with the commander's intent to guide their exercise of disciplined initiative in mission command.

SEEING THE BATTLEFIELD

3-209. Seeing the battlefield is a cognitive activity in which the commander forms a clear mental "picture" of relevant information applied to the tactical situation regarding the terrain, enemy and friendly forces (see Figure 3-15). The commander's knowledge (formerly discussed in earlier doctrine as situational awareness) of these three components is the foundation by which he achieves situational understanding. The commander's ability to "see the battlefield" accurately is enhanced by the COP and systems like FBCB2; yet it remains solely a cognitive function and to some degree is experience dependant. Regardless of systems or experience level, the commander is responsible for learning and developing techniques that allow him to rapidly process incoming information into knowledge and mentally track the tactical situation. Personal preparation is absolutely critical to any leader's performance during operational execution. The commander must carefully evaluate what he will be required to do during the battle and then take the necessary actions to prepare for the upcoming operation.

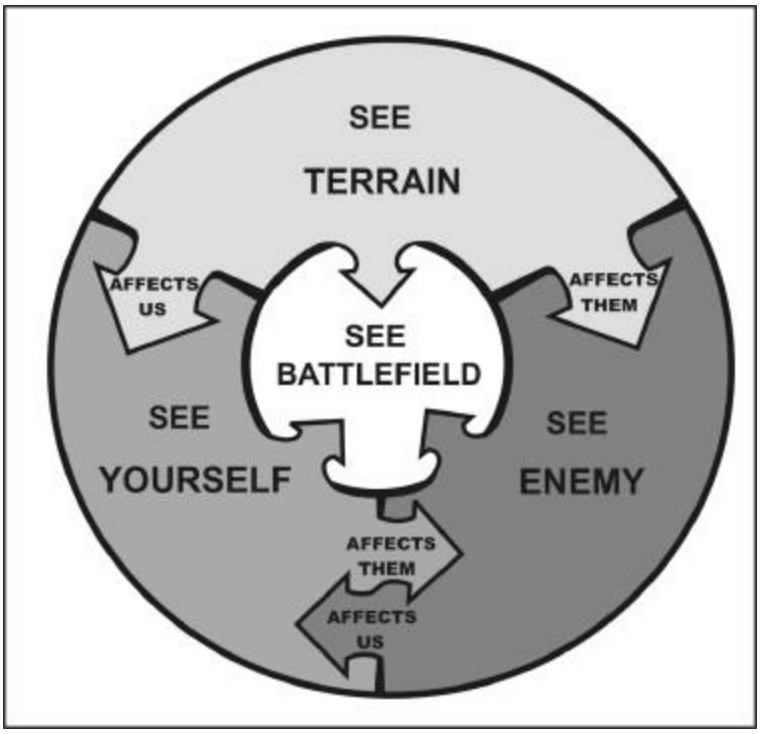


Figure 3-15. Seeing the Battlefield

SITUATIONAL UNDERSTANDING

3-210. The commander achieves situational understanding when he understands the relevant terrain and the relationship between friendly and enemy forces in time and space and foresees opportunities for mission accomplishment as well as potential threats. He does this by applying his experience, judgment, and intuition to his knowledge of the battlefield and the COP. Simply stated situational understanding is not only seeing the battlefield, but also understanding the actions, reactions and counter-actions of the impending engagement. The commander's situational understanding of the current state allows him to visualize his desired end state (mission accomplishment) and a sequence of events that will achieve it. (See FM 6-0 [FM 100-34] for a more detailed discussion on SU).

DECISION-MAKING

3-211. For the company team commander and all subordinate leaders, situational understanding is the basis for making sound, quick tactical decisions. It allows them to form logical conclusions and to make decisions that anticipate future events. In combat operations the commander will be exposed to an enormous amount of information from multiple sources simultaneously. Company team commanders must manage this flow to only relevant information in order to maintain their situational understanding and visualization of the operation. The two categories of RI are the CCIR and IR.

Commander's Critical Information Requirements

3-212. CCIR are elements of information required by the commander that directly affect decision-making and dictate the successful execution of military operations. Commanders designate CCIR to let subordinates know what information is critical to his decision-making. CCIR are composed of priority intelligence requirements (PIR) (*what do I need to know about the enemy to make a decision*) and friendly forces information requirements (FFIR) (*what do I need to know about myself to make a decision?*). A third element, essential elements of friendly information (EEFI) (*what information about myself do I want to keep from the enemy?*) is not *per se* part of the CCIR; however, EEFI become a priority once the company team commander states them (see Figure 3-16).

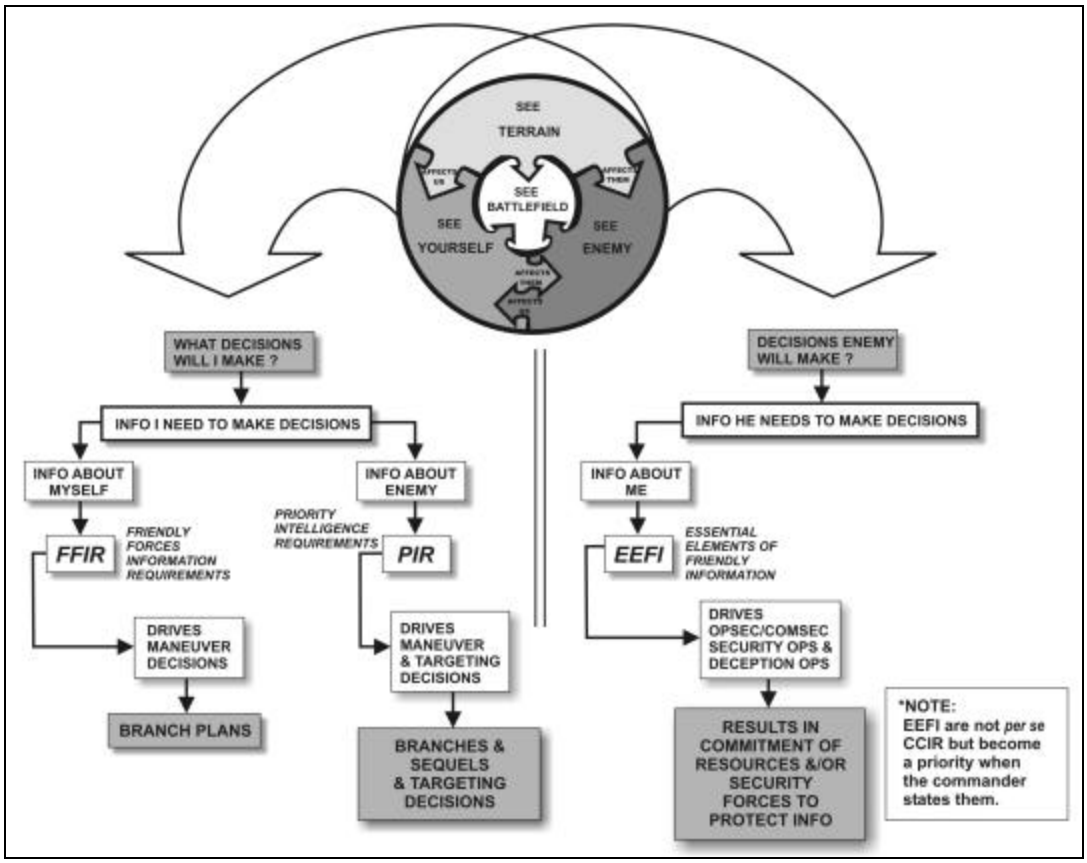


Figure 3-16. Commander's Critical Information Requirements

3-213. CCIR support the company commander's decision points, branch plans, and security measures. Figures 3-17 through Figures 3-19 illustrate examples of decisions that a company team commander could make and the CCIR that would support them.

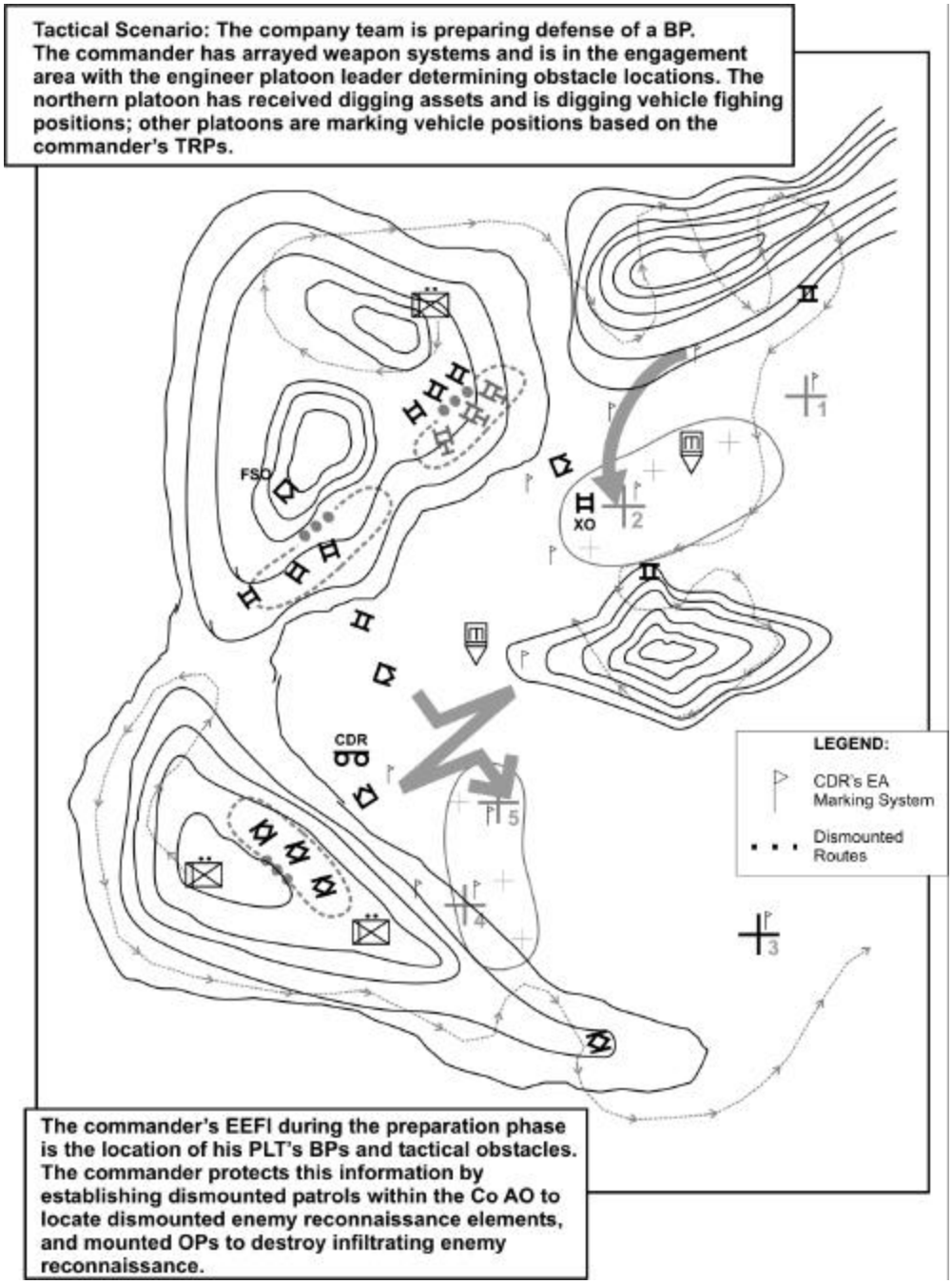


Figure 3-17. Example of Security Measures to Protect Company Team EEFI

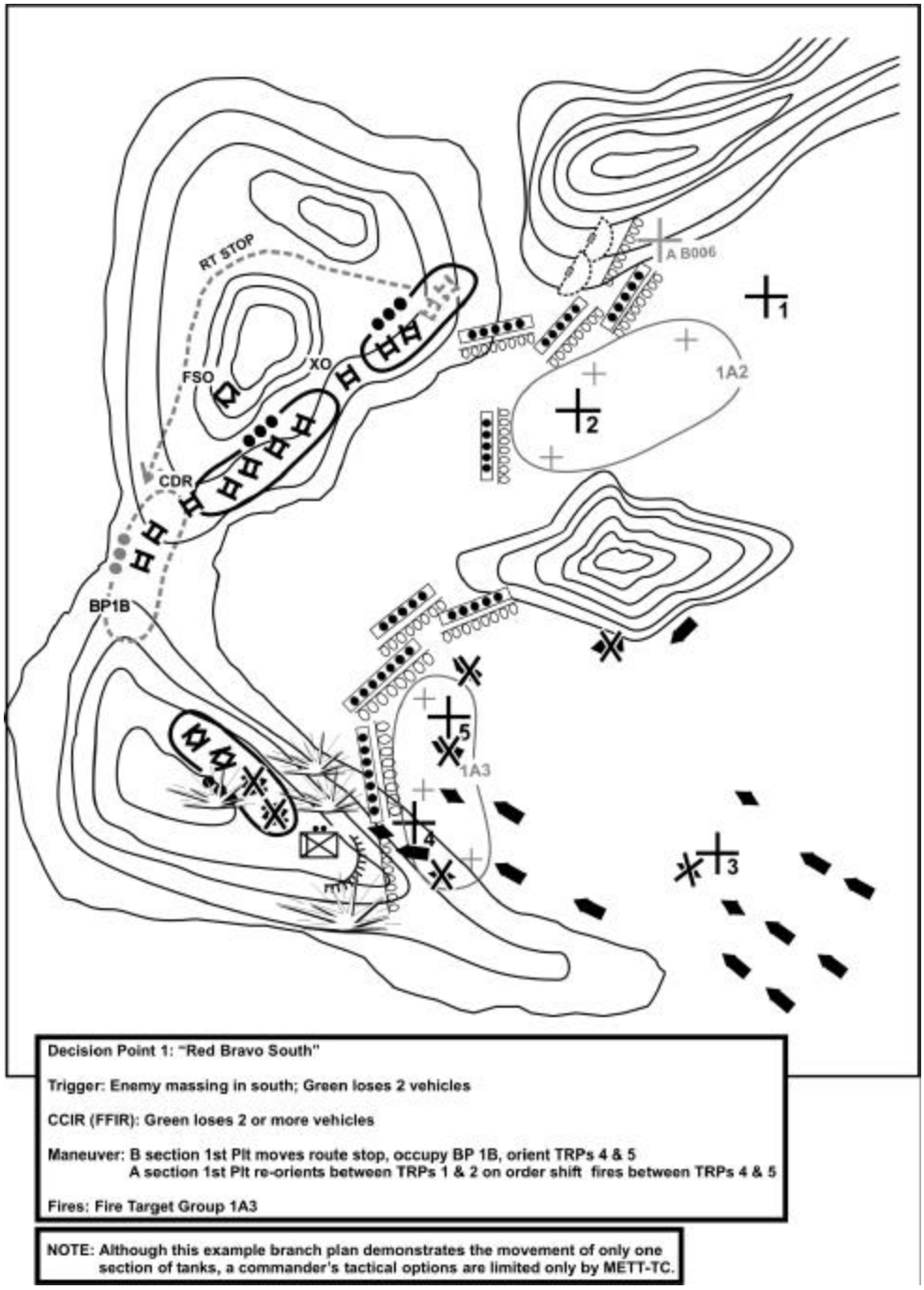
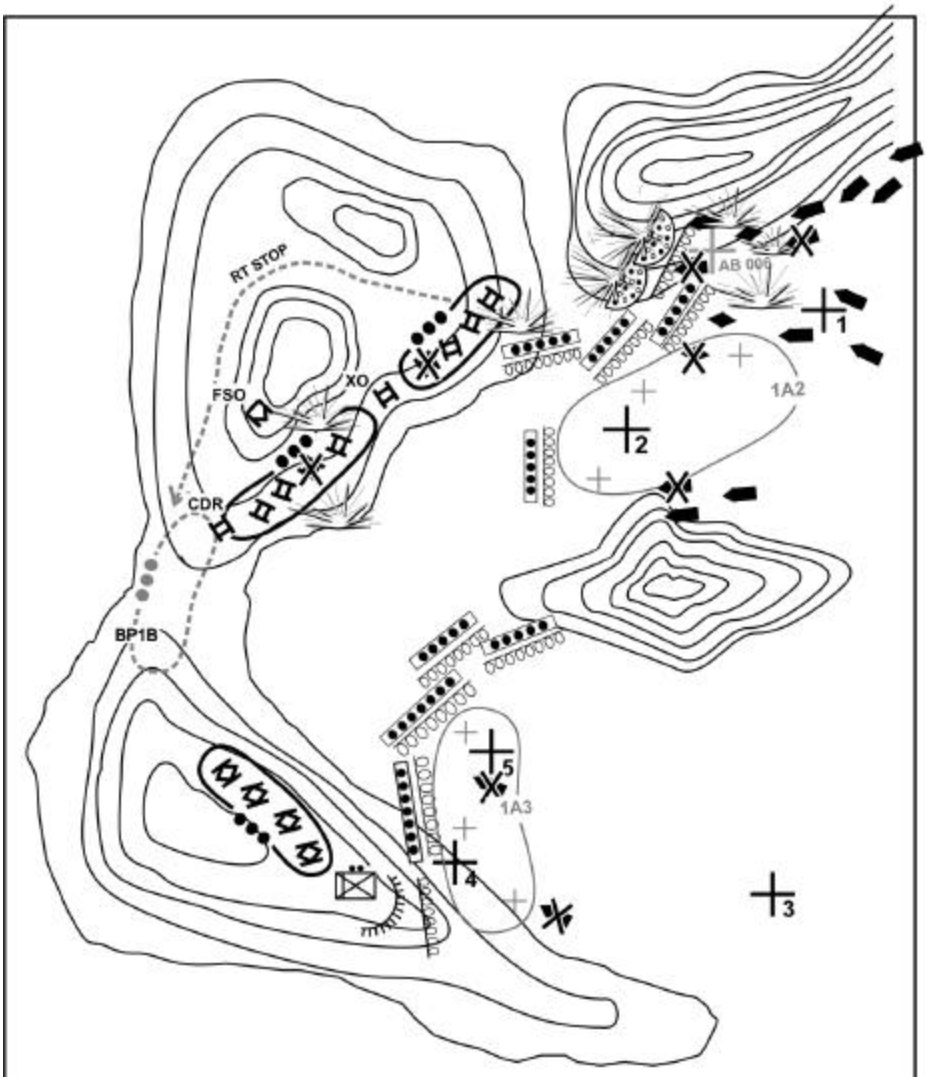


Figure 3-18. Example of an FFIR-Driven Decision Point for a Company Team



Decision Point 2: "MOPMS North"

Trigger: Enemy masses in north, attempting woodline penetration

CCIR (PIR): Will enemy attempt to envelope the northern flank through the northern trail network?

Maneuver: Shift fires to TRP 1 & 2

Fires: MTR TRG AB 006

NOTE: Although this example PIR driven decision point illustrates the employment of a company countermobility asset, it could easily involve a maneuver branch plan. A commander's tactical options are limited only by METT-TC.

Figure 3-19. Example of a PIR-Driven Decision Point for a Company Team

Information Requirements

3-214. IR are all of the information elements required by the commander for the successful execution of an operation, that is, all elements necessary to address the factors of METT-TC. There will be different IR for the commander depending on where he is in the operations process.

3-215. **IR During Planning and Preparation.** IR during planning and preparation are voids in relevant information the commander requires to accomplish step 6 of the TLP (complete the plan). These voids in information could be answered by task force assets in execution of ISR operations already under way or through RFIs to the task force staff. IR may also be answered by the company during step 5 of the TLP (conduct reconnaissance). Example of IR during planning and preparation include the following:

- Does this mobility corridor support tactical movement of the company?
- Which of these two routes best support movement of the company?
- Is Salt Creek an obstacle to our maneuver (for example, because of steep banks or limited fords)?
- Will wadi X provide cover and concealment to the breach force in our approach?
- Has this combat security outpost been confirmed?
- What is the civil population's sentiment toward us in the village we will be moving through?

3-216. **IR During Execution.** Inevitably, there will be outstanding voids in information during execution that must be addressed by the company during its execution or by monitoring of adjacent units and ISR reporting. During execution, however, the commander's IR are focused more on control of the operation. Generally, a company's execution IR are routine by nature but still required by the commander to successfully exercise C2. Execution IR are usually answered as a matter of SOPs that the commander has established. These IR generally govern the execution of movement and fires (event-driven actions). Examples of execution IR include the following:

- The report of a phase line triggers execution of a target in the company indirect fire plan.
- A bounding platoon's establishment of the next overwatch position triggers the movement of the next platoon.
- Visual contact with enemy breaching assets alert the commander to the enemy's likely point of penetration and/or the redistribution of fire.
- Visual contact with a specific enemy echelon triggers a company maneuver event, such as movement from hide positions to BPs.
- An enemy or friendly event triggers displacement to a subsequent BP.

BATTLESPACE

3-217. The ability to see the battlefield provides the commander with important tactical information, including friendly and enemy positions and relevant terrain. In turn, complete understanding of the military significance of this picture requires knowledge of the concept of battlespace; this is the key element in the intellectual process of visualizing the battlefield.

3-218. Battlespace is defined by several battlefield factors: the locations of friendly forces, including the team's individual elements and OPs; the effects of terrain, weather, and movement; and the ranges of all available weapons and sensing systems. Each subordinate element has its own battlespace. The company team's total battlespace is the sum of the individual elements' battlespace. The team battlespace is not restricted by boundaries; it can overlap the battlespace of adjacent units.

3-219. Battlespace has applications in all phases of mission planning, preparation, and execution. During the planning process, it is a critical factor in the selection of the movement axis as well as tentative positions and potential EAs. In the preparation phase, battlespace information aids leaders in determining where vehicle positions will be sited and to what level they will be prepared (dug). Once mission execution begins, the commander's knowledge of his battlespace is critical to his ability to issue timely and effective orders as the situation changes.

3-220. The importance of battlespace demands that the company team commander direct much of his battle command effort toward managing and enhancing his space. He must be aware at every moment of how battlespace is changing as friendly and enemy forces move and as terrain and visibility conditions change. As the operation progresses, the commander must take active measures to shape the battlespace to his best advantage.

3-221. One vital step in this process is to eliminate or reduce any gaps, or dead space, within the company team's battlespace. The commander can accomplish this in several ways. In the offense, for example, he can maintain an overwatch element during movement through a choke point or a danger area. In the defense, he can emplace OPs or reposition elements or individual vehicles to cover potential gaps in the team's battlespace. In all cases, the company team's position in relation to other friendly elements is an important factor in defining and enhancing the battlespace. The commander can shape his space more effectively if he applies the principles of mutual support and thorough coordination with adjacent units.

REPORTING

3-222. Reports exist to support the commander and to assist him in assessing his critical information requirements. Their format and use is normally mandated by unit SOP. With some exceptions, reports are not tied to a fixed schedule. Rather, they are submitted in these circumstances:

- On request or on order.
- When a change in the situation warrants.
- As necessary to keep the higher commander informed.

CYCLE OF REPORTING

3-223. In serving their primary purpose of keeping higher headquarters and adjacent units informed of changes in the situation, reports must be complete and accurate; at the same time, leaders must ensure that their reports are neither overly complex nor too frequent. As a general rule, leaders send increasingly detailed reports as the situation develops and as more information (and more time) becomes available during an operation. This concept is known as the cycle of reporting.

3-224. As an example of this cycle, a platoon leader who encounters an enemy force immediately sends a contact report to the company team commander and then initiates actions on contact. Once he has developed the situation, he sends a situation report (SITREP) that outlines the nature of the contact, his own situation, and his recommendation of a COA in response to the contact. After executing the COA directed by the commander, the platoon leader sends an updated SITREP (in this case, a closure report) to inform the commander of the result of the operation (again covering how the situation has changed).

REPORT GUIDELINES

3-225. Leaders at all levels should keep the following considerations in mind in preparing, submitting, and using reports:

- Send only the parts or lines of a report that contain new information or changes. This will help to prevent overloading of radio nets.
- Reports have prescribed formats to ensure completeness of the information that is transmitted. The company team SOP should outline the correct format for each report the unit normally uses. The SOP should also explain how each report is used and under what conditions it is to be submitted.
- At the same time, however, users must remember that timely reporting, especially of enemy activity, is critical in fast-moving tactical situations. Do not delay reports for the sole purpose of assuring the correct format; report accurate information as quickly as possible!
- Use the local time zone for all reports unless directed otherwise.

TYPES OF REPORTS

3-226. Company team commanders and other leaders receive and send reports in five general categories. Refer to the applicable SOP for unit-specific information on these groups. In general, company-level reports include the following:

- **Operations Reports.** These include the following:
  - Contact report and SPOTREP, used to report enemy activity.
  - SITREP. Several variations of the SITREP are also available, including the modified SITREP, the SALT report (a modified SITREP that is used to quickly summarize the enemy situation by covering only the aspects of size,

activity, location, and time), and the closure report, sent to make a final report on the end state or result of an operation or action.

- Combat power report, which a unit uses to send assessments of friendly combat power to its higher headquarters.
- Sensitive items report (SENSEREP), used to relay the status and accountability of sensitive items to higher headquarters.
- Reports covering physical aspects of the AO. These include the report for bridges, overpasses, culverts, underpasses, or tunnels, known as the BRIDGEREP; the report for fords, ferries, and other water crossing sites, known as the CROSSREP; the route reconnaissance report, known as the ROUTEREP; the obstacle report; and the bypass report.

- **Intelligence Reports.** These include the intelligence summary report and the MIJI report.
- **Logistics Reports.** These include equipment status reports (known as ESTAT), battle loss SPOTREPs, ammunition status reports, ammunition requests, POL status reports, and POL requests.
- **Personnel Reports.** These include personnel battle loss reports and MEDEVAC requests.
- **NBC Reports.** These include observer's initial reports (NBC-1); immediate warning of expected contamination reports (NBC-3); reports of NBC hazards by monitoring, survey, or reconnaissance (NBC-4); and reports of areas of contamination (NBC-5).

STANDING OPERATING PROCEDURES

3-227. SOPs articulate how the company team will conduct certain operations (or component actions within an operation). A well-rehearsed tactical SOP ensures quick, predictable actions by members of the team. It standardizes procedures for tactical road marches, assembly areas, communications, maneuver, engagement area development, CS, and CSS, as well as any other operations designated as critical by the commander. An effective SOP normally delegates responsibility for specific tasks to specific subordinate elements or individuals. Examples of SOPs are discussed throughout this manual.

3-228. The maneuver portion of the company team SOP helps leaders to make quick, accurate decisions; in turn, this enhances the team's ability to maintain the initiative, even when unexpected contact occurs. A maneuver SOP normally consists of a series of maneuver plans, sometimes referred to as plays that can be executed with slight modifications based on a timely METT-TC analysis. Unlike platoon battle drills (discussed in Chapter 5), plays allow the commander to account for friendly task organization, specific terrain, and a specific enemy. As a result, the maneuver SOP for a unit whose primary mission is to fight an infantry-based enemy in restricted terrain must be significantly different from that of a unit that must fight a mechanized enemy force in desert terrain. An effective

technique in development of maneuver plays is to develop a sketch and statement similar to the COA sketch and statement, which were discussed earlier in this chapter. Figure 3-20 illustrates an example of a play from a company team maneuver SOP.

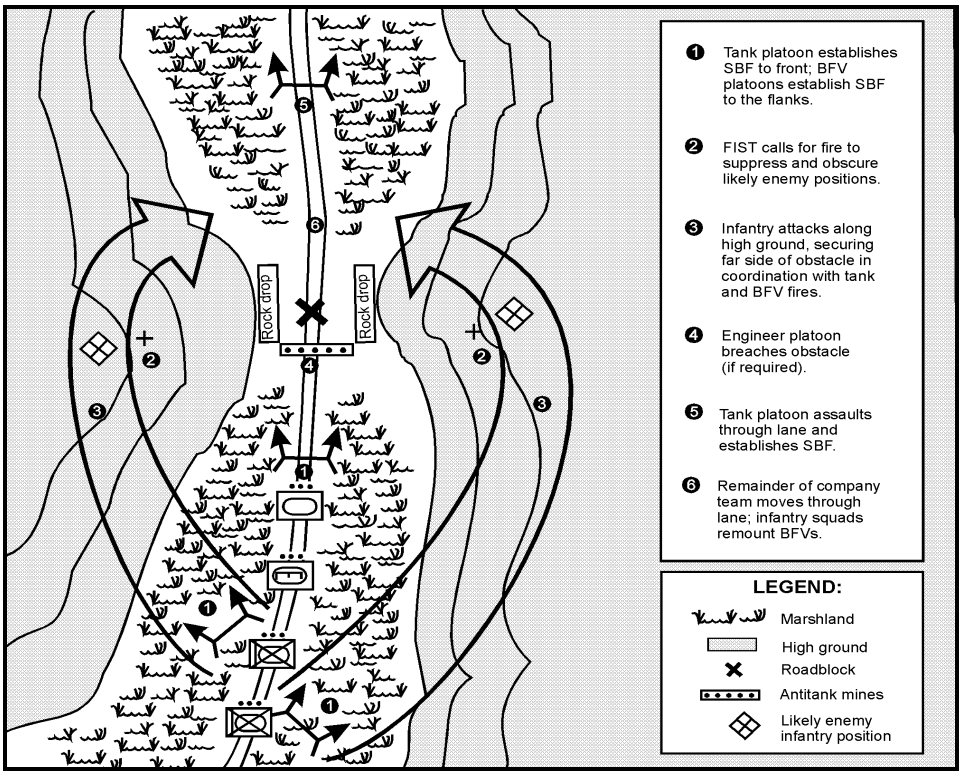


Figure 3-20. Example SOP Maneuver Play for Securing a Choke Point

COMMUNICATIONS

INTRODUCTION

3-229. The company team communicates to control subordinate elements and weapons, to gather and pass information, and to call for fires. The commander must carefully plan the use of the team's communications resources to ensure that he maintains redundancy and flexibility. He must understand the capabilities and limitations of the various means of communications available to the company team and the role that METT-TC factors play in determining which means will be used in a given situation.

3-230. SOPs are a critical element of company team communications. They may prescribe when to use certain methods or establish priorities for reports and other types of transmissions. For units with digital capability, SOPs should standardize graphics and dictate how overlays are passed from the top down and from the bottom up.

MEANS OF COMMUNICATIONS

3-231. The following discussion covers the capabilities, limitations, advantages, and disadvantages of the various means of communications available to the company team.

Messengers

3-232. When security conditions, resources, and time permit, the use of messengers is the preferred means of communications for the company team. It is the most secure means and generally is also very flexible and reliable. Messengers can deliver fire plans, status reports (STATREP), and various types of messages. If possible, lengthy messages sent by messenger should be written to prevent confusion.

Wire

3-233. This method of communications is especially effective in static positions. The company team may employ a hot loop in defensive positions, OPs, and assembly areas. Wire is both secure and reliable, but it imposes strict limits on the mobility of the user. This could interfere with unit TLP or other priorities of work. (**NOTE:** Wire can also be used on M1-series tanks and BFVs to facilitate communications with dismounted elements working with the unit. Wire is routed from inside the vehicle to an externally mounted phone.)

Visual Signals

3-234. Visual communications are valuable in identifying friendly forces or transmitting prearranged messages quickly over short distances. Standard hand-and-arm or flag signals work well during periods of good visibility. (See FM 3-25.60 [FM 21-60] for a description of hand-and-arm signals.) Crews can use no-power thermal paper, flashlights, chemical lights, or other devices during periods of limited visibility, but they must exercise extreme care to avoid alerting the enemy to friendly intentions. Pyrotechnic ammunition can also be used for visual signaling. The meaning of these signals must be specified in paragraph 5 of the OPORD or by unit SOP.

Sound Signals

3-235. This form of communications is mainly used to attract attention, transmit prearranged messages, and spread alarms. Sound signals, however, carry only short distances, and their range and clarity are greatly reduced by battle noise. In addition, since they are open to enemy interception, use of sound signals may be restricted for security reasons. They must be kept simple to avoid creating confusion. Pre-arranged meanings for sound signals must be covered in unit SOPs and SOIs.

Radio

3-236. The radio is the company team's most flexible, most frequently used means of communications. It can quickly transmit information over long distances with great accuracy. It is also the least secure means, although secure equipment and the ability of Single Channel Ground and Airborne Radio System (SINCGARS) to frequency-hop provide the company team with protection against most enemy direction-finding, interception, and jamming capabilities. To maintain effective radio communications, leaders must strictly enforce proper radio discipline and procedures and adhere to the following guidelines:

- Keep radio transmissions short (10 seconds or less); break up longer messages into short transmissions.
- Make clear, concise transmissions.
- When direct radio contact is broken, set up relays or go to high ground.
- Submit initial contact reports immediately, then send additional information later.
- Prioritize transmissions.

Digital (Force XXI Battle Command, Brigade And Below)

3-237. FBCB2 is the foundation system for Army Battle Command System (ABCS) and the tactical internet (TI). Mounted on most of the vehicles in the company team, each system is linked to a Precision Lightweight Global Positional System Receiver (PLGR) and a SINCGARS or EPLRS radio. Each FBCB2 generates and transmits its own position location. Collectively, the FBCB2 systems generate the Blue SA picture. Operators utilize FBCB2 to generate threat SPOTREPs, which create the majority of the Red (enemy) picture at the tactical level. The messaging, reporting, and orders/graphics capabilities of the system support battle command for each battlefield functional area (see Figure 3-21).

3-238. FBCB2 receives data across the TI via the internet controller (INC). The INC is a tactical router built into the SINCGARS radio system. The enhanced position location reporting system (EPLRS) data radio and the SINCGARS data/voice radio transmit/receive digital information between vehicles. Units equipped with FBCB2 must use precise SOPs to dictate how the unit and specific users will send and receive information from the top down and from the bottom up.

Figure 3-21. FBCB2

FM VERSUS DIGITAL COMMUNICATIONS

3-239. Whether to use FM or digital means for communication is a function of the situation and SOPs. Even though both systems are critical for effective C2 at all levels, FM will remain the primary method for control at company and below during operations. Some general considerations can help guide the understanding of when to use which mechanism at what time.

3-240. FM will be the primary method of communications when maneuver elements are in contact and time is a critical factor. Staffs at brigade and battalion level must remain sensitive to the difficulty and danger of utilizing digital systems when moving or in contact and should not expect immediate digital reports under those conditions. Digital systems are used for reporting combat information when not in direct fire contact. Companies should develop FBCB2 reporting SOPs that specify the protocol for turning FM reports received by platoons in contact into the digital reports that generate the COP on FBCB2.

3-241. Other general guidelines include—

- Initial contact at any echelon within the company team should be reported on FM voice; this alerts the net that a digital threat spot reports will follow as soon as possible in order to generate Red SA.
- Elements moving about the AO will utilize FM voice unless they can stop and generate a digital message or report.

- Emergency logistical requests, especially CASEVAC requests, should be initiated on FM voice with a follow-up digital report if possible.
- Calls for fire on targets of opportunity should be sent on FM voice; team FISTs submit digitally to AFATDS.
- Planned calls for fire from FISTs in the initial part of an engagement should be sent digitally.
- Routine logistical reports and requests should be sent digitally.
- Routine reports prior to and following combat should be sent digitally.
- Orders, plans, and graphics should be sent digitally, accompanied by an FM voice call to alert recipients that they have critical information being sent to them. Additionally, the transmitting element should request a verbal acknowledgement of both receipt and understanding of the transmitted information by an appropriate soldier (usually not the computer operator).
- Obstacle and NBC-1 reports should be sent initially by voice followed by digital reports to generate a geo-referenced message portraying the obstacle/contaminated area across the network.

COMPANY TEAM RADIO NETS

3-242. The company team transmits and receives tactical information over a variety of radio nets. The following paragraphs outline communications equipment and procedures used by the team's leaders and its subordinate and attached elements. Figure 3-22 illustrates the organization of the company team radio net.

Commander and XO

3-243. The company team commander normally operates on the company team command net and monitors the task force command net. This allows the commander to fight the team effectively while remaining responsive to the task force commander as necessary. He operates on the task force net to provide tactical assessments to the task force commander; to send critical information to the task force commander and/or other company team commanders; and to respond as required by the situation or as requested by the task force commander. The XO monitors the team net and operates on the task force net, making him responsive to both the team and task force commanders. He normally handles routine traffic on the task force net.

Platoon Leader and Platoon Sergeant

3-244. Platoon leaders normally operate on their specific platoon nets and monitor the company team command net, while each PSG monitors the platoon net and operates on the company team net. This allows platoon leaders to fight their platoons effectively while PSGs remain responsive to routine traffic. Platoon leaders must also remain responsive to the commander via the company team net; they provide tactical assessments

and other critical information to the commander and other platoon leaders as required or requested.

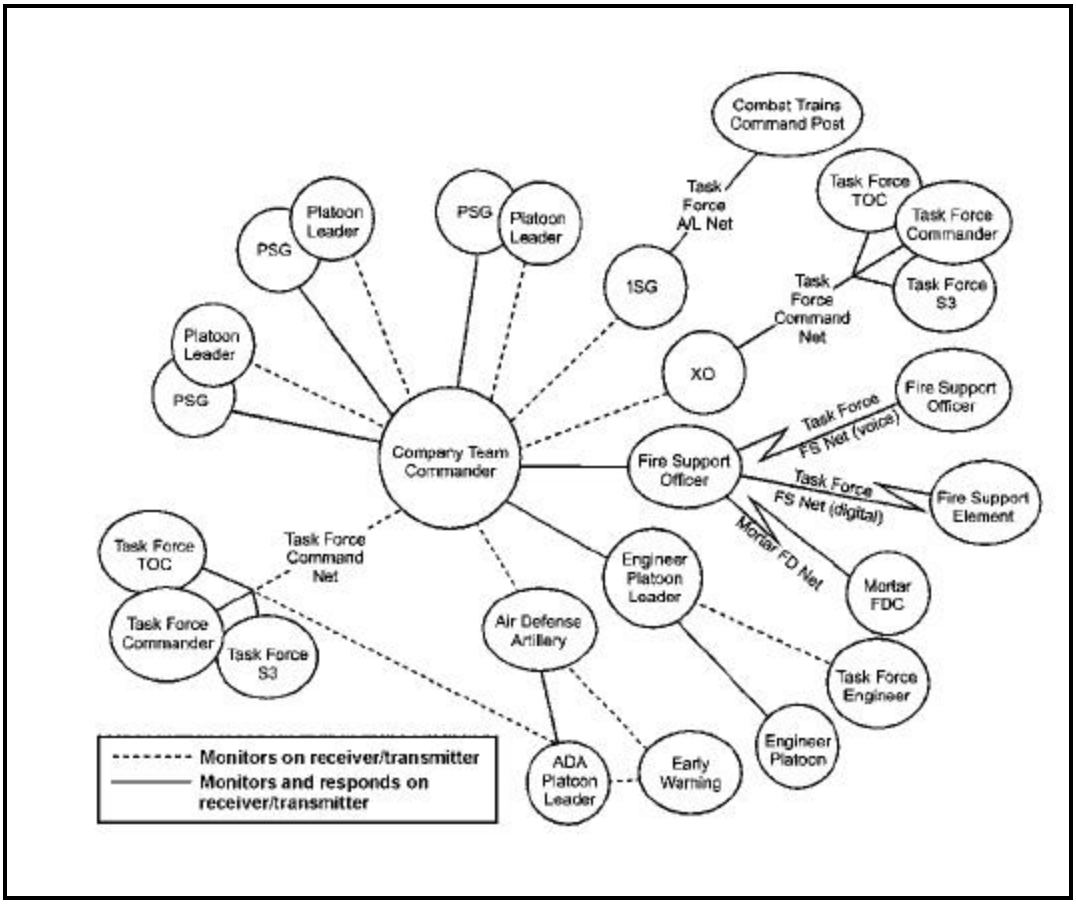


Figure 3-22. Company Team Command Radio Net

Other Leaders and Elements

3-245. Other factors related to the company team's radio nets include the following:

- The 1SG monitors the company team net and operates on the task force A/L net.
- The company combat trains monitor the company team net.
- BFV platoons are equipped with an additional man-portable radio as well as four hand-held radios for control of dismounted operations. Use of these assets will leave the internal platoon net nonsecure, although the platoon leader can still maintain secure communications on the company team net.

- BSFVs and/or Bradley Linebackers that are in DS or GS to the task force and are moving with the company team normally have two radios; they transmit and receive on the ADA platoon net and monitor the ADA early warning net and the company team net. The BSFV/Linebacker platoon leader has three radios; he transmits and receives on the ADA platoon net and ADA battery net and monitors the ADA early warning net and the task force command net.
- The company team FIST has four radios that transmit and receive on the following nets:
  - Tactical fire direction system. Known as TACFIRE, this digital task force net employs either of two systems, the initial fire support automated system (IFSAS) or the AFATDS.
  - Task force fire support net (voice net).
  - Mortar fire direction net (voice or digital net).
  - Company team command net.
- Attached engineer platoons normally have two radios that transmit and receive on internal platoon nets and on the team command net.

Preset Capability

3-246. SINCGARS radios offer up to eight preselected settings (manual, cue, and up to six additional preset frequencies or hopset patterns). The company team SOP should specify how leaders will configure their radios so that the frequency can be changed in response to a variety of situations and requirements, such as succession of command, cross-talk, and integration of CS and CSS assets.

COMMUNICATIONS SECURITY

INTRODUCTION

3-247. COMSEC involves measures taken to sustain and protect radio communications against enemy detection and electronic warfare attacks; it covers actions taken to protect personnel, facilities, and equipment from the effects of friendly and enemy electronic warfare that can degrade or destroy a unit's combat capability. Although the team is not usually the focus of interception, jamming, or direction-finding systems, proper COMSEC procedures are an absolute requirement for all operators. At the team level, COMSEC consists mainly of proper active protection measures and antijamming techniques for the specific equipment the unit is employing. For example, a company team with SINCGARS radios may try to avoid detection by employing its frequency-hopping capability at a low power setting (although use of a hot loop remains an option).

ACTIVE PROTECTION MEASURES

3-248. When the company team must use nonsecure or damaged communications assets, effective use of active protection measures can delay or prevent the enemy from gaining important tactical information from the team's radio transmissions. Active protection measures include the following procedures:

- Using approved codes.
- Changing frequencies and call signs when specified.
- Restricting radio use or designating times for radio listening silence.
- Using low power when appropriate.
- Selecting radio sites from which obstructions block friendly transmissions from enemy detection.

ANTIJAMMING PROCEDURES

3-249. Company team radio operators should use the procedures outlined in the following paragraphs to defeat the enemy's jamming activities. (**NOTE:** These procedures may also apply to other types of communications interference.)

Recognition

3-250. If he detects or suspects radio interference, the operator must determine the cause. He should not immediately assume that he is being jammed; some other types of radio interference may resemble jamming "symptoms." The operator first disconnects the antenna to determine whether the signal is being generated internally by the receiver. If the interference decreases in intensity when the antenna is removed, interference is external, possibly the result of enemy jamming.

Continued Operation

3-251. After identifying jamming as a possible cause of interference, the operator follows a simple rule—continue to operate unless ordered by the NCS to shut down or change frequencies. He must continue normal radio operations so the enemy will not learn that the interference is working; he should never mention over a nonsecure radio or frequency that he is being jammed. If the company team cannot continue to operate on the jammed net, operators should switch to the antijamming frequency and continue the mission. The commander may direct the XO to monitor the old frequency until all nodes have reestablished communications.

REPORTING

3-252. Use a MIJI report, sent via a secure means of communications, to inform leaders that jamming has been detected. The MIJI report format, found in the SOI or unit SOP, usually contains the following information:

- Date and time of the jamming.
- Frequencies jammed.
- Type and strength of the jamming signal.

- Designation of the unit making the report.

NOTE: Although not related to enemy activity, "hot mikes" and unintentionally keyed radio nets can severely limit the ability of the company team and subordinate elements to communicate effectively. The team commander and subordinate leaders must develop reporting and action procedures to prevent these problems.

COMPANY TEAM COMMAND POST

PURPOSE

3-253. The company team CP assists the commander and his subordinate leaders in preparing for battles by providing a centralized point for information gathering and dissemination, coordination, time management, and tracking of unit status.

CONFIGURATION

3-254. As the tank and mechanized infantry company team is not resourced a CP by MTOE, it is generally limited to the use of a tent or one of its organic headquarters vehicles as the CP. Tank company team options include the use of the 1SG's M113 or the fire support team vehicle (FIST-V). The 1SG's vehicle is organic to the team and thus is more likely to be available during the preparation phase. The FIST-V is large enough to serve as the CP, but it may be retained by the task force and therefore will not be available to the company. The mechanized infantry team may use one of its headquarters BFVs, the 1SG's M113, or the FIST-V. Disadvantages in using a BFV are that it may be required for a mounted rehearsal and that it will be required for boresighting.

3-255. The use of an additional shelter can enhance the capabilities of any type of vehicle CP. A canvas or modular extension will provide additional room to allow CP personnel to perform their functions more efficiently. Another CP technique is the use of a GP-small tent in conjunction with radio remotes. However, this CP configuration is not meant to act as a battle tracking platform during execution of an operation vehicles that comprise the CP revert to their primary purposes once the LD is crossed or the NLT defend time has arrived.

MANNING

3-256. There are several options for manning a company team CP. A senior NCO from the headquarters section or an attached element may be designated as information manager or NCOIC of the CP. Although the primary duty of this NCO may pull him away for limited periods, he can generally remain available for duty in the CP. Options include the master gunner, NBC NCO, or a senior gunner on a headquarters section BFV or tank.

3-257. Other positions in the CP can be manned on a rotational basis by the members of the headquarters section or attached elements. These may include the crews of headquarters tanks or BFVs; company team medics; the driver of the 1SG's M113; the communications specialist; and the crew of the FIST-V.

FUNCTIONS

3-258. The company team CP assists the commander by reducing the number of items he must personally track and report. This further frees the commander to conduct TLPs during the preparation phase. Examples of CP operations include the following:

- Record incoming information (such as STATREPs, WARNOs, and FRAGOs).
- Continuously refine the SITEMP using the latest intelligence and distribute the updated SITEMP to all company team elements.
- Post current guidance, timelines, and overlays.
- Pass required reports to the task force.
- Track unit battle preparations and logistical and maintenance status.
- Conduct required coordination with adjacent and flank units.
- Facilitate bottom-up refinement of operating system planning and preparation.

3-259. The CP may act as the point of contact for attached or operational control (OPCON) units. It can further assist the commander in his TLPs by providing a variety of services: supervising and enforcing the timeline; reproducing overlays; converting acetate overlays to digital format (in digital units); constructing sand tables for company team and platoon rehearsals. The company CP is intended as an information management center during the plan and prep phase of an operation and is not designed or equipped to perform as a TOC during mission execution.

Chapter 4

Reconnaissance and Surveillance

This chapter covers tasks that the company team may conduct as part of a larger force or on its own to complement or support its primary missions.

CONTENTS

Reconnaissance 4-1
Reconnaissance Planning 4-1
Reconnaissance Execution 4-2
Reconnaissance Before and After Operations ..4-2
Reconnaissance During Operations 4-3
Forms of Reconnaissance 4-4
Security Operations 4-7
Planning Considerations 4-8
Screen Operations 4-11
Guard Operations 4-14
Local Security....4-18
Operations Security 4-19
General Security Measures 4-19
Information Security 4-20
Signal Security 4-20
Physical Security....4-20
Observation Posts 4-21

SECTION I – RECONNAISSANCE

4-1. Reconnaissance is any mission undertaken, using visual observation or other methods, to obtain information regarding the activities and resources of enemy forces or the physical characteristics of a particular area. Successful reconnaissance is a focused collection effort, aimed at gathering timely, accurate information about the enemy and the terrain in the AO. It is the responsibility of every commander to conduct reconnaissance, with the goal of gaining the information he needs to ensure the success of his mission. In addition, the company team may conduct other reconnaissance operations to gather information for higher headquarters.

RECONNAISSANCE PLANNING

4-2. Reconnaissance planning starts with the commander's identification of critical information requirements. This process may be conducted while the unit is planning or preparing for an operation; in many cases, it will continue during the conduct of the operation.

4-3. As an example of identifying information requirements before an operation, the company team commander determines that he must find out if an enemy force is controlling a choke point through which the team must move during the next day's attack. As a result, the commander may decide to send an infantry patrol to reconnoiter the choke point the night before the attack. Once the operation is under way, the commander continues to identify information requirements. An example is the need to find an assailable flank or another position of advantage over an identified enemy force while the company team develops the situation; in such a situation, the commander may dispatch a platoon or section to find a flank or position from which the team can effectively engage the enemy.

RECONNAISSANCE EXECUTION

4-4. Reconnaissance can be passive or active. Passive reconnaissance includes such techniques as map and photographic reconnaissance and surveillance. Active methods available to the company team include mounted and dismounted ground reconnaissance and reconnaissance by fire. Active reconnaissance operations are also classified as stealthy or aggressive, as discussed in the following paragraphs.

STEALTHY RECONNAISSANCE

4-5. Stealthy reconnaissance emphasizes procedures and techniques that allow the unit to avoid detection and engagement by the enemy. It is more time-consuming than aggressive reconnaissance. To be effective, stealthy reconnaissance must rely primarily on dismounted elements that make maximum use of covered and concealed terrain. The company team's primary assets for stealthy reconnaissance are its infantry rifle squads. (See FM 3-21.10 [FM 7-10] and FM 3-20.98 [FM 17-98] for a more detailed discussion of dismounted patrolling.)

AGGRESSIVE RECONNAISSANCE

4-6. Aggressive reconnaissance is characterized by the speed and manner in which the reconnaissance element develops the situation once contact is made with an enemy force. A unit conducting aggressive reconnaissance uses both direct and indirect fires and movement to rapidly develop the situation. It uses primarily mounted reconnaissance and reconnaissance by fire. In conducting a mounted patrol, the unit employs the principles of tactical movement to maintain security. The patrolling element maximizes the use of cover and concealment and conducts bounding overwatch as necessary to avoid detection. See Chapter 5 for a more detailed discussion of tactical movement. The discussion of direct fire control in Chapter 2 includes a description of reconnaissance by fire.

RECONNAISSANCE BEFORE AND AFTER OPERATIONS

4-7. To be most effective, reconnaissance must be continuous, conducted before, during, and after operations. Before an operation, the company team focuses its reconnaissance effort on filling gaps in its information about the enemy and terrain. (Figure 4-1 shows an example of company team reconnaissance prior to an operation.) After an operation, the team normally conducts reconnaissance to maintain contact with the enemy and collect information for upcoming operations. Situations in which the company team may conduct reconnaissance before or after an operation include the following:

- A quartering party reconnoiters an assembly area and the associated route with it.
- An element reconnoiters from the assembly area to the LD and in the vicinity of the LD before an offensive operation.
- Patrols infiltrate enemy positions to find gaps prior to an attack.
- Patrols observe forward positions and guide the mounted elements to key positions on the battlefield.

- Patrols (normally infantry and engineers) locate bypasses around obstacle belts or determine the best location and method for breaching.
- Patrols identify choke points or other danger areas in advance of the remainder of the company team.
- Elements reconnoiter defensive positions or the EA prior to the conduct of defensive operations.
- Patrols secure friendly obstacles, clear possible enemy OPs, or cover areas not observable by stationary OPs.
- Patrols maintain contact (visual or physical) with adjacent units.
- Patrols maintain contact (visual) with enemy elements.

RECONNAISSANCE DURING OPERATIONS

4-8. The company team is responsible for conducting reconnaissance for its own use. As reconnaissance is an enabling operation, it is conducted as part of all company team operations, particularly in the offense. Reconnaissance during the offense is conducted both prior to and after enemy contact is made. Reconnaissance prior to contact is conducted to either secure tactical movement or to gather combat information. In simple terms, reconnaissance is conducted to gain visual or physical contact with the enemy first. This fundamental is crucial to maintaining the company's initiative and tactical momentum. During operations the company can conduct three methods of reconnaissance:

- **Mounted.** Mounted reconnaissance is both active and passive (surveillance), and includes individual vehicle, section, platoon, and company surveillance plans. Active reconnaissance may be as simple as a section reconnoitering forward to clear an intervisibility line and/or danger area (can be conducted in conjunction with dismounted) or establishing an internal reconnaissance element well forward in a company advance guard operation.
- **Dismounted.** Dismounted reconnaissance can be conducted by individual crew members (such as dismounting a tank loader or rifleman to clear an intervisibility line or around a building) or could include the reconnaissance of a choke point or defile by one of the company's rifle squads.
- **By Fire (Direct and Indirect).** The company or subordinate element may conduct reconnaissance by fire against suspected enemy positions to identify a hidden threat or illicit a tactical response. Recon by fire can be done with company organic weapons (direct fire) or indirect fire. For example, if the company is operating in restricted terrain, it may prove necessary to recon a woodline or choke point by fire with machine gun (.50 cal and or coaxial) to help identify potentially hidden vehicles and or thwart an enemy ambush. (See Appendix B for more information on reconnaissance by fire.)

4-9. Once enemy physical contact is made reconnaissance normally focuses on fighting for information about the enemy and the terrain, with

the primary goal of gaining an advantage over the enemy. The company team conducts this type of reconnaissance during actions on contact. As the team develops the situation, the commander may dispatch mounted and/or dismounted patrols to identify positions of advantage or to further develop the situation. The information gained by the company team while in contact is critical not only to the success of its own mission but also to the success of its higher headquarters. (See Chapter 5 for actions on contact.)

FORMS OF RECONNAISSANCE

4-10. In addition to reconnaissance performed as part of another type of operation, there are four forms of reconnaissance that are conducted as distinct operations—route reconnaissance, zone reconnaissance, area reconnaissance, and reconnaissance in force. Although not optimally organized for reconnaissance, the company team can conduct route, zone, or area reconnaissance. It may conduct a reconnaissance operation during preparation for another operation of its own (for example, performing zone reconnaissance before initiating a stationary guard operation), or it can conduct the reconnaissance to gain information for a higher headquarters. The team will normally be task organized with additional combat or CS assets as needed to meet the requirements of the reconnaissance operation. (**NOTE:** Reconnaissance in force is a limited-objective operation conducted by battalion-size and larger forces.)

POSITIONING OF SUBORDINATE ELEMENTS

4-11. In conducting a route, zone, or area reconnaissance, the company team employs a combination of mounted and dismounted elements as well as reconnaissance by direct and indirect fires. Based on his evaluation of METT-TC factors, the team commander establishes the role of organic elements and support assets within his scheme of maneuver. The following considerations apply:

- Mechanized infantry platoons normally perform the reconnaissance role, taking advantage of their ability to employ rifle squads to gather information on the ground.
- Tank platoons normally perform the overwatch role, providing security to reconnaissance elements. Based on METT-TC, however, the tanks may be tasked to perform the reconnaissance role.
- Engineers remain behind the combat elements; as necessary, they move forward to conduct any required breaches once breach sites have been secured by the combat elements.

FOCUS OF THE RECONNAISSANCE

4-12. In planning for route, zone, or area reconnaissance, the company team commander must determine the focus of the mission, identifying whether the reconnaissance will be oriented on the terrain or on the enemy force. It is then essential that he provide the team with clear guidance on the focus of the reconnaissance. In a force-oriented reconnaissance operation, the critical task will simply be to find the enemy and gather information on him; terrain considerations of the route, zone, or area are only a secondary concern. The company team generally is able to move more quickly than in terrain-oriented reconnaissance.

CONDUCT OF THE RECONNAISSANCE

4-13. The following paragraphs examine the specifics of route, zone, and area reconnaissance. (See FM 3-20.97 [FM 17-97] for a more detailed discussion of these operations at the company troop level.)

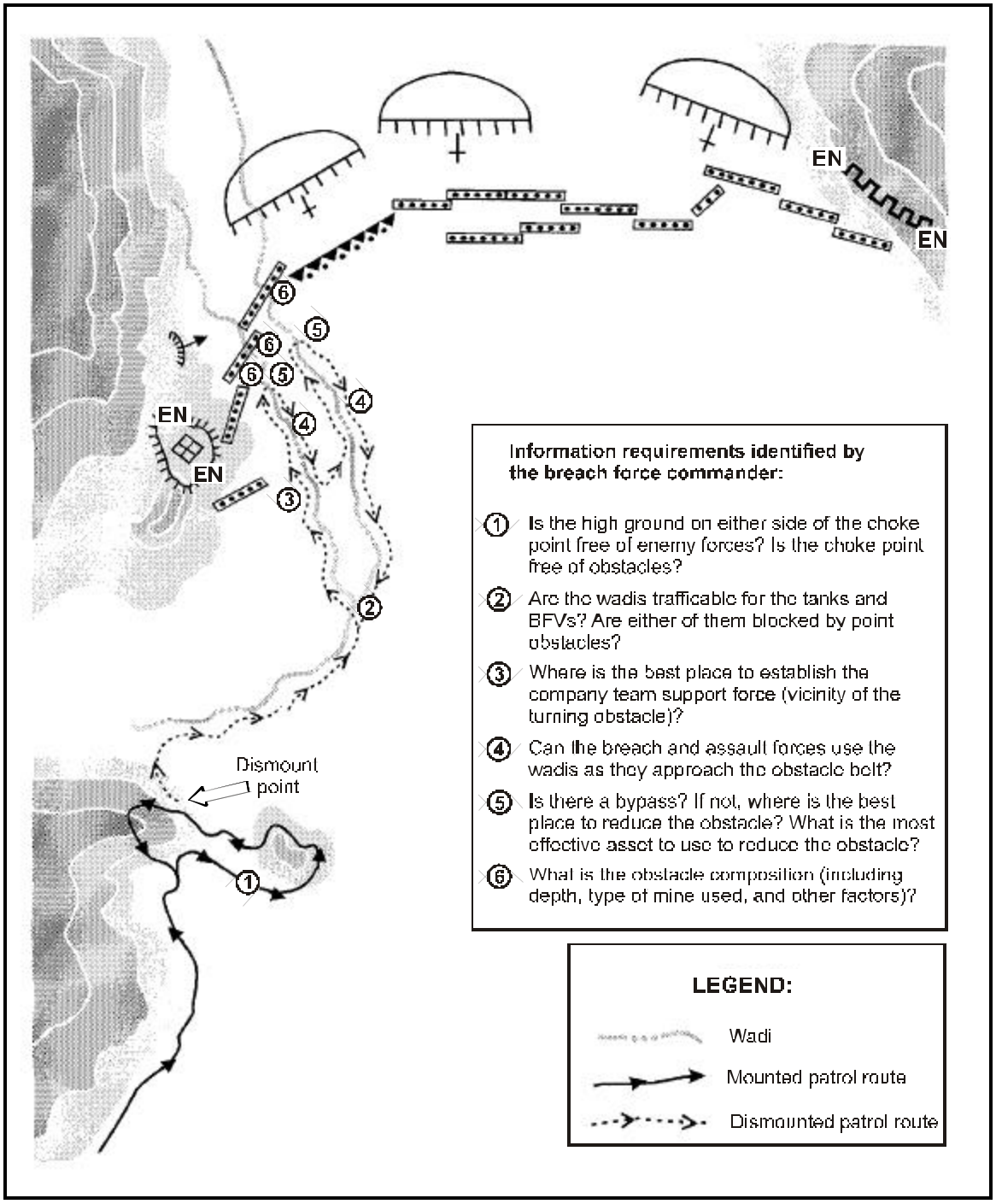


Figure 4-1. Example of a Company Team Commander Identifying Information Requirements and Using Patrols to Conduct Reconnaissance

Route Reconnaissance

4-14. A route reconnaissance is a directed effort to obtain detailed information on a specific route as well as on all terrain from which the enemy could influence movement along that route. Route reconnaissance may be oriented on a specific area of movement, such as a road or trail, or on a more general area, like an axis of advance. It is normally assigned when a commander wants to use the route in question. Although METT-TC and the commander's intent will ultimately dictate what actions the company team must take, the following tasks are normally considered critical components of the route reconnaissance:

- Determine the trafficability of the route.
- Reconnoiter all built-up areas.
- Reconnoiter all key terrain the enemy can use to dominate movement along the route.
- Reconnoiter all lateral routes based on the factors of METT-TC.
- Inspect (and classify) all bridges.
- Locate (and evaluate) fords and crossing sites near all bridges.
- Reconnoiter all defiles (within capability). This step includes clearing defiles of enemy forces and obstacles (within capability) or locating bypasses.
- Locate and clear mines, obstacles, and barriers (within capability).
- Locate a bypass around built-up areas, obstacles, and contaminated areas.
- Find and report all enemy elements that can influence movement along the route.
- Report all reconnaissance information.

Zone Reconnaissance

4-15. A zone reconnaissance is a directed effort to obtain detailed information concerning all routes, terrain, enemy forces, and obstacles (including areas of chemical and radiological contamination) within a zone, which is defined by specific boundaries. The zone reconnaissance is normally conducted when the enemy situation is vague or when information concerning cross-country trafficability is required. As in route reconnaissance, METT-TC and the commander's intent will dictate the company team's actions during a zone reconnaissance; the following tasks are normally considered critical components of the operation:

- Find and report all enemy forces within the zone.
- Reconnoiter specific terrain within the zone.
- Report all reconnaissance information.

4-16. Time permitting, the commander may also direct the company team to accomplish the following tasks as part of a zone reconnaissance:

- Reconnoiter all terrain within the zone.
- Inspect and classify all bridges.

- Locate and evaluate fords or crossing sites near all bridges.
- Inspect and classify all overpasses, underpasses, and culverts.
- Locate and clear all mines, obstacles, and barriers (within capability).
- Locate and mark bypasses around built-up areas, obstacles, and contaminated areas.

Area Reconnaissance

4-17. Area reconnaissance, a specialized form of zone reconnaissance, is a directed effort to obtain detailed information concerning the terrain or enemy activity within a prescribed area. The area can be any location that is critical to the unit's operations. Examples include easily identifiable areas covering a fairly large space (such as towns or military installations), terrain features (ridge lines, wood lines, choke points), or a single point (like a bridge or a building). The critical tasks of the area reconnaissance are the same as those associated with zone reconnaissance.

SECTION II – SECURITY OPERATIONS

4-18. Security operations are conducted to provide early and accurate warning of enemy operations, to provide the protected force with time and maneuver space to react to the enemy, and to develop the situation to allow the commander to effectively employ the protected force. These operations may be conducted to the front, flanks, or rear of the force. (See FM 3-20.95 [FM 17-95] or FM 3-90 [FM 100-40] for additional information on security operations.)

4-19. The four forms of security operations are screen, guard, cover, and area security. The screen, guard, and cover entail deployment of progressively higher levels of combat power and provide increasing levels of security for the main body. Area security preserves a higher commander's freedom to move his reserves, position fire support assets, conduct C2, and provide for sustainment operations.

NOTE: All forces have an inherent responsibility to provide for their own local security. Local security includes OPs, local security patrols, perimeter security, and other measures taken to provide close-in security for the force.

4-20. The company team can conduct screen or guard operations on its own. It participates in area security missions and covering force operations only as part of a larger element. The company team always provides its own local security. (**NOTE:** As part of a larger element's area security operation, the company team may conduct route clearance or convoy escort missions. (See Chapter 8 for a detailed discussion on these missions.)

PLANNING CONSIDERATIONS

4-21. Security operations require the commander assigning the security mission and the security force commander to address a variety of special operational factors. These planning considerations are discussed in the following paragraphs.

AUGMENTATION OF SECURITY FORCES

4-22. When it is assigned to conduct a guard or screen mission, the company team may receive additional combat, CS, and CSS elements. Attachments may include, but are not limited to, the following:

- A scout platoon.
- A mortar section or platoon.
- Additional tank or mechanized infantry platoons.
- Military intelligence (MI) surveillance assets. For example, these may include elements equipped with night vision devices (NVD).
- Associated CSS elements.

ENEMY-RELATED CONSIDERATIONS

4-23. Security operations require the company team to deal with a unique set of enemy considerations. For example, the array of enemy forces (and the tactics that enemy commanders use to employ them) may be different from those for any other tactical operation the team will conduct. Additional enemy considerations that may influence company team security operations include, but are not limited to, the following:

- The presence or absence of specific types of forces on the battlefield, including the following:
  - Insurgent elements (not necessarily part of the enemy force).
  - Enemy reconnaissance elements of different strength and capabilities (at divisional, regimental, or other levels).
  - Enemy security elements (such as fighting patrols and security patrols).
  - Enemy stay-behind elements or enemy elements that have been bypassed.
- Possible locations that the enemy will use to employ his tactical assets, including the following:
  - Reconnaissance and/or infiltration routes.
  - OP sites for surveillance and/or indirect fire observers.
- Availability and/or anticipated employment of other enemy assets, including the following:
  - Surveillance devices such as unmanned aerial vehicles (UAV) or radar devices.
  - Long-range rocket and artillery assets.
  - Helicopter and fixed-wing air strikes.
  - Elements capable of dismounted insertion and/or infiltration.
  - Mechanized forward detachments.

TIME THE SECURITY OPERATION IS INITIATED

4-24. The time by which the screen or guard must be set and active will influence the company team's method of deploying to the security area as well as the time it begins the deployment.

RECONNAISSANCE OF THE SECURITY AREA

4-25. The company team commander uses a thorough analysis of METT-TC factors to determine the appropriate methods and techniques the company team will use in accomplishing this critical action.

NOTE: The commander must make every effort to conduct his own reconnaissance of the security area he expects the team to occupy, even when the operation is preceded by a zone reconnaissance by other task force elements.

MOVEMENT TO THE SECURITY AREA

4-26. In deploying elements to an area for a stationary security mission, the company team commander must deal with the competing requirements of establishing the security operation quickly to meet mission requirements and of providing the necessary level of local security in doing so. The team can move to the security area using one of two basic methods—a tactical road march or a movement to contact. Either method should be preceded by a zone reconnaissance by the task force scout platoon. The following paragraphs examine considerations and procedures for the two methods of movement.

4-27. **Tactical Road March.** The company team conducts a tactical road march to a release point (RP) behind the security area. From that point, the platoons (or sections) deploy to occupy their initial positions. This method of deployment is faster than a movement to contact, but less secure. It is appropriate when enemy contact is not expected or when time is critical.

4-28. **Movement to Contact.** The company team conducts a movement to contact from the LD to the security area. This method is slower than a tactical road march, but it is more secure. It is appropriate when time is not critical and either enemy contact is likely or the situation is unclear.

LOCATION AND ORIENTATION OF THE SECURITY AREA

4-29. The main body commander determines the location, orientation, and depth of the security area in which he wants the security force to operate. The security force commander conducts a detailed analysis of the terrain in the security area. He then establishes his initial dispositions (usually a screen line, even for a guard mission) as far forward as possible on terrain that allows clear observation of avenues of approach into sector. The initial screen line is depicted as a PL and sometimes represents the forward line of own troops (FLOT). As such, the screen line may be a restrictive control measure for movement; this requires the company team commander to conduct all necessary coordination if he decides to establish OPs or to perform reconnaissance forward of the line.

INITIAL OP LOCATIONS

4-30. The company team commander may deploy OPs to ensure effective surveillance of the sector and designated named areas of interest

(NAI). He will designate initial OP locations on or behind the screen line. He should provide OP personnel with specific orientation and observation guidance, including, at a minimum, the primary orientation for the surveillance effort during the conduct of the screen. Once set on the screen line, the surveillance elements (normally, either scouts or infantrymen) will report their location. The element that occupies each OP always retains the responsibility for changing the location in accordance with tactical requirements and the commander's intent and guidance for orientation. OPs may be either mounted or dismounted. Mounted OPs allow use of vehicular optics and weapon systems and maximize speed of displacement, but are more easily detected by the enemy. Dismounted OPs maximize stealth.

WIDTH AND DEPTH OF THE SECURITY AREA

4-31. The company team sector is defined by lateral boundaries extending out to a limit of advance (LOA) (the initial screen line) forward of a rear boundary. The team's ability to maintain depth through the sector decreases as the frontage increases.

SPECIAL REQUIREMENTS AND/OR CONSTRAINTS

4-32. The company team commander must specify any additional considerations for the security operation, including, but not limited to, the following:

- All requirements for observing NAIs, as identified by the task force.
- Any additional tactical tasks or missions that the company team and subordinate elements must perform.
- Engagement and disengagement criteria for all team elements.

INDIRECT FIRE PLANNING

4-33. The company team commander conducts indirect fire planning to integrate artillery and mortar assets into the security operation. A wide sector may require him to position attached mortar assets where they can provide effective coverage of the enemy's most likely axis of attack or infiltration route, as determined in his analysis of METT-TC. The commander should position the mortars so that up to two-thirds of their maximum range lies forward of the initial screen line. The company team FSO assists the commander in planning indirect fires to adequately cover any gaps in mortar coverage with artillery.

POSITIONING OF COMMAND AND CONTROL AND CSS ASSETS

4-34. The commander normally positions himself where he can observe the most dangerous enemy axis of attack or infiltration route on terrain that best facilitates C2. Usually, the company team will have a follow on mission such as a defense or reserve mission. The XO will normally be involved in the coordination and preparation of this follow on mission. Otherwise, the XO may position himself on the second most dangerous enemy axis of attack or infiltration route. If the company team employs a CP, it is usually positioned in depth and centered in sector; this allows the CP to provide control of initial movement, to receive reports from the subordinate units, and to assist the commander in more effectively facilitating C2. Company trains are positioned behind masking terrain,

but they remain close enough for rapid response. The trains are best sited along routes that afford good mobility laterally and in depth.

PATROL REQUIREMENTS

4-35. Patrols may be required to cover gaps between the OPs. The company team commander will task elements to conduct either mounted or dismounted patrols as required.

COORDINATION

4-36. The company team commander must conduct adjacent unit coordination to ensure there are no gaps in the screen or guard and to ensure smooth execution of the team's rearward passages of lines (if required).

COMBAT SERVICE SUPPORT CONSIDERATIONS

4-37. The company team commander's primary consideration for CSS during the security operation is coordinating and conducting resupply of the team, especially for Class III and Class V supplies. (**NOTE:** One technique is for the commander to position prestock Class III and Class V vehicles at the team's successive positions.) In addition to normal considerations, however, the commander may acquire other responsibilities in this area, such as arranging CSS for a large number of attached elements or coordinating resupply for a subsequent mission.

4-38. The company team's support planning can be further complicated by a variety of factors. These include the extended distances from the task force combat trains and the BSA over which the team must operate (making resupply, CASEVAC, and vehicle recovery more difficult), the wide frontages that the team must cover, and the increased numbers of attachments for which the team must provide resupply and other support services (such as CASEVAC). To prevent these factors from creating outright tactical problems, the company team must receive logistical support, such as additional medical evacuation vehicles, from the controlling task force.

FOLLOW-ON MISSIONS

4-39. The complexities of security missions, combined with normal operational requirements can easily rob the company team commander of the time he needs for planning and preparation of follow-on missions. He must address these competing demands in his initial mission analysis to ensure that the team, and its leaders, can adequately meet all requirements for current and future operations. If METT-TC factors permit, for example, the commander can shift his focus to preparing for follow-on missions once preparations for the security mission are complete (or satisfactorily under way). Another technique is to detach the XO, with support personnel and vehicles, to prepare for follow-on missions. The XO's party can handle such operational requirements as reconnaissance, coordination, and development of follow-on EAs and BPs.

SCREEN OPERATIONS

4-40. A screen primarily provides early warning. It observes, identifies, and reports enemy actions. A screen provides the least amount of protection of any security mission. Generally, a screening force engages

and destroys enemy reconnaissance elements within its capabilities, but otherwise fights only in self-defense.

PURPOSES

4-41. A screen is appropriate to cover gaps between forces, the exposed flanks or rear of stationary and moving forces, or the front of a stationary formation. It is used when the likelihood of enemy contact is remote, the expected enemy force is small, or the friendly main body needs only a minimum amount of time once it is warned to react effectively. Screening is largely accomplished by establishing a series of OPs and conducting patrols to ensure adequate surveillance of the assigned sector. Purposes of the operation include the following:

- Prevent enemy ground elements from passing through the screen undetected or unreported.
- Maintain continuous surveillance of all avenues of approach into the sector under all visibility conditions.
- Destroy or repel enemy reconnaissance elements within capability.
- Locate the lead elements of each enemy advance guard force and determine their direction of movement.
- Maintain contact with enemy forces and report any activity in sector.
- Impede and harass the enemy within capability while displacing.
- Maintain contact with the enemy main body and any enemy security forces operating on the flanks of friendly forces.

STATIONARY SCREEN

4-42. The company team commander first takes a close look at infiltration routes into the screen sector, then assigns surveillance responsibility to the team's subordinate elements. He designates locations of OPs, which should be in depth through the sector. The OPs are normally manned by sections within the company team. The commander identifies the enemy's likely axes of attack or infiltration routes; if necessary, he identifies additional control measures (such as NAIs, PLs, TRPs, or checkpoints) to assist in movement control and in tracking of enemy elements. The company team conducts mounted and dismounted patrols to reconnoiter areas that cannot be observed from OPs.

4-43. Once the enemy is detected from an OP, the screening force normally engages him with indirect fires. This prevents the enemy from penetrating the screen line and does not compromise the location of the OP. Within its capability, the screening force may destroy enemy reconnaissance assets with direct fires if indirect fires cannot accomplish the task. (For additional details, see paragraphs 4-51 and 4-53 on the discussion of actions against enemy reconnaissance elements in the guard segment). The screening force also impedes and harasses other enemy elements, primarily through the use of indirect fires. If enemy pressure threatens the security of the screening force, the unit normally reports the situation and requests permission to displace to a subsequent screen line.

MOVING SCREEN

4-44. The company team can conduct a moving screen to the flanks or rear of the screened force. The movement of the screen is keyed to time and distance factors associated with the movement of the friendly main body.

Moving Flank Screen

4-45. Responsibilities for a moving flank screen begin at the front of the main body's lead combat element and end at the rear of the protected force. In conducting a moving flank screen, the company team either occupies a series of temporary OPs along a designated screen line or, if the protected force is moving too fast, continues to move while maintaining surveillance and preparing to occupy a designated screen line. The four basic methods of controlling movement along the screened flank are described below. The screening force may use one or more of these methods as the speed of movement of the protected force changes or contact is made.

Alternate Bounds by Individual Observation Post

4-46. This method is used when the protected force is advancing slowly or enemy contact is likely along the screen line. Designated elements of the screening force move to and occupy new OPs as dictated by the enemy situation and the movement of the main body. Other elements remain stationary, providing overwatch and surveillance, until the moving elements establish their new positions; these elements then move to new positions while the now-stationary elements provide overwatch and surveillance. This sequence continues as needed. The method of alternate bounding by individual OP is secure but slow.

Alternate Bounds by Unit

4-47. This method is used when the protected force is advancing slowly or enemy contact is likely along the screen line. Designated elements of the screening force move and occupy new positions as dictated by the enemy situation and the movement of the main body. Other elements remain stationary, providing overwatch, and surveillance, until the moving elements establish their new positions; these elements then move to new positions while the now-stationary elements provide overwatch and surveillance. This sequence continues as needed. The method of alternate bounding by unit is secure but slow.

4-48. **Successive bounds.** The screening element uses this method when enemy contact is possible and the main body makes frequent short halts during movement. Each platoon of the screening force occupies a designated portion of the screen line each time the main body stops. When main body movement resumes, the platoons move simultaneously, retaining their relative position as they move forward.

4-49. **Continuous marching.** This method is used when the main body is advancing rapidly at a constant rate and enemy contact is not likely. The screening force maintains the same rate of movement as the main body, at the same time conducting surveillance as necessary. Stationary screen lines are planned along the movement route, but the screening force occupies them only as necessary to respond to enemy action.

4-50. **Moving rear screen.** A moving rear screen may be established to the rear of a main body force conducting an offensive operation or between the enemy and the rear of a force conducting a retrograde operation. In either case, movement of the screen is keyed to the movement of the main body or to the requirements of the enemy situation; the operation is normally controlled by movement to a series of PLs.

GUARD OPERATIONS

4-51. A guard force protects the friendly main body either by fighting to gain time (while simultaneously observing the enemy and reporting pertinent information) or by attacking, defending, and/or delaying the enemy to prevent him from observing the main body and engaging it with direct fires. There are three types of guard operations—advance guard, flank guard, and rear guard. They can be conducted in support of either a stationary or a moving friendly force. The company team can conduct an advance guard for a battalion task force or a rear or flank guard for a brigade. Additionally the company team may participate as part of a task force in an advance guard for a brigade.

4-52. The guard force differs from a screening force in that it contains sufficient combat power to defeat, repel, or fix the lead elements of an enemy ground force before they can engage the main body with direct fires. A guard force uses all means at its disposal, including decisive engagement, to prevent the enemy from penetrating to a position where it could observe and engage the main body. It operates within the range of the main body's fire support weapons, deploying over a narrower front than a comparable-size screening force to permit concentrating combat power.

PURPOSES

4-53. The purposes of the guard operation, in addition to those listed in the earlier discussion of the screen, include the following:

- Destroy or repel all enemy reconnaissance elements.
- Fix and defeat enemy security elements.
- Cause the enemy main body to deploy and report its direction of travel to the friendly main body commander.

TYPES OF GUARD OPERATIONS

4-54. The following discussion covers operational considerations for advance guard, flank guard, and rear guard operations.

Advance Guard

4-55. An advance guard for a stationary force is defensive in nature. During task force defensive operations, the company normally defends or delays in accordance with the task force commander's intent as the stationary advance guard for the task force. Its role is either against main body and security elements or against reconnaissance elements. (See stationary guard below for detailed information.) An advance guard for a moving force is offensive in nature. The company team normally conducts an offensive advance guard mission during a movement to contact as part of a task force. Its role is to maintain the freedom of maneuver of the supported task force; it does this by providing early

warning of enemy activity to the protected task force and by finding, fixing, and destroying enemy reconnaissance and security elements. Additionally, the company may participate as part of a battalion task force in an advance guard for a brigade. (See Chapter 5 for more details on advance guard operations and movement to contact.)

Flank Guard

4-56. A flank guard protects an exposed flank of the main body. A flank guard is similar to a flank screen except that both OPs and defensive positions are planned. The company team may conduct a moving flank guard for the brigade during an attack or a movement to contact. In conducting a moving flank guard, the company team will normally occupy a series of BPs along the protected flank. It must maintain orientation both to the front (to perform its overwatch role and to maintain its own security) and to the protected flank. It must also maintain a sufficient distance from the main body to prevent the enemy from engaging the main body with long-range direct fires before early warning can be sent. (See paragraph 4-64 for a detailed discussion on execution of a moving flank guard.)

Rear Guard

4-57. The rear guard protects the rear of the main body as well as all CS and CSS elements within the main body. The company normally conducts a rear guard for the brigade during offensive operations when the main body breaks contact with the FLOT or during retrograde operations. A rear guard may be deployed behind both moving and stationary main bodies. The rear guard for a moving force displaces to successive BPs along PLs or delay lines in depth as the main body moves. During retrograde operations, the rear guard normally deploys its elements across the entire sector behind the main body's forward maneuver units. (See Chapter 6 for a more detailed discussion of retrograde operations.)

STATIONARY GUARD

4-58. As noted, a stationary guard mission is, at least initially, defensive in nature. The guard force normally employs OPs to accomplish all surveillance requirements of the guard mission. The company team must be prepared to conduct actions against the enemy's main body and security elements as well as his reconnaissance forces. The following paragraphs discuss considerations for operations involving these enemy elements.

Actions Against Main Body and Security Elements

4-59. Once contact is made with an enemy main body or security force, the guard force attacks, defends, or delays in accordance with the enemy situation and the intent of the commander of the protected force. (See Chapter 6 for considerations for the defense.)

Actions Against Reconnaissance Elements

4-60. When it must execute counterreconnaissance tasks, the team will normally task organize into a surveillance element (normally occupying a screen line) and an attack element. Each element has specific responsibilities but must be prepared to work effectively with the other to ensure success of the operation.

Surveillance Element and Surveillance Sectors

4-61. The commander must assign clear responsibilities for surveillance of identified avenues of approach and designated NAIs. The surveillance element (normally scout or mechanized infantry elements) is tasked with detecting, reporting, and maintaining contact with the enemy in the assigned surveillance sector. In addition, the surveillance element is responsible for passing off the enemy force to the attack element for destruction.

Attack Element

4-62. In this role, the company team's tank platoons (or sections) will be the primary direct fire killing assets and will remain responsive to the commander. (**NOTE:** Depending on the composition of the company team conducting the guard mission, BFVs may also be employed in this role, especially in a mechanized-heavy team.) The attack element occupies hide positions, BPs, or attack by fire positions along enemy avenues of approach. Once alerted by the surveillance force, it moves into position (if necessary) and destroys the approaching enemy element. The attack element is responsible for direct fire planning and EA development in support of the commander's plan. It must also rehearse all necessary movement to the planned fighting positions and report the required movement times to the commander.

Relationship of Surveillance and Attack Elements

4-63. The company team's surveillance element must track locations of any enemy vehicles moving through the sector while the attack element moves into position. Once the attack element is set and can observe the enemy, the surveillance element completes target handover. This operation requires continuous communication between the two subordinate elements conducting the handover as well as close control by the company team commander or XO. In close terrain, the surveillance and attack elements must be positioned much closer together than in open terrain. This helps the elements both in maintaining visual contact and in achieving target handover at the appropriate time. Figure 4-2 illustrates a company team stationary advance guard for a task force.

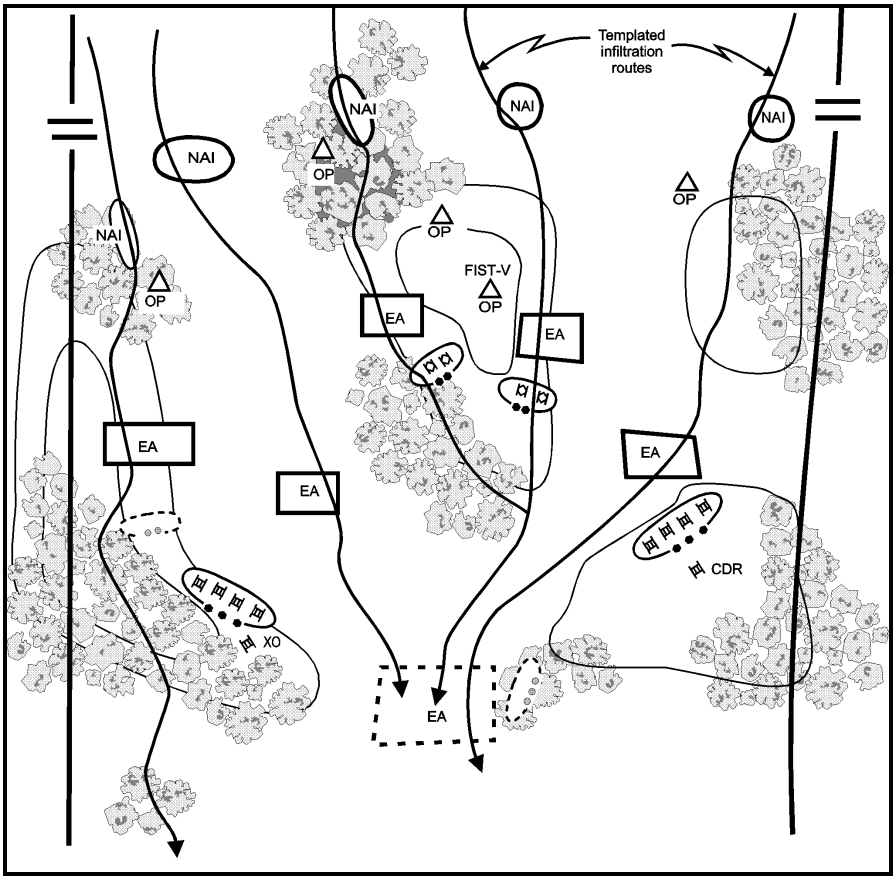


Figure 4-2. Example Company Team Stationary Advance Guard for a Task Force (With Infantry Squads Forward in Observation Posts)

MOVING FLANK GUARD

4-64. Many of the considerations for a moving flank screen apply to the execution of a moving flank guard. Unlike a moving flank screen, which occupies a series of OPs, the flank guard force plans to occupy a series of defensive positions. In conducting a moving flank guard for the brigade, the company team either occupies a series of temporary BPs along the protected flank or, if the protected force is moving too quickly, continues to move along the protected flank. During movement, the team maintains surveillance to the protected flank while preparing to occupy designated BPs based on enemy activity or on the movement of the protected force. The three basic methods of controlling movement along the guarded flank are—

- Alternate bounds by unit.
- Successive bounds by unit.
- Continuous marching.

NOTE: These are identical to the methods for controlling movement along a screened flank except that the company team and its platoons occupy designated defensive positions instead of OPs. (See paragraph 4-40 for the discussion of screen operations.)

4-65. The lead element of a moving flank guard must accomplish three tasks. It must maintain contact with the protected force, reconnoiter the flank guard's route of advance, and reconnoiter the zone between the protected force and the flank guard's advance. The rest of the flank guard marches along the route of advance and occupies BPs to the protected flank as necessary.

4-66. Figure 4-3 illustrates a company team flank guard operation during a movement to contact. One platoon is employed to provide security to the front and maintain contact with the main body; the other two platoons are oriented to the protected flank. Figure 4-3 shows the BPs that the platoons may occupy to respond to the approaching enemy force.

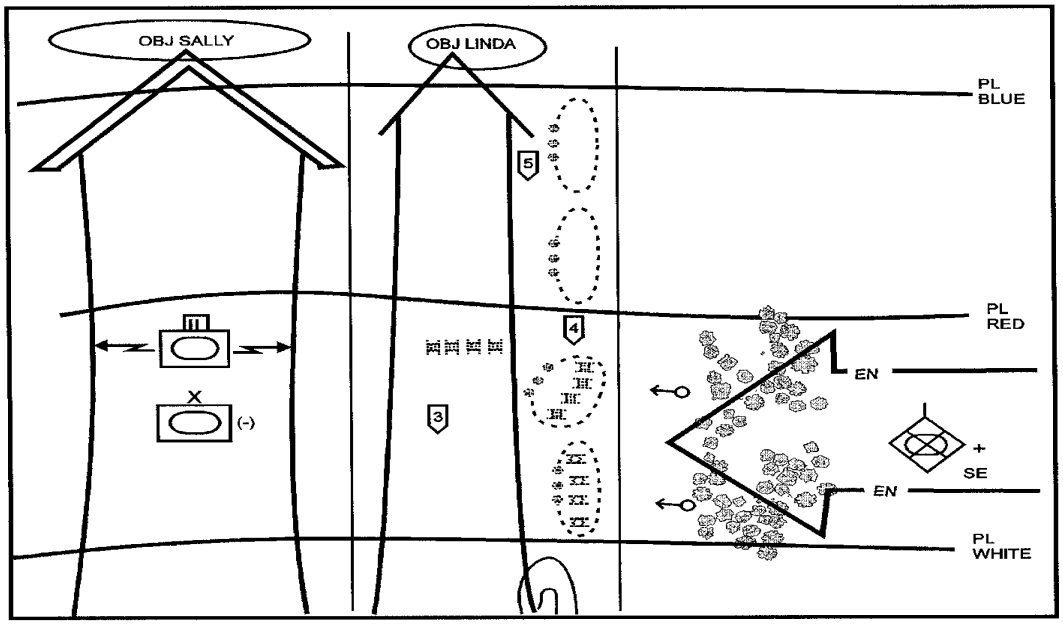


Figure 4-3. Example of a Company Team Guarding the Brigade Flank During Movement to Contact

LOCAL SECURITY

4-67. The company team is responsible for maintaining its own security at all times. It does this by deploying mounted and dismounted OPs and patrols to maintain surveillance and by employing appropriate operations security (OPSEC) measures. (See paragraph 4-68 for a detailed discussion of OPSEC measures.) In addition to maintaining security for its own elements, the company team may implement local security for other units as directed by the task force commander. Examples of such situations include, but are not limited to, the following:

- Provide security for engineers as they emplace obstacles or construct survivability positions in the company team BP.
- Secure a templated landing zone (LZ).

- Establish mounted and/or dismounted OPs to maintain surveillance of enemy infiltration and reconnaissance routes.
- Conduct patrols to cover gaps in observation and to clear possible enemy OPs from surrounding areas.

SECTION III – OPERATIONS SECURITY

4-68. OPSEC entails all measures taken by the company team to deny the enemy information about its actions and intentions. It covers a variety of procedures and precautions. This section focuses on general security measures; measures taken to ensure information security, signal security, and physical security as well as the employment of OPs. OPSEC measures are one way for the command to protect EEFI.

GENERAL SECURITY MEASURES

4-69. Maneuver units use general security measures to protect against surprise, observation, and infiltration. The following considerations and procedures will assist the company team in executing general security measures:

- **Enforce noise and light discipline.** Follow these procedures:
  - If feasible, turn off the circuit breaker for the brake lights.
  - Dim or cover all sources of light in the turret. Use a passive night observation device to check vehicles for light leaks before operations begin.
  - Move personnel and/or vehicles only when necessary.
  - Use headsets or the CVC helmet to monitor the radio; do not use the radio's external speakers.
  - Do not slam hatches.
  - Use short-count procedures to start engines simultaneously.
  - Use terrain to mask resupply and maintenance areas.
  - Use hand-and-arm signals and digital communications whenever possible.
  - Do not allow smoking outdoors at night.

- **Use camouflage to best advantage.** Follow these procedures:
  - Place vegetation on vehicles to break up their "profile."
  - Drape camouflage nets over gun tubes and turrets.
  - Park vehicles in natural concealment, such as shadows.
  - Cover all headlights and optics whenever possible.
  - Consider the effects of dust and exhaust smoke when moving.
  - Minimize track, tire, and foot trails that could be detected from the air or from enemy positions.

- Drive vehicles in previously made tracks when possible.
- In heavily used areas such as CPs and trains, ensure vehicles travel on existing tracks or roadways.

- Maintain effective concealment. Follow these procedures:
  - Disperse vehicles and personnel under foliage or inside structures whenever possible.
  - Conceal vehicles and personnel behind objects that block the thermal "LOS" of enemy devices.
  - Protect vehicles in hide positions against aerial observation by minimizing or eliminating their thermal signatures.
- Use challenge and password. Employ this procedure as specified in the OPORD or unit SOP.

INFORMATION SECURITY

4-70. Information security is the protection of all materials, both classified and unclassified, that may be of intelligence value to the enemy. The following procedures will assist the company team in maintaining information security:

- Ensure that soldiers do not send critical information through the mail. This includes unit identification, location, and capabilities; the commander's name; and information on combat losses or morale.
- Keep unauthorized personnel out of the company team's AO.
- Before leaving an area, police it to make sure items of intelligence value are not left behind.

SIGNAL SECURITY

4-71. The discussions of communications and COMSEC in Chapter 3 outline considerations and procedures for establishing and maintaining effective signal security.

PHYSICAL SECURITY

4-72. Physical security is the protection of materiel and equipment. The following considerations and procedures will help the company team to maintain effective physical security:

- When stationary, employ anti-intrusion devices, such as the platoon early warning system (PEWS), trip flares, and concertina wire.
- Maintain the prescribed REDCON status, and execute designated stand-to procedures at specified times.
- Do not allow foreign nationals and unauthorized observers in or near the unit's area or positions during operations. In accordance with the applicable ROE, ROI, and company team commander's intent, establish procedures for handling civilian intruders.

- Employ OPs to maintain surveillance on avenues of approach into the team's AO.
- Employ mounted and/or dismounted patrols as necessary.
- Establish reporting and inspection SOPs for personnel and sensitive items.

OBSERVATION POSTS

4-73. OPs are an especially important element of the company team's effort to establish and maintain OPSEC. They provide protection when long-range observation from current positions is not possible; this can occur when the team is in a hide position or when close terrain offers concealed avenues of approach to its position. The team can employ any number of OPs, either mounted or dismounted, as the situation dictates.

SELECTION OF THE OBSERVATION POST SITE

4-74. Before deploying OPs, the company team commander analyzes the terrain in his sector. He also coordinates with the team's subordinate leaders and with adjacent units to develop effective procedures for observing the assigned area of responsibility and eliminating gaps in observation between adjacent units.

4-75. Next, based on requirements for early warning and security, the commander decides which type of OP (mounted and/or dismounted) to employ and selects the best available location. A key consideration is the amount of reaction time the company team will require based on its current REDCON status. After selecting the type(s) of OPs and their locations, the commander should brief the company team OP plan to his subordinate leaders and coordinate the plan with commanders of adjacent units as necessary.

4-76. To be most effective, OPs should have the following characteristics:

- **Clear fields of observation covering the assigned area or sector.** OPs must be positioned to allow the company team to observe locations (such as the forward slope of a hill or dismounted avenues of approach) that it cannot see from current positions.
- **Overlapping coverage and mutual support.** Ideally, the fields of observation of adjacent OPs and/or units will overlap to ensure full coverage of the sector.
- **Effective cover and concealment.** Positions with natural cover and concealment help to reduce the vulnerability of OPs to enemy observation and attack.
- **Covered and concealed routes to and from the position.** Soldiers must be able to enter and leave their OPs without being seen and engaged by the enemy.
- **A location that will not attract enemy attention.** The commander should avoid sites that would logically be the target of enemy observation or that could serve as artillery TRPs.

- **A location that does not skyline observers.** In selecting OP sites, the commander should avoid hilltops. The OPs should be positioned farther down the slope of the hill.
- **A location that is within range of supporting small arms fire.** This enables the company team to cover OP personnel and vehicles if withdrawal becomes necessary.

MOUNTED OBSERVATION POSTS

4-77. Mounted OPs are used when the company team or subordinate elemen, have access to hull-down or turret-down positions that afford unobstructed surveillance of mounted avenues of approach in the unit's sector. This type of OP allows the commander to take advantage of his vehicles' capabilities: magnified thermal and daylight optics, sophisticated communications, lethal weapon systems, and survivability.

4-78. A common mounted OP technique, executed at the platoon level, has one vehicle positioned forward to observe an EA or obstacle while the remainder of the platoon occupies hide positions. Even when the mounted OP has clear fields of observation, it is advisable to dismount one or two members of the crew to provide close-in local security for the vehicle. The dismounted crewmen occupy positions far enough away that sounds from the vehicle do not prevent them from hearing an approaching enemy. Local security can also be enhanced by employment of infantry, which can conduct patrols and occupy dismounted OPs in accordance with the commander's OPSEC plan.

DISMOUNTED OBSERVATION POSTS

4-79. Whenever the company team must halt and occupy vehicle positions from which the terrain impedes observation or early warning of enemy activities, it should employ dismounted OPs to provide local security along dismounted avenues of approach. Dismounted OPs also augment or replace mounted OPs based on requirements in the commander's OPSEC plan. Platoons will normally emplace dismounted OPs as directed by the commander. (See 3-21.71 [FM 7-7J] and FM 3-20.15 [FM 17-15] for a discussion of dismounted OPs.)

Chapter 5

Offensive Operations

Offense is the decisive form of war. With offensive action comes the ability to create and maintain the initiative and choose the time and place of decisive action. Because of their ability to move quickly and employ devastating amounts of firepower with a high level of protection, armor and mechanized infantry company teams are ideally suited to perform a variety of critical offensive operations within the OE. Company teams attack throughout the AO to disrupt enemy defenses and ensure their destruction. The offense ends when the company team achieves its purpose of the operation, reaches a LOA, or reaches culmination. Company teams conclude a phase of an offensive operation by consolidating gains, resuming the attack or preparing for future operations.

Company team offensive operations also accomplish these additional tasks:

- Defeat, destroy, or neutralize an enemy force.
- Protect friendly forces by suppressing the enemy.
- Seize or secure key or decisive terrain.
- Develop the situation and gain critical combat information.
- Deny the enemy resources.
- Fix the enemy in position.
- Disrupt an enemy attack.

CONTENTS

Planning Considerations 5-2
Intelligence 5-2
Maneuver 5-2
Fire Support 5-5
Air Defense Artillery 5-5
Mobility and Survivability 5-5
Logistics 5-6
Command and Control 5-6
Tactical Movement 5-6
Movement Techniques 5-7
Infiltration 5-8
Overwatch 5-8
Movement Formations 5-11
Maneuver 5-16
Base of Fire Element 5-16
Bounding Element 5-17
Positioning of Platoons and Other Elements 5-18
Relationship of Tactical Movement, Actions On Contact, Maneuver, and Tactical Tasks 5-18
Actions on Contact 5-19
Contact Continuum 5-19
Developing Actions on Contact 5-20
Time Requirements for Actions on Contact. 5-21
Four Steps of Actions on Contact 5-21
Examples of Actions on Contact 5-26
Advance in Contact 5-31
Types of Offensive Operations 5-33
Movement to Contact 5-33
Search and Attack 5-37
Attack 5-41
Special Purpose Attacks 5-48
Offensive Tactical Tasks 5-51
Attack by Fire 5-52
Support by Fire 5-54
Suppress 5-56
Follow and Support 5-56
Bypass 5-58
Clear 5-59
Assault 5-65

SECTION I - PLANNING CONSIDERATIONS

INTELLIGENCE

5-1. To employ the proper capabilities and tactics, the commander must have detailed knowledge of the enemy's organization, equipment, and tactics. He must understand the enemy's strengths and weaknesses. Ideally, this knowledge will be available during TLP. The commander must analyze all combat information received via command updates and through a common operational picture gained with FBCB2 if available. Additionally, the commander must conduct personal reconnaissance of his AO as the situation permits. This information help to determine the feasibility of a COA designed to achieve maximum destruction of the enemy.

MANEUVER

5-2. By definition the company team is a combined arms organization that is formed by attaching one or more nonorganic tank, mechanized infantry, or light infantry platoons to a tank mechanized infantry, or light infantry company either in exchange for or in addition to organic platoons. Therefore, for a company team commander must understand the capabilities of each element in order to employ them effectively during offensive operations. In addition to ground maneuver assets, the company team commander must consider the following paragraphs when Army Aviation units operate within the company team's AO:

AVIATION COMBAT MISSIONS

5-3. Army aviation is an integral component of combined arms operations. Frequently, the BCT receives aviation assets in an attached command relationship; therefore the company team commander must understand the capabilities of attack and reconnaissance aircraft as well as understand how to coordinate with aviation units when operating within the same AO. The following paragraphs address considerations in all types of Army Aviation missions:

RECONNAISSANCE

5-4. Like their ground-based counterparts, air reconnaissance operations obtain information by visual observation and other detection methods; they employ assets that must have the ability to develop the situation, process the information, and provide it to the commander in near real time. The company team commander can take advantage of the supporting aviation element's OH-58D Kiowa Warrior and AH-64 Apache helicopters to dramatically improve his 24-hour reconnaissance capability. These assets complement and expand the AO covered by the team's tank and mechanized infantry platoons. Under favorable conditions, they can furnish early information concerning the enemy's general disposition and movements to considerable depth beyond the FEBA. Air reconnaissance operations obtain information through visual and sensor-based observation. Aviation assets have the capability to develop the situation by processing information and providing it to the commander in near real time.

SECURITY

5-5. Aviation assets can extend the company team's security area, providing the commander with enhanced situational understanding and battle-tracking capability. They can expand the team's maneuver space, provide additional reaction time, and assist in protection of the team. Aviation assets are used to gather information about the enemy and to provide early warning, reaction time, maneuver space, and protection for the main body. These operations are conducted using continuous aerial reconnaissance to reduce terrain and enemy unknowns, gaining and maintaining contact with the enemy to ensure continuous information flow, and providing early and accurate reporting of combat information to the protected force.

ATTACK

5-6. The primary purpose of attack helicopter operations is the destruction of enemy ground forces at decisive points of the battle. Attack helicopter units can be used in conjunction with tank and mechanized infantry elements during close operations. Helicopters are normally most effective when massed in continuous operations on the enemy's flanks and rear. Night operations are preferred.

SUPPORT BY FIRE AND ATTACK BY FIRE

5-7. When assigned a fire mission, attack helicopters may establish support by fire (SBF) or attack by fire (ABF) positions. They may engage enemy targets while tank or mechanized infantry elements move to or bypass the target area. The helicopters' role may range from suppression to complete destruction of the enemy force. Their most common mission is to fix targets so other friendly elements can maneuver. ABF positions are best suited to a fluid battlefield. The aviation commander often has the best vantage point from which to synchronize the combat multipliers, clear fires, and prevent fratricide.

MOVEMENT TO CONTACT

5-8. When the enemy situation is vague, as in a movement to contact, and the attack helicopter battalion commander has been assigned his own AO, he may establish attack by fire positions. From these positions, the attack helicopters may engage their targets, but do not maneuver over them, with the intent of inflicting a specified level of damage. Once contact is made, helicopters use direct and indirect fires to harass and impede the enemy preventing his influence on the friendly main body. Aviation assets can also direct ground elements to the vicinity of enemy units and can support those ground elements with fires. If the ground element is directed to bypass the enemy after initial contact, aviation assets will maintain surveillance and contain small forces until follow-on elements arrive to destroy them.

AIR ASSAULT

5-9. Heavy forces should always consider the use of air assault to assist them in overcoming obstacles during the seizure of critical terrain and in executing follow and support missions to preserve the momentum of the attack. (See FM 3.97.4 [FM 90-4] or FM 3-21.10 [FM 7-10] for a detailed discussion of air assault operations.)

COMMUNICATIONS

5-10. All Army helicopters have SINCGARS radios; however FBCB2 has not been fielded in Army Aviation organizations. While the radio remains the primary means of tactical communications, face-to-face contact is still the best method of passing information between air and ground elements. Whenever the situation permits, aviation leaders should land their aircraft, link up with their ground counterparts (such as the company team commander), and directly communicate the battlefield situation as gathered from the air.

COORDINATION

5-11. Aviation reconnaissance assets can easily identify enemy targets and then coordinate with the company team FIST to facilitate destruction of the targets with direct and indirect fires. In addition, prior coordination between air and ground elements, implementing of fire support coordination measures, identifying friendly positions, and planned movements, can eliminate a significant number of factors that contribute to fratricide, a vital concern during combined arms missions.

5-12. The following is a checklist when conducting air/ground coordination briefed by the ground force commander to the air mission commander:

- Enemy situation/recent contact.
- Bypassed enemy locations.
- Friendly situation (front line trace of vehicles and dismounted OPs).
- Mission statement.
- Concept of operations.
- Exchange of graphics.
- Actual and templated enemy air defense locations.
- Fire support plan.
- Battle handover line and criteria.
- Call signs/frequencies.

5-13. Briefed by the air mission commander to the ground force commander:

- Number and types of aircraft.
- Time on station.
- Any limitations to support (weather/light).
- Concept of the operation.
- Air routes.
- Air commander's graphic control measures.
- Forward arming and refueling point (FARP) locations.
- Downed aviator pick-up point (DAAP) locations and procedures.

FIRE SUPPORT

5-14. As part of the top-down fire planning system, the company team commander must refine the fire plan from higher headquarters to meet his mission requirements. He incorporates the results of his METT-TC analysis and makes key locations and targets from the fire plan an integral part of the company team rehearsal. Additionally, he works with the FSO to develop a corresponding observation plan as well as triggers for initiating or shifting fires.

5-15. The commander employs supporting fires in the offense to achieve a variety of operational goals:

- **Suppress enemy AT systems that inhibit movement.**
- **Fix or neutralize bypassed enemy elements.**
- **Prepare enemy positions for an assault.** Preparatory fires are normally used during a deliberate attack, with fires placed on key targets before the assault begins. Fires are initiated on call or at a prearranged time. The commander must weigh the benefits of preparatory fires against the potential loss of surprise.
- **Obscure enemy observation or screen friendly maneuver.** The company team can take advantage of smoke in various maneuver situations, such as during a bypass or in deception operations.
- **Support breaching operations.** Fires can be used to obscure or suppress enemy elements that are overwatching reinforcing obstacles. They can also obscure or suppress enemy forces on an objective area during the conduct of an assault breach.
- **Illuminate enemy positions.** Illumination fires are always included in contingency plans for night attacks.

AIR DEFENSE ARTILLERY

5-16. BSFVs, Bradley Linebackers, or HMMWV-mounted Stinger sections may be attached to or travel with the company team. Their security must be a consideration in planning for offensive operations. The company team commander must plan for and rehearse internal air security and active air defense measures. ADA requirements and procedures are normally dictated by SOP. The commander must anticipate possible contact with enemy air assets by templating enemy helicopter and fixed-wing air corridors and avenues of approach.

MOBILITY AND SURVIVABILITY

5-17. The task force may task organize the company team with engineers as part of a deliberate or in-stride breaching operation in the offense. If the company team is tasked to serve as the advance guard or breach force for the task force, it will normally receive additional mobility assets (such as mine clearing line charge [MICLIC], ACE, or armored vehicle launched bridge [AVLB]) based on METT-TC. (See FM 3-34.2 [FM 90-13-1] and/or FM 3-34.1 [FM 90-7] for a more detailed discussion of mobility and survivability operations and support.)

LOGISTICS

5-18. The main purpose of logistics in the offense is to assist maneuver elements in maintaining the momentum of the attack. Key logistics planning considerations for company team offensive operations include the following:

- Increased consumption of Class III supplies.
- Higher casualty rates.
- Vehicle maintenance requirements.

5-19. In the offense, logistics functions are performed as far forward as the tactical situation allows. Team trains remain one terrain feature (or about 1 kilometer) behind the combat formations. Logistics elements move forward as required to evacuate casualties and conduct resupply. The 1SG reports the team's combat status to the task force combat trains CP and requests resupply of Class III and V as needed.

COMMAND AND CONTROL

5-20. In the offense to effectively C2, the communications SOPs for the company team must be clear, simple and redundant. Daylight and limited visibility markings must be understood by all and radio transmissions must be clear and concise to enhance offensive C2. Units equipped with FBCB2 must have established SOPs that dictate message recipients to insure critical information reaches the commander, without burdening him with routine digital traffic. Additionally, the commander must consider where to position himself on the battlefield in order to most effectively influence the operation.

SECTION II - TACTICAL MOVEMENT

5-21. The purpose of tactical movement is to position units on the battlefield and to ensure protection and gain advantage over the enemy prior to contact. This section focuses on the movement techniques and formations that, in combination, provide the commander with options for moving his unit. The various techniques and formations have unique advantages and disadvantages.

5-22. The task force may dictate which movement techniques and formations the company team will use in a particular situation. This decision, however, normally falls to the team commander. His primary goals are to balance the requirements of speed and security and to conduct movement so the smallest possible element of the team makes contact with the enemy.

5-23. The commander must assess METT-TC factors to determine which techniques and formations will allow him to maintain the correct balance of speed and security to best accomplish his mission. He also must determine how and when the unit will transition to more secure or more rapid techniques and/or formations based on the situation. None of the movement techniques or formations discussed in this section should be considered

inflexible or immutable. The commander must always be prepared to adapt them to the situation at hand.

MOVEMENT TECHNIQUES

5-24. The company team commander selects from the three movement techniques (traveling, traveling overwatch, and bounding overwatch) based on several battlefield factors:

- The likelihood of enemy contact.
- The type of contact expected.
- Availability of an overwatch element.
- The terrain over which the moving element will pass.
- The level of security required during movement.
- Timeline of higher headquarters.

TRAVELING

5-25. Traveling is characterized by continuous movement by all company team elements. It is best suited to situations in which enemy contact is unlikely and speed is important.

NOTE: Organization of the company team in both traveling overwatch and bounding overwatch consists of a lead element (also called the bounding element in bounding overwatch) and a trail (or overwatch) element. The commander constitutes these elements using varying combinations of company team elements; his decision must be based on the results of his METT-TC analysis. As an example, the lead element might be one platoon and the XO's vehicle, overwatched by the remaining two platoons, the commander, and the FSO.

TRAVELING OVERWATCH

5-26. This is an extended form of traveling that provides additional security when speed is desirable but contact is possible. The lead element moves continuously. The trail element moves at various speeds and may halt periodically to overwatch movement of the lead element and scans possible enemy locations.

5-27. Dispersion between the two elements must be based on the trail element's ability both to see the lead element and to provide immediate suppressive fires in case the lead element is engaged. The intent is to maintain depth, provide flexibility, and maintain the ability to maneuver if any form of contact occurs, although a unit ideally should make contact while moving in bounding overwatch rather than traveling overwatch.

BOUNDING OVERWATCH

5-28. Bounding overwatch is used when physical or visual contact is expected. It is the most secure, but slowest, movement technique. The purpose of bounding overwatch is to deploy prior to contact, giving the unit the ability to protect a bounding element by immediately suppressing an enemy force.

5-29. In all types of bounding, the overwatch element is assigned sectors to scan while the bounding element uses terrain to achieve cover and concealment. The commander may designate that the overwatch element conduct reconnaissance by fire in order to provide the bounding element

increased security. The bounding element should avoid masking the fires of the overwatch element; it must never move beyond the range at which the overwatch element can effectively suppress likely or suspected enemy positions. The company team can employ either of two bounding methods, alternate bounds and successive bounds; these are discussed in the following paragraphs.

ALTERNATE BOUNDS

5-30. Covered by the rear element, the lead element moves forward, halts, and assumes overwatch positions. The rear element advances past the lead element and takes up overwatch positions. This sequence continues as necessary, with only one element moving at a time. This method is usually more rapid than successive bounds.

SUCCESSIVE BOUNDS

5-31. In the successive bounding method, the lead element, covered by the rear element, advances and takes up overwatch positions. The rear element then advances to an overwatch position roughly abreast of the lead element and halts. The lead element then moves to the next position, and so on. Only one element moves at a time, and the rear element avoids advancing beyond the lead element. This method is easier to control and more secure than the alternate bounding method, but is slower.

INFILTRATION

5-32. Infiltration is a form of maneuver that company teams can employ in a variety of situations. During an attack, for example, the company team may encounter strong enemy defensive positions. To avoid the enemy's strength, the company team commander may use stealth to move infantry squads and sometimes mounted elements through gaps or around the enemy positions to conduct operations in the enemy's rear area. The commander may also infiltrate a platoon or rifle squad to conduct attacks to seize key terrain, such as a choke point that will facilitate movement of the rest of the company team, or it can infiltrate to conduct an ambush. Infiltration can also be used in many other types of operations, such as reconnaissance and breaching.

5-33. Infiltration is normally conducted in five phases (see FM 3-21.10 [FM 7-10] for a more detailed discussion of infiltration).

- **Patrol.** Locate enemy positions and find gaps or weak areas in the enemy defense.
- **Prepare.** Conduct TLP.
- **Infiltrate.** The primary goal is to avoid enemy contact, normally by moving in the smallest elements possible.
- **Consolidate.** Link up with other infiltrating elements, and prepare for actions on the objective.
- **Execute.** Complete the mission.

OVERWATCH

5-34. Overwatch is the component of tactical movement in which an element observes and, if necessary, provides direct fire support for a friendly moving element. Situational understanding is crucial for the overwatch unit, whose objective is to prevent the enemy from surprising and engaging the moving unit. The overwatch force must maintain communications with

the moving element and provide early warning of enemy elements that could affect it using FM or FBCB2. The overwatch must be able to support the moving element with immediate direct and indirect fires; it can do this either while stationary (as in bounding overwatch) or on the move (as in traveling overwatch). (**NOTE:** The overwatch element must also maintain 360-degree observation and security for itself.)

5-35. The key to successful overwatch is aggressive scanning of gaps and dead space (that may require the use of dismounted squads, Army Aviation or tactical UAV if available) within the moving element's formation and on surrounding terrain. If the overwatch is unable to scan gaps and dead space and effectively engage the enemy, it must alert the moving element of the lapse in coverage. The moving element will normally adjust its movement speed and/or formation and initiate its own overwatch until the overwatch force completes movement to a position from which it can continue the overwatch mission.

5-36. Figure 5-1 on page 5-10 illustrates what the overwatch element must look (and listen) for as well as locations where the enemy can often be found.

COMPANY TEAM ROLE

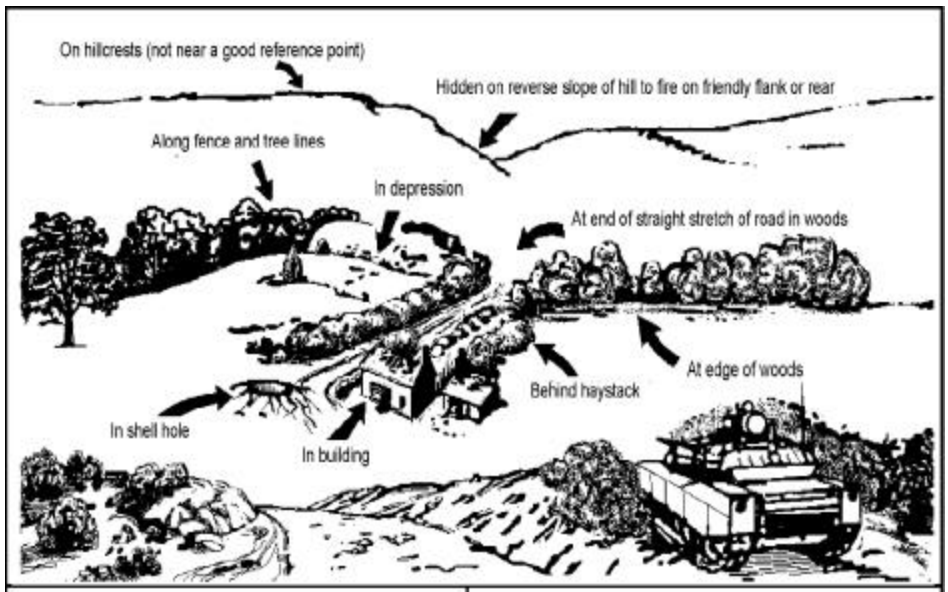
5-37. The company team may be tasked to perform an overwatch mission in support of the task force or a portion of it. In general, because of organic weapons capabilities and normal operational intervals, one company team will not normally provide overwatch for another. At this level, overwatch is usually performed by platoons, sections, or individual vehicles.

STATIONARY OVERWATCH

5-38. If possible, the stationary overwatch element occupies hull-down firing positions that afford effective cover and concealment, unobstructed observation, and clear fields of fire. The leader of the overwatch element (such as the commander or the platoon or section leader) will assign sectors of observation and fire. As noted, the overwatch element is responsible for its own security during both occupation of the overwatch position and execution of the operation. A common security measure is to dismount infantry squads or loaders from the tanks to clear the overwatch position before the rest of the element occupies it.

5-1. Crews aggressively scan their sectors (using slow, rapid or detailed techniques) to identify enemy elements and positions. The leader must structure the mission so the overwatch element can effectively scan for known or likely enemy positions, paying close attention to possible gaps and dead space. The element must have a clear understanding of the enemy situation so crewmen know what to look for and where to look. They use applicable search techniques and employ all available sights and other visual devices (such as binoculars and night vision goggles).

5-2. If contact is made, the overwatch element initiates a high volume of direct and indirect suppressive fires. It moves as necessary between primary and alternate positions to avoid being decisively engaged by the enemy.



WHAT TO LOOK AND LISTEN FOR:	WHERE TO LOOK (see figure above):
TANKS • Engine noise, track clatter. • Exhaust smoke. • Antenna masts. • Engine, suspension heat sources. • Dust and reflections. • Firing signature (flash, blast).	• Within 2,000 meters of moving element. • Near crests, next to buildings, in tree lines.
ATGM • Smoke signature of missile in flight. • Missile controller may be up to 100 meters from launch site. • Human heat sources.	• 400 to 4,000 meters from moving element. • May be launched from behind hilltops and ridge lines. • Roofs.
OTHER ANTITANK WEAPONS • Usually well-camouflaged. • Firing signature. • Handheld and crew-served weapon systems. • Human heat sources.	• Within 1,000 meters of moving element. • 360-degree observation needed to protect against tank ambush teams using handheld weapons. • Two or more may be employed on reverse slopes, protected by mines. • Usually on a flank.

Figure 5-1. Overwatch Locations and Techniques

OVERWATCH ON THE MOVE

5-39. This type of overwatch is used in conjunction with the traveling overwatch movement technique. While maintaining its location in the overall unit formation, the overwatch element (usually a platoon or section) continuously scans as the lead element bounds and closely monitors all potential gaps and dead space.

5-40. The overwatch maintains a specified interval from the lead element; this is dictated by weapons capabilities and the effects of terrain, movement, and speed. As needed, the overwatch can execute short halts to provide more effective observation, facilitating acquisition of enemy forces.

MOVEMENT FORMATIONS

5-41. The company team commander uses formations for several purposes:

- Establish the relationship of one platoon to another on the ground.
- Allow the team to position firepower where it is needed in support of the direct fire plan.
- Establish responsibilities for sector security among platoons.
- Facilitate the execution of battle drills and directed COAs.

5-42. Like movement techniques, formations are planned based on where enemy contact is expected, how the higher commander expects to react to the contact and what the terrain and vegetation allows. The company team commander must evaluate the situation and determine which formation best suits the mission and the situation.

5-43. It is not necessary for the team formation to be the same as the task force formation. It is critical, however, for the team commander to coordinate his formation with those of other elements moving in the main body task force formation. A parallel consideration is that while the company team formation establishes the relationship between the team's platoons, the actual positioning of vehicles within each platoon is dictated by the platoon formation. In some cases, the platoon may use the same formation as the company team (for example, the platoons may use the column formation within a team column). In other situations, however, platoon and team formations may be different as a result of METT-TC factors (such as the platoons moving in wedge formations within a team vee).

5-44. An important consideration in movement planning and execution is that formations are not rigid. Spacing requirements, as well as other METT-TC considerations, will require the company team commander and subordinate leaders to adapt the basic formations as necessary. They must be ready to adjust the distance between platoons and individual vehicles based on terrain, visibility, and mission requirements.

5-45. As a rule, the company team will move in formation when using traveling or traveling overwatch. When the team is using bounding overwatch, the bounding element makes the best use of the terrain, rather than adopting a precise formation, to move effectively while maintaining adequate security.

NOTE: The formations shown in illustrations in this chapter are examples only; they generally are depicted without consideration of terrain and other METT-TC factors that are always the most crucial element in the selection and execution of a formation. Leaders must be prepared to adapt their choice of formation to the specific situation.

COLUMN

5-46. The column is used when speed is critical, when the company team is moving through restricted terrain on a specific route, and/or when enemy contact is not likely. Each platoon normally follows directly behind the platoon in front of it. If the situation dictates, however, vehicles can disperse laterally to enhance security Figure 5-2 illustrates this type of column movement. The column formation has the following characteristics, advantages, and limitations:

- It provides excellent control and fires to the flanks.
- It permits only limited fires to the front and rear.
- It is easy to control.
- It provides extremely limited overall security.
- It is normally used for traveling only.

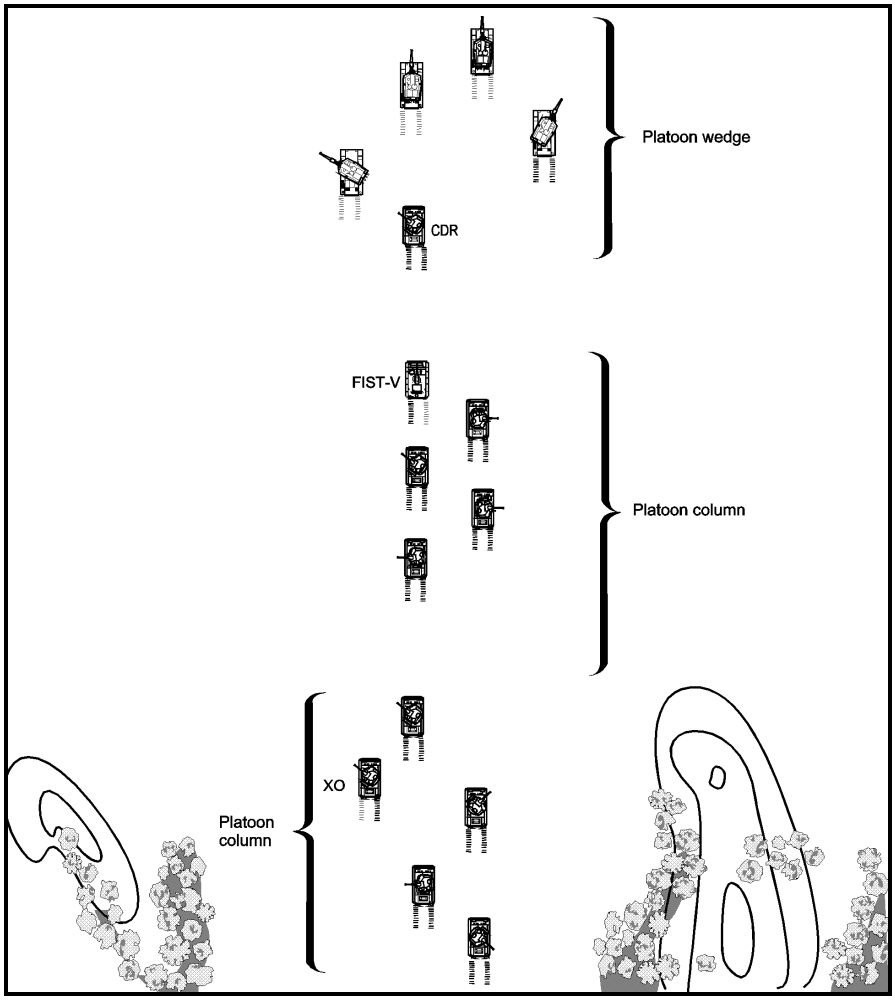


Figure 5-2. Company Team in Column Formation with Dispersal for Added Security

WEDGE

5-47. The wedge formation is often used when the enemy situation is unclear or contact is possible. In the company team wedge, the lead platoon is in the center of the formation with the remaining platoons located to the rear of and outside the lead platoon (see Figure 5-3). The wedge has the following characteristics, advantages, and limitations:

- It permits excellent fires to the front and good fires to the flanks.
- It is easy to control.
- It provides good security to the flanks.
- It can be used with the traveling and traveling overwatch techniques.
- It allows rapid transition to bounding overwatch.

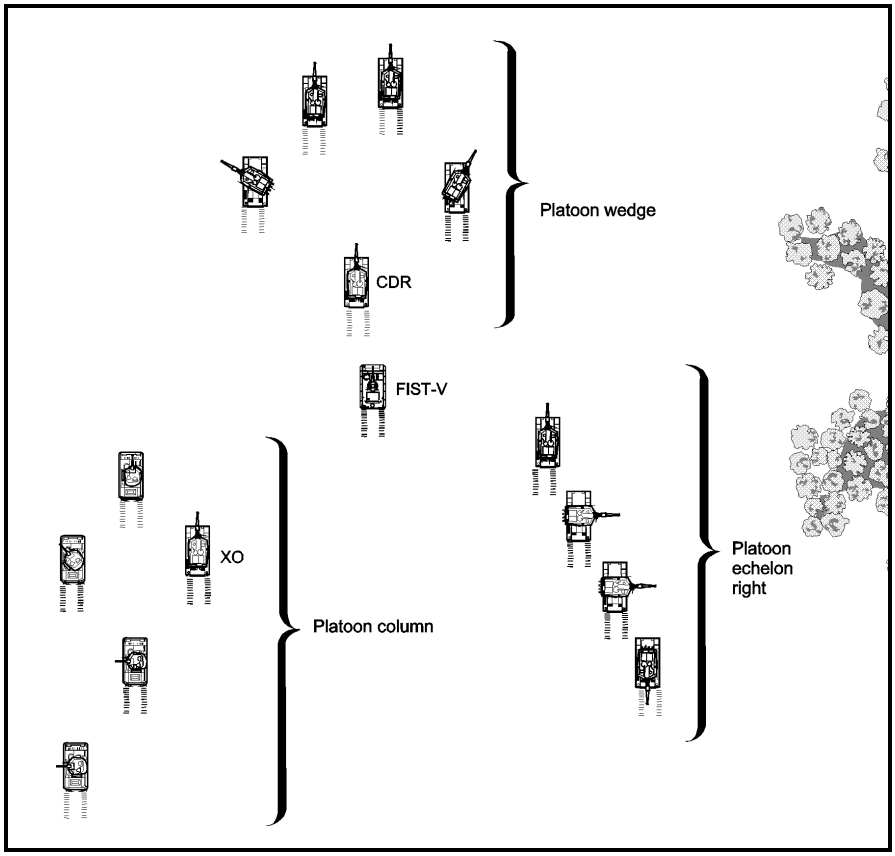


Figure 5-3. Company Team in Wedge Formation (with Different Platoon Formations)

VEE

5-48. The vee formation is used when enemy contact is possible (see Figure 5-4). In the company team vee, the center platoon is located in the rear of the formation, while the remaining platoons are to the front of and outside the center platoon. The vee has the following characteristics, advantages, and limitations:

- It permits more firepower to the front than the wedge and affords good fires to the flanks.
- It is more difficult to control than the wedge and makes it more difficult for vehicles to maintain proper orientation.
- It allows one platoon in the formation to maintain freedom of maneuver when contact occurs.
- It facilitates rapid deployment into any other formation.
- It can be used with the traveling and traveling overwatch techniques.
- It allows rapid transition to bounding overwatch.

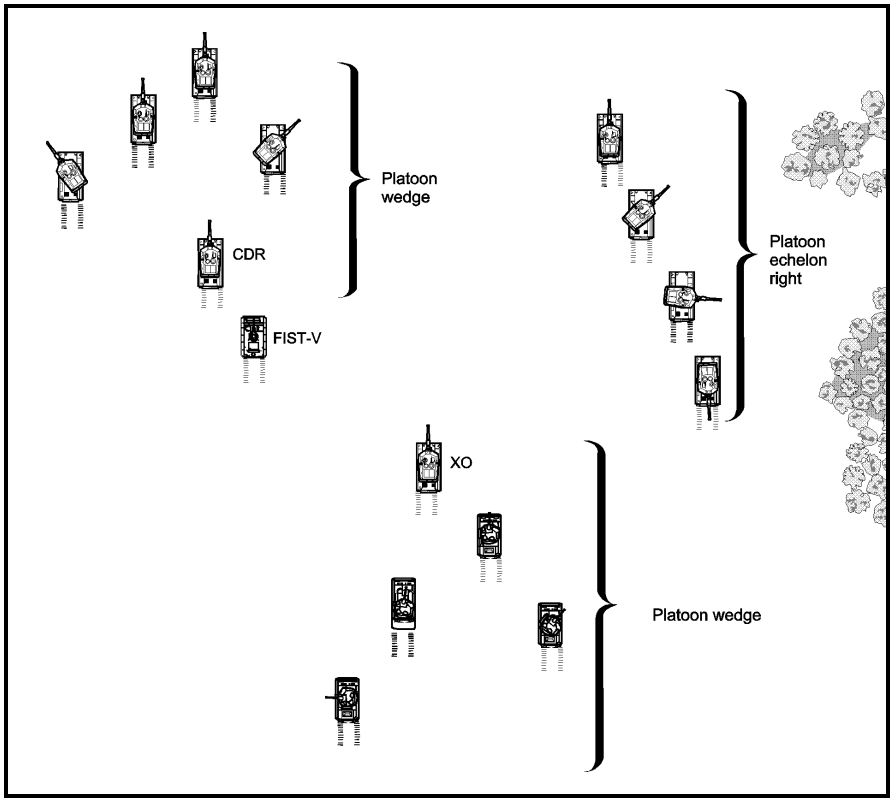


Figure 5-4. Company Team in Vee Formation (with Different Platoon Formations)

LINE

5-49. The line formation is primarily used when a unit or element is crossing a danger area or needs to maximize firepower to the front (see Figure 5-5). In the company team line, platoons move abreast of one another

and are dispersed laterally. The line formation has the following characteristics, advantages, and limitations:

- It permits maximum fires to the front or rear, but minimum fires to the flanks.
- It is difficult to control.
- It is less secure than other formations because of the lack of depth.
- It is the most difficult formation from which to make the transition to other formations.
- It may be used in the assault to maximize the firepower and/or shock effect of the heavy company team. This is normally done when there is no more intervening terrain between the unit and the enemy, when AT systems are suppressed, and/or when the unit is exposed to artillery fire and must move rapidly.

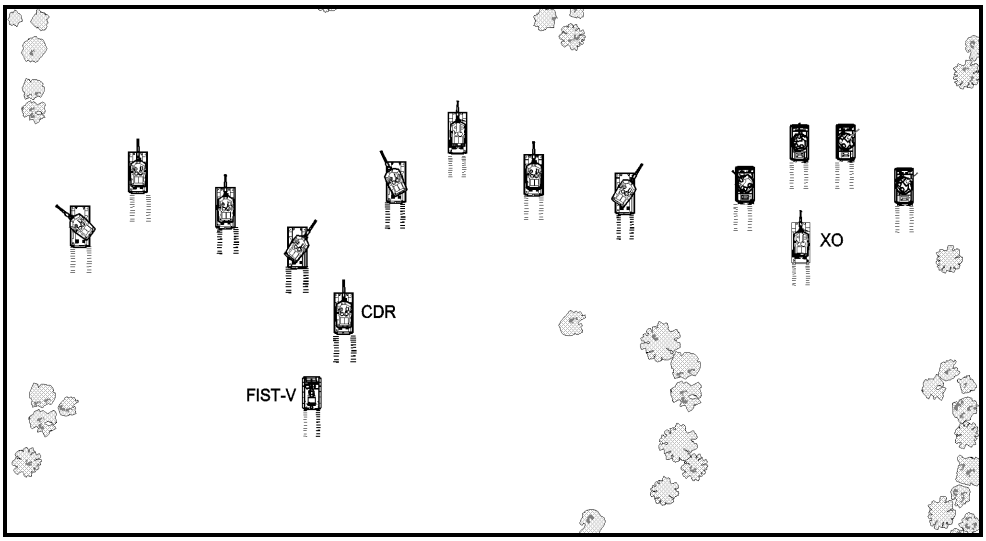


Figure 5-5. Company Team in Line Formation (with Platoons in Wedge Formations)

ECHELON

5-50. The echelon formation is used when the task force wants to maintain security and/or observation of one flank and enemy contact is not likely (see Figure 5-6). The company team echelon formation (either echelon left or echelon right) has the lead platoon positioned farthest from the echeloned flank, with each subsequent platoon located to the rear of and outside the platoon in front of it. The echelon formation has the following characteristics, advantages, and limitations:

- It is difficult to control.
- It affords excellent security for the higher formation in the direction of the echelon.
- It facilitates deployment to the echeloned flank.

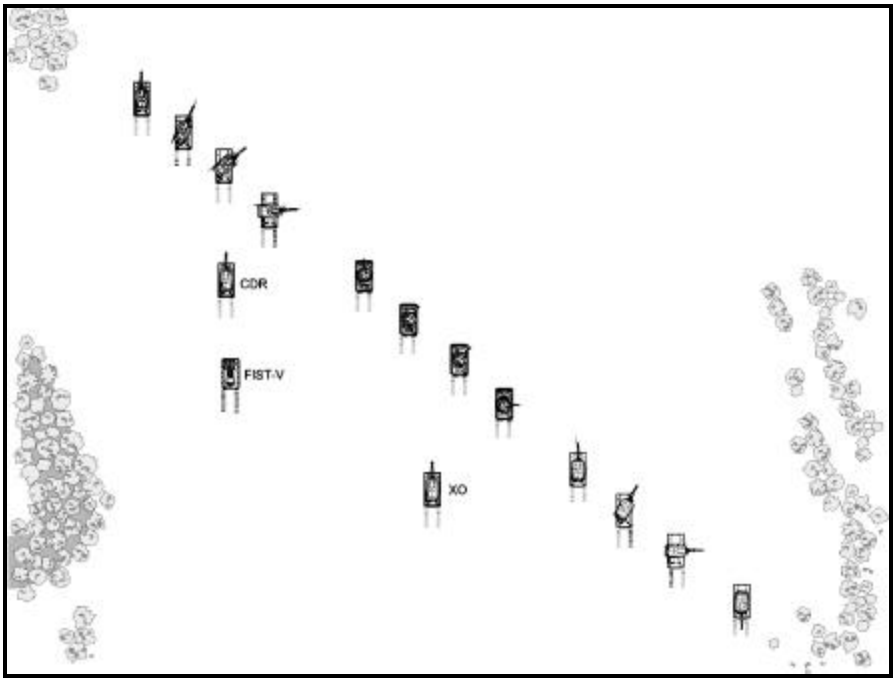


Figure 5-6. Company Team in Echelon Right Formation (with Platoons in Echelon Formations)

COIL AND HERRINGBONE

5-51. The coil and herringbone are platoon-level formations, employed when elements of the company team are stationary and must maintain 360-degree security. (See 3-20.15 [FM 17-15] or FM 3-21.71 [FM 7-7J] for more information on these formations.)

SECTION III – MANEUVER

5-52. Maneuver is the foundation for the employment of forces on the battlefield. It is defined as the use of movement in combination with fire (or fire potential), employed to achieve a position of advantage with respect to the enemy and to facilitate destruction of the enemy and accomplishment of the mission. At the company team level, maneuver is the essence of every tactical operation and task. The company team commander maneuvers his mounted and dismounted elements to close with the enemy, to gain successive positions of advantage over him, and ultimately to destroy him.

BASE OF FIRE ELEMENT

5-53. The combination of fire and movement first requires a base of fire, in which some elements of the company team remain stationary and provide protection for bounding elements by suppressing or destroying enemy elements. The base of fire element occupies hull-down firing positions (when possible) that afford effective cover and concealment, unobstructed observation, and clear fields of fire. Once it is in position, the base of fire element must suppress or destroy known enemy elements and must aggressively scan assigned sectors of observation; it identifies previously

unknown elements and then suppresses them. The protection provided by the base of fire element allows the bounding unit to continue its movement and to retain the initiative even when it is both under enemy observation and within range of enemy weapons.

5-54. Because maneuver is decentralized in nature, decisions on where and when to establish a base of fire must be made at the appropriate level. They normally fall to the leader on a specific part of the battlefield who knows what enemy elements can engage the moving element and what friendly forces are available to serve as the base of fire. Within the company team, these decisions may be made at team level (with the base of fire provided by a platoon), within platoons (with base of fire by a section), or within sections (with an individual vehicle or squad as the base of fire).

BOUNDING ELEMENT

5-55. Movement in a maneuver situation is inherently dangerous. It is complicated not only by the obvious potential for harm posed by enemy weapons and personnel but also by the uncertainty caused by unknown terrain and other operational factors. The following considerations apply for movement in maneuver situations:

- Conduct continuous reconnaissance (mounted, dismounted, and map) and maintain a COP with adjacent units.
- The bounding element must take full advantage of whatever cover and concealment is provided by the terrain. Leaders and drivers can enhance security by enforcing or applying the principles of terrain driving; among these important actions are use of intervening terrain and avoidance of skylining.
- All crews involved in the maneuver must maintain 360-degree security at all times. Crewmen in the bounding element must continuously scan their assigned sectors of observation. Commanders must provide clear focus to for scanning to ensure that 360 degree security is maintained. (See Appendix B for additional information on direct fire planning.)
- Although METT-TC factors will ultimately dictate the length of the bounds, the bounding element should never move beyond the range at which the base of fire element can effectively suppress known, likely, or suspected enemy positions. This will minimize the bounding element's exposure to enemy fires.
- In severely restricted terrain, bounds will generally be much shorter than in more open areas.
- The bounding element may have to dismount infantry rifle squads or individual crewmen to observe intervening gaps, clear intervisibility lines or dead space. Although, the combination of mounted and dismounted elements maneuvering together will slow the tempo of the operation it will not degrade the unit as much as the loss of a vehicle.
- The bounding element must remain focused on its ultimate goal of gaining a positional advantage, which it can then use to destroy the enemy by direct and indirect fires.

POSITIONING OF PLATOONS AND OTHER ELEMENTS

5-56. Based on his evaluation of METT-TC factors, the company team commander should establish the role of each platoon and support asset within the company team scheme of maneuver. These considerations apply—

- Tanks lead in maneuver against automatic weapons, antipersonnel mines, wire obstacles, and enemy armored units.
- Tanks, BFVs, and dismounted infantry maneuver in concert in the following situations:
  - In assaults against entrenched infantry, jungle positions, heavily fortified areas, and towns and villages.
  - During periods of limited visibility.
- Most often dismounted infantry squads and engineers lead in maneuver against constructed AT defenses (such as AT ditches and abatis), across defended water obstacles, through heavy woods, within built-up areas, and in mountainous terrain. In such situations, tanks and BFVs provide a base of fire. However, METT-TC may dictate that tanks and BFV's lead in restrictive terrain.

RELATIONSHIP OF TACTICAL MOVEMENT, ACTIONS ON CONTACT, MANEUVER, AND TACTICAL TASKS

5-57. The purpose of tactical movement is to move units on the battlefield and to prepare them for contact with the enemy. See Figure 5-7 for the process by which units transition from tactical movement to maneuver is actions on contact. Properly executed, maneuver allows units to move on the battlefield while in contact. Maneuver is an integral part of tactical tasks, all of which require the combination of fire and movement. At the same time, it is the action that allows a unit to advance while in contact to reach the point on the battlefield from which it executes its next tactical task. Tactical tasks, in turn, have specific effects in relation to the enemy, the terrain, and other friendly forces.

5-58. This complex relationship can be illustrated using the example of a company team with the mission of conducting support by fire as part of a task force attack. The company team conducts tactical movement from its assembly area (changing movement techniques as appropriate) and makes initial contact with the enemy. The team then conducts actions on contact and transitions to maneuver. It maneuvers by establishing a base of fire and using bounding techniques to “fight” its way to a position from which it can conduct its support by fire task. While conducting that tactical task, the company team continues to maneuver as necessary. Figure 5-7 illustrates the transitions that affect tactical movement (changes in movement technique) and the relationship on the battlefield of tactical movement, actions on contact, maneuver, and tactical tasks.

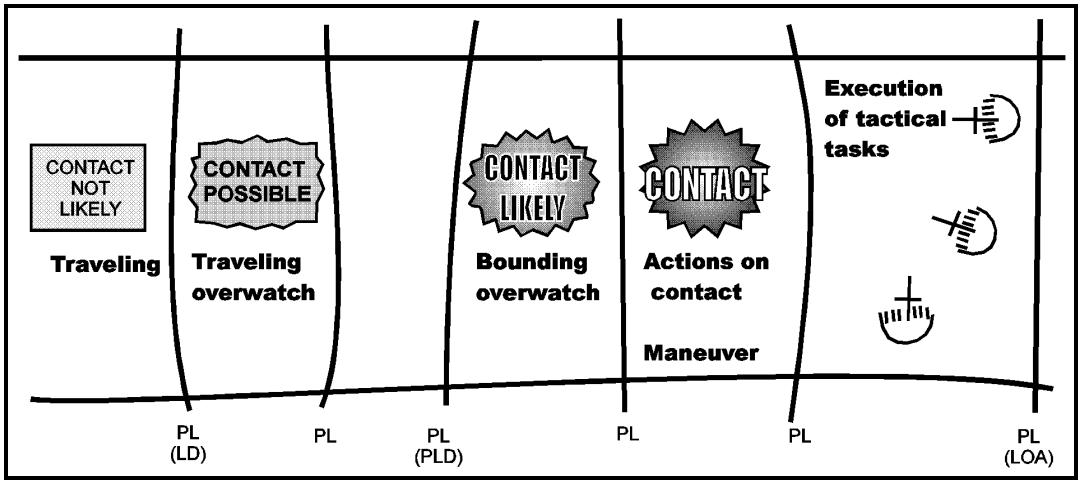


Figure 5-7. Battlefield Relationship of Tactical Movement, Actions on Contact, Maneuver, and Tactical Tasks

SECTION IV - ACTIONS ON CONTACT

CONTACT CONTINUUM

5-59. Leaders in Force XXI equipped units have the ability to gain increased situational understanding than most analog units through all-source analysis system (ASAS), maneuver control system (MCS), UAV, Long Range Advanced Scout Surveillance System (LRAS3) and FBCB2. With these assets the task force and brigade set the conditions for the company team to conserve combat power and engage the enemy in a much more decisive manner. At the brigade level, the brigade commander initiates visual contact based on real-time information from UAV and other ISR assets. After initiating visual contact the brigade commander positions task forces to locations on the battlefield that will protect his force and focus combat power on the assailable flank or weakest portion of the enemy force. Once brigade and task force have set the conditions for success, the company team commander must initiate physical contact with the enemy and develop the situation using fire and movement. The contact continuum is summarized in the following steps:

- BCT makes contact with sensors (through ABCS) or other ISR assets and disseminates that information.
- Evaluates/develops the situation (SU) out of physical contact.
- Maneuvers the force out of physical contact (chooses a COA).
- Make contact on own terms (executes a COA).

5-60. In both offensive and defensive operations, regardless if a company team is AOE or Force XXI, contact occurs when a member of the company team encounters any situation that requires an active or passive response to the enemy. These situations may entail one or more of the following forms of contact:

- Visual contact to include civilians (friendly elements may or may not be observed by the enemy).
- Physical contact (direct fire) with an enemy force or hostile civilians.
- Indirect fire contact.
- Contact with obstacles of enemy or unknown origin.
- Contact with enemy or unknown aircraft.
- Situations involving NBC conditions.
- Situations involving EW tactics.

5-61. Leaders at echelons from platoon through task force conduct actions on contact when they or a subordinate element recognizes one of the forms of contact or receives a report of enemy contact. The company team may conduct actions on contact in response to a variety of circumstances, including the following:

- Subordinate platoon(s) conducting actions on contact.
- Reports from the task force or another higher unit.
- Reports from or actions of an adjacent unit.

DEVELOPING ACTIONS ON CONTACT

5-62. Company team commanders and platoon leaders analyze the enemy throughout the troop-leading process to identify all likely contact situations that may occur during an operation. Through the planning and rehearsals conducted during TLPs, they develop and refine COAs to deal with the probable enemy actions. The COAs will eventually become the foundation for the company team's scheme of maneuver.

5-63. During the troop-leading process, the leaders must evaluate a number of factors to determine their impact on the unit's actions on contact. For example, the commander needs to consider how the likelihood of contact will affect his choice of movement techniques and formations. In doing this, he can begin preparing the team for actions on contact; for example, he may outline procedures for the transition to more secure movement techniques before a contact situation. As the Army Tactical Command and Control System (ATCCS) is integrated into task forces and companies, company commanders will gain more accurate and updated intelligence and combat information. Sharing a COP with brigade and task force ISR assets 24 to 48 hours prior to a mission with continuous updates up to and beyond LD will allow the commander to better determine what formations and what movement techniques he should employ. Figure 5-7 on page 5-19 shows an example of a commander's assessment and corresponding selection of movement techniques.

TIME REQUIREMENTS FOR ACTIONS ON CONTACT

5-64. Commanders must understand that properly executed actions on contact require time at both platoon and company team levels. To fully develop the situation, a platoon or team may have to execute extensive lateral movement, dismount and remount infantry squads, conduct reconnaissance by fire, and/or call for and adjust indirect fires. Each of these activities requires time. The commander must balance the time required for subordinate elements to conduct actions on contact with the need of the company team or task force to maintain tempo and momentum. In terms of slowing the tempo of an operation, however, the loss of a platoon or team is normally much more costly than the additional time required to allow the subordinate element to properly develop the situation.

FOUR STEPS OF ACTIONS ON CONTACT

5-65. The company team should execute actions on contact using a logical, well-organized process of decision-making and action entailing these four steps:

- Deploy and report.
- Evaluate and develop the situation.
- Choose a COA.
- Execute the selected COA.

5-66. The four-step process is not intended to generate a rigid, lockstep response to the enemy. Rather, the goal is to provide an orderly framework that enables the company team and its platoons to survive the initial contact, then apply sound decision-making and timely actions to complete the operation. Ideally, the team will acquire the enemy (visual contact) before being sighted by the enemy; it then can initiate physical contact on its own terms by executing the designated COA.

STEP 1 - DEPLOY AND REPORT

5-67. Events that occur during the first step of actions on contact depend in great measure on whether the contact is expected or unexpected. The following discussion examines some of the variables the company team commander faces in expected and unexpected contact situations and discusses the role of platoon battle drills and reporting in the deploy and report step.

EXPECTED CONTACT

5-68. If the commander expects contact (based on ISR reports on the task force command net, enemy symbols on his FBCB2 screen or through his own reconnaissance), he will already have deployed the company team by transitioning to the bounding overwatch movement technique. If the team is alert to the likely presence of the enemy, it has a better chance of establishing first visual contact and then physical contact on its own terms. Contact, either visual or physical, is usually made by an overwatching or bounding platoon, which initiates the team's actions on contact. In a worst-case scenario, the platoon may be engaged by a previously undetected (but expected) enemy element. The platoon in contact would conduct a battle drill for its own survival and then initiate actions on contact.

UNEXPECTED CONTACT

5-69. In some cases, the company team will make unexpected contact with the enemy while using traveling or traveling overwatch. The element in contact or, if necessary, the entire company team may have to deploy using battle drills to survive the initial contact. When making unexpected contact it is imperative that the platoon in contact send a contact report immediately. In Force XXI units the most efficient way for the task force S2 to provide situational understanding and COP to the task force is through digital reports sent by platoons in contact. If the commander and his staff must physically sift through several voice SPOTREPs, the ability for the commander and the remainder of the task force to gain situational understanding and COP is significantly diminished. Force XXI companies and platoons must develop sound SOPs that harness the capabilities of FBCB2 while destroying the enemy force and protecting the company and platoon.

Battle Drills

5-70. Battle drills provide virtually automatic responses to contact situations, in which immediate and, in many cases, violent execution of an action is critical both to the unit's initial survival and to its ultimate success in combat. Drills are not a substitute for carefully planned COAs; rather, they buy time for the unit in contact and provide a framework for development of the situation and to gain fire superiority.

5-71. When contact occurs, the company team's platoons return fire (when applicable) deploy immediately, executing the appropriate battle drills under the supervision of the commander. Table 5-1 lists the drills executed during the deployment step of actions on contact. Figure 5-8 shows an example of platoons executing battle drills. (See 3-20.15 [FM 17-15], FM 3-21.71 [FM 7-7J], ARTEP17-237-10-MTP, and ARTEP 7-247-11-DRILL for additional information on platoon battle drills.)

Table 5-1. Platoon Battle Drills for Deployment During Actions On Contact

TANK PLATOON DRILLS	MECHANIZED INFANTRY RIFLE PLATOON DRILLS
Change of Formation Drill	React to Contact Drill
Contact Drill	Break Contact Drill
Action Drill	React to Ambush Drill
React to Indirect Fire Drill	Change Formation Drill
React to Air Attack Drill	Execute Action Right or Left Drill
React to a Nuclear Attack Drill	
React to a Chemical/Biological Attack Drill	

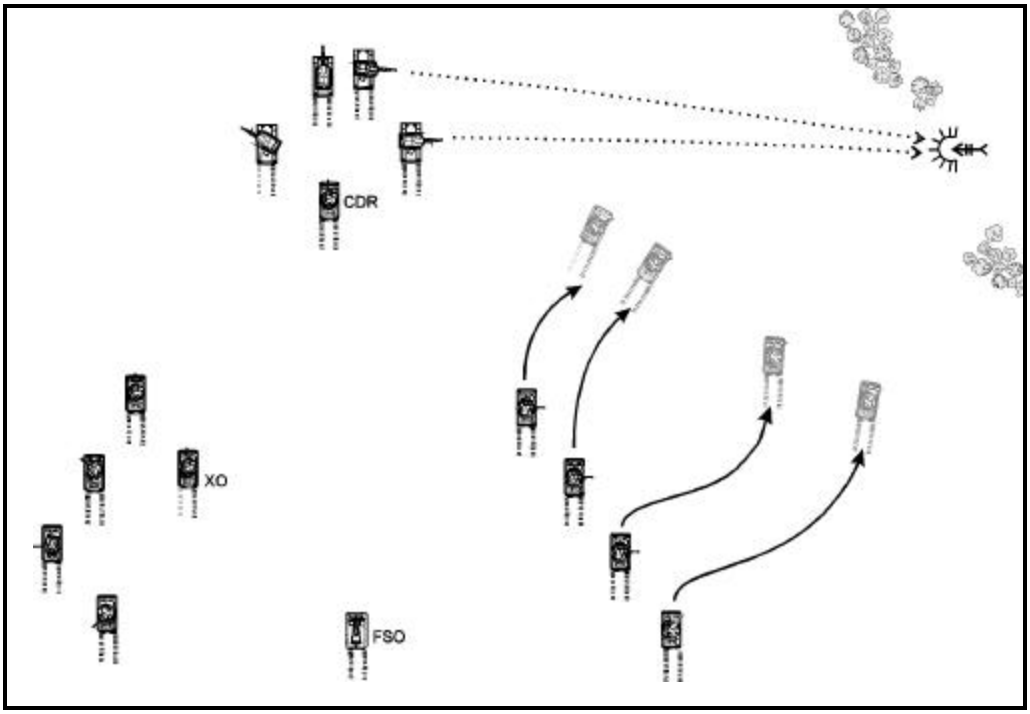


Figure 5-8. Example of a Tank Platoon Contact Drill in Concert with a Mechanized Infantry Platoon Action Right Drill

5-72. **Maneuver SOP.** An effectively written, well-rehearsed maneuver SOP helps to ensure quick, predictable actions by all members of the company team. In addition, the SOP, unlike platoon battle drills, allows leaders to take into account the friendly task organization, a specific enemy, and a specific type of terrain. As a result, the SOP can assist the company team in conducting actions on contact and in maintaining the initiative in a number of battlefield situations. (See Chapter 3 for a more detailed discussion of SOPs.)

5-73. **Reporting.** Timely, accurate reports are essential throughout actions on contact. As part of the first step of the process, the company team commander must send a contact report to the task force as soon as possible after contact occurs. He provides subsequent reports updating the situation as necessary. (See Chapter 3 for the discussion of reports.)

NOTE: Whether contact is expected or unexpected, the first step of actions on contact concludes with the unit deployed (into base of fire and bounding elements), the enemy suppressed or destroyed, and a contact report sent to task force headquarters.

STEP 2 - EVALUATE AND DEVELOP THE SITUATION

5-74. While the company team is deploying, the commander must evaluate the situation and, as necessary, continue to maneuver to develop it. The commander quickly gathers as much information as possible, either visually or, more often, through reports of the platoon(s) in contact. He analyzes the information to determine critical operational considerations, including these:

- The size of the enemy element.
- Location, composition, activity, and orientation of the enemy force.
- The impact of obstacles and terrain.
- Enemy capabilities (especially anti-armor capability).
- Probable enemy intentions.
- How to gain positional advantage over the enemy.
- The friendly situation (location, strength, and capabilities).
- Possible friendly COAs to achieve the specified end state.

5-75. After evaluating the situation, the commander may discover that he does not have enough information to identify the necessary operational considerations. To make this determination, he must further develop the situation in accordance with the task force commander's intent, using a combination of these techniques:

- Surveillance, employing infantry squads, dismounted tank loaders, and/or tank and BFV commanders (using binoculars and other optical aids).
- Mounted and/or dismounted maneuver (this includes lateral maneuver to gain additional information by viewing the enemy from another perspective).
- Indirect fire.
- Reconnaissance by fire.

5-76. Once the commander determines the size of the enemy force the company team has encountered, he sends a report to the task force.

STEP 3 - CHOOSE A COA

5-77. After developing the situation and determining that he has enough information to make a decision, the company team commander selects a COA that both meets the requirements of the task force commander's intent and is within the company team's capabilities.

Nature of Contact

5-78. The nature of the contact (expected or unexpected) may have a significant impact on how long it takes a commander to develop and select a COA. As an example, in preparing to conduct an attack, the company team commander determines that the team will encounter an enemy CSOP along its axis of advance; during TLP, he develops a scheme of maneuver to defeat the outpost. When the team's lead platoon makes contact with two BMPs, the commander can quickly assess that this is the anticipated contact and direct the team to execute his plan. On the other hand, unexpected contact with a well-concealed enemy force may require time for development of the situation at platoon and team levels. As it "fights" for critical information that will eventually allow the commander to make a sound decision, the platoon and/or company team may have to employ several of the techniques for developing the situation.

Course of Action Procedures

5-79. The commander has several options in how he goes about the process of selecting a COA. These procedures include the following:

- The company team commander can direct the team to execute the original plan if the situation reveals no need for change.

- If his analysis shows that the original plan is still valid but that some refinement is necessary, the team commander should inform the task force commander (prior to execution, if possible) and issue a FRAGO to refine the plan.

- If his analysis shows that the original plan needs to be changed but that the selected COA will still comply with the task force commander's intent, the team commander should inform the task force commander (prior to execution, if possible) and issue a FRAGO to retask his subordinate elements.

- If his analysis shows that the original plan deviates from the task force commander's intent and needs to be changed, the team commander must report the situation and recommend an alternative COA to the task force commander.

- If the battlefield picture is still vague, the team commander must direct the team or a platoon to continue to develop the situation. He then uses one of the first four options to report the situation and choose a COA and/or to direct further action.

STEP 4 - EXECUTE A COURSE OF ACTION

5-80. In executing a COA, the company team transitions to maneuver. It then continues to maneuver throughout execution, either as part of a tactical task or to advance while in contact to reach the point on the battlefield from which it executes its tactical task. The team can employ a number of tactical tasks as COAs, any of which may be preceded (and/or followed) by additional maneuver. These tasks include—

- Seize.
- Support by fire.
- Attack by fire.
- Bypass.
- Clear.
- Assault.
- Breach.
- Defend.
- Delay.
- Withdraw.

5-81. As execution continues, more information will become available to the company team commander. Based on the emerging details of the enemy situation, he may have to alter his COA during execution. For example, as the company team maneuvers to destroy what appears to be a tank platoon, it discovers two additional platoons in prepared positions. The commander must analyze and develop the new situation. He then selects an alternate COA, such as establishing a support by fire position to support another company team's maneuver against the newly discovered enemy force.

EXAMPLES OF ACTIONS ON CONTACT

5-82. Figures 5-9 through 5-13 illustrate the four-step process for executing actions on contact in two possible tactical situations. These examples depict a company team executing actions on contact with an expected and unexpected force and describe how the company team advances while in contact.

CONTACT WITH AN EXPECTED FORCE

5-83. Figure 5-9 through Figure 5-11 illustrate actions on contact when the company team encounters an expected enemy element.

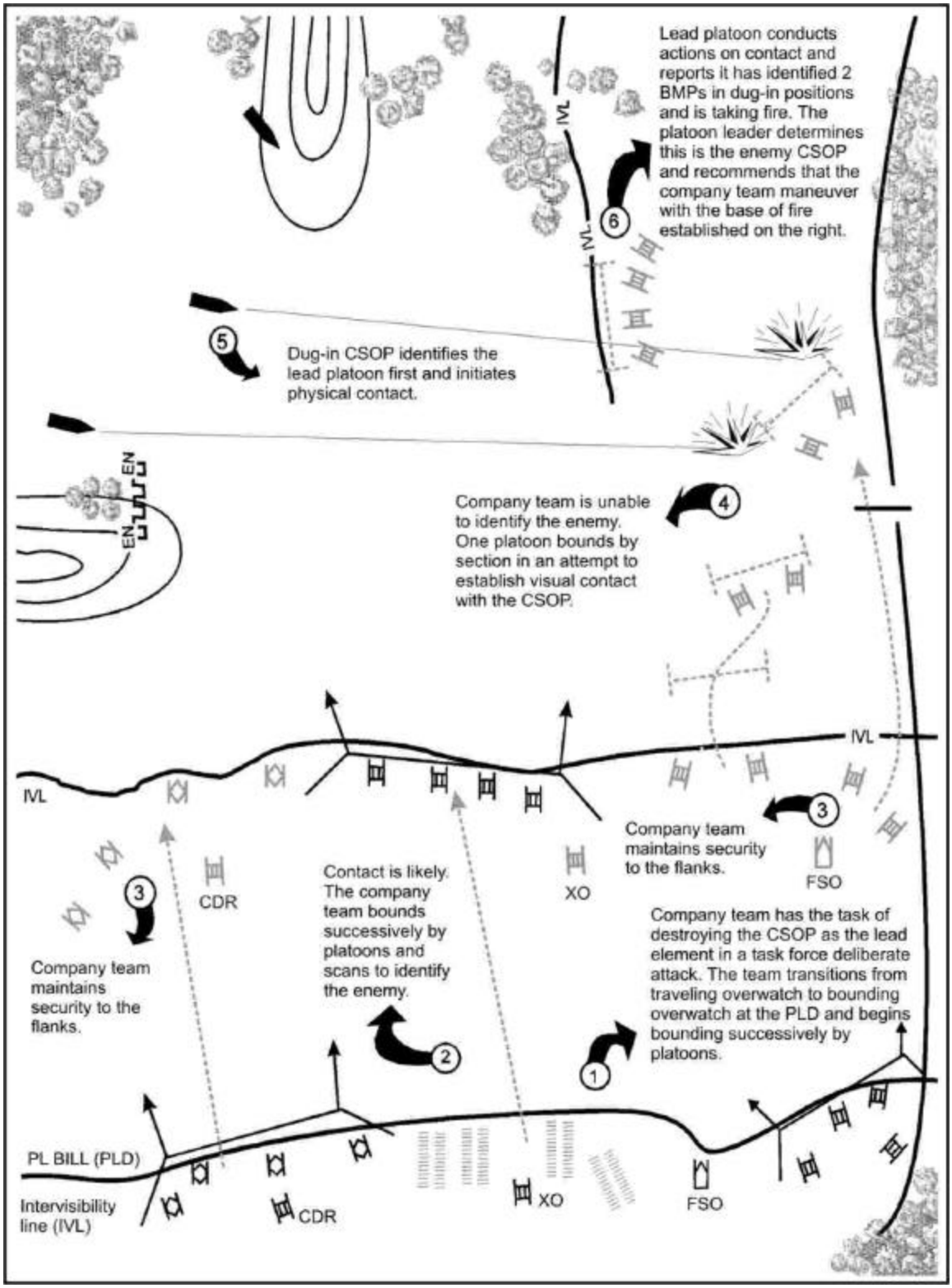


Figure 5-9. Company Team Deploys and Reports

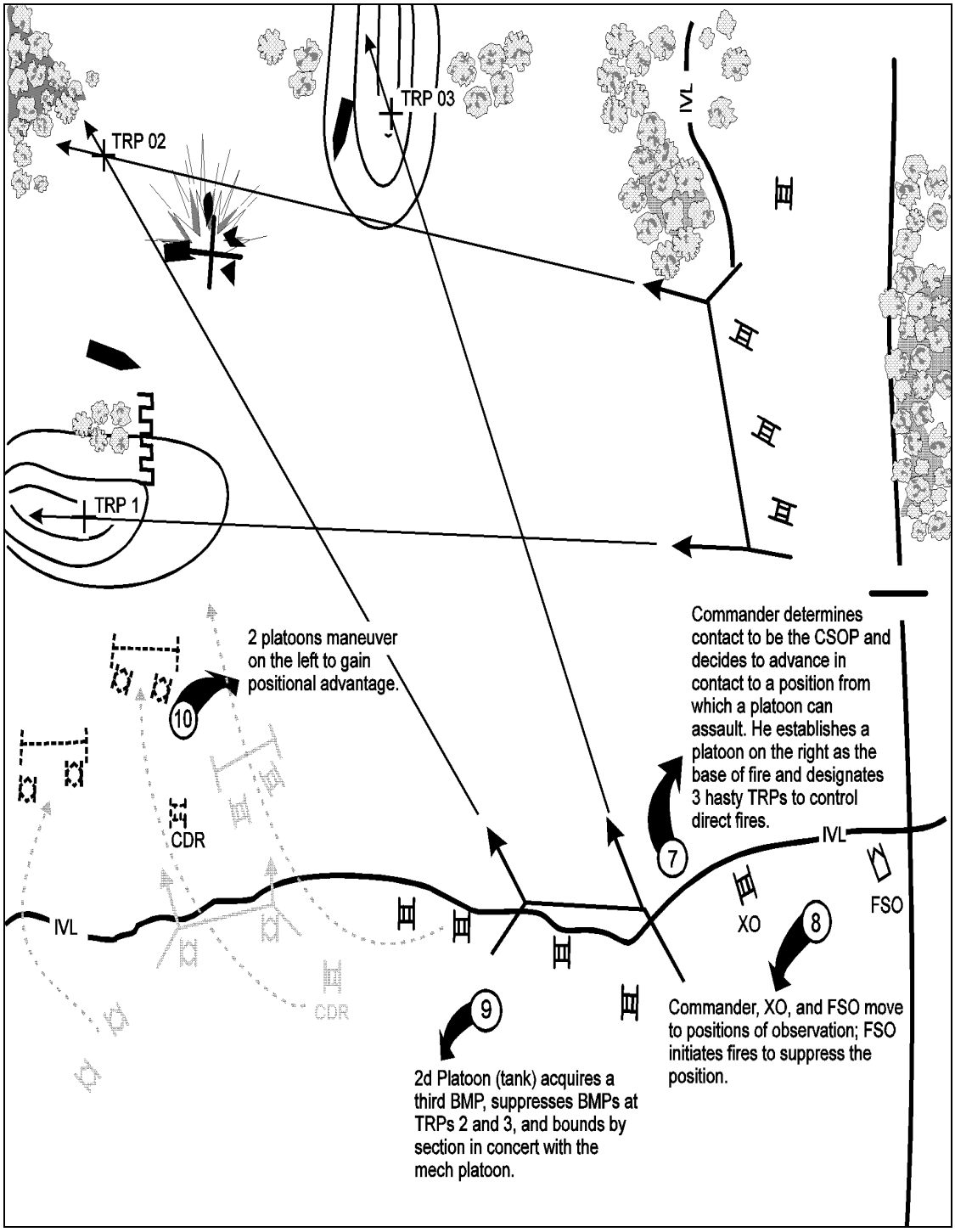


Figure 5-10. Company Team Develops the Situation and Advances in Contact to Close with the Enemy

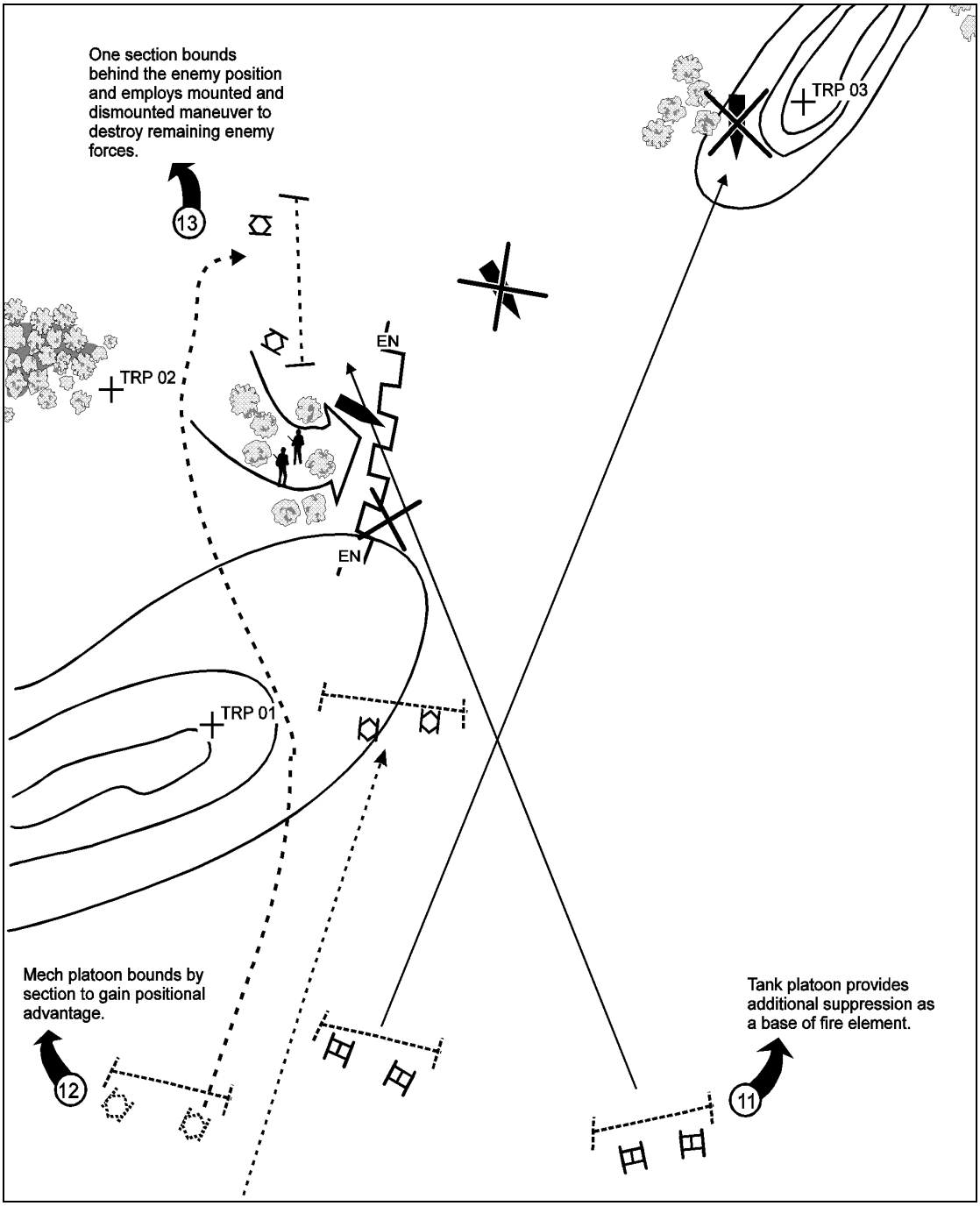


Figure 5-11. Suppression Continues as Mechanized Platoon Assaults to Destroy Remaining BMP and Infantry

CONTACT WITH AN UNEXPECTED FORCE

5-84. Figure 5-12 and Figure 5-13 illustrate an example of actions on contact that the company team might execute following an unexpected encounter with an enemy force. In this case, the enemy element is a forward security element with tanks and BMPs.

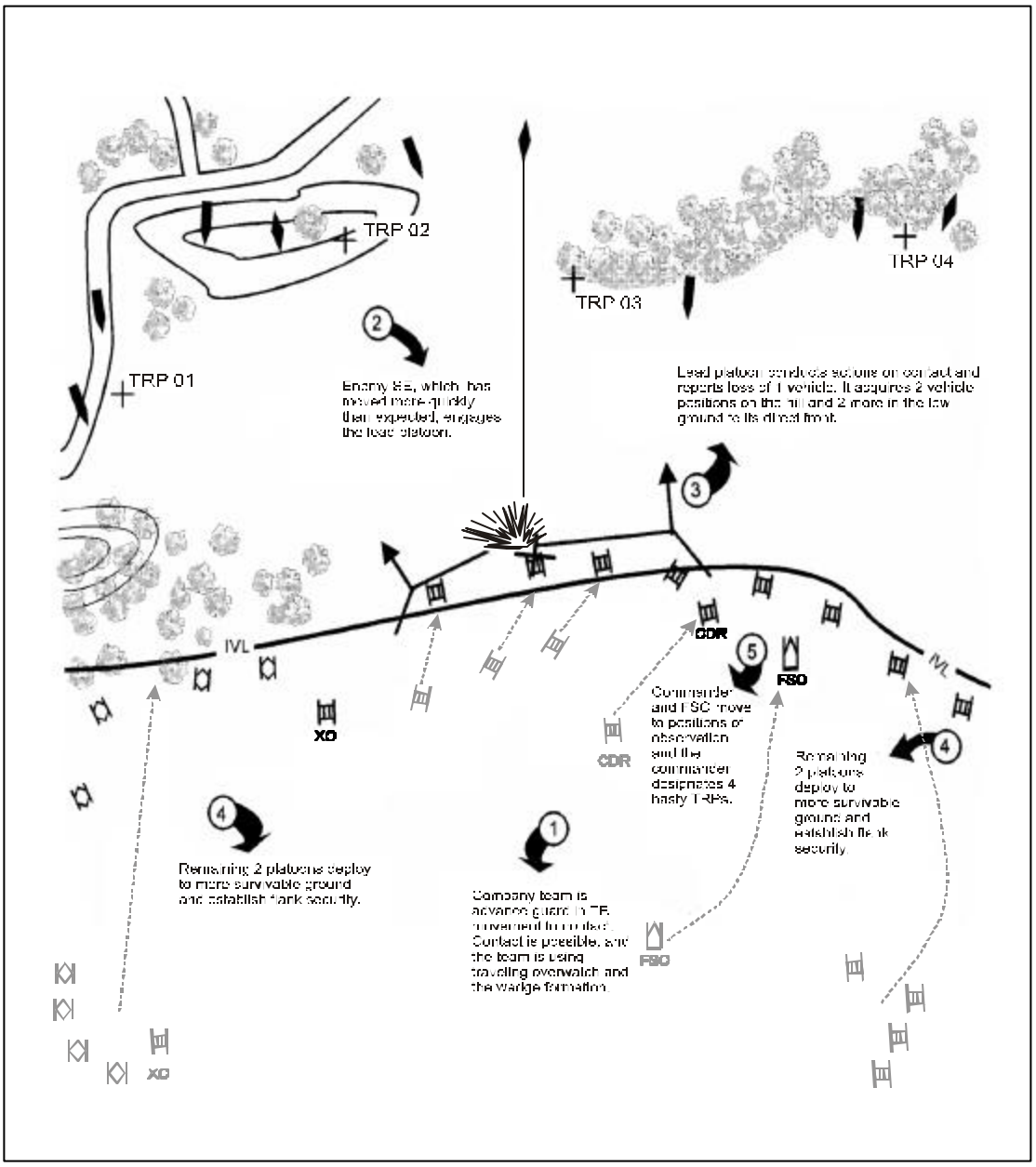


Figure 5-12. Company Team Makes Unexpected Contact, Deploys, and Receives and Sends Contact Reports

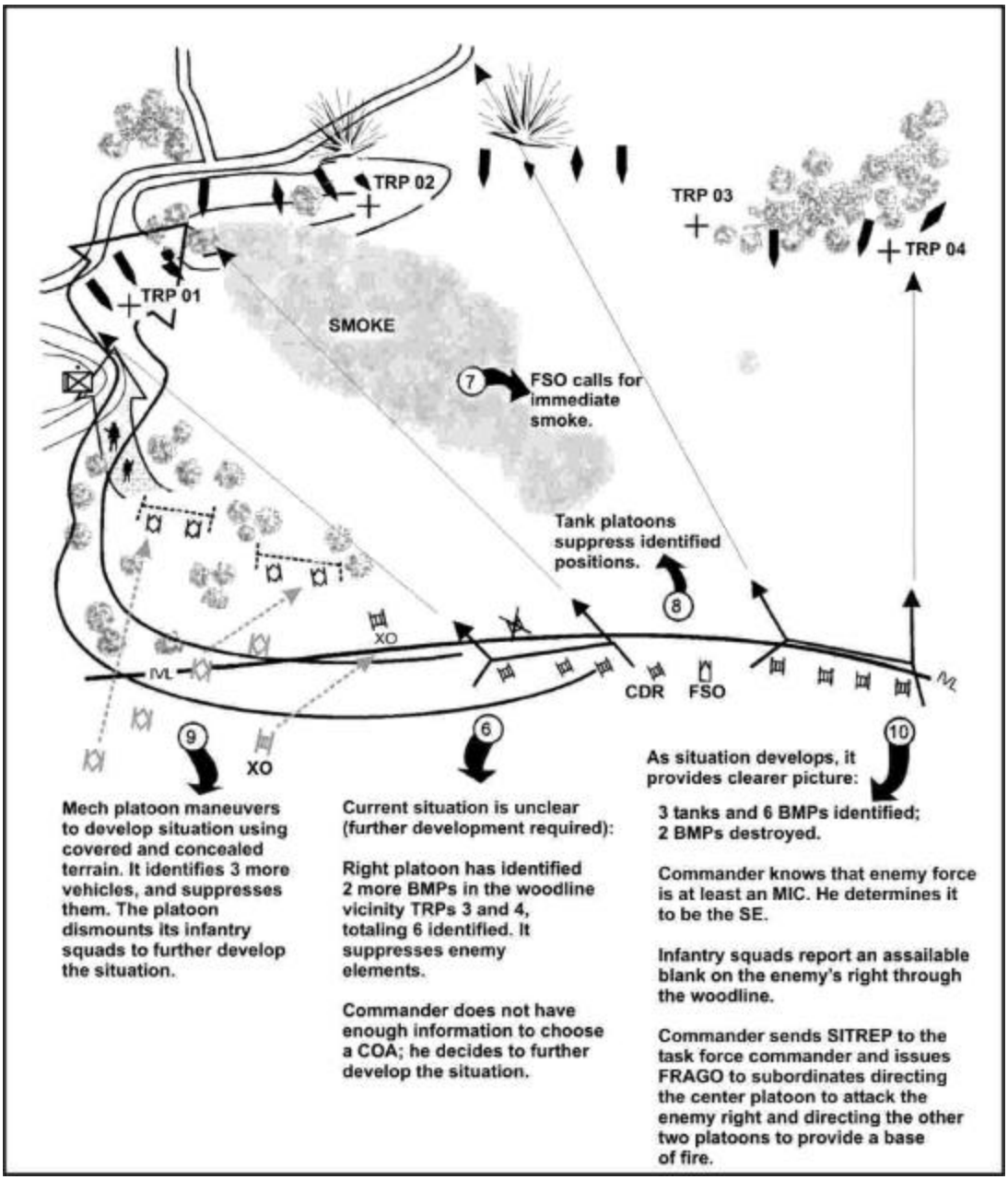


Figure 5-13. Company Team Develops the Situation and Chooses and Executes a COA

ADVANCE IN CONTACT

5-85. Advance in contact occurs after enemy contact is made and the actions on contact are conducted, and the company team commander decides to close with the enemy in contact. In most situations, it is conducted to gain a position of advantage over the identified enemy force. At the position of advantage, the company team may transition to another

tactical task, such as attack by fire, support by fire or assault. Because it has the positional advantage, however, the company team may already have forced the enemy to withdraw or may have destroyed him in the conduct of its maneuver. Advance in contact combines fire and movement by platoons and sections, as well as by infantry squads and individual vehicles.

5-86. A position of advantage is simply a location from which the enemy is vulnerable and/or from which the company team can effectively execute its tactical task. Examples of positional advantage include the following:

- A covered breach site upon which the enemy cannot mass fires.
- A short intervisibility line with a protected flank from which the company team can suppress the enemy.
- A covered route (such as a small trail, wood line, wadi, or low ground) that allows the company team to bypass an enemy fire sack.
- A small depression that provides a covered dismount point and access to covered and concealed routes to the enemy position.
- A defilade fighting position from which a tank, BFV, or Javelin gunner can acquire and destroy key enemy positions and vehicles.

5-87. Positions of advantage may be very subtle; they may not be easy to identify during the planning process. An example of this is a planned support by fire position. The commander can make an estimate of where this position should be based on a line of sight (LOS) analysis and his analysis of friendly and enemy weapons ranges; however, the position from which the company team can actually execute support by fire may be entirely different because the enemy has repositioned or because the selected position does not afford adequate fields of fire. In this example, the company team must identify a new position during actions on contact; it then must advance in contact and take the actions necessary to seize the position. Identification of the ground that will provide a marked advantage is critical to the success of the company team. The commander's intent should guide platoon leaders, vehicle commanders, and infantry squad leaders in identifying positions of advantage. The intent should additionally empower them to take the initiative to seize these positions as necessary and report them to the commander.

5-88. While advancing in contact, the company team employs the procedures and considerations discussed in the maneuver section of this chapter. The following principles of maneuver apply:

- Employ a base of fire to suppress known and suspected enemy positions, allowing other elements within the company team to conduct mounted or dismounted movement and preventing the enemy from repositioning.
- Maintain all-around security for both base of fire and bounding elements. Flank security is especially critical for bounding elements.
- Take full advantage of available cover and concealment.

- Use correct elements to conduct bounds based on the terrain and enemy.
- Use indirect fires to suppress or obscure the enemy or to screen friendly movement.

5-89. Open terrain that affords a sufficient view of both friendly and enemy elements may allow the commander to conduct the advance in contact as a more centrally controlled operation. He may establish elements as a base of fire. He may also be able to set other battlefield conditions; for example, he can use suppressive indirect fires or obscuring smoke to allow the movement of other platoons.

5-90. In more restrictive terrain, the advance in contact operation may be more decentralized. Platoons may move forward by bounding (either by section or within sections), or they may dismount infantry squads or tank loaders to clear dead space prior to the advance of platoon vehicles. The decentralized nature of the operation, however, must detract neither from the tempo of the operation nor from the commander's visualization of the situation; accurate, timely FRAGOs and concise reporting are key factors in preventing these potential pitfalls. As in all operations, commanders and leaders must maintain the critical balance of security and tempo. Commander's must be aggressive, but understand the difference between speed and haste. Battlefield opportunities are fleeting; if the enemy is allowed to reposition, the advantage that a piece of terrain may have provided to the company team could be lost.

SECTION V - TYPES OF OFFENSIVE OPERATIONS

5-91. This portion focuses on the two high-frequency offensive operations, movement to contact and attack that the company team normally conducts as part of a larger element. (**NOTE:** The team may also conduct these operations independently.) The discussion examines the various roles the team may hold in these operations, which are performed at task force and higher levels. Included are a discussion of the operational considerations involved in hasty and deliberate attacks and a description of three forms of attack (raid, feint, and demonstration) that the company team may execute to accomplish specific tactical purposes. (**NOTE:** The company team can also conduct two other types of offensive operations, pursuit and exploitation, as part of a brigade or larger unit.) (See FM 3-90 [FM 100-40] and FM 3-0 [FM 100-5] for a detailed discussion of these operations.)

NOTE: Illustrations in this section show the company team's role in several task force operations. The situations depicted are examples only; they are not intended to prescribe any specific method that the team must use.

MOVEMENT TO CONTACT

5-92. Movement to contact is an offensive operation designed to gain or regain contact with the enemy. It ends when contact is made. The company team normally conducts movement to contact as part of a task force or larger element. Based on METT-TC, however, it can conduct the operation

independently. As BCTs continue to field improved ISR equipment and platforms equipped with FBCB2 the frequency in which movements to contact will be conducted is theoretically reduced since task forces and company teams will have better situational understanding. However, conditions such as terrain, weather and enemy offensive information operations and deception are factors that may cause a task force to conduct a movement to contact. As an example, the company team may conduct movement to contact prior to occupation of a screen line. (**NOTE:** Contact will result in initiation of another operation such as attack against a stationary or moving enemy force, defense, delay, or withdrawal. If no contact occurs, the company team may be directed to conduct consolidation on the objective.) This section examines the role of the company team in a task force-level movement to contact. There are two techniques of conducting movements to contact. They are the approach march technique and the search and attack technique.

APPROACH MARCH

Task Organization

5-93. A task force or larger unit conducting a movement to contact is task organized into four successive elements:

- Reconnaissance force.
- Advance guard.
- Main body.
- Reserve.

Reconnaissance Force

5-94. The primary attribute of this organization is information on the enemy, terrain and early, accurate reporting it provides. Additionally, depth is essential in providing early warning and reaction time for leaders at the platoon, company team, and task force levels; it enables them to conduct effective actions on contact that will preserve the freedom of maneuver of the parent unit. The company team normally conducts movement to contact as part of a task force operation. It may serve as the advance guard, as part of the main body, or as the task force reserve. The following paragraphs describe the functions and responsibilities of each element in the movement to contact.

5-95. Composition of the reconnaissance force is based on METT-TC factors. In many situations, it will consist of a maneuver element (the task force scout platoon or a tank or mechanized infantry platoon) along with CS attachments such as engineers and FOs. This element may operate under the control of the task force headquarters, remaining far enough ahead to provide early warning to the advance guard. In some circumstances, the reconnaissance force may be attached to the advance guard. In either case, the reconnaissance force must cover the width of the task force AO and focus on finding enemy maneuver elements.

Advance Guard

5-96. The advance guard performs forward security for the task force. When the company team serves as the advance guard, its responsibilities include the following (see Figure 5-14):

- Provide security and early warning for the main body and facilitate its uninterrupted advance.
- Conduct reconnaissance to locate enemy forces along the task force axis of advance.
- Conduct actions on contact to retain freedom of maneuver for the task force.
- Call for indirect fires to impede or harass the enemy.
- Destroy enemy reconnaissance elements.
- Find, fix, defeat, destroy, or contain enemy security forces to retain freedom of maneuver for the task force.
- Bypass and report obstacles or act as the task force support or breach force during breaching operations.

5-97. Task organization of the advance guard is based on METT-TC factors. Engineers or additional tank or mechanized infantry platoons may be attached to or follow the advance guard. The mortar platoon or a mortar section may also support the advance guard.

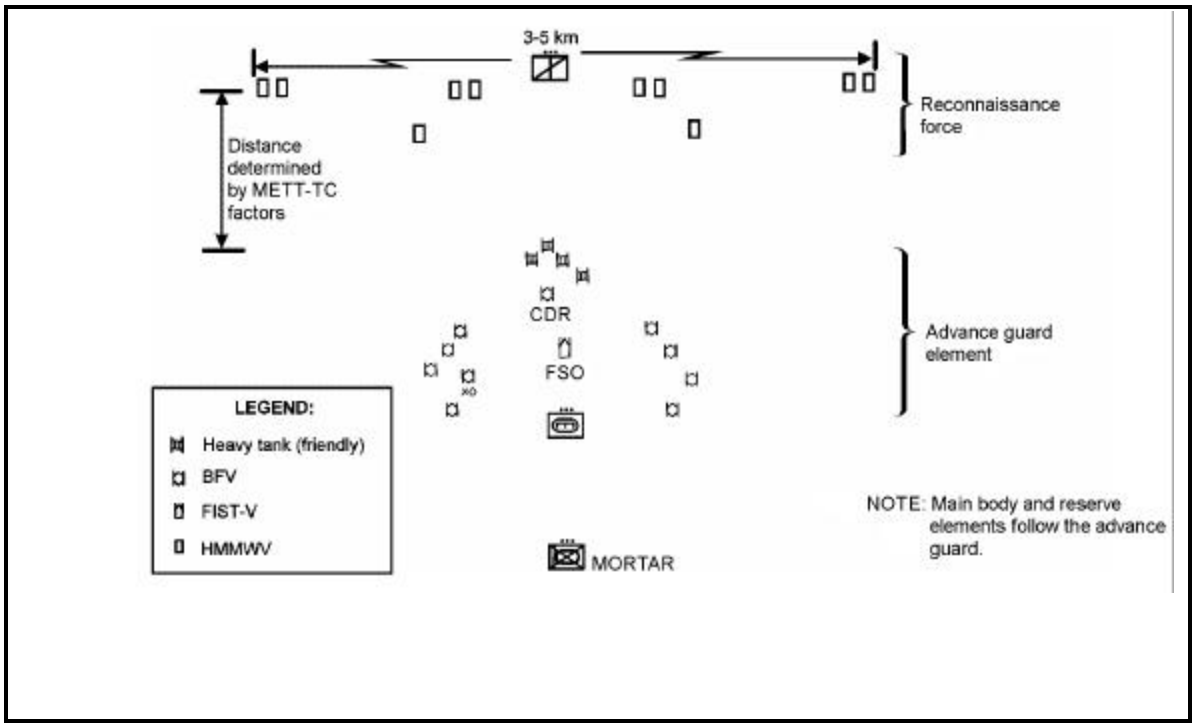


Figure 5-14. Example of a Company Team Serving as Task Force Advance Guard when Contact is not Likely (with Scout Platoon as the Task Force Reconnaissance Force)

Main Body

5-98. The company team may operate as part of the main body, which moves behind the advance guard. (**NOTE:** The distance between the advance guard and the main body is based on METT-TC factors.) Tasks the team may perform within the main body include the following:

- Provide flank security by positioning a platoon on the flank of the task force formation and establishing either a flank screen or a flank guard. Figure 5-15 illustrates this type of company team deployment. The platoon must be far enough away to provide the task force with early warning and maneuver space, but close enough to remain responsive and provide mutual support to the company team once it gains contact with the enemy main body. Depending on terrain, this may require a separation of one terrain feature or, in flat terrain, 3 to 4 kilometers. This is a protective mission; it is executed by aggressively acquiring and defeating enemy reconnaissance and/or security elements that threaten the flank of the main body. (See Chapter 4 for a detailed discussion of flank screens and flank guards.)
- Find, fix, defeat, destroy, or contain the enemy's fixing force followed by the enemy assault force or exploitation force, to retain freedom of maneuver for the remainder of the BCT.
- Execute a COA (such as a tactical task) to defeat or destroy a designated enemy main body element.

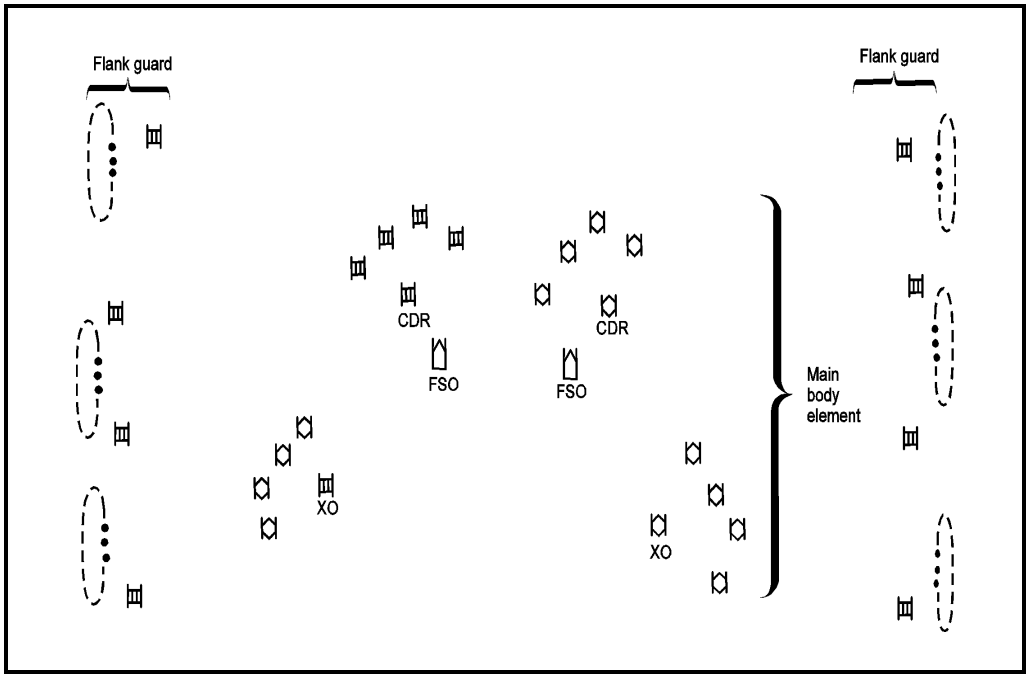


Figure 5-15. Example of Two Company Teams Moving as Part of the Task Force Main Body, with Platoons Deployed for a Flank Guard (Planned BPs for Flank Guard Elements are Also Shown)

Reserve

5-99. The task force commander normally designates a portion of the main body as the reserve. When the unit makes contact with the enemy, the reserve provides the commander with the flexibility he needs to react to unforeseen circumstances.

COMPLETION OF THE MOVEMENT TO CONTACT

5-100. Movement to contact continues until an element of the task force makes contact with an enemy force. At that point, which marks completion of movement to contact, the task force initiates actions on contact and executes follow-on tactical tasks to defeat the enemy. Successful completion of the operation demands the execution of well-rehearsed schemes of maneuver to defeat specific enemy elements (such as the forward support element and main body). In turn, these schemes of maneuver are based on the actions on contact, conducted at the appropriate level with the primary function of maintaining the freedom of maneuver of the parent unit.

5-101. When it serves as the advance guard, the company team normally has the responsibility for finding, fixing, and containing or destroying the enemy's security element. The advance guard normally will be task organized with CS assets (mortars, engineers, and ADA) to assist it in accomplishing its mission.

5-102. As part of the task force main body, the company team moves to gain contact with the enemy main body based on reports from the reconnaissance force and advance guard. Once contact is made, elements of the main body (at platoon, company team, and task force levels) conduct actions on contact and execute tactical tasks to defeat the enemy main body.

SEARCH AND ATTACK

5-103. Search and attack is a technique for conducting a movement to contact that shares many of the same characteristics of an area security mission. The nature of the OE may require a tank or mechanized company team to conduct a search and attack while operating in a noncontiguous AO. A commander employs this form of a movement to contact, conducted primarily by light forces and often supported by heavy forces, when the enemy is operating in small, dispersed elements, or when the task is to deny the enemy the ability to move within a given area. The battalion task force is the echelon that normally conducts a search and attack (See FM 3-21.10 [FM 7-10] for more information on search and attack).

5-104. This decentralized operation uses multiple, coordinated, small-unit (team/squad/platoon) actions to find the enemy. If the company makes contact without being detected by the enemy, the company team commander then has the initiative. The commander now has the option to destroy the enemy with the immediately available combat potential, to maneuver the remainder of the company to destroy the enemy, or to follow the enemy force back to its base camp and destroy him there. During his planning, the commander decides how to find the enemy, how to fix or follow him, and then how to finish him.

TASK ORGANIZATION

5-105. The company team commander organizes his unit into reconnaissance, fixing, and finishing forces, each with a specific task and purpose. The size of the reconnaissance force is based on the available intelligence about the size of enemy forces within the AO, the less known about the situation, the larger the reconnaissance force. The reconnaissance force must be small enough to achieve stealth, but large enough to provide adequate self-defense until the fixing and finishing forces can arrive. The fixing force must have enough combat power to isolate the enemy once the reconnaissance force finds him. The fixing force can be a combination of mounted and dismounted company team forces. The finishing force must have enough combat power to destroy those enemy forces expected in the company team AO.

FIND THE ENEMY

5-106. During this phase of the operation, the focus is on reconnaissance to locate the enemy. Generally, small units able to move quickly and with stealth are more likely to locate the enemy without detection. The company teams commander's concept may restrict the platoon's authority to destroy the enemy once located. It may be more important to locate and follow enemy units to identify their base camps. When not restricted, the unit making contact takes immediate action to destroy the enemy. If it is not within this unit's capabilities, the platoon conducts linkups to mass sufficient combat potential and to coordinate the attack.

5-107. Ambushes are also very effective tasks during limited visibility. The enemy may avoid daylight movements if aware of the company's presence in the AO. Ambushes should be set up on the enemy's likely routes or near their water and or food sources. Utilizing tanks and BFVs in an anti-armor ambush role is also an option when the company team has multiple high speed avenues of approach within an AO. Patrol bases should integrate ambushes and observation posts (with thermal sights, NVDs and PEWS) into their security plans. These tasks support the seizure and maintenance of the initiative.

FIX AND FINISH THE ENEMY

5-108. These phases of a search and attack are closely related. An initial attempt to finish the enemy by the platoon in contact may quickly become the fixing effort for the company's attack if the enemy was too strong for the platoon or the platoon was unable to achieve surprise. When the authority to conduct offensive actions to destroy the enemy has been decentralized to the lowest level, the fundamentals of an attack apply at every echelon.

Achieve Surprise

5-109. Locate the enemy without being detected. This allows more time to plan and coordinate the attack. Once detected, speed and violence in the assault may also achieve surprise, but this will rarely be true against a prepared enemy defense.

Limit the Enemy's Freedom of Action

5-110. Fix the enemy in position. Block his routes of escape with indirect fires and or maneuver forces. Suppress his weapons systems, obscure his vision, and disrupt his C2. Reconnaissance is continuous; leaders at every echelon are seeking out the enemy's dispositions, strengths, and

weaknesses. Initially, these actions are directed toward supporting an attack by the lowest echelon. At some point, the leader of this unit must determine if he is able to achieve fire superiority and also conduct the assault. If it is determined that the rifle squad in contact has insufficient combat power to complete the destruction of the enemy, the squad or platoon leader focuses on fixing the enemy and reconnoitering to support the attack by tanks and BFVs.

Maintain Security

5-111. While attempting to take these actions against the enemy—the enemy is attempting to do the same. For example, if mounted elements from the company team are conducting an envelopment on an enemy position it is crucial that the BFVs and tanks maintain their own flank security and take advantage of their optics to prevent flank attacks by anti-armor weapons. However, in complex terrain the rifle squads and the vehicles must work in concert to capitalize on each element's strengths and mitigate weaknesses.

Concentrate Combat Power

5-112. Once contact is made, the plan must support the rapid concentration of combat power to destroy the enemy. In order for the company team commander to take advantage of the speed and lethality of his BFVs and tanks to finish the enemy he must anticipate contact by his rifle squads and posture his mounted elements to act quickly and with massed effects. Leaders at each echelon plan to destroy the enemy within their capabilities. The combat potential of small units may be increased by ensuring each has the ability to request fire support from tanks and BFVs as well as indirect fire assets.

5-113. The commander may retain a portion of the company in reserve to react quickly to enemy contact by one of the small units. However, when the company is operating in a more dispersed manner, this company reserve may not be responsive enough. It may be more effective for each platoon to retain its reserve.

5-114. If the unit or platoon cannot finish the enemy, the commander determines how to fix or contain the enemy while concentrating his dispersed combat potential. He then develops an attack plan to destroy the enemy force. He may use the fixing force to support by fire, and assault with another platoon(s); or he may use artillery and close air support (CAS) to destroy him in position.

ENTER THE AREA OF OPERATIONS

5-115. The company team commander also decides how the company will enter its AOs, how to move once in the area, where to locate certain units or facilities, and what the requirements for contingency plans are. This includes establishing the proper graphic control measures to control the movement of the units, to provide for linkups between units, and to support the rapid concentration of the company's combat power. It also includes synchronizing the actions of the company and providing specific tasks or restraints to ensure subordinates understand what actions should be taken once contact with the enemy is made.

5-116. The company may enter the AO by moving as a company and then splitting up, by air assault, or by infiltrating squads and platoons both mounted and dismounted. To achieve some degree of stealth with tanks and

BFVs the company team commander should consider infiltrating vehicles by section or platoon at irregular intervals to lessen the chances of detection (see Figure 5-16 and Figure 5-17).

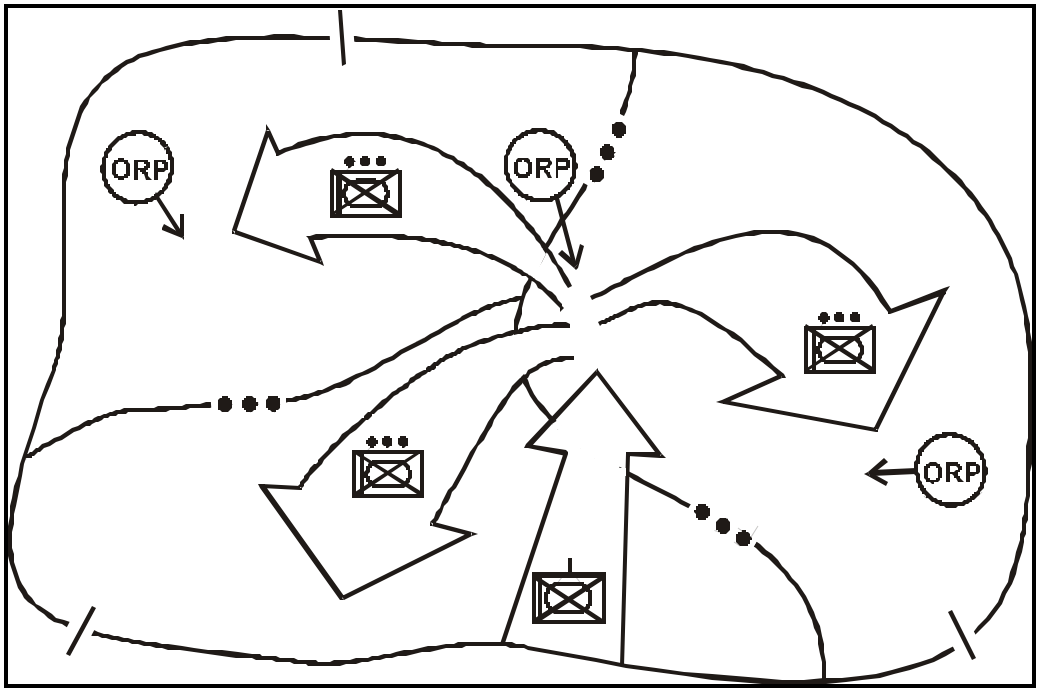


Figure 5-16. Entry by Company

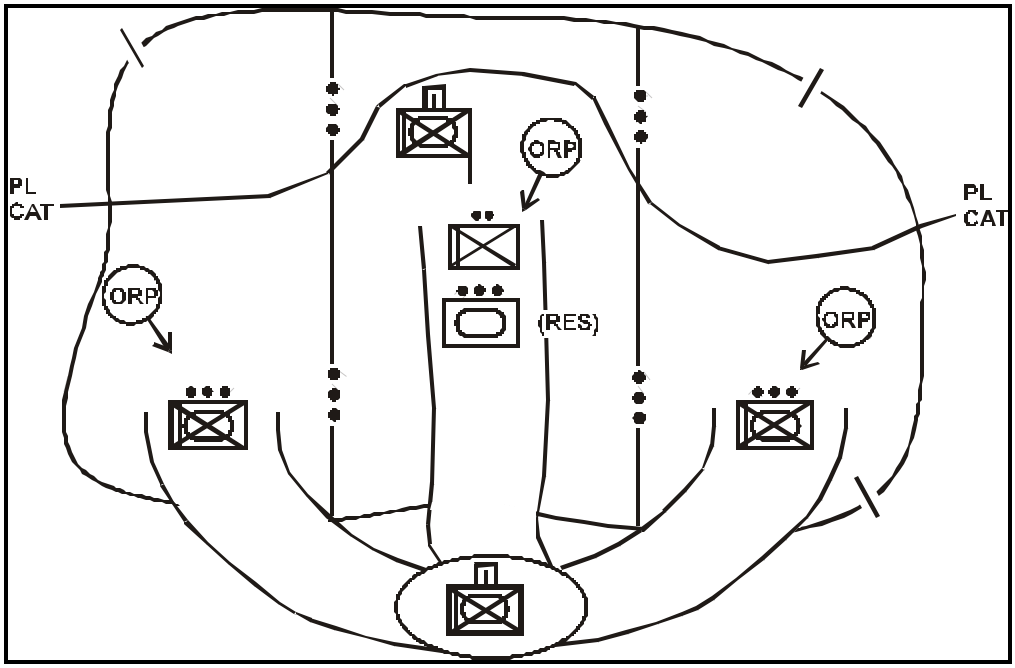


Figure 5-17. Infiltration by Squad/Platoon

5-117. Movement within the AO may be conducted by the entire company or by individual platoons. Figure 5-18 shows a concept sketch for a search and attack conducted without a company linkup.

5-118. The commander must decide where he will position himself on the battlefield. He may collocate with the main effort platoon, or may position himself in a central location where he can communicate with and move quickly to each platoon's location. A technique to rest soldiers during continuous operations is to rotate sections or platoons back to secure the company team trains.

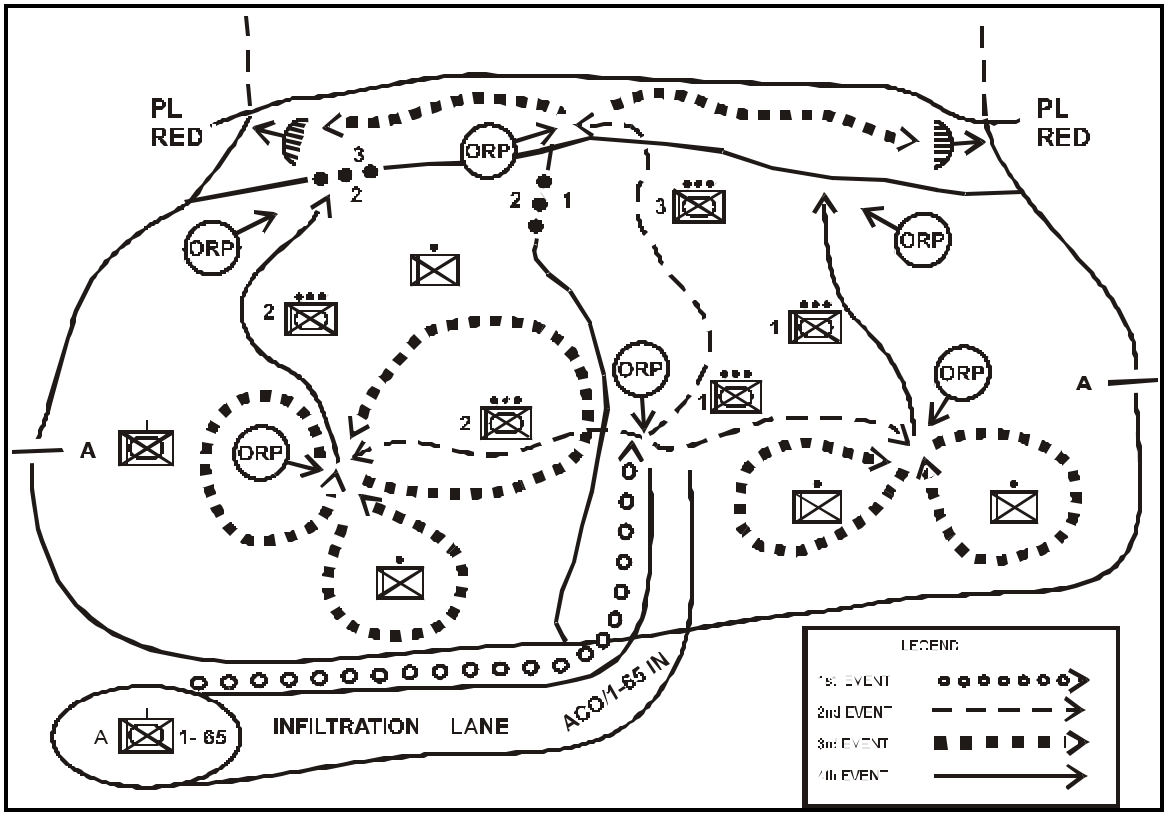


Figure 5-18. Company Search-and-Attack Concept Sketch

ATTACK

5-119. An attack is an offensive operation that destroys or defeats enemy forces, seizes, and secures terrain. When the commander decides to attack or the opportunity to attack occurs during combat operations, the execution of that attack must mass the effects of overwhelming combat power against selected portions of the enemy force with a tempo and

intensity that cannot be matched by the enemy. An attack at the company team level is a type of offensive action characterized by close combat, direct fire, maneuver, and support from indirect fires. When the company team commander decides to attack, he must mass the effects of overwhelming combat power against the weak point of the enemy with a tempo and intensity that the enemy cannot match.

HASTY ATTACK AND DELIBERATE ATTACK

5-120. There is no clear distinction between the hasty attack and the deliberate attack. The primary difference between them is the extent of planning and preparation conducted by the attacking force. Attacks range along a continuum defined at one end by FRAGOs that direct rapid execution of battle drills by forces immediately available. At this end of the continuum, the company team discovers the general enemy situation as part of a task force movement to contact and launches hasty attacks as a continuation of the meeting engagement to exploit a temporary advantage in relative combat power and to preempt enemy actions. At the other end of the continuum, the company team moves into a deliberate attack from a reserve position or assembly area with detailed knowledge of the enemy, a task organization designed specifically for the attack, and a fully rehearsed plan. Most attacks fall somewhere between the two ends of the continuum.

Hasty Attack

5-121. The commander may conduct a hasty attack during movement to contact, as part of a defense, or whenever he determines that the enemy is in a vulnerable position and can be quickly defeated by immediate offensive action. Because its primary purpose is to maintain momentum or take advantage of the enemy situation, the hasty attack is normally conducted only with the resources that are immediately available. With its emphasis on agility and surprise, however, this type of attack may cause the attacking force to lose a degree of synchronization. To minimize this risk, the commander should maximize use of standard formations and well-rehearsed, thoroughly understood battle drills and SOPs.

5-122. The hasty attack is often the preferred option during continuous operations. It allows the commander to maintain the momentum of friendly operations while denying the enemy the time needed to prepare his defenses and to recover from losses suffered during previous action.

5-123. **Task Organization.** The hasty attack is conducted using the principles of fire and movement. The controlling headquarters normally designates a base of fire element and a maneuver force.

5-124. **Conduct of the Hasty Attack.** The company team first must conduct actions on contact, allowing the commander to gather the information he needs to make an informed decision. The term "hasty" refers to limits on planning and preparation time, not to any acceleration in the conduct of actions on contact. Because the intelligence picture is vague, the commander will normally need more time, not less, during this process to gain adequate information about the enemy force.

5-125. Execution begins with establishment of a base of fire, which then suppresses the enemy force. The maneuver element uses a combination of techniques to maintain its security as it advances in contact to a position of advantage. These techniques include, but are not limited to, the following:

- Use of internal base of fire and bounding elements.
- Use of covered and concealed routes.
- Use of indirect fires to suppress or obscure the enemy or to screen friendly movement.
- Execution of bold maneuver that initially takes the maneuver force out of enemy direct fire range.

5-126. Once the maneuver element has gained the positional advantage, it can execute a tactical task (such as an attack by fire or assault) to destroy the remaining enemy. Figure 5-19 and Figure 5-20 illustrate a company team and task force conducting hasty attacks following movement to contact.

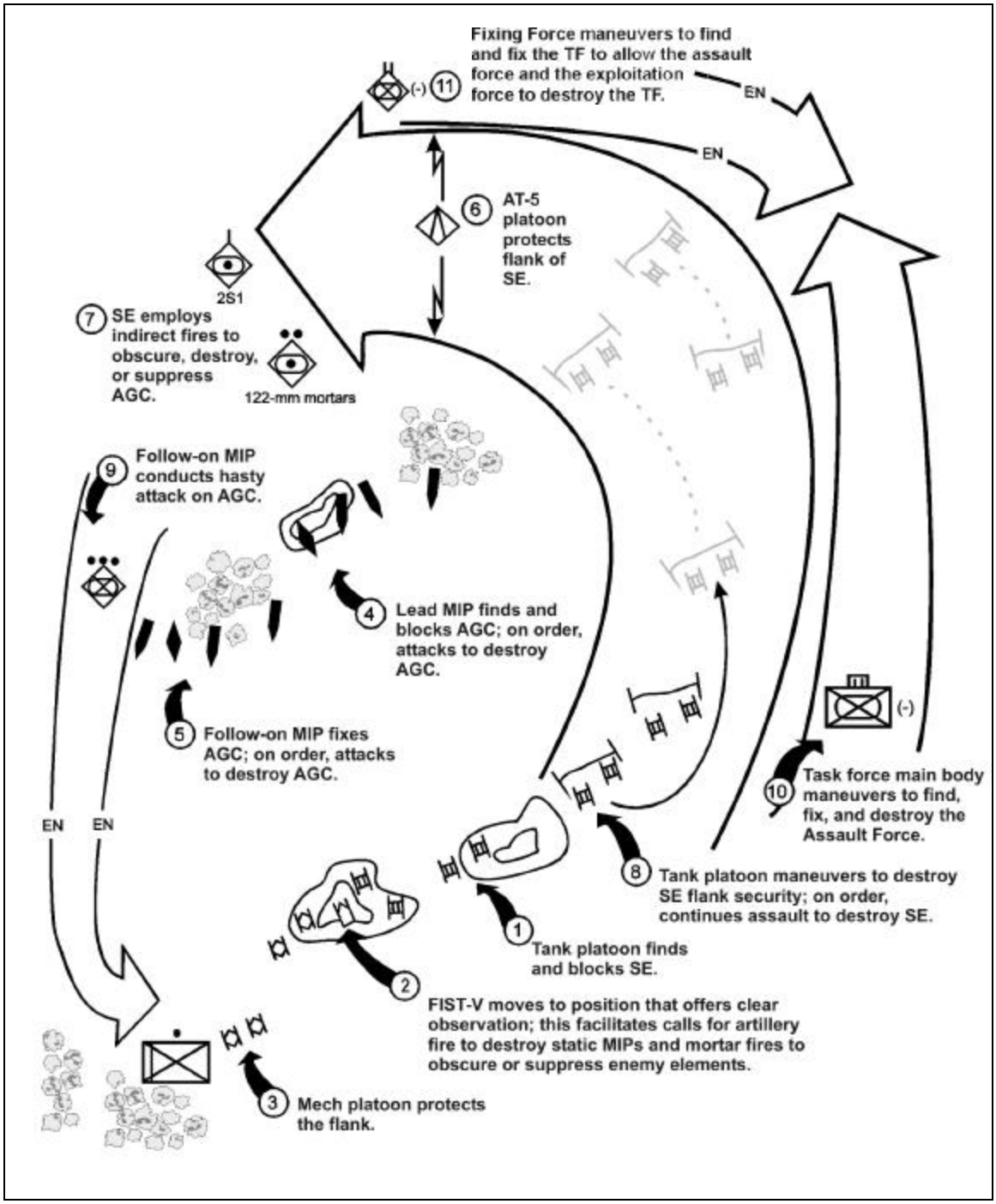


Figure 5-19. Example of Movement to Contact with the AGC and Enemy Security Element both Conducting Maneuver to Facilitate Maneuver of the Task Force Main Body and Enemy Assault Force

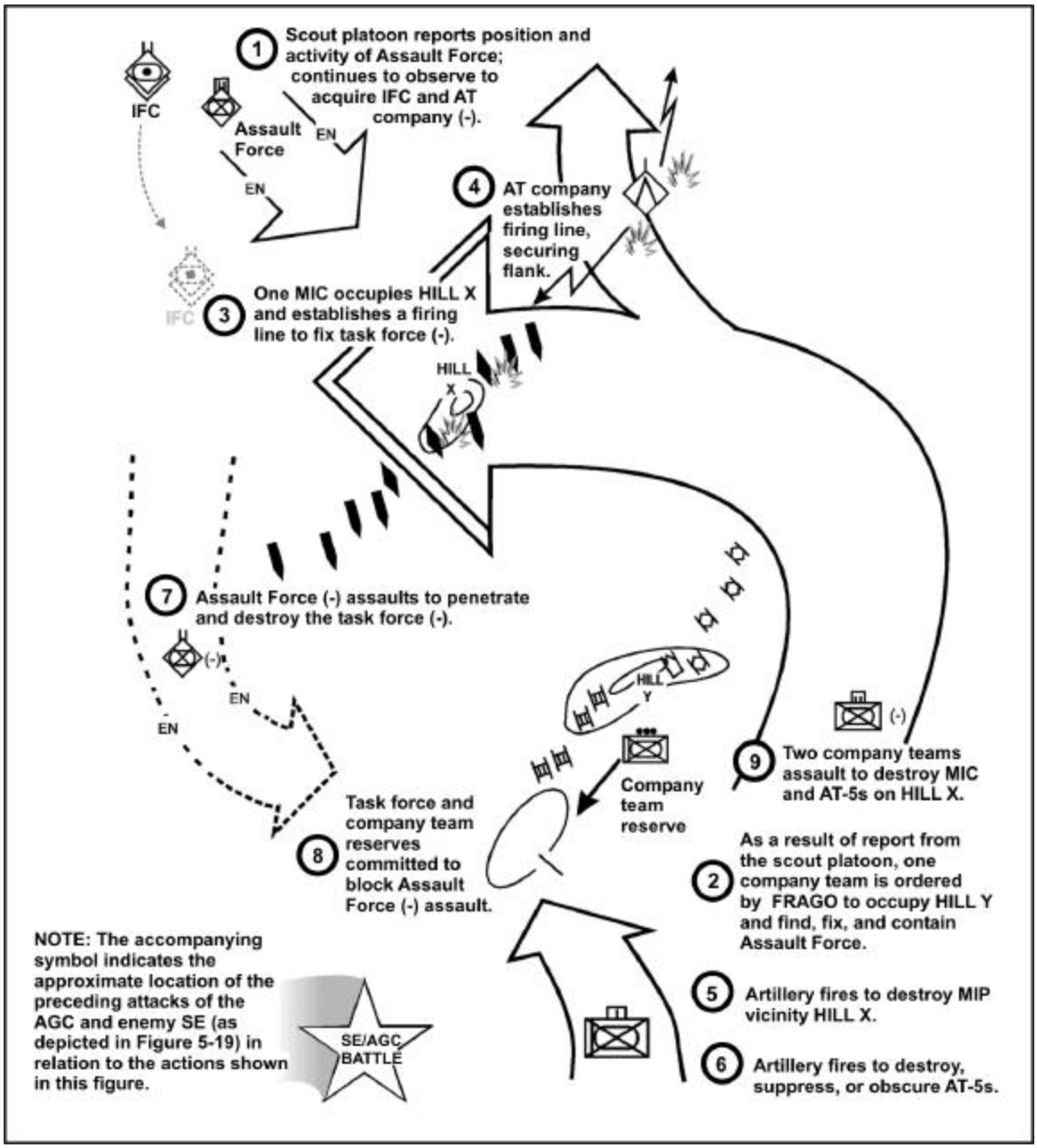


Figure 5-20. Example of Movement to Contact with the Task Force Main Body and Enemy Assault Force both Conducting Hasty Attacks

Deliberate Attack

5-127. The deliberate attack is a fully synchronized operation that employs every available asset against the enemy defense. It is characterized by a high volume of planned fires, use of major supporting attacks, forward positioning of resources needed to maintain momentum, and operations throughout the depth of enemy positions. Deliberate attacks follow a preparatory period that includes planning, reconnaissance, coordination, positioning of follow-on forces and reserves, preparation of troops and equipment, rehearsals, and operational refinement. The factors of METT-TC will dictate how thoroughly these activities are accomplished.

5-128. The commander normally conducts a deliberate attack when enemy positions are too strong to be overcome by a hasty attack. In weighing his decision to take the time required to prepare for and conduct the deliberate attack, he must consider the advantages that may be gained by both friendly and enemy forces. Thorough preparation will allow the attacking force to stage a fully integrated attack. Likewise, however, the enemy will have more time to prepare his defensive positions and integrate fires and obstacles.

5-129. **Task Organization.** The task force commander will normally task organize the unit into support and assault forces for conduct of a deliberate attack. He will also designate a breach force if the task force must conduct a breach as part of the attack. Figure 5-14 on page 5-32 and Figure 5-15 on page 5-33 illustrate an example of a task force deliberate attack, with company teams serving as the support, breach, and assault forces. Specific duties of these elements are covered in the discussion of company team operations and tactical tasks as follows:

- For support force duties, refer to the discussion of support by fire operations later in this chapter.
- For breach force duties, refer to the discussion of breaching operations in Chapter 11.
- For assault force duties, refer to the discussions of assault operations and clearance in restricted terrain later in this chapter.

5-130. **Conduct of the deliberate attack.** The task force deliberate attack is normally broken into the phases outlined in the following discussion.

5-131. *Attack along an axis.* The attacking task force advances to within range of friendly direct fire weapons of the enemy position under supporting fires and using a combination of traveling, traveling overwatch, and/or bounding overwatch movement techniques. Company teams advance to successive positions using available cover and concealment. The task force commander may designate support by fire positions to protect friendly forces with suppressive direct fires. As the task force closes with the enemy, it employs lethal and nonlethal fires to suppress, neutralize, and obscure the enemy positions.

5-132. *Actions at the PLD.* The PLD is normally a PL or checkpoint where elements of the attacking task force transition to secure movement techniques in preparation for contact with the enemy. Traditionally, the PLD is determined by the commander through personal IPB and S2 analysis of SPOTREPs from task force scouts and BCT ISR assets. In Force XXI units, the company commander has the ability to "see the battlefield" with increased clarity. FBCB2 allows the company team commander to pass reports and positional data to ABCS located in the task force TOC and to adjacent units. In turn, MCS, FBCB2 from adjacent units and ASAS provide the company team commander with friendly and enemy known locations throughout the plan, preparation and execution phase of a mission. Armed with a COP, the company team commander has the ability to more effectively determine his PLD. Company teams may maneuver from the PLD to designated support by fire positions, assault positions, or breach or bypass sites. The PLD may be collocated with the assault position.

5-133. *Obstacle breaching*. In selecting the scheme of maneuver, the task force commander normally tries to avoid COAs that will require breaching of enemy obstacles. Because all forces construct defensive obstacles around their positions, however, the attacking unit must be prepared to conduct a breach. In a task force deliberate attack, the company team may be tasked as the breach force; it may conduct breaches with its organic countermine equipment or with attached engineer assets. As an alternative, the company team may be designated as the support force, with responsibility for conducting support by fire to protect the breach force. In its other role, as the assault force, the company team gains access to the objective area by maneuvering through the breach; it then conducts its assault against the enemy.

5-134. *Actions on the objective*. The final assault is characterized by the combined effects of overwhelming and simultaneous application of fire, movement and shock action. Suppressive fires from support forces and from supporting indirect fire assets isolate the objective area and suppress the enemy. These fires protect the assault force as it closes with enemy elements. Other measures the task force may use to set favorable conditions for the final assault include, but are not limited to, the following:

- Use of task force and higher ISR assets to maneuver out of physical contact to an assault position.
- Employment of artillery, mortar, and/or direct fires from support by fire positions to destroy enemy forces on the objective and create favorable force ratios.
- Use of feints or demonstrations. (See paragraphs 5-142 and 5-144 for the discussion of these special purpose attacks.) These measures can achieve the following purposes:
    - Fix the enemy reserve or force its commitment to another area of the battlefield.
    - Prevent the repositioning of adjacent enemy units that could influence the outcome of the battle.
    - Use of obscuring smoke to isolate enemy forces on the objective.

- Once the conditions are set (suppression on the objective, obstacles are breached and the assault force is in position), the assault forces maneuver to close with and destroy the enemy. Other task force elements continue to provide support as necessary throughout the assault.

SPECIAL PURPOSE ATTACKS

5-135. Attacks can have different forms based on their purposes. As outlined in FM 3-90 (FM 100-40), the special purpose attacks are spoiling attack, counterattack, raid, feint, ambush, and demonstration. A spoiling is a form of attack that preempts or seriously impairs and enemy attack while the enemy is in the process of planning or preparing to attack and is usually mounted from a defensive posture. (See Chapter 6 for a discussion of how a counterattack is also executed from a defensive posture.)

5-136. The commander's intent and the factors of METT-TC determine which special purpose attack(s) of attack may be used in a specific situation. Each attack can be conducted as either a hasty or deliberate attack; refer to the previous discussion of these terms covering the characteristics of the attack. The following paragraphs examine the role of the company team in raids, feints, and demonstrations.

Raid

5-137. This is a limited-objective special purpose attack entailing swift penetration of hostile terrain. A raid operation always ends with a planned withdrawal to friendly lines upon the completion of the assigned mission. It is not intended to hold territory.

5-138. **Company Team Role.** The company team conducts raids as part of a larger force to accomplish a number of missions, including the following:

- Capture prisoners.
- Capture or destroy specific C2 locations.
- Destroy logistical areas.
- Obtain information concerning enemy locations, dispositions, strength, intentions, or methods of operation.
- Confuse the enemy or disrupt his plans.

5-139. **Task Organization.** Task organization of a raiding force is based on the purpose of the operation. It normally consists of the following elements:

- Support force (with the task of support by fire).
- Maneuver force (with the task of attack by fire or assault).
- Breach force (if required).

5-140. **Conduct of the Raid.** The main differences between a raid and other attack forms are the limited objectives of the raid and the associated withdrawal following completion. Raids may be conducted in daylight or

darkness, within or beyond supporting distance of the parent unit. When the area to be raided is beyond supporting distance of friendly lines, the raiding party operates as a separate force.

5-141. An objective, normally very specific in nature, is usually assigned to orient the raiding unit. In the withdrawal phase, the attacking force normally takes a route or axis different from that used to conduct the raid itself.

Feint

5-142. The feint is in many ways identical to other special purpose attack. Its purpose is to cause the enemy to react in a particular way, such as by repositioning forces, committing its reserve, or shifting fires. The key difference between the feint and other attack forms is that it is much more limited in scope, with an extremely specific objective. The scale of the operation, however, is usually apparent only to the controlling headquarters; for the element actually conducting the feint, such as a company team or task force, execution is just as rapid and as violent as in a full-scale attack.

5-143. **Company Team Role**. The company team normally participates in a feint as part of a larger element. Among the planning considerations that the team commander must keep in mind are the following:

- The higher commander's intent regarding force preservation.
- Disengagement criteria and plans.
- Assignment of limited depth and attainable objectives.
- Clear follow-on orders to ensure that the feinting force is prepared to exploit the success of the main attack if necessary.

5-144. **Making Feints Believable.** Feints will be successful only if the enemy believes that a full-scale attack operation is under way. To be believable, they must be conducted with the same violence and the same level of precision as any attack. The controlling headquarters must issue a clear task and purpose to the unit conducting the feint. This should include identification of the specific enemy action the feint is supposed to trigger (or deny), such as forcing the commitment of an enemy reserve force or preventing an enemy element from repositioning against the main effort attack. Feints are most effective under the following conditions:

- When they reinforce the enemy's expectations.
- When the attack appears to present a definite threat to the enemy.

- When the enemy has a large reserve that he has consistently committed early in the battle.
- When the attacker has several feasible COAs, any of which the enemy could mistake for the main effort.

Demonstration

5-145. The demonstration is an attack whose purpose is to deceive the enemy about the location of the main attack. This purpose is similar to that of a feint, but the friendly force does not make contact with the enemy. For example, the company team's role might entail establishing an attack by fire position beyond the enemy's direct fire engagement range; the purpose would be to cause the enemy to commit a specific element simply by virtue of the positioning of the demonstration force. In preparing to participate in a demonstration as part of a larger force, the company team commander should keep in mind these planning considerations:

- The LOA must be carefully planned so the enemy can "see" the demonstration force but cannot effectively engage it with direct fires. The force must also take any other security measures necessary to prevent engagement by the enemy.
- The demonstration force must make contingency plans so it can respond effectively to enemy direct or indirect fires, avoiding decisive engagement.
- Clear, specific follow-on orders must be issued to ensure that the demonstration force is prepared, if necessary, to exploit the success of the main attack.

Ambush

5-146. An ambush is an attack by fire or other destructive means from a concealed position on a moving or temporarily halted enemy. It may take the form of an assault to close with and destroy the enemy, or it may be an attack by fire only, executed from concealed positions. An ambush does not require that ground be seized or held. Ambushes are generally executed to reduce the enemy's force's overall combat effectiveness. (See FM 3-21.10 [FM 7-10] for a more detailed discussion of ambushes.)

5-147. **Operational Considerations.** The execution of an ambush is offensive in nature. The company team, however, may be directed to conduct an ambush in a wide variety of situations. For example, it may stage the ambush during offensive or defensive operations, as part of task force rear area operations, or during retrograde operations.

5-148. OPSEC is critical to the success of an ambush and is a major consideration as to why the operation is normally conducted by infantry forces only. The company team must take all necessary precautions to ensure that it is not detected during the movement to or preparation of the ambush site. The team must also have a secure route of withdrawal following the ambush.

Planning Considerations

5-149. Phases of the ambush. An ambush normally consists of the following phases:

- Tactical movement to the objective rally point (ORP).
- Reconnaissance of the ambush site.
- Establishment of ambush site security.
- Preparation of the ambush site.
- Execution of the ambush.
- Withdrawal.

Task Organization

5-150. The company team is normally task organized into support, assault, and security elements for the execution of the ambush.

Support Element

5-151. The support element fixes the enemy force and prevents it from moving out of the kill zone, allowing the assault force to conduct the ambush.

- **Assault Element.** The assault element executes the ambush. It may employ an attack by fire, an assault, or a combination of those techniques to destroy the ambushed force.
- **Security Element.** The security element provides protection and early warning to the other elements of the ambush patrol. It is responsible for securing the ORP. It isolates the ambush area, both to prevent the ambushed enemy force from moving out of the ambush site and to keep enemy rescue elements from reaching the site. The security element may also be responsible for securing the company team's withdrawal route.
- **Types of Ambushes.** Once the company team receives an order to conduct an ambush, the commander must determine which of the two types of ambush operations is best suited to the situation. In a point ambush, the patrol deploys to attack an enemy force in a single kill zone. In an area ambush, the patrol is deployed to conduct multiple, related point ambushes throughout an ambush area.

SECTION VI - OFFENSIVE TACTICAL TASKS

5-152. Tactical tasks are specific activities that are performed by units as they conduct tactical operations and/or maneuver. At the company team level, these tasks are the war-fighting actions the team may be called upon to perform in battle. This section provides discussion and examples of eight high-frequency offensive tactical tasks:

- Attack by fire.
- Support by fire.

- Suppress.
- Follow and support.
- Bypass.
- Clear.
- Assault.
- Seize.

NOTE: The situations used in this section to describe the company team's role in the conduct of tactical tasks are examples only. They will not be applicable in every tactical operation, nor are they intended to prescribe any specific method or technique that the team must use in achieving the purpose of the operation. Ultimately, it is up to the commander or leader on the ground to apply the principles discussed here, along with his knowledge of the situation (including his unit's capabilities, the enemy he is fighting, and the ground on which the battle is taking place), in developing the most effective tactical solution.

ATTACK BY FIRE

5-153. Attack by fire focuses on the employment of fires at a distance to accomplish its purpose of destroying or defeating a maneuvering enemy force. It can also be employed to fix a defending force, preventing it from repositioning. The attacking force employs long-range fires from dominating terrain or uses flanking fires; it can also take advantage of the standoff range of the unit's weapon systems.

5-154. This task is most commonly conducted when the mission or tactical situation does not dictate or support occupation of the objective. In the offense, it is usually executed by supporting elements; during defensive operations, it is often a counterattack option for the reserve force.

PLANNING

5-155. When the company team is tasked as the attack by fire force, the commander should obtain the most current intelligence update on the enemy and apply his analysis to the information. He should take the following actions in planning and preparing for the attack by fire operation:

- Conduct LOS analysis to identify the most advantageous locations for attack by fire positions. Commanders in Force XXI can utilize FBCB2 for LOS analysis and the task force S2 can assist in LOS analysis with ASAS light. Some LOS tools may be limited by software capabilities.
- Conduct direct and indirect fire planning and integration.
- Determine triggers for lifting or shifting direct and indirect fires.
- Plan and rehearse actions on contact, as well as maneuver to attack by fire positions.

EXECUTION

5-156. The operation begins with the establishment of positions from which the blocking force fixes the enemy while the attack by fire force maneuvers to its position. Both elements have a part in security for the operation. The attack force can provide its own security by using the principles of maneuver and/or by employing screening or obscuring smoke. The blocking force helps to protect the attack force by establishing a base of fire.

5-157. Several other considerations may affect execution of an attack by fire. The company team may have to conduct an attack against enemy security forces to seize the ground from which it will execute the attack by fire. The initial attack by fire position may afford inadequate security or may not allow the team to achieve its task or purpose; this could force the team to reposition to maintain the desired weapons effects on the enemy force. In addition, because the attack by fire may be conducted well beyond the direct fire range of the blocking force, it may not be possible to destroy the targeted enemy force from initial positions. The company team may at first be able only to fix or disrupt the enemy at extended ranges; additional maneuver would then be required to close with the enemy force to complete its destruction.

5-158. Throughout the attack by fire operation, the company team should adhere to the following guidelines (see Figure 5-21):

- Employ infantry rifle squads whenever possible to assist mounted elements. Rifle squad support functions may include the following:
  - Secure positions prior to occupation by mounted elements.
  - Augment mounted AT fires with Javelin fires and AT-4.
  - Provide local security for the attack by fire force.
- Maintain communications between blocking and maneuver forces.
- Maintain 360-degree security.
- Execute timely, decisive actions on contact.
- Use maneuver to move to and occupy attack by fire positions.
- Destroy enemy security elements protecting the targeted force.
- Employ effective fires to fix or destroy the enemy force.
- Use repositioning and/or maneuver to maintain flexibility, enhance survivability, and maintain desired weapons effects on the enemy.

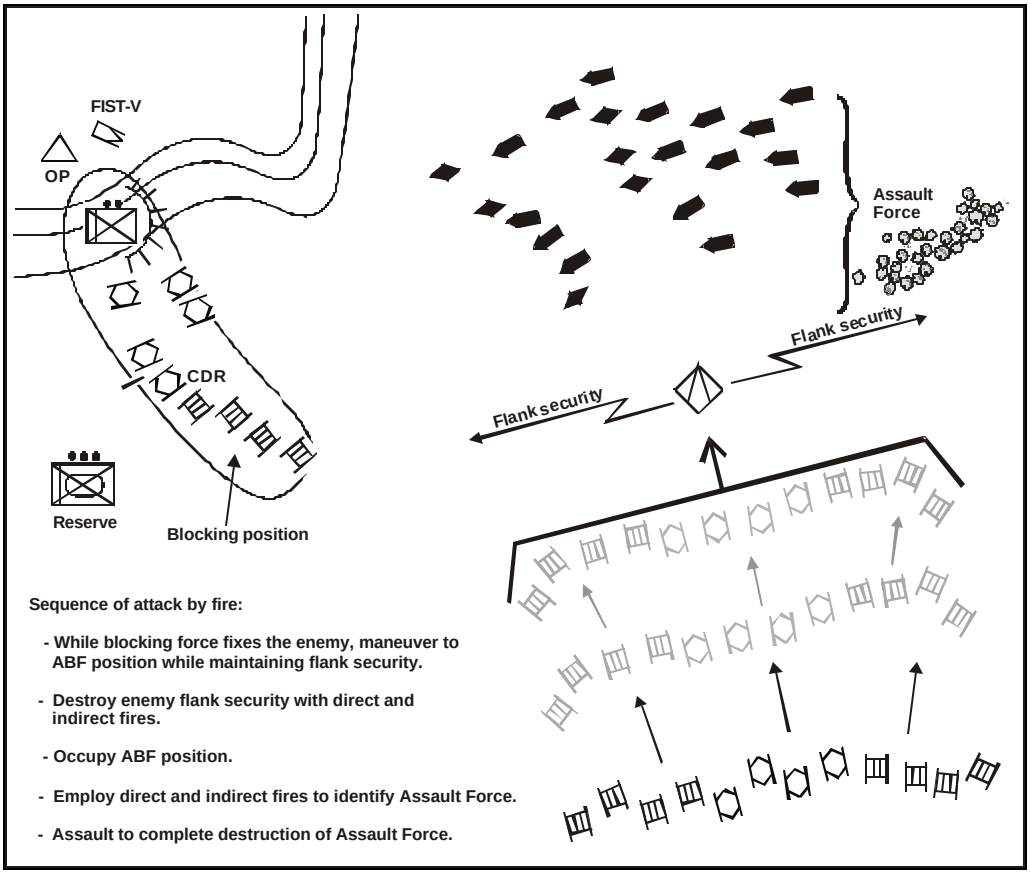


Figure 5-21. Example of a Company Team Conducting an Attack by Fire (in Conjunction with Another Company Team in a Blocking Position)

SUPPORT BY FIRE

5-159. Support by fire is a tactical task in which the company team maneuvers to a position on the battlefield from which it can observe the enemy and engage him with direct and indirect fires. The purpose of support by fire is to prevent the enemy from engaging friendly forces. To accomplish this, the company team must maintain orientation both on the enemy force and on the friendly maneuver force it is supporting. Figure 5-24 on page 5-62 and Figure 5-25 on page 5-64 (in the discussion of assault operations later in this chapter) depict an example of company team support by fire as part of a task force deliberate attack. The illustrations accompanying the discussion of breaching operations in Chapter 11 show an example of platoons within the company team providing support by fire during a team breaching operation.

PLANNING

5-160. The company team commander should take the following actions in planning and preparing for the support by fire operation:

- Conduct LOS analysis to identify the most advantageous positions for conducting support by fire.
- Conduct planning and integration for direct and indirect fires. (See Appendix B for the discussion of direct fire control.)
- Determine triggers for lifting or shifting direct and indirect fires.
- Plan and rehearse actions on contact, as well as maneuver to support by fire positions.
- Plan for large Class V expenditures, especially 25-mm rounds. The commander must consider a number of factors in assessing Class V requirements, including the following:
  - Desired effects of company team fires.
  - Composition, disposition, and strength of the enemy force.
  - Time required suppressing the enemy.

EXECUTION

5-161. Situational understanding is a crucial factor in all support by fire operations. The company team commander should use all available intelligence and information resources to stay abreast of events on the battlefield. Additional considerations may apply. The company team may have to execute an attack to secure the terrain from which it will conduct support the fire. The initial support by fire position may not afford adequate security or may not allow the company team to achieve its task or purpose; this could force the team to reposition to maintain the desired weapons effects on the enemy. The commander must ensure that the team adheres to these guidelines while conducting the support by fire task and related operations:

- Employ infantry rifle squads whenever possible to assist mounted elements. Rifle squads support functions may include the following:
  - Secure positions prior to occupation by mounted elements.
  - Augment mounted AT fires with Javelin fires and AT-4.
  - Provide local security for the support by fire force.
- Maintain communications with the moving force.
- Be prepared to support the moving force with both direct and indirect fires.
- Be ready to lift, shift, or cease fires when masked by the moving force.

- Scan the AO, and prepare to acquire, track, and destroy any enemy element that threatens the moving force. (**NOTE:** When friendly forces locate enemy elements that are under cover or in prepared positions, they may have to show patience in waiting for the enemy vehicles to expose themselves.)
- Maintain 360-degree security.
- Use tank main guns, BFV 25-mm cannons, and TOW to kill any exposed enemy vehicles.
- Employ BFV 25-mm cannons to lay a base of sustained fire to keep the enemy fixed and/or suppressed in his fighting positions.
- Prevent the enemy from employing accurate direct fires against the protected force.
- Continuously maneuver (reposition) to enhance survivability and maintain desired weapons effects on the enemy.

SUPPRESS

5-162. Suppress is a tactical task that results in the temporary degradation of the performance of a force or weapon system below the level needed to accomplish its mission. Simply stated, when executing a support by fire mission it is paramount that the SBF force suppress the enemy, particularly when it is in conjunction with an assault. Effective suppression is achieved when the enemy force can no longer return fire or is returning fire that is ineffective and sporadic and does not hinder the maneuver of the assault force.

FOLLOW AND SUPPORT

5-163. Follow and support forces are employed in the offense to maintain the momentum of an operation. They do this by providing any kind of support or assistance that will relieve the lead element of hindrances that could slow its advance. Follow and support missions are usually assigned when the enemy situation is vague and speed of the operation is important.

COMPANY TEAM ROLE

5-164. The company team may be task organized to conduct follow and support missions in one of several ways:

- It can be part of a task force with the mission of maintaining the momentum of a brigade attack.
- It can function as a separate maneuver element in support of the movement of another task force element.
- Platoons within the team may conduct follow and support missions in support of infantry elements (especially during light/heavy operations).

FOLLOW AND SUPPORT TASKS

5-165. Follow and support operations may require the company team to conduct a variety of tactical tasks, including the following:

- Conduct linkup operations with the lead element's fixing or overwatch force.
- Maintain contact with the enemy that is not destroyed by main effort and complete destruction.
- Destroy pockets of resistance bypassed by the lead element.
- Secure the flanks of a penetration to prevent the enemy from closing the penetration.
- Expand the area of a penetration.
- Secure LOCs.
- Secure key terrain.
- Protect key installations.
- Guard enemy prisoners of war (EPW).

EXECUTION

5-166. The lead element will identify the enemy force that is to be fixed, bypassed, and handed over to the company team or platoon tasked with the follow and support mission. (**NOTE:** The lead element may also be responsible for identifying other tasks, such as those listed previously, that the follow and support force will perform.) The follow and support force receives information on the enemy or the supporting tasks from the lead element's fixing or overwatch force.

5-167. The follow and support force conducts linkup with the fixing force on the ground, completes the exchange of critical tactical information, and accepts responsibility for the assigned tasks. Once this exchange is complete, the fixing force is released to rejoin the lead element. The follow and support force then executes its tasks. If enemy contact occurs, it conducts actions on contact as outlined earlier in this chapter. (See Figure 5-22 for an illustration of a follow and support operation.)

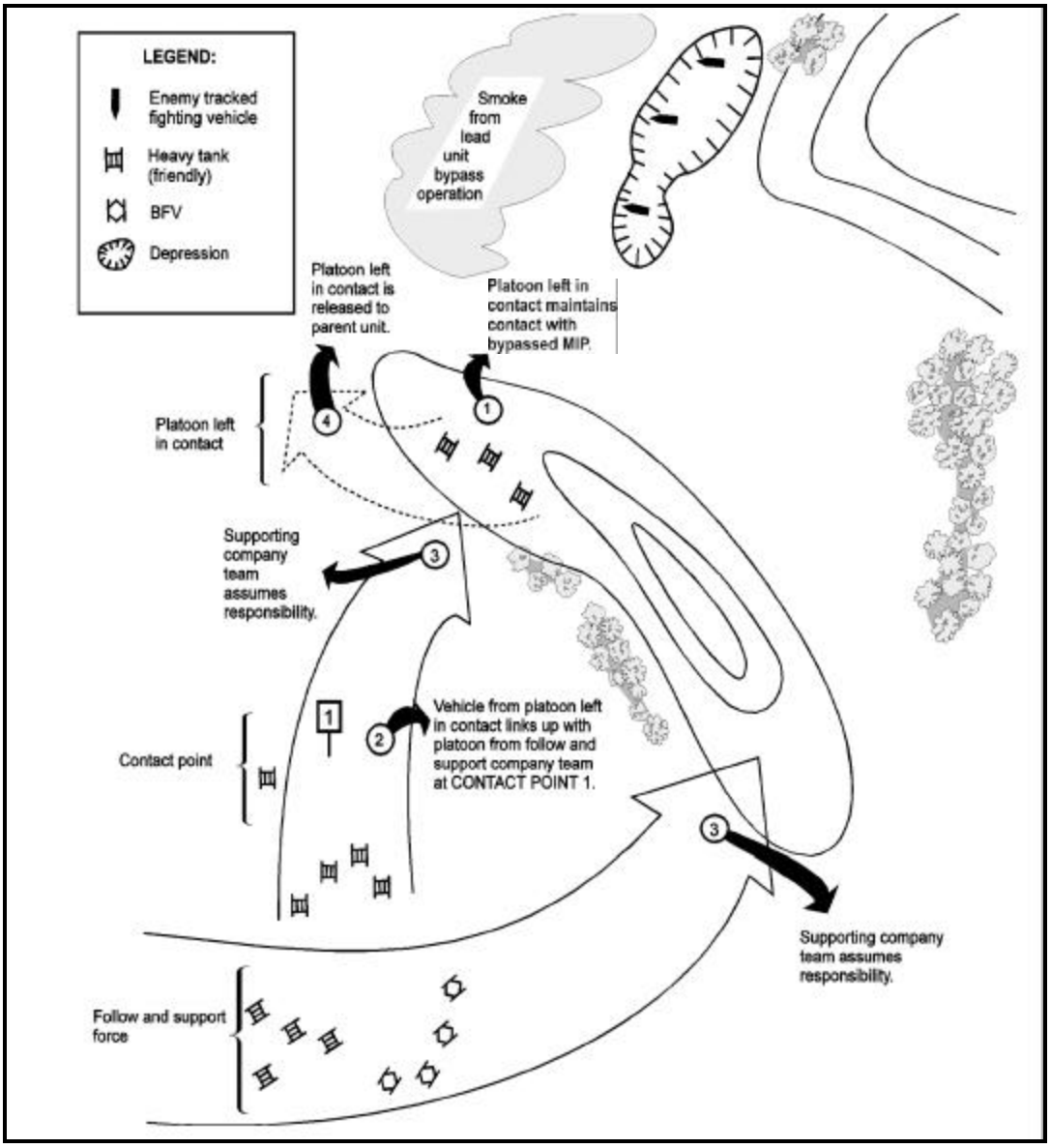


Figure 5-22. Example of Follow and Support Operation

BYPASS

5-168. The company team may bypass an enemy force or obstacle to maintain the momentum of the attack or for another tactical purpose. The task force commander often establishes bypass criteria. Figure 5-23 provides an illustration of a team-level bypass operation.

5-169. The company team commander first designates a fixing force to maintain contact with the enemy and assist the remainder of the team during the bypass. The bypassing force uses covered and/or concealed routes and, if possible, moves along bypass routes that are outside the enemy's direct fire range. The team can also employ smoke to obscure the enemy or to screen the bypassing force's movement. The team must conduct adequate reconnaissance of the route to confirm the feasibility of the bypass; the

enemy may intentionally leave a bypass route unguarded to draw attacking forces into his kill sacks.

5-170. Once the rest of the team clears the enemy position, the fixing platoon normally hands the enemy over to a supporting force, breaks contact, and rejoins the team. The fixing platoon may also be attached to the follow-on force.

NOTE: In a task force-level bypass operation, the company team may be employed as the fixing force.

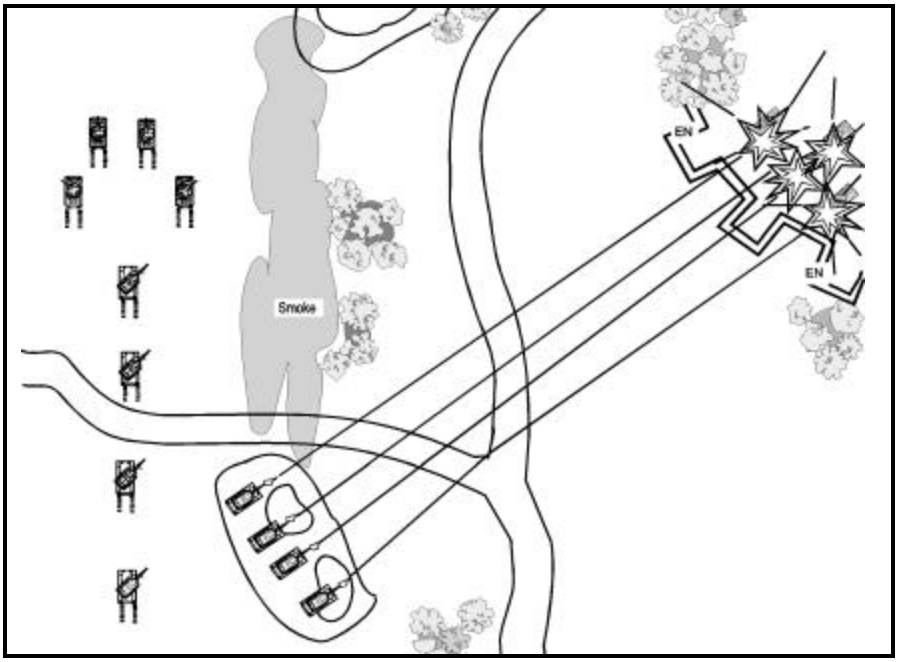


Figure 5-23. Example Company Team Bypass

CLEAR

5-171. Clear is a tactical task to remove all enemy forces and eliminate organized resistance within an AO or an objective. The company team may be tasked to clear an objective area during an attack, with the purpose of facilitating the movement of the remainder of the task force, or with clearance of a specific part of a larger objective area. Mechanized infantry rifle companies or company teams may be best suited to conduct clearance operations, which in many cases will involve working in restricted terrain. Situations in which the team may conduct the clearance tactical task include the following:

- Clearance of a defile, including high ground surrounding the defile and/or choke points within the defile.
- Clearance of a heavily wooded area.
- Clearance of a built-up or strip area. (See FM 3-06.11 [FM 90-10-1] for more detailed discussions of Urban Operations as well as Chapter 7.)

- Clearance of a road, trail, or other narrow corridor. This may include obstacles or other obstructions on the actual roadway, as well as surrounding wooded and built-up areas.

TERRAIN FACTORS

5-172. The commander must take several important terrain considerations into account in planning and executing the clearance task. These factors include the following, based on the OAKOC terrain analysis process:

- **Observation and Fields of Fire.** Observation and fields of fire favor the enemy. The attacking force must neutralize this advantage to be successful. Identify dead space where the enemy cannot see or engage friendly forces. In addition, identify multiple support by fire positions; these are necessary to support a complex scheme of maneuver that covers the company team's approach, the actual clearance task, and maneuver beyond the restricted terrain.

- **Avenues of Approach.** Avenues of approach will be limited. Consider the impact of canalization and estimate how much time will be required to clear the objective area.

- **Key Terrain.** Key terrain may include areas that dominate the approaches or exits for the objective area as well as any terrain that dominates the fight inside the defile, wooded area, or built-up area.

- **Obstacles.** Obstacles will influence the maneuver of any vehicle entering the objective area. The narrow corridors, trails, or roads associated with restricted terrain can be easily obstructed with wire, mines, and log cribs.

- **Cover and Concealment.** Cover and concealment are normally abundant for infantry elements but scarce for trail-bound vehicles. Lack of cover leaves vehicles vulnerable to ATGM fires.

ENEMY SITUATION

5-173. Careful analysis of the enemy situation is a mandatory step in ensuring the success of any clearance operation. The enemy evaluation should include the following elements:

- Determine the location of the enemy's vehicles, key weapons, and infantry elements in the AO.
- Determine location of enemy TRPs, Targets and engagement areas.
- Identify the type and location of enemy reserve forces.
- Identify the type and location of an enemy security force.
- Assess the impact of the enemy's NBC and/or artillery capabilities.

CLEARANCE PROCEDURES

5-174. To clear restrictive terrain is both time-consuming and resource-intensive. During the planning process, the commander evaluates the tactical requirements, resources, and other considerations for each of the three phases of the operation:

- Approach (the restricted terrain).
- Clear (the area in and around the restricted area).
- Secure (the far side of the objective area).

Approach

5-175. The approach phase focuses on moving combat power into the restricted terrain and posturing it to begin the clearance operation. The company team commander takes the following actions:

- Establish support by fire positions with the team's tanks and BFVs; destroy or suppress any known enemy positions to allow forces to approach the restricted terrain.
- Provide additional security by incorporating suppressive indirect fires and obscuring or screening smoke.
- Provide support by fire for the infantry rifle squads. Be prepared to cover infantry elements from their dismount points to the points at which they enter the restricted terrain, such as the following:
  - High ground on either side of a defile.
  - Wooded areas on either side of a trail or road.
  - Buildings on either side of a road in a built-up area.
- Move dismounted infantry rifle squads along axes that provide cover and concealment.

5-176. The approach phase ends when the infantry rifle squads are prepared to conduct an attack. (See Figure 5-24 for an illustration of this phase of the clearance.)

Clear

5-177. The clearance phase begins as the infantry squads begin their attack in and around the restricted terrain. Examples of the locations where this maneuver may take place include the following:

- On both sides of a defile, either along the ridge lines or high along the walls of the defile.
- Along the wood lines parallel to a road or trail.
- Around and between buildings on either side of the roadway in a built-up area.

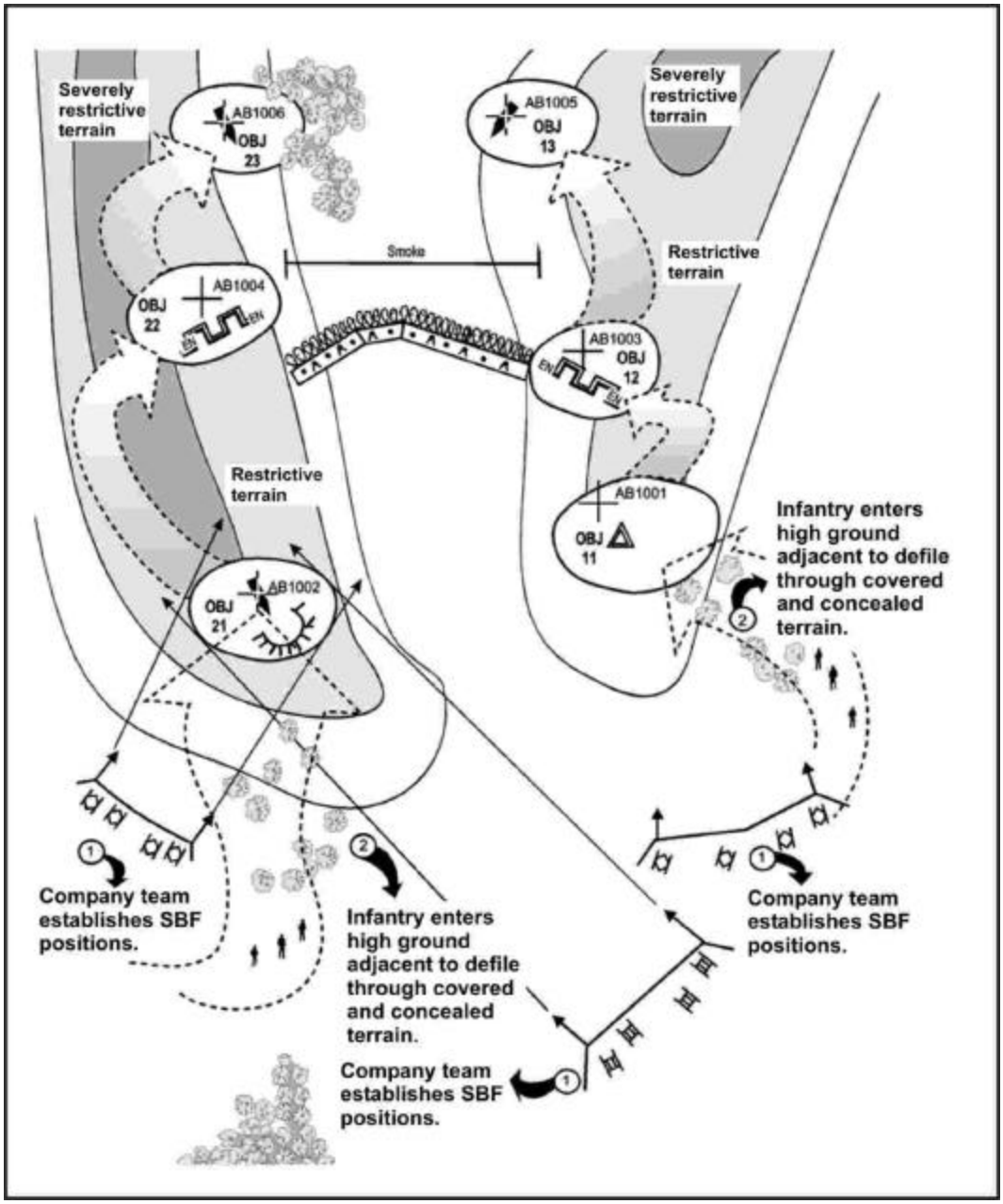


Figure 5-24. Company Team Conducts the Approach to a Defile

5-178. Figure 5-25 illustrates the clearance phase for an operation in a heavily wooded area. The following actions and considerations are applicable during this phase:

- The infantry conducts clearance operations in concert with the BFVs or tanks. Combat vehicles provide a base of fire to protect infantry elements as they clear an area. The infantry stops at a designated point or terrain feature where observation is affected; it provides a base of fire to allow the vehicles to bound to a new support by fire position. This cycle continues until the entire area is cleared.

- BFVs may be better suited than tanks to support the movement of the infantry in defiles and in urban areas with multiple-story buildings. This is the result of the BFV's ability to elevate its main gun to an angle of +60 degrees (an M1-series tank can only elevate to +20 degrees). Tanks, however, are very effective in destroying bunkers and other fortified positions; they can also neutralize and/or penetrate ground-level floors in buildings, providing the infantry with access to and support in this type of restricted terrain.

- Within the restricted area, tanks should be brought forward only to accomplish specific missions that are within their capabilities. Factors that may limit the usefulness of tanks in clearance operations include the following:

  - Short engagement ranges, which may be prevalent in these operations.

  - Limitations in elevating/traversing the main gun.

  - Significant blind spots associated with targets above the tank.

- At the same time, tanks have more effective armor protection than do BFVs and thus have greater survivability. They can also provide cover for infantry elements that move behind them when crossing danger areas.

- Direct fire plans should cover responsibility for both horizontal and vertical observation and direct fire.

- Infantry squads should clear a defile from the top down and should be oriented on objectives on the far side of the defile.

- Dismounted engineers with manual breaching capability should move with the infantry. Additionally, engineers should move with the overwatching vehicles to reduce obstacles.

- During the clearance phase, tanks and BFVs may be required to operate in DS of infantry elements.

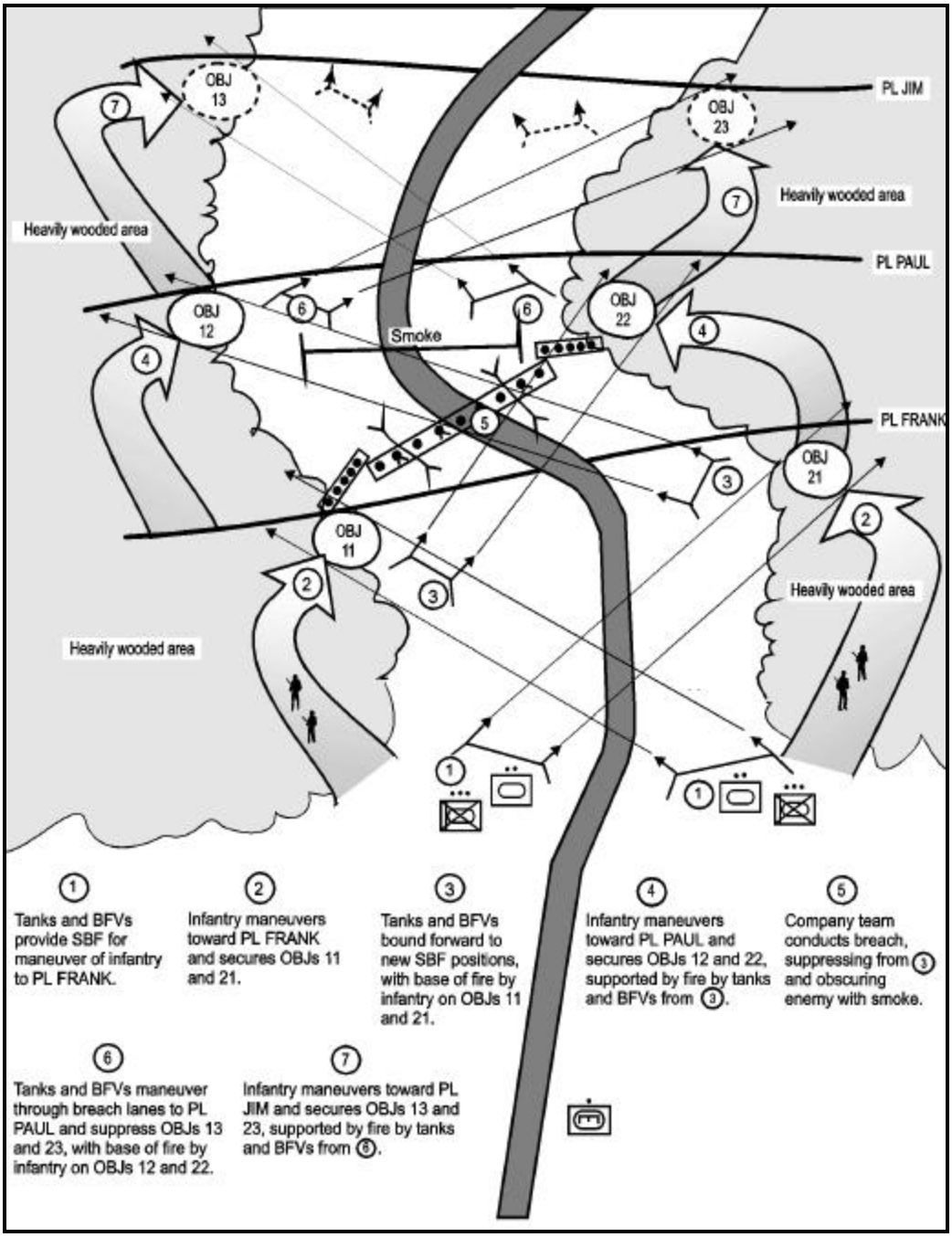


Figure 5-25. Company Team Conducts Clearance Operation in a Heavily Wooded Area

Secure

5-179. Secure is a tactical task to gain possession of a position or terrain feature, with or without force and prevent its destruction or loss. The company team must secure the far side of the defile, built-up area, or wooded area until the task force moves forward to pick up the fight beyond the restricted terrain. If the restricted area is large, the team may be directed to assist the passage of another element forward to continue the

clearance operation. Figure 5-26 shows the company team securing the far side of a core periphery. In completing the clearance, the company team must be prepared to take any action necessary to secure the area, such as the following:

- Within the capabilities of the company team, assault to destroy enemy forces and secure the far side of the restricted terrain.
- Maneuver mounted elements to establish support by fire positions on the far side of the restricted terrain.
- Conduct support by fire to protect the deployment of the follow-on force that is assuming the fight or to destroy or suppress any enemy elements that threaten the task force as it exits the restricted terrain.
- Defeat any counterattacks.
- Protect the obstacle reduction effort.
- Maintain observation beyond the restricted terrain.
- Integrate indirect fires as necessary.

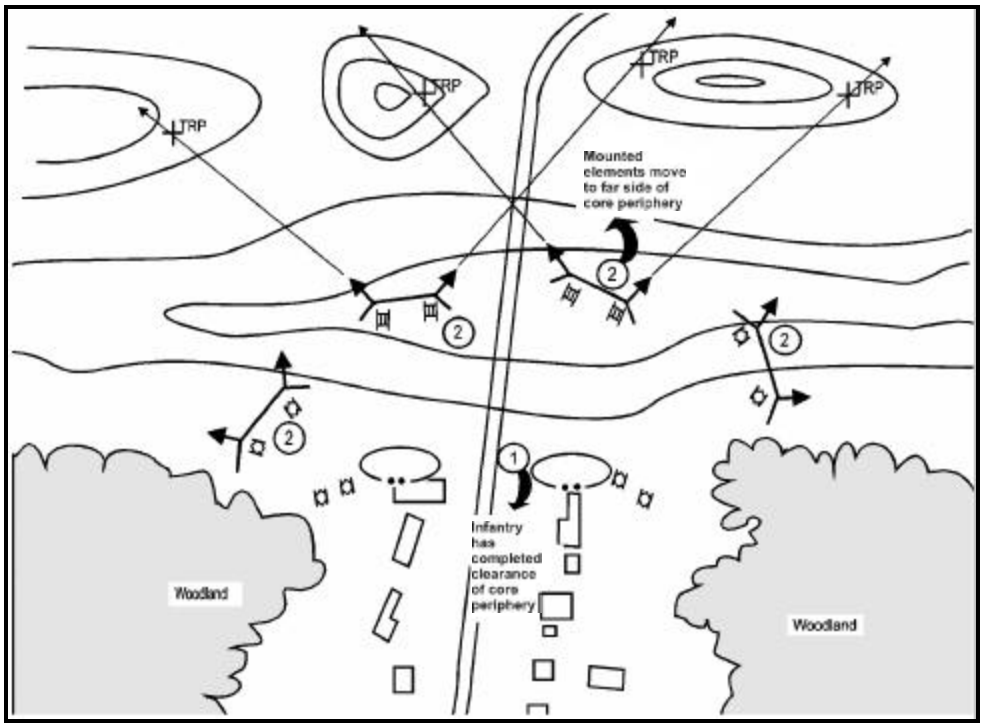


Figure 5-26. Company Team Secures the Far Side of a Core Periphery

ASSAULT

5-180. The assault is a complex tactical task that entails closure with the enemy, under fire of his weapons, to the point that the assaulting force gains positional advantage over and destroys the enemy. A company team

may be required to assault prepared or unprepared enemy positions from either an offensive or defensive posture. Examples of situations requiring company teams or platoons to assault include the following:

- A platoon assault to secure the far side of an obstacle as part of a company team breach.
- A company team assault to penetrate an enemy defense as part of a task force deliberate attack.
- A company team assault to complete the destruction of a defending enemy as part of a task force deliberate attack.
- A company team or platoon assault to destroy enemy security elements (such as ambush positions, CSOPs, or OPs) as part of a task force attack.
- A company team or platoon assault to destroy an ambush element (for example, this could occur in response to a near ambush during a tactical road march).
- A company team assault to destroy an attacking element as part of a counterattack or hasty attack.
- A company team assault to seize key/decisive terrain as part of a task force deliberate attack.

PLANNING CONSIDERATIONS

5-181. There are many inherent dangers in an assault: deadly enemy fires; a rapidly changing operational environment; the requirement to execute the assault on short notice; the possibility of fratricide when friendly forces converge. Taken together, these factors dictate that the company team commander and subordinate leaders understand the planning considerations covered in the following discussion.

Enemy Situation

5-182. The process of developing a clear and current picture of the enemy situation is the same in an assault as for other tactical tasks. Because the company team may conduct an assault in a variety of situations, the commander will often face unique challenges in collecting and disseminating information on the situation.

5-183. For example, if the company team is the assault force during a task force deliberate attack, the commander may be able to develop an accurate picture of the enemy situation during the troop-leading process. He can then produce his SITEMP, updating it as a result of battlefield reporting by the task force support and breach forces. He can also concentrate on developing thorough FRAGOs to issue new information to the team as needed.

5-184. In another instance, however, the company team commander may have to develop his picture of the enemy situation on the run, after the operation has begun; he must rely more heavily on reports from units in contact and on his own development of the situation. In this type of situation, such as when the team is assaulting to complete the destruction of the enemy assault force during a movement to contact, the commander must plan on relaying information as it develops. Again, he uses clear, concise FRAGOs to explain the enemy situation to subordinates; he must

know how to develop and issue these orders quickly under the pressures of the battlefield environment.

5-185. In either type of situation, it is imperative that the company team commander and his subordinate leaders make necessary adjustments to the scheme of maneuver based on the available information. This will help them to ensure that their plans are adapted to defeat the enemy they will actually face on the ground and not the enemy depicted in a SITEMP that no longer applies.

Maneuver

5-186. An assault entails closure with the enemy to gain positional advantage over him and, ultimately, to destroy him. In some situations, closure may require the company team to conduct only mounted maneuver; in other cases, the team may have to use both mounted and dismounted maneuver to assume the advantage. Factors influencing the commander's decision whether to conduct a mounted assault or one that combines mounted and dismounted elements include the following:

- **The company team's task, purpose, and end state.** If the team is directed to seize an objective area and the enemy has dismounted positions, it is likely that the team's assault will entail both mounted and dismounted maneuver. On the other hand, securing the objective area may require the team to conduct the assault using only mounted forces to achieve its task and purpose.
- **Trafficability of the objective area.** If all or part of the objective area is not trafficable by the company team's armored vehicles, the commander must consider conducting a dismounted assault. He must assess both existing obstacles (severely restricted terrain) and reinforcing obstacles (such as minefields or entrenchments).
- **Enemy AT capabilities.** The presence of AT assets on or around the objective will put the team's armored vehicles at risk. The preferred COA is to destroy or suppress these elements, allowing the vehicles to maneuver. If this is not possible, however, a dismounted assault may be required to eliminate specific antitank threats prior to or in conjunction with a mounted assault.
- **Effectiveness of mounted direct and indirect fires.** If the company team cannot effectively suppress or destroy a threat using mounted direct and/or indirect fires, it may have to employ dismounted infantrymen and conduct a belowground fight.

Fire Support

5-187. Fire support is employed for a variety of purposes in support of an assault. These include, but are not limited to, the following:

- Smoke employed by the task force to isolate the targeted enemy force and to hinder the enemy as he attempts to reposition forces or reinforce his positions.

- Suppressive fires employed by the task force to fix adjacent or reserve enemy elements, preventing them from repositioning.
- Fires employed by the task force to suppress and/or destroy the enemy on the objective area to protect the approaching assault force.
- Mortar smoke employed by the assaulting company team to isolate enemy elements on or adjacent to the objective area.
- Mortar high-explosive (HE) rounds employed by the assaulting company team to suppress enemy elements on the objective area or to destroy light-skinned AT systems.
- Close air support (CAS) and/or artillery fires employed to destroy the enemy and achieve the necessary force ratio for the assault.

NOTE: The company team commander must be especially careful to maintain the minimum safe distance for artillery and mortar fires during the assault on the objective.

Mobility and Survivability

5-188. Conduct of a breach during the assault breach is a high-frequency task for the company team when it takes part in assault of prepared enemy positions. The following discussion supplements the detailed examination of breaching operations in Chapter 11.

5-189. While serving as the assault force in a task force deliberate attack, the company team may have to conduct breach of the enemy's protective obstacles to gain access to the objective area. Protective obstacles normally consist of AP mines emplaced to defeat a dismounted assault; they are normally integrated with existing obstacles and restricted terrain.

5-190. The company team can conduct either a mounted or dismounted assault breach. The commander must determine if a mounted breach is possible based on several factors, including terrain and the enemy's AT capabilities. The following considerations apply:

- Breaching mounted during the assault is normally the preferred COA if terrain is favorable and enemy AT systems can be suppressed or destroyed. It maximizes the firepower and protection of the company team's armored vehicles while preserving the combat power of the team's dismounted elements. The team normally employs plow and roller tanks in this type of assault breach. (See FM 3-20.15 [FM 17-15] for more detailed information on breaching operations and Chapter 11 of this manual.)
- Breaching dismounted during the assault is also called a manual breach, is normally slower than the mounted breach and exposes the dismounted infantry and/or engineers to extreme danger. It may, however, be required based on the restrictiveness of the terrain and/or the proximity and effectiveness of enemy AT systems. (See FM 3-34.2 [FM 90-13-1] for a detailed discussion of manual breaching techniques.)

5-191. During the planning and preparation phases, the commander should focus on the tactical considerations and actions that will affect the execution of the assault. The following paragraphs outline these factors, organized roughly in chronological order as they will occur on the battlefield.

Set the Conditions for the Assault

5-192. Either the task force or, in limited circumstances, the company team must set the conditions for the assault. The purpose of this effort is to achieve a 3-to-1 force ratio for the assaulting force. The task force or team normally achieves this by either or both of two methods: isolation of the enemy force or portions of the objective area and/or destruction of the enemy on the objective area (see Figure 5-27 for this phase of the assault operation).

Isolate the Enemy Force or Objective Area

5-193. The task force or company team may use one of the following methods to isolate a particular enemy force or a particular part of the objective area:

- Conduct feints or demonstrations to immobilize the enemy's reserve or to deceive him into committing the reserve to another area on the battlefield.
- Use screening or obscuring smoke to isolate the enemy force visually from adjacent units.
- Fix adjacent units or reserve elements with direct fires, preventing them from repositioning, reinforcing, or conducting a counterattack or withdrawal.
- Destroy the enemy force. The task force or company team may accomplish this by employing CAS, artillery fires, or direct fires from support by fire positions.
- Suppress the enemy on the objective. The enemy must be suppressed to protect the assault force. The suppressing force, which normally requires at a least a 1-to-1 force ratio to be successful, may be provided by the task force or by the assaulting company team. The following considerations apply:
  - If the company team is conducting an assault as part of a task force attack, other company teams within the task force will normally have the responsibility to suppress the enemy on the objective area from designated support by fire positions. These teams may be the same support forces that protected the breach force; however, terrain factors may require them to reposition to provide effective support for the assault force. (Figure 5-28 on page 5-72 illustrates company teams providing this type of protective fires.)
  - If the company team is conducting an assault that is not part of a task force deliberate attack (for example, in a counterattack or an assault of a CSOP), it may have to establish its own support by fire positions to suppress the enemy and protect its assault force.

- Regardless of how support by fire is provided (by another company team or by internal elements), the company team must always integrate the principles of fire and movement (maneuver) when executing the assault.

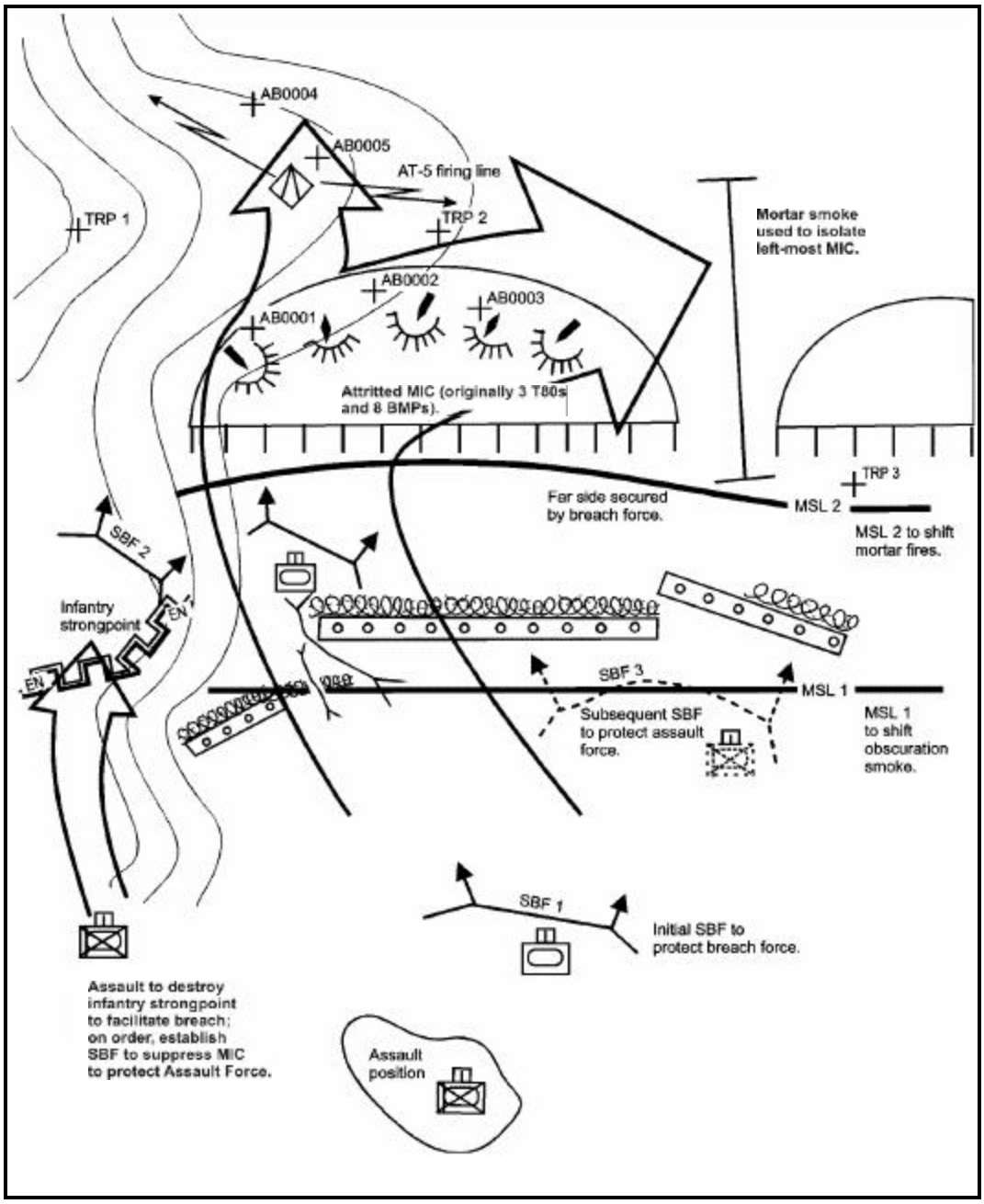


Figure 5-27. Example of a Task Force Setting the Conditions for an Assault During a Deliberate Attack

Conduct Actions at the Assault Position or the Probable Line of Depoyment

5-194. An assault position, the last covered and concealed position short of the objective, is normally used when the company team is the assault force in a task force deliberate attack. An assault position may be used in conjunction with a PLD, or a PLD may be used in lieu of an assault position. The example in Figure 5-28 illustrates the relative position of the assault position in a task force deliberate attack. Actions at the assault position or PLD may include these critical functions conducted ideally on the move, but also from a short halt:

- Verify current friendly and enemy situations using tactical reports from company team or task force support by fire forces.
- Issue FRAGOs and disseminate information to the lowest level.
- Confirm TRPs and direct fire responsibilities.
- Position artillery observers.
- Conduct final prepare-to-fire checks.
- Reorganize to compensate for combat losses.

5-195. Figure 5-28 illustrates various phases of the assault; these actions, which are covered in the following discussion, include the assault breach, the aboveground fight, and the belowground fight.

Breaching During the Assault

5-196. The company team may need to conduct a breach of the enemy's protective obstacles if the enemy is fighting from prepared positions. The team can conduct either a manual (dismounted) or mounted breach.

Conduct the Above Ground Fight

5-197. The aboveground fight includes those actions taken by the company team to suppress and/or destroy the enemy on the objective using accurate direct fires. It also entails securing the objective from enemy counterattacks, direct fires, and indirect fire observers. The aboveground fight is controlled by the company team commander, who must take into account the following paragraphs.

Indirect Fires

5-198. The company team may be able to employ indirect fires to isolate a small part of the enemy defense or to suppress the enemy on the objective. The team commander must always keep in mind the potential danger to friendly elements created by indirect fires used in support of the assault; he must ensure that the indirect fire assets know the position of the assault force at all times.

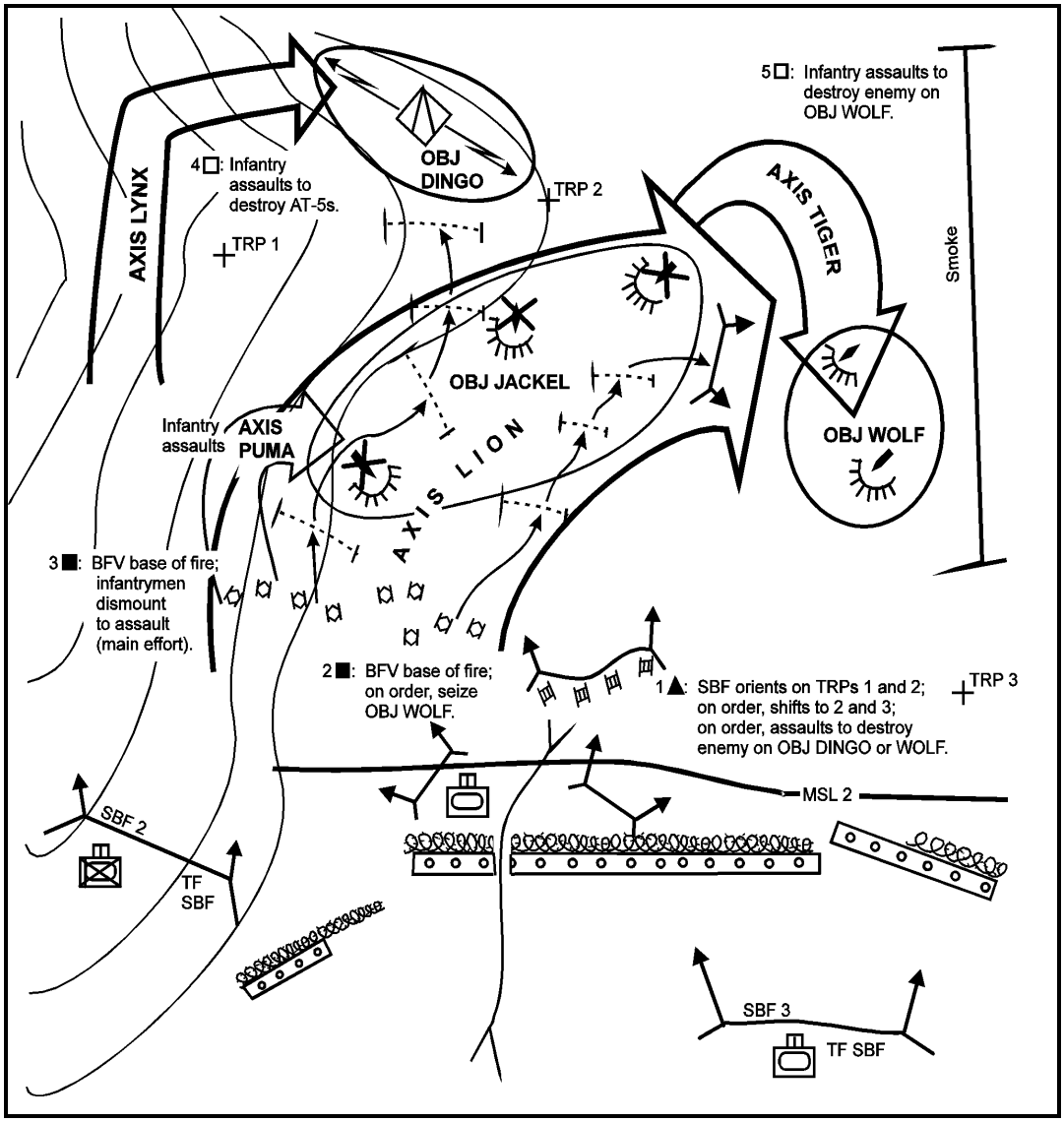


Figure 5-28. Example of a Company Team Conducting an Assault of a Depleted MIC as the Assault Force in a Task Force Deliberate Attack

Maneuver

5-199. The purpose of maneuver on the objective is to close with and destroy the defending enemy. As discussed earlier in this chapter, maneuver requires a base of fire element to suppress and/or destroy enemy forces with accurate direct fires and bounding elements that maneuver to gain positional advantage over the enemy. When effectively executed by the company team, maneuver leaves the enemy elements vulnerable by forcing them to fight in two directions; it also robs the enemy of the initiative and will ultimately limit his tactical options. The aboveground fight may require employment of dismounted maneuver (infantry and engineer squads) to breach, penetrate, seize, secure, or clear the objective.

Conduct the Belowground Fight

5-200. Belowground operations entail the clearance of enemy trench lines and bunker complexes. They are conducted by dismounted infantry and engineers in concert with tanks and BFVs under the control of infantry platoon leaders and their subordinate squad leaders. (**NOTE:** The company team commander must thoroughly understand the differences, in terms of tempo and other operational considerations, between the aboveground and belowground fights. His effectiveness in controlling both fights and in integrating all of his assets is a critical factor in the success of the assault operation.)

5-201. See FM 3-21.71 (FM 7-7J) for a detailed discussion of mounted and dismounted integration and drills for entering and clearing a trench line. The following paragraphs outline procedures and considerations for several aspects of the belowground fight.

Dismount Point

5-202. The company team commander will designate where his infantry squads will dismount to begin execution of the belowground fight. These dismount points can be short of the objective, on the objective, and/or beyond the objective. The following paragraphs examine the relative advantages and disadvantages of each positioning option.

Short of the Objective

5-203. The advantages of dismounting the infantry squads before reaching the objective include protection of the infantrymen 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. Disadvantages include exposure of the infantry squads to indirect and small arms fires as they maneuver to the objective area and the possibility that suitable dismount points will be targeted for enemy indirect fires.

On the Objective

5-204. The primary advantages of this option are greater speed and enhanced protection of the infantry squads as the company team 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 to short-range anti-armor weapons.

Beyond the Objective

5-205. This dismount option has several potential advantages—effective control at the dismount point; greater ease in orienting the dismounted elements to the terrain and the objectives of the assault; 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 team to attack from enemy positions in depth or from enemy reserve forces; vulnerability of the BFVs to short-range anti-armor systems; and increased risk of fratricide.

Support of Dismounted Maneuver

5-206. The company team must establish a base of fire with its tanks and BFVs; this will allow the infantry to safely dismount and then either to maneuver or to enter the trench line. The direct fire plan must be thoroughly developed and rehearsed to ensure that it will facilitate effective protection for the infantry while preventing fratricide. The commander should consider use of restrictive fire measures to protect converging forces and of other direct fire control measures, such as visual signals, to trigger the requirement to lift or shift fires.

5-207. The commander must also consider specific hazards associated with the company team's weapon systems. An example is the downrange hazard for dismounted infantry elements created by the discarding petals of rounds from the team's 120-mm and 25-mm guns. The hazard area for 120-mm sabot rounds is 70 meters to the left and right of the gun-target line out to a range of 1 kilometer. The hazard area for 25-mm armor-piercing rounds extends 30 degrees to the left and right of the gun-target line out to a range of 200 meters. The use of TOW missiles creates hazards as well. TOWs have a backblast area, in the form of a 90-degree "cone," that extends 75 meters to the rear of the vehicle firing the missile; this area is divided into a 50-meter danger zone and a 25-meter caution zone (See Chapter 7 for the main gun safety diagrams).

SEIZE

Seize the Objective

5-208. Seize is a tactical task that requires taking possession of a designated area by using overwhelming force. The company team achieves overwhelming force through the speed, firepower and shock effect delivered by the tank and BFV. When tasked to clear and objective, the objective must first be seized by the company team. Once the company team seizes the physical objective, it clears the terrain within that objective by killing, capturing, or forcing the withdrawal of all enemy forces.

Trench and Bunker Clearance

5-209. The company team's base of fire element and the maneuvering dismounted infantry must maintain close coordination throughout the clearance operation. The focus of the supporting tanks and BFVs is on protecting the dismounted infantrymen as they clear the trench line or maneuver to destroy individual or vehicle positions. The base of fire vehicles normally concentrate on the destruction of key aboveground structures (especially CPs and bunkers, which normally contain crew-served weapons) and the suppression and destruction of enemy vehicles.

As noted previously, the direct fire plan must be thoroughly developed and rehearsed to ensure that it will facilitate effective mutual support while preventing fratricide. Techniques for controlling direct fires during trench and bunker clearance may include the following:

- Attaching a flag to a pole carried by the soldier following immediately behind the lead clearance team.
- Using panels to mark cleared bunkers.
- Using visual signals to indicate when fires must be lifted and/or shifted.

5-210. See FM 3-21.71 (FM 7-7J) for a more detailed discussion of trench and bunker clearance operations.

Combined Effects

5-211. Once the dismounted infantry enters the trench line, the combined effects of the company team's assets will place the enemy in a dilemma. Every action the enemy takes to avoid direct fire from the tanks and BFVs, such as maintaining defiled positions or abandoning bunker complexes, leaves him vulnerable to attack from the infantry maneuvering down the trench. Conversely, when enemy vehicles move to avoid the attacking friendly infantry or when the enemy's infantry elements stay in bunkers or CPs, they expose themselves to the fires of the friendly armored vehicles.

Consolidate

5-212. Consolidation consists of actions taken to secure the objective and defend against an enemy counterattack. The company team commander must use the troop-leading process to plan and prepare for this phase of the operation. He ensures that the team is ready to conduct the following actions that normally are part of consolidation:

- Eliminate enemy resistance on the objective.
- Establish security beyond the objective by securing areas that may be the source of enemy direct fires or enemy artillery observation.
- Establish additional security measures such as OPs and patrols.
- Prepare for and assist the passage of follow-on forces (if required).
- Continue to improve security by conducting other necessary defensive actions; these steps, which are outlined in Chapter 6, include EA development, direct fire planning, and BP preparation.
- Adjust FPFs.
- Protect the obstacle reduction effort.
- Secure EPWs.

Reorganize

5-213. Reorganization, normally conducted concurrently with consolidation, consists of actions taken to prepare for follow-on operations. As with consolidation, the company team commander must plan and prepare for reorganization as he conducts his TLPs. He ensures that the company team is prepared to take the following actions:

- Provide essential medical treatment and evacuate casualties as necessary.
- Cross-level personnel and adjust task organization as required.
- Conduct resupply operations, including rearming and refueling.
- Redistribute ammunition.
- Conduct required maintenance.
- Register indirect fires.
- Prepare for counterattack or resume attack.

Chapter 6

Defensive Operations

Military forces conduct defensive operations only until they gain sufficient strength to attack. Though the outcome of decisive combat derives from offensive actions, commanders often find that it is necessary, even advisable, to defend. Once they make this choice, they must set the conditions for the defense in a way that allows friendly forces to withstand and hold the enemy while they prepare to seize the initiative and return to the offense. A thorough understanding of the commander's intent is especially critical in defensive operations, which demand precise integration of combat, CS, and CSS elements.

The immediate purposes of all defensive operations are to defeat an enemy attack and gain the initiative for offensive operations. The company team may also conduct the defense to achieve one or more of the following purposes:

- Gain time.
- Retain key terrain.
- Facilitate other operations by preoccupying the enemy in one area while friendly forces attack him in another.
- Erode enemy forces at a rapid rate while reinforcing friendly operations.

CONTENTS

Sequence of the Defense 6-1
Reconnaissance and Security Operations and Enemy Preparation Fires 6-2
Occupation 6-2
Approach of the Enemy Main Attack 6-2
Enemy Assault 6-3
Counterattack 6-3
Consolidation and Reorganization 6-3
Defensive Planning Considerations 6-3
Weapons Positioning 6-3
Air Defense 6-8
Mobility and Survivability 6-9
Combat Service Support 6-12
Class IV/V Supply Points and Mine Dumps 6-13
Displacement Planning 6-14
Preparation and Integration 6-16
Engagement Area Development 6-16
Battle Position Occupation and Preparation 6-23
Adjacent Unit Coordination 6-26
Defensive Techniques 6-27
Defense in Sector 6-27
Defend a Battle Position 6-28
Defend a Strongpoint 6-28
Defend a Perimeter 6-31
Reserve Operations in the Defense 6-33
Planning Considerations 6-33
Reserve Operations and Techniques 6-36
Positional Reserve 6-37
Retrograde Operations 6-38
Delay 6-38
Withdrawal 6-42
Retirement 6-44

SECTION I – SEQUENCE OF THE DEFENSE

6-1. As part of a larger element, the company team conducts defensive operations in a sequence of integrated and overlapping phases or steps. The following paragraphs focus on the tactical considerations and procedures involved in each phase.

RECONNAISSANCE AND SECURITY OPERATIONS AND ENEMY PREPARATORY FIRES

6-2. Security forces must be employed to protect other friendly forces and allow them to continue their preparations. The enemy will attempt to discover the defensive scheme of maneuver using reconnaissance elements and attacks by disruption elements and fixing forces. He will also attempt to breach the task force's tactical obstacles.

6-3. The goals of the task force security force normally include providing early warning, destroying enemy reconnaissance units, and impeding and harassing enemy main body elements. The security force will continue its mission until directed to displace. The commander may also use security forces in his deception effort, employing them to give the illusion of strength in one area while positioning his true combat power in another. While conducting this type of security operation, the company team may simultaneously have to prepare BPs, creating a challenging time management problem for the commander and other leaders.

6-4. During this phase of the operation, the company team may need to provide guides to the passing security force and may be tasked to close the passage lanes. The team may also play a role in shaping the battlefield. The task force or brigade commander may position the team to deny likely enemy attack corridors, enhancing flexibility and forcing enemy elements into friendly EAs. When it is not conducting security or preparation tasks, the company team will normally occupy hide positions to avoid possible chemical strikes or enemy artillery preparation.

OCCUPATION

6-5. During this phase, the company team reconnoiters and occupies its positions. This usually includes movement from tactical assembly areas to the actual defensive sector, led by a quartering party that clears the defensive positions. The division, brigade, and task force will establish security forces during this phase, and remaining forces will begin to develop EAs and prepare BPs.

6-6. Operational and tactical security is critical during the occupation to ensure the company team can avoid detection and maintain combat power for the actual defense. Leaders and crewmen at all levels of the team must thoroughly understand their duties and responsibilities related to the occupation; they then must be able to execute the occupation quickly and efficiently to maximize the time available for planning and preparation of the defense.

APPROACH OF THE ENEMY MAIN ATTACK

6-7. As this phase begins, the company team's parent brigade engages the enemy at long range using indirect fires, EW, and CAS (deep fight). The goal is to use these assets, along with disrupting obstacles, to shape the battlefield and/or to slow the enemy's advance and disrupt his formations, leaving him more susceptible to the effects of CS weapons.

6-8. As the enemy's main body approaches the task force EA, the task force may initiate indirect fires and CAS to further weaken the enemy by attrition; at the same time, the brigade's effort normally shifts to follow-on forces. (**NOTE:** Long-range fires may be withheld in accordance with the commander's intent.) Friendly forces will occupy their actual defensive positions before the enemy reaches direct fire range; positions are shifted in response to enemy actions or other tactical factors.

ENEMY ASSAULT

6-9. During this phase, the enemy will deploy to achieve mass at a designated point, normally employing both assault and supporting forces. This may leave him vulnerable to the combined effects of indirect and direct fires and integrated obstacles. He may employ additional forces to fix friendly elements and prevent their repositioning.

6-10. Friendly counterattack forces may be committed against the enemy flank or rear, while other friendly forces may displace to alternate, supplementary, or successive positions in support of the commander's scheme of maneuver. All friendly forces should be prepared for the enemy to maximize employment of combat multipliers, such as dismounted infantry operations, to create vulnerability. The enemy is also likely to use artillery, CAS, and/or chemical weapons to set the conditions for the assault.

COUNTERATTACK

6-11. As the enemy's momentum is slowed or stopped, friendly forces may launch a counterattack. The counterattack may be launched purely for offensive purposes to seize the initiative from the enemy. In some cases, however, the purpose of the counterattack will be mainly defensive, such as re-establishing the FEBA or restoring control of the AO. The company team may participate in the counterattack as a base of fire element (shaping operation) or as the counterattack force (decisive operation).

CONSOLIDATION AND REORGANIZATION

6-12. The company team must secure its AO by repositioning forces, destroying remaining enemy elements, processing EPWs, and reestablishing obstacles. The team conducts all necessary CSS functions as it prepares to continue the defense. Even when it is not being actively engaged by enemy forces, the company team must maintain SU and local security at all times during consolidation and reorganization.

SECTION II – DEFENSIVE PLANNING CONSIDERATIONS

WEAPONS POSITIONING

6-13. The goal of effective weapons positioning is to enable the company team to mass fires at critical points on the battlefield and to enhance its survivability. To do this, the commander must maximize the strengths of the company team's weapons systems while minimizing its exposure to enemy observation and fires. The following paragraphs focus on tactical considerations for weapons positioning.

DEPTH AND DISPERSION

6-14. Dispersing positions laterally and in depth helps to protect the force from enemy observation and fires. Company team and platoon positions are established in depth, allowing sufficient maneuver space within each position to establish in-depth placement of vehicle weapon systems and dismounted infantry elements. (See Figure 6-1 for an illustration of how a company team establishes depth in sector.)

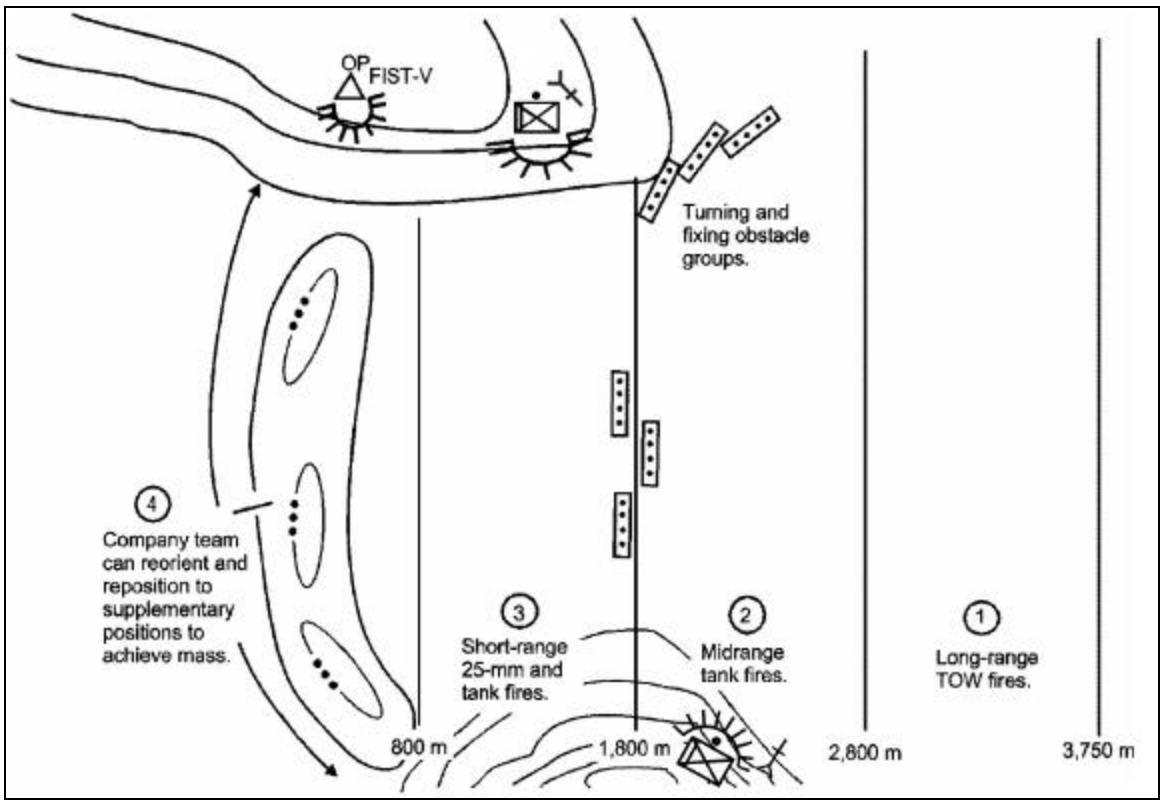


Figure 6-1. Example of a Company Team Achieving Depth in Sector

6-15. Vehicle and infantry fighting positions should be positioned to allow the massing of fires at critical points on the battlefield. Although METT-TC factors ultimately determine the placement of weapon systems and unit positions, the following general guidelines apply:

- Tanks are best employed where they can engage targets with the main gun (out to a maximum range of 4,000 meters for M1A1 and M1A2 tanks) and with the coaxial machine gun (at ranges out to 900 meters). The factors of METT-TC will ultimately dictate positioning and engagement criteria. As a general guideline, however, tanks are normally best employed where they can engage the enemy at a range of approximately 2,500 meters.
- TOW missiles are best employed at a range of 2,500 to 3,700 meters, where targets can be tracked for at least 12 seconds.

- BFVs are best employed from flank positions and in positions, at a range of 2,500 meters or less, from which they can destroy lightly armored vehicles and infantry or fix or severely limit the movement of tanks.
- Infantry squads should be positioned on reverse slopes or in restricted terrain where they cannot be engaged before they can take the enemy under fire.
- Infantry squads can supplement the anti-armor fires of the tanks and BFVs with Javelin missiles, which have a maximum range of 2,000 meters.
- Infantry squads can retain or deny key terrain if employed in strongpoints or well-covered positions.
- Infantry squads can protect obstacles or flank positions that are tied into severely restricted terrain.

FLANK POSITIONS

6-16. Flank positions enable a defending force to bring fires to bear on an attacking force moving parallel to the defender's attack formation. An effective flank position provides the defender with a larger and more vulnerable target while leaving the attacker unsure of the location of the defense.

6-17. Major considerations for successful employment of a flank position are the defender's ability to secure the flank and his ability to achieve surprise by remaining undetected. Effective fire control and fratricide avoidance measures are critical considerations in the employment of flank positions. Figure 6-2 illustrates an example of a team using flank positions in the defense.

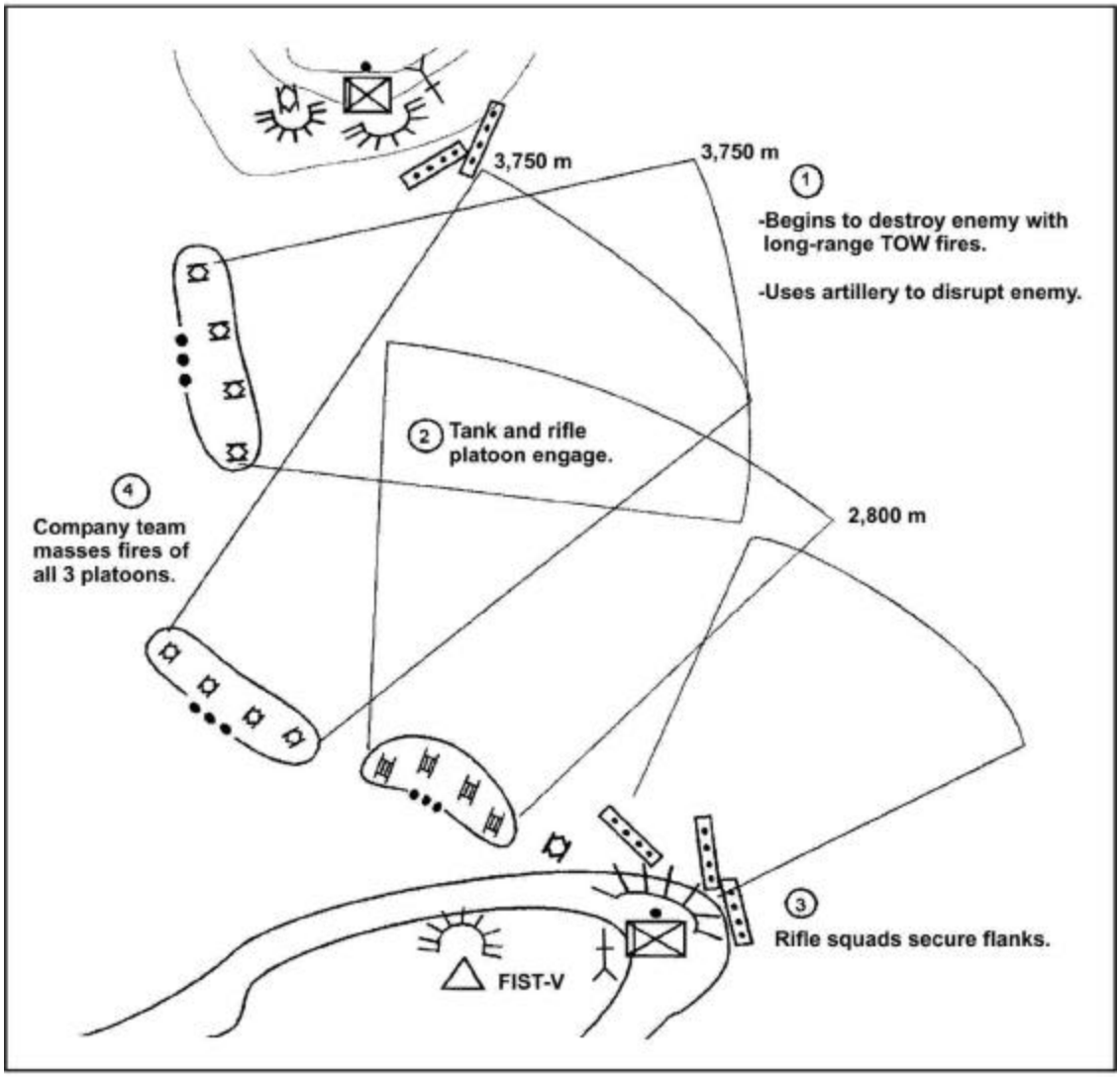


Figure 6-2. Example of Company Team Depth and Flank Positions

REVERSE SLOPE POSITIONS

6-18. The reverse slope defense uses the topographical crest to mask the defender from the attacker's observation and supporting long-range direct and indirect fires. This can provide the defender with both a degree of force protection and the advantage of surprise. By employing OPs on the far side of the crest, he gains early warning of the attacking force's advance and can use indirect fires to disrupt or destroy the enemy. In addition, the reverse slope defense allows effective employment of obstacles. The enemy will have very little time to react to any obstacles placed on the friendly side of the crest, preventing him from generating effective combat power (mass) for a rapid penetration. Figure 6-3 illustrates an example of a company team reverse slope defense.

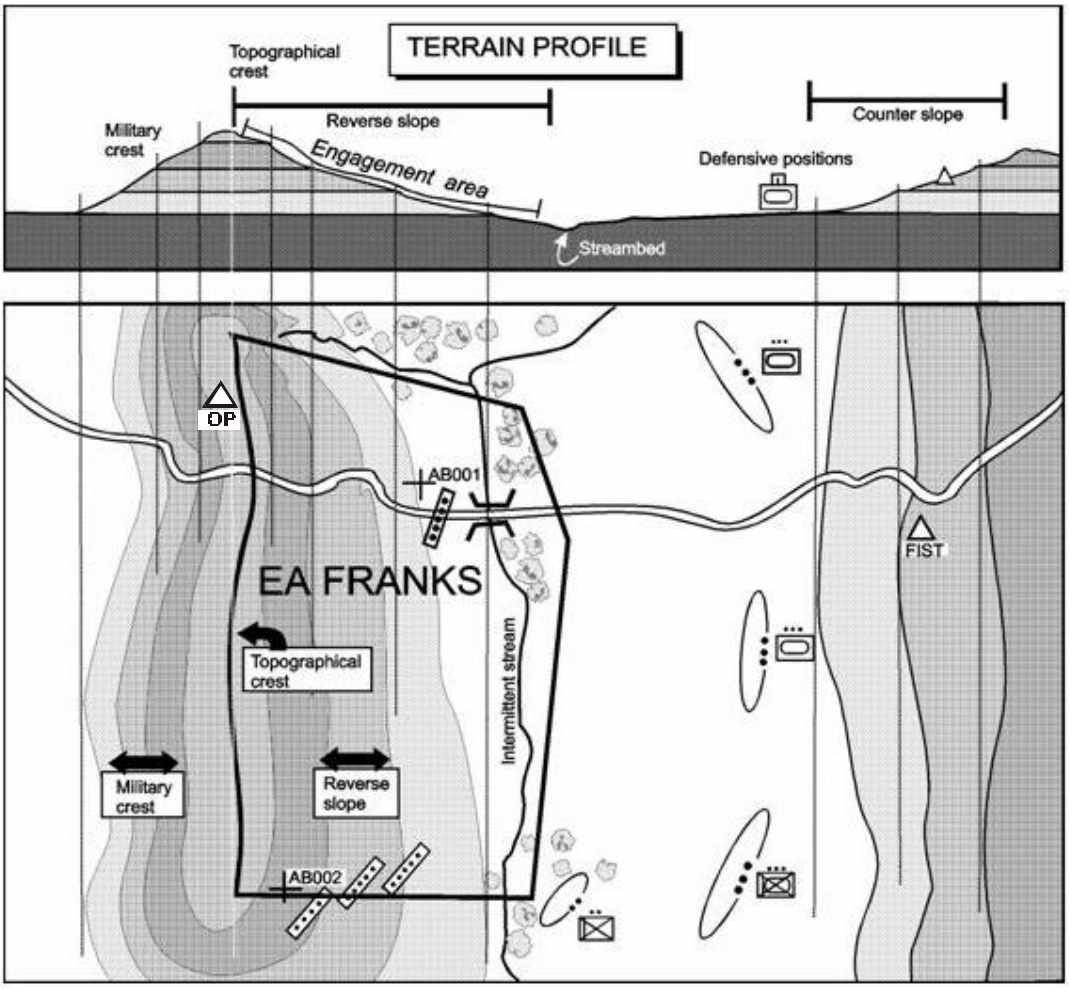


Figure 6-3. Example of Company Team Reverse Slope Defense

DEFENSIVE BATTLEFIELD OPERATIONING SYSTEMS CONSIDERATIONS

Fire Support Assets

6-19. In developing the fire plan, the company team must evaluate the indirect fire systems available to support a specific operation. Normal assets available to the company are the task force mortar platoon and artillery in DS. Considerations include tactical capabilities, weapons ranges, and available munitions. Establishing triggers for each of these systems is key to ensure adequate indirect support is fired to support the displacement/disengagement. The quicker response time from the mortars allows for their use as the enemy closes on the friendly position. These factors help the company team commander and FSO to determine the best method for achieving the EFSTs.

TARGET PURPOSE

6-20. For the fire plan to be effective in the defense, the company EFSTs must be nested with the battalion's EFST. The EFST purpose supports the maneuver purpose. Indirect fires serve a variety of purposes in the defense, including the following:

- Slow and disrupt enemy movement.
- Prevent the enemy from executing breaching operations at turning or blocking obstacles.
- Destroy or delay enemy forces at fixing obstacles using massed fires or pinpoint munitions (such as Copperhead rounds).
- Disrupt enemy support by fire elements.
- Defeat attacks along dismounted avenues of approach with the use of FPFs.
- Disrupt the enemy to allow friendly elements to disengage or conduct counterattacks.
- Obscure enemy observation or screen friendly movement during disengagement and counterattacks.
- Deliver scatterable mines to close lanes and gaps in obstacles, to disrupt or prevent enemy breaching operations, to disrupt enemy movement at choke points, or to separate or isolate enemy echelons.
- Provide illumination as necessary.
- Execute suppression of enemy air defense (SEAD) missions to support CAS attacks and high-payoff targets (HPT).
- Use smoke to separate enemy forces; to screen friendly displacement; or to silhouette enemy formations, facilitating direct fire engagement.

POSITIONING OF THE FSO AND FIST-V/B-FIST

6-21. The company team's fire support personnel contribute significantly to the fight; effective positioning is critical. The team commander and FSO must select positions that provide fire support personnel with unobstructed observation of the AO. In addition, the FIST-V/B-FIST should receive high priority for positioning and the digging of a survivability position.

AIR DEFENSE

6-22. The focus of the air defense plan is on likely air avenues of approach for enemy fixed-wing aircraft, helicopters, and UAVs; these may or may not correspond with the enemy's ground avenues of approach. ADA assets are positioned based on METT-TC factors and the task force commander's scheme of maneuver. For example, a key consideration is to position air defense vehicles (BSFVs or Bradley Linebackers), usually about 2 kilometers apart, to maximize the Stinger's capabilities in the defense. The Stinger then becomes the primary killer of rotary-wing and fixed-wing aircraft, with the Bradley's 25-mm chain gun used for close-in defense. In another situation, the task force S2 and the task force air defense officer (ADO) may determine that the air defense vehicles should be positioned independent of the friendly ground maneuver elements. These vehicles are

also frequently used to protect friendly counterattack forces against aerial observation or attack.

6-23. Other factors in air defense planning include development of engagement criteria for BSFVs or Linebackers that become involved in the ground fight and positioning of air defense vehicles near templated enemy landing zones (LZ) in the task force sector. Resupply of Stinger missiles places unique demands on the company team; it requires detailed planning and consideration. It may be necessary to pre-position Stingers in the company team area to facilitate timely resupply.

MOBILITY AND SURVIVABILITY

MOBILITY

6-24. Mobility operations in the defense focus on the ability to reposition forces, including unit displacement; forward or rearward passage of forces and the commitment of reserve forces (counterattack routes). Priorities set by the task force may specify some routes for improvement; lanes; or bypasses required to support such operations. Normally, however, all or most of the task force engineer assets will be allocated to the survivability and/or countermobility effort. After the survivability and/or countermobility efforts are complete, the engineers should be in position that they can reopen counterattack routes if required.

SURVIVABILITY

6-25. Survivability positions are prepared in BPs or strongpoints to protect vehicles, weapon systems, and dismounted infantry elements. Positions can be dug in and reinforced with overhead cover to provide dismounted infantry and crew-served weapons with protection against shrapnel from air bursts. Vehicle fighting positions are constructed with both hull-defilade firing positions and turret-defilade observation positions. In addition, the company team may use blade assets to dig in ammunition prestocks at alternate, supplementary, or subsequent BPs or in individual vehicle fighting positions.

6-26. Because the process of digging in a task force requires many “blade hours” and assets may be limited, the company team commander must develop a plan for digging in the team; he prepares the team area for the arrival of the blades by marking vehicle positions and designating guides for the engineer vehicles. He also may have to position fuel vehicles in the vicinity of the BP to refuel the supporting ACE or dozers.

6-27. The commander must prioritize the survivability effort; for example, he may only have time to dig in positions that have the least amount of natural cover and concealment. Soil composition should also be a consideration in BP selection; sites to be avoided include those where the soil is overly soft, hard, wet, or rocky.

COUNTERMOBILITY

6-28. To be successful in the defense, the company team commander must integrate individual obstacles into both direct and indirect fire plans, taking into account the intent of each obstacle group. At the task force level, obstacle intent consists of the target of the obstacle group, the desired effect on the target, and the relative location of the group. Obstacle emplacement, like artillery and mortar employment, must also have a clear task and purpose. The purpose will influence many aspects of the operation, from selection and design of obstacle sites to actual conduct of the defense. Normally, the task force or brigade will designate the purpose of an obstacle group. For example, the task force commander might specify this purpose: "We must deny the enemy access to our flank by turning the northern MIBN into our EA, allowing Team B and Team C to mass their fires to destroy it."

6-29. Obstacles are any physical characteristics of terrain that impede the mobility of a force. Obstacles are classified as either existing or reinforcing. Existing obstacles are the inherent aspects of the terrain on the battlefield such as rivers, forests, mountains, or urban areas. Reinforcing obstacles are specifically constructed, emplaced, or detonated by military forces. Generally the maneuver commander and supporting engineer incorporate existing and reinforcing obstacles to complete the tactical and protective obstacle plans for the defense (See FM 3-34.1 [FM 90-7] for additional information on obstacle planning, siting, and turnover.) The following paragraphs discuss employment considerations for various types of tactical and protective obstacles.

6-30. **Obstacle Effect.** Tactical obstacles and fires manipulate the enemy in a way that supports the commander's intent and scheme of maneuver. The intended effect that the commander wants the obstacles and fires to have on the enemy is called the obstacle effect. The obstacle effect drives integration, focuses subordinates' fires, focuses obstacle effort, and multiplies the effect of firepower. All tactical obstacle produce one of the following effects:

- Disrupt.
- Turn.
- Fix.
- Block.

Disrupting Effects

6-31. Disrupting effects focus a combination of fires and obstacles to impede the enemy's attack in several ways, such as breaking up his formations, interrupting his tempo, and causing premature commitment of breaching assets. To achieve this effect the obstacle must attack half the width of the avenue of approach (example AA = 1 km, linear frontage of obstacle = 500 meters).These obstacles are normally used forward within EAs or in support of forward positions within a defensive sector. Normally, only indirect fires and long-range direct fires are planned in support of disrupting obstacles. These are often the product of situational obstacles, such as scatterable mines.

Turning Effects

6-32. The commander uses this combination of fires and obstacles to support the scheme of maneuver in several ways, including the following:

- Divert the enemy into an EA, exposing his flanks when he makes the turn.
- Divert an enemy formation from one avenue of approach to another.
- Deny the enemy the ability to mass forces on a flank of the friendly force.

6-33. The fire plan should specify how the defending unit will target the enemy throughout the turn as well as identify the task and purpose of the obstacle. In addition, the commander must clearly identify the size of the enemy element to be turned. The turning obstacles are tied into an existing obstacle (severely restricted terrain) at its initial point, are easily visible, and appear very complex at the initial point; the obstacle appears less complex in the direction of the turn eventually allowing a bypass at its end point. To achieve this effect the obstacle must attack the entire width of the avenue of approach, as well as maintain an overall depth equal to AA (example AA = 1 km, linear frontage obstacle group = 1 km, depth of obstacle group = 1 km). The commander may further enhance the effectiveness of the obstacle by using infantry squads to cover it with fires.

Fixing Effects

6-34. Fixing effects use the combination of fires and obstacles to slow or temporarily stop an attacker within a specified area, normally an EA. The defending unit can then focus on destroying the enemy, using indirect fires to suppress him in the EA while direct fires inflict maximum casualties and damage. If necessary, the defender can reposition his forces using the additional time gained as a result of fixing the enemy. To fully achieve the fixing effect, these obstacles are arrayed in depth causing the enemy forces to react and breach repeatedly. The obstacles linear frontage must equal the width of the avenue of approach, and its depth must equal the overall width of the AA (example AA width = 1 km, obstacle group linear frontage = 1 km, overall obstacle group depth = 1 km). However one essential factor is the obstacle appearing as if it could be easily breached or bypassed. The commander must clearly specify the size of enemy unit to be fixed.

Blocking Effects

6-35. Blocking effects use the combination of fires and obstacles to stop an attacker along a specific avenue of approach, or deny passage through an EA. Block effects are achieved by integrating massed fires (direct and indirect) with complex obstacles to defeat the enemy's breaching effort. Complex obstacles in depth defeat the enemy's mounted and dismounted breaching efforts enabling their destruction by fires. Block obstacles are extremely resource intensive requiring extensive engineer manpower and CL IV/V effort. The obstacle group linear frontage is 1.5 times the width of an AA, with an overall obstacle group depth 1/3 the width of the AA (example AA = 1 km, obstacle group linear frontage = 1.5 km, obstacle

group depth = 330 m). Blocking obstacles must be anchored on both sides by existing obstacles (severely restricted terrain.

Protective Obstacles

6-36. Company teams are responsible for coordinating and employing their own protective obstacles to protect their BPs. To be most effective, these should be tied into existing obstacles. The company team may use mines and wire from its basic load or pick up additional assets (including modular pack mine system [MOPMS], if available) from the task force Class IV/V supply point. The team may also be responsible for any other required coordination (such as that needed in a relief in place), for recovery of the obstacle, or for its destruction (as in the case of MOPMS).

6-37. In planning for protective obstacles, the commander must evaluate the potential threat to the team's position and then employ the appropriate system to counter that threat. For example, MOPMS is predominantly an AT system best used on mounted avenues of approach, although it does have some antipersonnel applications; on the other hand, wire obstacles may be most effective when employed on dismounted avenues. (See FM 3-34.1 [FM 90-7] for detailed planning guidance for protective obstacle emplacement.)

6-38. **Obstacle Lanes.** The company team may be responsible for actions related to lanes through obstacles. These duties may include marking lanes in an obstacle, reporting locations of the start and end points of each lane, manning contact points, providing guides for elements passing through the obstacle, and closing the lane.

COMBAT SERVICE SUPPORT

6-39. In addition to the CSS functions required for all operations, the company team commander's planning process should cover the considerations discussed in the following paragraphs. (See Chapter 10 for CSS operations.)

PRESTOCKS AND CACHES

6-40. The commander's mission analysis may reveal that the company team's ammunition needs during an upcoming operation will exceed its basic load. This will require the team to establish ammunition caches, or prestocks. The prestocks, which may be positioned either at an alternate or subsequent BP or with the fighting vehicles, should be both dug in and guarded.

Position of Trains

6-41. The company team combat trains normally operate 500 to 1,000 meters (or one terrain feature) to the rear of the company team to provide immediate recovery, medical, and maintenance support. The commander must ensure that all elements know the locations of the forward and main aid stations. He must also plan and rehearse CASEVAC procedures.

CLASS IV/V SUPPLY POINTS AND MINE DUMPS

6-42. These sites are important elements of task force resupply operations. (See FM 3-34.1 [FM 90-7] for a more detailed discussion of Class IV/V supply points and mine dump operations.)

CLASS IV/V SUPPLY POINTS

6-43. Class IV/V supply points stock construction and barrier materials; they are also the sites at which the task force receives and transfers control of mines pushed forward by corps and/or division throughput haul assets. The task force has responsibility for establishing the supply point and for transporting materials from the point to locations in the task force area where the supplies are needed. The site is normally run by the task force S4 or his NCOIC, assisted by an NCO from the task force's attached engineer company. Other task force elements, including the company team, may be tasked to provide personnel for supply point operations. These soldiers play a crucial role in organizing the site, unpacking the barrier materials, loading them onto transport vehicles, and as necessary, helping to transport the materials forward. (**NOTE:** The task force may supplement the supply point with mine dump sites to better support engineer platoons in establishing obstacles on the ground [see the following discussion]).

MINE DUMPS

6-44. The mine dump is the most forward mine resupply node, although it is not normally a permanent supply point. It is the site at which mines are task organized into mine strip packages and then are inspected, prepared, and loaded into emplacing vehicles. Mine dump operations are primarily handled by an engineer company or platoon. When a mine dump supports an obstacle the company team has responsibility for siting, however, the team will normally augment the unit operating the dump. Table 10-1 illustrates how many mines a given number of soldiers can process in a given time period; this is a critical planning factor in mine dump operations.

Table 6-1. Processing schedule for mine dump operations

Processing Element	Quantity of Mines Processed
2-man team	25 mines/hour
Squad (8 soldiers)	100 mines/hour
Platoon	300 mines/hour 3,600 mines/day
Company	10,800 mines/day
NOTE: Processing rates are based on a speed of 2 minutes per mine processed by a 2-man team, with soldiers working 50 minutes per hour and 12 hours per day.	

DISPLACEMENT PLANNING

6-45. Disengagement and displacement are key defensive tasks that allow the company team to retain its operational flexibility and tactical agility. The ultimate goals of disengagement and displacement are to enable the company team to maintain standoff range and to avoid being fixed or decisively engaged by the enemy. The company team commander must consider several important factors in displacement planning; these include, but are not limited to, the following:

- The enemy situation (for example, an enemy attack with overwhelming force and speed may prevent the company team from disengaging).
- Disengagement criteria.
- Availability of direct fire suppression that can facilitate disengagement by suppressing or disrupting the enemy.
- Availability of cover and concealment, indirect fires, and smoke to assist disengagement.
- Obstacle integration, including situational obstacles.
- Positioning of forces on terrain (such as reverse slopes or natural obstacles) that provides an advantage to the disengaging elements.
- Identification of displacement routes and times that disengagement and/or displacement will take place.
- The size of the friendly force that must be available to engage the enemy in support of the displacing unit.
- Location of remount points, times that remount operations will take place, and maneuver considerations for conduct of a remount in contact.

6-46. While disengagement and displacement are valuable tactical tools, they can be extremely difficult to execute in the face of a rapidly moving enemy force. In fact, displacement in contact poses such great problems that the company team commander must plan for it thoroughly before the operation; even then, he must carefully evaluate the situation whenever displacement in contact becomes necessary to ensure it is feasible and will not result in unacceptable personnel or equipment losses. Designating key DPs will aide the commander while engaging the enemy.

DISENGAGEMENT CRITERIA

6-47. Disengagement criteria dictate to subordinate elements the circumstances under which they will displace to an alternate, supplementary, or subsequent BP. The criteria are tied to both friendly and enemy actions, but are always linked to the commander's intent and concept of operation. Examples of enemy actions may be "one infantry company advancing past PL DOG" or destruction of a predetermined number of vehicles (from that position). Friendly actions or triggers should be linked to maintaining the initiative or achieving a desired effect on the enemy. For example, if the company team is defending in sector with platoon and section subsequent BPs, disengagement criteria could be linked to the platoons fire command based on the desired effect on the

enemy from that position (Red, "Your engagement criteria is the security element crossing Smith Creek, engagement priorities are tanks then BMPs, disengagement criteria is a platoon volley of two rounds sabot). Disengagement criteria are developed during the planning process based on the unique conditions of a specific situation; they should never be part of the unit's SOP.

6-48. Disengagement criteria dictate to subordinate elements the circumstances under which they will displace to an alternate, supplementary, or subsequent BP. The criteria are tied to an enemy action (such as one infantry company advancing past PL DOG) and are linked to the friendly situation (for example, they may depend on whether an overwatch element or artillery can engage the enemy). Disengagement criteria are developed during the planning process based on the unique conditions of a specific situation; they should never be part of the unit's SOP.

DIRECT FIRE SUPPRESSION

6-49. The attacking enemy force must not be allowed to bring effective fires to bear on a disengaging force. Direct fires from the base of fire element, employed to suppress or disrupt the enemy, are the most effective way to facilitate disengagement. The company team may receive base of fire support from another element in the task force. In most cases, however, the team will establish its own base of fire; an internal base of fire requires the commander to carefully sequence the displacement of his elements.

COVER, CONCEALMENT, AND REHEARSALS

6-50. Ideally, the company team and subordinate elements should use covered and/or concealed routes when moving to alternate, supplementary, or subsequent BPs. Regardless of the degree of protection the route itself affords, the team should rehearse the movement. This will increase the speed at which it can conduct the move, providing an added measure of security. The company team commander must make a concerted effort whenever time is available to rehearse movement in limited visibility and degraded conditions.

INDIRECT FIRES AND SMOKE

6-51. Artillery or mortar fires can be employed to assist the team during disengagement. Suppression fires, placed on an enemy force as it is closing inside the defender's standoff range, will slow the enemy and cause him to button up. The defending force rapidly engages the enemy with long-range direct fires, then disengages and moves to new positions. Smoke can be employed to obscure the enemy's vision, slow his progress, or screen the defender's movement out of the BP or along his displacement route.

OBSTACLE INTEGRATION

6-52. Obstacles should be integrated with direct and indirect fires to assist in disengagement. By slowing and disrupting enemy movement, obstacles provide the defender with the time necessary for displacement and allow friendly forces to employ direct and indirect fires against the enemy. MOPMS can also be employed in support of the disengagement, either to block a key displacement route once the displacing unit has passed through it or to close a lane through a tactical obstacle.

6-53. The location of obstacles in support of disengagement depends in large measure on METT-TC factors. A major consideration is that an obstacle should be positioned far enough away from the defender that he can effectively engage enemy elements on the far side of the obstacle while remaining out of range of the enemy's massed direct fires. Additionally, when using situational obstacles during disengagement, OPs must be positioned to observe the effects of the obstacle and call for effective indirect fires to facilitate displacement.

SECTION III – PREPARATION AND INTEGRATION

ENGAGEMENT AREA DEVELOPMENT

6-54. The EA is where the commander intends to trap and destroy an enemy force using the massed fires of all available weapons. The success of any engagement depends on how effectively the commander can integrate the obstacle plan, the indirect fire plan, and the direct fire plan within the EA to achieve the company team's tactical purpose.

6-55. At the company team level, EA area development is a complex function, demanding parallel planning and preparation if the team is to accomplish the myriad tasks for which it is responsible. Despite this complexity, however, EA development resembles a drill in that the commander and his subordinate leaders use an orderly, fairly standard set of procedures. Beginning with evaluation of METT-TC factors, the development process covers these steps:

- Identify all likely enemy avenues of approach.
- Determine likely enemy schemes of maneuver.
- Determine where to kill the enemy.
- Plan and integrate obstacles.
- Emplace weapon systems.
- Plan and integrate indirect fires.
- Rehearse the execution of operations in the EA.

NOTE: The steps of EA development are not a rigid sequential process; some steps may occur simultaneously to ensure the synergy of combined arms.

6-56. The following paragraphs outline planning and preparation procedures the commander may use for each of these steps.

IDENTIFY LIKELY ENEMY AVENUES OF APPROACH

6-57. The following procedures and considerations apply in identifying the enemy's likely avenues of approach (see Figure 6-4):

- Conduct initial reconnaissance. If possible, do this from the enemy's perspective along each avenue of approach into the sector or EA.
- Identify key and/or decisive terrain. This includes locations that afford positions of advantage over the enemy as well as natural obstacles and/or choke points that restrict forward movement.
- Determine which avenues will afford cover and concealment for the enemy while allowing him to maintain his tempo.
- Evaluate lateral routes adjoining each avenue of approach.

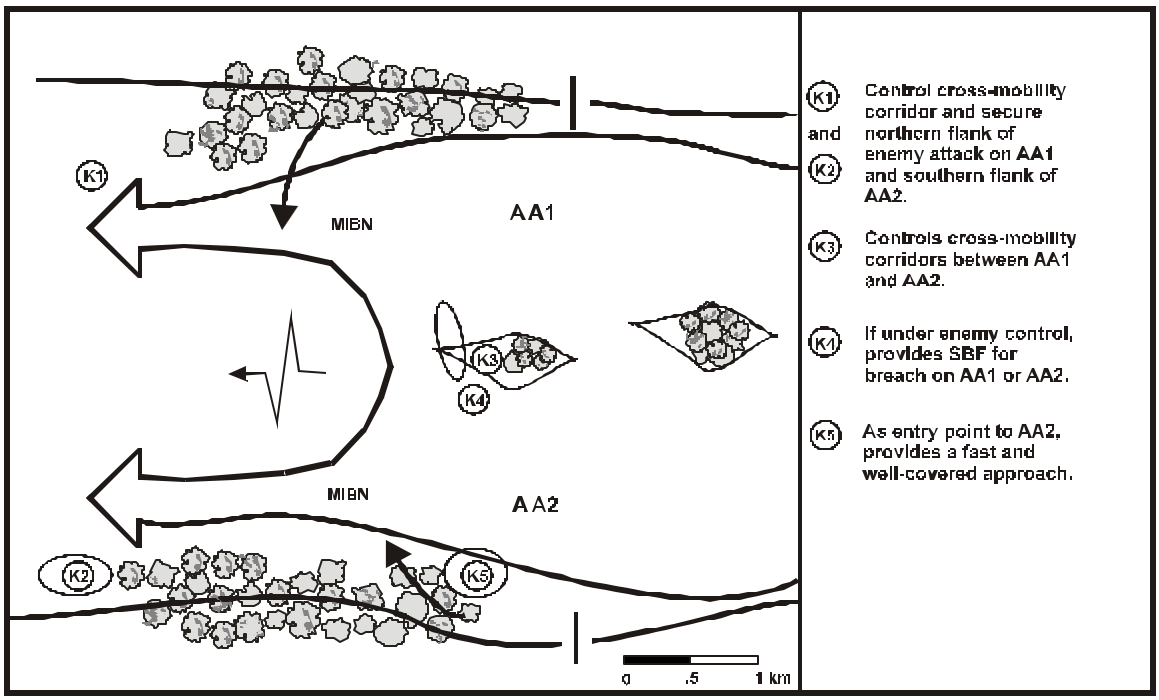


Figure 6-4. Identify all Likely Enemy Avenues of Approach

DETERMINE THE ENEMY SCHEME OF MANEUVER

6-58. The company team commander can use the following procedures and considerations in determining the enemy's scheme of maneuver (see Figure 6-5):

- Determine how the enemy will structure the attack.
- Determine how the enemy will use his reconnaissance assets. Will he attempt to infiltrate friendly positions?
- Determine where and when the enemy will change formations and/or establish support by fire positions.
- Determine where, when, and how the enemy will conduct his assault and/or breaching operations.

- Determine where and when he will commit follow-on forces.
- Determine the enemy's expected rates of movement.
- Assess the effects of his combat multipliers and the anticipated locations/areas of employment.
- Determine what reactions the enemy is likely to have in response to projected friendly actions.

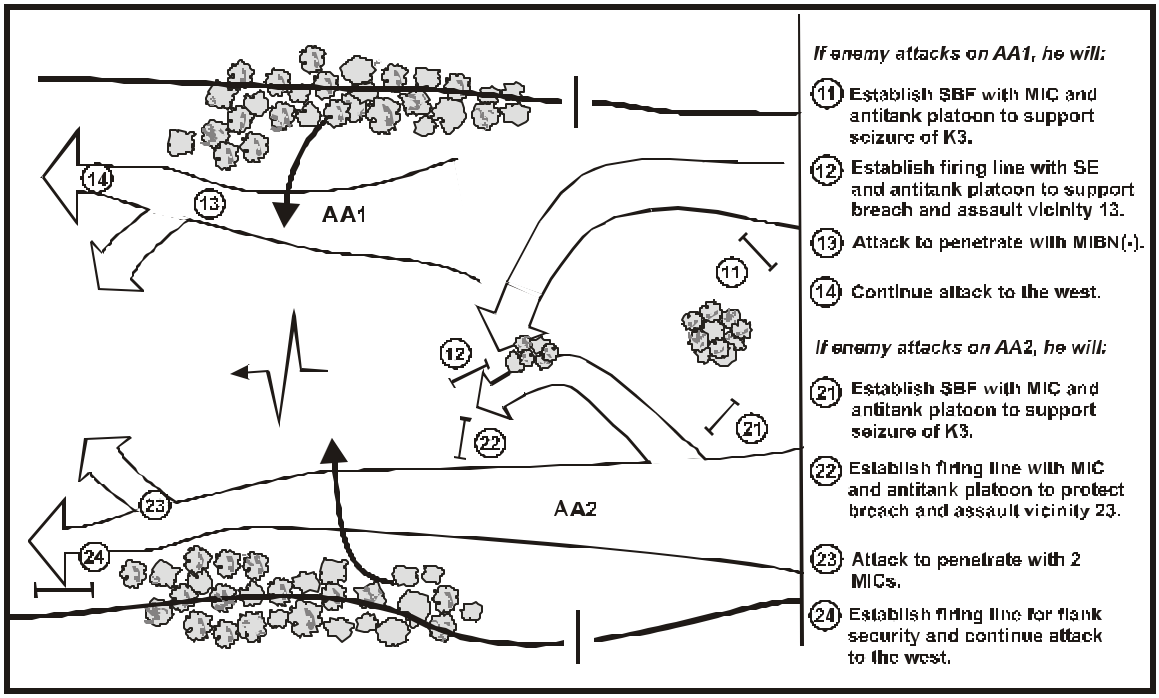


Figure 6-5. Determine the Enemy's Scheme of Maneuver

DETERMINE WHERE TO KILL THE ENEMY

6-59. The following steps apply in identifying and marking where the task force and company team will engage the enemy (see Figure 6-6):

- Identify TRPs that match the enemy's scheme of maneuver, allowing the company team to identify where it will engage enemy forces through the depth of the sector.
- Identify and record the exact location of each TRP.
- Determine how many weapon systems will focus fires on each TRP to achieve the desired end state.
- Determine which platoons will mass fires on each TRP.
- Establish EAs around TRPs.
- Develop the direct fire planning measures necessary to focus fires at each TRP. (See Appendix B for additional information on direct fire control.)

NOTE: In marking TRPs, use thermal sights to ensure visibility at the appropriate range under varying conditions, including daylight and limited visibility (darkness, smoke, dust, or other obscurants).

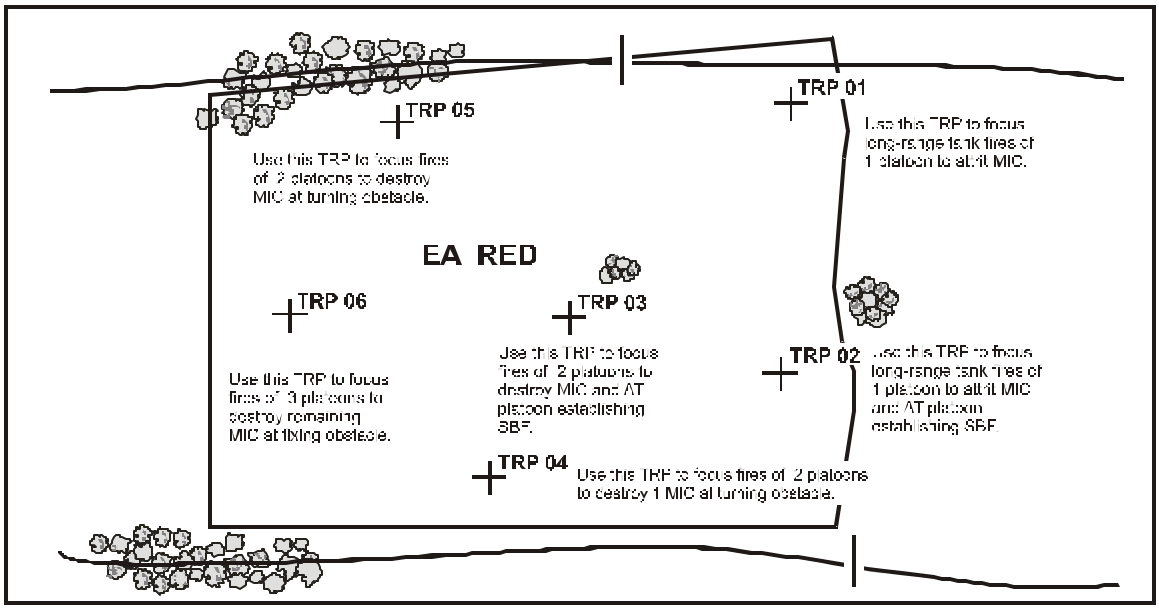


Figure 6-6. Determine Where to Kill the Enemy

PLAN AND INTEGRATE OBSTACLES

6-60. The following steps apply in planning and integrating obstacles in the company team defense (see Figure 6-7):

- Determine the obstacle group intent with the engineer platoon leader confirming the target, relative location, and effect. Ensure intent supports the task force scheme of maneuver.
- In conjunction with the engineer platoon leader, identify, site, and mark the obstacles within the obstacle group.
- Integrate protective obstacle types and locations within company team defense.
- Ensure coverage of all obstacles with direct fires.
- Assign responsibility for guides and lane closure as required.
- IAW METT-TC assist engineer platoons in emplacing obstacles, securing Class IV/V point, securing mine dump, and/or securing obstacle works sites.
- Coordinate engineer disengagement criteria, actions on contact, and security requirements with the engineer platoon leader at the obstacle work site.

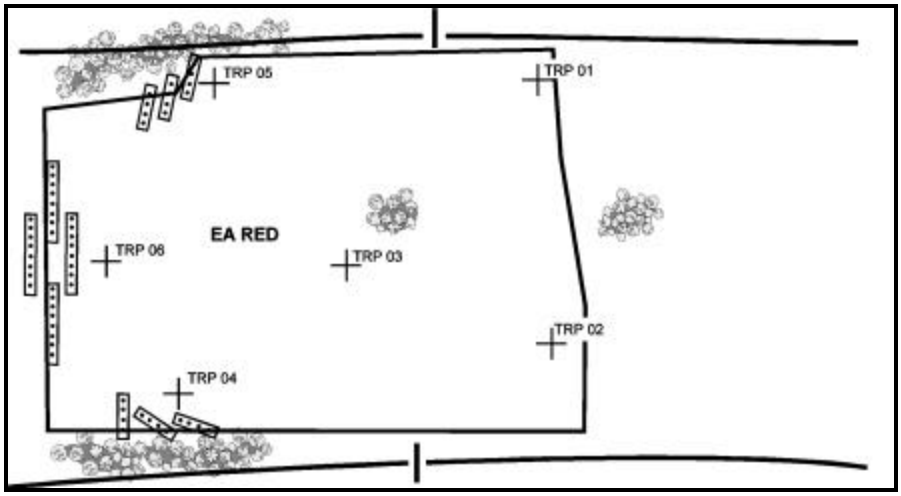


Figure 6-7. Plan and Integrate Obstacles

EMPLACE WEAPON SYSTEMS

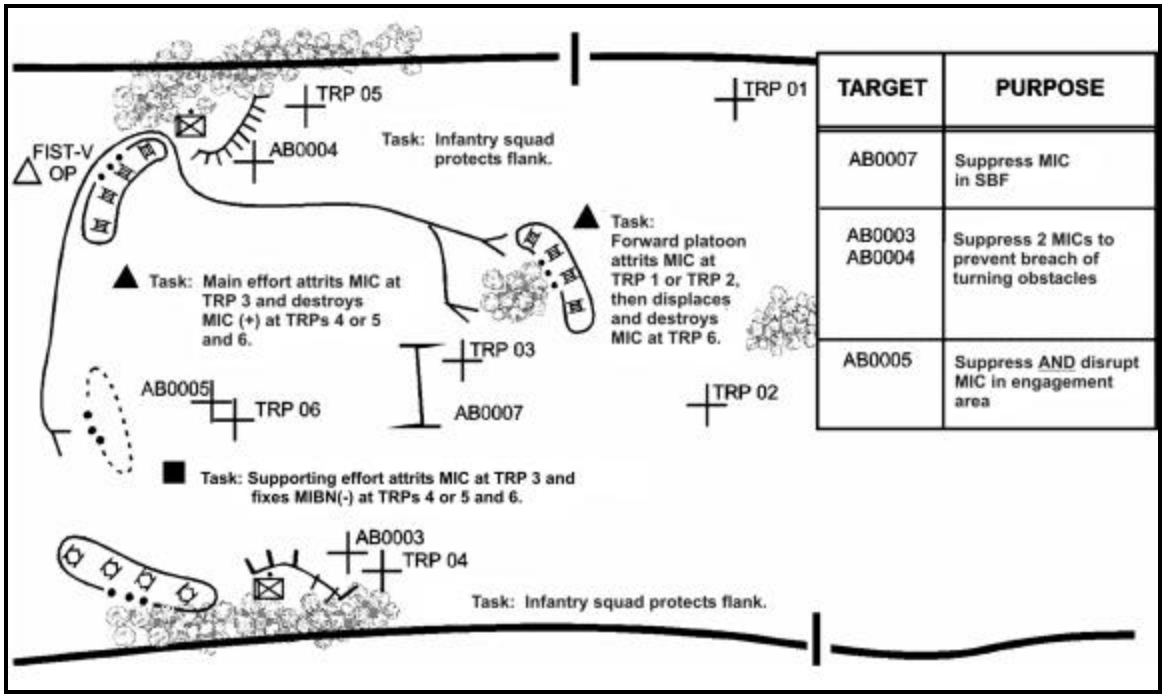
6-61. The following steps apply in selecting and improving BPs and emplacing the company team's vehicles, crew-served weapon systems, and dismounted infantry positions (see Figure 6-8):

- Select tentative platoon BPs. (**NOTE:** When possible, select these while moving in the EA. Using the enemy's perspective enables the commander to assess survivability of the positions.)
- Conduct a leader's reconnaissance of the tentative BPs.
- Drive the EA to confirm that selected positions are tactically advantageous.
- Confirm and mark the selected BPs.
- Ensure that BPs do not conflict with those of adjacent units and that they are effectively tied in with adjacent positions.
- Select primary, alternate, and supplementary fighting positions to achieve the desire effect for each TRP.
- Ensure that platoon leaders, PSGs, vehicle commanders, and/or dismounted infantry squad leaders position weapon systems so that each TRP is effectively covered by the required number of weapons, vehicles, and/or platoons.
- Ensure that positions allow vehicle commanders, loaders, and/or gunners (as applicable for each vehicle) to observe the EA from the turret-down position and engage enemy forces from the hull-down position.
- Stake vehicle positions in accordance with unit SOP so engineers can dig in the positions while vehicle crews perform other tasks.
- Proof all vehicle positions.

PLAN AND INTEGRATE INDIRECT FIRES

6-62. The following steps apply in planning and integrating indirect fires (see Figure 6-8):

- Determine the purpose of fires.
- Determine where that purpose will best be achieved.
- Establish the observation plan, with redundancy for each target. Observers will include the FIST, as well as members of maneuver elements with fire support responsibilities (such as PSGs).
- Establish triggers based on enemy movement rates.
- 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 (CFZ) for protection of maneuver elements and no-fire areas (NFA) for protection of OPs and forward positions.



TARGET	PURPOSE
AB0007	Suppress MIC in SBF
AB0003 AB0004	Suppress 2 MICs to prevent breach of turning obstacles
AB0005	Suppress AND disrupt MIC in engagement area

Figure 6-8. Emplace Weapon Systems, and Plan and Integrate Indirect Fires

NOTE: Figure 6-9 illustrates the completed scheme of maneuver for a company team defense in sector.

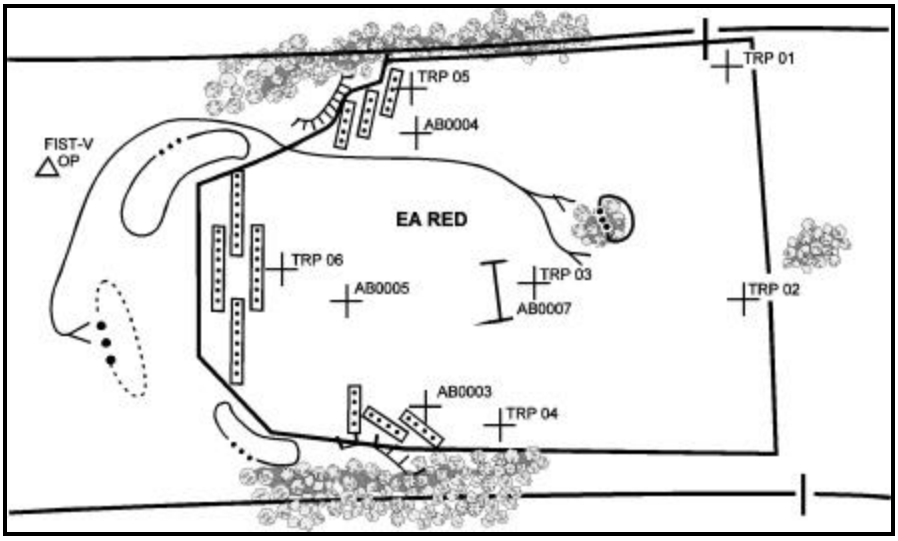


Figure 6-9. Example of a Company Team Defense in Sector

CONDUCT AN ENGAGEMENT AREA REHEARSAL

6-63. The purpose of this rehearsal is to ensure that every leader and soldier understands the plan and that elements are prepared to cover their assigned areas with direct and indirect fires. Although the company team commander has several options, the most common and most effective type is the mounted rehearsal. One technique for the mounted rehearsal in the defense is to have the company team trains, under the control of the team XO, move through the EA to depict the enemy force while the commander and subordinate platoons rehearse the battle from the team BP. The rehearsal should cover these actions:

- Rearward passage of security forces (as required).
- Closure of lanes (as required).
- Movement from the hide position to the BP.
- Use of fire commands, triggers, and/or maximum engagement lines (MEL) to initiate direct and indirect fires.
- Shifting of fires to refocus and redistribute fire effects.
- 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 BPs.
- Cross-leveling or resupply of Class V.
- Evacuation of casualties.

NOTE: The company team commander should coordinate the team rehearsal with the task force 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 task force units. It will also eliminate the danger of misidentification of friendly forces in the rehearsal area that could result in fratricide.

BATTLE POSITION OCCUPATION AND PREPARATION

6-64. Occupation and preparation of the BP is conducted concurrently with TLP and development of the EA. Almost all aspects of BP preparation are tied closely to those two processes. As an example of this, the company team commander must determine where to kill the enemy and where to emplace his weapon systems before the team can occupy the BP and begin digging survivability positions. The process is not sequential, however, and the commander must weigh the limited time available against the competing demands of security, EA development, execution of the TLP, and BP preparation. The potential problems associated with this process, especially lack of adequate preparation time, can be compounded if the team has several other BPs (alternate, supplementary, and successive) and EAs to develop.

HASTY OCCUPATION OF A BATTLE POSITION

6-65. The company team may conduct a hasty occupation in the defense during a counterattack or after disengagement and movement to alternate, supplementary, or subsequent BPs. At a minimum, the team must accomplish the following actions:

- The commander issues a FRAGO, at a minimum covering the following information:
  - Changes in the enemy and/or friendly situation (the reason the FRAGO is being issued).
  - The company team task and purpose (what the team must accomplish and why).
  - The task and purpose for each platoon/element.
  - The scheme of fires.
  - Coordinating instructions.
- The team approaches the BP from the rear or flank.
- The commander establishes direct fire control measures or, if these are preplanned, reviews the plan.
- The commander reports “OCCUPIED” to the task force.

DELIBERATE OCCUPATION OF A BATTLE POSITION

6-66. The company team conducts deliberate occupation of a BP when time is available, enemy contact is not expected, and friendly elements are positioned forward in sector to provide security for forces in the MBA. The actual establishment of the BP is conducted concurrently with the development of the EA. The commander directs the initial reconnaissance from the EA; only then are vehicle and weapon system positions tentatively emplaced.

6-67. Once this is completed, subordinate leaders can begin to develop their sector sketches and fire plans based on the basic team fire plan developed during the leader’s reconnaissance of the EA. Vehicle positions are improved while the direct fire plan is finalized and proofed. Depending on METT-TC factors, the company team may occupy hide positions when preparations are completed, then occupy the BP just before initiating the defensive operation.

BATTLE POSITION PREPARATION

6-68. The commander will designate the level of preparation for each BP based on the time available and other tactical considerations for the mission. There are three levels of BP preparation, which are listed here in descending order of thoroughness and time required:

- **Occupy.** This is complete preparation of the position from which the company team will initially defend. The position is fully reconnoitered, prepared, and occupied prior to the "defend NLT" time specified in the task force OPORD. The company team must rehearse the occupation, and the commander must establish a trigger for occupation of the position.
- **Prepare.** The position and the corresponding EA will be fully reconnoitered. Platoon and vehicle positions in the BP should be marked, along with fire control measures in the EA. Survivability positions may be dug, ammunition caches pre-positioned, and protective obstacles emplaced.
- **Reconnoiter.** The EA and BP will be fully reconnoitered. Tentative platoon and weapon positions should be planned in the BP, and limited fire control measures should be established in the EA.

ALTERNATE, SUPPLEMENTARY, AND SUBSEQUENT BATTLE POSITIONS

6-69. In addition to establishing the company team's primary BP, the commander and subordinate leaders normally plan for preparation and occupation of alternate, supplementary, and subsequent BPs in accordance with the task force OPORD. The following paragraphs describe tactical considerations for these positions; accompanying illustrations depict how the positions are employed in tactical situations.

ALTERNATE BATTLE POSITION

6-70. The following characteristics and considerations apply for an alternate BP, which is illustrated in Figure 6-10:

- It covers the same avenue of approach and/or sector of fire as the primary BP.
- It is located slightly to the front, flank, or rear of the primary BP.
- It may be positioned forward of the primary BP during limited visibility operations.
- It is normally employed to supplement or support positions with weapons of limited range, such as dismounted infantry positions.

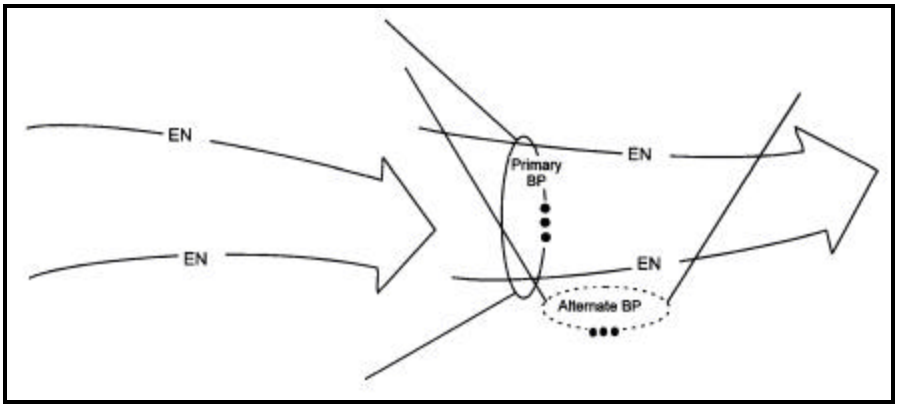


Figure 6-10. Alternate Battle Position

SUPPLEMENTARY BATTLE POSITION

6-71. The following characteristics and considerations apply for a supplementary BP (see Figure 6-11):

- It covers an avenue of approach and/or sector of fire different from those covered by the primary BP.
- Occupation is based on specific enemy actions.

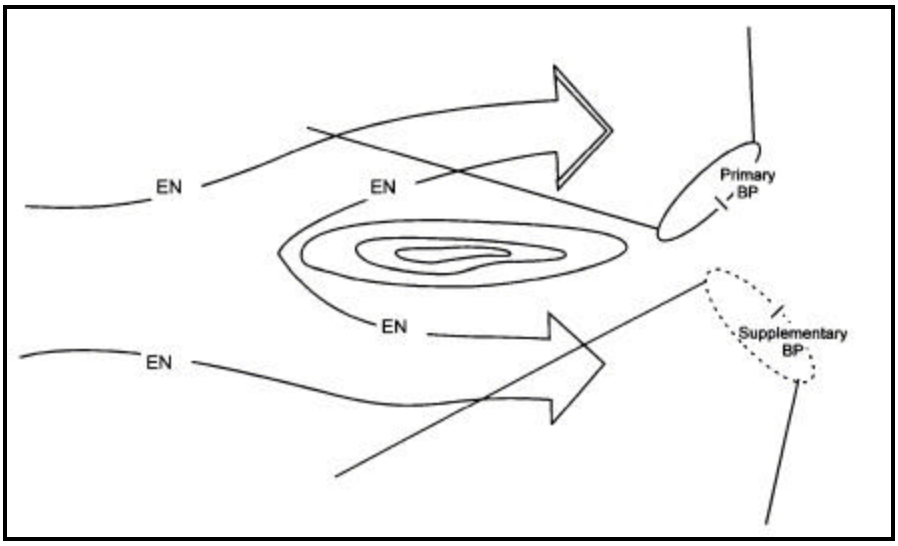


Figure 6-11. Supplementary Battle Position

SUBSEQUENT BATTLE POSITION

6-72. The following characteristics and considerations apply for a subsequent BP (see Figure 6-12):

- It covers the same avenue of approach and/or sector of fire as the primary BP.
- It is located in depth through the defensive sector.

- Occupation is based on specific enemy actions or conducted as part of the higher headquarters scheme of maneuver.

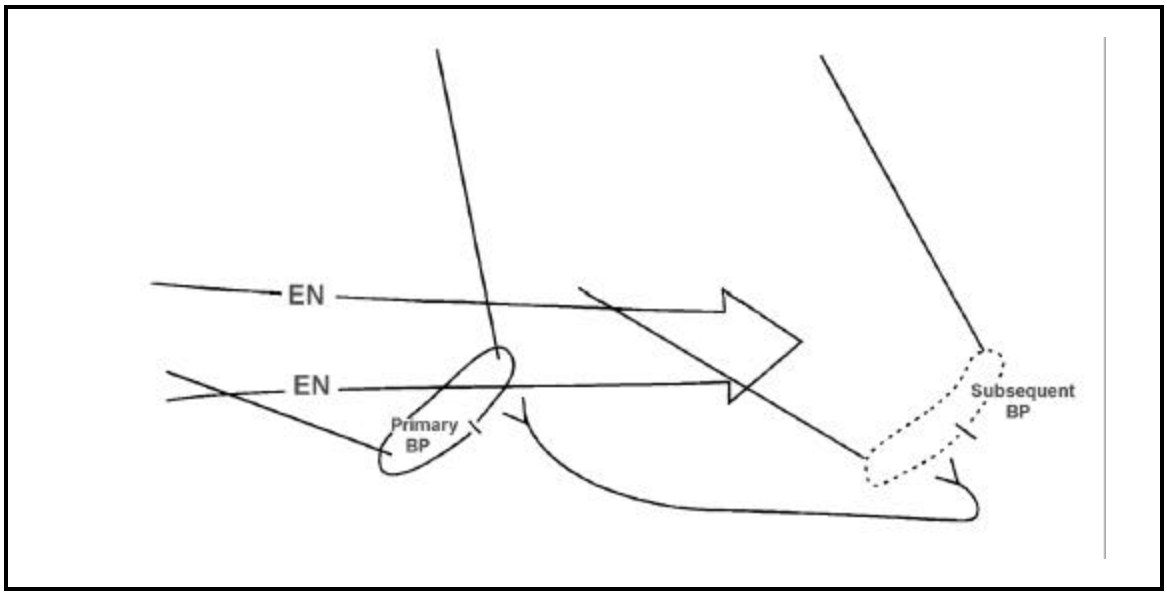


Figure 6-12. Subsequent Battle Position

ADJACENT UNIT COORDINATION

6-73. The ultimate goal of adjacent unit coordination is to ensure unity of effort in the accomplishment of the higher unit's mission. Items that adjacent units must coordinate include, but are not limited to, the following:

- The enemy situation.
- Unit positions, including locations of C2 nodes.
- Locations of OPs and patrols.
- Overlapping fires (to ensure that direct fire responsibility is clearly defined).
- TRPs.
- Alternate, supplementary, and subsequent BPs.
- Indirect fire and SOI information.
- Obstacles.
- Air defense considerations, if applicable.
- Routes to be used during occupation and repositioning.
- CSS considerations.

SECTION IV – DEFENSIVE TECHNIQUES

6-74. The company team will normally defend using one of these basic techniques:

- Defend in sector.
- Defend a BP.
- Defend a strongpoint.
- Defend a perimeter.

DEFENSE IN SECTOR

6-75. This defense allows the task force to maintain flank contact and security and ensures unity of effort within the task force scheme of maneuver. Sectors afford depth in the company team defense. They allow the team to achieve the commander's desired end state while facilitating clearance of fires at the appropriate level of responsibility. The task force commander normally orders a defense in sector when these conditions apply:

- Flexibility is desired.
- Retention of specific terrain features is not necessary.
- The task force cannot concentrate fires because of any of the following factors:
  - Extended frontages.
  - Intervening, or cross-compartment, terrain features.
  - Multiple avenues of approach.

6-76. The company team is assigned defend in sector mission to prevent enemy forces from penetrating the rear boundary of the sector; see Figures 6-1 on page 6-4 and 6-9 on page 6-18. To maintain coherence of the sector defense, it is critical that the company team remain tied in to adjacent units on the flanks. The task force commander may direct the team to conduct the defense in one of two ways.

6-77. In one type, he specifies a series of subsequent BPs within the sector from which the team will defend; he normally does this to ensure that fires of two company teams can be massed at any given time.

6-78. The other option is to assign a sector to the company team. The team commander assumes responsibility for most tactical decisions, normally controlling maneuver of his platoons by assigning them a series of subsequent BPs. The task force commander will normally assign a sector to the team only when it is fighting in isolation.

DEFEND A BATTLE POSITION

6-79. The task force commander assigns this defense to his company teams when he wants to mass the fires of two or more teams in the task force EA or to position a team to execute a counterattack. Purposes of this defense include the following:

- 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.

6-80. The task force commander assigns company team BPs to allow each team to concentrate its fires or to place it in an advantageous position for the counterattack. The size of the team BP can vary, but it should provide enough depth and maneuver space for platoons to maneuver into alternate or supplementary positions and to execute local counterattacks.

6-81. The BP is a general position on the ground; the company team commander places his vehicles on the most favorable terrain within the BP based on the higher unit mission and intent.

6-82. The team then fights to retain the position unless ordered by the task force commander to counterattack or displace.

DEFEND A STRONGPOINT

6-83. A strongpoint 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 of key terrain. Defense of a strongpoint is the not the most common mission for an armor or mechanized infantry force, because they sacrifice the mobility of the unit's organic weapon systems, and require at least a one day effort from an engineer unit the same size as the defending unit to be minimally effective. Battalions and companies normally occupy strongpoints, although brigades may construct them. Platoons and squads normally do not conduct strongpoint defenses. This defensive mission may require the team to accomplish any of the following purposes:

- Hold key or decisive terrain critical to the task force scheme of maneuver.
- Provide a pivot for the maneuver of friendly forces.
- Block an avenue of approach.
- Canalize the enemy into one or more EAs.

EMPLOYMENT CONSIDERATIONS

6-84. The success of the strongpoint defense depends on how well the position is tied into the existing terrain. It is most effective when employed in terrain that naturally provides cover and concealment to both the strongpoint and its supporting obstacles. Mountainous, forested, or urban terrain can be easily adapted to a strongpoint defense. Strongpoints placed in more open terrain, however, require the use of reverse slopes or of extensive camouflage and deception efforts.

6-85. The prime characteristic of an effective strongpoint is that it cannot be easily overrun or bypassed. It must be positioned and constructed so that the enemy knows he can reduce it only at the risk of heavy casualties and significant loss of materiel. He must be forced to employ massive artillery concentrations and dismounted assaults. To accomplish this, the strongpoint must be tied in with existing obstacles and positioned to afford 360-degree security in terms of both observation and fighting positions.

6-86. At company team level, a strongpoint defense is normally executed by a mechanized infantry team to take advantage of the organic infantry squads' ability to retain ground. The defense can be used in conjunction with BPs and sectors to make best use of the team's tanks and BFVs. Before committing a platoon to construct a strongpoint, the company team commander must have the permission of the task force commander.

STRONGPOINT PROCEDURES

6-87. The following discussion covers a variety of techniques and considerations involved in the establishment and execution of the strongpoint defense. It also includes considerations for displacement and withdrawal from the strongpoint.

ESTABLISHMENT OF THE STRONGPOINT

6-88. The company team commander begins by determining the projected size of the strongpoint. He does this by assessing the number of vehicles, weapon systems, and individual soldiers available to conduct the assigned mission, as well as the terrain on which the team will fight. He must remember that although a strongpoint is usually tied into a task force defense and is flanked by other BPs, it must afford 360-degree observation and firing capability.

6-89. The commander must ensure that layout and organization of the strongpoint maximize the capabilities of the team's personnel strength and weapon systems without sacrificing the security of the position. Siting options range from positioning all the vehicles outside the strongpoint (with the infantry occupying dismounted positions inside it) to placing all assets inside the position. From the standpoint of planning and terrain management, placing everything within the strongpoint is the most difficult option. An added factor is that this is potentially the most dangerous organization because of the danger of enemy encirclement.

6-90. In laying out the strongpoint, the commander first designates weapon positions that support the task force defensive plan. Once these primary positions have been identified, he continues around the strongpoint, siting weapons on other possible enemy avenues of approach and EAs until he has the ability to orient effectively in any direction. The fighting positions facing the task force EA may be positioned along one line of defense or staggered in depth along multiple lines of defense (if the terrain supports positions in depth). Similarly, vehicle positions may be located abreast of the two-man fighting positions or, for greater depth, behind them. The commander can create a broader frontage for the strongpoint by interspersing vehicle and dismounted positions.

MOBILITY/SURVIVABILITY CONSIDERATIONS

6-91. Terrain reinforcement is the primary role of engineers in support of the strongpoint defense. Priorities of work will vary depending on the situation and the time available. For example, the first 12 hours of the strongpoint construction effort may be critical for emplacing countermobility and survivability positions as well as C2 bunkers. On the other hand, if the focus of engineer support is to make terrain approaching the strongpoint impassable, the task force engineer effort must be adjusted accordingly.

6-92. The task force obstacle plan will be the foundation for the company team strongpoint obstacle plan. Depending on the situation, the commander may need to determine how he can integrate protective obstacles (designed to defeat dismounted assaults) into the overall countermobility plan. In addition, if adequate time and resources are available, he should plan to reinforce existing obstacles using field expedient demolitions and booby traps.

6-93. Once the enemy has identified the strongpoint, it will bring all the fires it can spare against the position. To safeguard his dismounted infantry, the commander must arrange for construction of overhead cover for the individual fighting positions. If the strongpoint is in a more open position, such as on a reverse slope, he may also plan for connecting trench lines, which will allow soldiers to move between positions without exposure to fire. Time permitting, crawl trenches can be improved to fighting trenches or standard trenches.

Employment of the Reserve

6-94. The reserve may comprise mounted elements, dismounted elements, or a combination. Regardless of the actual configuration, the commander must know how to influence the strongpoint battle by employing his reserve. He has several employment options, including—

- Reinforcing a portion of the defensive line.
- Counterattacking along a portion of the perimeter against an identified enemy main effort.

6-95. The commander should identify routes or axes that allow the reserve to move to any area of the strongpoint. He should then designate positions that the reserve can occupy once they arrive. These routes and positions should afford sufficient cover to allow the reserve to reach its destination without enemy interdiction. The commander should give special consideration to developing a direct fire plan for each contingency that may involve the reserve; one key area of focus may be a plan for isolating an enemy penetration of the perimeter.

Displacement Considerations

6-96. The commander should conduct a rehearsal covering actions the company team must take if it has to fall back to a second defensive perimeter; this should include the direct fire control measures necessary to accomplish the maneuver. FPF may be employed to assist in the displacement.

EXAMPLE

6-97. Figure 6-13 illustrates an example of a mechanized infantry company team conducting a strongpoint defense in a small town.

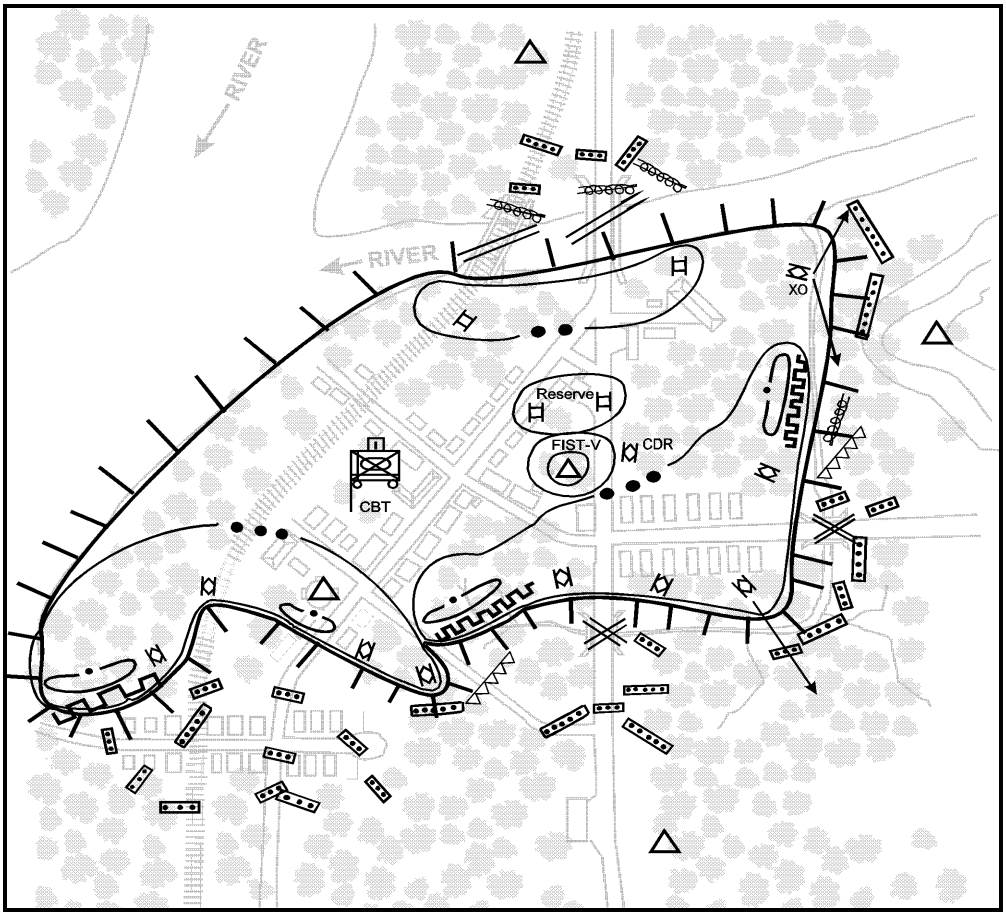


Figure 6-13. Example of a Company Team Strongpoint Defense

DEFEND A PERIMETER

6-98. The perimeter defense allows the defending force to orient in all directions (see Figure 6-14). Units organize a perimeter defense to accomplish a specific mission such as protecting a fire base, or providing immediate self protection, such as during resupply operations when all-around security is required. In terms of weapons emplacement, direct and indirect fire integration, and reserve employment, a commander conducting a perimeter defense must consider the same factors for a strongpoint operation. Although not the most common mission for a tank or mechanized company team, the aforementioned conditions may

dictate the company conducts a perimeter defense in isolation or as part of a higher headquarters operation. Additional factors that dictate this defensive technique include—

- When it must hold critical terrain or defend itself in areas where the defense is not tied in with adjacent units (such as operating behind enemy lines or when securing an isolated objective such as a bridge, mountain pass, or airfield).
- When it has been bypassed and isolated by the enemy and must defend in place.
- When it conducts occupation of an independent assembly area or reserve position.
- When it begins preparation of a strongpoint.
- When it is directed to concentrate fires into two or more adjacent avenues of approach.
- When located in a friendly rear area with in the confines of a base or base cluster.

NOTE: A variant of the perimeter defense is the use of the "Y"-shaped defense, which allows two of the team's platoons to orient at any particular time on any of three EAs (see Figure 6-15).

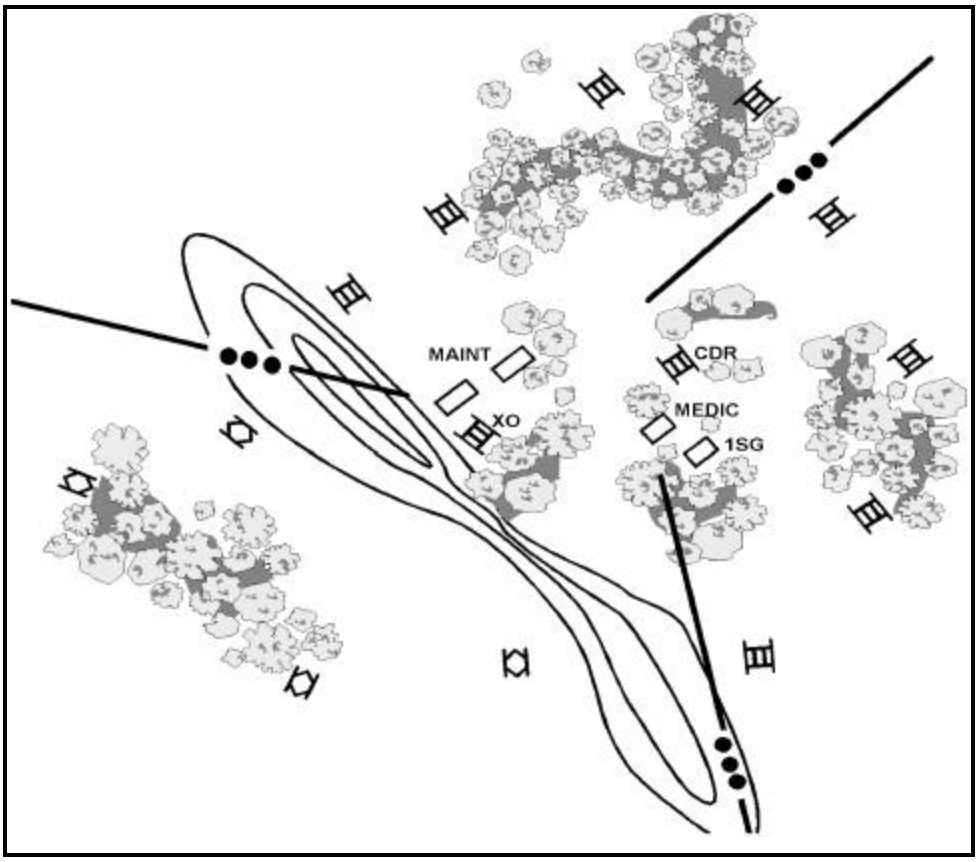


Figure 6-14. Company Team Perimeter Defense During Assembly Area Operations

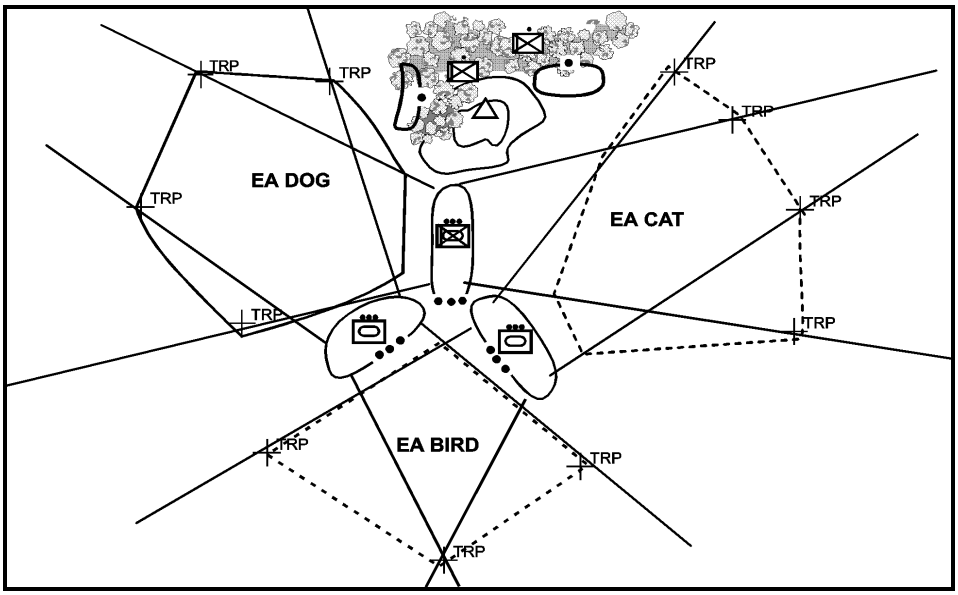


Figure 6-15. "Y"-Shaped Perimeter Defense

SECTION V – RESERVE OPERATIONS IN THE DEFENSE

6-99. The company team may be assigned to serve as the reserve for either the task force or the brigade. In this role, it executes either offensive or defensive missions to support the scheme of maneuver of the controlling headquarters. The primary purpose of a reserve is to conduct counterattacks to destroy an enemy force, to exploit success, and or to restore the integrity of the defense. Some other options for reserve employment include—

- Block enemy penetrations.
- Conduct defense of a BP.
- Reinforce defending elements in a BP.
- Assume another company team's mission.

PLANNING CONSIDERATIONS

COMMAND GUIDANCE

6-100. Flexibility and the ability to remain responsive to the commander are of paramount importance to successful reserve operations. At the same time, however, these attributes, coupled with the wide range of missions the reserve can perform, dictate that the higher commander's initial intent will not always correspond directly to his use of the reserve on the battlefield. His command guidance for the reserve will most likely cover a series of be-prepared missions rather

than a single well-defined task. To assist the reserve commander with mission planning and preparation, the task force commander's guidance should, at a minimum, address the following areas:

- Positioning.
- Be-prepared missions in priority order. The higher commander must understand that the reserve commander may be able to effectively plan for only a limited number of these missions.
- A clear task and purpose for each mission.
- DPs that define the friendly and/or enemy criteria under which the reserve will be employed for each be-prepared mission.
- Supporting graphic control measures, such as BPs or attack by fire positions and corresponding EAs.
- Direct fire planning information.

TIME MANAGEMENT, COORDINATION, REHEARSALS, AND REDCON LEVELS

6-101. Receipt of a reserve mission will have a significant impact on the troop-leading process. Because he normally will be required to plan for several contingencies, the reserve commander must, in most cases, delegate responsibilities for conducting preparations for combat. Thorough coordination and effective rehearsals are keys in ensuring that the unit is ready to fight. As an example, the company team may be tasked as the brigade reserve and committed in one of several sectors. This results in much broader coordination requirements and creates a need for well-focused rehearsals. The team commander and subordinate leaders must be proactive in fulfilling these requirements and ensuring that their soldiers are ready to execute the team's portion of the higher commander's plan. In addition, the commander must make a realistic determination of the REDCON levels under which the company team will operate throughout the reserve mission.

POSITIONING AND PROTECTION

6-102. Since the reserve is one of the higher commander's most important resources, he must ensure both that the force remains intact and that it is located where it can influence the battle. He does this through effective positioning and thorough OPSEC and force protection measures.

Reserve Position

6-103. The location of the reserve position is a critical factor in the success of the reserve, no matter what mission it is performing. The commander must position the force so it is responsive to the most likely contingency; however, the reserve position must allow it to respond to all possible missions dictated by the task force or brigade.

Force Protection

6-104. The enemy's actions (both actual and anticipated) also have a significant effect on reserve positioning. The enemy will target the reserve in his intelligence collection effort; later, he will try to prevent the reserve from influencing the battle, using indirect fires, chemicals, or virtually any other means to divert, slow, or weaken it. To counter these actions, the commander must ensure that the reserve position enhances security, if

possible affording cover from enemy fires and concealment from enemy observation. If an effective hide position is not available, the reserve can maintain security through frequent moves or effective dispersion.

AXIS PLANNING AND TIME-DISTANCE ANALYSIS

6-105. Mobility is a key factor in maintaining the responsiveness of the reserve force. Both the reserve commander and the higher commander are responsible for ensuring that the reserve can move quickly and safely throughout the defensive sector. Their tools in this effort include axis planning and time-distance analysis.

6-106. Whenever possible, the commander should identify covered and concealed axes for each contingency the reserve may face. This will require detailed coordination and planning for routes through and/or around tactical and protective obstacles in the sector. The reserve should rehearse movement on as many axes as possible under a variety of conditions.

6-107. The commander also must calculate time-distance factors for each axis. The time required moving between the reserve position and each contingency BP or attack by fire position must be forwarded to the controlling headquarters to assist in the synchronization of the higher plan.

ENGAGEMENT AREA DEVELOPMENT AND DIRECT FIRE PLANNING

6-108. During planning for the reserve mission, the commander must prioritize EA development and direct fire planning. The level of planning and preparation that goes into each EA should be based on the priority it was given in the task force or brigade command guidance. The reserve force is not likely to receive countermobility and survivability support in developing its EAs since those assets will normally be allocated to company teams in defensive positions; this means the commander must give special attention to the use of existing terrain features and obstacles in providing security for the reserve. He must also conduct direct fire planning for all contingencies. Depending on the designated priorities, the level of planning and preparation will vary for each contingency. For example, the commander may specify a mounted rehearsal for the most likely mission, but limit planning for contingencies of lower priority to a leader's reconnaissance.

PLANNING FOR BATTLE POSITIONS AND ATTACK BY FIRE POSITIONS

6-109. Planning and preparation for BPs and/or attack by fire positions in reserve operations are virtually identical to the corresponding activities for other types of operations. A key difference is that the commander has a greater opportunity, and a greater responsibility, to employ positional advantage in the reserve role. Whenever possible, he should maximize the use of BPs and attack by fire positions on the enemy's flanks or on reverse slopes.

FIRE SUPPORT PLANNING

6-110. The company team commander and FSO must develop fire support plans to support the EA(s) designated for each reserve contingency. Once it is employed, the reserve is usually designated as the main effort and, as such, may receive priority of fires. An additional fire support consideration is the employment of smoke to screen the movement of the reserve force. (**NOTE:** When the company team is serving in the reserve role, the team FIST may be task organized with forward elements of the task force.)

RESERVE OPERATIONS AND TECHNIQUES

6-111. In a reserve role, the company team may be committed to execute an offensive mission (such as a counterattack to destroy an enemy force or to exploit success) or a defensive mission (such as blocking a penetration, reinforcing a BP, or assuming another company team's mission). In either case, the tactical tasks the team will be called on to execute are similar to those discussed in Chapter 5 and in this chapter.

COUNTERATTACK

6-112. The reserve force 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 (maneuver) element moves on a concealed route to firing positions from which it can engage the enemy in the flank and/or rear. The counterattack element must maneuver rapidly to its firing position, often fighting through enemy flank security elements, to complete the counterattack before the enemy can bring follow-on forces forward to influence the fight.

6-113. Counterattack security is provided in several ways. The commander and all element leaders analyze and implement intelligence data from the task force. Platoons in the counterattack element employ fire and movement, with support from the base of fire element adding a degree of movement security. Smoke is especially valuable in enhancing counterattack security. It can be employed to screen the movement of the counterattack element. It can also aid in a deception effort; examples include placing smoke on previous reserve positions to simulate disengagement and placing it on the flank opposite the counterattack force to deceive the enemy as to the location of the counterattack.

6-114. Execution of the counterattack is similar to that for an attack by fire. Planning and preparation considerations for the counterattack will vary depending on the purpose and location of the operation. For example, the counterattack may be conducted forward of friendly positions, requiring the reserve force to move around friendly elements and through their protective and tactical obstacles. In other situations, the commander may use a counterattack by fire to block, fix, or contain a penetration. In any case, the reserve force will conduct the counterattack as an enemy-oriented operation. Figure 6-16 illustrates an example of counterattack by fire conducted by a company team.

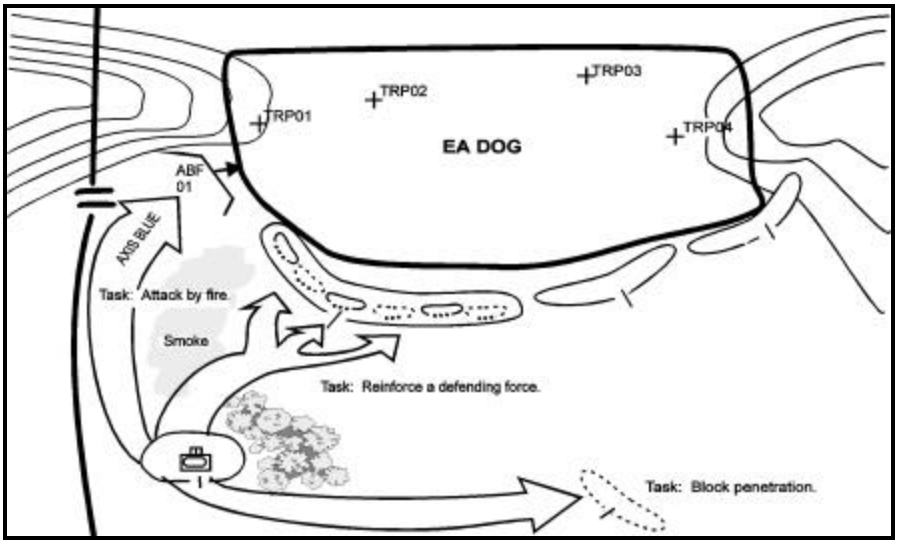


Figure 6-16. Example of Company Team Reserve Missions, Including Counterattack by Fire, Reinforce a Defending Element, and Block a Penetration

ASSAULT

6-115. In a reserve role, the company team can conduct an assault to destroy an enemy force, to relieve pressure on a friendly unit, or to regain key terrain. The unit attacks the enemy force from the flank and uses maneuver (fire and movement) to close with and destroy the threat. Unlike the counterattack, in which long-range fires may be employed from stationary positions to reduce enemy combat power by attrition, the assault requires the attacking force to maneuver to a position of advantage well inside the range of enemy weapons.

REINFORCE A DEFENDING FORCE

6-116. Reinforcement of a defending element requires a level of detailed planning and coordination similar to that associated with linkup operations. As the reinforcing element, the reserve force moves into adjacent positions covering the same avenues as the unit being reinforced. It then assists the other unit in the defense of the BP or assumes responsibility for the defense. Figure 6-16 illustrates a reserve mission in which the company team reinforces a defending element.

6-117. In assuming the mission of another company team (or another type of unit, if applicable), the reserve force first conducts a relief in place. The now committed reserve then continues the mission, such as defense of a BP.

POSITIONAL RESERVE

6-118. A positional reserve is a combat force that has been committed to the defense of the main battle area (MBA) and is ordered to disengage from its primary mission and execute its reserve mission. For example, the brigade may direct a company team to execute a flank guard, however, the company also has an on order mission to block enemy penetration within the MBA as part of a brigade branch plan. (Positional reserves may also be dedicated through execution adjustment decisions during the operation.)

For example, the higher commander may direct formerly committed elements that have accomplished their initial tasks to be prepared to move to and react to other tactical developments elsewhere in the brigade's AO. Positional reserves retain flexibility through offensive action.

SECTION VI – RETROGRADE OPERATIONS

6-119. Retrograde operations entail organized movement away from the enemy. Units may employ them, either voluntarily or under direct pressure from the enemy, to achieve a variety of purposes:

- Improve a tactical situation or prevent an unfavorable situation from becoming worse.
- Economize forces.
- Maintain freedom of maneuver.
- Avoid combat under unfavorable conditions.

6-120. There are three types of retrograde operations:

- **Delay.** This operation allows the unit to trade space for time, avoiding decisive engagement and safeguarding its elements.
- **Withdrawal.** The commander uses this operation to break enemy contact, especially when he needs to free the unit for a new mission.
- **Retirement.** This operation is employed to move a force that is not in contact to the rear.

DELAY

6-121. This is a series of defensive and offensive actions over successive positions in depth. It is an economy of force operation that trades space for time. While the enemy gains access to the area (space) that is vacated, friendly elements gain time to conduct necessary operations and retain freedom of action and maneuver. This allows friendly forces to influence the action; they can prevent decisive engagement or postpone it to occur at a more critical time or place on the battlefield.

DELAY MISSIONS

6-122. There are two types of delay missions:

- Delay in sector.
- Delay forward of a specified line or position for a specified time.

6-123. The controlling commander must determine whether the delay operation will focus on avoiding decisive engagement and preserving the combat power of the friendly force (delay in sector) or on a specific, time-related objective. The type of mission must be clearly outlined in the commander's intent.

6-124. For either type of delay mission, the flow of the operation can be summarized as "hit hard, and then move." A successful delay has three key components:

- The ability to stop or slow the enemy's momentum while avoiding decisive engagement.
- The ability to degrade the enemy's combat power.
- The ability to maintain a mobility advantage.

PLANNING

6-125. In preparing for the delay operation, the commander uses planning considerations that are identical to those for a defense in sector, varying only in their purpose. Planning for the delay must cover several areas related to hindering enemy movement and maintaining mobility. These considerations include the following:

- Use of existing terrain and obstacles, enhanced as necessary by employment of reinforcing obstacles.
- Designation of positions from which the friendly force can harass or impede the enemy without risking decisive engagement itself; this is especially applicable for a delay in sector. When a task force is delaying in sector, company teams are normally assigned a series of specific BPs to enhance command and control across the sector. Likewise, in a company team delay in sector, the commander will assign a series of specific BPs for each platoon.
- Assessment of opportunities to conduct limited counterattacks to disrupt enemy actions.
- Designation of high-speed avenues of withdrawal.
- Rehearsal of operations anticipated for the delay; these may include engagement of the enemy and maneuver through the delay area.

DELAY TECHNIQUES

6-126. In executing either a delay in sector or a time-related delay, the commander can choose from the following techniques:

- Delay from subsequent positions or PLs.
- Delay from alternating positions.

6-127. Delay from subsequent positions or PLs. This delay technique is normally used when the sector is so wide that available forces cannot occupy more than a single line of positions. The commander must be aware of several factors that may put his unit at a disadvantage during the delay:

- Lack of depth at any particular time.
- The possibility of inadequate time to prepare subsequent positions.

- Decreased security during disengagement.
- The possibility of gaps between units.

6-128. When the unit receives the order to conduct the delay from its initial positions, one element (such as a company team in a task force delay or a platoon in a company team delay) displaces and occupies its subsequent BP. The remainder of the unit maintains contact with the enemy until the first displacing element is in position to engage the enemy from the subsequent position. The first element then provides overwatch or base of fire as other elements displace to their successive positions. Figure 6-17 illustrates a company team delay from subsequent positions.

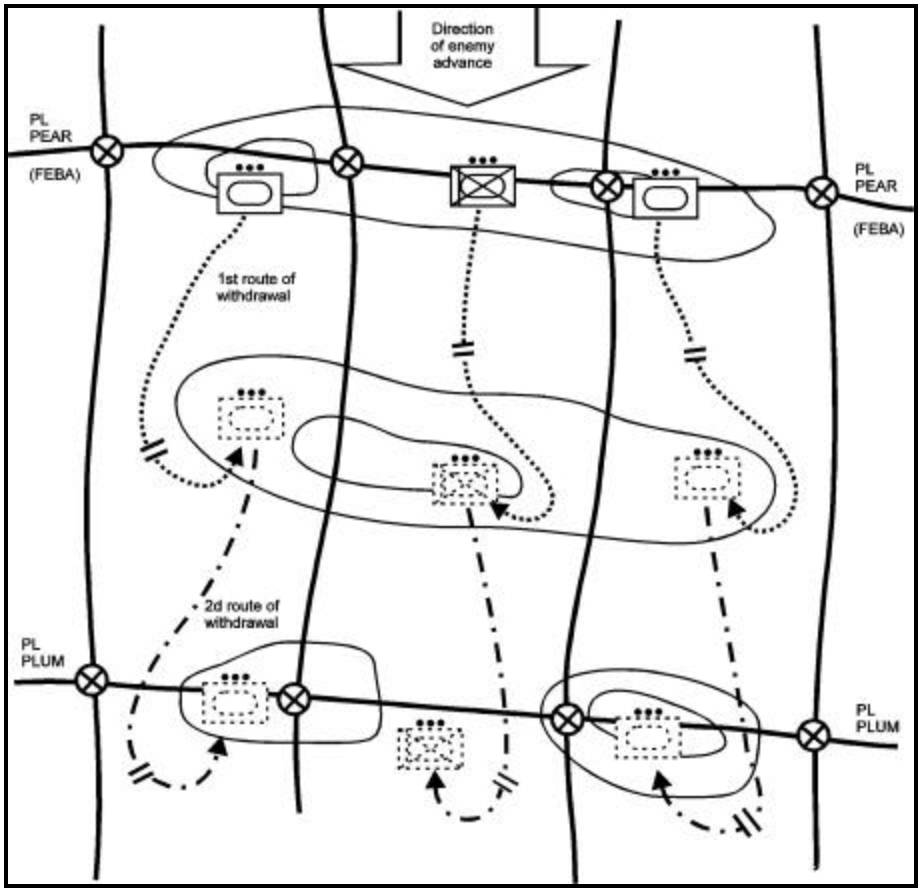


Figure 6-17. Example Company Team Delay from Subsequent Positions

Delay from Alternating Positions

6-129. This method of delay may be used when the delaying element has sufficient forces to occupy more than a single line of positions (normally in a narrow sector). The delaying task force or company team arrays one or more of its subordinate elements in the initial delay positions. This first echelon then engages the enemy while the rest of the unit occupies and prepares second-echelon delay positions.

6-130. The unit then alternates fighting the enemy with movement to new positions. The elements in the initial delay positions engage the enemy until ordered to displace or until their displacement criteria have been met. They then displace, moving through the second-echelon delay positions to their own subsequent positions (which become the third echelon of the delay).

6-131. Elements in the second echelon overwatch the displacing units' movement and assume responsibility for engaging the enemy. This sequence continues until the delay operation is completed. Figure 6-18 illustrates a company team delay from alternating positions.

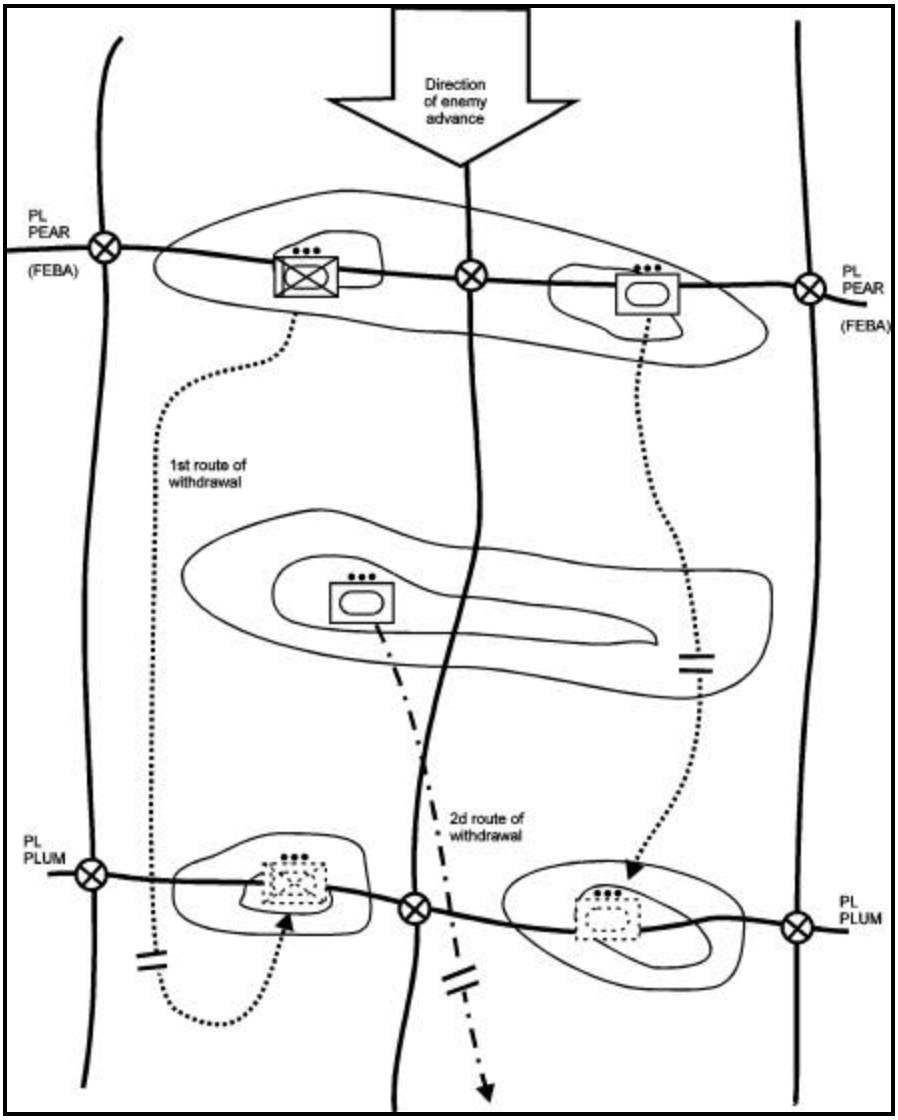


Figure 6-18. Example Company Team Delay from Alternating Positions

WITHDRAWAL

6-132. A withdrawal is an operation in which a unit in contact disengages from an enemy force in order to prepare for a follow-on mission. It can also be conducted when the commander determines that he must reposition all or part of his force for a specific purpose; for example, he may need to separate from the enemy by a prescribed distance to allow employment of special-purpose munitions. A withdrawal can be executed at any time and during any type of operation. The company team normally conducts a withdrawal as part of a task force operation.

CLASSIFICATION

6-133. In addition to the purpose of the operation, conduct of the withdrawal is classified in several ways:

- **Under pressure or not under pressure.** A unit making a withdrawal under pressure must additionally be prepared to conduct disengagement operations.
- **Assisted or unassisted.** In an assisted withdrawal, a security force provided by the next higher headquarters assists the main body in breaking contact with the enemy. In an unassisted withdrawal, the controlling headquarters must provide its own security. Assisted and unassisted withdrawals are discussed below.

PHASES

6-134. Withdrawals are accomplished in three overlapping phases, which are outlined in the following paragraphs.

Preparation

6-135. The commander dispatches quartering parties, issues WARNOs, and initiates planning. Nonessential vehicles are moved to the rear.

Disengagement

6-136. Designated elements begin movement to the rear. They break contact and conduct tactical movement to a designated assembly area or position.

Security

6-137. In this phase, a security force protects and assists the other elements as they disengage and/or move to their new positions. This is done either by a detachment left in contact (DLIC), which the unit itself designates in an unassisted withdrawal, or by a security force provided by the higher headquarters in an assisted withdrawal. As necessary, the security force assumes responsibility for the sector, deceives the enemy, and protects the movement of disengaged elements by providing overwatch and suppressive fires. In an assisted withdrawal, the security phase ends when the security force has assumed responsibility for the fight and the withdrawing element has completed its movement. In an unassisted withdrawal, this phase ends when the DLIC completes its disengagement and movement to the rear.

UNASSISTED WITHDRAWAL

6-138. In an unassisted withdrawal, the unit conducting the withdrawal establishes the DLIC to maintain contact with the enemy and/or to deceive him. In a task force withdrawal, the DLIC may consist of an element from each company team (under leadership of the team XO or a platoon leader), with the task force S3 as the overall DLIC commander. As an alternative, a company team may serve as the DLIC for the rest of the task force. The company team commander has several deployment options. He can reposition elements across the entire task force frontage. Another option is to position the team to cover only the most dangerous enemy avenue of approach; other avenues into the sector are covered with observation from additional security elements provided by the task force, such as the scout platoon.

6-139. The commander has similar options in an unassisted company team withdrawal. He may designate one platoon to execute the DLIC mission for the team, or he can constitute the DLIC using elements from all three platoons, with the XO as the DLIC commander. Figure 6-19 illustrates an example of an unassisted withdrawal.

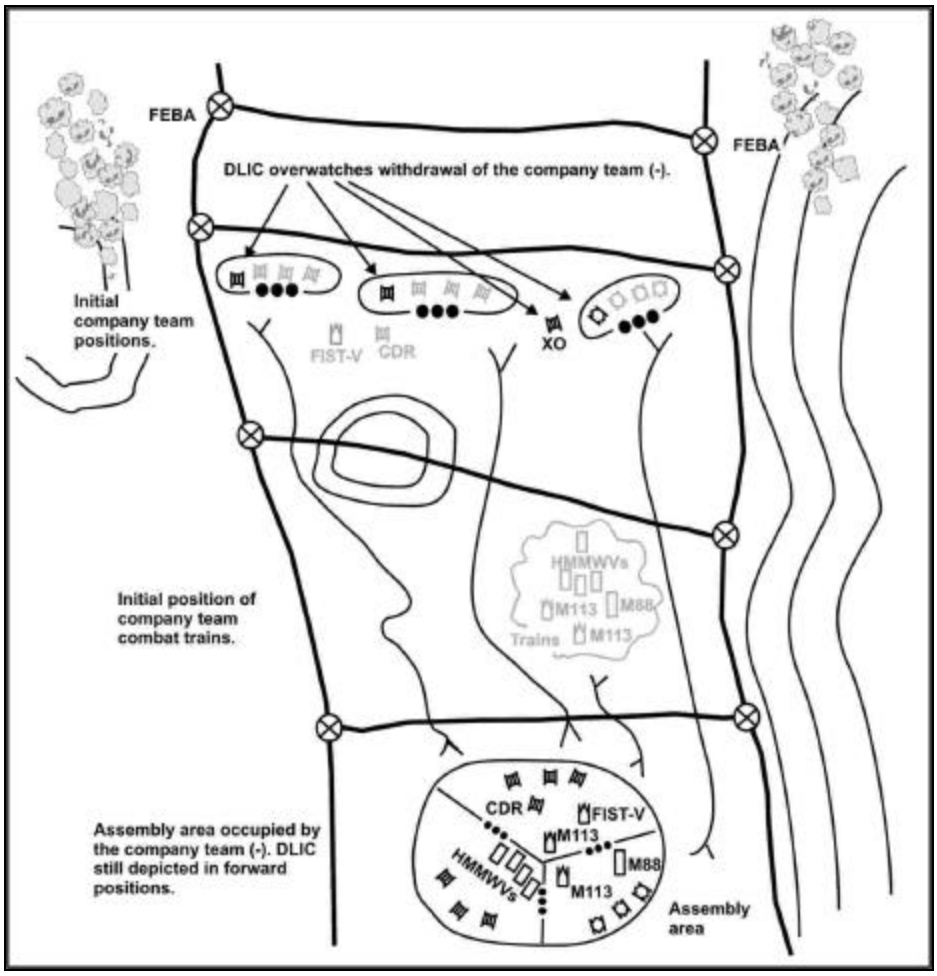


Figure 6-19. Example of an Unassisted Withdrawal

ASSISTED WITHDRAWAL

6-140. In an assisted task force withdrawal, the brigade will normally provide a security element to maintain contact with and deceive the enemy while the task force conducts its withdrawal. Likewise, in a company withdrawal, the task force provides the security force.

6-141. The security force establishes defensive positions behind the withdrawing unit and conducts preparations for a rearward passage of lines. The withdrawing force disengages from the enemy and conducts the rearward passage through the security force to assembly areas in the rear.

RETIREMENT

6-142. Retirement is a retrograde operation in which a force not in contact with the enemy conducts organized movement to the rear. It is normally done during periods of limited visibility. The company team conducts a retirement as part of a larger force.

Chapter 7

Urban Operations

The company team may take part in large-scale urban combat operations as part of a larger force. The team may also have to conduct urban operations (UO) when maneuvering separately; situations might include enemy contact in a very small village (10 or fewer buildings) or in a strip area (along a road or highway).

This chapter examines the basic characteristics of UO as well as special planning considerations and techniques of offensive and defensive operations. (See FM 3-06.11 [FM 90-10-1]; FM 3-90.3 [FM 71-3]; FM 3-90.2 [FM 71-2]; FM 3-21.71[FM 7-7J); and FM 3-20.15 [FM 17-15] for more detailed information.)

CONTENTS

Urban Operations Planning Considerations . 7-1
Urban Operations Characteristics 7-1
Urban Areas 7-5
Vehicles and Equipment Characteristics .. 7-6
Command and Control 7-10
Tactics, Techniques, and Procedures for Markings 7-12
NATO Standard Marking SOP 7-13
Maneuver 7-14
Fire Support 7-15
Combat Service Support 7-16
Offensive Urban Operations 7-16
Task Organization 7-17
Isolate an Urban Objective 7-20
Assault a Building 7-22
Attack of a Block or Group of Buildings 7-25
Hasty Attack 7-26
Movement to Contact and Reconnaissance 7-26
Seizure of Key Urban Terrain 7-27
CSS During Urban Offensive Operations 7-39
Defensive Urban Operations 7-41
Enemy Forces Outside the Urban Area 7-41
Enemy Forces Within the Urban Area 7-41
Defensive Techniques in Urban Operations 7-42
Hasty Defense 7-44
Occupation and Preparation of Positions 7-45
Defense of a Village 7-46
Defense of a Block or Group of Buildings 7-49
Defense of Key Urban Terrain 7-50
Defense of an Urban Strongpoint 7-54
Delay 7-56
CSS During Defensive Urban Operations 7-57

SECTION I – URBAN OPERATIONS PLANNING CONSIDERATIONS

URBAN OPERATIONS CHARACTERISTICS

7-1. There are many characteristics that separate UO from other environments. US technological advantages are often degraded during UO. An adept enemy will use the technique of "hugging" American forces to deny them use of their overwhelming firepower. Urban combat requires significant numbers of infantry to accomplish the mission; however, urban combat is a combined arms action. It is characterized by moment to moment decisions by small unit leaders. Commanders and leaders facilitate this fight by anticipating what subordinates will need to accomplish the mission. The greatest threats might be snipers, grenade launchers, booby traps, and rocket-propelled grenades (RPG).

CHANGING CONDITIONS

7-2. Additionally, the company team may experience a shift in the nature of host nation sentiment. The change from stability and support operations to combat operations and vice versa will often change conditions from high intensity to precision (restrictive ROE) or the opposite. METT-TC factors and the ROE determine this change. ROE changes are normally made at echelons much higher than company team and battalion, but they normally require that units modify the way they fight in urban areas. Squads and platoons will be required to select different TTP based on the conditions which they face. The ROE will ultimately determine what tactics or techniques are acceptable for the given situation.

SMALL UNIT BATTLES

7-3. Platoons and squads fighting in urban areas often become isolated or feel like they are isolated, making combat a series of small-unit battles. Soldiers and squad/team leaders must have the initiative, skill, and courage to accomplish their missions while isolated from their parent units. A skilled, well-trained defender has tactical advantages over the attacker in this type of combat. The defender may occupy strong covered and concealed static positions and conduct three-tier ambushes, whereas the attacker must be exposed in order to advance. Greatly reduced line-of-sight ranges, built-in obstacles, and compartmented terrain may require the commitment of more troops for a given frontage. While the defense of an urban area can be conducted effectively with relatively small numbers of troops, the troop density required for an attack in urban areas may be greater than for an attack in open terrain. Individual soldiers must be trained and psychologically ready for this type of operation.

COMMUNICATIONS

7-4. Urban operations require centralized planning and decentralized execution. Therefore, effective vertical and horizontal communications are critical. Company team leaders must trust their subordinates' initiative and skill that can only occur through training. The state of a unit's training and cohesion are vital, decisive factors in the execution of operations in urban areas.

7-5. Structures and a high concentration of electrical power lines normally degrade radio communications in urban areas. Many buildings are constructed so that radio waves will not pass through them. Frequently, units may not have enough radios to communicate with subordinate elements as they enter buildings and move through urban canyons and defiles.

7-6. Visual signals may also be used but are often not effective because of the screening effects of buildings, walls, and so forth. Signals must be planned, widely disseminated, and understood by all assigned, attached, or OPCON units. Increased noise makes the effective use of sound signals difficult. Verbal signals may communicate the location and intent of the unit to the enemy.

7-7. Messengers and wire can be used as other means of communication. Messengers are slow and susceptible to enemy fire when moving between buildings or crossing streets. Wire is the primary means of communication for controlling the defense of an urban area. Wire should be considered as an alternate means of communications during offensive operations, if assets are available. However, wire communications can often be cut due to falling debris, exploding munitions, and moving vehicles.

Noncombatants

7-8. Urban areas, by their very nature, are population centers. Noncombatants will be present and will affect both friendly and threat COAs across the spectrum of UO. Besides the local inhabitants of an area, nongovernmental organizations, international organizations, and displaced civilians (DC) may be present. They will have needs and agendas brought on by conflict.

HIGH EXPENDITURE OF AMMUNITION

7-9. Company team conducting UO use large quantities of ammunition because of short ranges, limited visibility, briefly exposed targets, constant engagements, and requirements for suppression. AT4s, rifle and machine gun ammunition, high-explosive antitank (HEAT) and Canister tank rounds, 40-mm grenades, hand grenades, and explosives are high-usage items in this type of fighting. When possible, those items should be either stockpiled or brought forward on-call, so that they are easily available.

INCREASED CASUALTIES

7-10. More casualties occur because of shattered glass, falling debris, rubble, ricochets, urban fires, and falls from heights. Difficulty in maintaining awareness of the situation also contributes to this problem because of increased risks of fratricide. Stress related casualties and nonbattle injuries resulting from illnesses or environmental hazards, such as contaminated water and toxic industrial materials (TIM) also increase the rate of casualties.

LIMITED MOUNTED MANEUVER SPACE

7-11. Buildings, street width, rubble, debris, and noncombatants, all contribute to limited mounted maneuver space inside urban areas. Armored vehicles will rarely be able to operate inside an urban area without infantry support.

THREE DIMENSIONAL TERRAIN

7-12. Friendly and threat forces will conduct operations in a three dimensional battlespace. Engagements can occur on the surface, above the surface, or below the surface of the urban area. Additionally, engagements can occur internal and external to buildings. Multistory buildings will present the additional possibility of different floors within the same structure being controlled by either friendly or threat forces.

COLLATERAL DAMAGE

7-13. Depending on the nature of the operation and METT-TC factors, significant collateral damage may occur, especially under conditions of high intensity UO. Commanders and leaders will have to ensure that ROE are disseminated and enforced.

RELIANCE ON HUMAN INTELLIGENCE

7-14. Until technological advancements provide more effective ways of gathering information, there will be a need for human intelligence (HUMINT). Reconnaissance efforts of battalion and brigade assets can assist as well as the shaping operations of division or joint task force assets. Companies and below will normally have to continue to rely on information that is provided to them from human sources.

NEED FOR COMBINED ARMS

7-15. While UO historically have consisted of a high density of Infantry specific tasks, UO conducted purely by Infantry units have proven to be unsound. Properly tasked organized combined arms teams consisting primarily of infantry, engineers, and armor, supported by other combat, CS, and CSS assets have proven to be more successful both in the offense and defense. The same concept is true for stability and support operations, when the main effort may not necessarily consist of combat units.

Need to Isolate Critical Points

7-16. During offensive operations, companies, platoons, and squads will be assaulting buildings and clearing rooms. More often, assets will not exist to isolate large portions of the urban area. Therefore, skillful use of direct and indirect fires, obscurants, and, maneuver must occur in order to isolate key buildings or portions of buildings in order to secure footholds and clear.

Toxic Corridor

7-17. Historically, combat in urban areas has been marked by the soldier's exposure to large amounts of highly toxic chemicals and biological hazards in liquid, solid, or gaseous form. Many German and Russian casualties at Stalingrad were caused by exposure to chemicals, smoke, and fire. Soldiers operating within the "toxic corridor" may find themselves engaged in combat adjacent to above and below ground chemical and fuel storage tanks, internal liquid or gas transfer points, liquid fuel piping within structures (especially factories), biological hazard waste, medicines, and chemicals in hospitals, truck storage areas, rail yards, airports, port facilities, and many others. Death or incapacitation from some chemical and biological hazards may be rapid or delayed depending upon their lethality and the soldier's physical condition. Nor can the threat of fire be overlooked. Fire, caused by damage to structures, hostile fire, chemical combinations, or explosions can not only make positions untenable, it may also serve as the carrier for chemically saturated smoke. Soldiers must be aware not only "*where*" they are fighting, but "*what*" threats are in their vicinity. In some cases, operating within the toxic corridor may pose a greater risk than direct combat against the enemy."

Snipers

7-18. Historically, snipers have had increased utility in urban areas. They can provide long and short range precision fires and can be used effectively to assist company team and platoon level isolation efforts. A well trained sniper can dominate an avenue of approach for an indefinite period of time. Conversely, he may also be the only credible counter-sniper asset available to the company team. Snipers also have provided precision fires during stability operations.

URBAN AREAS

7-19. Urban areas mainly consist of man-made features such as buildings that provide cover and concealment, limit observation and fields of fire, and block movement of forces, especially mechanized/armored forces (see Figure 7-1). Thick-walled buildings provide ready-made, fortified positions. Thin-walled buildings may have fields of observation and fire that may prove important. Another important aspect is that urban areas complicate, confuse and degrade the commander's ability to identify and control his forces. All these factors will influence urban battlespace.

7-20. Commanders and leaders can enhance situational understanding by maintaining a clear understanding of their urban battlespace. The four urban battlespace areas are urban airspace, supersurface, surface, and subsurface also act as mobility corridors within an urban environment. These mobility corridors are divided into five corridors—air mobility corridor, supersurface exterior (top/roof), supersurface interior, and surface and subsurface.

7-21. Streets are usually avenues of approach. However, forces moving along streets are often canalized by the buildings and have little space for off-road maneuver. Thus, obstacles on streets in towns are usually more effective than those on roads in open terrain since they are more difficult to bypass. Subsurface systems found in some urban areas are easily overlooked but can be important to the outcome of operations.

7-22. Commanders and leaders must be able to identify building types, construction materials, and building design and must understand the effectiveness and limitations of weapons against these factors. They must also understand that urban combat will require them to visualize a three-dimensional battlespace. Commanders and leaders must be aware of how their urban battlespace is changing as friendly and enemy forces and civilians move, and as weather and environmental conditions change. They can react to changes within their battlespace with the timely movement of assault, support, and breaching elements in the offense; repositioning of platoons and squads in the defense; and synchronization of CS and CSS assets. Other factors that impact battlespace are—

- CASEVAC and resupply procedures.
- Handling EPWs and noncombatants.
- ROE.

- Weather conditions.
- Battlefield obscuration.
- Communications.
- Movement of vehicles. (How will the battlespace affect movement and target engagement?)

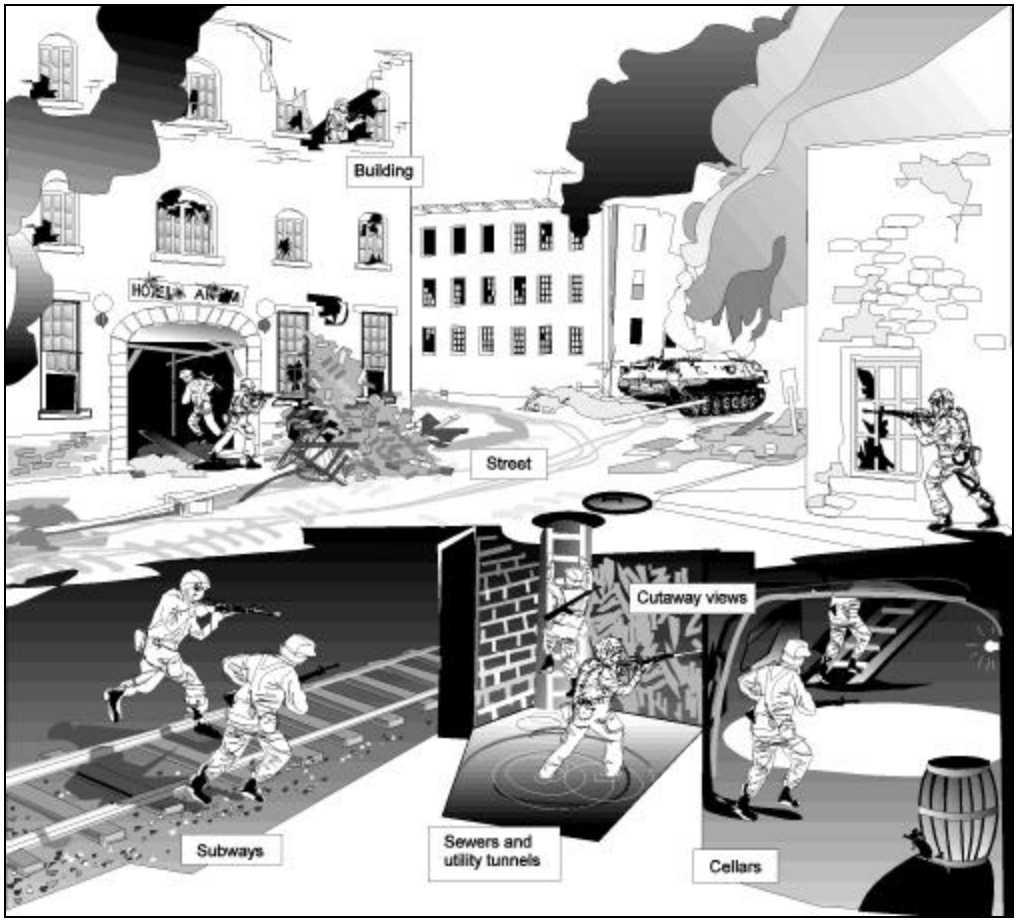


Figure 7-1. Underground Systems

VEHICLES AND EQUIPMENT CHARACTERISTICS

7-23. As described in the following paragraphs, numerous factors related to vehicles and equipment affect the company team UO planning and execution.

M1-SERIES TANKS

7-24. The following factors may affect UO:

- HEAT rounds are normally the primary main gun ammunition in the UO. They are the most effective round against masonry and will penetrate all but the thickest reinforced concrete. A HEAT round will open a hole large enough for a man to fit through in masonry or concrete walls, but it will not destroy the reinforcing bars in reinforced concrete. HEAT is also effective against all earthen and sandbag-reinforced strongpoints. A 120-mm HEAT round arms about 36 feet from the end of the gun tube.

- MPAT rounds will also penetrate concrete and masonry, but they are not as effective as HEAT against heavier structures.

- Sabot ammunition has limited utility against most nonvehicular targets, and its discarding petals endanger accompany teaming infantry elements. Sabot petals create a hazard area extending 70 meters on either side of the gun-target line out to a range of 1 kilometer. In addition to the Sabot petals the overpressure of the main gun presents a danger to dismounted troops within a 90 degree arc out to 200 meters from the gun tube (see Figure 7-2).

- Canister rounds are designed to defeat enemy infantry from 100 to 700 meters in open terrain, restrictive terrain, and urban terrain.

- The tank's main gun can depress only to -10 degrees and can elevate only to +20 degrees. This creates considerable dead space for the M1 crew at the close ranges that are typical in the UO environment.

- When buttoned up, the tank crew has limited visibility to the sides and rear and no visibility to the top. Figure 7-3 and Figure 7-4 illustrate the dead space associated with tank operations in an urban environment.

- The external M2 HB machine gun can elevate to +36 degrees; however, the TC must be unbuttoned to fire the M2 on the M1A2 and the ready ammunition capacity is only 100 rounds.

- The M240 coaxial machine gun and the loader's 240 machine gun can effectively deliver suppressive fire against enemy personnel and against enemy positions that are behind light cover; however, the loader must be unbuttoned to fire the weapon.

- The tank can be outfitted with an external phone hookup for communications with accompanying infantry rifle squads.

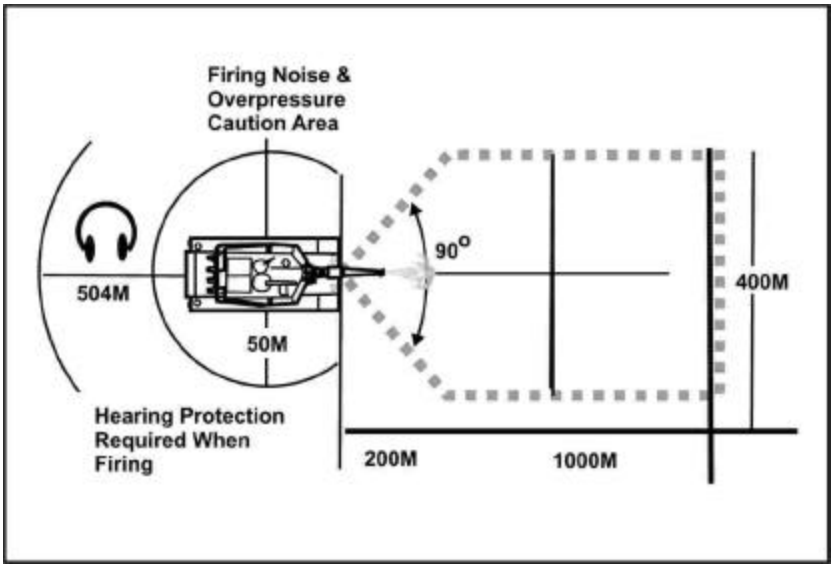


Figure 7-2. 120 mm Sabot Petal Danger Area and Noise/Overpressure Caution Area

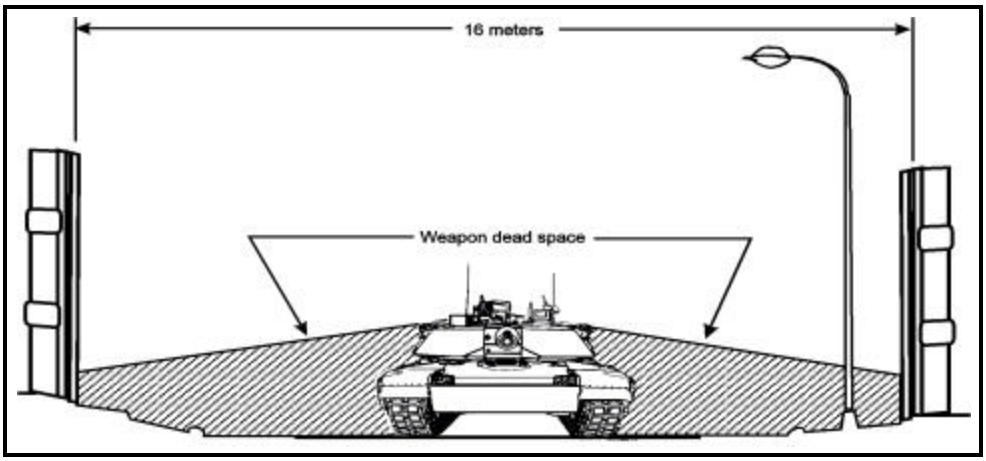


Figure 7-3. Tank Weapon Dead Space at Street Level

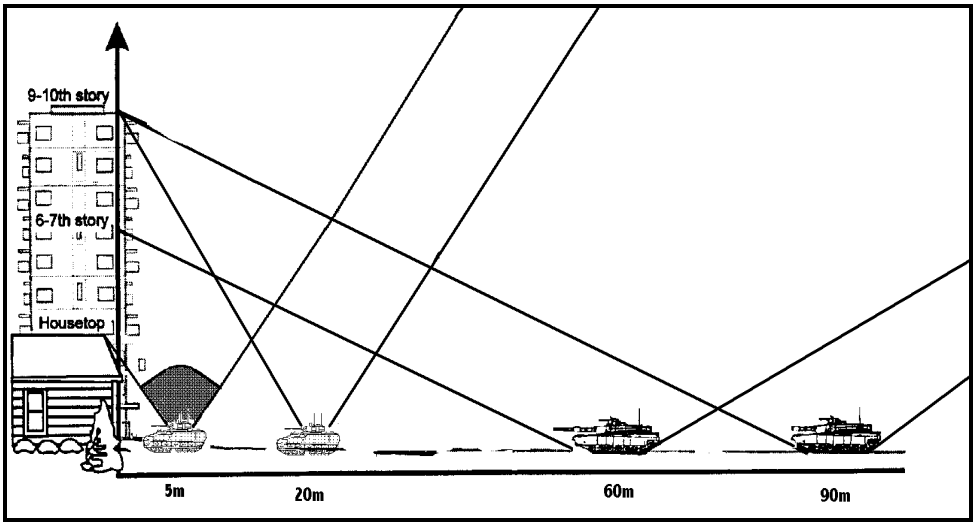


Figure 7-4. Bradley and Tank Main Gun and Coax Deadspace above Street Level

BRADLEY FIGHTING VEHICLES

7-25. The following factors may affect UO:

- The primary roles of the BFV in the UO environment are to provide suppressive fires and to breach exterior walls. The vehicle's armor-piercing rounds can be extremely useful in UO. They can penetrate concrete up to 16 inches thick, can easily penetrate brick structures, and are highly effective against earthen and sandbag-reinforced bunkers.
- The BFV can elevate its 25-mm gun to +60 degrees and depress it to -10 degrees.
- The crew has limited visibility to the sides and rear and no vision to the top when buttoned up.
- The BFV can be outfitted with an external phone hookup for communications with accompanying infantry.
- The 25-mm gun can be used effectively against enemy-occupied buildings and fortifications, firing AP, HE, and even TP-T rounds. (See FM 3-06.11 [FM 90-10-1] for detailed information on the effects of these rounds on typical urban construction materials.)
- The M240C coax machine gun can effectively deliver suppressive fires against enemy personnel and against enemy positions that are behind light cover.
- TOW missiles can be effectively employed to destroy heavily fortified positions, however, power lines around the urban area can interfere with the tracking wire and the TOW has a 20 degree firing angle limitation.

- The TOW back blast area extends 75 meters to the rear of the launcher and forms a 90 degree danger/caution area. The danger zone extends 50 meters to the rear of the launcher and the caution area extends an additional 25 meters to the rear of the danger zone (see Figure 7-5).
- The discarding petals of 25-mm Sabot rounds create a downrange hazard within 30 degrees on either side of the gun-target line out to a range of 200 meters.

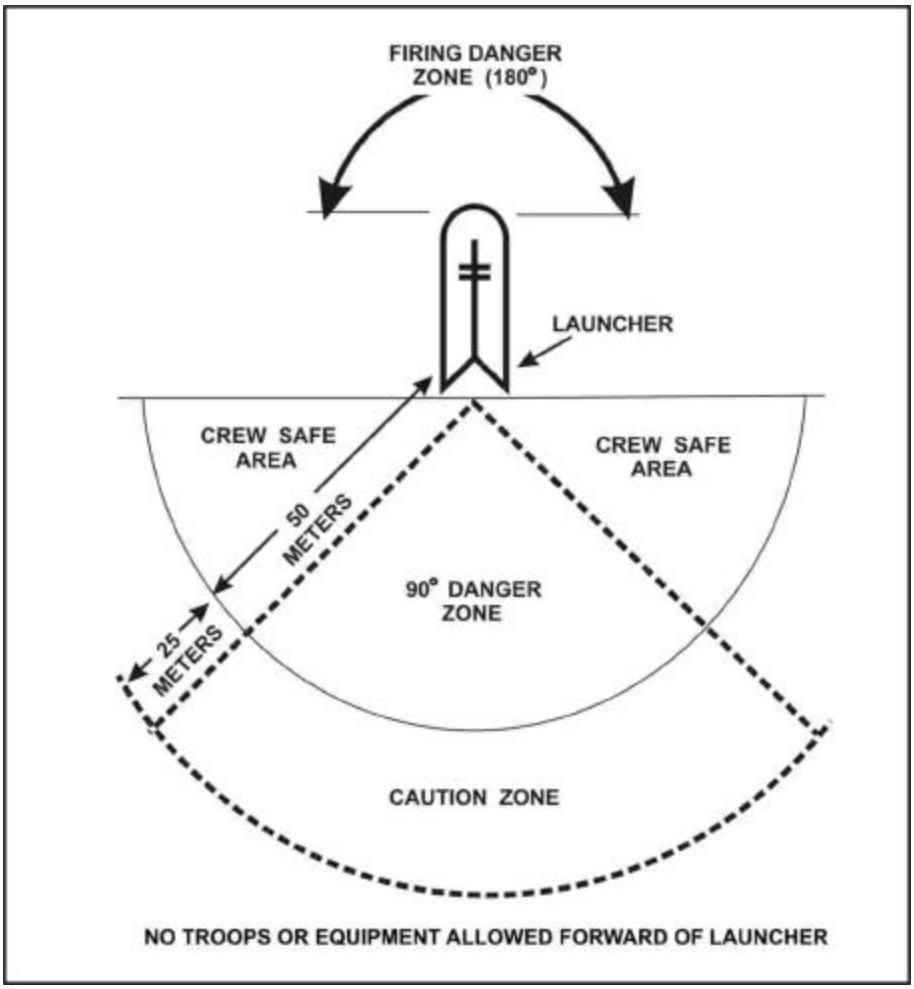


Figure 7-5. TOW Backblast Caution/Danger Area

COMMAND AND CONTROL

7-26. The following C2 considerations will affect the company team's UO planning and execution:

- **Communications Problems.** The low-level task organization that may take place during UO will require elements to establish additional communications links, which can be disrupted by buildings and other urban terrain features. Although FBCB2 will provide another means to communicate

within urban areas it too is degraded in the same manner as FM radios. Additionally, infantry rifle squads or any other dismounted element will not have access to FBCB2 and in many cases a messenger may be the best form of communication. Well established and rehearsed visual signals are essential to success during offensive urban operations. Knowing when rooms and buildings are clear and not clear will ensure that the company team maintains a good operational tempo during an urban attack.

- **Small Scale Maps.** Company team commanders should consider using small scale maps such as 1:25,000 when planning UO since the level of the detail is greater and his AO is generally smaller. If small scale maps are not available, the use of tourist city maps may also work.
- **Fire Control.** Extensive direct fire planning and restrictive fire control measures are an absolute requirement in UO. Marking of cleared rooms and buildings, visual signals to lift or shift fires must be clear and rehearsed. Use of hand held smoke, AN/PEQ-2 laser designator or AN/PAQ-4 IR designators are resources that the commander can use to control fires.
- **Graphic Control Measures.** During the planning process the company team commander must establish detailed graphic control measures to ensure mission accomplishment and fratricide avoidance.
- **Numbering.** When attacking to seize a foothold or clearing a village, the company team commander should number buildings and assign immediate objectives in order to differentiate blocks and measure progress.
- **Phase Lines.** PLs can be used to report progress or to control the advance of attacking units. PLs should be on the near side of the street or open area.
- **Boundaries.** Boundaries are usually set within blocks so that a street is included in the zone. Boundaries must be placed to ensure that both sides of a street are included in the zone of one unit.
- **Checkpoints and Contact Points.** Checkpoints and contact points are planned at street corners, buildings, railway crossings, bridges, or any other easily identifiable urban feature.
- **Frontages.** A unit's assigned frontage for the attack of a built-up area depends on the size of buildings and the resistance anticipated. However, a company team normally attacks on a one to two block front, and a battalion on a two to four block front, based on city blocks averaging 175 meters in width.

- **Proximity and Visibility.** Friendly elements often must operate in confined and restrictive areas during UO, and they may not be able to see other nearby friendly forces. These factors significantly increase the danger of fratricide. To avoid fratricide in UO the following factors must be implemented:
  - *Clear graphic control measures.* Graphic control measures must be defined and obvious.
  - *Leader control.* Leaders must exercise firm control when engaging targets. Movement should also be tightly controlled. Examples are code words and visual signals for shifting fire.
  - *Marking cleared rooms.* Cleared rooms and buildings should be distinctly marked to identify cleared areas and to mark progress of clearing teams to the supporting elements.
  - *Marking soldiers.* Visible markers (glint tape or thermal tape) should be attached to individual soldiers. Specific casualty marking should also be implemented.
  - *Recognition symbols.* Far and near recognition symbols should be used properly. Examples include challenges and passwords, running passwords, building markings, and aircraft recognition.
- **Personnel Factors.** UO imposes significant, and often extreme, physical and psychological demands on soldiers and leaders.
- **ROE and Noncombatants.** The ROE may restrict the use of certain weapon systems. As an integral part of UO, noncombatants create special operational problems. To deal with these concerns, units operating in urban terrain must know how to effectively employ linguists and counterintelligence and civil affairs teams.
- **METT-TC Analysis.** The company team commander must conduct a detailed analysis of the factors of METT-TC and provide his platoon leaders with ample guidance within which they execute disciplined initiative to accomplish their assigned tasks and purposes.

TACTICS, TECHNIQUES, AND PROCEDURES FOR MARKING

BUILDINGS AND ROOMS

7-27. Units have long identified a need to mark specific buildings and rooms during UO. Sometimes rooms need to be marked as having been cleared, or buildings need to be marked as containing friendly forces. The US Army Infantry School is currently testing a remote marking device that can be used to mark doors from as far away as across a wide street. In the past, units have tried several different field-expedient marking devices; some with more success than others. Chalk has been the most common. It is light and easily obtained but not as visible as other markings. Some of

the other techniques that have been used are spray paint, and VS-17 panels and engineer tape.

SPRAY PAINT

7-28. Canned spray paint is easily obtained and comes in a wide assortment of colors including florescent shades that are highly visible in daylight. It cannot be removed once used. Cans of spray paint are bulky and hard to carry with other combat equipment. Paint is not visible during darkness nor does it show up well through thermal sights.

Wolf Tail

7-29. A simple, effective, easy-to-make, lightweight device called a "wolf tail" can be fabricated to mark buildings, doorways, and windows (see Figure 7-6). A unit has changed its tactical TSOP to require that each Infantryman carry one of these devices in his BDU cargo pocket. Wolf tails, when used in accordance with a simple signaling plan understood by all members of the unit, can aid in C2, reduce the chances of fratricide, and speed up casualty collection during urban combat.

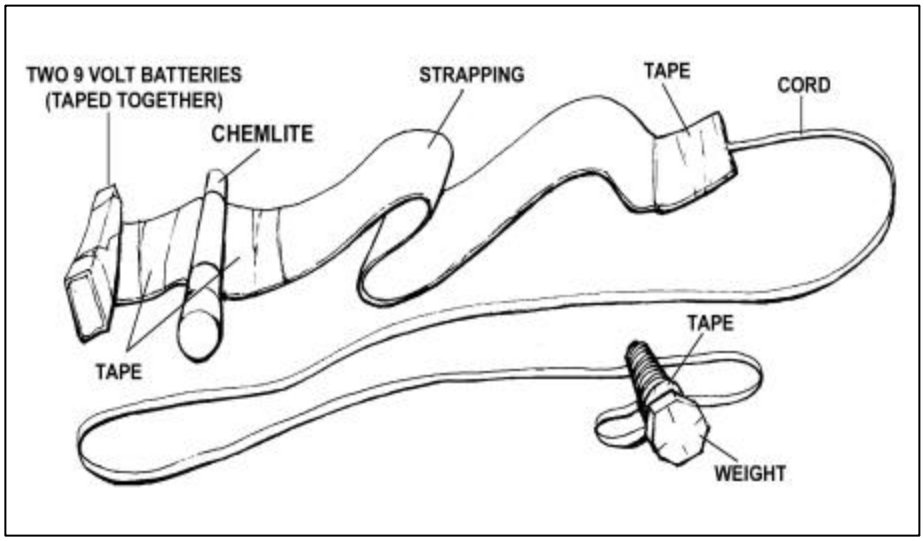


Figure 7-6. Example of a Wolf Tail Marking Device

NOTE: An option is to place chemlites and batteries at both ends of the wolf tail to mark the inside and outside of a building or room.

NATO STANDARD MARKING SOP

7-30. The North Atlantic Treaty Organization (NATO) has developed a standard marking SOP for use during urban combat. It uses a combination of colors, shapes, and symbols. These markings can be fabricated from any material available (see Figure 7-7).

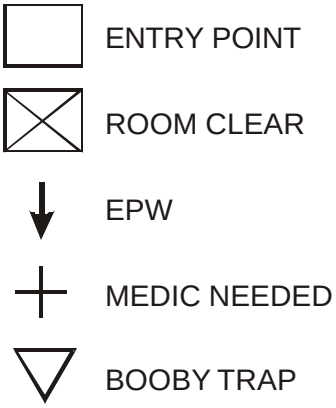
EXTERIOR DAYLIGHT MARKING IAW NATO SOP
12”X12” SQUARE

Tape Color	Indication
RED	ENTRY POINT
YELLOW	MEDIC NEEDED
GREEN	BUILDING CLEAR
BLUE	BOOBY TRAP

PROGRESS THROUGH THE BUILDING SHOULD BE MARKED WITH A PIECE OF ENGINEER TAPE HUNG OUT OF EVERY WINDOW. THIS WILL HELP PREVENT FRATRICIDE AND ALLOW THE SUPPORT BY FIRE TO FOLLOW THE PROGRESS OF THE MANEUVERING ELEMENTS.

ALL NIGHT MARKINGS ARE TWO CHEMLITES ON A DOUBLE ARM’S LENGTH OF ENGINEER TAPE HUNG

INTERIOR MARKINGS



ALL INTERIOR MARKINGS MAY BE MADE WITH PAINT, CAMO STICKS, CHALK, OR ANY OTHER WRITING MATERIAL. THE ONLY CRITERIA ARE THAT MARKINGS BE SEMI-PERMANENT AND NOT AFFECTED BY MOISTURE. MARKINGS SHOULD BE PLACED ON THE UPPER LEFT SIDE OF THE DOOR. IF THIS IS NOT POSSIBLE, THEY SHOULD BE PLACED ANYWHERE THAT WILL BE VISIBLE TO SOMEONE PASSING THROUGH THE ENTRY.

Figure 7-7. Sample Marking SOP

MANEUVER

7-31. The following factors related to maneuver will affect the company team’s UO planning and execution:

- **The need for detailed centralized planning and decentralized execution.** UO are usually executed as a deliberate attack, demanding extensive intelligence activities and rehearsals.
- **Formation of combined arms teams at the lowest levels.** Whereas task organization normally is done no lower than platoon level, UO may require task organization of squads and sections. The company team may face a number of unusual

organizational options, such as a tank section working with an infantry platoon.

- **Vulnerability of friendly forces.** Tanks and BFVs can provide firepower to effectively support accompanying infantry rifle squads, but they are, in turn, vulnerable to attack from enemy infantry. The attacking force in UO must also guard against local counterattacks.
- **Requirements for cooperation.** UO can be successful only when close cooperation is established between infantry squads and fighting vehicles at the lowest level.
- **The role of infantry.** Infantry squads are employed extensively during UO. They can fight both enemy vehicles and enemy dismounted elements.

FIRE SUPPORT

7-32. The UO environment will affect how and when indirect fires will be employed. The following factors may have an impact on planning and execution:

- Careful use of variable time (VT) ammunition is required to prevent premature arming.
- Indirect fire may cause unwanted rubble.
- The close proximity of enemy and friendly troops requires careful coordination.
- WP ammunition may create unwanted fires or smoke.
- Fuze delay should be used to ensure rounds penetrate fortifications as required.
- Illumination can be effective; however, it must be carefully planned to ensure friendly positions remain in the shadows while enemy positions are highlighted. Tall buildings may mask the effects of illumination rounds.
- VT and improved conventional munitions (ICM) rounds are effective for clearing enemy positions, observers, and antennas on rooftops.
- Scatterable mines can be used to impede enemy movement in the UO environment. It may be especially useful during the isolation phase to prevent the enemy from repositioning or reinforcing his forces. The effectiveness of scatterable mines is reduced when the mines are delivered on a hard surface.
- Artillery may be used in direct fire mode against point targets.
- Mortars are the most responsive indirect fires available to the company team in the UO environment. They are well suited for combat in built-up areas because of their high rate of fire, steep angle of fall, and short minimum range.
- The UO environment creates difficulties for the company team in target acquisition and in clearance and adjustment of fires.

- When taking part in UO, the company team must always keep in the mind that the UO environment creates unique requirements for centrally controlled fires and more restrictive fire control measures.
- Depending on the range to targets and the height of buildings in the urban area, up to 50 percent of all artillery rounds may impact on the roofs and sides of the buildings rather than on targets on the ground. Mortar fires are significantly more effective in hitting targets at street level between buildings.

COMBAT SERVICE SUPPORT

7-33. Guidelines for providing effective CSS to units fighting in built-up areas include the following:

- Provide supplies to units in the required quantities and as close as possible to the location where those supplies are needed.
- Protect supplies and CSS elements from the effects of enemy fire by preventing and/or avoiding detection and by using effective cover and concealment.
- Disperse and decentralize CSS elements to develop the most effective support structure based on requirements for communications, C2, security, and proximity to the MSR for resupply.
- Position support units as far forward as the tactical situation permits.
- Plan the locations of casualty collection points and evacuation sites.
- Plan for the use of carrying parties and litter bearers.
- Plan for and use host-country support and civil resources when authorized and practical.
- Develop plans for requesting and obtaining special equipment such as ladders and toggle ropes with grappling hooks.

SECTION II – OFFENSIVE URBAN OPERATIONS

7-34. Offensive operations in a built-up area are planned and executed based on the factors of METT-TC and established doctrine. This section focuses on the unique problems and challenges that offensive UO pose for the company team.

TASK ORGANIZATION

7-35. The task organization of a company team conducting an attack during UO will vary according to the specific nature of the built-up area and the objective. In general, the team will employ an assault force, a support force, and a reserve; in some cases, a security force is also used. Normally, there is no separate breach force; however, breaching elements may be part of the assault or support force, depending on the type and location of anticipated obstacles.

SUPPORT FORCE

7-36. Normally, most mounted elements of the UO unit are task organized in the support force. This allows the task force or company team commander to employ the firepower of the fighting vehicles without compromising their survivability, a distinct danger when heavy forces move into an urban area. The support force isolates the AO and the actual entry point into the urban area, allowing assault forces to secure a foothold.

BREACH FORCE

Breaching Element

7-37. At the company team level, breaching is normally conducted by the assault element. However, a separate breaching element may be created and a platoon may be given this mission and task organized accordingly. The purpose of breaching is to provide the assault element with access to an urban objective. Breaching can be accomplished using explosive, ballistic, thermal, or mechanical methods. Ballistic breaching includes using direct fire weapons; mechanical breaching includes the use of crowbars, axes, saws, sledgehammers, or other mechanical entry devices. Thermal breaching is accomplished through the use of a torch to cut metal items such as door–hinges. Attached engineers, or a member of the assault element who has had additional training in mechanical, thermal, ballistic, and explosive breaching techniques, may conduct the breach.

ASSAULT FORCE

7-38. The assault force is the element that gains a foothold in the urban area and conducts the clearance of actual objectives in the area. This force is normally a dismounted element task organized with engineers, with specific augmentation by armored vehicles.

RESERVE FORCE

7-39. The reserve force normally includes both mounted and dismounted forces. It should be prepared to conduct any of the following tasks:

- Attack from another direction.
- Exploit friendly success or enemy weakness.
- Secure the rear or flank of friendly forces.
- Clear bypassed enemy positions.
- Maintain contact with adjacent units.
- Conduct support by fire or attack by fire as necessary.

Deliberate Attack

7-40. At the company team level, a deliberate attack of an urban area usually involves the sequential execution of the tactical tasks below.

Reconnoiter the Objective

7-41. This method involves making a physical reconnaissance of the objective with company team assets and those of higher headquarters, as the tactical situation permits. It also involves a map reconnaissance of the objective and all the terrain that affects the mission, to include the analysis of aerial imagery, photographs, or any other detailed information about the building or other urban terrain, which the company team is responsible for. Additionally, any HUMINT collected by reconnaissance and surveillance units, such as the battalion reconnaissance platoon, snipers, and so forth, should be considered during the planning process.

Move to the Objective

7-42. This method may involve moving the company team tactically through open and or urban terrain. Movement should be made as rapidly as possible without sacrificing security. Movement should be made along covered and concealed routes and can involve moving through buildings, down streets, subsurface areas, or a combination of all three. Urban movement must take into account the three-dimensional aspect of the urban area.

Isolate the Objective

7-43. Isolating the objective involves seizing terrain that dominates the area so that the enemy cannot supply, reinforce, or withdraw its defenders. It also includes selecting terrain that provides the ability to place suppressive fire on the objective. (This step may be taken at the same time as securing a foothold.) If isolating the objective is the first step, speed is necessary so that the defender has no time to react. Companies may be required to isolate an objective as part of a battalion operation or may be required to do so independently. Depending on the tactical situation, an Infantry company team may isolate an objective by infiltration and stealth.

Secure a Foothold

7-44. Securing a foothold involves seizing an intermediate objective that provides cover from enemy fire and a location for attacking troops to enter the urban area. The size of the foothold is METT-TC dependent and is usually a company team intermediate objective. In some cases a large building may be assigned as a company team intermediate objective (foothold). As the company team attacks to gain a foothold, it should be supported by suppressive fire and smoke.

Clear an Urban Area

7-45. Before determining to what extent the urban area must be cleared, the factors of METT-TC must be considered. The ROE influence the TTP platoons and squads select as they move through the urban area and clear individual buildings and rooms.

7-46. The commander may decide to clear only those parts necessary for the success of his mission if—

- An objective must be seized quickly.
- Enemy resistance is light or fragmented.
- The buildings in the area have large open areas between them. In this case, the commander would clear only those buildings along the approach to his objective, or only those buildings necessary for security.

7-47. A company team may have a mission to systematically clear an area of all enemy. Through detailed analysis, the commander may anticipate that he will be opposed by a strong, organized resistance or will be in areas having strongly constructed buildings close together. Therefore, one or two platoons may attack on a narrow front against the enemy's weakest sector. They move slowly through the area, clearing systematically from room to room and building to building. The other platoon supports the clearing units and is prepared to assume their mission.

Consolidate/Reorganize and Prepare for Future Missions

7-48. Consolidation occurs immediately after each action. Consolidation is security and allows the company team to prepare for counterattack and to facilitate reorganization. It is extremely important in an urban environment that units consolidate and reorganize rapidly after each engagement. The assault force in a cleared building must be quick to consolidate in order to repel enemy counterattacks and to prevent the enemy from infiltrating back into the cleared building. After securing a floor, selected members of the assault force are assigned to cover potential enemy counterattack routes to the building. Priority must be given to securing the direction of attack first. Those soldiers alert the assault force and place a heavy volume of fire on enemy forces approaching the building. Reorganization occurs after consolidation. Reorganization actions prepare the unit to continue the mission; many actions occur at the same time.

Consolidation Actions

7-49. Platoons assume hasty defensive positions after the objective has been seized or cleared. Based upon their specified and implied tasks, assaulting platoons should be prepared to assume an overwatch mission and support an assault on another building, or another assault within the building. Commanders must ensure that platoons guard enemy mouseholes between adjacent buildings, covered routes to the building, underground routes into the basement, and approaches over adjoining roofs.

Reorganization Actions

7-50. After consolidation, the following actions are taken:

- Resupply and redistribute ammunition, equipment, and other necessary items.
- Mark the building to indicate to friendly forces that the building has been cleared.
- Move support or reserve elements into the objective if tactically sound.
- Redistribute personnel and equipment on adjacent structures.

- Treat and evacuate wounded personnel.
- Treat and evacuate wounded EPW and process remainder of EPW.
- Segregate and safeguard civilians.
- Re-establish the chain of command.
- Redistribute personnel on the objective to support the next phase or mission.

Prepare for Future Missions

7-51. The company team commander anticipates and prepares for future missions and prepares the company team chain of command for transition to defensive and or stability and support missions.

NOTE: Friendly force situational understanding is significantly improved in digitally equipped units through the use of FBCB2 assets.

ISOLATE AN URBAN OBJECTIVE

7-52. Infantry companies isolate an urban objective to prevent reinforcement of, or a counterattack against, the objective and to kill or capture any withdrawing enemy forces. When planning the isolation, commanders must consider three-dimensional and in-depth isolation of the objective (front, flanks, rear, upper stories, rooftops, and subsurface). All available direct and indirect fire weapons, to include attack helicopters and CAS, should be employed, consistent with the ROE. Isolating the objective is a key factor in facilitating the assault and preventing casualties. The company team may perform this mission as the support element for a battalion operation, or it may assign the task to its own internal support element for a company team attack. In certain situations, companies may be required to isolate an objective or an area for special operations forces or for stability/support operations. When possible, the objective should be isolated using stealth and or rapid movement in order to surprise the enemy. Depending on the tactical situation, companies may use infiltration in order to isolate the objective. Likely tasks include, but are not limited to, the ones described below.

Isolating the Objective (Task Force Attack)

7-53. A company team may isolate the objective as the support element for a battalion operation. When a company team is given this mission, the objective is normally a larger structure, a block, or a group of buildings. The company team commander task-organizes his platoons and assigns them support by fire positions based on the factors of METT-TC. In addition to isolating the objective, the company team (support element) may be given additional tasks that will be conducted on order or at the same time. Examples of these additional tasks include assuming assault element missions, securing cleared buildings, handling noncombatants and EPWs, and CASEVAC.

Isolating the Objective (Company Team Attack)

7-54. When a company team conducts an attack, the task organization and tasks given to the company team support element is determined by the factors of METT-TC. If the company team conducts an attack, the objective can be a building, a block or group of buildings, a traffic circle, or a small village (see Figure 7-8). Emphasis must be placed on suppressing or neutralizing the fires on and around the objective. Figure 7-8 depicts an infantry company team with an attached light infantry platoon assaulting buildings 41 and 42. In order to secure a foothold and clear buildings 41 and 42, the commander has assigned a platoon to support by fire and suppress the enemy squad in building 11 and the medium machine gun in building 21. A tank section suppresses the light machine gun in building 51 and assists in the suppression of building 11. Another platoon supports by fire and suppresses any enemy fire from buildings 31, 41, and 42. The company team's third platoon, positioned in buildings behind the support element, acts as the assault element to clear buildings 41 and 42. In this manner, three-dimensional isolation of the objective (buildings 41 and 42) is accomplished.

NOTE: All buildings within the support element's sector of fire were numbered to facilitate C2.

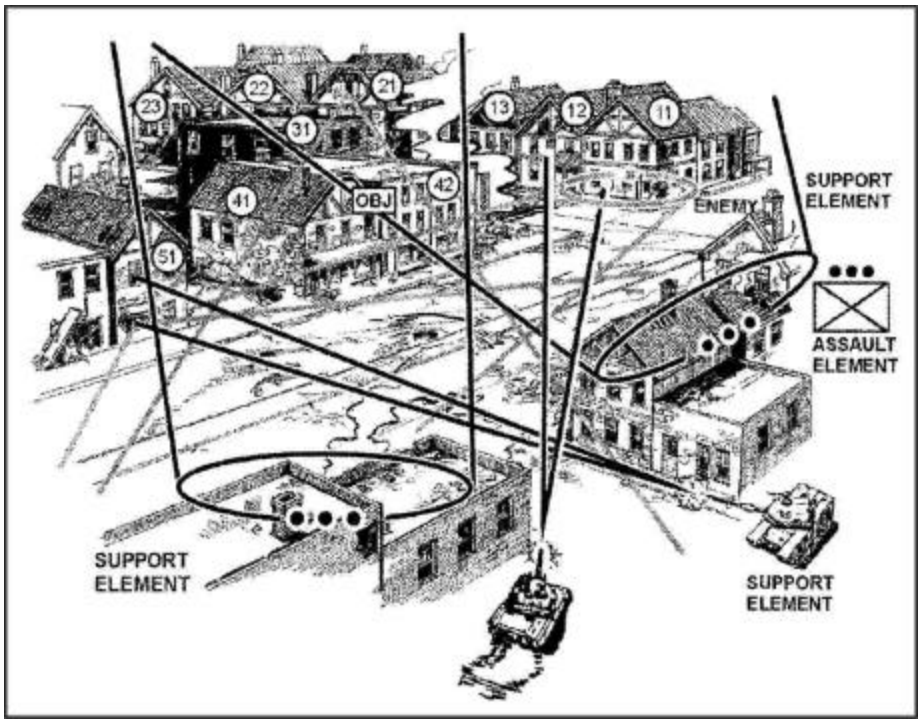


Figure 7-8. Isolating an Urban Objective

TASKS

7-55. The company team commander isolates the objective with direct and indirect fires before and during the assault element's execution of its mission. The company team will—

- Suppress known, likely, and suspected enemy targets, consistent with the ROE, with direct and indirect fire weapons. Under restrictive ROE, suppression may be limited only to actual enemy locations.
- Cover mounted avenues of approach with tanks, BFVs and anti-armor weapons.
- Cover dismounted avenues of approach with automatic weapons.
- Control key terrain near or adjacent to the objective in order to prevent the enemy from reinforcing his positions, withdrawing, or counterattacking.
- Be prepared to move to other locations in order to suppress enemy fires and neutralize enemy positions as the assault element performs its tasks.

7-56. Company team commanders must give specific instructions to subordinate leaders concerning where to place fires in support of the assault element. For example, from TRP 1 to TRP 2, along the third and second floor windows on the east side of building 21, shift fires to the west side of the objective from TRP 1 to TRP 4 when the green star cluster is seen, and so on. Once suppressive fires on the objective begin, they normally increase and continue until masked by the advancing assault element. Suppressive fires may or may not be used from the beginning of the assault depending on the ROE. Targets can be marked and identified with tracer rounds; M203 smoke, HE, or illumination rounds; voice and arm-and-hand signals; laser pointers; or similar devices.

7-57. The precise well-placed volume of fire, as opposed to a volume of fire, suppresses the enemy. The volume of fire and types of weapons employed is ROE dependent. Once masked, fires are shifted to upper or lower windows and continued until the assault force has entered the building. At that time, fires are shifted to adjacent buildings to prevent enemy withdrawal or reinforcement. If the ROE are restrictive, the use of supporting fires is normally limited to known enemy locations that have engaged the unit.

NOTE: Care must be taken in urban areas when WP, ILLUM, or tracers are used since urban fires can be caused. Care must also be exercised, if Sabot rounds are used by the tanks and BFVs, based on its penetration capability. Sabot rounds can penetrate many walls and travel great distances to include passing through multiple buildings, creating unintended damage, casualties, and fratricide.

ASSAULT A BUILDING

7-58. The company team conducts this mission as part of the assault element of a battalion task force or independently. (Independently is defined here as a company team having to provide its own support element, as opposed to conducting an operation without flank and rear support, such as a raid or ambush.) If it is conducted as the assault element of a battalion

task force, it will probably be conducted against a large building defended by a strong enemy force; for example, a reinforced platoon. Company team commanders need to clearly understand the specified and implied tasks that are required to accomplish the mission, as well as the brigade/battalion commanders' intent and the desired mission end-state. This procedure allows the company team commander to task-organize and issue specific missions to his subordinate elements as to which floors and rooms to clear, seize, or bypass.

EXECUTION

7-59. Squads should move by bounds by floor when clearing a multistory building. This procedure permits troops to rest after a floor has been cleared. It is likely that platoons are required to leave security on floors and in cleared rooms and also facilitate the passage of another platoon in order to continue the assault. The assault element must quickly and violently execute its assault and subsequent clearing operations. Once momentum has been gained, it is maintained to prevent the enemy from organizing a more determined resistance on other floors or in other rooms. If platoons come across rooms/hallways/stairwells that are barricaded with furniture or where obstacles have been placed, they should first attempt to bypass the barricade or obstacle and maintain the momentum of the attack. If they cannot bypass the barricade or obstacle, security should be placed on it, it should be checked for booby traps, and should then be reduced. Also, sealing doors and floors may be an option in order to maintain momentum. Subordinate leaders should continue the momentum of the assault, yet not allow the operation to become disorganized.

AMMUNITION AND EQUIPMENT

7-60. METT-TC factors and the ROE determine how the assault element is equipped and armed. The assault element carries only a fighting load of equipment and as much ammunition as possible, especially grenades (fragmentation, smoke, concussion, and stun consistent with the building construction and the ROE). The support element maintains control of additional ammunition and equipment not immediately needed by the assault element. An often-overlooked munition in an urban battle is the light antitank weapon such as the M72 LAW and the AT4. Soldiers can use these for a variety of purposes such as suppressing a manned position or supporting the breaching or assault elements. Resupply should be pushed to the assault element by the support element. Commanders must carefully manage the soldier's load during the assault. Normally, ammunition, water, special assault weapons/equipment, and medical supplies/litters are the only items carried in the assault. Tank and BFV crews should also configure their ammunition load to support their mission, consistent with the ROE.

ASSAULT LOCATIONS

7-61. The assault may begin from the top or bottom of the building.

Top Entry

7-62. Entry at the top and fighting downward is the preferred method of clearing a building. This method is only feasible, however, when access to an upper floor or rooftop can be gained by ladder; from the windows or roofs of adjoining, secured buildings; or when enemy air defense weapons can be suppressed and troops can be transported to the rooftops by helicopter.

Bottom Entry

7-63. Entry at the bottom is common and may be the only option available. When entering from the bottom, breaching a wall is the preferred method because doors and windows may be booby trapped and covered by fire from inside the structure. If the assault element must enter through a door or window, entry from a rear or flank position is preferred. Under certain situations, the ROE may not permit the use of certain explosives, therefore entry through doors and windows may be the only option available. Armored vehicles can be especially useful in supporting bottom entry.

Breaching

7-64. Squads and platoons will have to conduct breaching. Engineers may be attached to the unit responsible for breaching. Depending on the factors of METT-TC, company team commanders may need to designate specific breaching locations or delegate the task to platoon leaders. The ROE also influences whether mechanical, thermal, ballistic, or explosive breaching is used. For example, tanks and BFVs can breach the wall by main-gun fire for the initial-entry point.

Assault Tasks

7-65. Once inside the building, the priority tasks are to cover the staircases and to seize rooms that overlook approaches to the building. These actions are required to isolate enemy forces within the building and to prevent reinforcement from the outside. The assault element clears each room on the entry floor and then proceeds to clear the other floors to include the basement. If entry is not made from the top, consideration may be given to rushing/clearing and securing a stairwell and clearing from the top down, if the tactical situation permits. If stairwell use is required, minimize their use and clear them last. If there is a basement, it should be cleared as soon as possible, preferably at the same time as the ground floor. The procedures for clearing a basement are the same as for any room or floor, but important differences do exist. Basements may contain entrances to tunnels such as sewers and communications cable tunnels. These should be cleared and secured to prevent the enemy from infiltrating back into cleared areas.

Suppressive Fires During the Assault

7-66. The support element provides suppressive fire while the assault element is systematically clearing the building. It also provides suppressive fire on adjacent buildings to prevent enemy reinforcements or withdrawal. Suppressive fire may consist of firing at known and suspected enemy locations; or, depending on the ROE, may only include firing at identified targets or returning fire when fired upon. The support element destroys or

captures any enemy trying to exit the building. The support element must also deal with civilians displaced by the assault. Armored vehicles are useful in providing heavy, sustained, accurate fire.

Clearing Rooms

7-67. Company team commanders must ensure that clearing squads carry enough room marking equipment and plainly mark cleared rooms from the friendly side in accordance with unit SOP. Also, if the operation occurs during limited visibility, marking must be visible to friendly units. The support element must understand which markings will be employed and ensure that suppressive fires do not engage cleared rooms and floors. Maintaining situational understanding concerning the location of the assault teams and which rooms/floors have been cleared is imperative and a key command and control function for the company team commander. Radios can be consolidated, if necessary, with priority going to the squads and platoons clearing rooms. When exiting cleared buildings friendly troops should notify supporting elements using the radio or other preplanned signals.

ATTACK OF A BLOCK OR GROUP OF BUILDINGS

7-68. A company team normally attacks a block or group of buildings as part of a battalion task force. To attack a block or a group of buildings, a company team may need to be reinforced with additional rifle squads and d engineers, consistent with the ROE and the enemy situation.

EXECUTION

7-69. The execution of this mission is characterized by platoon attacks supported by both direct and indirect fires. Success depends on isolating the enemy positions which often become platoon objectives, suppressing enemy weapons, seizing a foothold in the block, and clearing the block's buildings room by room.

DIRECT FIRE WEAPONS

7-70. BFVs, tanks, machine guns, and other direct fire support weapons fire on the objective from covered positions, consistent with the ROE. These weapons should not be fired for prolonged periods from one position. The gunners should use a series of positions and displace from one to another to gain better fields of fire and to avoid being targeted by the enemy. Direct fire support tasks can be assigned as follows:

- Machine guns fire along streets and into windows, doors, mouseholes, and other probable enemy positions. ROE may restrict firing only to known enemy locations.
- BFVs, tanks, and AT weapons fire at enemy tanks and other armored vehicles can also provide a countersniper capability due to their range and target acquisition capability.
- Tanks fire at targets protected by walls and provides protection against enemy tanks, as required.
- BFVs may be used to create breaches with the 25-mm gun and TOW.
- Riflemen engage targets of opportunity.

OBSCURATION AND ASSAULT

7-71. Before an assault, the company team commander should employ smoke to conceal the assaulting platoons. He secures their flanks with direct fire weapons and by employment of the reserve, if necessary. Concealed by smoke and supported by direct fire weapons, an assaulting platoon attacks the first isolated building. The assault element utilizes the cover of suppressive fires to gain a foothold. The company team commander must closely coordinate the assault with its supporting fire so that the fire is shifted at the last possible moment. The squads and platoons then clear each designated building. After seizing the block, the company team consolidates and reorganizes to repel a counterattack or to continue the attack. Periods of limited visibility may provide the best conditions to attack, especially if night-vision goggles (NVG) and thermal sights provide the company team a technological advantage over the threat.

NOTE: Obscuration rounds may cause uncontrolled fires in the city and must be carefully planned.

HASTY ATTACK

7-72. A company team may find itself moving to an urban area or conducting a movement to contact with a mission of clearing a village of enemy. The following discussion provides a technique for conducting a hasty attack on a village. The company team commander makes a quick assessment of the factors of METT-TC and reacts appropriately to support the higher level commander's intent.

ESTABLISH SUPPORT

7-73. Tanks and BFVs assume support-by-fire positions from which they can fire on the village, prevent the enemy from withdrawing, and destroy any reinforcements (support element functions). Tanks and BFVs vehicles can re-position during the assault, if necessary, to gain better fields of fire and provide better support.

ASSAULT THE VILLAGE

7-74. The rifle platoons assault from a covered route so as to hit the village at a vulnerable point. As the platoons approach the village, smoke is employed to screen their movement and supporting fires are shifted. Once the platoons close on the village, they clear the buildings quickly, consistent with the ROE, and consolidate. The company team is then ready to continue operations.

MOVEMENT TO CONTACT AND RECONNAISSANCE

7-75. In a fast-moving situation, a company team may have to conduct a movement to contact through an urban area to fix enemy forces. Similarly, a company team may have to reconnoiter such a route to prepare for a battalion task force attack or other mission. This type of reconnaissance is accomplished with a company team. It is preferable to conduct this mission with tanks and or BFVs. The actual task organization will be determined by the factors of METT-TC.

TEMPO

7-76. These operations are characterized by alternating periods of rapid movement to quickly cover distances and much slower movement for security. The speed of movement selected depends on the terrain and enemy situation.

EXECUTION

7-77. In open areas where rapid movement is possible due to terrain, a tank section should lead, if available. In closer terrain, the infantry rifle squads should lead while overwatched by the tanks. Another infantry rifle squad and another other tank or BFV section should move on a parallel street. Artillery fire should be planned along the route. Engineers accompany the lead platoon on the main route to help clear obstacles and mines.

DANGER AREAS

7-78. The company team should cross danger areas (crossroads, bridges, and overpasses, and so forth) by a combination of actions:

- Between danger areas, the company team moves with the infantry mounted, or rapidly on foot, when contact is not likely.
- When enemy contact is likely, the company team moves to clear enemy positions or to secure the danger area. Tanks and other combat vehicles support infantry.

AXIS OF ADVANCE

7-79. In peripheral areas, this advance should be on one axis with the lead unit well forward and security elements checking side streets as they are reached. In the city core, this operation is conducted as a coordinated movement on two or three axes for more flank security.

ENEMY POSITIONS

7-80. Enemy positions can be either destroyed by the company team itself or, if the need for speed is great, bypassed, reported, and left to following units if the situation allows.

COORDINATION

7-81. The company team commander must ensure that the actions of platoons and attached or OPCON elements are coordinated. SU must be maintained in a rapidly moving or changing environment. The company team commander reports all information collected to the battalion task force.

SEIZURE OF KEY URBAN TERRAIN

7-82. A traffic circle, bridge or overpass that spans a canal, a building complex, or, in some cases, the population itself are examples of key urban terrain. Therefore, seizing such terrain intact and securing it for friendly use is a likely mission for a company team. The discussion below describes the TTP for seizing and controlling a bridge and seizing a traffic circle.

SEIZURE OF A BRIDGE

7-83. For this mission a company team should (see Figure 7-9)—

- **Clear the Near Bank.** The first step in seizing a bridge is to clear the buildings on the near bank that overwatch the bridge and the terrain on the far side. The commander must find out which buildings dominate the approaches to the bridge. Buildings that permit him to employ anti-tank weapons, machine guns, and riflemen are cleared while supporting fire prevents the enemy from reinforcing his troops on the far bank and keeps enemy demolition parties away from the bridge.

- **Suppress.** Suppress enemy weapons on the far bank with direct and indirect fire. In suppressing the enemy's positions on the far bank, priority is given to those positions from which the enemy can fire directly down the bridge. Tanks and BFVs, are effective in this role. TOWs, Dragons, Javelins, and AT4s can be used against enemy tanks covering the bridge. Use screening smoke to limit enemy observation. All suppression must be consistent with the ROE.

- **Assault.** Seize a bridgehead (buildings that overwatch and dominate the bridge) on the far bank by an assault across the bridge. The objectives of the assaulting platoons are buildings that dominate the approaches to the bridge on the far side. One or two platoons assault across the bridge using all available cover while concealed by smoke. In addition to a frontal assault across the bridge, other routes should be considered. They are supported by the rest of the company team and any attached and OPCON forces. Once on the other side, they call for the shifting of supporting fire and start clearing buildings. When the first buildings are cleared, supporting fire is lifted and or shifted again and the assault continues until all the buildings in the objective area are cleared.

- **Clear the Bridge.** Secure a perimeter around the bridge so that the engineers can clear any obstacles and remove demolitions from the bridge. The company team commander may expand his perimeter to prepare for counterattack. Once the bridge is cleared, tanks, BFVs, and other support vehicles are brought across to the far bank.

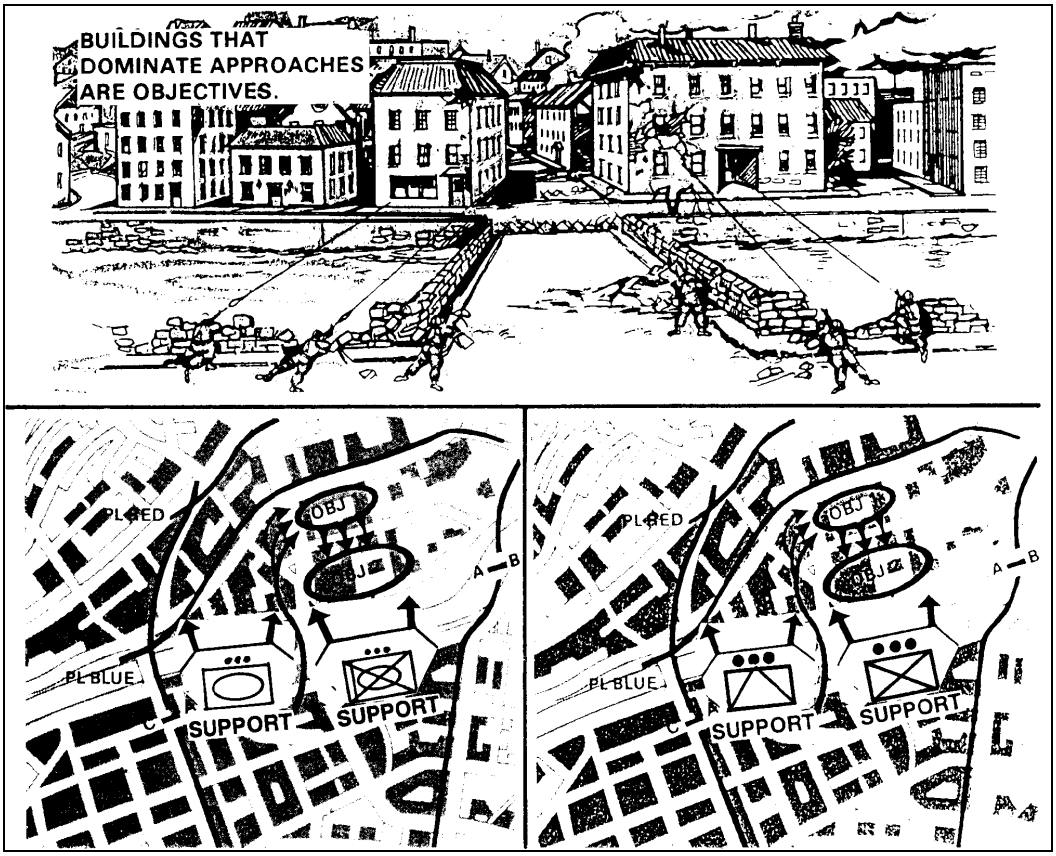


Figure 7-9. Seize a Bridge

SEIZURE OF A TRAFFIC CIRCLE

7-84. A company team may have to seize a traffic circle either to secure it for friendly use or to deny it to the enemy (see Figure 7-10). This operation consists of seizing and clearing the buildings that control the traffic circle, and bringing direct-fire weapons into position to cover it. After gathering all available intelligence on the terrain, enemy, and population, the commander takes the following steps:

- Isolates the objective.
- Seizes and or clears the buildings along the traffic circle.
- Consolidates and prepares for counterattack.

Troop Safety

7-85. Friendly troops should not venture into the traffic circle until it is secure. A traffic circle is a natural kill zone.

Task Organization

7-86. The company team should be organized with assault, support, and reserve elements based on the factors of METT-TC and the ROE.

- **Assault.** Seizes and or clears the terrain (buildings) that influence the objective. (For example, two rifle platoons, reinforced with engineers.)

- **Support.** Isolates the traffic circle and provides security. This element can be mounted (preferred) or dismounted; for example, an infantry squad with a section of BFVs, provides direct fire support for the assault element. The element should consist of tanks, and BFVs, occupying a support-by-fire position.
- **Reserve.** Reinforces the assault element on order. (Normally a detached squad from one of the BFV platoons.)

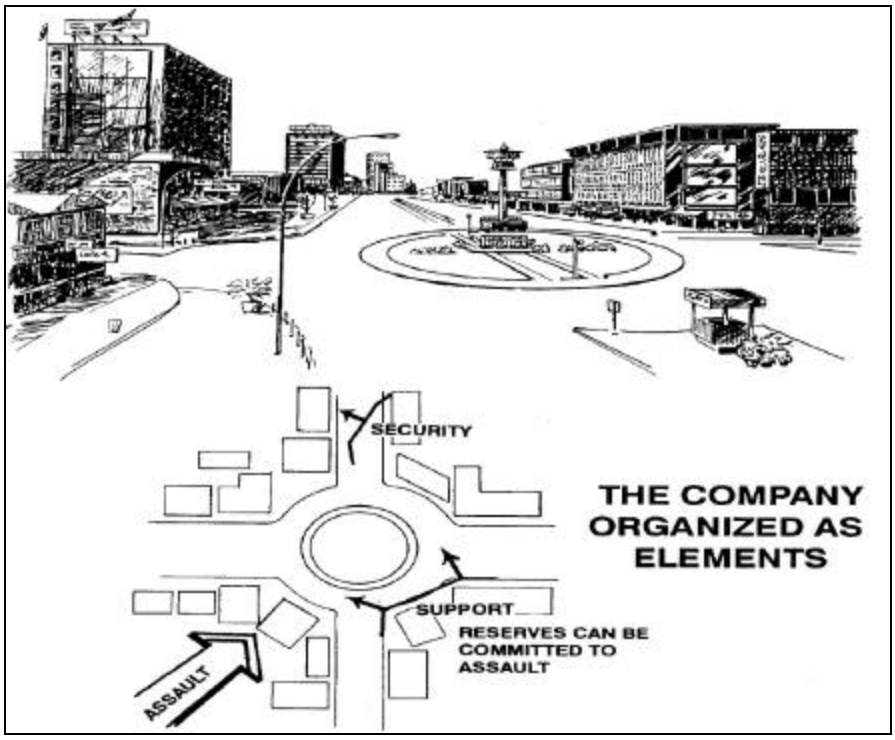


Figure 7-10. Seizure of a Traffic Circle

Flexibility

7-87. At various stages in this operation, roles may change. For example, the assault element may clear buildings until the support element can no longer support it. Then the reserve can be committed to the assault. It may also occur that one of the assault elements finds itself in a better position to isolate the traffic circle and becomes the support element. At that time, the isolating (support) element would become part of the assault element. The support element may also have to reposition to continue support.

7-88. At the task force level, the UO offense takes the form of either a hasty or deliberate attack. Both types of attack require the friendly force to conduct as much planning, reconnaissance, and coordination as time and the situation permit.

7-89. Task forces and company team conduct hasty attacks as a result of meeting engagements, when unexpected contact occurs and bypass has not been authorized, or when the enemy is in a vulnerable position and can be

quickly defeated through immediate offensive action. The following special considerations apply for hasty attacks in the UO environment:

- In built-up areas, incomplete intelligence and concealment may require the maneuver unit to move through, rather than around, the unit fixing the enemy in place (the base of fire element). Control and coordination become important factors in reducing congestion at the edges of the built-up area.
- Once its objective is secured, a UO hasty attack force may have to react to contingency requirements, either by executing on-order or be-prepared missions or by responding to FRAGOs.

Role of Tanks and Bradley Fighting Vehicles

7-90. The commander must employ tanks and BFVs to take advantage of their long-range lethality. He can usually do this by positioning the armored vehicles outside the built-up area, where they remain for the duration of the attack to cover high-speed avenues of approach. This is especially true during the isolation phase. (**NOTE:** Before providing support for the attack, tanks and BFVs must be able to maneuver into overwatch or base of fire positions; this will normally require support from organic infantry weapons to suppress enemy strongpoints and antitank guided missiles [ATGM] assets.) Tanks and BFVs are ideally employed outside the built up areas to take advantage of their long range lethality, however, the commander must consider the size of the threat and threat weapons inside the built-up area before relegating his mounted elements to strictly an overwatching role. Tanks and BFVs may initially occupy overwatch positions during the isolation phase of an urban attack, but the commander must plan to use his armored assets to move down streets in concert with his rifle squads providing mutual support and delivering suppressive fires to facilitate the clearance of a built up area.

Direction of Assault Technique of Direct Fire Control

7-91. In this technique, the company team commander assigns building numbers in a consistent pattern in relation to the direction of assault. Figure 7-11 shows an example of how the commander numbered the buildings consecutively, in a counterclockwise manner. Further, the sides of the buildings were color coded consistently throughout the objective area (WHITE=direction of assault side; GREEN=right side; BLACK=rear side; RED=left side; BLUE=roof). An odd-shaped building is also shown. Note that a *four-sided* concept was retained to minimize confusion. Further designations of WHITE 1, WHITE 2, WHITE 3, and so on from left to right can be added to specify which wall will be engaged. Apertures on the buildings are also labeled consecutively using rows and columns, as shown. In the example, “OBJ 4, WHITE, window A1” is the lower left-hand window on the direction of assault side of OBJ 4. All designations are labeled in relation to the direction of assault. (See FM 2-01.3 [FM 34-130] for additional information on building shapes and structural labeling.)

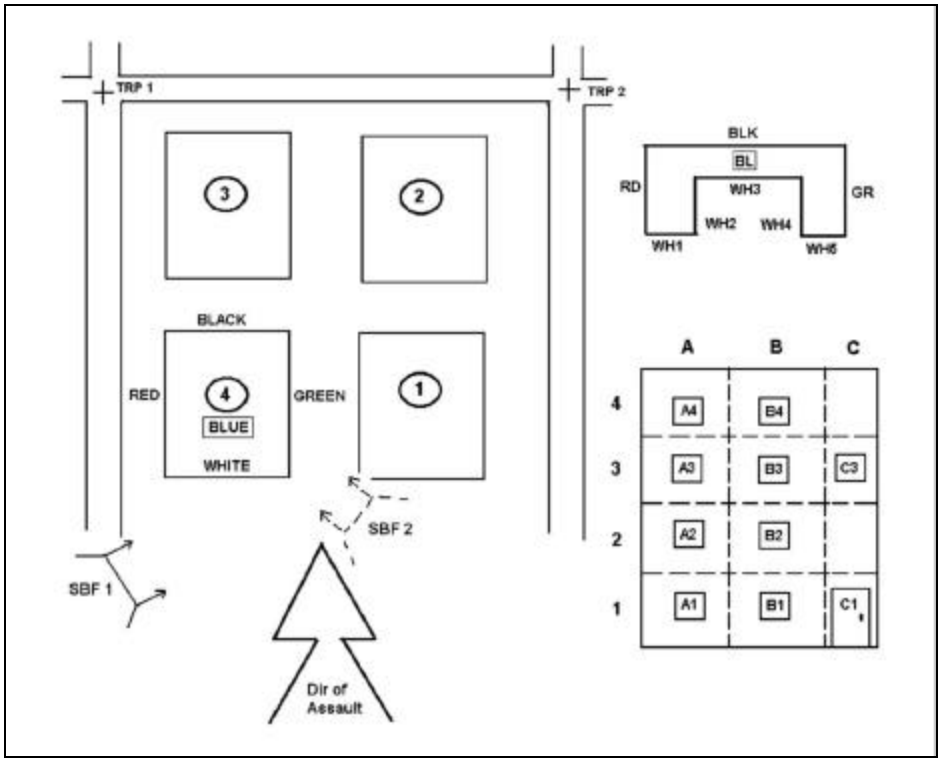


Figure 7-11. Direction of Assault Technique

MUTUAL SUPPORT

7-92. In house-to-house and street fighting, tanks and BFVs move down the streets protected by the infantry, which clears the area of enemy ATGM weapons. The armored vehicles in turn support the infantry by firing their main guns and machine guns from a safe standoff range to destroy enemy positions and create breaches in buildings. In addition to mutual support between dismounted infantry tank and Bradley crews must develop sound SOPs to provide mutual overwatch between vehicles when advancing in urban terrain. Figure 7-12 illustrates a task force attack in a UO environment.

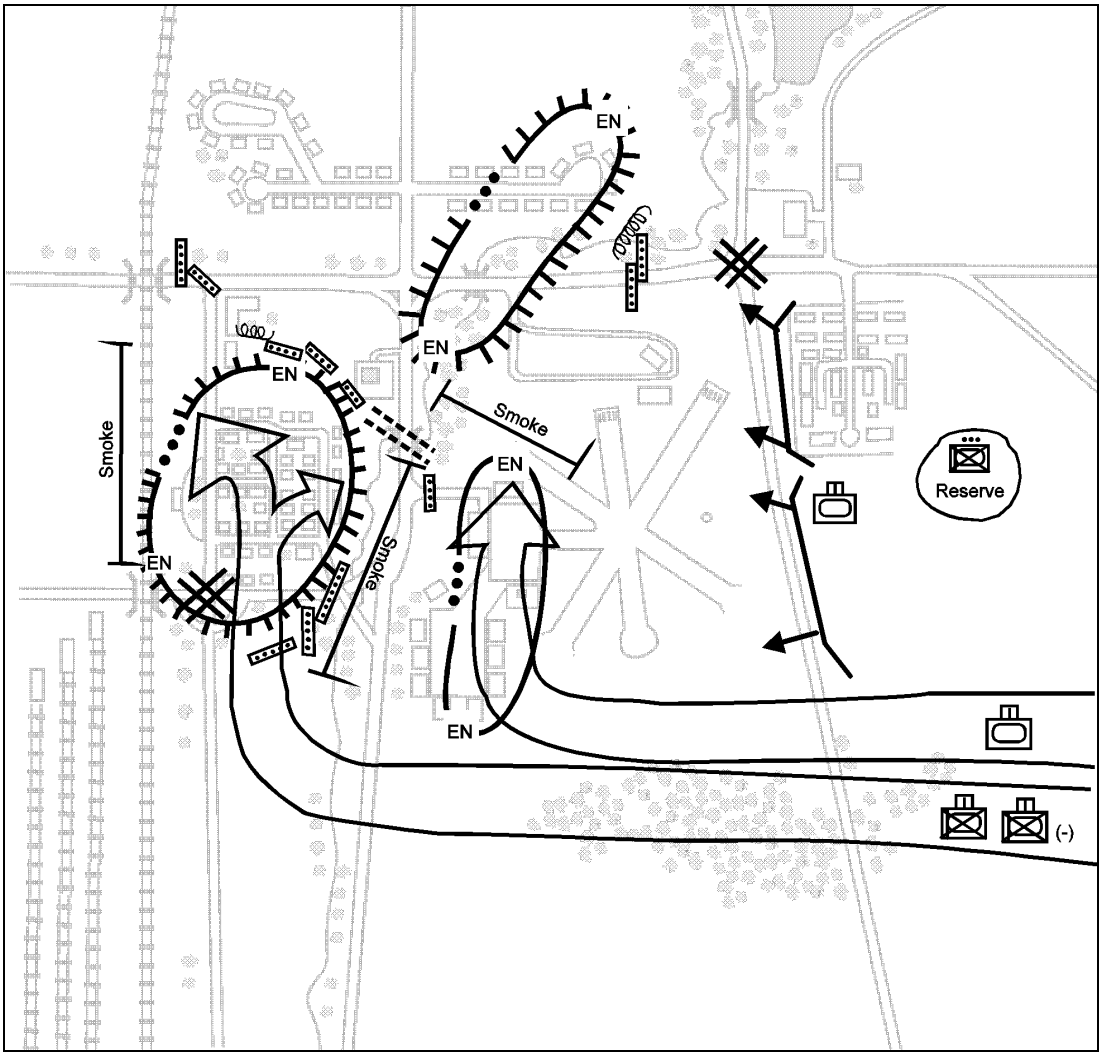
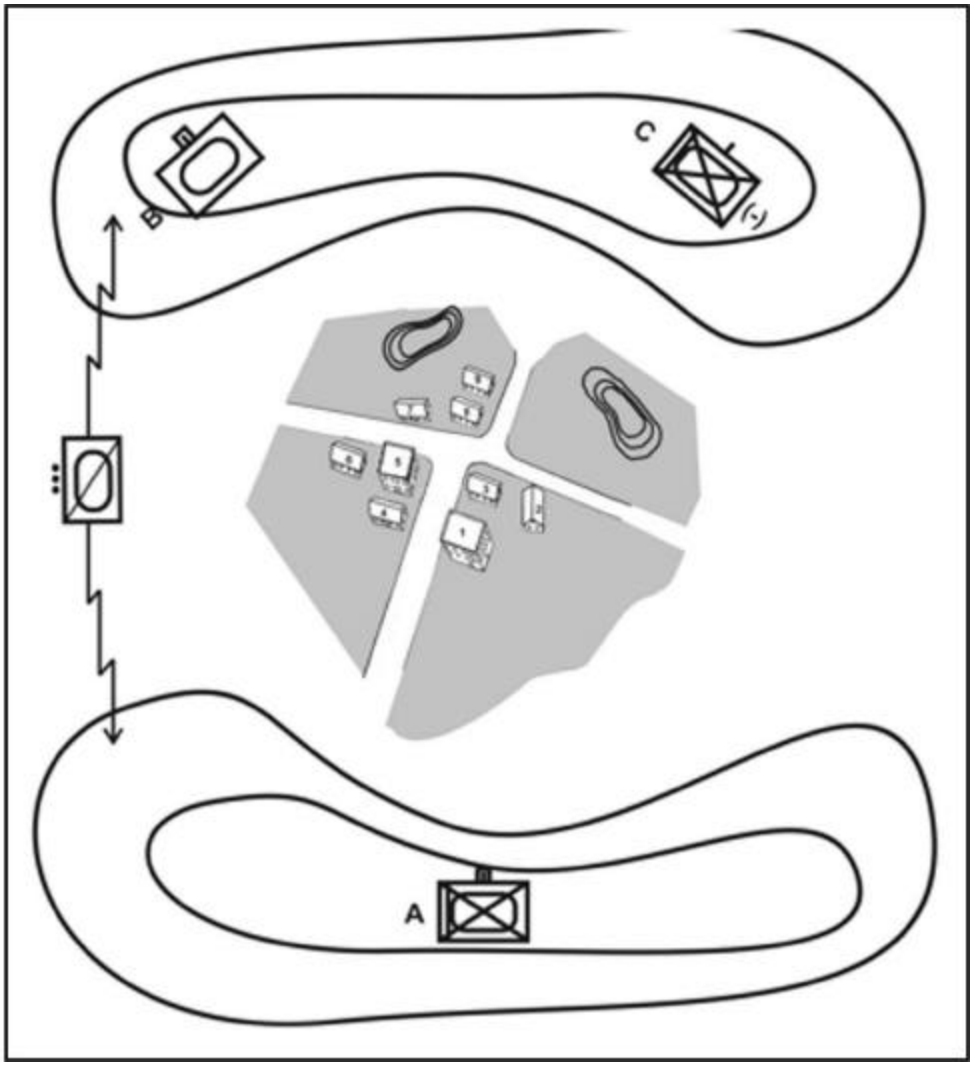


Figure 7-12. Example Task Force Attack in an Urban Operation

EXAMPLE OFFENSIVE URBAN OPERATION

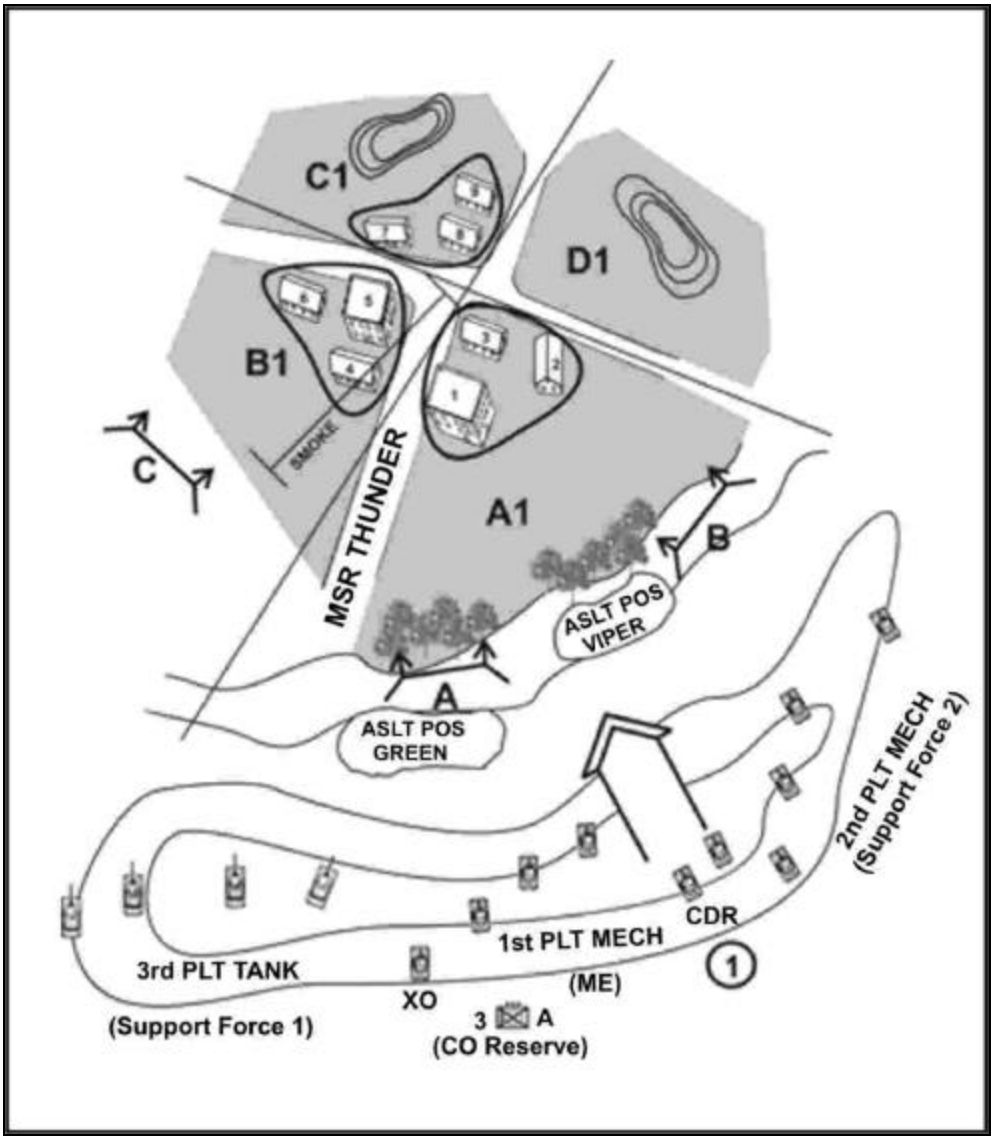
7-93. Figures 7-13a through 7-13f is a vignette in which a mechanized infantry company team has been tasked to seize a village.



Team A, 1-47 Infantry, a mechanized infantry company team (+), will conduct the decisive operation for the mechanized task force as the main effort. Alpha Team's task and purpose is to clear a village in order to allow freedom of movement along the MSR. Alpha Team is task organized with three mechanized infantry platoons, one tank platoon with three mine plows, and one engineer Sapper platoon. Enemy forces occupying the village consist of a platoon-size element armed with RPG-7s, one 12.7-mm machine gun several 7.62-mm machine guns and possibly one AT-3 ATGM. It is also reported by HUMINT sources that T-62 tanks and BMP 1s have been spotted in the area, but the estimate is that the armor will not be a factor due to friendly close air support.

TF 1-47 Infantry is a FBCB2 equipped, LCD design task force with one mechanized company team, one armor company team, and one mechanized infantry company (-). Bravo tank and Charlie Mech (-) have the task and purpose to isolate the objective in order to protect the decisive force from any armored threats. TF Scouts are screening the western flank of the task force. Task force mortars are in direct support of Team A. Alpha Team has completed phase one (reconnaissance) of offensive urban operations.

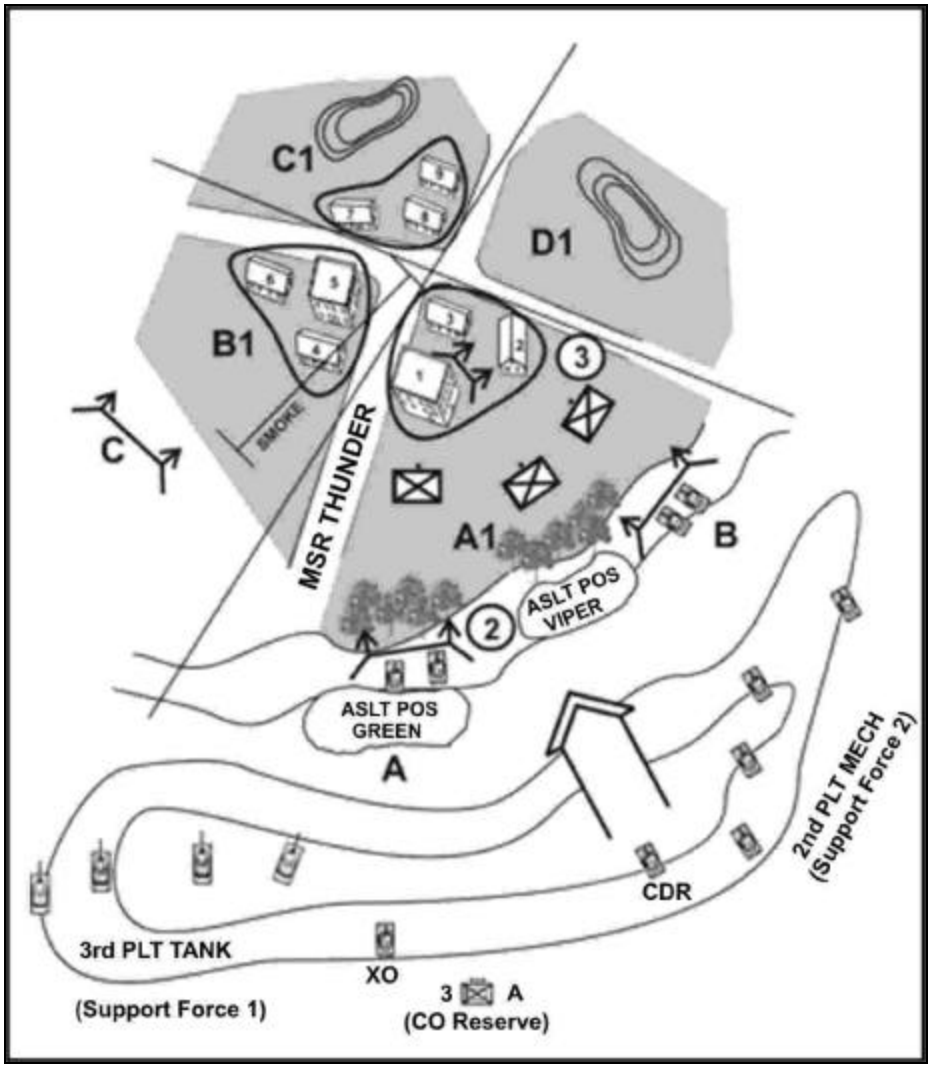
Figure 7-13a. Example of Company Team Seizing a Village



1. The company team commander issues final instructions in covered and concealed position prior to initiating 1st platoon's movement to assault position VIPER the infantry dismount point. Once the squads have dismounted, first platoon initiates movement to the objective to begin the assault on OBJ A.

The XO is located with support force 1 (the tank platoon) in order to provide C2. The commander trails the main effort first platoon as they bound using intervisibility lines south of the objective. Task force mortars, 2d platoon (support force 2) and the tank platoon suppress and isolate Objective A from Objectives B and C with mortar smoke and direct fires, 3d Platoon Charlie is the company team reserve.

Figure 7-13b. Example of Company Team Seizing a Village (Continued)



2. 1st platoon utilizes hand held smoke and direct fire from crew served and vehicle mounted weapons systems to isolate building one from buildings two and three in order to secure a foothold in Objective A.

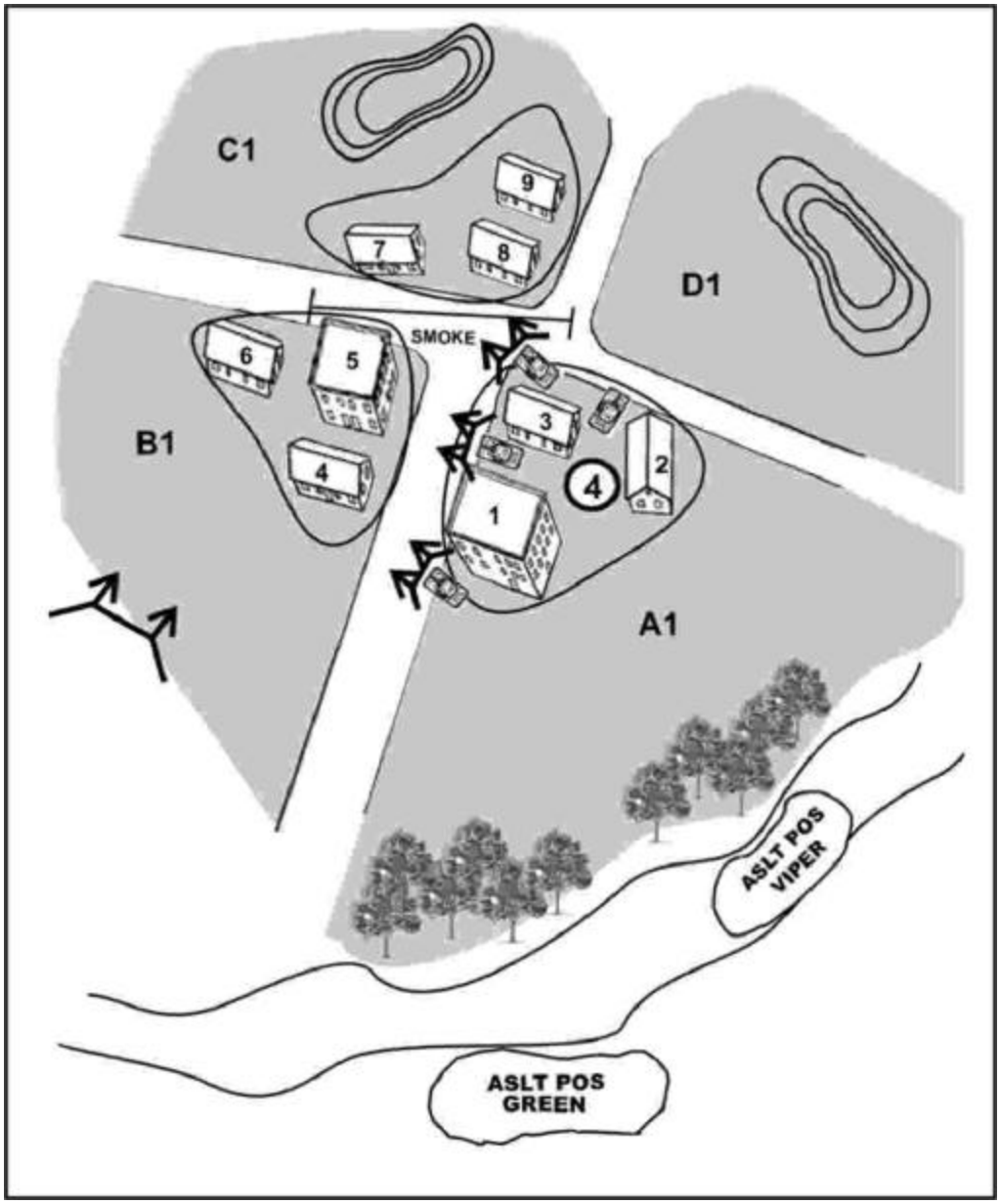
Attached engineer squads are prepared to reduce protective obstacles and provide necessary explosive breaches into buildings.

Direct fires from the tank platoon and 2d platoon are restricted to quadrants B1, C1 and D1 in order to reduce the potential of fratricide during the clearance of objective A.

3. When building one is cleared, a fire team from 1st squad provides supporting fires with the mounted element to isolate building two to allow second squad to seize the building and begin clearing the built-up area.

When building two is cleared 1st squad, 2d squad and the mounted element suppress and isolate building three to facilitate 3d squad's assault and clearance of building three.

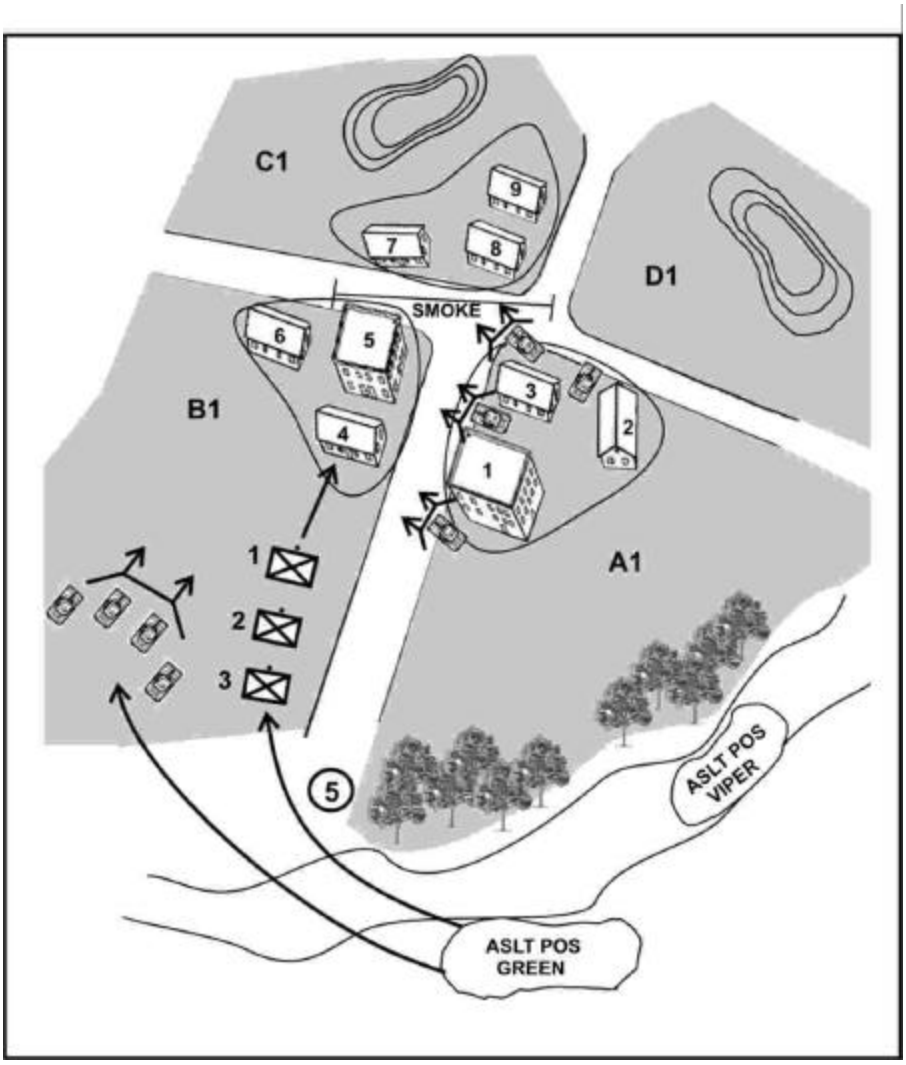
Figure 7-13c. Example of Company Team Seizing a Village (Continued)



4. Objective Alpha is secured. First platoon consolidates and reorganizes and establishes support by fire positions oriented on Objective Bravo in order to facilitate 3d platoon's assault on Objective Bravo. 3d platoon now becomes the main effort and 2d platoon becomes the positional reserve for the company team.

Smoke is shifted to quadrant C1 to isolate objective Bravo. First platoon isolates the foothold building four from buildings five and six with mounted and dismounted direct fires. 2d platoon continues to provide support by fire overwatch on OBJ Charlie in order to protect 3d platoon's assault on OBJ Bravo.

Figure 7-13d. Example of Company Team Seizing a Village (Continued)

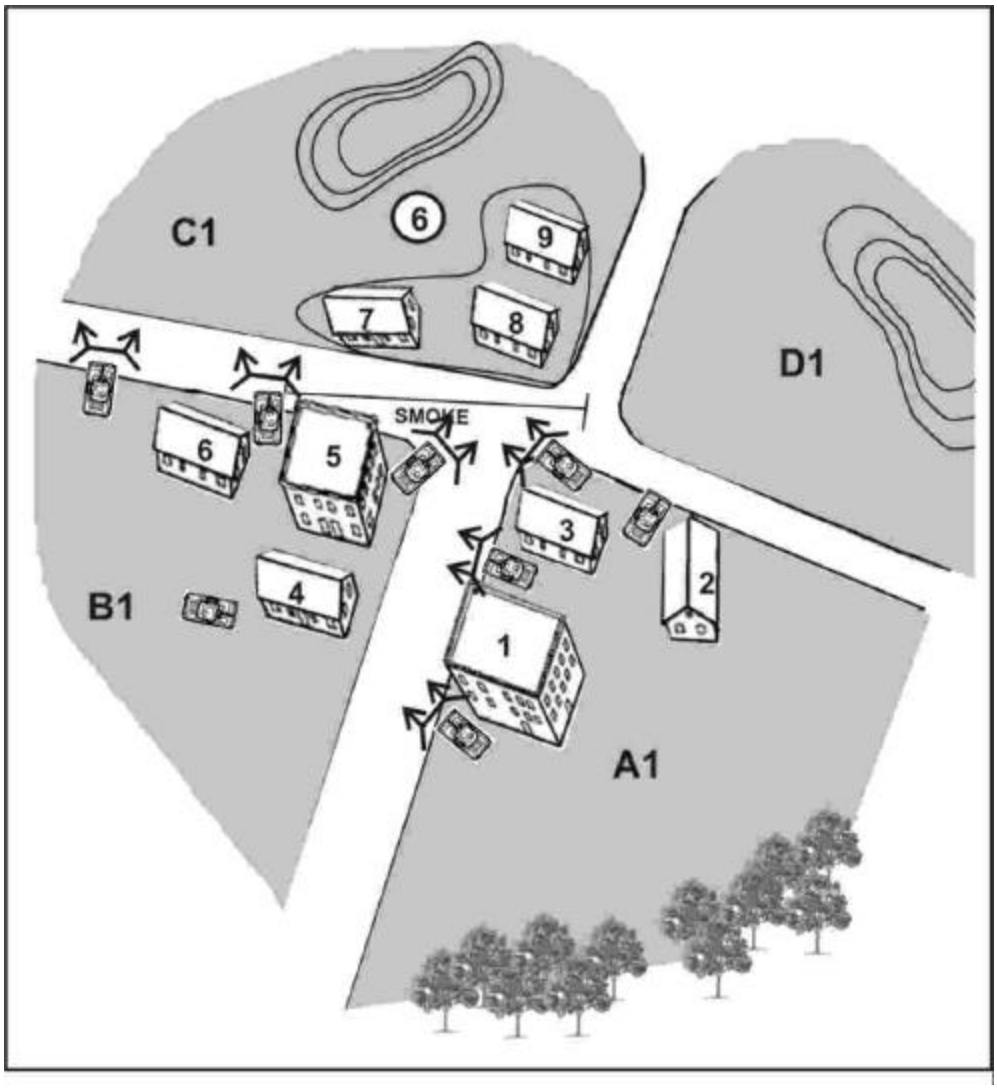


5. The 3d platoon maneuvers to assault position GREEN the infantry dismount point and dismounts its infantry squads. First platoon lifts and shifts fires to Objective Charlie when 3d platoon conducts the assault on foothold building four. Once building four is secured and cleared by 1st squad/3d platoon, 2d squad/3d platoon assaults building five with the mounted element and 1st squad providing suppressive fires on building six to isolate building five and facilitate its clearance.

When 2d squad clears building five, third squad prepares to assault building six. Again, first platoon provides suppressive fires on objective Charlie with 2d squad/3d platoon providing overwatch for the assault on building six.

When building six is cleared, third platoon consolidates and reorganizes. The company team commander then determines if he has sufficient combat power to clear Objective Charlie with first and third platoons. If not, one section with two squads from 2d platoon is ordered to clear objective Charlie.

Figure 7-13e. Example of Company Team Seizing a Village (Continued)



6. The company team clears objective Charlie employing the same techniques used to clear objectives A and B.

Figure 7-13f. Example of Company Team Seizing a Village (Continued)

CSS DURING URBAN OFFENSIVE OPERATIONS

7-94. Sustaining the tank and mechanized infantry company team during offensive UO presents several challenges to the company team leadership. The nature of urban combat has a high propensity for heavy casualties, ammunition expenditure, and high consumption of general supplies.

7-95. The typical lack of maneuver space caused by narrow streets, rubble, debris and noncombatants hinders the company team from

resupplying itself in the same manner as during linear operations on open terrain. In order to maintain momentum during an attack, the company team should consider pushing the maximum amount of supplies forward prior to the attack. During the attack the XO and 1SG should plan for successive sites for LOGPACs along the axis of advance in support of the scheme of maneuver.

7-96. The intensity of the operation may preclude the company trains from moving forward to the location of the platoons, therefore rotating platoons rearward to a resupply point is a method to replenish supplies while maintaining the momentum of the attack. Additionally, the company team commander must plan for multiple resupply routes to maintain flexibility.

7-97. For example, during a deliberate attack, if the width of the AO does not require or allow the company commander to utilize all his BFVs and tanks simultaneously, he with the XO and 1SG can develop a plan for BFVs and tanks to rotate rearward to refuel and rearm and carry supplies forward to the rifle squads who might have been left as a DLIC. This technique of resupply was used effectively during the Battle of Seoul in September 1950.

7-98. CASEVAC in UO is particularly challenging. Significant risk is accepted when bringing evacuation assets forward to the point of injury. In most cases casualties, once treated by a combat lifesaver should be evacuated to a company casualty collection point for additional treatment and evacuation to the battalion aid station. Due to organizational constraints of having only two medics assigned, the commander along with the XO and 1SG must develop an estimate where the casualty collection point should be located to best support the company team.

7-99. Another technique that is effective for delivering, meals ready-to-eat (MRE), water, medical supplies and small arms ammunition is the “speed ball” delivered by helicopters. This method delivers preconfigured loads of supplies by helicopters flying low into the AO to drop points on the ground and releasing supplies to troops on the ground. This technique is fast, but is limited to certain classes of supplies due to weight constraints and practicality.

SECTION III – DEFENSIVE URBAN OPERATIONS

7-100. Like offensive UO, defensive operations in a built-up area require thorough planning and precise execution based on METT-TC and established doctrine. This portion examines UO considerations that affect the company team in the defense.

ENEMY FORCES OUTSIDE THE URBAN AREA

7-101. While positioned in an urban area, the company team may be tasked to defend against an enemy approaching from outside the area. In general, procedures and considerations are the same as those for defensive operations in open terrain. For example, the commander designates BPs that take advantage of all available weapon systems. Objectives are similar as well; these may include preventing the enemy from isolating the defensive position, conducting reconnaissance of the defensive position, and/or gaining a foothold in the urban area. This type of UO may transition into an in-depth defense of the urban area, as described in the following paragraph, if the attacker continues to commit forces to the battle and the defending force fails to divert or destroy them.

ENEMY FORCES WITHIN THE URBAN AREA

7-102. The company team may be called upon to conduct any of several types of defensive operations (including defend in sector, defend a strongpoint, and defend a BP) when it faces enemy forces within the urban area. Procedures and considerations for these defensive operations are generally similar to those used in more conventional open terrain situations. The commander should designate EAs that take advantage of integrated obstacles and urban terrain features and that can be covered by direct and indirect fires. Figure 7-14 illustrates a defensive UO.

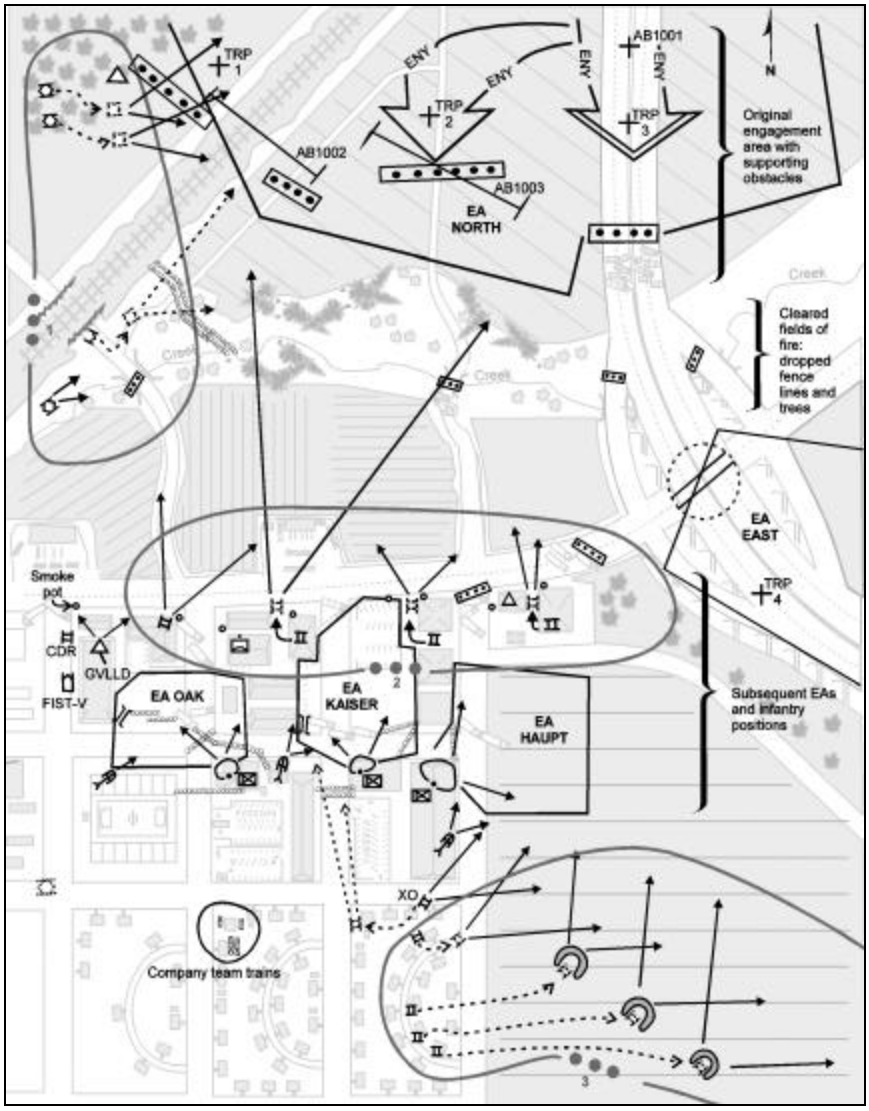


Figure 7-14. Example Company Team Defense in Sector in an Urban Environment

DEFENSIVE TECHNIQUES IN URBAN OPERATIONS

ROLE OF TANKS AND BRADLEY FIGHTING VEHICLES

7-103. In the defense, tanks and BFVs provide the UO commander with a mobile force that can respond quickly to enemy threats. They should be located on likely enemy avenues of approach in positions that allow them to take advantage of their long-range fires. Effective positioning allows the commander to employ the armored vehicles in a number of ways, such as the following:

- On the edge of the city in mutually supporting positions, delivering overwhelming precision fires.
- On key terrain on the flanks of towns and villages.

- In positions from which they can cover barricades and obstacles by fire.
- As part of the reserve.

7-104. Tanks and BFVs are normally employed as a platoon. The company team commander also has the alternative of employing sections with attached infantry platoons and squads; this allows tanks and BFVs to take advantage of the close security provided by the infantry. Employment of individual tanks and BFVs with light infantry is highly discouraged. Although, light infantry provides effective local security, a section of tanks or BFVs providing mutual overwatch and rapid fire armor killing capabilities ensure rapid effective response or deterrence to enemy AT threats both mounted and dismounted.

FIGHTING POSITIONS

7-105. Fighting positions for tanks and BFVs are an essential component of a complete and effective defensive plan in built-up areas. Vehicle positions must be selected and developed to afford the best possible cover, concealment, observation, and fields of fire; at the same time, they must not restrict the vehicles' ability to move when necessary. The following considerations apply:

- If fields of fire are restricted to the street area, hull-down positions should be used to provide cover and to enable tanks and BFVs to fire directly down the streets. From these positions, the armored vehicles are protected while retaining their ability to rapidly move to alternate positions. Buildings collapsing from enemy fires are a minimal hazard to the armored vehicles and their crews.
- Before moving into position to engage the enemy, a tank or BFV can occupy a hide position for cover and concealment. Hide positions for armored vehicles may be located inside buildings or underground garages, adjacent to buildings (using the buildings to mask enemy observation), or in culverts (see Figure 7-15 for an example of a tank using a hide position in an UO environment.)
- Since the crew will not be able to see the advancing enemy from the hide position, an observer from the vehicle or a nearby infantry unit must be concealed in an adjacent building to alert the crew. When the observer acquires a target, he signals the armored vehicle to move to the firing position and, at the proper time, to fire.
- After firing, the tank or BFV moves to an alternate position to avoid compromising its location.

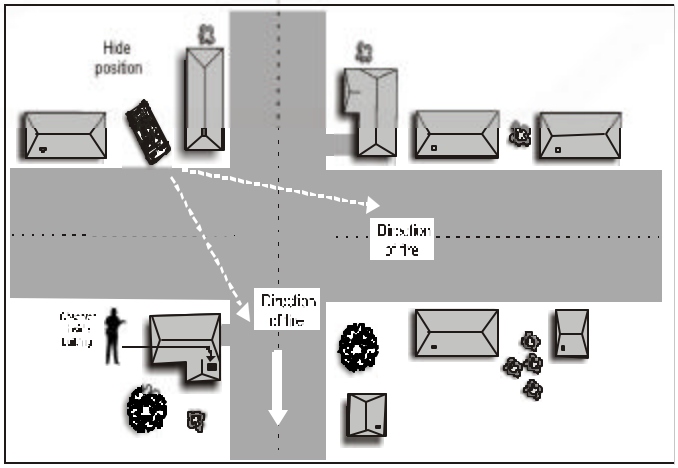


Figure 7-15. Example vehicle hide position in an urban environment

EMPLOYMENT OF INFANTRY RIFLE SQUADS

7-106. Infantry rifle squads are usually employed abreast so that they all can fire toward the expected direction of attack. In the company team however, the limited number of available infantrymen may require squad positions to be interspersed with vehicle positions. In built-up areas, squads may be separated by rooms within a building, or they may be positioned in different buildings. Infantry positions must be mutually supporting and allow for overlapping sectors of fire, even when they are in separate buildings or are divided by walls.

EMPLOYMENT OF THE RESERVE FORCE

7-107. The commander's defensive scheme of maneuver in UO must always include the employment of a reserve force. This force should be prepared to counterattack to regain key positions, to block enemy penetrations, to protect the flanks of the friendly force, or to provide a base of fire for disengaging elements. For combat in built-up areas, the reserve force has these characteristics:

- It normally consists of infantry elements.
- It must be as mobile as possible.
- It may be supported by tanks and/or BFVs.
- In company team UO, the reserve force may be a platoon or squad.

HASTY DEFENSE

7-108. A very likely defensive mission for the Infantry company team in urban terrain will be to conduct a hasty defense. This mission is characterized by reduced time for the preparation of the defense. All of the TLP are the same. The priorities of work will basically be the same, but many will take place concurrently. Units will be deployed, weapons emplaced, and positions prepared in accordance with the mission analysis and amount of time the company team commander has available. Companies must be prepared to conduct a hasty defensive mission as part of stability operations and support operations.

OCCUPATION AND PREPARATION OF POSITIONS

7-109. Preparations for the hasty defense will vary with the time available. The preparations described below will generally take between two to four hours. In a hasty defense, the primary effort is to camouflage and conceal the presence of the hasty fighting positions and provide as much protection as possible for the soldiers manning them. Positions are constructed back from the windows in the shadows of the room using appliances, furniture, and other convenient items and materials. The emphasis on fortifying positions and making major alterations to the environment is reduced. These actions will occur after security has been established.

POSITION CREW-SERVED AND SPECIAL WEAPONS

7-110. Generally, they will be employed from the inside of buildings, unless an outside position is preferable and can be protected and camouflaged. Armored vehicles can exploit longer fields of fire or a reverse slope engagement using buildings to protect the vehicle's position.

EMPLACE BARRIERS AND OBSTACLES

7-111. Lack of time means there will be two belts established and they will not be as extensive as in a defense that permits more time. Cover all obstacles with observation and fire.

First Belt

7-112. The first belt is usually between 50 to 100 meters from and parallel to the defensive trace. It will normally consist of wire obstacles, improvised barriers, road craters, and minefields. For example, burning tires and trash have proven to be effective obstacles on urban terrain. Antitank and command detonated mines are used consistent with the ROE. This belt blocks, fixes, turns, or canalizes the enemy; disrupts attack formations; and inflicts casualties.

Second Belt

7-113. The second belt is the denial belt. It consists of wire obstacles placed around, through, and in the defensive buildings and close-in mine fields as well as in subsurface accesses. It impedes and complicates the enemy's ability to gain a foothold in the defensive area. Command detonated Claymores are used extensively consistent with the ROE. Claymores are placed where they will not cause friendly casualties.

FIELD-EXPEDIENT OBSTACLES

7-114. Field-expedient obstacles made from available materials, such as rubble, cars and light poles, should be employed.

PREPARE POSITIONS

7-115. Squads and platoons prepare positions using whatever materials are available; for example, filling dressers or other furnishings with earth or other materials.

REHEARSALS

7-116. Conduct rehearsals with leaders and soldiers concerning the orientation of the defense, unit positions, location of crew served weapons, CASEVAC, resupply, execution of counterattack plans, withdrawal plan, and so on. One of the more important rehearsals to conduct is the

synchronization of direct and indirect fires to accomplish the commander's intent.

MOVEMENT ENHANCEMENT

7-117. There will not be much time to improve movement within the defense. Units should plan to use subsurface and supersurface (through buildings) routes. Priority should be given to removing obstructions to alternate positions and to the counterattack route.

COMMUNICATIONS

Check Communications

7-118. Communications is initially radio. Plans are made for messengers, and routes improved for them. Wire is emplaced as an improvement to the defense as time and the terrain allows.

NOTE: The digital force has the potential to provide accurate threat information that can enhance situational understanding that helps facilitate targeting and obstacle placement. Joint Surveillance Target Attack Radar System (JSTARS); GUARDRAIL; unmanned aerial vehicles, if present; and other reconnaissance assets will significantly improve the threat situational understanding and targeting capability of the unit.

Improving the Defense

7-119. As time permits, the following areas can be given consideration and prioritized in accordance with METT-TC.

- Sleep plan.
- Barrier and obstacle improvement.
- Improvement of primary and alternate positions.
- Preparation of supplementary positions.
- Additional movement enhancement efforts.
- Initiation of patrols.
- Improvement of camouflage.
- Maintenance/refueling.
- Continued rehearsals for counterattack and withdrawal.

DEFENSE OF A VILLAGE

7-120. An infantry company team may be given the mission to defend a village (see Figure 7-16). Once the company team commander has completed his reconnaissance of the village, he scouts the surrounding terrain and, with the information assembled, he develops his plan for the defense. One of his first decisions is whether to defend with his Infantry on the leading edge of the village or farther back within the confines of the village. Normally, defending on the leading edge will be more effective against an armor heavy force, where the defending company team can take advantage of longer range observation and fields of fire. Defending in depth within the village will be more effective against a primarily Infantry heavy force, in order to deny the enemy a foothold. This decision will be based on the factors of METT-TC. This mission is usually characterized with the company team

defending an urban area that is surrounded by open terrain. The company team may need to coordinate with adjacent units to plan for the defense or control of this terrain.

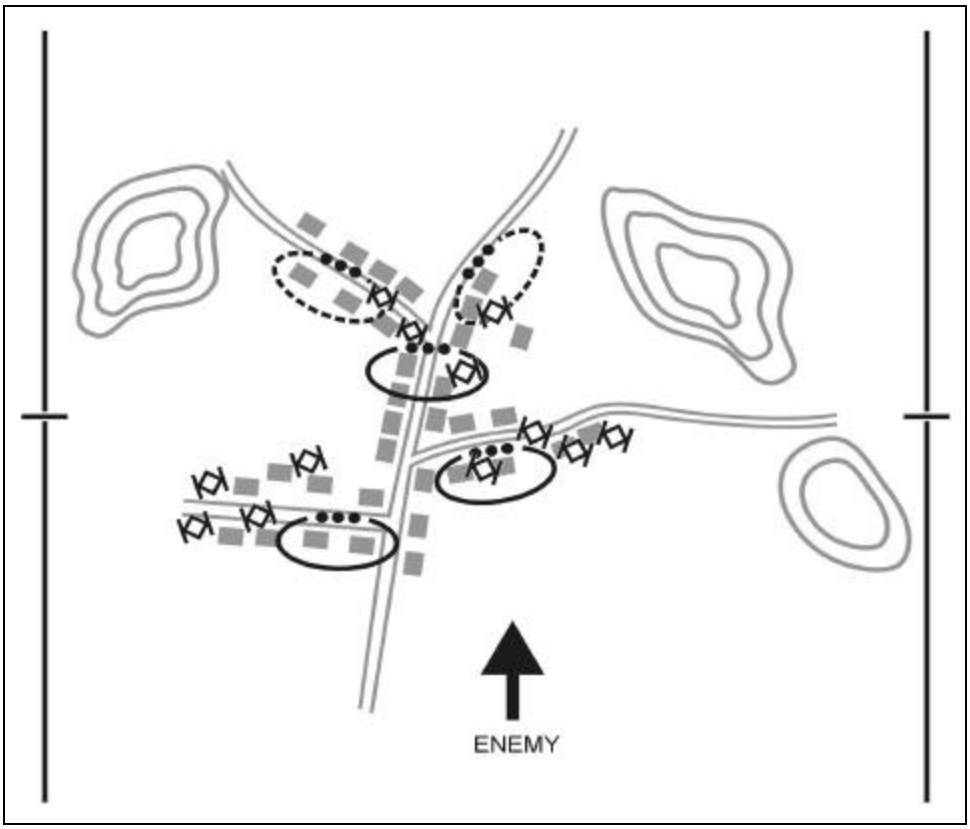


Figure 7-16. Mechanized Infantry Rifle Company Defense of a Village

Influencing Factors

7-121. Several factors influence the commander's decision. First, he must know the type of enemy that his company team defends against. If the threat is mainly infantry, the greater danger is allowing them to gain a foothold in the village. If the threat is armor or motorized infantry, the greatest danger is that massive direct fire destroys the company team's defensive positions. The company team commander must also consider the terrain forward and to the flanks of the village from which the enemy can direct fires against his positions.

Platoon Battle Positions

7-122. Based on the mission analysis, platoons are normally given a small group of buildings in which to prepare their defense, permitting the platoon leader to establish mutually supporting squad-sized positions. This increases the area that the platoon can control and hampers the enemy's ability to isolate or bypass a platoon. A platoon may be responsible for the road through the village. The rest of the company team is then positioned to provide all-round security and defense in depth.

Bradley Fighting Vehicle

7-123. Based on METT-TC considerations, BFVs may be placed along the forward edge of the urban area to engage enemy armored vehicles. Friendly armored vehicles can also be placed in positions to the rear of the buildings and interior courtyards where their weapon systems can provide added rear and flank security. Combat vehicles are assigned primary, alternate, and supplementary positions as well as primary and secondary sectors of fire. They should be positioned in defilade behind rubble and walls or inside buildings for movement into and out of the area. Armored vehicles can also be used for resupply, CASEVAC, and rapid repositioning during the battle. BFVs can also provide a mobile reserve for the company team. If a mechanized infantry platoon is attached, it is controlled through its chain of command. If a mechanized infantry section is attached, it can be controlled through the senior squad leader.

Tanks

7-124. The company team commander should place the tanks along the leading edge where rapid fire would be complemented by the antitank weapons of the infantry rifle squads. The tank platoon leader should select exact firing positions and recommend EAs. If faced by enemy infantry, the tanks move to alternate positions with the protection of friendly infantry. These alternate positions allow the tanks to engage to the front as well as the flanks with as little movement as possible. Positions can be selected within buildings and mouseholes can be constructed. After they are withdrawn from the leading edge of the village, the tanks could provide a mobile reserve for the company team.

Final Protective Fires

7-125. FPFs are planned to address the biggest threat to the company team—the enemy's infantry. When firing an FPF inside an urban area is required, mortars are more effective than artillery. This situation is true due to their higher angle of fall that gives them a greater chance of impacting on the street.

Barriers and Obstacles

7-126. Obstacles are easily constructed in an urban area. The company team commander must stop enemy vehicles without interfering with his own movement in the village. Therefore, the company team detonates cratering charges at key street locations on order. Mines are laid on the outskirts of the town and along routes the company team will not use. Barriers and obstacles are normally emplaced in three belts. If attached or OPCON, the tank or BFV platoon leader can assist the commander by giving advice on where to place antivehicular obstacles.

Engineers

7-127. The supporting engineers use C4 and other explosives to make firing ports, mouseholes, and demolition obstacles. Based upon his priority of work, the commander tells the engineer squad leader to assist each of the infantry platoons preparing the village for defense and to execute the company team's obstacle plan. The engineer squad leader's mission is to tell the infantrymen exactly where to place the demolitions and how much is

needed for the desired effect. He assists in preparation of charges. He also assists in the emplacement and recording of the minefields as well as the preparation of fighting positions.

Communications

7-128. To ensure adequate communications, redundant verbal and nonverbal communications are planned and checked. The company team installs a wire net and develops a plan for pyrotechnic signals. Lay backup wire in case the primary lines are cut by vehicles, fires, or the enemy. The commander also plans for the use of messengers throughout the village.

DEFENSE OF A BLOCK OR GROUP OF BUILDINGS

7-129. An infantry company team operating in urban terrain may have to defend a city block or group of buildings in a core periphery or residential area. The company team conducts this operation in accordance with the battalion task force's defensive scheme of maneuver. The operation should be coordinated with the action of security forces charged with delaying to the front of the company team's position. The defense should take advantage of the protection of buildings that dominate the avenues of approaches into the MBA. This mission differs from defense of a village in that it is more likely to be conducted completely on urban terrain, without surrounding open terrain that characterizes the defense of a village. A mechanized infantry company team is better suited for this type of mission, since the fighting will require the enemy to move infantry into the urban area in order to seize and control key terrain (see Table 5-1 on page 5-8.)

TASK AND PURPOSE

7-130. A well-organized company team defense in an urban area—

- Defeats the enemy's attack on the streets and city blocks by using obstacles and fire.
- Destroys the enemy by ambush and direct fire from prepared positions within defensible buildings.
- Clears the enemy from footholds or remains in place for a counterattack.

RECONNAISSANCE AND SECURITY

7-131. The execution of the mission will be more effective if the terrain is reconnoitered and obstacles and fire lanes are prepared. The listening posts (LP)/OPs should be supplemented by patrols, mainly during periods of limited visibility, and wire communications should be used. Platoons should be given the mission to provide one LP/OP in order to provide SPOTREP concerning the size, location, direction and rate of movement, and type of enemy assaulting the company team sector or BP.

TASK ORGANIZATION

7-132. METT-TC factors will determine how the company team will be task organized to accomplish the mission. A possible task organization might be—

- **Platoons.** Three platoons (one platoon minus a squad) occupy the defensive sector.

- **Reserve.** Detached squad from one of the rifle platoons. The reserve should be given priority of commitment missions such as reinforcing the fires of the defense, reacting to a danger on the flank, or counterattacking to throw the enemy from a foothold. The biggest threat to the company team is for the enemy to gain a foothold and use it to begin clearing buildings. Any foothold should be counterattacked and the enemy must be quickly and violently expelled. The company team XO can be used to control a reserve with multiple elements.

- **Fire Support.** Task force mortars.

- **Company Team Control.** An engineer squad, with priority to the company team obstacle plan, then reverts to company team reserve. Engineers should be controlled at company team level. They construct obstacles, prepare access routes, and assist in preparing defensive positions. A tank platoon can initially attack by fire and then revert to a positional reserve role.

- **Execution.** The defensive forces should ambush on the avenues of approach, cover the obstacles by fire, and prepare a strong defense inside the buildings. Counterattack forces should be near the front of the company team sector in covered and concealed positions with an on order mission to counterattack. Rehearsals should be conducted both day and night. Counterattack forces should also be given specific instructions of what their actions will be after the enemy assault has been repelled; for example, stay in sector or revert back to reserve status.

DEFENSE OF KEY URBAN TERRAIN

7-133. A company team may have to defend key urban terrain. This defense may be part of defensive operations or may be an adjunct mission to stability and support operations. In many cases, the mission is characterized by an unclear enemy situation and extremely restrictive ROE. The key terrain may be a public utility, such as gas, electrical, or water plants; a communications center, such as radio and or television; transportation center; a traffic circle; and so forth. When assigned a mission of this type, a company team commander may often find his company team having to defend a piece of terrain that he would rather not have to occupy. Often the facilities previously described are sited for their centrality of location and convenience and not for the defensibility of the terrain.

TASK ORGANIZATION

7-134. The factors of METT-TC will determine the task organization of the company team. Figure 7-17 depicts a mechanized infantry company team reinforced with an additional rifle platoon to defend the objective (water purification plant). Additional assets will be given to the company team commander as they are requested or assigned, based on mission requirements and availability. In the situation depicted in Figure 7-17, the organic weapons of the mechanized infantry company team are sufficient to accomplish the mission. The only additional requirement was an additional rifle platoon to defend the objective.

TASKS

7-135. In the situation shown in Figure 7-17, the company team commander has determined that in order to properly defend the objective, he needs to deploy platoons on the defensible terrain available. Therefore, he is defending urban terrain (left), high ground (top), and low vegetated terrain (right, bottom). Additionally, it may be necessary to perform some of the tasks listed below:

- Provide inner and outer security patrols.
- Conduct counterreconnaissance.
- Establish LP/OPs.
- Establish checkpoints and roadblocks.
- Conduct civilian control and evacuation.
- Conduct coordination with local authorities.
- Prevent collateral damage.
- Supervise specific functions associated with operation of the facility, such as water purification tests, site inspections, and so forth.

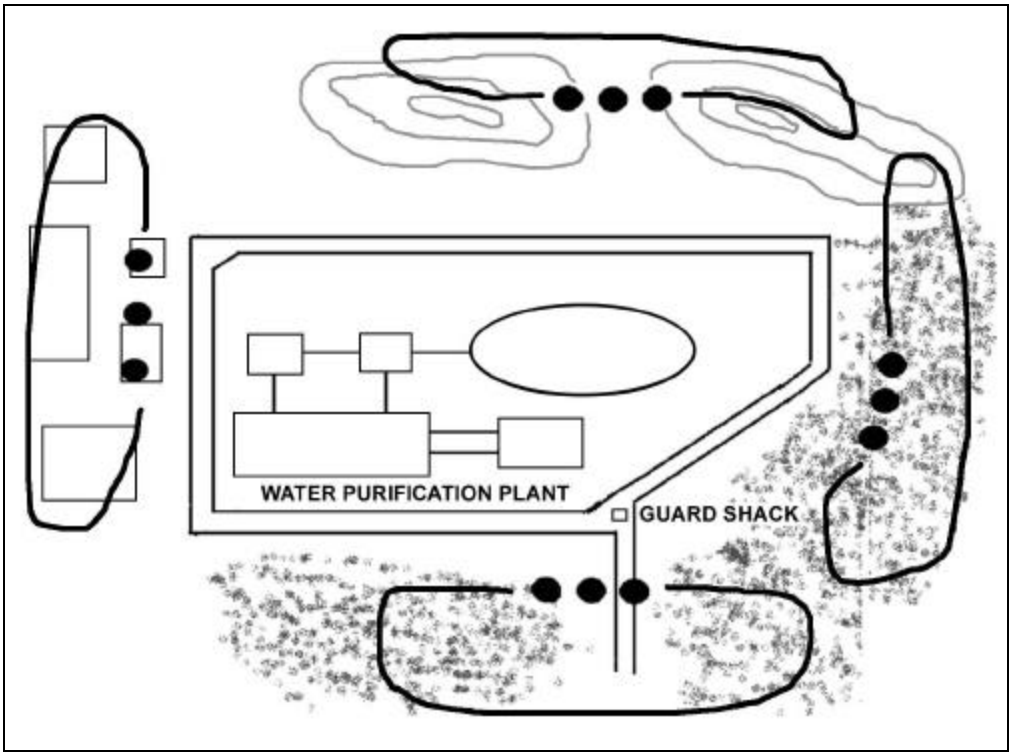


Figure 7-17. Perimeter Defense of Key Terrain

EXECUTION

7-136. The company team commander will normally deploy platoons in a perimeter around the objective in order to dominate key terrain and cover the mounted and dismounted avenues of approach into the objective. BFVs, tanks, machine guns and AT weapons will be emplaced to cover the mounted and dismounted avenues of approach into the objective, respectively. Wire obstacles will normally be used to restrict and deny entry into the objective area. Obstacles should be covered by fire and rigged with detection devices and trip flares. AT and command-detonated mines will be used consistent with the ROE. The company team prepares to defend against a direct attack, such as a raid, or sabotage against key facilities within the objective, for example, water filtration system, pump station, and so forth. The commander makes an assessment as to the overall importance of the key facilities within the objective and prioritizes security requirements.

OTHER CONSIDERATIONS

7-137. Depending on the mission requirements and threat, the company team commander may have to consider the need for the following.

- Artillery and attack helicopter support.
- ADA assets to defend against air attack.
- Engineer assets to construct obstacles.
- Interpreters to assist in the functioning of the facility and operation of the equipment.

- MP, CA, and or psychological operations (PSYOP) assets for civilian control and liaison/ coordination with local police and or authorities.
- BFVs or tanks to act as a mobile reserve or reaction force, or integrated into the company team plan.

FORCE PROTECTION

7-138. The company team may be required to conduct a perimeter defense as part of force protection, such as defending a friendly base camp on urban terrain. The same techniques of establishing a perimeter defense would be used. The company team maintains the appropriate level of security (100, 50, 30 percent, and so forth), consistent with the commander's plan and the enemy situation. Additional tasks may include—

- Setting up roadblocks and checkpoints.
- Searching individuals and vehicles prior to entry into the camp.
- Maintaining a presence as a show of force to the population outside the base camp.
- Conducting inner and outer security patrols.
- Clearing potential threats from any urban terrain that overwatches the base camp.
- Conducting ambushes to interdict any enemy forces moving towards the base camp.
- Restricting access to locations within the base camp. Conducting surveillance of these locations from within or from adjacent structures or positions.
- Conducting reaction force duties inside and outside the perimeter of the camp.

DEFENSE OF A TRAFFIC CIRCLE

7-139. An Infantry company team may be assigned the mission of defending a key traffic circle in an urban area, or similar terrain, to prevent the enemy from seizing it or to facilitate movement of the battalion task force or other units (see Figure 7-18).

7-140. The company team commander with this mission should analyze enemy avenues of approach into the objective and buildings that dominate those avenues. He should plan direct and indirect fires, consistent with the ROE, on to the traffic circle itself and on the approaches to it. He should also plan for all-round defense of the buildings that dominate the traffic circle to prevent encirclement. The company team should prepare as many covered and concealed routes between these buildings as time permits. This makes it easier to mass or shift fires and to execute counterattacks.

7-141. Obstacles can also deny the enemy the use of the traffic circle. Obstacle planning, in this case, must take into account whether friendly forces will need to use the traffic circle.

7-142. AT weapons can fire across the traffic circle if fields of fire are long enough. Tanks should engage enemy armored vehicles and provide heavy direct-fire support for counterattacks. BFVs should engage enemy armored vehicles and provide direct fire to protect obstacles.

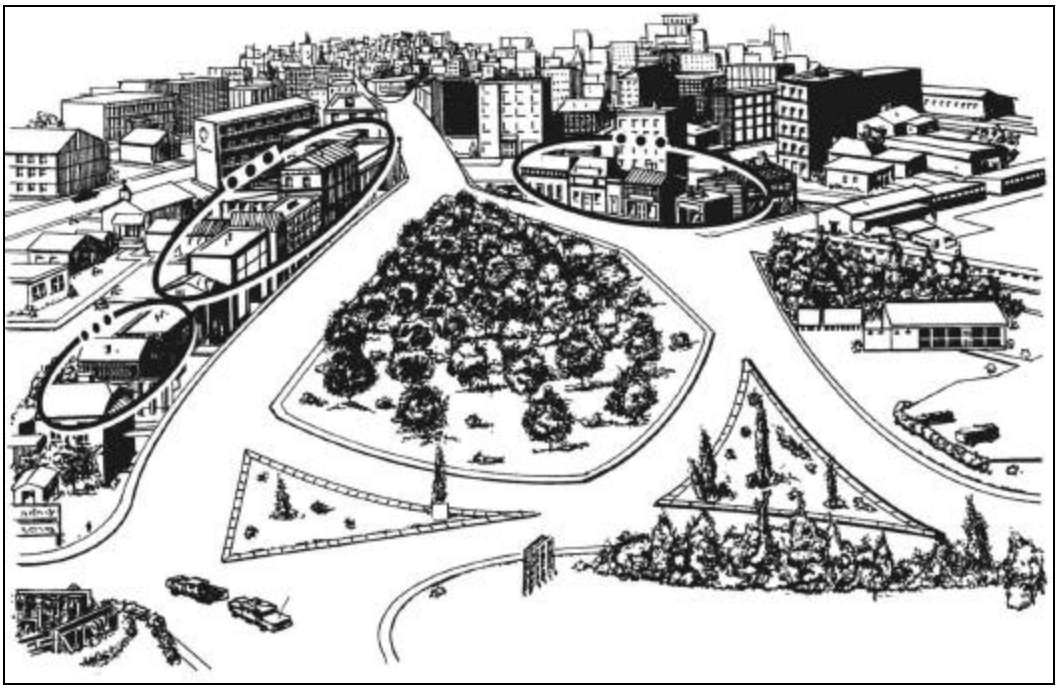


Figure 7-18. Defense of a Traffic Circle

DEFENSE OF AN URBAN STRONGPOINT

7-143. A company team may be directed to construct a strongpoint as part of a battalion defense (see Figure 7-19). In order to do so, it must be augmented with engineer support, more weapons, and CSS resources. A strongpoint is defended until the unit is formally ordered out of it by the commander directing the defense. Urban areas are easily converted to strongpoints. Stone, brick, or steel buildings provide cover and concealment. Buildings, sewers, and some streets provide covered and concealed routes and can be rubbled to provide obstacles. Also, telephone systems can provide communications.

7-144. The specific positioning of unit in the strongpoint depends on the commander's mission analysis and estimate of the situation. The same considerations for a perimeter defense apply in addition to the following:

- Reinforce each individual fighting position (to include alternate and supplementary positions) to withstand small-arms fire, mortar fire, and artillery fragmentation. Stockpile food, water ammunition, pioneer tools, and medical supplies in each fighting position.
- Support each individual fighting position with several others. Plan or construct covered and concealed routes between positions and along routes of supply and communication. Use these to support counterattack and maneuver within the strongpoint.

- Divide the strongpoint into several independent, but mutually supporting, positions or sectors. If one of the positions or sectors must be evacuated or is overrun, limit the enemy penetration with obstacles and fires and support a counterattack.
- Construct obstacles and minefields to disrupt and canalize enemy formations, to reinforce fires, and to protect the strongpoint from the assault. Place the obstacles and mines out as far as friendly units can observe them, within the strongpoint, and at points in between where they will be useful.
- Prepare range cards for each position and confirm them by fires. Plan indirect fires in detail and register them. Indirect fires should also be planned for firing directly on the strongpoint using proximity fuses.
- Plan and test several means of communication within the strongpoint and to higher headquarters. These are radio, wire, messenger, pyrotechnics, and other signals.
- Improve or repair the strongpoint until the unit is relieved or withdrawn. More positions can be built, routes to other positions marked, existing positions improved or repaired, and barriers built or fixed.

7-145. A strongpoint may be part of any defensive plan. It may be built to protect vital units or installations, as an anchor around which more mobile units maneuver, or as part of a trap designed to destroy enemy forces that attack it.

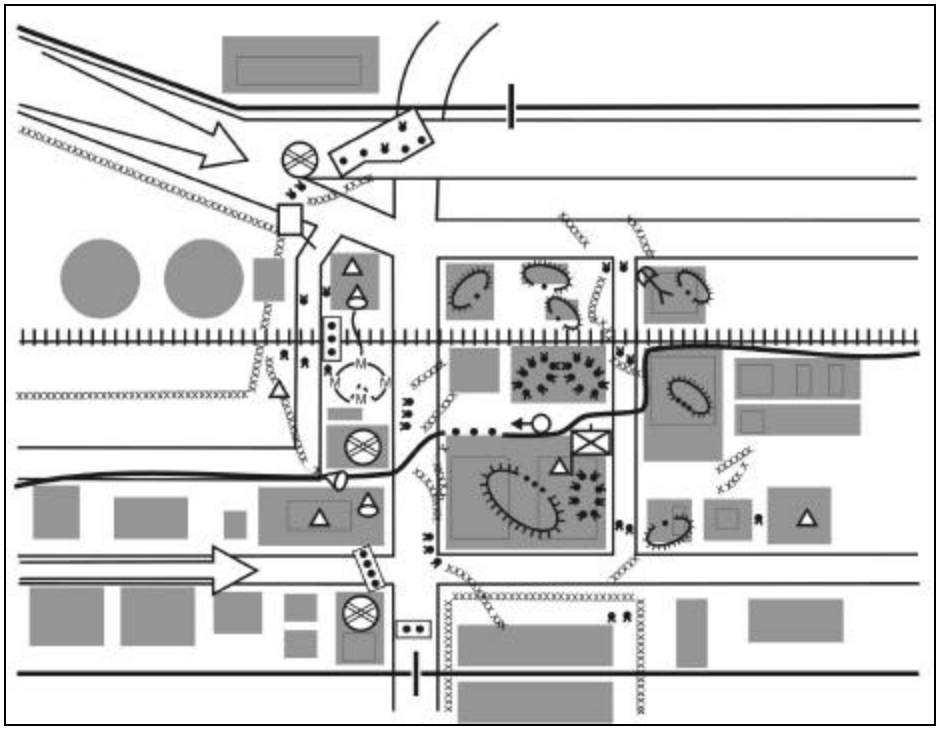


Figure 7-19. Urban Strongpoint

DELAY

7-146. The intent of a delay is to slow the enemy, cause casualties, and stop him, where possible, without becoming decisively engaged. This procedure is done by defending, disengaging, moving, and defending again. A company team delay is normally conducted as part of the battalion task force's plan. The delay destroys enemy reconnaissance elements forward of the outskirts of the urban area, prevents the penetration of the urban area, and gains and maintains contact with the enemy to determine the strength and location of the main attack by trading space for time. Delays are planned by assigning platoon BPs, platoon sectors, or both. Figure 7-20 depicts a company team delay in urban terrain with the company team commander assigning platoon BPs. Routes are planned to each subsequent BP or within the sector. Routes also are planned to take advantage of the inherent cover and concealment afforded by urban terrain, such as going through and hugging buildings, using shadows, subsurface areas, and so forth.

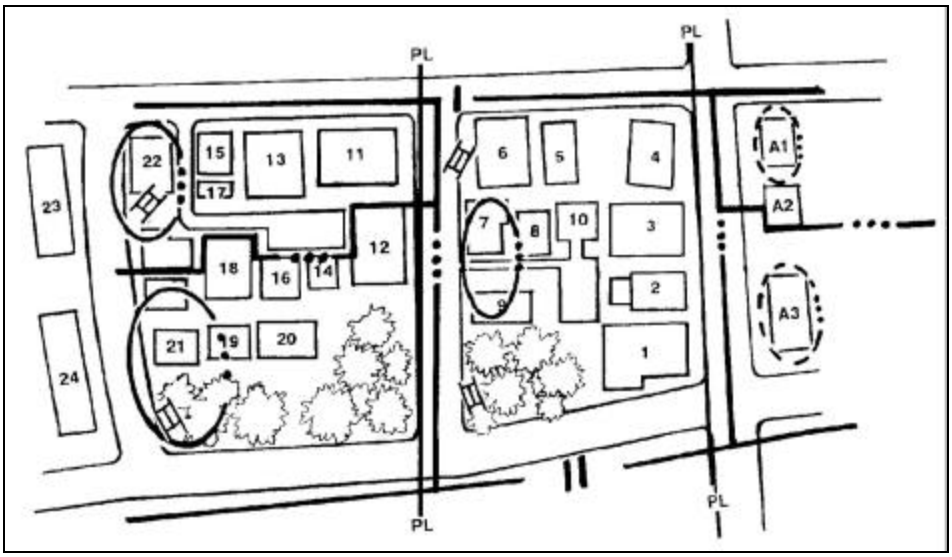


Figure 7-20. Company Team Delay in an Urban Area

7-147. The company team's sector should be prepared with obstacles to increase the effect of the delay. Engineers prepare obstacles on main routes but avoid some covered and concealed routes that are known by the friendly troops for reinforcement, displacement, and resupply. These routes are destroyed and obstacles are executed when no longer needed.

7-148. Tanks, BFVs, and anti-armor weapon systems should be positioned on the outskirts of the urban area to destroy the enemy at maximum range. They should be located in defilade positions or in prepared shelters. They fire at visible targets and then fall back or proceed to alternate positions. Platoons should be assigned sectors from 100 to 300 meters (one to two blocks) wide. Platoons delay by detecting the enemy early and inflicting casualties on him using patrols, OPs, and ambushes and by taking advantage of all obstacles. Each action is followed by a disengagement and withdrawal. Withdrawals occur on covered and concealed routes through

buildings or underground. By day, the defense is dispersed; at night, it is more concentrated. Close coordination and maintaining situational understanding are critical aspects of this operation.

COMBAT SERVICE SUPPORT DURING DEFENSIVE URBAN OPERATIONS

7-149. When defending in UO, company teams must maximize the pre-positioning of supplies and utilize caches to sustain the defensive fight. The defense is easier to sustain than the offense with the assumption that LOGPAC sites are secure and that forces will not advance significant distances while defending.

7-150. METT-TC will dictate which technique will be more effective. If frequent repositioning is expected then operating a centralized resupply point might be the best method for sustainment. On the other hand, if significant obstacles or rubble lie between company elements then caches might be the best method to keep platoons sustained.

7-151. CASEVAC in the defense presents similar challenges as it does in the offense. The limited number of medics assigned to the company team requires the company team leadership to develop an estimate of the situation and determine where best to position medics and where to accept risk with combat lifesavers. Route rehearsals from vehicle and rifle squad fighting positions to the company CCP by both the platoons and the company medics are crucial to expedient evacuation of casualties from the battlefield.

Chapter 8

Stability Operations and Support Operations

Stability operations and support operations apply military power to influence the political environment, to facilitate diplomacy, and to interrupt or prevent specific illegal activities. These operations cover a broad spectrum. At one end are development and assistance activities aimed at enhancing a government's willingness and ability to care for its people. At the other are coercive military actions; these involve the application of limited, carefully prescribed force, or the threat of force, to achieve specific objectives. Army elements may be tasked to conduct stability operations to accomplish one or more of the following purposes:

- Deter or thwart aggression.
- Reassure allies and friendly governments, agencies, or groups.
- Provide encouragement and/or support for a weak or faltering government.
- Stabilize an area with a restless or openly hostile population.
- Maintain or restore order.
- Lend force, or the appearance of force, to national or international agreements and policies.

See the following publications for more detailed information on stability operations FM 3-07 (FM 100-20), FM 3-07.3 (FM 100-23), FM 3-07.7 (FM 100-19), FM 3-0 (FM 100-5), FM 3-90.2 (FM 71-2), and FM 3-90.3 (FM 71-3).

CONTENTS

Planning Considerations 8-2
Decentralized Operations 8-2
Rules of Engagement 8-2
Rules of Interaction 8-2
Force Protection 8-2
Task Organization 8-3
Combat Service Support Considerations 8-3
Media Considerations 8-3
Operations with Outside Agencies 8-3
Types of Stability Operations 8-3
Noncombatant Evacuation Operations 8-3
Support to Domestic Civil Authority 8-4
Peace Enforcement Operations 8-4
Support to Insurgency and Counter-Insurgency Operations 8-4
Combating Terrorism 8-4
Support to Counterdrug Operations 8-5
Arms Control and Nation Assistance 8-5
Company Team Tasks 8-5
Establish and Occupy a Lodgment Area 8-5
Conduct Negotiations 8-9
Monitor Compliance with an Agreement 8-12
Establish Observation Posts 8-12
Establish Checkpoints 8-13
Conduct Patrolling 8-17
Planning Considerations 8-17
Organization 8-17
Headquarters 8-18
Elements 8-18
Conduct Convoy Escort 8-20
Open and Secure Routes 8-26
Conduct Reserve Operations 8-27
Support Operations 8-27
Types of Support Operations 8-27
Foreign Humanitarian Assistance 8-28
Categories of Support Operations 8-29
Considerations for Support Operations 8-31
Provide Essential Support to the Largest Number of People 8-31
Coordinate Actions with Other Agencies 8-31
Establish Measures of Effectiveness 8-32
Handover to Civilian Agencies As Soon As Feasible 8-32
Transition to Combat 8-32
Phase of Support Operations 8-32

SECTION I – PLANNING CONSIDERATIONS

8-1. The following paragraphs examine several important considerations that will influence planning and preparation for stability operations. (See FM 3-07.3 [FM 100-23] for a more detailed discussion of these subjects.)

DECENTRALIZED OPERATIONS

8-2. Although stability operations are normally centrally planned, execution often takes the form of small-scale, decentralized actions conducted over extended distances. Responsibility for making decisions on the ground will fall to junior leaders. Effective command guidance and a thorough understanding of ROE (see the following paragraph) are critical at each tactical level.

RULES OF ENGAGEMENT

8-3. The ROE are directives that explain the circumstances and limitations under which US forces initiate and/or continue combat engagement with hostile forces. These rules reflect the requirements of the laws of war, operational concerns, and political considerations when the operational environment shifts from peace to conflict and back to peace.

8-4. ROE must be briefed and trained to the lowest tactical level. They should be established for, disseminated to, and thoroughly understood by every soldier in the unit. Another important consideration in development and employment of ROE is that commanders must assume that the belligerents they encounter will also understand the ROE; these unfriendly elements will attempt to use the ROE to their own advantage (and to the disadvantage of the friendly force). (See FM 3-07.3 [FM 100-23] for a more detailed discussion of ROE.)

RULES OF INTERACTION

8-5. These directives, known as the ROI, embody the human dimension of stability operations; then lay the foundation for successful relationships with the myriad of factions and individuals that play critical roles in these operations. ROI encompass an array of interpersonal communication skills, such as persuasion and negotiation. These are tools the individual soldier will need to deal with the nontraditional threats that are prevalent in stability operations, including political friction, unfamiliar cultures, and conflicting ideologies. In turn, ROI enhance the soldier's survivability in such situations.

8-6. ROI are based on the applicable ROE for a particular operation; they must be tailored to the specific regions, cultures, and/or populations affected by the operation. Like ROE, ROI can be effective only if they are thoroughly rehearsed and understood by every soldier in the unit.

FORCE PROTECTION

8-7. Commanders must implement appropriate security measures to protect the force. Establishment of checkpoints, effective base camp security procedures, and aggressive patrolling are examples of force protection measures.

TASK ORGANIZATION

8-8. Because of the unique requirements of stability operations, the company team may be task organized to operate with a variety of units. This includes some elements with which the team does not normally work, such as linguists, psychological operations (PSYOP) teams, and civil affairs (CA) teams.

COMBAT SERVICE SUPPORT CONSIDERATIONS

8-9. The operational environment the company team faces during stability operations may be very austere, creating special CSS considerations. These factors include, but are not limited to, the following:

- Reliance on local procurement of certain items.
- Shortages of various critical items, including repair parts, Class IV supply materials, and lubricants.
- Special Class V supply requirements such as pepper spray.
- Reliance on bottled water.

MEDIA CONSIDERATIONS

8-10. The presence of the media is a reality that confronts every soldier involved in stability operations. All leaders and soldiers must know how to deal effectively with broadcast and print reporters and photographers. This should include an understanding of which subjects they are authorized to discuss and which ones they must refer to the public affairs office (PAO).

OPERATIONS WITH OUTSIDE AGENCIES

8-11. US Army units may conduct certain stability operations in coordination with a variety of outside organizations. These include other US armed services or government agencies as well as international organizations (including private volunteer organizations, nongovernmental organizations, and UN military forces or agencies).

SECTION II – TYPES OF STABILITY OPERATIONS

8-12. FM 3-0 (FM 100-5) categorizes stability operations into several activities. The boundaries between these activities are not always well defined nor are they meant to be exhaustive. This portion provides an introductory discussion of stability activities. (See FM 3-0 [FM 100-5] and FM 3-21.98 [FM 7-98] for more detailed information.)

NONCOMBATANT EVACUATION OPERATIONS

8-13. Noncombatant evacuation operations (NEO) are primarily conducted to evacuate US citizens whose lives are in danger, although they may also include natives of the host nation and third-country aliens friendly to the United States. These operations involve swift insertion and temporary occupation of an objective, followed by a planned withdrawal. Leaders use only the amount of force required for self-defense and protection of evacuees.

SUPPORT TO DOMESTIC CIVIL AUTHORITY

8-14. Domestic support operations are conducted by military forces in support of federal and state officials under provisions of, and limited by, the Posse Comitatus Act and other laws and regulations (see FM 3-07.7 [FM 100-19]). Actions defined by the US Congress as threats to national security warranting military support include drug trafficking, illegal immigration, and customs violations.

PEACE ENFORCEMENT OPERATIONS

8-15. Peace operations encompass three general areas—diplomatic (peacemaking), traditional peacekeeping, and threatened or actual forceful military actions (peace enforcement). The company team may participate in peacekeeping or peace enforcement operations.

PEACEKEEPING OPERATIONS

8-16. A peacekeeping force facilitates truce negotiations and political settlement of disputes. In doing so, it must assure each side in the dispute that other parties are not taking advantage of settlement terms to their own benefit. Peacekeeping differs from internal security in that the force does not act in support of a government. Rather, the peacekeeping force must remain entirely neutral; if it loses a reputation for impartiality, its usefulness within the peacekeeping mission is destroyed.

PEACE ENFORCEMENT

8-17. Several unique characteristics distinguish peace enforcement activities from wartime operations and from other stability operations. The purpose of peace enforcement is to maintain or restore peace under conditions broadly defined at the international level. It may entail combat, armed intervention, or physical threat of armed intervention. Under the provisions of an international agreement, the task force and its subordinate company teams may be called upon to use coercive military power to compel compliance with international sanctions or resolutions.

SHOW OF FORCE

8-18. Forces deployed abroad lend credibility to a nation's promises and commitments. In support of this principle, show of force operations are meant to reassure a friendly nation or ally through a display of credible military force directed at potential adversaries. These operations may also be conducted to influence foreign governments or political-military organizations to respect US interests.

SUPPORT TO INSURGENCY AND COUNTERINSURGENCY OPERATIONS

8-19. This type of support includes assistance provided by US forces to help a friendly nation or group that is attempting to combat insurgent elements or to stage an insurgency itself. This type of stability activity is normally conducted by special operation forces (SOF).

COMBATING TERRORISM

8-20. In all types of stability operations, antiterrorism and counterterrorism activities are a continuous requirement in protecting installations, units, and individuals from the threat of terrorism. Antiterrorism focuses on defensive measures. Counterterrorism

encompasses a full range of offensive measures to prevent, deter, and respond to terrorism. (See JCS Publications 3-07.2 and ST 17-16-1 Combating Terrorism, for more information on these activities.)

SUPPORT TO COUNTERDRUG OPERATIONS

8-21. US military forces may be tasked for a variety of counterdrug activities, which are always conducted in conjunction with another government agency. These activities include destroying illicit drugs and disrupting or interdicting drug manufacturing, growing, processing, and smuggling operations. Counterdrug support may take the form of advisory personnel, mobile training teams, offshore training activities, as well as assistance in logistics, communications, and intelligence.

ARMS CONTROL AND NATION ASSISTANCE

8-22. Tank and mechanized company teams may work with another nation's military to conduct arms control or nation assistance activities. These types of support usually entail short-term, high-impact operations.

SECTION III – COMPANY TEAM TASKS

ESTABLISH AND OCCUPY A LODGMENT AREA

8-23. A lodgment area is a highly prepared position used as a base of operations in stability operations. Like an assembly area or defensive strongpoint, the lodgment provides a staging area for the occupying unit, affords a degree of force protection, and requires 360-degree security.

8-24. At the same time, several important characteristics distinguish the lodgment area from less permanent positions. Most notable is the level of preparation and logistical support required for long-term occupation. The lodgment must have shelters and facilities that can support the occupying force and its attachments for an extended period. The area must be positioned and developed so the unit can effectively conduct its primary missions (such as peace enforcement or counterterrorism) throughout its area of responsibility.

8-25. In establishing the lodgment, the company team may use existing facilities or request construction of new facilities. A key advantage in using existing structures is immediate availability; this also reduces or eliminates the need for construction support from engineers and members of the team. There are disadvantages as well. Existing facilities may be inadequate to meet the team's operational needs, and they may pose security problems because of their proximity to other structures.

8-26. The company team may establish and occupy a lodgment area as part of a task force or, with significant support from the controlling task force, as a separate element. Figure 8-1 illustrates a company team lodgment area established using existing facilities.

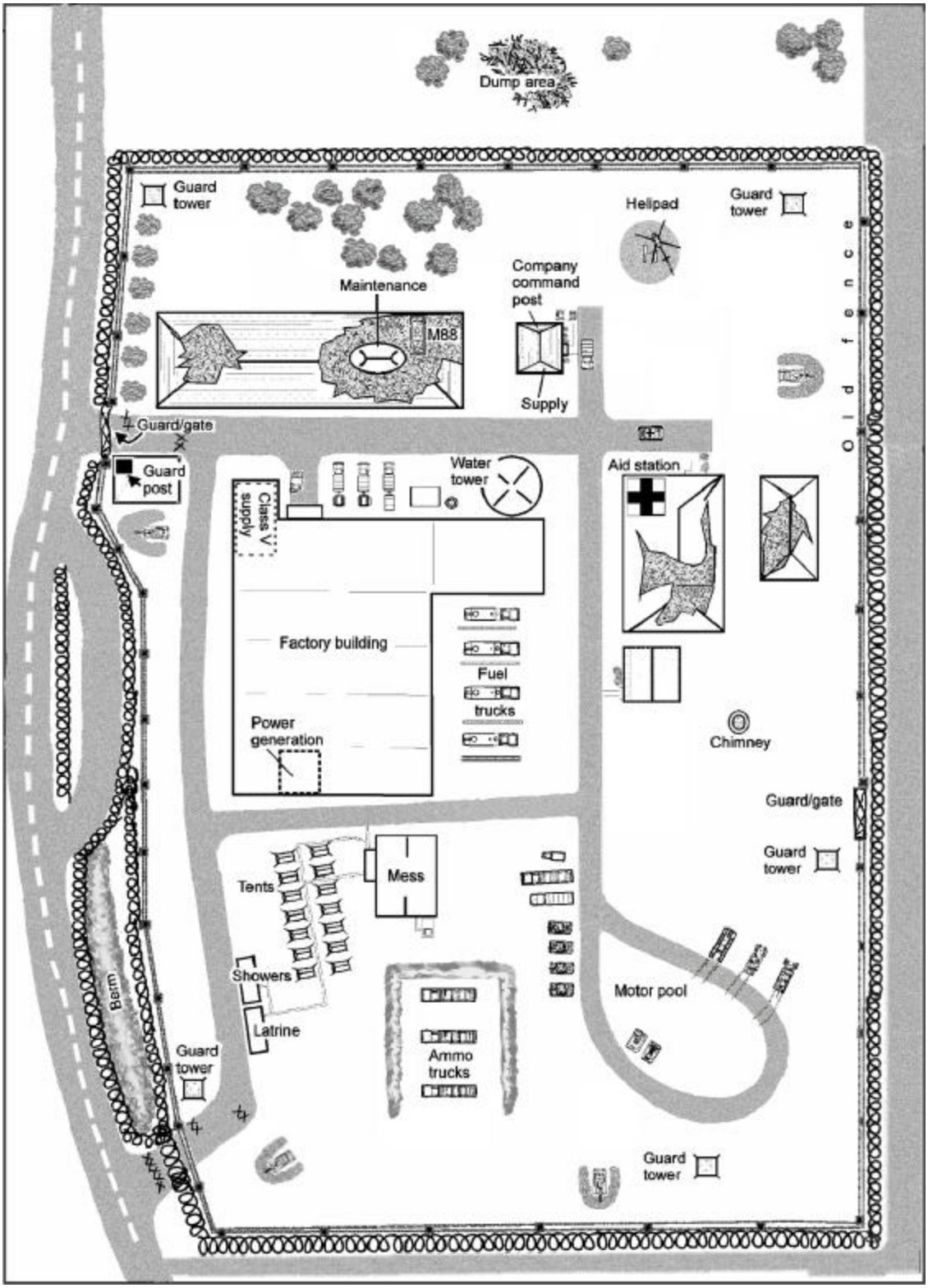


Figure 8-1. Example Company Team Lodgment Area Using Existing Facilities

PLANNING THE LODGMENT AREA

8-27. Before he begins preparation, construction, and occupation of the lodgment area, the commander must plan its general layout. He should evaluate these factors:

- Location of the lodgment area.
- Effects of weather.
- Traffic patterns.
- OP sites and/or patrol routes.
- Entry and exit procedures.
- Vehicle emplacement and orientation.
- Bunkers and fighting positions.
- Fire planning.
- Size and composition of the reserve.
- Location of possible LZs and pickup zones (PZ).
- CSS considerations, including locations of the following:
  - Mess areas, showers, and latrines (including drainage).
  - Storage bunkers for Class III, Class IV, and Class V supplies.
  - Maintenance and refueling areas.
  - Aid station.
- CP site security.
- Size, composition, and function of advance/reconnaissance parties.
- Nature and condition of existing facilities (quarters; water, sewer, and power utilities; reinforced "hardstand" areas for maintenance).
- Proximity to structures and/or roadways (including security factors).

PRIORITIES OF WORK

8-28. The commander must designate priorities of work as the company team establishes the lodgment area. At a minimum he should consider the following tasks:

- Establishment of security of the immediate area and the perimeter.
- Establishment of initial roadblocks to limit access to the area.
- Mine clearance.
- Construction of revetments to protect vehicles, generators, communications equipment, and other facilities.
- Construction of barriers or berms around the lodgment area to limit observation of the compound and provide protection for occupants.
- Construction of shelters for lodgment personnel.
- Construction of defensive positions.

- Construction of sanitation and personal hygiene facilities.
- Construction of hardened CP facilities.
- Continuing activities to improve the site (such as adding hard-wire electrical power or perimeter illumination).
- Establish a relationship with local civil authorities.

COMPANY COMMAND POST

8-29. During stability operations and support operations the company should establish a company CP. The CP is a vital C2 node that ensures that routine daily tasks are accomplished and in times of crisis the company commander has the ability to C2 when the platoons are positioned in a noncontiguous AO. Units equipped with FBCB2 have enhanced battle tracking capabilities. If possible, company CPs should be equipped with FBCB2 in order to better monitor mounted operations and provide increased situational understanding throughout the AO. The following is some information managed by a CP during stability operations and support operations:

- Battle tracking charts.
  - Mission/intent.
  - Combat power.
  - Presence patrols.
  - Town diagrams.
  - Operational overlays (digital or analog).
  - Force protection (FPCON) level.
  - Personnel. status (PERSTAT).
  - Timeline.
  - Phone rosters.
  - Checkpoints.
  - Guard posts (protected sites).
  - Routine activities (net calls, synch meetings).
  - Community activities (holidays).
  - Quick-reaction force (QRF).
  - DA Form 1594.
  - Battle rhythm.
  - CCIR.
  - Patrol debrief forms.
- Considerations for communications.
  - FM.
  - Digital.
  - Telephone.
  - Internet.

- Multiple radiotelephone operators (RTO).
- Dedicated medical evacuation (MEDEVAC) nets.

- Considerations for crisis center activities.
  - Large crowd control.
  - Crime reports.
  - Recovery of human remains.
  - Media.

CONDUCT NEGOTIATIONS

8-30. The company team may face a number of situations in which leaders will need to conduct negotiations. There are two general types of negotiations—situational and planned. Situational negotiations are conducted in response to a requirement for on-the-spot discussion and resolution of a specific issue or problem. Planned negotiations are conducted in such situations as a company team commander conducting a work coordination meeting between commanders of belligerents to determine mine clearance responsibilities.

SITUATIONAL NEGOTIATIONS

8-31. At the company team level, situational negotiations are far more common than the planned type. In fact, employment in stability operations will require the commander, his subordinate leaders, and other soldiers to conduct some form of negotiations almost daily. This in turn requires them to have a thorough understanding of the ROE and ROI.

8-32. Members of the company team apply this working knowledge to the process of discussing and, whenever possible, resolving issues and problems that arise between opposing parties, which may include the team itself. A critical aspect of this knowledge is the negotiator's ability to recognize that he has exhausted his options under the ROE/ROI and must turn the discussion over to a higher authority. Negotiations continue at progressive levels of authority until the issue is resolved.

8-33. In preparing themselves and their soldiers for the negotiation process, the commander and subordinate leaders must conduct rehearsals covering the ROE and ROI. One effective technique is to war-game application of ROE/ROI in a given stability situation, such as manning a checkpoint. This forces leaders and subordinates alike to analyze the ROE/ROI and apply them in an operational environment.

PLANNED NEGOTIATIONS

8-34. Planned negotiations require negotiators to thoroughly understand both the dispute or issue at hand and the factors influencing it, such as the ROE and ROI, before talks begin. The negotiator's ultimate goal is to reach an agreement that is acceptable to both sides and that reduces antagonism (and/or the chance of renewed hostilities) between the parties involved. The following paragraphs list guidelines and procedures for each phase of the negotiation process.

Identify the Purpose of Negotiations

8-35. Before contacting leaders of the belligerent parties to initiate the negotiation process, the commander must familiarize himself with both the situation and the area in which his unit will be operating. This includes identifying and evaluating avenues of approach that connect the belligerents. Results of the negotiation process, which may be lengthy and complicated, must be based on national or international agreements or accords. Negotiation topics include the following:

- When the sides will withdraw.
- Positions to which they will withdraw (these should be located to preclude observation and direct fire by the belligerents).
- What forces or elements will move during each phase of the operation.
- Pre-positioning of peace forces that can intervene in case of renewed hostilities.
- Control of heavy weapons.
- Mine clearance and removal.
- Formal protest procedures for the belligerent parties.

Establish the Proper Context

8-36. The next step in the process is to earn the trust and confidence of each opposing party. This includes establishing an atmosphere (and a physical setting) that participants will judge to be both fair and safe. These considerations apply:

- Always conduct joint negotiations on matters that affect both parties.
- When serving as a mediator, remain neutral at all times.
- Learn as much as possible about the belligerents, the details of the dispute or issue being negotiated, and other factors such as the geography of the area and specific limitations or restrictions (for example, the ROE and ROI).
- Gain and keep the trust of the opposing parties by being firm, fair, and polite.
- Use tact, remain patient, and be objective.
- Never deviate from applicable local and national laws and international agreements.

Prepare for the Negotiations

8-37. Thorough, exacting preparation is another important factor in ensuring the success of the negotiation process. Company team personnel should use the following guidelines:

- Negotiate sequentially, from subordinate level to senior level.
- Select and prepare a meeting place that is acceptable to all parties.
- Make arrangements to record the negotiations (use audio or video recording equipment, if available).
- Arrange for interpreters and adequate communications facilities as necessary.
- Ensure that all opposing parties, as well as the negotiating team, use a common map (edition and scale).
- Coordinate all necessary movement.
- Establish local security.
- Keep higher headquarters informed throughout preparation and during the negotiations.

Conduct the Negotiations

8-38. Negotiators must always strive to maintain control of the session. They must be firm, yet evenhanded, in leading the discussion. At the same time, they must be flexible, with a willingness to accept recommendations from the opposing parties and from their own assistants and advisors. The following procedures and guidelines apply:

- Exchange greetings.
- Introduce all participants by name, including negotiators and any advisors.
- Consider the use of small talk at the beginning of the session to put the participants at ease.
- Allow each side to state its case without interruption and without making premature judgments.
- Make a record of issues presented by both sides.
- If one side makes a statement that is incorrect, be prepared to produce evidence or proof to establish the facts.
- If the negotiating team or peacekeeping force has a preferred solution, present it and encourage both sides to accept it.
- Close the meeting by explaining to both sides what has been agreed upon and what actions they are expected to take. If necessary, be prepared to present this information in writing for their signatures.
- Do not negotiate or make deals in the presence of the media.
- Maintain the highest standards of conduct at all times.

MONITOR COMPLIANCE WITH AN AGREEMENT

8-39. Compliance monitoring involves observing belligerents and working with them to ensure they meet the conditions of one or more applicable agreements. Examples of the process include overseeing the separation of opposing combat elements, the withdrawal of heavy weapons from a sector, or the clearance of a minefield. Planning for compliance monitoring should cover, but is not limited to, the following considerations:

- Liaison teams, with suitable communications and transportation assets, are assigned to the headquarters of the opposing sides. Liaison personnel maintain communications with the leaders of their assigned element; they also talk directly to each other and to their mutual commander (the company team or task force commander).
- The commander positions himself at the point where it is most likely that violations could occur.
- He positions platoons and squads where they can observe the opposing parties, instructing them to assess compliance and report any violations.
- As directed, the commander keeps higher headquarters informed of all developments, including his assessment of compliance and/or noncompliance.

ESTABLISH OBSERVATION POSTS

8-40. Construction and manning of OPs is a high-frequency task for company teams and subordinate elements when they must establish area security during stability operations. Each OP is established for a specified time and purpose. During most stability operations, OPs are both overt (conspicuously visible, unlike their tactical counterparts) and deliberately constructed. They are similar in construction to bunkers and are supported by fighting positions, barriers, and patrols (see FM 3-34.112 [FM 5-103]). (**NOTE:** If necessary, the company team can also employ hasty OPs, which are similar to individual fighting positions.) Based on METT-TC factors, deliberate OPs may include specialized facilities such as the following:

- Observation tower.
- Ammunition and fuel storage area.
- Power sources.
- Supporting helipad.
- Kitchen, sleep area, shower, and/or toilet.

8-41. Each OP must be integrated into supporting direct and indirect fire plans and into the overall observation plan. Figure 8-2 illustrates an example OP.

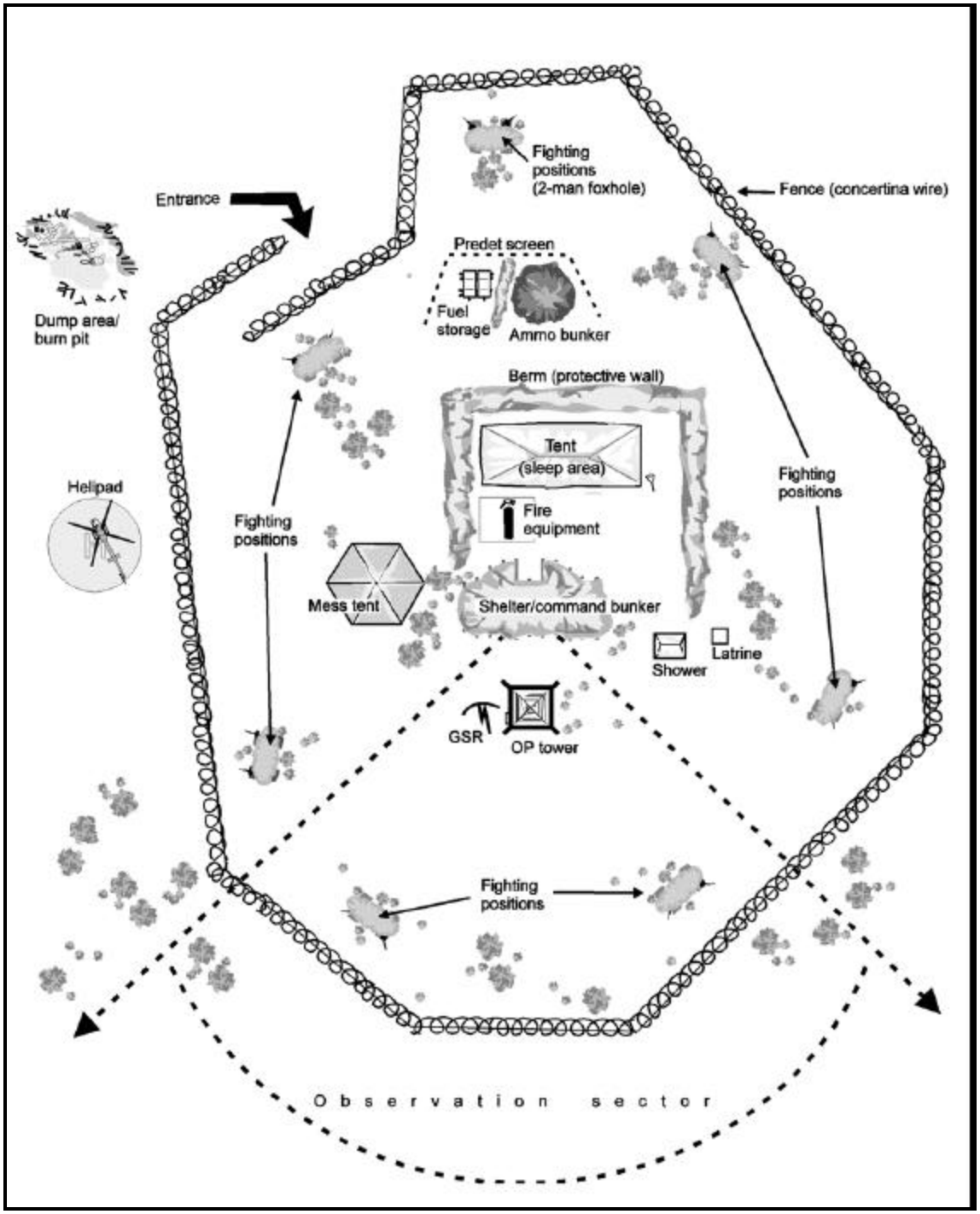


Figure 8-2. Example Deliberate Observation Post

ESTABLISH CHECKPOINTS

8-42. Establishment of checkpoints is a high-frequency task for company teams and subordinate elements involved in stability operations. Checkpoints can be either deliberate or hasty.

PURPOSES

8-43. The team or a subordinate element may be directed to establish a checkpoint to achieve one or more of the following purposes:

- Deter illegal movement.
- Create an instant roadblock.
- Control movement into the AO or onto a specific route.
- Demonstrate the presence of peace forces.
- Prevent smuggling of contraband.
- Enforce the terms of peace agreements.
- Serve as an OP and/or patrol base.

CHECKPOINT PROCEDURES

8-44. Checkpoint layout, construction, and manning should reflect METT-TC. The layout of a deliberate checkpoint is depicted in Figure 8-3 on page 8-16. The following procedures and considerations may apply:

- Position the checkpoint where it is visible and where traffic cannot turn back, get off the road, or bypass the checkpoint without being observed.
- Position a combat vehicle off the road, but within direct fire range, to deter resistance to soldiers manning the checkpoint. The vehicle should be in a hull-down position and protected by local security. It must be able to engage vehicles attempting to break through or bypass the checkpoint.
- Place obstacles in the road to slow or canalize traffic into the search area.
- Establish a reserve.
- Establish a bypass lane for approved convoy traffic.
- Establish wire communications within the checkpoint area to connect the checkpoint bunker, the combat vehicle, the search area, security forces, the rest area, and any other elements involved in the operation.

- Designate the search area. If possible, it should be below ground to provide protection against such incidents as the explosion of a booby-trapped vehicle. Establish a parking area adjacent to the search area.

- If applicable, checkpoint personnel should include linguists.

- Properly construct and equip the checkpoint. Consider inclusion of the following items:
  - Barrels filled with sand, concrete, or water (emplaced to slow and canalize vehicles).
  - Concertina wire (emplaced to control movement around the checkpoint).
  - Secure facilities for radio and wire communications with the controlling headquarters.
  - First-aid kit/combat lifesaver bag.
  - Sandbags for defensive positions.
  - Wood or other materials for the checkpoint bunker.
  - Binoculars, night vision devices, and/or flashlights.
  - Long-handled mirrors (these are used in inspections of vehicle undercarriages).

- Elements manning a deliberate CP may require access to specialized equipment, such as the following:
  - Floodlights.
  - Duty log.
  - Flag and unit sign.
  - Barrier pole that can be raised and lowered.
  - Generators with electric wire.

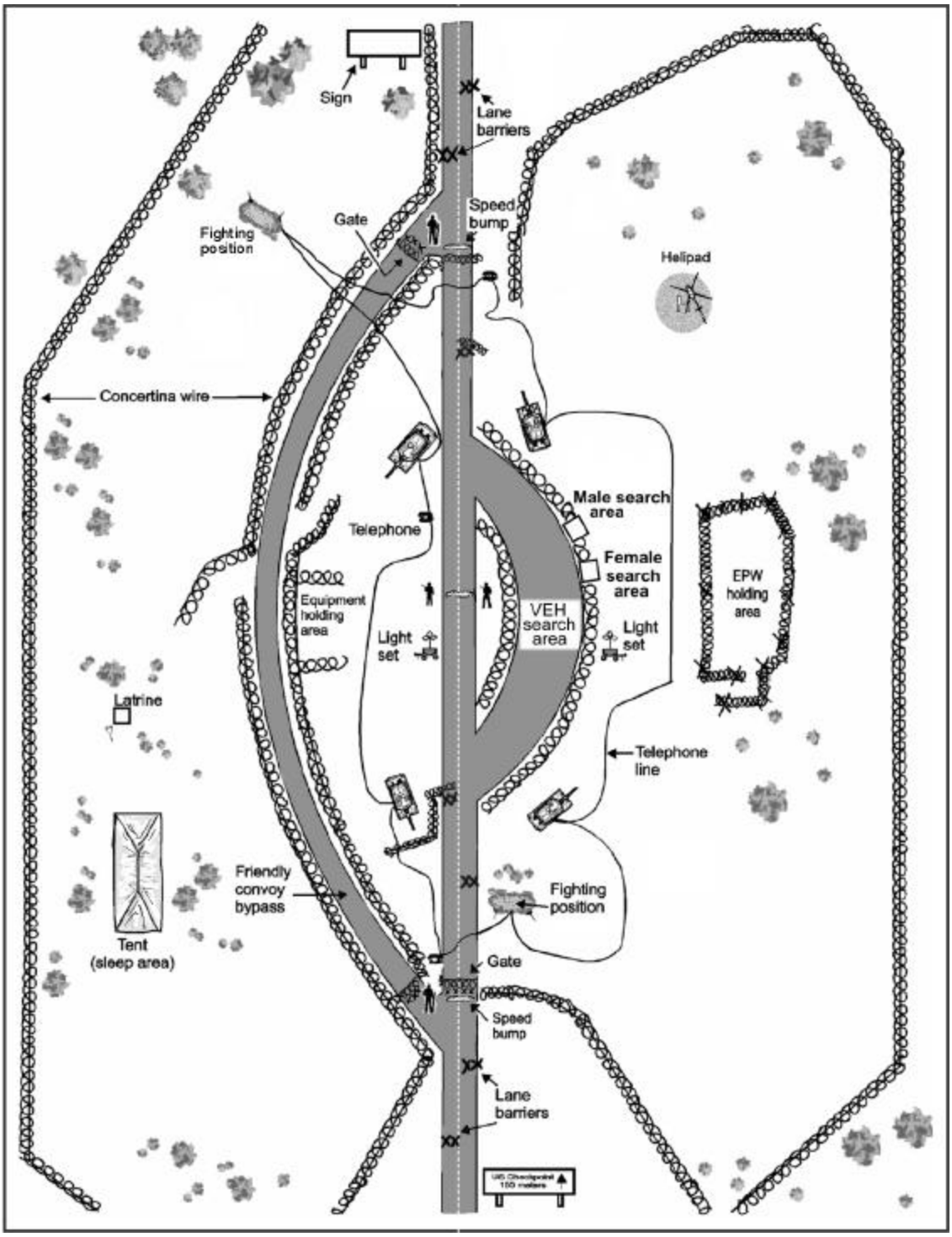


Figure 8-3. Example Deliberate Checkpoint Layout

CONDUCT PATROLLING

8-45. Patrolling is also a high-frequency task during stability operations. Planning and executing an area security patrol are similar to procedures for other tactical patrols except that patrol leaders must consider political implications and ROE. However, during stability operations the frequency of decentralized platoon operations is daily. Often, company teams operate in noncontiguous environments conducting mounted and dismounted presence patrols led by squad leaders and controlled by platoon level CPs located within urban areas or inside key nodes such as police stations. (See FM 3-21.10 [FM 7-10] for a detailed discussion of patrol operations.)

PLANNING CONSIDERATIONS

8-46. Company teams will conduct patrols mounted or dismounted for several reasons. In stability operations, company teams may conduct reconnaissance and combat patrols, but will most often conduct presence patrols. Presence patrols are tasked by higher headquarters, but are planned and executed at the lowest levels. Company teams will conduct patrols to confirm or supervise a cease fire; gain information; establish mobile checkpoints; cover space between OPs or checkpoints in noncontiguous AO, show force presence to reassure communities; protect and/or escort formerly belligerent elements or local population through trouble spots and search/recover remains. The following are some considerations when conducting patrols in stability operations:

- ROE review.
- Routes and locations of known minefields.
- Use of liaison officers (LNO) and interpreters.
- Off-limits areas.
- Patrol restrictions.
- Overt recognition signals.
- Communications plan.
- Adjacent unit coordination.
- CASEVAC.
- Actions at halts.
- Actions in minefields.
- Actions in an ambush.
- React to indirect fire.
- Actions at illegal checkpoints.
- Actions at vehicle breakdowns.

ORGANIZATION

8-47. The company team commander decides what elements and teams are needed for his mission, selects men or units for these elements and teams, and decides what weapons and equipment are needed. He should, however, use his unit's normal organization (squads, sections and platoons) and chain of command (squad and platoon leaders) as much as possible to meet these needs. For example, a company size combat patrol may be organized as such: the company headquarters is the patrol headquarters; the 1st platoon is the assault element; the 2d platoon is the security element; and the 3d platoon as the support element.

HEADQUARTERS

8-48. Rarely in a stability operation will an entire company team conduct a patrol. Most often, the company team commander will develop a random patrol plan with his platoon leaders and provide C2 from a stationary CP within a basecamp or in a mobile CP such as a HMMWV, BFV, or tank. However, when conducting a company size dismounted patrol the company headquarter element should consist of the normal command group and a security element.

ELEMENTS

8-49. Occasionally, company teams may be tasked to conduct reconnaissance and combat patrols in a stability environment to gain information on belligerent activity or to interdict threats to security within an area of responsibility (AOR).

8-50. In an area reconnaissance, a patrol has a reconnaissance element and a security element. In a zone reconnaissance, a patrol has several reconnaissance elements. Each one provides its own security. A combat patrol normally has an assault element, a security element, and a support element. At times, the support element may be omitted by combining it with the assault element or a reserve element may be required.

- Reconnaissance patrol elements are organized into several reconnaissance teams in an area reconnaissance, or into reconnaissance and surveillance (R&S) teams in a zone reconnaissance. R&S teams provide their own security while reconnoitering. Security elements are organized into the number of security teams needed to secure the objective area.
- Combat patrol elements are also organized into the teams needed for various tasks (assault, security, support, and special purpose).
- Two or more assault elements are organized when all of the assault element cannot be directly controlled by the assault element leader. This may be the case when the objective is to be assaulted from more than one location.
- Security teams are organized as needed to secure and or isolate the objective area.
- Two or more support teams are organized when all of the weapons of the support element cannot be directly controlled by the support element leader. This may be the case when there are many supporting weapons, or they are too far apart for direct control by the element leader.
- Special purpose teams may also be organized for missions involving the use of scout dogs, demolitions, litters for wounded, and EPW handling.
- Presence patrols, whether mounted or dismounted generally consist of two elements that can provide mutual overwatch in the event the patrol must search individuals or react to a crime scene or set up a random checkpoint.

8-51. Figure 8-4 illustrates the use of patrols in conjunction with checkpoints and OPs, in enforcing a zone of separation between belligerent forces.

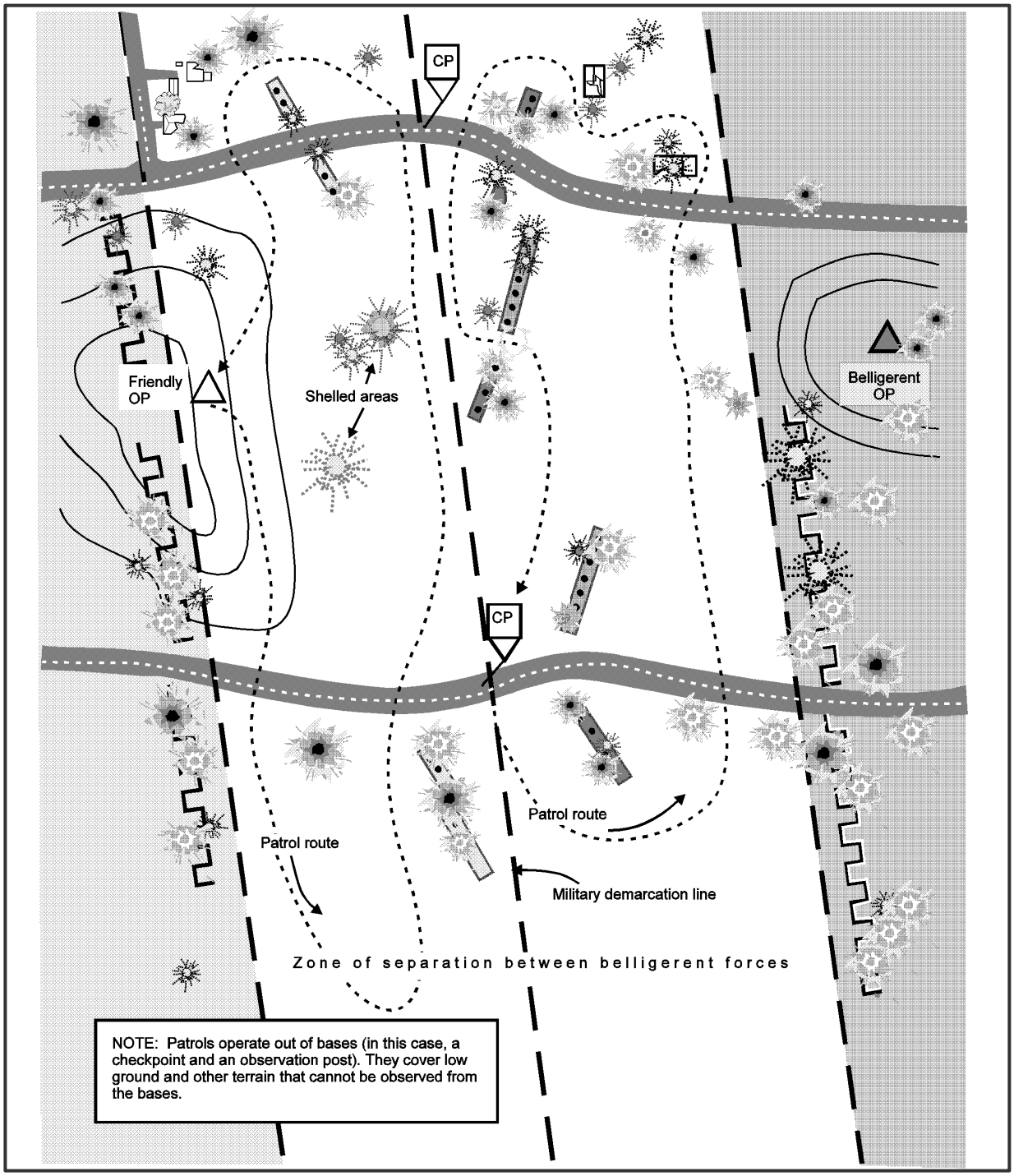


Figure 8-4. Example Employment of Checkpoints, OPs, and Patrols to Enforce a Zone of Separation

CONDUCT CONVOY ESCORT

8-52. This mission requires the company team to provide a convoy with security and close-in protection from direct fire while on the move. The task force may choose this COA if enemy contact is imminent or when it anticipates a serious threat to the security of the convoy. Convoy security should be planned and executed with the same level of detail and force protection measures given to a combat mission. Depending on METT-TC factors, the company team is capable of providing effective protection for a large convoy. Company teams may also conduct convoy escort in wheeled vehicles in order to ensure freedom of movement throughout the AOR. Escorting farmers from rural areas through formerly belligerent towns and villages in order to sell produce in a city market is an example of a convoy escort mission during stability operations.

BATTLE COMMAND

8-53. The task organization inherent in convoy escort missions makes battle command especially critical. The company team commander may serve either as the convoy security commander or as overall convoy commander. In the latter role, he is responsible for the employment not only of his own organic combat elements but also of CS and CSS attachments and drivers of the escorted vehicles. He must incorporate all of these elements into the various contingency plans developed for the operation and rehearse them as a unit prior to the mission. He must also maintain his link with the controlling CP.

8-54. When equipped with FBCB2 the company commander is able to better C2 convoy operations by affording him the ability to see precise locations of friendly vehicles and share a COP with the convoy commander. Whether or not the company commander is a participant in the convoy or providing C2 from the company CP, FBCB2 enables to company team commander to react rapidly to contingencies such as ambushes, mine strikes, vehicle breakdowns and breaks in contact. Maintaining a COP during stability operations is just as critical to the company team commander as it is during offensive and defensive operations.

8-55. Effective SOPs and drills must supplement OPORD information for the convoy, and rehearsals should be conducted if time permits. Additionally, extensive PCCs and PCIs must be conducted, to include inspection of the escorted vehicles. The commander must also ensure that all required coordination is conducted with units and elements in areas through which the convoy will pass.

8-56. Before the mission begins, the convoy commander should issue a complete OPORD to all vehicle commanders in the convoy. This is vital because the convoy may itself be task organized from a variety of units and because some vehicles may not have tactical radios or FBCB2. The

order should follow the standard five-paragraph OPORD format; it may place special emphasis on these subjects:

- Inspection of convoy vehicles.
- Route of march (including a strip map for each vehicle commander).
- Order of march.
- Actions at halts (scheduled and unscheduled).
- Actions in case of vehicle breakdown.
- Actions for a break in column.
- Actions in built-up areas.
- Actions on contact, covering such situations as snipers, enemy contact (including near or far ambush), indirect fire, and minefields.
- Riot drill.
- Refugee control drill.
- Evacuation drill.
- Actions at the delivery site.
- Chain of command.
- Guidelines and procedures for negotiating with local authorities.
- Communications and signal information to include MEDEVAC and attack aviation frequencies.

TACTICAL DISPOSITION

8-57. In any escort operation, the basic mission of the convoy commander (and, as applicable, the convoy security commander) is to establish and maintain security in all directions and throughout the length of the convoy. He must be prepared to adjust the disposition of the security force to fit the security requirements of each particular situation. Several factors affect this disposition, including METT-TC, convoy size, organization of the convoy, and types of vehicles involved. In some instances, the commander may position security elements, such as platoons, to the front, rear, and/or flanks of the convoy. As an alternative, he may disperse the combat vehicles throughout the convoy body.

TASK ORGANIZATION

8-58. When sufficient escort assets are available, the convoy commander will usually organize convoy security into three distinct elements: advance guard, close-in protective group, and rear guard. He may also designate a reserve to handle contingency situations. Figure 8-5 shows a company team escort force task organized with an engineer platoon, an aerial scout section, a task force wheeled scout section, a BSFV air defense vehicle, a task force mortar section, and the team's normal maintenance and medical attachments. (**NOTE:** The convoy escort will normally be provided with linguists as required.)

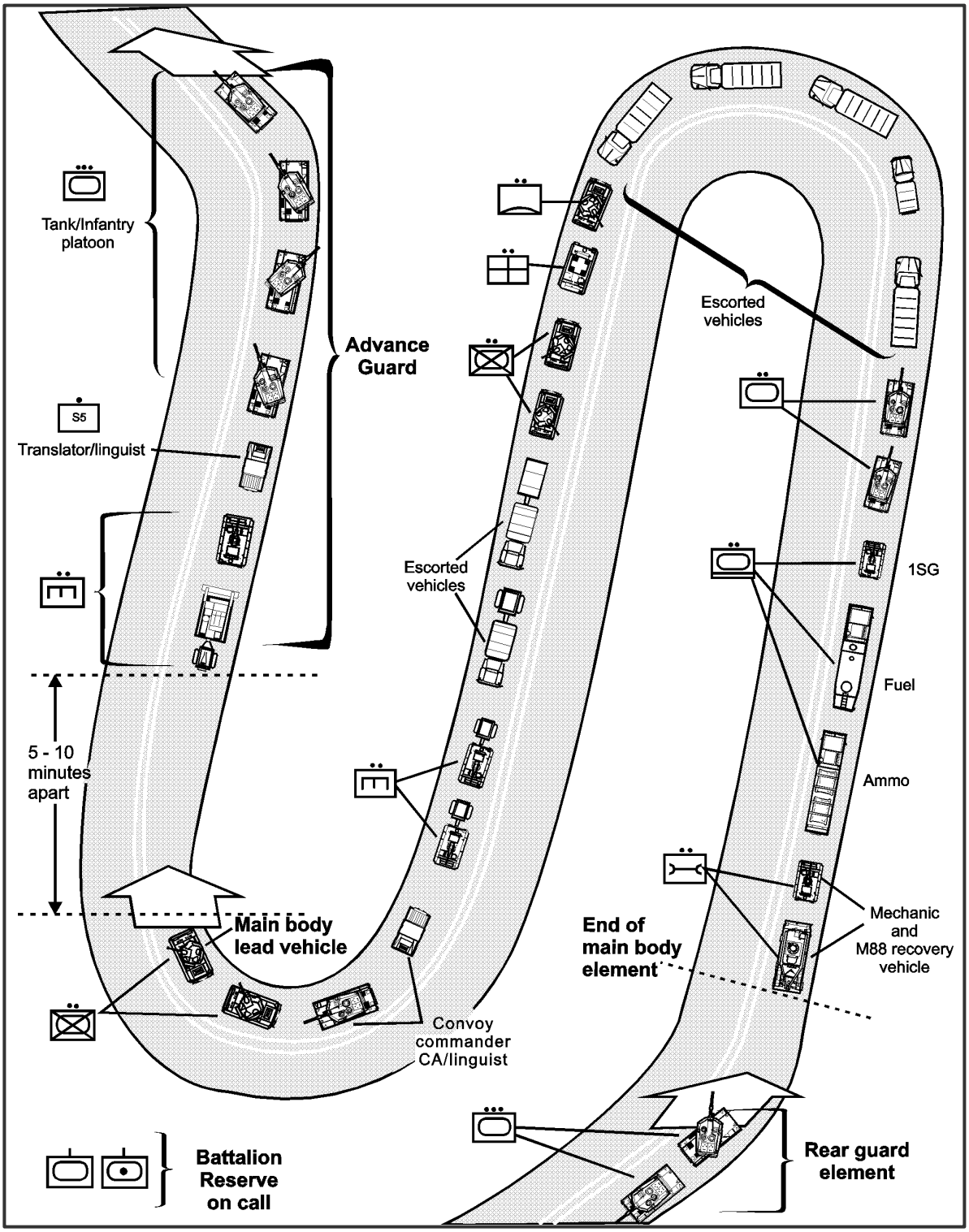


Figure 8-5. Example Company Team Convoy Escort Mission

8-59. The following paragraphs examine the role of the advance guard, of security assets accompanying the convoy main body, and of the reserve.

Advance Guard

8-60. The advance guard reconnoiters and proofs the convoy route. It searches for signs of enemy activity, such as ambushes and obstacles. Within its capabilities, it attempts to clear the route. The distance and time separation between the advance guard and the main body should be sufficient to provide the convoy commander with adequate early warning before the arrival of the vehicle column; however, the separation should be short enough that the route cannot be interdicted between the passage of the advance guard and the arrival of the main body.

8-61. The advance guard should be task organized with reconnaissance elements (wheeled scouts and aerial scouts, if available), combat elements (a tank or MIP), and mobility assets (an engineer squad and a tank with plow or roller). As necessary, it should also include linguists.

Main Body

8-62. The commander may choose to intersperse security elements with the vehicles of the convoy main body. These may include combat elements (including the rear guard), the convoy commander, additional linguists, mobility assets, and medical and maintenance support assets. Depending on METT-TC, the convoy commander may also consider the employment of flank security. The length of the convoy may dictate that he position the accompanying mortars with the main body.

Reserve

8-63. In a company team escort mission, the reserve may consist of a tank or MIP and the attached mortar section, if available. The reserve force will either move with the convoy or locate at a staging area close enough to provide immediate interdiction against enemy forces. The supporting headquarters will normally designate an additional reserve, consisting of an additional company team or combat aviation assets, to support the convoy operation.

Escort of Nonmilitary Convoys

8-64. During stability operations, Army forces may be called upon to escort civilian buses, trucks and automobiles to, from and through various ethnic regions that are hostile to one another. Reasons for these mission are usually (but not limited to) to enable families to visit relatives across borders, to allow farmers from one ethnic region to sell produce to the same ethnic groups that are minorities in another ethnic region or the convoys may have the purpose to evacuate non-combatants from a potential combat zone. The following are some planning considerations prior to conducting this type of convoy escort:

- Search civilian vehicles for weapons and contraband prior to movement.
- Require manifests for each convoy.
- Verify the manifest against wanted lists.
- Ensure enough linguists are available to deal with all ethnicities.

ACTIONS ON CONTACT

8-65. As the convoy moves to its new location, the enemy may attempt to harass or destroy it. This contact will usually occur in the form of an ambush, often executed in coordination with the use of a hasty obstacle. In such a situation, the safety of the convoy rests on the speed and effectiveness with which escort elements can execute appropriate actions on contact.

8-66. Based on the factors of METT-TC, portions of the convoy security force, such as a tank platoon or tank section, may be designated as a reaction force. This element performs its normal escort duties, such as conducting tactical movement or occupying an assembly area, as required until enemy contact occurs; it then is given a reaction mission by the convoy commander.

Actions at an Ambush

8-67. An ambush is one of the most effective ways to interdict a convoy. Conversely, reaction to an ambush must be immediate, overwhelming, and decisive. Actions on contact in response to an ambush must be planned for and rehearsed so they can be executed as a drill by all escort and convoy elements; particular attention should be given to fratricide prevention.

8-68. In almost all situations, the security force will take several specific, instantaneous actions in reacting to an ambush. These steps include the following:

- As soon as they acquire an enemy force, the escort vehicles action toward the enemy. They seek covered positions between the convoy and the enemy and suppress the enemy with the highest possible volume of fire permitted by the ROE. Contact reports are sent to higher headquarters as quickly as possible.
- Call for indirect fire or attack aviation fires to assist in destroying the enemy force or to break contact from the ambush.
- The convoy commander retains control of the convoy vehicles and continues to move them along the route at the highest possible speed.
- Convoy vehicles, if they are armed, may return fire only if the security force has not positioned itself between the convoy and the enemy force.
- Subordinate leaders or the convoy commander may request that any damaged or disabled vehicles be abandoned and pushed off the route.
- The escort leader uses SPOTREPs to keep the convoy security commander informed. If necessary, the escort leader or the security commander can then request support from the reserve; he can also call for and adjust indirect fires.

- Once the convoy is clear of the kill zone, the escort element executes one of the following COAs based on the composition of the escort and reaction forces, the commander's intent, and the strength of the enemy force:
  - Continue to suppress the enemy as the reserve moves to provide support.
  - Assault the enemy.
  - Break contact and move out of the kill zone.

Actions at an Obstacle

8-69. Obstacles pose a major threat to convoy security. Obstacles can be used to harass the convoy by delaying it; if the terrain is favorable, the obstacle may stop the convoy altogether. In addition, obstacles can canalize or stop the convoy to set up an enemy ambush. The purpose of route reconnaissance ahead of a convoy is to identify obstacles and either breach them or find bypasses. In some cases, however, the enemy or its obstacles may avoid detection by the reconnaissance element. If this happens, the convoy must take actions to reduce or bypass the obstacle.

8-70. When an obstacle is identified, the convoy escort faces two problems—reducing or bypassing the obstacle and maintaining protection for the convoy. Security becomes critical, and actions at the obstacle must be accomplished very quickly. The convoy commander must assume that the obstacle is overwatched and covered by enemy fires.

8-71. To reduce the time the convoy is halted and thus to reduce its vulnerability, these actions should occur when the convoy escort encounters point-type obstacles:

- The lead element identifies the obstacle and directs the convoy to make a short halt and establish security. The escort overwatches the obstacle and requests that the breach force move forward.
- The escort maintains 360-degree security and provides overwatch as the breach force reconnoiters the obstacle in search of a bypass.
- Once all reconnaissance is complete, the convoy commander determines which of the following COAs he will—
  - Bypass the obstacle.
  - Breach the obstacle with the assets on hand.
  - Breach the obstacle with reinforcing assets.

NOTE: Among the obstacles the convoy may encounter is an illegal checkpoint established by civilians or noncombat elements. If the checkpoint cannot be bypassed or breached, the commander must be prepared to enforce passage for the convoy.

- The commander relays a SPOTREP higher and, if necessary, requests support from combat reaction forces, engineer assets (if they are not part of the convoy), and aerial reconnaissance elements.
- Artillery units or the supporting mortar section are alerted to be prepared to provide fire support.

Actions at a Halt

8-72. During a short halt, the convoy escort remains at REDCON-1 status regardless of what actions other convoy vehicles are taking. If the halt is for any reason other than an obstacle, the following actions should be taken:

- The convoy commander signals the short halt and transmits the order via tactical radio. Based on METT-TC factors, he directs all vehicles in the convoy to execute the designated formation or drill for the halt.
- Ideally, the convoy will assume a herringbone or coil formation. If the sides of the road are untrafficable or are mined, however, noncombat vehicles may simply pull over and establish 360-degree security as best they can and post local security. This will allow movement of the escort vehicles as necessary through the convoy main body.
- If possible, escort vehicles are positioned up to 100 meters beyond other convoy vehicles. Escort vehicles remain at REDCON-1 but establish local security based on the factors of METT-TC.
- When the order is given to move out, convoy vehicles reestablish the movement formation, leaving space for escort vehicles. Once the convoy is in column, dismounted security elements (if used) return to their vehicles, and the escort vehicles rejoin the column.
- When all elements are in column, the convoy resumes movement.

OPEN AND SECURE ROUTES

8-73. This task is a mobility operation normally conducted by the engineers. The company team may be tasked to assist them using its mineplows and rollers and to provide overwatch support. The route may be cleared to achieve one of several tactical purposes:

- For use by the task force for its initial entry into an AO.
- To clear a route ahead of a planned convoy to ensure that belligerent elements have not emplaced new obstacles since the last time the route was cleared.
- To secure the route to make it safe for use as a main supply route (MSR).

8-74. The planning considerations associated with opening and securing a route are similar to those for a convoy escort operation. The company team commander must analyze the route and develop contingency plans covering such possibilities as likely ambush locations and sites that are likely to be mined. The size and composition of a team charged with opening and securing a route is based on METT-TC. (See FM 3-24.32 [FM 20-32] for additional information on combine arms route clearance operations.)

CONDUCT RESERVE OPERATIONS

8-75. Reserve operations in the stability environment are similar to those in other tactical operations in that they allow the commander to plan for a variety of contingencies based on the higher unit's mission. As noted throughout this section, the reserve may play a critical role in almost any stability activity or mission, including lodgment area establishment, convoy escort, and area security.

8-76. The reserve force must be prepared at all times to execute its operations within the time limits specified by the controlling headquarters. For example, a platoon-size reserve may be directed to complete an operation within 5 minutes, while a company-size force may be allotted 10 minutes.

8-77. The controlling headquarters may also tailor the size and composition of the reserve according to the mission it is assigned. If the reserve is supporting a convoy mission, it may consist of a company team; in a mission to support established checkpoints, the reserve force may be the dismounted elements from a platoon or company team, supported by aviation assets.

SECTION IV – SUPPORT OPERATIONS

8-78. US military forces conduct support operations to assist designated groups by providing essential supplies and services in the face of adverse conditions, usually those created by man-made or natural disasters. Mission success in support operations, which are normally characterized by the lack of an active opponent, is measured in terms of the ability to relieve suffering and to help civil authorities respond to crises. The ultimate goals of these operations are to meet the immediate needs of the supported groups and to transfer responsibility quickly and efficiently to appropriate civilian authorities.

8-79. Domestic support operations are always conducted in support of local, state, and federal civil authorities. Overseas support operations are almost always conducted in support of and in concert with other agencies; these may be American or international organizations of either government or private affiliation.

8-80. Support operations may be independent actions; however, they will likely complement the other full spectrum operations; see the previous discussions of offensive, defensive, and stability operations.

TYPES OF SUPPORT OPERATIONS

8-81. There are two types of support operations—domestic support operations (DSO) and foreign humanitarian assistance (FHA) operations. Both share four forms of operations, which occur to varying degrees in each support operation: relief operations, support to weapons of mass destruction incidents, support to civil law enforcement, and community assistance. Army units conduct DSOs in the US and its territories using active and reserve components. It conducts FHA operations abroad and under the direction of a combatant commander. Since domestic emergencies can require Army forces to respond with multiple

capabilities and services, they may conduct the four forms of support operations simultaneously during a given operation.

8-82. DSOs supplement the efforts and resources of state and local governments and NGOs within the United States. During DSOs, the US military always responds in support of another civilian agency. DSOs also include those activities and measures taken by DOD to foster mutual assistance and support between the department of defense (DOD) and any civil government agency. DSOs may include military assistance with planning or preparedness for, or in the application of resources in response to, the consequences of civil emergencies or attacks, including national security emergencies or major disasters. A presidential declaration of an emergency or disaster area usually precedes a DSO.

8-83. The US military provides domestic support primarily in accordance with a DOD directive for military assistance to civil authorities. The directive addresses responses to both natural and manmade disasters and includes military assistance with civil disturbances, counterdrug activities, counterterrorism activities, and law enforcement.

8-84. DSOs focus on the condition of all types of natural and manmade properties, with the goal of helping to protect and restore these properties as requested. Typically, environmental operations are conducted in response to such events as forest and grassland fires, hazardous material releases, floods, and earthquakes.

FOREIGN HUMANITARIAN ASSISTANCE

8-85. US forces conduct FHA operations outside the borders of the US or its territories to relieve or reduce the results of natural or manmade disasters or other endemic conditions, such as human suffering, disease, or deprivation that might present a serious threat to life or that can result in great damage to or loss of property.

8-86. The US military typically supplements the host nation authorities in concert with other governmental agencies, nongovernmental organizations, private volunteer organizations, and unaffiliated individuals. Most foreign humanitarian assistance operations closely resemble domestic support operations. The distinction between the two is the legal restrictions applied to US forces inside the US and its territories. The Posse Comitatus Act does not apply to US forces overseas.

8-87. FHA operations are limited in scope and duration. They focus exclusively on prompt aid to resolve an immediate crisis. Crises or disasters caused by hostile individuals or factions attacking a government are normally classified as stability rather than support operations. In environments where the situation is vague or hostile, support activities are considered a subset of a larger stability or offensive or defensive operation.

CATEGORIES OF SUPPORT OPERATIONS

8-88. Support operations may be independent actions, or they may complement offensive, defensive, and stability operations. Most offensive, defensive, and stability operations require some form of support operations before, during, and after execution. Support operations generally fall into four categories:

- Relief operations.
- Support to incidents involving chemical, biological, radiological, nuclear, and high-yield explosive consequence management (CBRNE-CM).
- Support to civil law enforcement.
- Community assistance.

RELIEF OPERATIONS

8-89. In general, the actions performed during relief operations are identical in both DSO and FHA operations. The actions can be characterized as either humanitarian relief, which focuses on the well being of supported populations, or disaster relief, which focuses on recovery of critical infrastructure after a natural or manmade disaster. Relief operations accomplish one or more of the following objectives:

- Save lives.
- Reduce suffering.
- Recover essential infrastructure.
- Improve quality of life.

Disaster Relief

8-90. Disaster relief encompasses those actions taken to restore or recreate the minimum infrastructure to allow effective humanitarian relief and set the conditions for longer-term recovery. This includes establishing and maintaining minimum safe working conditions plus the security measures necessary to protect relief workers and the affected population from additional harm.

Humanitarian Relief

8-91. Humanitarian relief focuses on life-saving measures to alleviate the immediate needs of a population in crisis. It often includes the provision of medical support, food, water, medicines, clothing, blankets, shelter, and heating or cooking fuel. In some cases, it involves transportation support to move affected people from a disaster area.

Support to Chemical, Biological, Radiological, Nuclear, and High-Yield Explosive Consequence Management

8-92. CBRNE-CM incidents are deliberate or unintentional events involving chemical, biological, radiological, nuclear, and high-yield explosives that produce catastrophic loss of life or property. Army forces assist civil authorities in protecting US territory, population, and infrastructure prior to an attack by supporting domestic preparedness and critical asset protection programs. If an attack occurs, response to

the consequences of the attack may include the following types of support:

- Decontamination and medical care, including assessment.
- Triage treatment.
- MEDEVAC.
- Hospitalization.
- Follow-up on victims of chemical and biological agents.
- Transportation.
- Bomb dogs.
- Imagery.
- Public affairs (PA).

SUPPORT TO CIVIL LAW ENFORCEMENT

8-93. Support to domestic civil law enforcement generally involves support activities related to counterterrorism, counterdrug operations, civil disturbance operations, or general support. Support may involve providing resources, training, or direct support. Federal forces remain under the control of their military chain of command at all times while providing the support.

COMMUNITY ASSISTANCE

8-94. Community assistance is a broad range of activities that provides support and maintains a strong connection between the military and civilian communities. Community assistance activities provide effective means of projecting a positive military image, providing training opportunities, and enhancing the relationship between the Army and the American public. These activities should fulfill community needs that would not otherwise be met. Community activities can enhance individual and unit combat readiness. Projects should exercise individual soldier skills, encourage teamwork, and challenge leaders' planning and coordination skills. They should result in measurable accomplishments and increase soldier proficiency. Commanders of forward-deployed Army units may also apply those concepts when fostering or establishing relationships with host nation communities.

8-95. State and local efforts also improve the community's perception of the Army. Community assistance varies widely ranging from individual soldier involvement to full installation participation. An installation or organization can enter into an agreement with the local community to provide critical services not available in the community, to augment community services unable to meet demand, or to ensure that emergency services are available in the shortest possible time.

8-96. Participation in public events, memorials, and exhibits facilitates interaction between soldiers and the local community. This contact communicates the professionalism, readiness, and standards of the Army. Individual soldiers serve as representatives and role models to the civilian community, promote and inspire patriotism, and generate interest in the Army. This increased public awareness enhances the Army's reputation and secures the confidence of the American people.

8-97. Laws, regulations, and policies limit Army participation in community assistance activities. Commanders consider the objective and purpose of community assistance and the limitations under which Army participation in community assistance activities is authorized. Commanders ensure that their initiatives do not compete with local resources or services and do not result in remuneration in any form. Commanders also avoid providing assistance and support to one segment of a community when they cannot also provide the same assistance to others. Actions that appear to benefit a particular group can foster perceptions of bias or partisanship. Ideally, support should be provided only to events and activities of common interest and benefit across the community.

SECTION V – CONSIDERATIONS FOR SUPPORT OPERATIONS

8-98. Although each support operation is different, TLP used in offensive, defensive, and stability operations still apply. The following considerations supplement those processes and can help commanders develop tailored concepts and schemes for support operations.

PROVIDE ESSENTIAL SUPPORT TO THE LARGEST NUMBER OF PEOPLE

8-99. The principle of essential support to the largest number guides prioritization and allocation. Commanders allocate finite resources to achieve the greatest good.

8-100. Initial efforts usually focus on restoring vital services, which include food and water distribution, medical aid, power generation, search and rescue, firefighting, and community relations. It may be necessary to complete a lower-priority task before accomplishing a higher one. For example, units may need to restore limited electrical services before restoring hospital emergency rooms and shelter operations.

8-101. Commanders assess requirements to employ units effectively. They determine how and where to apply limited assets to benefit the most people. In some cases, warfighting reconnaissance capabilities and techniques are adaptable to support operation requirements. For example, mounted patrols using thermal sights can survey relief routes and locate civilian refugee groups. Standard information collection methods are reinforced and supplemented by CA or dedicated disaster assessment teams, as well as interagency, host nation, and nongovernmental organizations sources. The combination of traditional and nontraditional information support allows commanders to obtain a clear understanding of the situation and adjust plans accordingly.

COORDINATE ACTIONS WITH OTHER AGENCIES

8-102. DSOs and FHA operations are typically joint and interagency; FHA operations are also multinational. The potential for duplication of effort and working at cross-purposes is high. Unity of effort requires, as a minimum, common understanding of purposes and direction among all agencies. Ensuring unity of effort and efficient use of resources requires constant coordination. Army forces enhance unity of effort by establishing a civil military operations center (CMOC) in FHA operations and by

providing liaison elements, planning support, advisors, and technical experts to lead civil authority in DSOs. Commanders determine where their objectives and plans complement or conflict with those of other key agencies through these contacts. Each participant's capabilities are in constant demand.

ESTABLISH MEASURES OF EFFECTIVENESS

8-103. In conjunction with supported agencies and governments, commanders establish relevant measures of effectiveness (MOE), similar to the tactical METT-TC factors considered during mission analysis, to gauge mission accomplishment. MOEs focus on the condition and activity of those being supported. Because they are discrete and measurable and they link cause and effect, they are helpful in measuring the progress and success of the operation. In famine relief, for example, it may be tempting to measure effectiveness only by the gross amount of food delivered. This may be an acceptable MOE, but a better MOE may be the total nourishment delivered, as measured by the total number of calories delivered per person per day or the rate of decline of deaths directly attributable to starvation. MOEs depend on the situation and require readjustment as situations and guidance change.

HANDOVER TO CIVILIAN AGENCIES AS SOON AS FEASIBLE

8-104. The timing and feasibility of the handover from military to civilian authorities depends on mission-specific considerations. The two most important of these are the ability of civil authorities to resume operations without Army assistance and the necessity of committing Army forces to competing operations. Commanders identify and include civil considerations as early as possible in the planning process. Commanders must continually consider the long-term goals of the civil leadership and the communities they assist. While the immediate goal of support operations is to relieve hardship and suffering, the ultimate goal is to create those conditions necessary for civil follow-on operations. The successful handover of all activities to civil authorities and withdrawal of Army units is a positive signal to the supported population and the Army. It indicates that the community has recovered enough for civil agencies to resume control, that life is beginning to return to normal, and that the Army unit has successfully completed its support mission.

TRANSITION TO COMBAT

8-105. In some support operations (typically those that take place in an active combat theater), the company commander must remain prepared to defend himself or to attack forces that threaten his command. This applies differently in each operation. It may mean maintaining a reserve within the company. It may even compel the company to dispose its forces in ways that allow immediate transition from support operations to combat.

PHASES OF SUPPORT OPERATIONS

8-106. Although each operation is unique, support operations are generally conducted in three broad phases—response, recovery, and restoration. Army elements can expect to be most heavily committed during the response phase. They will be progressively less involved during the recovery phase, with only very limited activity, if any, during the restoration phase.

RESPONSE

8-107. In the response phase, commanders focus on the life-sustaining functions that are required by those in the disaster area. The following functions dominate these response operations:

- Search and rescue.
- Emergency flood control.
- Hazard identification.
- Food distribution.
- Water production, purification, and distribution.
- Temporary shelter construction and administration.
- Transportation support.
- Fire fighting.
- Medical support.
- Power generation.
- Communications support.

RECOVERY

8-108. Recovery phase operations begin the process of returning the community infrastructure and related services to a status that meets the immediate needs of the population. Typical recovery operations include the following:

- Continuation of response operations as needed.
- Damage assessment.
- Power distribution.
- Water and sanitation services.
- Debris removal.

RESTORATION

8-109. Restoration is a long-term process that returns the community to pre-disaster normality. Restoration activities do not generally involve large numbers of military forces. When they are involved, Army elements generally work with affected communities in the transfer of responsibility to other agencies as military support forces redeploy.

Chapter 9

Supporting Company Team Operations

For a unit to achieve its full combat potential, the commander must effectively integrate all available combat and CS assets. This chapter focuses on those elements with which the company team is most likely to work: fire support, engineers, air defense, NBC, intelligence, and Army aviation in its CS role. Other CS elements include signal and MP; the company team, however, will very rarely be task organized with those types of units.

NOTE: Additional considerations, procedures, and techniques for integration of CS assets appear throughout this manual. References to such information are included as appropriate in this chapter.

CONTENTS

Fire Support 9-1
Fire Support Team 9-1
FIST Employment 9-2
Fire Support Planning 9-3
Engineer Support 9-11
Organization and Organic Equipment 9-11
Equipment Capabilities 9-12
Mobility Planning Considerations 9-13
Countermobility Planning Considerations 9-14
Survivability Planning Considerations 9-24
Air Defense 9-24
Systems, Organization, and Capabilities 9-24
Employment of ADA Systems 9-26
Early Warning Procedures 9-27
Reaction Procedures 9-27
Nuclear, Biological, and Chemical Support 9-30
Reconnaissance Support 9-31
Decontamination Support 9-31
Smoke Support 9-31
Intelligence 9-31
Aviation Combat Support Missions 9-32
Command and Control 9-32
Air Movement 9-32
Aerial Mine Warfare 9-32
Integration of Aviation Assets 9-32

SECTION I – FIRE SUPPORT

9-1. Fire support is the collective and coordinated use of both lethal (such as indirect fire weapons and armed aircraft), and nonlethal means in support of the battle plan. Lethal fire support assets include mortars, FA cannons and rockets, Army aviation, CAS, and naval gunfire (NGF). Nonlethal fire support attack systems include smoke or illumination munitions, as well as EW assets).

FIRE SUPPORT TEAM

9-2. The following paragraphs examine personnel, equipment, capabilities, procedures, and other considerations that affect the company team FIST and its employment in the accomplishment of fire support tasks.

PERSONNEL

9-3. FIST personnel for the company team include a FA lieutenant as the team FSO, a staff sergeant as the fire support sergeant or FSNCO, a fire support specialist, and a RTO. The mechanized infantry FIST also includes three two-man FOs parties per company. Each party includes an FO and a radio operator and is attached to the supported platoons.

EQUIPMENT

9-4. The FIST headquarters operates out of a variety of specially modified fire support vehicles (FSV), currently either the M981 FIST-V or the M7 Bradley Fire Support Vehicle (BFSV). Each vehicle is equipped with digital and voice communications links to all available indirect fire support assets. The large targeting head atop the FIST-V houses the ground vehicle laser locator designator (G/VLLD), or its replacement the digital laser locator/designator (LLD), that can accurately determine the range, azimuth, and vertical angle to targets and can designate targets for laser-guided munitions.

COMMUNICATIONS

9-5. The FIST has the capability to transmit on and/or monitor these five nets:

- The DS battalion fire direction net (digital). The FIST uses this net to send calls for fire (CFF).
- The company team command net (voice). This net allows the FIST to monitor company team operations and links it to the commander and platoon leaders for planning and coordination.
- FBCB2 allows the FIST to have a COP with the company team, task force FSE as well as other fire support teams.
- The task force fire support net (voice). The FIST communicates with the FSE on this net, for which the FSE is the NCS.
- The mortar platoon fire direction net (digital). As necessary, the FIST sends fire missions to the supporting mortar platoon or section using this net.

FIST EMPLOYMENT

9-6. The company team FSO works out of the FSV that he positions where he can most effectively observe and control execution of the fire support plan. The FSO establishes OPs that take maximum advantage of the capability of the G/VLLD, or LLD, to create lethal, accurate fires. He communicates with the commander on the company team command net. This option allows the FSO to maintain effective control of his FOs and to conduct required fire support coordination. He must keep the company team informed at all times of his location and of the routes he will take when moving from OP to OP.

FIRE SUPPORT PLANNING

9-7. Fire support planning is conducted concurrently with maneuver planning at all levels. Task forces and brigades typically use top-down fire support planning, with bottom-up refinement of the plans. The commander develops guidance for fire support in terms of tasks and purposes. In turn, the fire support planner determines the method to be used in accomplishing each task; he also specifies an end state that quantifies task accomplishment. Fire support planning is usually defined by the essential fire support tasks (EFST).

9-8. Individual fire support assets then incorporate assigned tasks into their fire plans. Units tasked to initiate fires must refine and rehearse their assigned tasks. This means that the company team commander will refine the team's assigned portion of the task force fire support plan, ensuring that the designated targets will achieve the intended purpose. He also conducts fire support rehearsals to prepare for the mission and, as specified in the plan, directs the team to execute its assigned targets.

LINKING FIRE SUPPORT TASKS AND MANEUVER PURPOSE

9-9. A clearly defined maneuver purpose enables the company commander to articulate precisely how he wants indirect fires to affect the enemy during the different phases of the battle. In turn, this allows fire support planners to develop a fire support plan that effectively supports the intended purpose. They can determine each required task (in terms of effects on a target), the best method for accomplishing each task (in terms of a fire support asset and its fire capabilities), and a means of quantifying accomplishment.

9-10. The FSO will develop EFSTs using the information derived from mission analysis and COA development. The EFSTs identify the critical tasks that must be planned, coordinated, resources and executed. Each EFST is described by its task, purpose, method, and effects.

Task

9-11. The task describes the objective the fires must achieve against a specific enemy formation's function or capability. Tasks are normally expressed in terms of objective, formation, and function. The FSO can use numerous terms to describe objectives with the most common being limit, delay, damage, disrupt and divert. The formation refers to a specific element, vehicle type, or target category. Function is the definitive capability that is needed (the enemy formation) to achieve its primary task and purpose.

Purpose

9-12. The purpose describes the maneuver or operational reason for the task. This should identify as specifically as possible the friendly maneuver formation that will benefit for engaging the enemy target and describe in terms of time and space what the objective will accomplish.

Method

9-13. The method describes how the task will fire support task will be achieved. The method includes—priority of fires, observers, triggers, target allocation, priority of fires, restrictions, special munitions, and other instructions.

Effects

9-14. The effects attempt to quantify the successful accomplishment of the task. It provides a guide to determine when we are done with the task and if it has achieved the desired results.

9-15. Table 9-1 shows an example of the EFST matrix. Figure 9-1 shows an example of the fire support execution matrix (FSEM).

Table 9-1. Essential Fire Support Task Matrix

Task: Disrupt the ability of stationary enemy recon elements to identify and report on company movement along Axis Hammer from PL Dodge to PL Tombstone.		
Objective	**Formation**	**Function**
Screen company movement	OPs and observers from security and counterrecon	Deny enemy the capability to observe company movement
Purpose: To preserve the freedom of movement along the axis, prevent enemy FOs from calling in indirect fires and achieving surprise on enemy forces beyond PL Tombstone.		
Method: Mortar fires suppress and obscure enemy OPs.		
Priority:	Mortar POF to 1st Platoon upon crossing PL Dodge, on order to 2d Platoon FA POF to 3d Platoon upon crossing PL Dodge	
Allocation:	3 x mortar priority tgts, each tgt w/4 rds HE followed by 4 rds smk FIST Tm and FO direct all fires Trigger point for all obscuration missions is last concealed point	
Restrictions:	All HE fires w/VT or time fuzes	
Effects:	All smk rds are planned for impacting 50 meters upwind (NE) of target All known an suspected OP locations are screened	

9-16. A carefully developed method of fire is equally valuable during execution of the fire support mission; it assists not only the firing elements but also the observers who are responsible for monitoring the effects of the indirect fires. With a clear understanding of the intended target effects, fire support assets and observers can work together effectively, planning and adjusting the fires as necessary to achieve the desired effects on the enemy.

9-17. The following paragraphs describe the three types of targeting effects FA applies to a target based upon the commander's attack guidance.

Suppression

9-18. Suppression of a target limits the ability of enemy personnel to perform their mission. The purpose of suppressive fires is to create apprehension or surprise, and to cause armored vehicles to button up. The effect of surprise only lasts as long as fires are continued. This type of fire is used against known, suspected, and even inaccurately located targets. For example, the commander may direct that suppressing fires be used this way: "Suppress the ability of enemy AT reserves to fire or reposition, allowing Team B to consolidate on OBJECTIVE BOB."

COMMANDER' INTENT FOR FIRE SUPPORT: *COMPANY OFFENSE*
Smoke on BB1001 to cover our initial movement across the LD. Fire group B1B on Obj Fox as 2d and 3d plts cross PL Blue. Use BB 3109 to block a counter attack from Hill 333.

Tgt #	Grid	Description	Trigger Point	Execution Primary	Execution Backup
BB1001	123456	Smoke OP	When 1st Plt is ready to cross LD	1st Plt	FSO
BB1002 (Group B1B)	123567	Suspected Inf Sqd	2nd and 3rd Plts cross PL Blue	Co Cdr	2nd Plt
BB3108 (Group B1B)	135467	AT position	2nd and 3rd Plts cross PL Blue	Co Cdr	2nd Plt
BB3109	143335	Road Junction	If Counter atk from Hill 333 at 146576	2nd Plt	3rd Plt
BB2102	136324	Suspected AT position	If receive fire from position	FSO	XO

High Payoff Targets: *All AT-5 Positions*

Actions upon loss of FSO: *XO monitors 120 mortar net for fire support coordination. Plt Ldrs switch to FA net or the mortar net to fire missions*

	PRIORITY OF FIRES Cross LD		PRIORITY OF FIRES Cross PL Blue		Ammunition Available to TF
	FA	Mortars	FA	Mortars	FA HE: 16 Bn 3 rnds
CO	1s Plt	1st Plt	2nd Plt	2nd Plt	FA SMk: 25 min
BN	Co A	Co B	Co A	Co B	Mort HE: 22 Plt 6 rnds
BDE	3-37		3-37		Mort SMK: 20 Min

SOI	Days *05*	Days *06*
FA NET	31.10	45.5
Mort Net	56.00	44.5
Mort FDC	D34	W45
FA FDC	F7M33	H6L58

COORDINATING INSTRUCTIONS:

1. *Shoot 120mm Mortar smoke on BB1001*
2. *Group B1B targets are artillery priority targets*
3. *Shoot immediately any ZSU-23-4 or SA-9*

Note: FSEM examples are illustrative only. Format, content, and preparation of matrixes should be tailored to unit needs and standardized in local SOPs.

Figure 9-1. Fire Support Execution Matrix

Neutralization

9-19. Neutralization of a target renders it temporarily nonmission capable. Neutralization fires are delivered on known enemy targets. For example, the commander may direct: "On order, neutralize the easternmost MIBN, located vic grid OU 812422, to prevent the enemy from massing two MIBN against Teams B and D."

Destruction

9-20. Destruction fires renders a target permanently nonmission capable, and as a result, it also requires the greatest expenditure of ammunition to accomplish (provided precision guided munitions (PGM) are not used). Destruction missions require accurate target locations. Using laser guided munitions are also a means of conducting a destruction mission. For example, a commander may direct: "During the river crossing the FSV will locate where it can adequately observe the enemy. On order, the FSV will laze bunkers, hull down tanks, and other targets to provide targeting guidance to PGMs for target attack."

Nonlethal Fires

9-21. Two types of nonlethal fires that may be used to achieve suppressive effects are hexachloroethane-zinc (HC) smoke and white phosphorus (WP) smoke. Since weather conditions may affect smoke, the company FSO must ensure to coordinate not only with the maneuver commander, but also with adjacent units that may also be affected.

Screening

9-22. Screening fires involve the use of HC, WP, or a combination of these munitions to mask friendly elements and conceal their operations from the enemy. Screening fires may be used as follows: slow enemy vehicles to blackout speed; obscure the vision of direct fire gunners; reduce the accuracy of enemy observed fires by obscuring OPs and/or COPs, cause confusion and apprehension among enemy soldiers, limit the effectiveness of enemy visual command and control signals

9-23. Two additional special missions are Illumination and FA delivered family of scatterable munitions (FA FASCAM).

Illumination

9-24. The commander may require artillery delivered illumination rounds despite the increase in the number of image intensification (I2) and infrared sights. Illumination provides the ground force commander with the ability to see the battlefield at night without using his I2 and infrared night sight (INS), resulting in a savings to those systems batteries.

FA Delivered FASCAM

9-25. The commander may direct the FA fire FASCAM to delay or disrupt enemy formations or to close gaps in the defensive obstacle belts. FA delivered FASCAM consists of two different types of munitions—remote anti-armor mines system (RAAMS) and area denial artillery munitions (ADAM). Use of this munition requires coordination between the maneuver commander, the FSO, and the engineer.

FINAL PROTECTIVE FIRES PLANNING

9-26. FPF are designed to create a final barrier, or "steel curtain," to prevent a dismounted enemy from moving across defensive lines. They are fires of last resort; as such, they take priority over all other fires, to include priority targets. The employment of FPF presents several potential problems. They are linear fires, with coverage dependent on the firing sheaf of the fire support asset(s). In addition, while FPF may create a barrier against penetration by enemy infantry, armored vehicles may simply button up and move through the fires into the friendly defensive position.

9-27. FPF are planned targets and thus must have a clearly defined purpose. FPF planning is normally delegated to the company team that is allocated the support. Table 9-2 summarizes the coverage area of several possible FPF arrays, a critical planning factor the team commander must consider in employing FPF.

Table 9-2. Final Protective Fires Widths

STANDARD WIDTHS		
SYSTEM	**ELEMENTS**	**SIZE (M)**
60-mm Mortar	2 Tubes	70 X 35
81-mm Mortar	4 Tubes	140X40
107-mm Mortar	3 Tubes	120 X 40
107-mm Mortar	6 Tubes	250 X 40
120-mm Mortar	3 Tubes	180 X 60
120 mm Mortar	4 Tubes	200 X 60
120-mm Mortar	6 Tubes	350 X 60
105-mm Howitzer	3 Guns	105 X 35
105-mm Howitzer	6 Guns	210 X 35
155-mm Howitzer	3 Guns	150 X 50
155-mm Howitzer	6 Guns	300 X 50

TARGET REFINEMENT

9-28. The company team commander is responsible for the employment of indirect fires in his AO. The most critical aspect of this responsibility is target refinement, in which he makes necessary changes to the fire support plan to ensure that targets accomplish the task force or brigade commander's intended battlefield purpose. Rather than merely executing targets without regard to the actual enemy situation, the company team commander and FSO must be ready to adjust existing targets or to nominate new targets that allow engagement of specific enemy forces.

9-29. Necessary refinements usually emerge when the team commander conducts war-gaming as part of step 6 (complete the plan) of TLPs. The war-gaming process allows him to identify required additions, deletions, and adjustments to the task force fire support plan. The team FSO then submits the refinements to the task force FSE for inclusion in the scheme of fires for the operation. (**NOTE:** This is normally only the first step of target refinement, with the commander and FSO making further adjustments as the enemy situation becomes clearer.)

9-30. As a specific requirement in defensive planning, the team commander must focus on target refinement for the ground he will "own" during the operation. This usually takes place as part of EA development. The commander makes appropriate adjustments to the targets based on refinements to the SITEMP, such as the actual positions of obstacles and enemy direct fire systems.

9-31. Because fire support is planned from the top down, cutoff times for target nomination and target refinement are normally specified in the task force OPORD. Commanders must ensure that nominations and refinements meet these deadlines to provide fire support planners with sufficient time to develop execution plans.

Fire Support Preparation

9-32. As noted, although the task force and brigade commanders establish target tasks and purposes and allocate appropriate fire support assets, it is the team commander who must ensure execution of assigned targets. In turn, successful execution demands thorough preparation, focusing on areas covered in the following paragraphs.

Observation Plan

9-33. In developing the observation plan, the commander must ensure that all targets are covered by both a primary observer and an alternate observer. The plan must provide clear, precise guidance for the observers. Perhaps the most important aspect of the plan is positioning; observers' positions must allow them to see the trigger for initiating fires as well as the target area and the enemy force on which the target is oriented. The commander must also consider other aspects of observer capabilities, including available equipment. For example, the G/VLLD or LLD, provide first-round fire for effect capability; without it, observers may have to use adjust-fire techniques that take longer and are more difficult to implement. The observation plan must also include contingency plans that cover limited visibility conditions and backup communications.

NOTE: In addition to providing the specific guidance outlined in the observation plan, the commander must ensure that each observer understands the target task and purpose. For example, observers must understand that once the first round impacts, the original target location is of no consequence; rather, they must orient on the targeted enemy force to ensure that fires achieve the intended battlefield purpose.

Rehearsals

9-34. The company team commander is responsible for involving his FSO in team and task force-level rehearsals, for making the team available for any separate fire support rehearsals, and for rehearsing the team's observers in the execution of targets. He should also use rehearsals to ensure that the team's primary and backup communications systems will adequately support the plan.

Target Adjustment

9-35. In the defense, the commander should confirm target location by adjusting fires as part of EA development.

Trigger Planning

9-36. The commander develops a trigger for each target. The trigger can be a point on the ground, such as an easily recognizable terrain feature or an emplaced marker, or a designated linear control measure. In the defense, triggers should be physically marked on the ground or their location specifically selected and identified during the development of the engagement area. (**NOTE:** Triggers can be marked using techniques similar to those for marking TRPs. See Figure B-2 for an illustration of some of these methods.)

9-37. The trigger line or point must be tied to clearly understood engagement criteria associated with the targeted enemy force. As an example, the commander might use the following order to begin indirect fires: "Initiate target AE0001 when approximately 30 BMPs and 10 T-80s cross TRIGGER LINE ORANGE."

9-38. Several factors govern the positioning of the trigger. Especially critical are the enemy's rate of travel and the resulting time required for the enemy force to move from the trigger to the target area. Using this information, the commander can then select the trigger location based on the following considerations:

- The amount of time required to make the call for fire.
- The time needed by the fire support element to prepare for and fire the mission.
- The time required for the task force and/or brigade to clear the fires.
- Any built-in or planned delays in the firing sequence.
- The time of flight of the indirect fire rounds.
- Possible adjustment times.

9-39. The company team commander can use the information in Table 9-3 and Table 9-4 as he completes the process of determining the location of the trigger in relation to the target area. Table 9-3 lists the time required for the enemy force to move a specified distance at a specified rate of march. Table 9-4 lists the response time required by FA assets to prepare for and fire various types of support missions.

9-40. As in trigger planning for the initiation of fires, the commander must establish triggers for lifting and/or shifting of fires based on battlefield events, such as the movement of enemy or friendly forces. One technique is the use of a minimum safe line (MSL). When a friendly element, such as a breach force, is moving toward an area of indirect fires. As the element approaches the MSL, observers call for fires to be lifted or shifted, allowing the friendly force to move safely in the danger area.

Table 9-3. Time (in minutes) Required to Travel a Specified Distance

RATE OF MARCH	DISTANCE TRAVELED									
	1 km	**2 km**	**3 km**	**4 km**	**5 km**	**6 km**	**7 km**	**8 km**	**9 km**	**10 km**
60 km/hr	1	2	3	4	5	6	7	8	9	10
50 km/hr	1.2	2.4	3.6	4.8	6	7.2	8.4	9.6	10.8	12
40 km/hr	1.5	3	4.5	6	7.5	9	10.5	12	13.5	15
30 km/hr	2	4	6	8	10	12	14	16	18	20
25 km/hr	2.4	4.8	7.2	9.6	12	14.4	16.8	19.2	21.6	24
20 km/hr	3	6	9	12	15	18	21	24	27	30
15 km/hr	4	8	12	16	20	24	28	32	36	40
10 km/hr	6	12	18	24	30	36	42	48	54	60
5 km/hr	12	24	36	48	60	72	84	96	10**8	120

Table 9-4. Artillery Response Times

GRID OR POLAR MISSION (UNPLANNED)	**5-7 minutes**
PREPLANNED MISSION	**3 minutes**
PREPLANNED PRIORITY MISSION	**1-2 minutes**
NOTE: These are approximate times (based on ARTEP standards) needed to process and execute calls for fire on normal artillery targets. Special missions may take longer.	

CLEARANCE OF FIRES

9-41. The maneuver commander is the final authority to approve (clear) fires and their effects within his zone or sector. Although he may delegate authority to coordinate and clear fires to his FSO, the ultimate responsibility belongs to the commander. Normally, the FSO will assist the commander by making recommendations on the clearance of fires. Units equipped with FBCB2 can request fires digitally by highlighting the call for fire box on the FBCB2 SALT report tab or on a traditional call for fire format. Once the FSO receives this request via FBCB2, he must still clear the request through the company commander and if the company commander approves the request the FSO then forwards the request through the fire support channels via FM or the AFATDS.

SECTION II – ENGINEER SUPPORT

ORGANIZATION AND ORGANIC EQUIPMENT

9-42. Based upon the METT-TC and Brigade Commander's scheme of maneuver an Armor/Infantry task force is supported by a mechanized engineer company. The command and support relationship of the engineer company may be attached, OPCON, or direct support to the maneuver task force. As a combat multiplier the engineer focuses all effort on maintaining the friendly forces freedom to maneuver (mobility); attack the enemy's ability to mass and maneuver (countermobility); and protect the friendly forces from the effects of direct and indirect fires (survivability). The engineer company consists of two engineer sapper platoons and an assault and obstacle platoon.

Engineer Sapper Platoon

9-43. Each engineer platoon is organized into three engineer squads and a headquarters section. It is also equipped with four M113s and an ACE (METT-TC and unit SOP dependent, all ACEs may be consolidated in assault and obstacle platoon). The sapper platoon contains significant small arms firepower with three M2 .50 cal machine guns, one MK19 40mm grenade launcher, two M240B 7.62 mm machine guns, and three M249 5.56 mm squad automatic weapons. The sapper platoon is capable of conducting each engineer mission, when it is tasked to conduct breaching operations, it may be reinforced with elements from the assault and obstacle platoon.

ASSAULT AND OBSTACLE PLATOON

9-44. The assault and obstacle platoon consists of two assault sections and an obstacle section. Each assault section has two AVLBs (or the replacement Wolverine), two ACEs, and two MICLICs (METT-TC and unit SOP dependent, MICLICs may be located within the Sapper platoons). The obstacle section has two M548s (that may carry the Volcano mine-laying system), two small emplacement excavator (SEE), two heavy expanded mobility tactical trucks (HEMTT), and an ACE.

COMPANY TEAM ROLE

9-45. The company team may be task organized in one of several ways—with an engineer platoon (or squad) and an assault section attached, or OPCON during mobility operations; with the engineer platoon(s) in direct support to the company during EA development; or with the assault and obstacle platoon in direct support to construct survivability positions during BP preparation. In addition, the team may attach its mine plow or roller tanks to the engineer company when the engineers serve as the breach force during breaching operation. (**NOTE:** For missions in which the company team is task organized with an engineer platoon, the engineer platoon leader takes part in development of the team's plan; the platoon leader provides expertise in terrain analysis and employment of the engineer assets to the company team commander.)

EQUIPMENT CAPABILITIES

ARMORED COMBAT EARTHMOVER

9-46. The M9 ACE uses its front-end blade to fill in craters and AT ditches, dig AT ditches and vehicle fighting positions, and reduces lanes in AP minefields. Additional mobility capabilities of the ACE are discussed in the description of breaching operations in Chapter 11.

ARMORED VEHICLE LAUNCHED BRIDGE

9-47. The AVLB is based on an M60-series or M48-series tank chassis modified to transport, launch, and retrieve an 18-meter (60-foot) bridge. The span is capable of carrying MLC 60 track loads across a 17-meter gap and MLC 70 loads across a 15-meter gap. See the discussion of breaching operations in Chapter 11 and the discussion of gap crossing operations, also in Chapter 11, for additional information on the AVLB's mobility capabilities.

WOLVERINE

9-48. The Wolverine is based on a M1A2 SEP tank chassis modified to transport, launch, and retrieve a 26 meter bridge. The span is capable of carrying MLC 70 track loads across a 24 meter gap, and is FBCB2 equipped. The Wolverine is currently in the low rate initial production phase and replaces the AVLB on a one for one basis during fielding.

MINE-CLEARING LINE CHARGE

9-49. The MICLIC is a rocket-propelled explosive line charge; when fired into a minefield, it creates a lane that is 100 meters long and 14 meters wide. The lane must be proofed mechanically or manually to ensure no mines remain within the lane. The line charges are either trailer-mounted or, as noted in the following paragraph, carried on the armored vehicle launched MICLIC (AVLM). The MICLIC is most effective to reduce minefields containing single-impulse, pressure activated AT mines, and mechanically activated AP mines. The MICLIC has 62 meters standoff distance from the launcher to the detonation point. The MICLIC has limited effectiveness against prong AT mines, magnetically activated mines, top/side attack mines, and mines containing time delay fuses. See Chapter 11 for further discussion of MICLIC capabilities.

ARMORED VEHICLE LAUNCHED MICLIC

9-50. This vehicle serves as a launch platform for two MICLICs. The AVLM is a modified version of the AVLB. When configured as an AVLM the vehicle is no longer able transport, launch, or retrieve a bridge.

MINE CLEARING BLADE

9-51. The mine clearing blade (MCB) is used to proof or create lanes in minefields. It consists of a blade arrangement with scarifying teeth to extract mines, a moldboard to cast mines aside and leveling skids to control the blades depth. The MCB lifts and pushes mines that are surface laid or buried up to 31 centimeters deep to the side of the track lanes. The blade has three depth settings—21, 25, and 31 centimeters. The blade creates a 1.5 meter cleared path in front of each track at a speed of 8 to 10 kph in a straight line. The MCB weights about 3,150 kilograms and can be mounted on the front an M1 tank without any special preparation or modification. It takes about one hour to mount the MCB onto a tank.

MINE CLEARING ROLLER

9-52. The mine clearing rollers (MCR) consists of a roller assembly, mounting kit and a hand winch. The roller assembly weighs 9,072 kilograms and is mounted to the front of the tank. The rollers are designed to defeat most single-pulse, pressure activated AT and AP mines. The roller creates a 1.1 meter wide cleared path in front of each track at a speed of 5 to 15 kph in a straight line. It is designed to resist four conventional (22.5 pounds HE) or three SCATMINE strikes.

VOLCANO

9-53. The Volcano is a scatterable mine system that can be mounted on the back of a five-ton truck, on an M548, or on a UH-60 helicopter. See situational obstacle on page 9-16 for further discussion on capabilities, planning, and execution of the Volcano system.

SMALL EARTH EXCAVATOR

9-54. The SEE has a backhoe, a bucket loader, and other attachments, including a handled hydraulic rock drill, a chain saw, and a pavement breaker. The SEE can dig positions for individual, crew-served, and AT weapons or for Stinger missile teams. It can also be employed to dig in ammunition prestock positions and vehicle protective positions (dependent upon the soil conditions).

MOBILITY PLANNING CONSIDERATIONS

9-55. In mobility operations, the engineer platoon can perform the support operations described in the following paragraphs. (**NOTE:** See FM 3-34.2 [FM 90-13-1] for a detailed discussion of mobility operations.)

ROUTE RECONNAISANCE

9-56. Engineers may conduct route reconnaissance missions as a Squad mission or augment task force scouts and/or the brigade recon troop as dictated by the METT-TC. Specific information requirements requiring engineer subject matter expertise may include obstacle intelligence (OBSINTEL), bridge classification, or crossing site locations.

OBSTACLE REDUCTION

9-57. Engineers identify and mark bypasses, or reduce obstacles, to maintain freedom of maneuver capability of the unit they are supporting. The discussion of breaching operations in Chapter 11 covers the engineers' obstacle reduction capability.

ROUTE CONSTRUCTION AND IMPROVEMENT

9-58. The engineers have limited capability to construct, improve, and maintain roads, bridges, and fords. In addition to providing mobility support for offensive operations, they can enhance mobility in the defense, focusing on the ability to shift forces. This effort includes assisting defensive elements in movement to alternate, supplementary, and successive BPs and assisting in the movement of reserve forces to counterattack, blocking, or reinforcing positions.

COUNTERMOBILITY PLANNING CONSIDERATIONS

9-59. In their countermobility role, engineers construct obstacles that deny the enemy's ability to execute his scheme of maneuver. Commonly used obstacles include minefields, wire obstacles, AT ditches, road craters, abatises, and log cribs. Engineers can also reinforce terrain and existing obstacles to disrupt, fix, turn, or block the enemy force. The company team, especially its infantry squads, will often assist the engineers in the emplacement of obstacles. Additional coordination measures between the company team commander and the engineer platoon leader include work site security plan, engineer disengagement criteria, passage of lines procedures, and actions upon indirect fire or direct fire contact.(See FM 3-34.1 [FM 90-7] for a detailed discussion of countermobility operations.)

9-60. Regardless of the type of defense used by the maneuver commander, there are five basic principles for the employment of reinforcing obstacles:

- Obstacles must support the scheme of maneuver.
- They must be integrated with and covered by observed fires.
- Reinforcing obstacles must tie into existing obstacles when possible.
- Obstacles are most effectively employed in depth.
- They should be employed to surprise the enemy.

OBSTACLE INTEGRATION

9-61. An understanding of obstacle integration will assist the company team commander in implementing the team's portion of the task force obstacle plan. This includes knowledge of obstacle purpose and integration procedures.

OBSTACLE INTENT

9-62. The task force commander decides how he will use obstacles to support his scheme of maneuver, defining the end result that the combination of fires and obstacles must achieve. His obstacle intent provides purpose and unity of effort for his subordinates' obstacle emplacement. At task force level (as well as at brigade level), obstacle intent identifies the following emplacement factors:

- **Target.** Obstacles are force-oriented combat multipliers. The company team commander and supporting engineers must understand the target of each obstacle so it can be properly designed and sited.
- **Obstacle Effect.** An understanding of the higher commander's desired obstacle effect (disrupt, fix, turn, or block) is essential.
- **Relative Location.** This is a vital consideration; it ties the target and obstacle effect into the higher commander's scheme of maneuver.

OBSTACLE ZONES, BELTS, AND GROUPS

9-63. Commanders use obstacle zones (at division level and higher) and obstacle belts (at brigade level) to define the areas in which subordinates are authorized to employ tactical obstacles. Zones and belts give subordinate commanders flexibility in their use of obstacles. At the same time, however, they help to eliminate conflicts among subordinate elements over obstacle employment while ensuring that the effects of obstacles that are emplaced will support the higher commander's overall plan and scheme of maneuver and are covered by either direct or indirect fires.

9-64. Within the brigade belt, individual task forces are responsible for developing and emplacing obstacle groups. These are collections of individual obstacles designed and arrayed to produce a singular, specific tactical effect on a company-size enemy element. At the task force level, obstacle effects are directly linked to the direct and indirect fire plans. Table 9-5 summarizes the echelons of obstacle control and effects.

Table 9-5. Echelons of Obstacle Control and Effects

Obstacle Control Measure	Echelon	Size of Enemy AA/MC Targeted		Obstacle Effect
		Armored	Light	
Zone	Corps/ Division	Division/Brigade	Brigade/ Battalion	
Belt	Brigade	Brigade/Battalion	Battalion/ Company	
Group	Battalion	Battalion/ Company	Company/ Platoon	
Individual obstacle	Company	Standard obstacles; tailored to obstacle group effect		N/A

TYPES OF TACTICAL OBSTACLES

9-65. The task force employs tactical obstacles to directly attack the enemy's ability to maneuver, mass, and reinforce. These obstacles are used to produce four types of primary effects—to disrupt, to turn, to fix, or to block.

9-66. The three types of tactical obstacles (situational, reserve, and directed) are described in the following paragraphs. See the discussion of planning considerations in Chapter 4 for additional information on the purpose of each type. (**NOTE:** In addition to the three types described here, the company team employs protective obstacles.) Table 9-6 shows an

example of the countermobility planning matrix that the commander might use to plan time requirements for obstacle construction.

Table 9-6. Example Countermobility Planning Matrix

OBSTACLE TYPE	CONSTRUCTION TIME
Disrupting minefield (250 meters by 100 meters)	1.5 platoon hours
Fixing minefield (250 meters by 120 meters)	1.5 platoon hours
Turning minefield (500 meters by 300 meters)	3.5 platoon hours
Blocking minefield (500 meters by 320 meters)	5 platoon hours
Hasty road crater (6 to 10 meters wide)	1.5 squad hours
Abatis (75 meters deep)	4 squad hours
Triple standard concertina wire obstacle (300 meters)	1 engineer platoon hour OR 1.5 infantry platoon hours
11-coil concertina wire roadblock	1 squad hour

Situational Obstacles

9-67. These are obstacles that units plan (and, if possible, prepare) before an operation. Execution, however, is a be-prepared mission based on the actions of the enemy; the unit does not execute situational obstacles unless specific criteria are met. Although situational obstacles can be conventionally emplaced, employment is normally limited to scatterable mine systems described in the following paragraphs.

9-68. **ADAM and RAAMS.** These are, respectively, antipersonnel and AT mines delivered by 155-mm artillery. Depending on the number of aim points and volume of rounds, they can be employed in low-, medium-, or high-density minefields ranging from 100 to 800 meters wide and from 400 to 1,000 meters deep (typical minefields 400 meter X 400 meter medium density). Both ADAM and RAAMS have a short duration of four hours, and a long duration of 48 hours. The safety zone of ADAM and RAAMS varies from 500 to 1,500 meters from aim point(s) (depends on delivery factors) (see Figure 9-2).

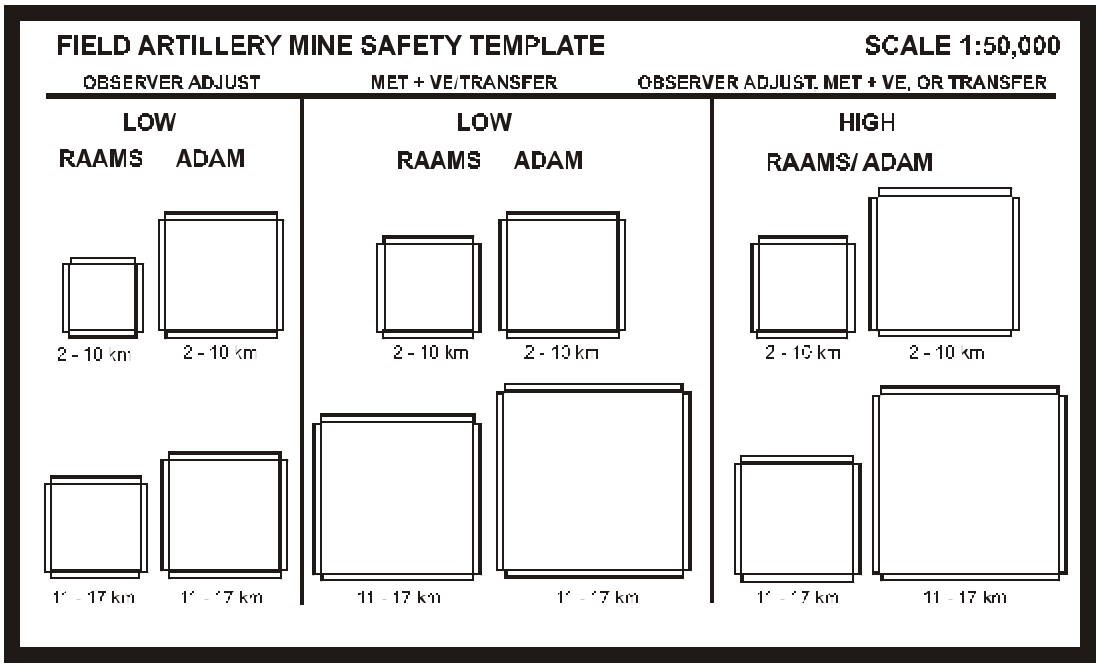


Figure 9-2. Field Artillery Mine Safety Template

9-69. **Volcano.** The Volcano scatterable mine system emplaces 120 meters deep and up to 1,100 meters long mixed AP and AT minefield. Volcano minefields can be emplaced by air or ground systems. The system may reinforce existing obstacles; close lanes, gaps, and defiles; provide flank protection for advancing forces; and deny the enemy access to possible air defense sites. Volcano minefields are also ideal for employment when the company team is operating in concert with air and ground cavalry units in conducting flank guard and flank screen missions. They have a safety zone 1,150 meters X 160 meters and a fragmentation zone of 235 meters, a short duration of four hours, and a long duration of 48 hours/15 days. (**NOTE:** See FM 3-24.32 [FM 20-32] for detailed information on the design of Volcano minefields based on the desired effect).

9-70. **MOPMS.** This system centers on a man-portable dispenser that can emplace 17 AT mines and 4 antipersonnel mines in a 35-meter semicircle. Mines are dispensed on command using the M71 remote control unit (RCU) or an electronic initiating device, such as the M34 blasting machine. The company team can use MOPMS to create a protective minefield, to close lanes in task force tactical obstacles, or emplace disrupt and fix minefields utilizing multiple dispensers. The safety zone is 55 meters from the front and sides and 20 meters from the rear of the container. MOPMS has duration of four hours (the mines initiate self-destruction at 3 hours and 15 minutes, with the last mine self-destructing at the 4 hour mark) that can be extended up to three times starting at the 3 hour and 15 minute mark (a total of 13 hours); mines can be command-detonated using the M71 (see Figure 9-3).

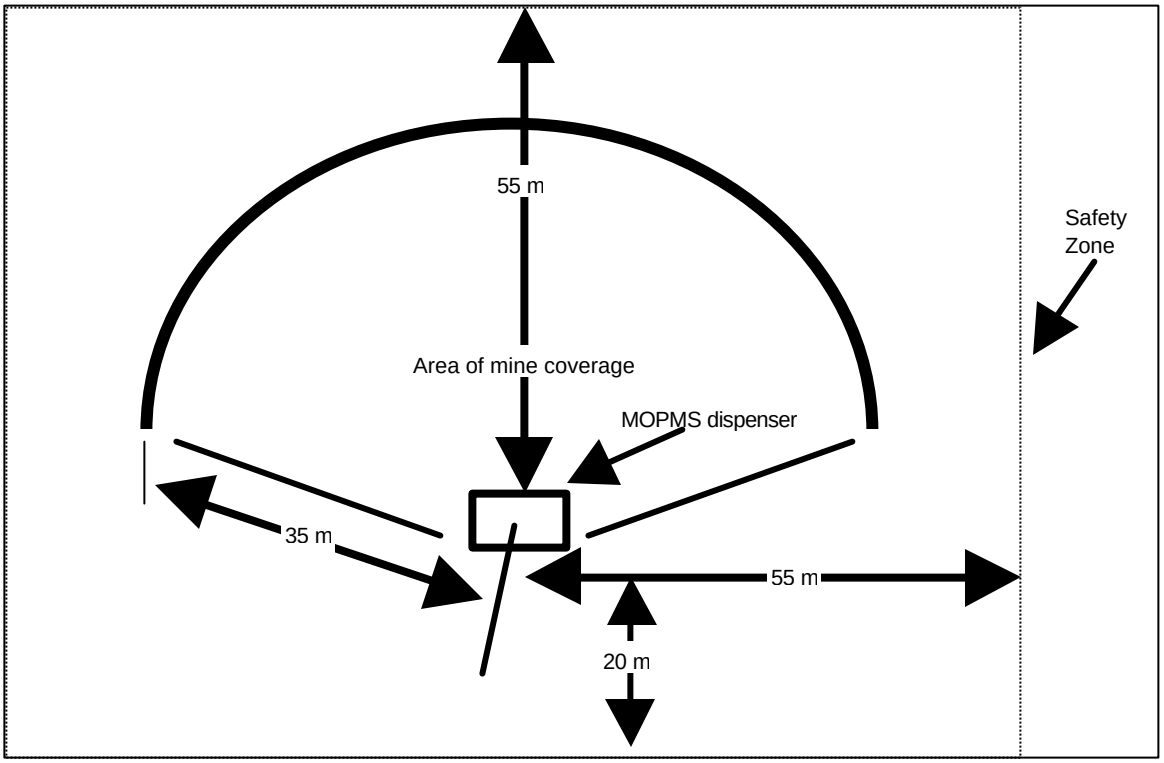


Figure 9-3. MOPMS Emplacement and Safety Zones

9-71. **HORNET.** The M93 Hornet is an AT/antivehicular off-route munition made of lightweight material (35 pounds) that one person can carry and employ (see Figure 9-2). The Hornet is a nonrecoverable munition that is capable of destroying vehicles by using sound and motion detection methods. Once armed and it completes its self-test, the Hornet automatically search, detect, recognize, and engage moving targets by using top attack at a standoff distance up to 100 meters from the munition. Self–destruct times for the Hornet are four hours, 48 hours, 5 days, 15 days, or 30 days. It is employed by combat engineers, rangers, and SOF (see Figure 9-4).

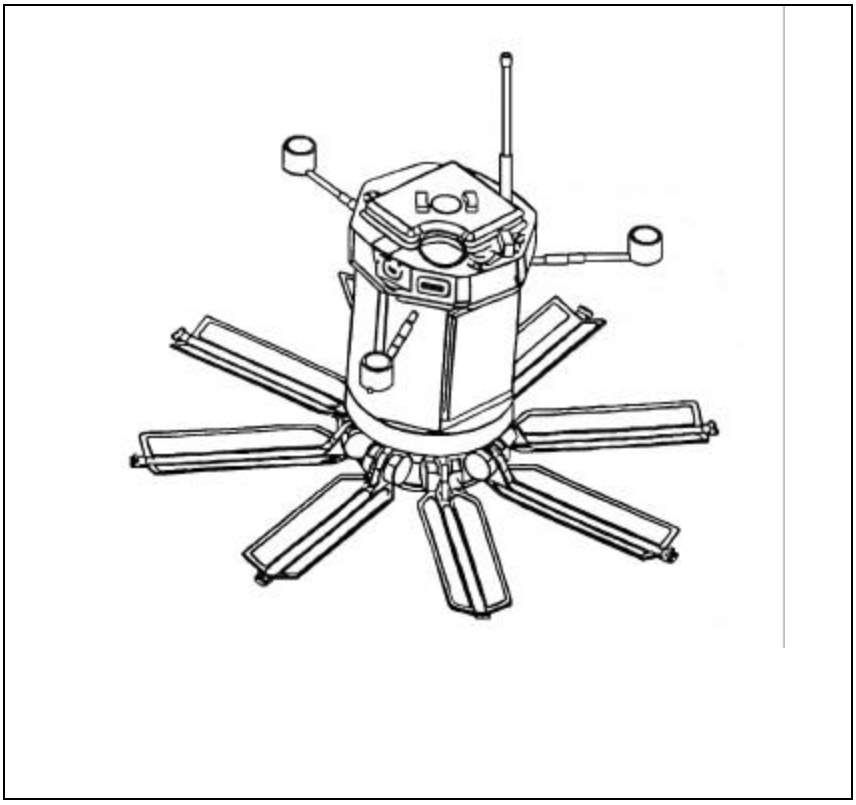


Figure 9-4. M93 Hornet

NOTE: Scatterable mines begin self-destruction at 80 percent of their life cycle (see Table 9-7 and Table 9-8).

Table 9-7. Self-Destruct Window Times

SD Time	SD Window Begins
4 hours	3 hours 12 minutes
48 hours	38 hours 24 minutes
5 days	4 days
15 days	12 days

Table 9-8. Safety and Hazard Zones

SYSTEM	SAFETY ZONE	FRAGMENT HAZARD ZONE
ADAM/RAAM	500 to 1,500 meters from aim point(s) (depends on delivery method)	235 meters from the outside dimensions of the safety zone
Ground Volcano	1,150 x 160 meters	235 meters from start and stop point and the center line
Air Volcano	1,915 x 200 meters	235 meters from start and stop points and the center line
MOPMS	55 meters (semicircle from front and side up dispenser)	235 meters from the outside dimensions of the safety zone.

Reserve Obstacles

9-72. These are on-order obstacles (such as road cratering and bridge demolition) for which the commander restricts execution authority. He usually specifies the unit responsible for emplacing, guarding, and executing the reserve obstacle. He must also clearly identify the conditions under which the obstacle is to be executed. (See FM 3-34.1 [FM 90-7] for additional details on reserve obstacles.)

Directed Obstacles

9-73. Most directed obstacles are planned at task force level to achieve a specific obstacle intent. In support of this intent, they are assigned to a specific unit for siting and emplacement. Regardless of the type of obstacle and who is assigned responsibility of the obstacle, it must be recorded manually on DA Form 1355 and reported via FM and FBCB2 to the task force main CP.

OBSTACLE SITING

9-74. The company team commander and engineer platoon leader work together on obstacle siting during the development of the EA. (See FM 3-34.1 [FM 90-7] for a detailed discussion of obstacle siting procedures. Additional information is provided in the discussion of EA development in Chapter 6.) The following specific steps apply in this procedure:

- Combat elements should be used to provide security for the engineers as they emplace obstacles.
- The company team marks fire control measures (such as TRPs and artillery targets) in the EA.
- Elements from the engineer platoon enter the EA and move to the far side of the proposed trace of the obstacle group.
- The engineer platoon leader and company team commander collocate in the defensive positions covering the obstacle.
- Elements from the engineer platoon move along the proposed trace of the obstacle group.

- From the defensive position, the commander, platoon leaders, and vehicle commanders follow the movement of the engineer platoon, ensuring that all points of the obstacle trace can be covered with fires. They maintain communications with the engineers via FM.
- The commander and engineer platoon leader refine the obstacle trace, adjusting the position of individual obstacles as necessary.

9-75. The team commander and the emplacing engineer should use a common set of operational "tools" to ensure accurate, effective obstacle siting. These resources include the following:

- The current SITEMP.
- Commander's intent.
- The fire plan and applicable maneuver graphics.
- Obstacle execution matrix.
- Scheme of obstacles overlay.
- Fire support plan.
- CSS graphics.

OBSTACLE TURNOVER AND TRANSFER

9-76. Once an obstacle group is completed, the emplacing element conducts obstacle turnover, transferring control of the obstacles to the owning unit. Turnover procedures should cover the following paragraphs.

9-77. Once an obstacle group is completed, the emplacing unit conducts minefield or obstacle turnover with the owning unit. Occasionally, the owning unit will transfer responsibility for a minefield to another unit. Minefield or obstacle turnover ensures that the commander of the owning unit is familiar with the minefield and understands his responsibilities concerning it. Turnover is conducted whether or not there are lanes/gaps to be closed. Minefield turnover is a must; the time and the location for the turnover is established during the initial siting coordination.

9-78. The engineer must verbally address the following items with the overwatching company team:

- **Intelligence.**
  - Provide an update on enemy activity forward of the minefield.
  - Discuss expected enemy reconnaissance efforts.
  - Brief on local, friendly, and enemy situations.
- **Maneuver.**
  - Discuss obstacle protection against enemy dismounted patrols. Recommend that the maneuver unit conducts security/patrols to protect the minefield during limited visibility.
  - Discuss fire control measures.

- **Mobility/survivability.**
  - Discuss the obstacle's intended effect on enemy maneuver.
  - Discuss the minefield front and depth and walk/ride the minefield trace.
  - Provide grid coordinates of the minefield trace.
  - Discuss minefield composition.
  - Discuss friendly minefield marking.
  - Discuss lane/gap closure, if applicable. Confirm the signal or the activity that initiates lane closure.
  - Train units on how to close lanes. This may mean training the unit on emplacing conventional mines or using the MOPMS.
- **Fire support.**
  - Update the company FIST on grid coordinates for the minefield trace.
  - Discuss indirect fires covering the minefield.
- **CSS.** Provide mines/material required to close lanes/gaps and ensure that all necessary material is available and prepared.
- **C2.**
  - Transfer graphics and documentation (minefield records, demolition-target folders, or other written records).
  - Report completion of the turnover to the higher engineer and supported unit headquarters.
  - Complete an obstacle-turnover report and submit it to higher headquarters (a sample worksheet is shown in Figure 9-5).
  - Forward the written minefield report and record (DA Form 1355 or DA Form 1355-1-R) to the next higher commander common to both units.

OBSTACLE-TURNOVER/TRANSFER REPORT

OBSTACLE DATA

Obstacle Number	Obstacle Type	Emplacing Authority
Obstacle Location *(8-digit UTM grid to center of mass)*	Obstacle Effect	Emplacing Unit

TURNOVER DATA

Transferring Unit	Receiving Unit	Date/Time of Transfer
Next Higher Command Common to Both		Date Obstacle Emplaced

TURNOVER CHECKLIST

☐ Intelligence
- Enemy activity forward of the obstacle *(discuss enemy recon and breaching efforts)*.
- Friendly activity in the vicinity of the obstacle *(discuss LOGPAC, recon, counterrecon maneuver)*

☐ Maneuver
- Obstacle protection against enemy recon/breaching *(discuss overwatch, counterrecon patrols, sunrise sweep)*.
- Location of TRPs and indirect-fire targets *(point out location on graphics and terrain)*.
- Rearward/forward passage of lines *(discuss planned and routine activity around the obstacle)*.

☐ Mobility/survivability
- Obstacle trace *(discuss corner grids on map and point them out on terrain)*.
- Obstacle marking *(rear side, all four sides, fence, signs, HEMMS poles, or no marking)*.
- Obstacle composition.
- Location of gaps/lanes.
- Method of closing gaps/lane *(MOPMS, ADAM, RAAM, conventional mines)*.
- Location of material to close gaps/lanes.

☐ CSS Planned casualty evacuation and supply routes in the vicinity of the obstacle.

☐ C^2
- DA Form 1355 or 1355-1-R, dated _____, transferred to receiving unit.
- Obstacle overlay, dated _____, transferred to receiving unit.
- Target folder, dated _____, preparing headquarters _____, transferred to receiving unit.
- Higher headquarters (transferring, receiving, and emplacing units) notified of transfer.
- DA Form 1355 or 1355-1-R forwarded. (NOTE: Three copies are required for transfer—one to transferring unit, one to receiving unit, and one to next higher headquarters common to both.)

CERTIFICATION

The undersigned certify that the receiving unit has assumed full responsibility for the obstacle indicated above. The unit commander understands all the information related to the obstacle, the obstacle intent, and his responsibility to transfer or recover the obstacle upon his departure.

Signature of Transferring Unit Commander	Signature of Receiving Unit Commander
Printed Name and Rank	Printed Name and Rank

Figure 9-5. Sample Obstacle-Turnover Worksheet

SURVIVABILITY PLANNING CONSIDERATIONS

9-79. The commander must plan the priority of his survivability effort. His plan should specify a sequence in which vehicle and individual positions will receive dozer and/or ACE support; it should also designate the priority for small emplacement excavator (SEE) support (to construction of infantry fighting positions or to emplacement of Class V caches). Survivability specifications for vehicle and individual fighting positions are covered in FM 3-20.15 (FM 17-15), FM 3-21.71 (FM 7-7J), and FM 3-34.112 (FM 5-103) and also list the specifications for trench lines and bunkers associated with a strongpoint defense.

9-80. Table 9-9 summarizes the amount of time required to prepare various types of vehicle and individual positions using the assets available to the company team. The company team commander can use this information in developing his survivability plan, in establishing digging priorities, and in directing the handoff of digging assets among his platoons. Additional considerations for survivability planning include site security, vehicle position marking requirements, linkup and escort procedures, disengagement criteria, CSS, and movement times between BPs.

Table 9-9. Survivability Planning Timetable (Time, in Hours, Required to Prepare Vehicle and Individual Positions)

ASSET TYPE OF POSITION	BLADE TEAM (2 ACEs OR 2 dozers)	SEE	MANUAL
M1/BFV hull-defilade	1.5	NA	NA
M1/BFV turret-defilade	3.5	NA	NA
M113 position	0.6	NA	NA
Two-man fighting position	NA	0.5 *	6 *
Machine gun position	NA	1 *	7 *
AT position	NA	1 *	6 *
* An additional five hours is required for these assets to prepare overhead cover for the position.			

SECTION III — AIR DEFENSE

SYSTEMS, ORGANIZATION, AND CAPABILITIES

9-81. Enemy air forces operating over the battlefield, will attempt to attack friendly ground forces and attempt to destroy or disrupt their operations. The air defense battalion will provide short-range air defense (SHORAD) coverage for divisional assets. Lower echelons, including the company team, must depend on their own air defense capabilities by utilizing Combined Arms for Air Defense (CAFAD).

9-82. The company team commander must be able to employ all available active and passive air defense measures. The team can mass the fires of its individual and crew-served weapons against any enemy aircraft to provide a significant terminal defense. In addition, every member of the company team must be capable of firing at attacking air platforms.

AIR DEFENSE ARTILLERY SYSTEMS

9-83. The air defense commander employs several types of systems to provide low- to high-altitude air defense coverage. At corps level and higher, these systems are the Avenger, the Patriot, Theater High Altitude Air Defense (THAAD), and man-portable air defense (MANPAD). At the tactical level, low- to medium-altitude air defense is accomplished by the air defense battalion organic to the division.

TASK FORCE ORGANIZATION

9-84. A maneuver task force is normally task organized with an air defense platoon equipped with either four BSFV, Bradley Linebacker, or Avenger weapon systems. The company team may have an air defense section moving with it; however, this section normally will remain part of the air defense platoon, responsible for providing DS, GS, or general support-reinforcing (GS-R) coverage to the task force.

TASK FORCE ASSETS

9-85. Air defense systems employed by the task force are described in the following paragraphs.

Stinger

9-86. This heat-seeking, short range guided missile is the task force's primary air defense weapon. Stinger missiles are deployed as the missile component of the MANPADS teams, Linebackers, and Avengers. It is designed to counter the threat of advanced helicopters, UAVs and RPVs, high-speed maneuvering aircraft, and cruise missiles. The Stinger has a range in excess of 5 kilometers.

Man-Portable System

9-87. The Stinger can be employed as a man-portable air defense system, known as MANPADS. The two-man Stinger team, consisting of a gunner and a crew chief, is transported in a HMMWV or BSFV (described in the following paragraph). The MANPADS team carries an identification, friend, or foe (IFF) interrogator to assist the gunner and team chief in identifying and engaging targets.

Bradley Stinger Fighting Vehicle

9-88. The BSFV provides the air defender with armor protection. The vehicle also gives him the ability to maneuver with the supported force and position the MANPADS team forward on the battlefield. The MANPADS team must dismount to fire its missiles. The BSFV carries a basic load of six Stinger missiles as its primary air defense weapon; the Bradley's 25-mm chain gun can be used to augment the Stinger and cover dead space to a range of 2,000 meters. The vehicle also carries five TOW missiles and is manned by five soldiers. The BSFV secondary mission is to engage and destroy ground targets.

Bradley Linebacker

9-89. This recently developed vehicle replaces the BSFV's TOW system with four ready-to-fire Stinger missiles, housed in the standard vehicle mounted launcher (SVML). The Bradley Linebacker, with its ability to shoot on the move, is designed specifically to provide air defense on all terrain throughout the depth of the battlefield.

Avenger

9-90. The Avenger is a light weight, day or night, limited adverse weather fire unit employed to counter enemy ISR efforts, and low level aerial threats. The Avenger system has eight ready to fire Stinger missiles in two turret mounted launchers. It also has a M3P .50 cal machine gun. It can launch a Stinger missile or fire the machine gun while on the move, or from a remote firing position. The Avenger has a two soldier crew.

EMPLOYMENT OF AIR DEFENSE ARTILLERY SYSTEMS

9-91. In offensive situations, BSFV and Bradley Linebacker units will accompany the main attack. They may maneuver with the task force's lead company teams, orienting on low-altitude air avenues of approach and the enemy's most likely COA. When the unit is moving or in a situation that entails short halts, the Bradley's primary weapon is the 25-mm chain gun, which has an effective range of 2,000 meters. Consequently, to assure mutual support, BSFVs or Linebackers will maneuver no farther than 1,000 meters away from other task force elements. The Stinger gunners on the BSFV can dismount to provide air defense when the unit reaches the objective or pauses during the attack. Additional planning factor to consider when employing Avenger systems is Avengers are light skinned and extremely vulnerable to small arms and indirect fire.

9-92. In the defense, BSFV or Bradley Linebacker units establish BPs based on available IPB information and the task force commander's scheme of maneuver. Squads are positioned approximately 2 kilometers apart to maximize the air defense vehicles' defensive capabilities. BSFVs and Linebackers are often used to protect counterattacking maneuver units that are vulnerable to detection and attack by enemy air forces.

COMMAND AND CONTROL

9-93. Depending on the task organization and guidance from the task force commander, the BSFV or Linebacker platoon leader operates on the Air Defense Early Warning net and monitors and reports on the task force or controlling company team command net. Air defense platoons should not be attached to individual tank or mechanized platoons. Whether a section or full air defense platoon is attached to the company team the section leader or platoon leader should report directly to the company team commander. Working as a single unit the air defense section/platoon leader can more effectively coordinate air defense coverage within the company team AO. However, it is incumbent upon the ADA leader to coordinate with adjacent platoons when operating within the company team AO to avoid fratricide and disruption of C2.

WEAPONS CONTROL STATUS

9-94. The weapons control status (WCS) set by the Joint Forces Air Component Commander (JFACC) describe the relative degree of control in effect for air defense fires. The JFACC is the only commander authorized to decrease the WCS, subordinate commanders have the authority to increase, but not decrease the WCS. It applies to all weapon systems. The WCS is dictated in the task force OPORD and may be updated based on the situation. The three levels of control are the following:

- **WEAPONS FREE.** Crews can fire at any air target not positively identified as friendly. This is the least restrictive WCS level.
- **WEAPONS TIGHT.** Crews can fire only at air targets positively identified as hostile according to the prevailing hostile criteria.
- **WEAPONS HOLD.** Crews are prohibited from firing except in self-defense or in response to a formal order. This is the most restrictive control status level.

EARLY WARNING PROCEDURES

9-95. While air defense warnings cover the probability of hostile air action over the entire theater of war or operations, local air defense warnings describe with certainty the air threat for a specific part of the battlefield. ADA units use these local warnings to alert Army units to the state of the air threat in terms of "right here, right now." There are three local air defense warning levels:

- **DYNAMITE.** Air platforms are inbound or are attacking locally now.
- **LOOKOUT.** Air platforms are in the area of interest but are not threatening. They may be inbound, but there is time to react.
- **SNOWMAN.** No air platforms pose a threat at this time.

NOTE: Air defense warnings are routinely issued by the area air defense commander for dissemination throughout the theater of war or operations. These warnings describe the general state of the probable air threat and apply to the entire area.

REACTION PROCEDURES

PASSIVE AIR DEFENSE

9-96. Passive air defense consists of all measures taken to prevent the enemy from detecting and/or locating the unit, to minimize the target acquisition capability of enemy aircraft, and to limit damage to the unit if it comes under air attack. One advantage the company team can exploit is that target detection and acquisition are difficult for crews of high-performance aircraft. In most cases, enemy pilots must be able to see and identify a target before they can launch an attack.

Guidelines

9-97. The company team should follow these guidelines to avoid detection and/or to limit damage:

- When stopped, occupy positions that offer cover and concealment; dig in and camouflage vehicles that are exposed. When moving, use covered and concealed routes.
- Disperse vehicles as much as possible to make detection and attack more difficult.
- Wipe out track marks leading to vehicle positions, and eliminate or cover the spoil from dug-in positions.
- If moving when an enemy aircraft attacks, disperse and seek covered and concealed positions.
- Do not fire on a hostile fixed-wing aircraft unless it is clear that the aircraft has identified friendly elements. Premature engagement will compromise friendly positions.
- Designate air guards for every vehicle and/or position, and establish and maintain 360-degree security.
- Establish an air warning system in the unit SOP, including both visual and audible signals.

Passive Air Defense Procedures

9-98. When the company team observes fixed-wing aircraft, helicopters, or UAVs that could influence its mission, it initially takes passive air defense measures unless the situation requires immediate active measures. This reaction normally will be in the form of each platoon's react to air attack battle drill; however, the commander can initiate specific passive measures if necessary. See the passive air defense guidelines for the company team discussed earlier in this section. (**NOTE:** Passive air defense also includes the company team's preparations for conducting active air defense measures.)

9-99. Passive air defense involves these three steps:

- **Step 1 – Alert the company team with a contact report.**
- **Step 2 – Deploy or take the appropriate actions.** If the company team is not in the direct path of an attacking aircraft, the commander or the platoon leaders order vehicles to seek cover and concealment and halt with at least a 100-meter interval between vehicles. The team also may be ordered to continue moving as part of the task force. Figure 9-6 illustrates procedures used to evade enemy aircraft.
- **Step 3 – Prepare to engage.** Fighting vehicle crews prepare to engage the aircraft with machine gun or main gun fire on order of the commander or their platoon leaders.

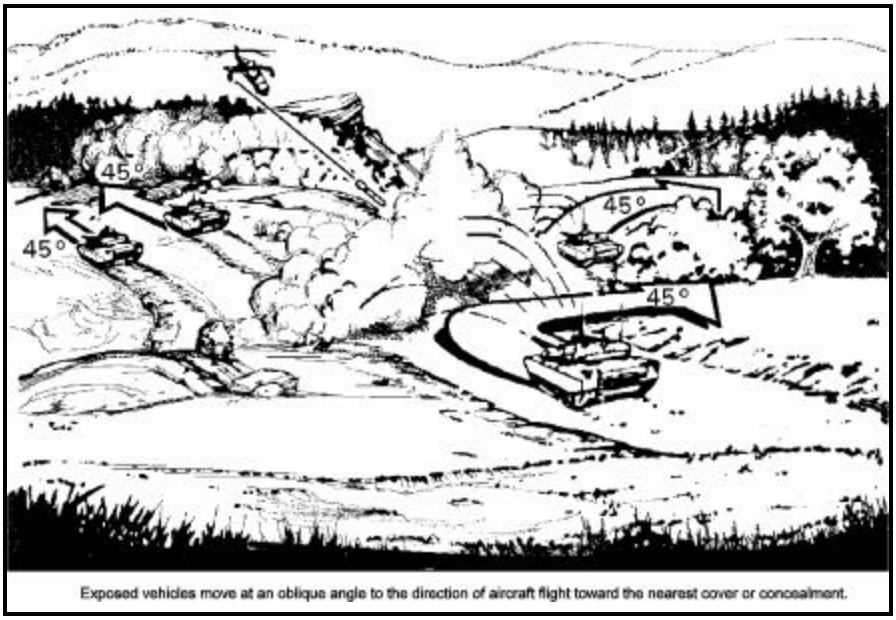


Figure 9-6. Procedures for Evading Enemy Aircraft

ACTIVE AIR DEFENSE

9-100. If the commander determines that the company team is in the direct path of attacking aircraft, he initiates active air defense procedures, including react to air attack drills by the team's platoons. Active air defense entails the following steps:

- **Step 1 – Initiate fires.** The primary intent is to force aircraft to take self-defense measures that alter their attack profile and reduce their effectiveness. Leaders may use a tracer burst to designate an aim point for machine gun antiaircraft fires (see Figure 9-7). Volume is the key to effectiveness; tanks and BFVs throw up a "wall of steel" through which aircraft must fly. Effective in company team air defense employment are the tank main gun and TOW and Javelin missiles against hovering attack helicopters, the tank main gun and BFV 25-mm cannon against moving helicopters, and the tank main gun multipurpose antitank round (MPAT) round against high-performance aircraft.
- **Step 2 – Create a nonlinear target.** Vehicles move as fast as possible at a 45-degree angle away from the path of flight and toward attacking aircraft (as illustrated in Figure 9-6). Each platoon maintains an interval of at least 100 meters between vehicles, forcing aircraft to make several passes to engage the entire platoon.
- **Step 3 – Move quickly to covered and concealed positions and stop.** Vehicles freeze their movement for at least 60 seconds after the last flight of aircraft has passed.

- **Step 4 – Send a SPOTREP.** The commander or XO updates the task force commander on the situation as soon as possible.

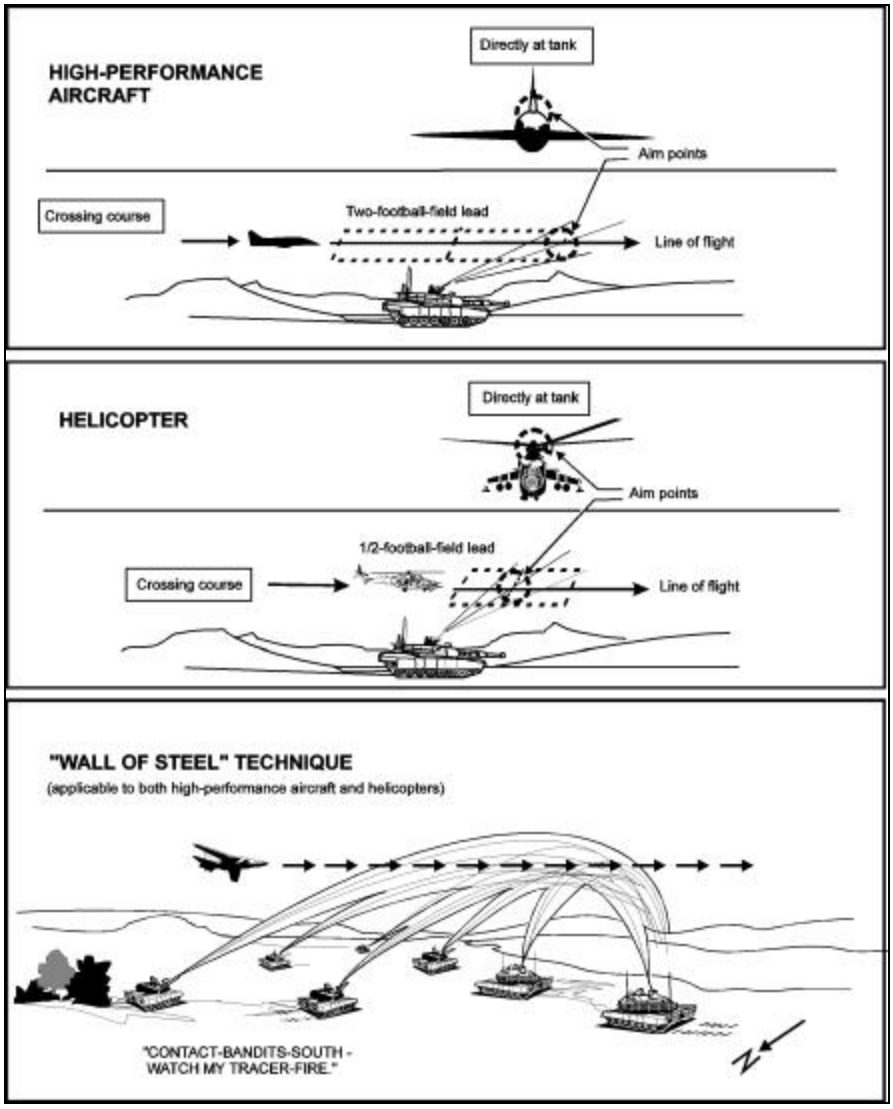


Figure 9-7. Machine Gun Aim Points Against Helicopters and High-Performance Aircraft

SECTION IV – NUCLEAR, BIOLOGICAL, AND CHEMICAL SUPPORT

9-101. The company team receives NBC support through the corps chemical company. Within the chemical company, specialized platoons provide three basic categories of support—NBC reconnaissance, decontamination, and smoke operations. Elements of the reconnaissance or smoke platoon may be task organized down to brigade or task force level.

RECONNAISSANCE SUPPORT

9-102. The corps chemical company provides NBC reconnaissance throughout the division area based upon the METT-TC and corps scheme of maneuver. The NBC reconnaissance platoon, which is organized into three reconnaissance squads (each squad consisting of two FOX recon vehicles), has the capability of locating, identifying, marking, and reporting NBC-contaminated areas. The platoon can also report and mark bypass routes around contaminated areas.

DECONTAMINATION SUPPORT

9-103. The chemical company's chemical decontamination platoon is organized into three squads, each equipped with an M12A1 decontamination apparatus. The squads usually work directly with elements of the division in setting up and operating sites for operational and thorough decontamination. The company team may be tasked to work with the decon platoon or one of its squads during the conduct of thorough decontamination operations. (See Appendix E for a more detailed discussion of decontamination requirements. Table E-4 provides a complete list of required resources.)

SMOKE SUPPORT

9-104. The chemical company provides the division with smoke support through its mechanized smoke platoon. The platoon has the capability of providing both hasty smoke generation and large-area smoke support for tactical operations in the MBA. The smoke platoon consists of seven M1059 mechanized vehicles, or its replacement the M58 mechanized vehicle, each equipped with a caliber .50 machine gun and two smoke generators (the M58 only has one smoke generator).

NOTE: See Appendix E for additional information on NBC operations.

SECTION V – INTELLIGENCE

9-105. The company team may conduct operations with any of several types of intelligence assets. In stability and support operations, for example, interrogation or counterintelligence (CI) teams may work in DS of the company team. While conducting security operations, the team may receive attached intelligence assets, such as GSR or remotely monitored battlefield sensor system (REMBASS) teams.

9-106. In most situations, attachment of intelligence assets to the company team will be rare. More commonly, these assets will be operating in or near the team's AO; they will be attached to or in DS or GS of the task force, brigade, or division. The company team should be prepared to take advantage of information from the intelligence assets. It may also be tasked to provide a degree of tactical and/or logistical support, especially area medical support coverage, for the intelligence elements.

9-107. In situations in which the company team works with or supports intelligence assets, leaders of each element share responsibility for conducting coordination early in the operation. Coordination commonly includes exchanging call signs and frequencies; conducting fratricide

prevention activities; and sharing basic operational plans, fire support plans, and fire control measures (see Chapter 4 for additional information).

SECTION VI – AVIATION COMBAT SUPPORT MISSIONS

9-108. Aviation support is an important, but sometimes overlooked, CS asset. Army aviation elements can provide support to the team in several critical areas, including those covered in the following discussion.

COMMAND AND CONTROL

9-109. Aviation units can assist the company team in maintaining these critical functions. They can conduct liaison between separate units, transmit intelligence information, and verify unit situations and locations. They can enhance communications through airborne transmission capabilities and relay equipment. Additional aviation intelligence functions that may aid the company team include target acquisition, reconnaissance, and employment of intelligence-gathering systems.

AIR MOVEMENT

9-110. Air movement operations are conducted to reposition units, personnel, supplies, equipment, and other critical combat elements in support of current and/or future operations. These operations include both airdrops and air landings.

AERIAL MINE WARFARE

9-111. Aviation units can employ the Volcano scatterable mine system in support of the company team's operations. (See page 9-13 for a description of Volcano.)

INTEGRATION OF AVIATION ASSETS

9-112. The OE requires combined arms at all levels, therefore the likelihood of tank and mechanized company team commanders receiving attack and utility aviation assets in an OPCON status is ever increasing. The following are some considerations for the company team commander when receiving aviation assets:

- Exchange of frequencies and FM check-in times.
- Terrain model and radio rehearsals.
- Location of air corridors and air control points (ACP).
- Location of aerial ABFs/SBFs/BPs.
- Identification method for marking ground targets.
- Aircraft weapons configuration.
- Friendly recognition symbols for both aircraft and ground vehicles.
- Fire coordination measures.
- Location and marking of LZs and PZs for CASEVAC and aerial resupply.

Chapter 10

Combat Service Support

Simply stated, the role of CSS in any military unit is to sustain the force for continuous combat operations. In the company team, the commander has ultimate responsibility for CSS. The XO and the 1SG are the team's primary CSS operators; they work closely with the task force staff to ensure they receive the required support for the team's assigned operations.

CONTENTS

Responsibilities....10-1
General Guidelines....10-1
Individual Responsibilities....10-2
Trains....10-5
Company Team Combat Trains....10-5
Army of Excellence TF Combat Trains....10-6
Army of Excellence TF Field Trains....10-6
Force XXI Task Force Combat Trains....10-6
Force XXI Task Force Support Area....10-6
Trains Security....10-7
Communications....10-7
Supply Considerations....10-8
Classes of Supply....10-8
Combat Load, Basic Load, and Prescribed Load List....10-9
Reporting....10-10
Resupply Operations....10-10
Routine Resupply....10-10
LOGPAC Operations....10-10
Emergency Resupply....10-14
Prestock Operations....10-14
Class IV/V Supply Points and Mine Dumps....10-16
Maintenance Operations....10-17
Company Team Role....10-18
Cross-Attachment Considerations....10-19
Unit Maintenance Collection Points Operations....10-19
Destruction....10-19
Health Service Support....10-19
Health and Hygiene....10-20
Sick Call and Health Assessment....10-20
Soldiers Wounded in Actions....10-20
Soldiers Killed in Action....10-23
Personnel Services....10-24
Postal, Financial, and Legal Services....10-24
Unit Ministry Team....10-24
Public Affairs....10-24
EPWs Processing and Evacuation....10-25
Reorganization and Weapon Replacement....10-25
Replacement and Cross-Leveling of Personnel....10-25
Replacement and Salvaging of Equipment 10-26
Integration and Preparation for Combat....10-26
Weapon System Replacement Operations .. 10-26
CSS Planning Considerations....10-26
Development of the CSS Plan....10-26
CSS Briefings and Rehearsals....10-28
Aviation CSS Missions....10-28
Aerial Sustainment....10-28
Casualty Evacuation....10-28

SECTION I – RESPONSIBILITIES

GENERAL GUIDELINES

10-1. In most tank and mechanized infantry battalion task forces, CSS assets are assigned to the HHC or the FSC in Force XXI structured units. The HHC/FSC commander provides each maneuver company team with CSS personnel, equipment and supplies, and other support functions, including POL and transportation requirements. These services are provided by the medical platoon, maintenance platoon, and support platoon/supply and transportation (S&T) platoon.

10-2. Within that support structure, the company team must plan, prepare, and execute its portion of the task force CSS plan. Concurrent with other operational planning, the team develops its CSS plan during the mission analysis and refines it in the war-gaming portion of the troop-leading process. CSS rehearsals are normally conducted at both task force and company team levels to ensure the team receives a smooth, continuous flow of materiel and services.

10-3. The company team's basic CSS responsibilities are to report and/or request support requirements through the correct task force channels and to ensure that CSS operations are properly executed when support elements arrive in the team area. The XO and 1SG is normally in charge of these functions, with guidance and oversight provided by the commander. They must submit accurate personnel and logistical reports, along with other necessary information and requests.

INDIVIDUAL RESPONSIBILITIES

10-4. The following paragraphs focus on specific individual responsibilities within the company team's CSS chain.

EXECUTIVE OFFICER

10-5. The XO is the company team's primary CSS planner and coordinator, reporting directly to the commander. During preparations for the operation, he works closely with the 1SG to determine specific support requirements of the tactical plan. He then must ensure that proper arrangements are made for delivery of CSS goods and services. The XO also performs these CSS functions:

- Determine the location of the team's resupply point based on data developed during operational planning and the war-gaming process.
- Compile periodic maintenance updates from the platoon leaders, PSGs, the 1SG, and the maintenance team chief and provide updates to the commander as required.
- Along with the 1SG, ensure that the company team is executing CSS operations in accordance with the task force plan.
- Lead the company team CSS rehearsal in cooperation with the company 1SG.

FIRST SERGEANT

10-6. The 1SG is the company team's primary CSS operator. He executes the team's logistical plan, relying heavily on team and task force SOPs. He directly supervises and controls the combat trains. The 1SG also performs these CSS functions:

- Conduct CSS rehearsals at the company team level and/or integrate CSS into the team's maneuver rehearsals.
- Receive, consolidate, and forward all administrative, personnel, and casualty reports to the task force combat trains via FM, hard copy, or FBCB2.
- Direct and supervise the medical team, moving it forward when the situation requires.
- Establish and organize the company team resupply point.

- Meet the LOGPAC at the logistics release point (LRP), guide it to the company team resupply point, supervise resupply operations there, and if necessary, guide the LOGPAC to its subsequent destination.
- Provide a company team orientation for new personnel and, in consultation with the commander, assign replacements to the team's subordinate elements.
- Supervise evacuation of casualties, EPWs, and damaged equipment.
- Direct and supervise the collection, initial identification and evacuation of KIAs/remains to the mortuary collection point.
- Maintain the company team battle roster.

SUPPLY SERGEANT

10-7. The supply sergeant is the company team's representative in the task force field trains/TFSA. He assembles the LOGPAC and moves it forward to the LRP. The supply sergeant also performs these CSS functions:

- Coordinate with the support platoon/S&T platoon leader for resupply of Classes I, III, and V.
- Maintain individual supply and clothing records, and requisition Class II resupply as needed.
- Requisition Class IV and Class VII equipment and supplies.
- Coordinate with the task force PLL section to turn in and/or pick up maintenance documents, routine Class IX supplies, and recoverable materials.
- Pick up replacement personnel and, as necessary, deliver them to the 1SG.
- Receive and evacuate KIAs to the mortuary affairs point in the BSA.
- Transport, guard, and/or transfer EPWs as required.
- Guide the LOGPAC, along with EPWs and damaged vehicles (if applicable), back to the BSA or task force support area (TFSA).
- Coordinate with the task force S1 section to turn in or pick up mail and personnel action documents.
- Collect bagged contaminated soil and transport it to collection points as part of LOGPAC procedures.
- Maintain and provide supplies for team field sanitation activities.

MAINTENANCE TEAM CHIEF

10-8. The maintenance team chief and the mechanics he supervises are assigned to the task force HHC/FSC, but are attached to the company team. The maintenance team chief performs these CSS functions:

- Supervise maintenance and recovery operations.
- Compile DA Form 5988EE from the PSGs.
- Review the forms, ensure deficiencies and problems are verified by the mechanics, and complete the forms as necessary (for example, adding the parts numbers for required parts).
- Submit the completed forms to the 1SG or XO.
- Develop and implement a tracking system to monitor critical maintenance services, such as the following:
  - Deferred maintenance.
  - Army oil analysis program (AOAP).
  - Services due.
  - Work to be completed by the maintenance team.
  - Status and flow of DA Forms 5988E.
- Monitor the status of replacement parts, including parts on order and valid parts requisition numbers.
- Distribute and/or store replacement parts.
- Direct and/or supervise recovery operations to the unit maintenance collection point (UMCP).
- Ensure all recoverable parts are turned in.
- As appropriate, supervise turn-in of used or excess POL products and of hazardous waste.
- Advise the XO and 1SG on vehicle recovery, repair, and/or destruction.
- Conduct rehearsals of spill prevention procedures.
- Ensure that soil contaminated during maintenance activities is collected, bagged, and turned in to the supply sergeant.
- Assist the 1SG as required and, in his absence, serve as NCOIC of the company team trains.

PLATOON SERGEANTS

10-9. Each PSG in the company team performs these CSS functions:

- Ensure crews perform proper maintenance on all assigned equipment.
- Compile all personnel and logistics reports for the platoon and submit them to the 1SG as directed or in accordance with SOP.
- Collect each DA Form 5988E within the platoon, check the forms for accuracy, and submit them to the maintenance team chief.

- Obtain supplies and equipment (all classes) and mail from the supply sergeant and ensure proper distribution within the platoon.
- Oversees all personnel actions affecting the platoon (awards, decorations, promotions).

TRAUMA SPECIALIST/COMPANY/PLATOON MEDICS

10-10. Company team medics/trauma specialists are allocated to the mechanized infantry companies on the basis of one trauma specialist per platoon, and one senior company team medic (Force XXI) is allocated for each company. In armor battalions, the allocation is one senior company team medic/trauma specialist and one ambulance crew per company. The location of the trauma specialist is of extreme importance for rapid medical treatment of casualties. The MIP trauma specialist normally locates with, or near, the element leader. When the platoon is moving on foot in the platoon column formation, he positions himself near the element leader. When the platoon is mounted, the trauma specialist will usually ride in the same vehicle as the platoon sergeant.

10-11. The company senior trauma specialist collocates with the company combat trains. When a casualty occurs, first aid will be rendered by self-aid/ buddy aid or by the CLS. The platoon/company trauma specialist will then go to the location of the casualty or the casualty will be brought to the trauma specialist at the CCP. The trauma specialist makes his assessment; administers initial medical care; initiates a DD Form 1380, then requests evacuation or returns the individual to duty. (See Chapter 2 for additional responsibilities of company team medics.)

SECTION II – TRAINS

COMPANY TEAM COMBAT TRAINS

10-12. The most forward CSS element is the company team combat trains, which provide vehicle recovery, medical aid, and maintenance services. The 1SG normally positions the trains and directly supervises CSS operations. The trains normally operate 500 to 1,000 meters (or one terrain feature) to the rear of the company team. (**NOTE:** METT-TC factors ultimately dictate the actual distance.) This gives the team virtually immediate access to essential CSS functions while allowing the trains to remain in a covered and concealed position behind the FLOT. The company team combat trains normally include the following vehicles, with corresponding crews:

- The M88A1/2 recovery vehicle.
- The maintenance M113.
- The 1SG's M113.
- The armored ambulance (M113).

- The command HMMWVs.
- Maintenance tool truck or Forward Repair System-Heavy (FRS-H) (normally located in the UMCP, but should repair forward when possible).

ARMY OF EXCELLENCE TASK FORCE COMBAT TRAINS

10-13. The task force combat trains are normally positioned close enough to the FLOT to be responsive to forward units, but beyond the range of enemy direct fires. The trains are generally located 4 to 8 kilometers behind the most forward company. The task force trains normally include the combat trains command post (CTCP), emergency Class III and Class V elements from the support platoon, the UMCP, and the BAS. The CTCP, battalion aid station (BAS), and UMCP are normally located in separate, but nearby, positions; however, they can be collocated to form a base cluster for defense. The CMT's tool truck is normally located in the UMCP.

ARMY OF EXCELLENCE TASK FORCE FIELD TRAINS

10-14. The task force field trains are normally positioned in the BSA. In offensive operations, this usually places them 20 to 25 kilometers behind the task force combat trains; in the defense, the distance is 20 to 40 kilometers to the rear. The company team normally locates its supply section and corresponding vehicles, including the water trailer and the CMT's prescribed load list (PLL) truck, in the task force field trains.

FORCE XXI TASK FORCE COMBAT TRAINS

10-15. The Force XXI Task Force Combat Trains are located 1 to 4 kilometers behind the FLOT. The Force XXI Combat Trains contains the CTCP, UMCP, the BAS, the FSC support operations cell and emergency Class III and Class V assets. The combat trains is commanded by the HHC commander and assisted by the HHC 1SG.

FORCE XXI TASK FORCE SUPPORT AREA

10-16. The TFSA provides all class of supply, minus Class VIII and field maintenance (organizational/DS) to the supported task force. The FSC commander commands the TFSA and with the company team supply sergeants forms the LOGPACs for the forward task force units. Within the TFSA CP, the task force S1 and S4 sections (-) minus, execute all task force personnel and supply actions. Additionally, the task force HHC XO is located in the TFSA to provide tactical/technical advice to the FSC commander. Essentially, the TFSA performs all the functions that the task force field trains perform in an AOE organization, but is located 8 to 12 kilometers behind the FLOT. (See FM 4-93.50 [FM 63-20-1] for more detailed information on forward support battalion [FSB] operations.)

TRAINS SECURITY

10-17. Because security of CSS elements is critical to the success of the company team and task force missions, the company team and task force combat trains and the task force field trains must all develop plans for continuous security operations. Where feasible, they may plan and execute a perimeter defense. The trains, however, may lack the personnel and combat power to conduct a major security effort. In such situations, they must plan and implement passive security measures to provide protection from enemy forces.

COMMUNICATIONS

10-18. Fast, reliable communications are critical to the CSS effort. Whether as directed by higher headquarters or as needed to support the company team mission, the 1SG must be able to instantly report the company team's status, including combat losses, and to send resupply and support requests.

10-19. In units not equipped with FBCB2, the radio is the fastest and most frequently used means for transmitting CSS requests and reports. It is also the least secure means of communications and poses other problems for the company team's CSS operators. The task force A/L net is used for most CSS traffic, but the team may not have enough working radio systems to monitor it. When this is the case, a higher NCS will be forced to enter the company team net when it must contact the team. Another type of problem can arise when company teams enter the A/L net. The transmission of one team may "walk over" another team's report or request. Unit SOPs must specify procedures to be followed in this type of situation to ensure that the task force field and/or combat trains receive all transmissions on a timely basis.

10-20. In Force XXI units equipped with FBCB2 CSS reporting is extremely more efficient. Each platform can send a logistics SITREP to the next higher echelon on a routine basis or as supplies are needed. Units should establish SOPs that lay out what types/classes of supplies are reported daily and to whom. For instance, each vehicle in a platoon should send a SITREP to the PSG who then consolidates that information as a platoon roll-up to the 1SG, who then turns forwards a company team roll-up to the brigade S4 with courtesy copies to the task force S4.

10-21. FBCB2 CSS reports are tailored under the commanders tracked items list (CTIL). This report contains hundreds of supply line items in every class of supply that should be tailored to the specific needs of the unit (usually directed by the brigade). The company team should develop SOPs that direct to what level each platform addresses CTIL messages.

10-22. As an alternative in analog units, the company team can send CSS reports and requests by messenger or wire. Messengers are slower, but more secure, than radio transmission. Wire communications are also very secure, but are strictly limited in range and/or coverage. In situations where use of the radio is not possible, a messenger can be sent with the resupply or evacuation vehicle. In addition, either messenger or wire is the best means for sending lengthy or complex reports and requests.

SECTION III – SUPPLY CONSIDERATIONS

10-23. The supply sergeant is responsible for obtaining supplies and delivering them to the company team. He handles small items himself; the assets of the support platoon are employed to deliver bulky or high-expenditure items. Priorities for delivery are established by the commander, but the demands of combat will normally dictate that supplies and equipment in Classes I, III, V, and IX are the most critical to successful operations.

CLASSES OF SUPPLY

CLASS I

10-24. Class I includes rations, water, and ice as well as gratuitous issue of items related to health, morale, and welfare. Class I supplies are automatically requested from the brigade on the daily strength report. Rations are prepared in two ways. First, in the field trains/TFSA and delivered with the LOGPAC or in the company assembly area with the kitchen, company level, field feeding-enhanced (KCLFF-E). MREs stored on combat vehicles are eaten only when Class I resupply, including mess operations, cannot be accomplished.

CLASS II

10-25. This supply class includes clothing, individual equipment, MOPP suits, tentage, tool sets, and administrative and housekeeping supplies and equipment. Expendable items such as soap, toilet tissue, and insecticide are distributed during LOGPAC operations.

CLASS III

10-26. Class III comprises POL products. Unusual Class III requests are normally submitted to the combat trains. POL includes both bulk and package products. Examples of bulk products include JP8 (Army common fuel), diesel, and MOGAS. Package products are requested and received like Class II and Class IV items; they include 5-gallon and 55-gallon containers; packaged products such as lubricants, grease, hydraulic fluid, and solvents in amounts of 55 gallons or less; and cylinders of liquid and compressed gasses.

CLASS IV

10-27. Construction materials, pickets, sandbags, and concertina wire are among the items covered by Class IV. Company team SOP will specify the combat load of Class IV items for each vehicle.

CLASS V

10-28. Class V covers all types of ammunition and mines, including C4 and other explosives.

CLASS VI

10-29. Class VI includes personal-demand items ordinarily sold through the exchange system. Examples are candy, tobacco products, soaps, cameras, and film. When a post exchange (PX) is not available, Class VI support is requested through the S1.

CLASS VII

10-30. This supply class includes major end items such as tanks, BFVs, and other vehicles. Class VII items are issued based on battle loss reports. Ready-to-fight weapon systems are sent forward with the LOGPAC.

CLASS VIII

10-31. Class VIII is medical material including repair parts unique to medical equipment, and management of blood. Combat lifesaver bags and first-aid kits are replaced on a one-for-one basis at the BAS.

CLASS IX

10-32. Class IX includes repair parts and documents required for equipment maintenance operations. Repair parts are issued in response to a specific request or are obtained by direct exchange of repairable parts, to include batteries for night vision devices and man-portable radios. In combat situations, exchange and cannibalization are the normal means of obtaining Class IX items.

CLASS X

10-33. In this class, materials support nonmilitary programs such as agriculture and economic development. Instructions for request and issue of Class X supplies are provided at division level or higher.

MAPS

10-34. The company team requests unclassified maps through the task force S4 and classified maps through the task force S2.

COMBAT LOAD, BASIC LOAD, AND PRESCRIBED LOAD LIST

COMBAT LOAD

10-35. The company team's combat load includes the supplies that it physically carries into the fight. The task force commander will dictate some minimum requirements; however, most items will be specified by the company team commander or by unit SOP. Specific combat loads will vary by mission.

BASIC LOAD

10-36. The basic load includes supplies kept by the company team for use in combat. The quantity of most supply items in the basic load is related to the number of days in combat the team may be required to sustain itself without resupply. For Class V, the basic load is a quantity of ammunition, specified by the higher command or by SOP that the team is required to have on hand to meet combat needs until resupply can be accomplished.

PRESCRIBED LOAD LIST

10-37. The PLL specifies the quantity of combat-essential supplies and repair parts that major commanders direct their units to have on hand. In the company team, PLL items are normally carried on the PLL truck located in the task force field trains or the TFSA.

REPORTING

10-38. There are few, if any, scenarios in which US military forces will have all the supplies they need for an operation. Because of this, it is essential that every unit's daily logistical reports accurately reflect not only its operational needs but also what supplies and equipment are on hand.

10-39. As much as possible, CSS planners try to standardize "push" packages, providing all units with sufficient quantities of each supply item. Together with the commander's guidance for issuance of scarce, but heavily requested, supply items, accurate reporting allows planners to quickly forecast supply constraints and then to submit requisitions to alleviate projected shortages. Units equipped with FBCB2 must maximize the CTIL report to provide a daily, accurate supply status to the FSB. Conversely, inaccurate or incomplete reporting can severely handicap efforts to balance unit requirements and available supplies. As a result, some units may go into combat without enough supplies to accomplish the mission while others have an excess of certain items.

SECTION IV – RESUPPLY OPERATIONS

10-40. Resupply operations are generally classified as routine, emergency, or prestock. Cues and procedures for each method are specified in the company team SOP and are rehearsed during team training exercises. The actual method selected for resupply in the field will depend on METT-TC factors.

ROUTINE RESUPPLY

10-41. Routine resupply operations cover items in Classes I, III, V, and IX as well as mail and any other items requested by the company team. Whenever possible, routine resupply should be conducted daily, ideally during periods of limited visibility. Because tanks and other major combat vehicles consume large amounts of fuel (for example, M1-series tanks may require multiple refuelings during offensive operations), the company team must resupply Class III at every opportunity.

LOGPAC OPERATIONS

10-42. The LOGPAC technique is a simple, efficient way to accomplish routine resupply operations. The key feature is a centrally organized resupply convoy originating at the task force trains. It carries all items needed to sustain the company team for a specific period, usually 24 hours or until the next scheduled LOGPAC. Company team and task force SOPs will specify the exact composition and march order of the LOGPAC.

PREPARATION

10-43. The company team supply sergeant first compiles and coordinates all of the team's supply requests. Based on the requests, he them assembles the LOGPAC under the supervision of the support platoon/S&T platoon leader or the HHC/FSC commander. He obtains the following:

- Class I, Class III (bulk and packaged products), and Class V supplies from the support platoon (S&T). This will normally entail employment of one or two fuel HEMTTs and one or two cargo HEMTTs.
- Class II, Class IV (basic load resupply only), Class VI, and Class VII supplies from task force S4 personnel in the field trains.
- Routine Class IX supplies and maintenance documents (as required) from the PLL section in the field trains.
- Replacement personnel and soldiers returning from a medical treatment facility.
- Vehicles returning to the company team area from maintenance.
- Mail and personnel action documents (including awards and finance and legal documents) from the task force S1 section.

10-44. When LOGPAC preparations are completed, the supply sergeant initiates tactical movement to the LRP under the supervision of the support platoon leader. The supply sergeant and LOGPAC link up with the 1SG at the LRP.

ACTIONS AT THE LOGISTICS RELEASE POINT

10-45. When the 1SG arrives at the LRP to pick up the company team LOGPAC, he updates all personnel and logistical reports and is briefed by the field trains/TFSA OIC on any changes to the tactical or support situation. He then escorts the convoy to the company team resupply point, providing security during movement from the LRP.

RESUPPLY PROCEDURES

10-46. The company team uses either the service station or the tailgate resupply method, both of which are discussed later in this section. The time required for resupply is an important planning factor. It must be conducted as quickly and efficiently as possible, both to ensure operational effectiveness and to allow the company team LOGPAC to return to the LRP on time. Service station resupply of the team can normally be completed in 60 to 90 minutes, although it may take longer. Tailgate resupply usually requires significantly more time than do service station operations.

RETURN TO THE LOGISTICS RELEASE POINT

10-47. Once resupply operations are completed, the LOGPAC vehicles are prepared for the return trip. Company team vehicles requiring recovery for maintenance or salvage are lined up and prepared for towing. KIAs are carried on cargo trucks, fuel trucks, or disabled vehicles. EPWs ride in the cargo trucks and are guarded by walking wounded or other company team personnel. All supply requests and personnel action documents are consolidated for forwarding to the field trains, where the appropriate staff section will process them for the next LOGPAC.

10-48. The 1SG or the supply sergeant leads the LOGPAC back the LRP, where he links up with the support platoon leader. Whenever possible, the reunited task force LOGPAC convoy returns to the field trains together. When METT-TC dictates or when the LOGPAC arrives too late to rejoin the larger convoy, the company team vehicles must return to the field trains on their own. Because only minimal security assets will be available, this situation should be avoided.

RESUPPLY METHODS

10-49. As directed by the commander or XO, the 1SG establishes the company team resupply point using either the service station or tailgate method. He briefs each LOGPAC driver on which method will be used. When the resupply point is ready, the 1SG informs the commander, who in turn directs each platoon or element to conduct resupply based on the tactical situation.

Kitchen, Company Level, Field Feed-Enhanced

10-50. Some units may elect to utilize the KCLFF-E to provide rations to the company team. The advantages and disadvantages are—

- Advantages—
  - Provides flexibility in the unit meal plan. Units can adjust the meal time in order to not conflict with TLPs.
  - Soldiers are not lost to the battalion mess section for kitchen police (KP).
  - Class I equipment is less susceptible to attack since all assets are not centrally located at task force level.
- Disadvantages—
  - Increases the size of the company team's logistics tail.
  - Class I equipment may have to be abandoned in the event of a surprise attack.

Service Station Resupply

10-51. With the service station method, vehicles move individually or in small groups to a centrally located resupply point. Depending on the tactical situation, one vehicle or section or even an entire platoon moves out of its position, conducts resupply operations, and then moves back into position. This process continues until the entire company team has been resupplied (see Figure 10-1).

10-52. In using this method, vehicles enter the resupply point following a one-way traffic flow; only vehicles requiring immediate maintenance stop at the maintenance holding area. Vehicles move through each supply location, with crews rotating individually to eat, pick up mail and sundries, and refill or exchange water cans. When all platoon vehicles and crews have completed resupply, they move to a holding area, where, time permitting, the platoon leader and PSG conduct a PCI. The company command group (CO, XO and 1SG) should also take this opportunity to conduct PCIs of each platoon as they pass through the resupply point.

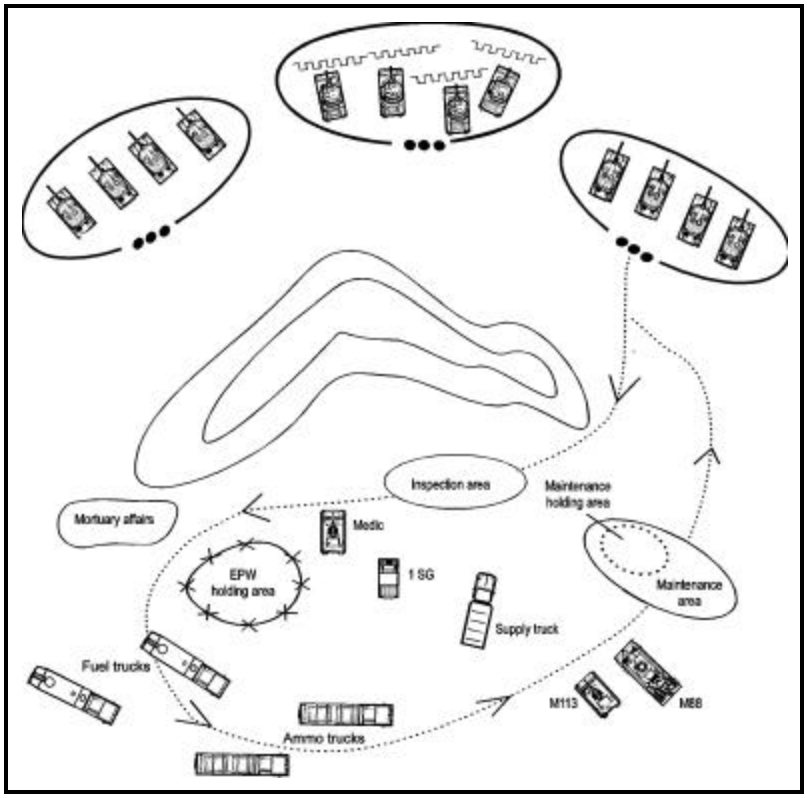


Figure 10-1. Service Station Resupply Method

Tailgate Resupply

10-53. The tailgate method is normally used only in assembly areas. Combat vehicles remain in their vehicle positions or back out a short distance to allow trucks carrying Class III and Class V supplies to reach them. Individual crewmen rotate through the feeding area, pick up mail and sundries, and fill or exchange water cans. Any EPWs are centralized and guarded. KIAs, with their personal effects, are brought to the holding area, where the 1SG takes charge of them (see Figure 10-2).

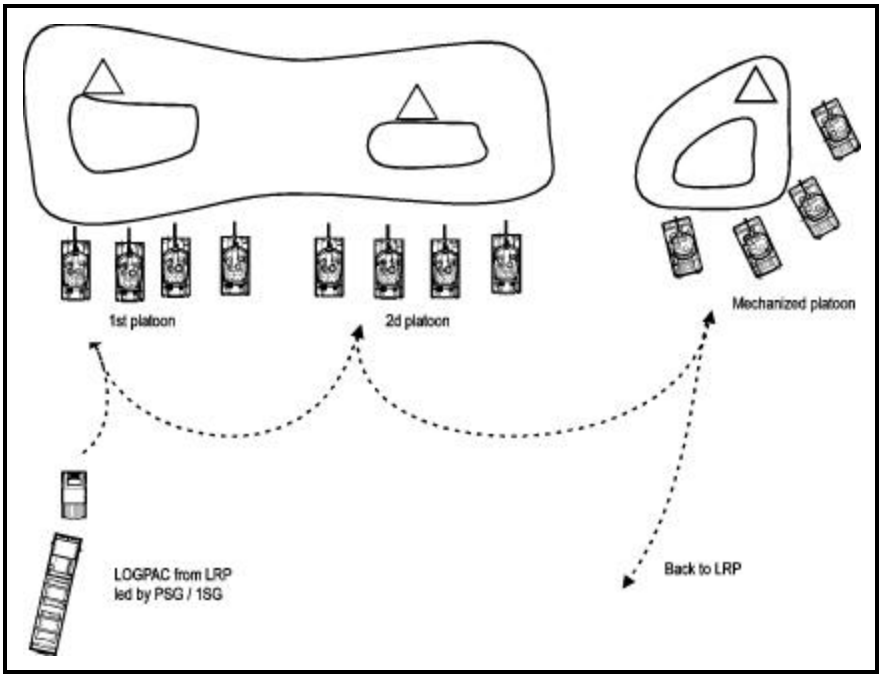


Figure 10-2. Tailgate Resupply Method

EMERGENCY RESUPPLY

10-54. Occasionally (normally during combat operations), the company team may have such an urgent need for resupply that it cannot wait for a routine LOGPAC. Emergency resupply may involve Classes III, V, and VIII, as well as NBC equipment and, on rare occasions, Class I. The task force will usually use support platoon and medical assets located in the task force combat trains to conduct emergency resupply of the company team.

10-55. Emergency resupply can be conducted using either the service station or tailgate method, although procedures may have to be adjusted when the company team 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 platoon leader; they conduct resupply and then return to the fight. With tailgate resupply, the company team brings limited supplies forward to the closest concealed position behind each vehicle or element.

PRESTOCK OPERATIONS

10-56. Prestock resupply, also known as pre-positioning, is most often required in defensive operations. Normally only Class V items are pre-positioned. Class III supplies can be pre-positioned; however, this requires company team vehicles to refuel before moving into fighting positions during initial occupation of the BP or to move out of their fighting positions to conduct refueling operations at the rear of the BP. Figure 10-3 and Figure 10-4 illustrate two methods of pre-positioning supplies.

10-57. Prestock operations must be carefully planned and executed at every level. All leaders, down to vehicle commander and squad leader, must know the exact locations of prestock sites, which they verify during reconnaissance or rehearsals. The company team must take steps to ensure

survivability of the prestock supplies. These measures include digging in prestock positions and selecting covered and concealed positions. The team commander must also have a plan to remove or destroy pre-positioned supplies to prevent the enemy from capturing them.

10-58. During offensive operations, mobile pre-positioning can be employed by loading supplies on trucks and positioning them forward on the battlefield. This technique works well if the company team expects to use a large volume of fire, with corresponding ammunition requirements, during a fast-moving operation.

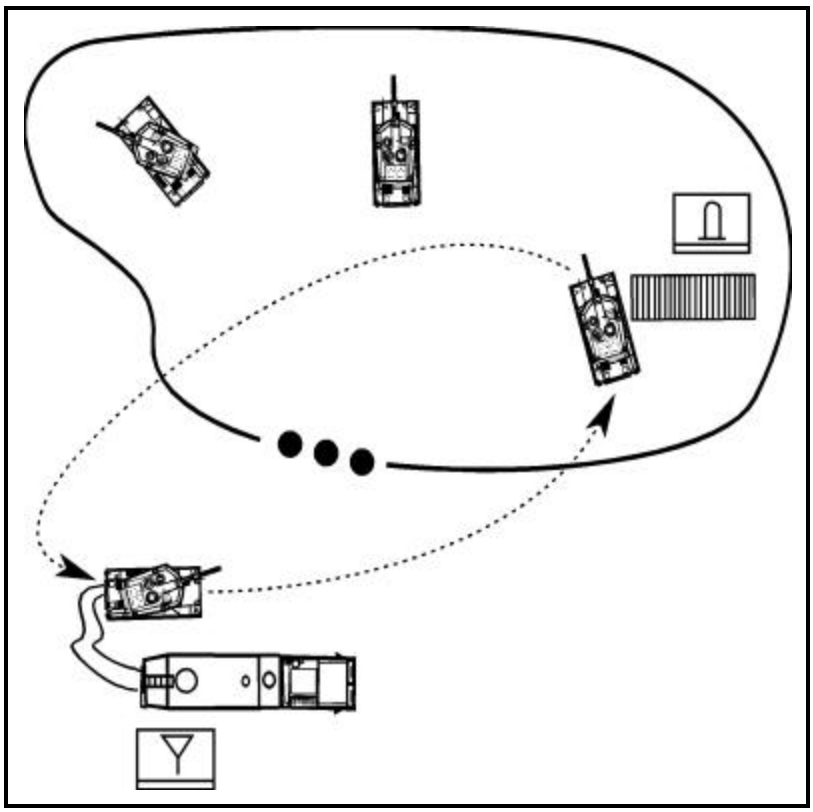


Figure 10-3. Prestock Resupply Operations—Method 1 (Central Class V Prestock Site)

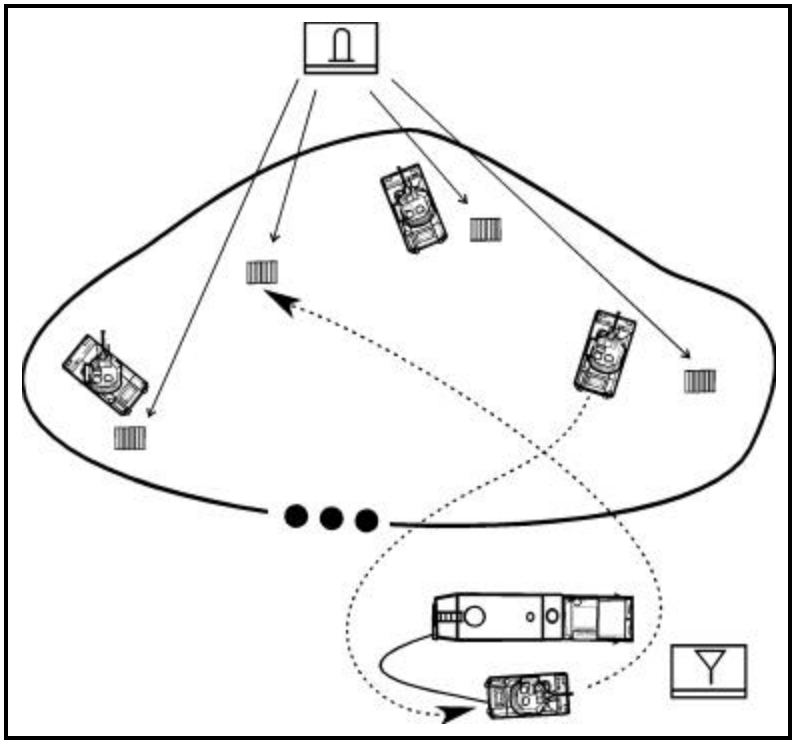


Figure 10-4. Prestock Resupply Operations—Method 2 (Class V Prestock Site for Each Vehicle)

CLASS IV/V SUPPLY POINTS AND MINE DUMPS

10-59. These sites are important elements of task force resupply operations. (See FM 3-34.1 [FM 90-7] for a more detailed discussion of Class IV/V supply points and mine dump operations.)

CLASS IV/V SUPPLY POINTS

10-60. Class IV/V supply points stock construction and barrier materials; they are also the sites at which the task force receives and transfers control of mines pushed forward by corps and/or division throughput haul assets. The task force has responsibility for establishing the supply point and for transporting materials from the point to locations in the task force area where the supplies are needed. The site is normally run by the task force S4 or his NCOIC, assisted by an NCO from the task forces attached engineer company. Other task force elements, including the company team, may be tasked to provide personnel for supply point operations. These soldiers play a crucial role in organizing the site, unpacking the barrier materials, loading them onto transport vehicles, and as necessary, helping to transport the materials forward. (**NOTE:** The task force may supplement the supply point with mine dump sites to better support engineer platoons in establishing obstacles on the ground [see the following discussion]).

MINE DUMPS

10-61. The mine dump is the most forward mine resupply node, although it is not normally a permanent supply point. It is the site at which mines are task organized into mine strip packages and then are inspected, prepared, and loaded into emplacing vehicles. Mine dump operations are primarily handled by an engineer company or platoon. When a mine dump supports an obstacle the company team has responsibility for siting, however, the team will normally augment the unit operating the dump. Table 10-1 illustrates how many mines a given number of soldiers can process in a given time period; this is a critical planning factor in mine dump operations.

Table 10-1. Processing Schedule for Mine Dump Operations

Processing Element	Quantity of Mines Processed
Two man team	25 mines/hour
Squad (8 soldiers)	100 mines/hour
Platoon	300 mines/hour 3,600 mines/day
Company	10,800 mines/day
NOTE: Processing rates are based on a speed of 2 minutes per mine processed by a 2-man team, with soldiers working 50 minutes per hour and 12 hours per day.	

SECTION V – MAINTENANCE OPERATIONS

10-62. Proper maintenance is the key to keeping vehicles, equipment, and other materials in serviceable condition. It is a continuous process that starts with preventive measures taken by each vehicle crew and continues through repair and recovery efforts by higher-level maintenance personnel. It includes the services involved in inspecting, testing, servicing, repairing, requisitioning, recovering, and evacuating.

10-63. As a general guideline, repair and recovery are performed as far forward as the situation allows. When vehicles and equipment cannot be repaired on site, they must be evacuated to the rear for necessary repairs. Table 10-2 shows normal time guidelines for maintenance at each level of support. (**NOTE:** These guidelines indicate normal repair times only; they do not account for recovery time or for time spent awaiting repair parts.)

Table 10-2. Vehicle Repair and Maintenance Time Guidelines

MAINTENANCE/REPAIR SITE	TIME GUIDELINE
On site	Less than 2 hours
UMCP	2 to 6 hours
FSB/field trains/TFSA	6 to 24 hours
DSA	24 to 36 hours

COMPANY TEAM ROLE

"FLOW" OF MAINTENANCE FORMS AND REPAIR PARTS

10-64. Company team maintenance functions begin with preventive maintenance checks and services (PMCS), a daily crew responsibility, and crew-level preparation of the prescribed maintenance forms (DA Forms 5988E, as applicable). These forms are the primary means through which the crew obtains repair parts; they follow a pathway, described in the following paragraphs, from crew level to the task force field trains and back; the company team XO and the maintenance team chief supervise the "flow" of these critical maintenance documents and of repair parts.

10-65. Vehicle commanders collect their crews' maintenance forms each day; they give the forms to the PSG, who consolidates them for the platoon. The PSG in turn gives the forms to the maintenance team chief, who reviews and verifies problems and deficiencies and requisitions Class IX items needed for maintenance and repairs. During the next LOGPAC operation, the completed forms are given to the 1SG or supply sergeant, who transfers them to maintenance personnel in the task force field trains.

10-66. In the combat trains PLL clerks issue the required repair parts they have on hand; they order any other required parts and assign a document number and status for the ordered parts. The maintenance forms, amended with the document numbers and status of ordered parts, are returned to the company team supply section (along with the issued repair parts). The amended forms and repair parts are transported via the LOGPAC to the company team area. The maintenance team chief works with PSGs and vehicle commanders to distribute the repair parts and to verify the accuracy and status of the parts on order.

Maintenance Sequence

10-67. The vehicle crew conducts initial maintenance, repair, and recovery actions on site. Once it is determined that the crew cannot repair or recover the vehicle or equipment, the platoon contacts the 1SG, who in turn dispatches the CMT/CRT to the vehicle's location. If the CMT/CRT needs additional assistance, the team chief or the 1SG requests it from the battalion maintenance officer (BMO).

Location of the CMT/CRT

10-68. During offensive operations, the CMT/CRT usually follows one terrain feature behind the company team. In the defense, it is normally located one terrain feature or 1 to 2 kilometers behind the company team.

This positioning enhances security and allows for quick reaction when support is requested by the platoons. In some situations, METT-TC factors may dictate that the CMT/CRT be positioned at the UMCP to further enhance security and survivability.

CROSS-ATTACHMENT CONSIDERATIONS

10-69. The number of mechanics in the company team combat trains, as well as their specialties, should reflect the number and types of vehicles in the team. As an example, a tank team should have at least one BFV mechanic, with appropriate manuals, in its trains; the team will also detach a tank mechanic to the corresponding mechanized infantry team.

UNIT MAINTENANCE COLLECTION POINTS OPERATIONS

10-70. When a vehicle or piece of equipment cannot be fixed quickly on site, it is moved to the task force UMCP, where it is repaired by the maintenance platoon or maintenance support team (MST). When not involved in on-site actions, the CMT/CRT may assist with operations in the UMCP. Vehicles that cannot be repaired within the established timelines or that would overload the UMCP's capability are recovered to the field trains/TFSA or FSB.

DESTRUCTION

10-71. When a vehicle or piece of equipment cannot be recovered or is damaged beyond repair, the crew reports the situation to the commander. He will give permission for destruction of the materiel if that is the only way to prevent enemy capture. Crewmen remove all radios, crew-served weapons, ammunition, personal items, and other serviceable items and parts; they also take all classified materials or paperwork that could be of intelligence value to the enemy. The crew then destroys the vehicle or equipment using procedures specified in the team SOP.

SECTION VI – HEALTH SERVICE SUPPORT

10-72. Effective timely medical care is an essential factor in sustaining the company team's combat power during continuous operations. The senior company team medic and other trauma specialists attached to the company team are assisted by the administration of first aid (self-aid/buddy aid) and enhanced first aid (by the combat lifesavers). The company team medics locate, acquire, and provide emergency medical treatment to battlefield casualties. Casualties are stabilized by the company team medics and then are evacuated by a DS medical platoon armored ambulance back to the BAS. The time of evacuation from the point of injury to the BAS is optimally less than 30 minutes and not greater than two hours. The commander must ensure that team leaders and all personnel understand the casualty evacuation plan and the locations of CCPs.

HEALTH AND HYGIENE

10-73. The commander and all leaders, in conjunction with the company team senior medic and field sanitation team, must emphasize and enforce high standards of health and hygiene at all times. This "preventive medicine" approach should cover all aspects of the soldier's health and well-being, including the following:

- Daily shaving to ensure proper fit of the protective mask.
- Regular bathing and changing of clothes.
- Prevention of weather-related problems. These include cold-weather injuries such as frostbite, trench foot, and immersion foot and heat-related injuries like heat exhaustion and heat stroke. Soldiers must understand the effects of such conditions as sunburn and wind-chill.
- Effective field sanitation measures, including unit waste control, waste disposal activities and facilities, water purification, rodent control, food service sanitation, and use of insect repellents.
- Combat operational stress control, battle fatigue prevention, and strict implementation of the unit sleep plan.

SICK CALL AND HEALTH ASSESSMENT

10-74. In noncombat situations, the company team senior medic will conduct daily sick call screening. This will be coordinated through the 1SG and conducted either at the team's position or during LOGPAC operations. The senior company team medic provides treatment to soldiers with minor injuries or illness. In addition, the senior medic will check with vehicle crews as often as possible to assess their physical and mental readiness for duty. He advises the commander and on the overall health of the company team and briefs the commander regularly on sick call activities and on the medical conditions of individual company team members.

SOLDIERS WOUNDED IN ACTION

10-75. Medical treatment of wounded or injured soldiers during combat operations is a continuous, progressive operation that occurs in a series of separate, but interlocking, stages. It involves personnel, equipment, and facilities at virtually every level of the organization.

COMPANY TEAM RESPONSIBILITIES

10-76. In the armor company team, the normal flow of care for combat casualties is self-aid/buddy-aid then from the enhance first aid provided by the combat lifesaver (at the point of injury); to the emergency medical treatment provided by company team senior medic (at the company CCP); to the advanced trauma management provided by the physician and the PA (at the BAS). In the mechanized infantry company there is only one difference in the flow of care. Since there are platoon medics in the mechanized infantry company, from the combat lifesaver the combat casualty's flow of care goes to the emergency medical treatment provided by the platoon medic (at the point of injury or at a platoon CCP) then to the senior company team medic. In addition, company team leaders play an important role in recovery of combat casualties and coordinating for medical treatment and/or

their expedient evacuation to a CCP where medical treatment is available. The following paragraphs discuss the individual responsibilities of company team personnel in this process.

Combat Lifesaver

10-77. Along with the vehicle commander, the combat lifesaver is almost always the first person on the scene to begin the process of providing enhanced first aid to wounded and injured personnel. With the help of the vehicle commander and company team and platoon aidmen, the combat lifesaver provides initial first aid to WIAs. He prepares them for MEDEVAC or returns them to duty status after rendering first aid. Whenever possible, the company team commander should ensure that there is at least one combat lifesaver on each team vehicle at all times.

Vehicle Commander

10-78. The vehicle commander is responsible for ensuring that wounded or injured crewmen receive immediate first aid and that the commander is informed of casualties. He coordinates with the 1SG and company team senior medic for ground evacuation or with the 1SG or commander for aerial evacuation. The vehicle commander ensures that casualty feeder and witness statement forms are completed and routed to the proper channels. (**NOTE:** The casualty feeder card stays with the wounded soldier; witness statements are given to the 1SG.)

Senior Trauma Specialist/Medic

10-79. The senior medic is both the company team's primary medical treatment practitioner and the supervisor of all battlefield medical operations. The latter role encompasses numerous responsibilities. The senior medic trauma specialist works closely with the commander to ensure all members of team understand what to do to provide and/or obtain medical treatment in combat situations. He oversees the training of combat lifesavers and, once combat begins, directs their actions. He assists the vehicle commanders and the 1SG in arranging WIA evacuation. The senior trauma specialist/senior company medic is attached to the company team to provide EMT for sick, injured, or wounded company personnel. Emergency medical treatment procedures performed by the trauma specialist 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. The EMT performed by the trauma specialist is under the supervision of the battalion surgeon or physician's assistant (PA). The senior company medic works closely with the commander to ensure all company team members understand the HSS plan and procedures for medical evacuation and treatment.

10-80. The senior medic trauma specialist/medic is also responsible for monitoring the vital paperwork that is part of the medical treatment and evacuation process. He must ensure that DA Form 1156 remains with each WIA until the soldier reaches a source of definitive medical care (a surgeon or physician's assistant) in the task force main aid station or field aid station. (**NOTE:** The DA Form 1156 is collected at the aid station by designated medical personnel or members of the task force S1 section; it is sent to the S1 section for further processing through administrative channels in the task force field trains.) If a soldier's remains cannot be recovered, the senior medic ensures that the crew completes DA Form 1155

as quickly as possible and ensures that the form is given to the 1SG for processing. He is also responsible for monitoring the records keeping that is part of the medical treatment and evacuation process. He ensures that DD Form 1380 is initiated on each patient evacuated from the CCP. The DD Form 1380 is used to record basic patient identification data and to describe the problem requiring medical attention and the medical care provided. The FMC is made so that it can be attached to the casualty. See AR 40-66 and FM 4-02.2 (FM 8-10-6) for definitive information on use, preparation, and disposition of the FMC. The senior company team medic may assist with the preparation of other forms such as the DA Form 1156 and the DA Form 1155. The DA Form 1156 is normally initiated at the BAS by a S1 representative or the company team 1SG. (**NOTE:** The DA Form 1156 is collected at the aid station by designated medical personnel or members of the task force S1 section; it is sent to the S1 section for further processing through administrative channels in the task force field trains.) If a soldier's remains cannot be recovered, the 1SG ensures that the crew completes DA Form 1155 as quickly as possible and sends the form is the S1 for processing.

First Sergeant

10-81. The 1SG supervises and coordinates casualty operations, collects witness statements and submits them to the S1, and submits the battle loss report to the task force TOC. Perhaps his most important duty is managing the company team's personnel status during combat operations; as necessary, he directs cross-leveling among platoons and vehicle crews to alleviate personnel shortages. The 1SG also supervises the completion and processing of DA Form 1155 and DA Form 1156; see the discussion of these forms in the paragraph covering the senior medic's duties.

Commander

10-82. The commander has overall responsibility for medical services; his primary task is to prepare the team to properly treat and/or evacuate casualties. In this role, he works closely with others in the team medical process to ensure that they fully understand the responsibilities described in the previous paragraphs and are proficient in required medical skills. The commander designates the location for the company team's CCP and ensures that all vehicle commanders record the location on appropriate overlays. He also develops and implements appropriate SOPs for CASEVAC; an example is standardized vehicle markings based on the severity of casualties carried on particular vehicles.

EVACUATION PROCEDURES

10-83. Casualties are cared for at the point of injury (or under nearby cover and concealment). Casualties receive self-aid/buddy-aid, advance first aid from the combat lifesaver, or emergency medical treatment from the trauma specialist (company or platoon medic). Vehicle commanders arrange for transport of the casualty to the platoon CCP or the casualty is evacuated to the CCP using the appropriate manual carry. (See FM 4-02.2 (FM 8-10-6) for definitive information on manual carries). From the platoon CCP, the casualty is either transported via CASEVAC to the company CCP or MEDEVAC by the by the armored ambulance. Depending on METT-TC the casualty may be medically evacuated from the point of injury by air ambulance to the BAS.

NOTE: Before casualties are evacuated to the collection point or beyond, leaders should remove all key operational items and equipment, including SOI/automated net control devices (ANCD) maps, position location devices, and laser pointers. Every unit should establish an SOP for handling the weapons and ammunition of its WIAs.

10-84. At the collection point, the senior medic conducts triage of all casualties, takes the necessary steps to stabilize their condition, and initiates the process of moving them to the rear for further treatment. He assists the PSG and vehicle commanders in arranging either ground transport or air ambulance (MEDEVAC or CASEVAC). (**NOTE:** See the earlier discussion of aerial evacuation.)

10-85. When air ambulance evacuation is not absolutely necessary or when these assets are not available, the team has these options for transporting casualties:

- The senior medic can transport them to the BAS himself. He turns the WIAs over to the task force medical team, obtains any needed medical supplies, and returns to the company team location. (**NOTE:** The 1SG's M113 can be equipped with litters for use in MEDEVAC.)
- Casualties can be evacuated by the task force medical platoon's ambulance section. Although ambulances are task force assets, they can be task organized as needed. In many cases, they are habitually associated with the company team. The team's assigned ambulance evacuates WIAs to the BAS, and then returns to the team location.

10-86. Under some operational scenarios when a treatment team is positioned with a company team's CCP, the attached ambulance may evacuate back to FSB medical company ambulance exchange point (AXP). From the AXP, patients are evacuated to the MTF located in the BSA. Soldiers evacuated to the MTF in the BSA receive medical treatment and or RTD or evacuated to a corps hospital. Company team members may be held in the division for medical treatment for up to 72 hours then, they are either RTD or evacuate for further treatment.

SOLDIERS KILLED IN ACTION

10-87. The company team commander will designate a location for the collection of KIAs. All personal effects remain with the body, while equipment and issue items become the responsibility of the vehicle commander until they can be turned over to the 1SG or supply sergeant. As a rule, KIA remains should not be transported on the same vehicle as wounded soldiers. The commander will send a letter of condolence through the S1 to the soldier's next of kin, normally within 48 hours of death.

SECTION VII – PERSONNEL SERVICES

10-88. Personnel services include clothing exchange and showers, awards and decorations, leaves and passes, command information, mail, religious services, financial services, legal assistance, rest and relaxation, and any other service designed to enhance or maintain the soldier's health, welfare, and morale. The following paragraphs discuss several of these functions.

POSTAL, FINANCIAL, AND LEGAL SERVICES

POSTAL SERVICES

10-89. Incoming mail is sorted at the task force trains and is then given to the 1SG or a certified mail handler from the company team for the next LOGPAC. All outgoing and returned mail is given to the 1SG or mail handler during resupply and is turned over to the S1 section when the LOGPAC returns to the field trains.

FINANCIAL SERVICES

10-90. Pay inquiries and allotment changes are collected by the 1SG or supply sergeant during resupply and are then submitted with other S1 actions when the LOGPAC returns to the field trains. When requested actions are completed, the S1 annotates actions taken and gives a copy of the document to the 1SG or supply sergeant, who returns it to the soldier's PSG (or the soldier) at the next LOGPAC.

LEGAL SERVICES

10-91. Requests for legal action should be submitted in writing to the S1 during the LOGPAC. As necessary, the S1 will either prepare all required documents and return them to the soldier or inform the company team commander of the time and location at which legal proceedings, such as a hearing, will be conducted.

UNIT MINISTRY TEAM

10-92. The unit ministry team (UMT) provides and performs religious support operations. The UMT consists of at least one chaplain and one chaplain assistant. Religious support consists of the personal delivery of rites, sacraments, ordinances, spiritual care, religious counseling, spiritual fitness training and assessment, religious worship services, and advice to the command on matters of religion, morals, and morale as affected by religion. The UMT also plays an important part in the primary care of casualties suffering from battlefield stress. The chaplain assistant accompanies the chaplain during all activities, providing security and maintaining section equipment. The chaplain assistant serves as the chaplain's staff and assists the chaplain during religious support operations.

PUBLIC AFFAIRS

10-93. The PAO is the division commander's official spokesman and handles the functions of public and command information and community relations. He provides the division commander with public affairs (PA) advice and services covering all matters of solider and media interest. All requests from the media for interviews with any company team member should be directed to the task force S1. Prior to any deployment, leaders must provide soldiers with guidance on dealing with the media. Soldiers are encouraged to "tell the Army story," but soldiers and leaders at all level must only answer questions to subjects that they have personal knowledge of and do not compromise the security of the unit or mission.

ENEMY PRISONERS OF WAR PROCESSING AND EVACUATION

10-94. EPWs and captured enemy equipment and materials are excellent sources of combat information and intelligence. This information, however, will be of tactical value only if prisoners and materials are processed and evacuated to the rear quickly. In any tactical situation, the company team will have specific procedures and guidelines for handling prisoners and captured materials; these measures are prescribed in team and task force SOPs and in the commander's OPORD. Basic principles for handling EPWs are covered by the "five-S and T" procedures: search, segregate, silence, speed, safeguard and tag. However, the tempo of an operation may not allow the company team to tag prisoners and equipment. The company team commander must weigh operational requirements against completing the "five-S and T" steps. Some circumstances may only allow for the company team to complete only the "search" step in handling EPWs and then pass the prisoners along to follow on forces to complete processing of EPWs.

10-95. In addition to initial processing, the capturing element is responsible for providing guards and transportation to move prisoners to the designated EPW collection points. Prisoners normally will be carried in restraints on vehicles already heading toward the rear, such as tactical vehicles being moved for repair or replacement or supply vehicles returning from LOGPAC operations. The capturing element also has responsibility for feeding the EPWs, providing them with medical treatment, and safeguarding them until they reach the collection point.

10-96. At the collection point, the 1SG generally assumes responsibility for providing security for the EPWs and for transporting them to the task force trains. He must be prepared to use any available personnel as guards, including the walking wounded or soldiers moving to the rear for reassignment.

SECTION VIII – REORGANIZATION AND WEAPON REPLACEMENT

REPLACEMENT AND CROSS-LEVELING OF PERSONNEL

10-97. Replacements for wounded, killed, or missing personnel are requested through the S1. Returning or replacement personnel arriving with the LOGPAC should already have been issued all TA-50 equipment, MOPP gear, and other items, including their personal weapons.

10-98. Within the company team, each platoon leader will cross-level personnel among his crews, with the 1SG controlling cross-leveling from platoon to platoon. Soldiers from disabled or destroyed vehicles will be used to fill out crews until replacement personnel and vehicles arrive at the company team CP.

REPLACEMENT AND SALVAGING OF EQUIPMENT

10-99. Lost, damaged, or destroyed equipment will be replaced through normal supply channels and brought forward with the LOGPAC. When vehicles are evacuated to the rear for extended periods, crews will remove any serviceable equipment or parts for use on other company team vehicles.

INTEGRATION AND PREPARATION FOR COMBAT

10-100. To maintain effective, consistent combat power, the company team must have specific plans and procedures that allow each element to quickly integrate replacement personnel and equipment. Unit SOP should define how soldiers and equipment are prepared for combat. The SOP covers such areas as uploading, load plans, PCCs and PCIs, and in-briefings.

WEAPON SYSTEM REPLACEMENT OPERATIONS

10-101. Weapon system replacement operations (WSRO) are conducted to provide units with fully operational, ready-to-fight replacement weapon systems and cover both vehicle and crew-served systems. The division provides replacement weapon systems to battalions based on the brigade priorities. At brigade level, systems normally covered by WSROs are tanks with four-man crews, mortars with four-man crews, and BFVs with three-man crews. Before these weapon systems are brought forward for delivery to the company team, the higher headquarters will supervise the completion of all necessary PCCs.

SECTION IX – COMBAT SERVICE SUPPORT PLANNING CONSIDERATIONS

DEVELOPMENT OF THE COMPANY COMBAT SERVICE SUPPORT PLAN

10-102. The company team commander develops his CSS plan by first determining exactly what supplies he has on hand and then accurately predicting his support requirements. By reviewing the CTIL if equipped with FBCB2, the company commander can review his supply status at any time. Additionally he uses available information from his mission analysis and from war-gaming the plan with his subordinate leaders. This process is important not only in confirming the validity of the CSS plan but also in ensuring that the team's support requests are submitted as early as possible.

10-103. The commander can formulate his CSS execution plan and submit support requests to the task force based on the results of his COA analysis and of the war-gaming and refinement of the maneuver plan.

The CSS plan should provide answers to a variety of operational questions, such as the following examples:

- Based on the nature of the operation and specific tactical factors, what types of support will the company team need?
- In what quantifies will this support be required? The discussion will also cover these questions:
  - Will emergency resupply be required during the battle?
  - Does this operation require prestock supplies?
- What are the composition, disposition, and capabilities of the expected enemy threat and how will this affect CSS operations during the battle? The discussion will also cover these questions:
  - Where and when will the expected contact occur?
  - Based on the nature and location of expected contact, what are the company team's expected casualties and vehicle losses?
  - What impact will the enemy's special weapons capabilities (such as NBC) have on the battle and on expected CSS requirements?
  - How many EPWs are expected and where?
- How will terrain and weather affect CSS operations during the battle? The discussion will also cover these questions:
  - What ground will provide optimum security for trains elements?
  - What ground will provide optimum security for maintenance and CCPs?
  - What are the company team's vehicle and casualty evacuation routes?
  - What are the team's "dirty" routes for evacuation of contaminated personnel, vehicles, and equipment?
- When and where will the company team need CSS? The discussion will also cover these questions:
  - Based on the nature and location of expected contact, what are the best sites for the maintenance collection points?
  - Based on the nature and location of expected contact, what are the best sites for the CCPs? Where will the EPW collection points be located?
  - What LRPs will be active, and when, during the battle?
- What are the criteria and triggers for the movement of the company combat trains?
- What are the support priorities (by element and type of support)?
  - Which platoon has priority for emergency Class III resupply?
  - Which platoon has priority for emergency Class V resupply?

- Will there be lulls in the battle that will permit support elements to conduct resupply operations in relative safety? If no lulls are expected, how can the company team best minimize the danger to the CSS vehicles that will provide the required support?
- Based on information developed during the CSS planning process, which resupply technique should be used?

COMBAT SERVICE SUPPORT BRIEFINGS AND REHEARSALS

10-104. As in all operational areas, thorough briefings and comprehensive rehearsals are important keys to effective CSS planning. These activities play a critical role in ensuring that the company team can execute its CSS plans efficiently, on time, and with the fewest possible problems. They allow the commander, his subordinate leaders, and each crewman to discover potential problem areas and to develop contingency plans to take care of unforeseen difficulties.

10-105. At both the task force and company team levels, commanders have several options for conducting CSS rehearsals. One is to integrate the CSS rehearsal into the unit's larger maneuver rehearsals. Another alternative is to have the unit's CSS operators conduct a separate rehearsal. Within the company team, for example, the commander could direct the XO and 1SG to rehearse CSS operations with the team's PSGs, maintenance team chief, and senior medic.

SECTION X – AVIATION COMBAT SERVICE SUPPORT MISSIONS

AERIAL SUSTAINMENT

10-106. Aerial sustainment is the movement of personnel, equipment, material, and supplies by utility, cargo, and fixed-wing assets for operations other than air assault and CS. These air movements are considered CSS missions because the aviation forces are not task organized with combined arms forces and because they do not move forces or assets whose primary mission is to engage or destroy enemy forces.

CASUALTY EVACUATION

10-107. CASEVAC is the term used to refer to the movement of casualties by air or ground on nonmedical vehicles or aircraft. CASEVAC operations normally involve the initial movement of wounded or injured soldiers to the nearest medical treatment, or treatment facility. CASEVAC operations may also be employed in support of mass casualty operations. MEDEVAC includes the provision of en route medical care, whereas, CASEVAC does not provide any medical care during movement. For definitive information on CASEVAC, see FM 4-02.2 (FM 8-10-6) and FM 4-02.26 (FM 8-10-26).

NOTE: An important distinction must be made between the terms CASEVAC and MEDEVAC. CASEVAC can be performed by any Army aviation utility aircraft when tasked by the maneuver commander. CASEVAC requests are made through aviation channels. MEDEVAC is the process of moving casualties and/or patients while providing them with medical care en route. Most aviation units are not equipped or staffed to perform MEDEVAC, which is requested through medical channels. See the earlier discussion of evacuation.

Chapter 11

Tactical Enabling Operations

Tactical enabling operations encompass a wide range of special purpose operations undertaken routinely during all operations. This chapter covers tasks the company team may conduct, either on its own or as part of a larger force, to complement or support its primary missions.

CONTENTS

Linkup....11-1
Linkup Situations....11-1
Phases of the Linkup Operations....11-1
Passage of Lines....11-3
Planning Considerations....11-3
Reconnaissance and Coordination....11-4
Forward Passage of Lines....11-5
Rearward Passage of Lines....11-6
Relief in Place....11-7
Planning the Relief....11-7
Coordination....11-7
Conducting the Relief....11-8
Breaching Operations....11-10
Breach Theory....11-10
Bypass....11-11
Mobility Assets....11-21
Hasty Water Crossing and Gap Crossing Operations....11-25
Methods and Purposes of Water Crossing Operations....11-26
Road Marches and Assembly Areas....11-27
Tactical Road March....11-27
March Columns....11-28
Planning Considerations....11-28
Quartering Party....11-29
Control Measures....11-29
Actions During the March....11-30
Actions on Contact....11-31
Actions in the Assembly Area....11-33
The Desert Laager Formation....11-34

SECTION I – LINKUP

LINKUP SITUATIONS

11-1. Linkup is an operation entailing the meeting of friendly ground forces (or their leaders or designated representatives). It may occur in, but is not limited to, the following situations:

- Advancing forces reaching an objective area previously secured by air assault, airborne, or infiltrating forces.
- Units conducting coordination for a relief in place.
- Cross-attached units moving to join their new organization.
- A unit moving forward during a follow and support mission with a fixing force.
- A unit moving to assist an encircled force.
- Units converging on the same objective during the attack.
- Units conducting a passage of lines.

PHASES OF THE LINKUP OPERATION

11-2. The company team conducts linkup activities independently or as part of a larger force. Within a larger unit, the team may lead the linkup force. The linkup consists of three phases; the actions outlined in the following paragraphs are critical to the execution of a successful operation:

- **Phase 1 - Far recognition signal.** During this phase, the units or elements involved in the linkup should establish communications both FM and digital before they reach direct fire range. The lead element of each linkup force should monitor the radio frequency of the other friendly force.
- **Phase 2 – Coordination.** Before initiating movement to the linkup point, the forces must coordinate necessary tactical information, including the following:
  - The known enemy situation.
  - FBCB2 (if equipped) filter setting and address book commonality.
  - Type and number of friendly vehicles and number of vehicles equipped with FBCB2.
  - Disposition of stationary forces (if either unit is stationary).
  - Routes to the linkup point and rally point (if used).
  - Fire control measures.
  - Near recognition signal(s).
  - Communications information.
  - CS coverage.
  - CSS responsibilities and procedures.
  - Finalized location of the linkup point and rally point (if used).
  - Any special coordination, such as that covering maneuver instructions or requests for medical support.
- **Phase 3 - Movement to the linkup point and linkup.** All units or elements involved in the linkup must enforce strict fire control measures to help prevent fratricide; linkup points and RFLs must be easily recognizable by moving and/or converging forces. Linkup elements take these actions:
  - Conduct far recognition using FM radio and/or FBCB2 (if equipped).
  - Conduct short-range (near) recognition using the designated signal.
  - Complete movement to the linkup point.
  - Establish local security at the linkup point.
  - Conduct additional coordination and linkup activities as necessary.

SECTION II – PASSAGE OF LINES

11-3. A passage of lines entails movement of one or more units through another unit. This 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 the discussion later in this chapter and to Figure 11-1 on page 11-5 and Figure 11-2 on page 11-6).

11-4. The controlling task force is responsible for planning and coordination of a passage of lines involving the company team. In some situations, as when the company team is using multiple passage routes (such as a separate route for each platoon), the team commander must take responsibility for planning and coordinating each phase of the operation.

PLANNING CONSIDERATIONS

11-5. In planning the passage of lines, the commander must consider the tactical factors and procedures covered in the following paragraphs.

PASSAGE LANES

11-6. The passage should facilitate transition to follow-on missions through the use of multiple lanes or of lanes wide enough to support doctrinal formations for the passing units.

USE OF DECEPTION

11-7. Deception techniques, such as the use of smoke, may be employed to enhance security during the passage.

BATTLE HANDOVER

11-8. The controlling commander must clearly define the battle handover criteria and procedures to be used during the passage. His order should cover the roles of both the passing unit and the stationary unit and the use of direct and indirect fires. If necessary, he also specifies the location of the battle handover line as part of the unit's graphic control measures. For a forward passage, the battle handover line is normally the LD for the passing force; in a rearward passage, it is normally a location within the direct fire range of the stationary force. In general, a defensive handover is complete when the passing unit is clear and the stationary unit is ready to engage the enemy. Offensive handover is complete when the passing unit has deployed and crossed the battle handover line.

OBSTACLES

11-9. The passing and stationary units must coordinate obstacle information, to include the locations of enemy and friendly obstacles, of location and method of marking lanes and/or bypasses, and of guides for the passage.

AIR DEFENSE

11-10. 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.

COMBAT SERVICE SUPPORT RESPONSIBILITIES

11-11. Responsibility for CSS actions, such as vehicle recovery or CASEVAC in the passage lane, must be clearly defined for both passing and stationary units.

COMMAND AND CONTROL

11-12. The company team will collocate a C2 node, (normally the commander or XO), with a similar element from the stationary or moving unit to ensure effective C2 during the passage (as applicable).

RECONNAISSANCE AND COORDINATION

11-13. Detailed reconnaissance and coordination are critical in a passage of lines, both in dealing with the often complex planning factors outlined previously and in ensuring that the passage is conducted quickly and smoothly. The company team commander normally conducts all necessary reconnaissance and coordination for the passage. At times, he may designate the XO, 1SG, or a platoon leader to conduct liaison duties for reconnaissance and coordination.

11-14. The following items of information are coordinated (an asterisk indicates items that should be confirmed by reconnaissance):

- Unit designation and composition; type and number of passing vehicles to include which vehicles have FBCB2 capability.
- Passing unit arrival time(s).
- Location of attack positions or assembly areas.
- Current enemy situation.
- Stationary unit's mission and plan (to include OP, patrol, and obstacle locations).
- Location of movement routes, contact points, passage points, and passage lanes. (**NOTE:** In units with digital capability, the use of global positioning system (GPS)/position navigation (POSNAV) waypoints will simplify this process and, as a result, speed the passage.)
- Guide requirements.
- Order of march.
- Anticipated actions on enemy contact.
- Requirements for supporting direct and indirect fires, including the location of the RFL.
- NBC conditions.
- Available CS and CSS assets and their locations.
- Communications information.

- Criteria for battle handover and location of the battle handover line.
- Additional procedures for the passage.

FORWARD PASSAGE OF LINES

11-15. In a forward passage, the passing unit first moves to an assembly area 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 then lead the passing elements through the passage lane.

11-16. The company team conducts a forward passage by employing tactical movement. It moves quickly, using appropriate dispersal and formations whenever possible and keeping radio traffic to a minimum. It bypasses disabled vehicles as necessary. The team holds its fire until it passes the battle handover 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 consolidates at a rally point or attack position and then conducts tactical movement in accordance with its orders. Figure 11-1 illustrates a forward passage of lines.

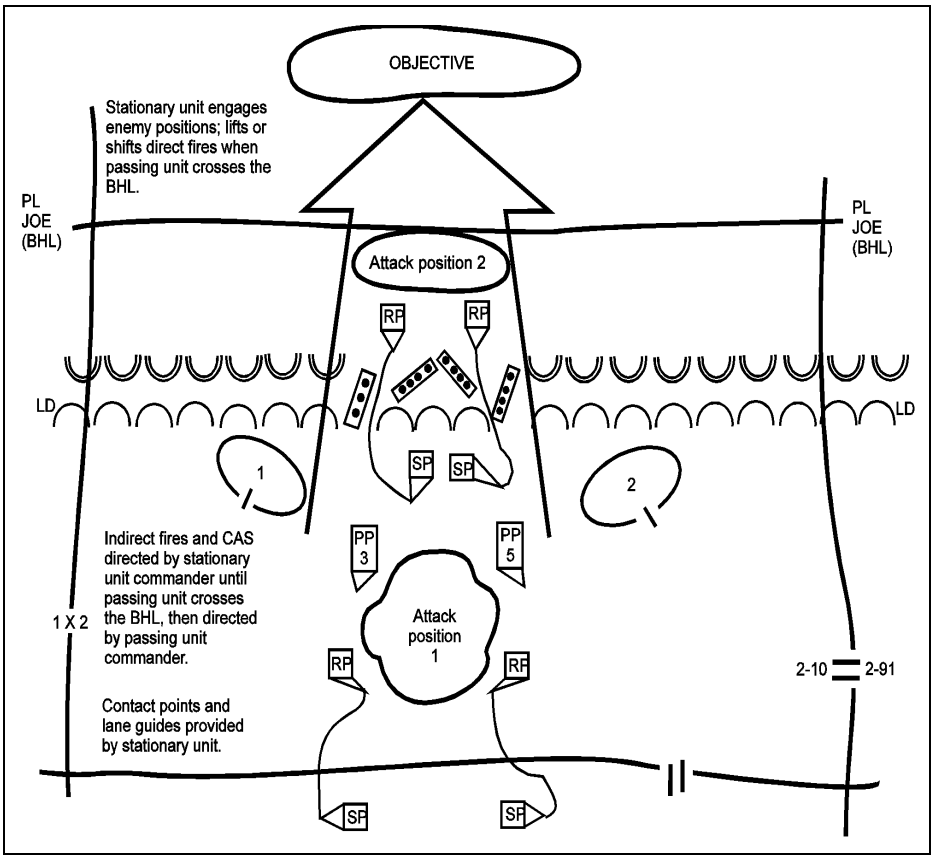


Figure 11-1. Company Team Forward Passage of Lines

REARWARD PASSAGE OF LINES

11-17. Because of the increased chance of fratricide during a rearward passage, coordination of recognition signals and direct fire restrictions is critical. 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 battle handover line are emphasized. Additional fire control measures, such as restrictive fire lines (RFL), may be employed to further minimize the risk of fratricide.

11-18. Following coordination, the passing unit continues tactical movement toward the passage lane. Gun tubes are oriented on the enemy, and the passing unit is responsible for its own security until it passes the battle handover line. If guides are provided by the stationary unit, 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 Figure 11-2 for an illustration of the rearward passage.)

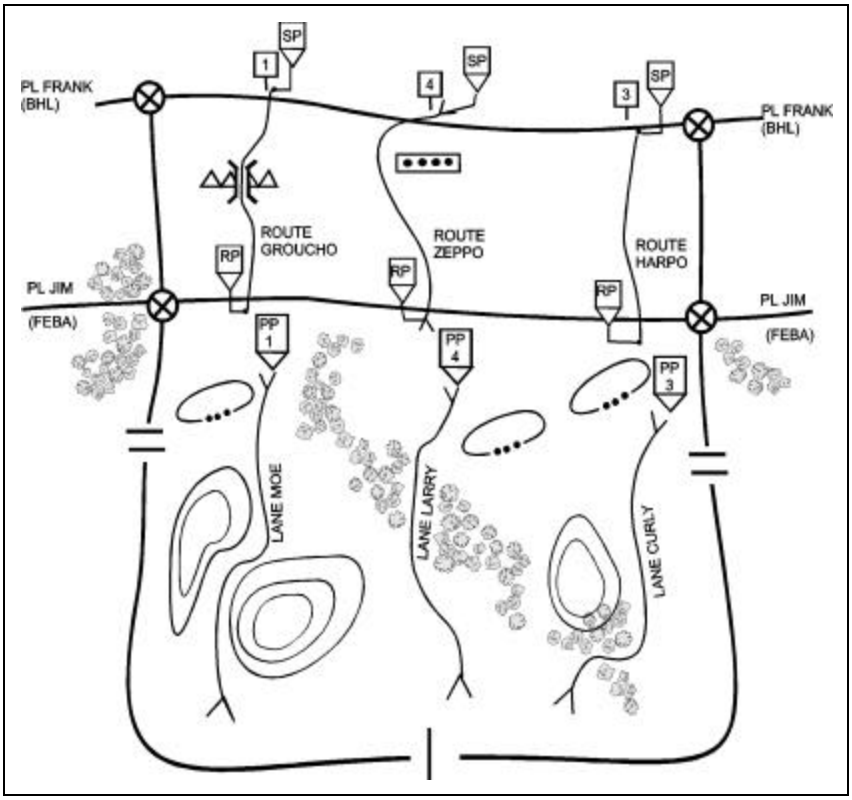


Figure 11-2. Company Team Rearward Passage of Lines

SECTION III – RELIEF IN PLACE

11-19. A relief in place occurs when one unit is replaced by another unit during full spectrum operations. Its purpose is to preserve the combat effectiveness of committed units. In a relief involving the company team, the task force commander will direct when and how the operation will be conducted.

PLANNING THE RELIEF

11-20. In planning for a relief in place, the company team commander takes the following actions:

- Issue an order immediately.
- Use an advance party composed of key leaders to conduct detailed reconnaissance and coordination.
- As the relieving unit, adopt the outgoing unit's normal pattern of activity as much as possible.
- As the relieving unit, determine when the team will assume responsibility for the outgoing unit's position.
- As the relieving unit, collocate team headquarters with the relieved unit's headquarters.
- Maximize OPSEC to prevent the enemy from detecting the relief operation. (**NOTE**: Whenever possible, conduct the relief at night or under other limited visibility conditions.)
- Plan for relief of CS elements after combat elements are relieved.
- Plan for transfer of excess ammunition, wire, POL, and other material of tactical value to the incoming unit. (**NOTE:** Other equipment that may be exchanged includes machine gun traverse and elevation (mechanism) (T&E) mechanisms and tripods, emplaced sensors and chemical alarms, and MOPMS control boxes.)
- Control movement by reconnoitering, designating, and marking routes and providing guides.

COORDINATION

11-21. The incoming and outgoing commanders must meet to exchange tactical information, conduct a joint reconnaissance of the area, and complete other required coordination for the relief. The two commanders must carefully address passage of command and jointly develop contingency actions to deal with enemy contact during the relief. This process will normally include coordination of the following additional information:

- Location of vehicle and individual fighting positions (to include hide, alternate, and supplementary positions). Verification of fighting positions should be done by both conventional map and on FBCB2 (if equipped).

- Enemy situation.
- The outgoing unit's tactical plan, to include graphics, company team and platoon fire plans, and individual vehicles' sector sketches.
- Fire support coordination, including 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. (**NOTE:** The relief will be conducted on the radio nets of the outgoing unit.)
- Maintenance and logistical support for disabled vehicles.
- Limited visibility considerations.

CONDUCTING THE RELIEF

11-22. During conduct of the relief, the outgoing commander retains responsibility for the area of operations and the mission. He exercises operational control over all subordinate elements of the incoming unit that have competed their portion of the relief. Responsibility can pass to the incoming commander when all elements of the outgoing unit are relieved and adequate communications are established.

11-23. There are two overall methods of relief, sequential and simultaneous, with elements relieved one at a time or all at once. In addition, the relief of individual elements can be conducted in one of two ways:

- **By alternate element position.** The relieving element occupies a position separate from that of the relieved element. (See Figure 11-3 for an illustration of this relief method.)
- **By alternate vehicle and/or individual position.** The relieving element occupies vehicle or individual fighting positions within the same BP as the relieved element (see Figure 11-4).

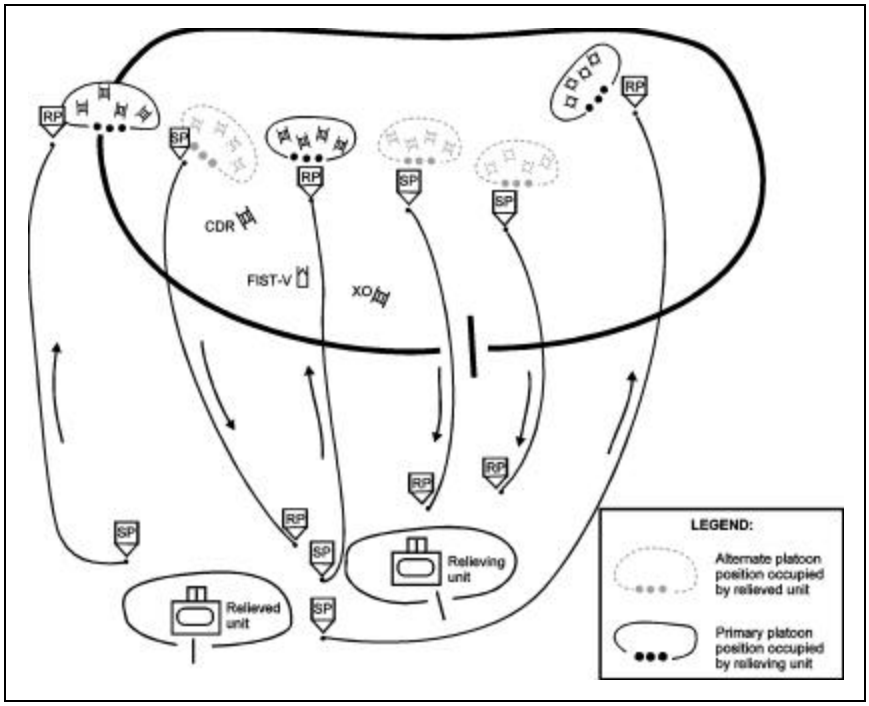


Figure 11-3. Example Relief in Place by Alternate Platoon Positions

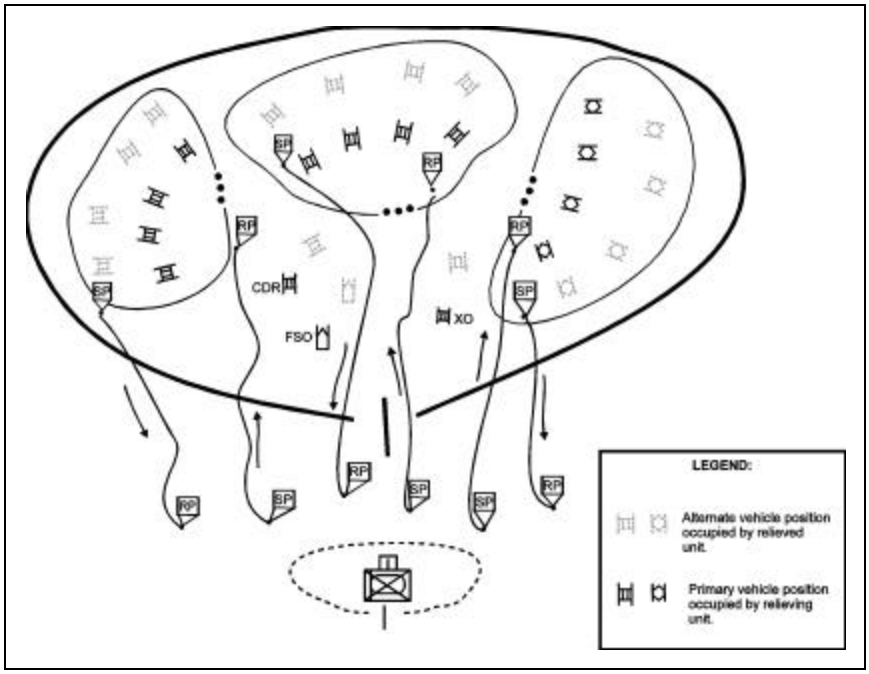


Figure 11-4. Example Relief in Place by Alternate Vehicle Positions

SEQUENTIAL RELIEF

11-24. This is the most time-consuming method. The relieving unit moves to an assembly area 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 collocate their headquarters and trains elements to facilitate C2 and transfer of equipment, ammunition, fuel, water, and medical supplies.
- The first element being relieved (such as a platoon) moves to its alternate fighting positions or BP while the relieving element moves into the outgoing element's primary positions. The incoming element occupies vehicle and individual fighting positions as appropriate.
- Incoming and outgoing elements complete the transfer of equipment and supplies.
- The relieved element moves to the designated assembly area behind the position.
- Once each outgoing element clears the RP en route to its assembly area, the next relieving element moves forward.

SIMULTANEOUS RELIEF

11-25. This is the fastest, but least secure, method. All outgoing elements are relieved at once, with the incoming unit normally occupying existing positions, including 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.
- The units complete the transfer of equipment and supplies.
- Relieved elements move to the designated unit assembly area.

SECTION IV – BREACHING OPERATIONS

11-26. Breaching operations are conducted to enable maneuver despite the presence of obstacles. Breaching entails the employment of a combination of techniques and equipment to project combat power to the far side of an obstacle. The company team commander must understand breaching theory, the application of breach tenets throughout the planning and execution of missions, and the capabilities and limitations of various mobility assets.

BREACH THEORY

11-27. As discussed in Chapter 5, attacks are offensive operations with no clear distinction between a hasty attack and deliberate attack. Attacks range along a continuum defined at one end by FRAGOs that direct rapid execution of battle drills by forces immediately available. At the other end of the continuum, the company team moves into a deliberate attack from a reserve position or assembly area with detailed knowledge, a task organization specific for the attack, and a fully rehearsed plan. Most attacks fall somewhere between the two ends of the continuum and may require breaching operations to preserve friendly forces freedom of maneuver.

Regardless of where on this continuum the attack falls the incorporation of breach tenets and execution of the breach fundamentals never change. The only variables a company commander faces is the time available and the level of detail known of the enemy situation to plan, task organize engineer and other mobility assets, and the conduction of rehearsals prior to execution of the attack.

11-28. FM 3-34.2 (FM 90-13-1) contains a detailed discussion of breaching operations and threat obstacle employment.

BYPASS

11-29. When a unit bypasses an obstacle, it physically changes direction, moving along a route that avoids the obstacle. Obstacles should be bypassed whenever possible to maintain the momentum of the operation. Commanders, however, must ensure that conducting the bypass will provide a tactical advantage without exposing the unit to unnecessary danger. If possible, they should conduct a reconnaissance to evaluate tactical considerations, including the following:

- The limits of the obstacle.
- Physical aspects of the bypass route, including location, availability of cover and concealment, and key terrain influencing the route.
- Confirmation that the bypass route will take the unit where it needs to go while avoiding possible enemy ambush sites and kill sacks. Information gained from the enemy's defense will confirm if a perceived bypass is valid, or if it facilitates the intent of the enemy obstacles.

BREACHING TENETS

11-30. In the planning and execution of a successful combined arms breaching operation, the company team commander must apply the five tenets of breaching. These basic principles, described in this discussion, are the following:

- Intelligence.
- Breaching fundamentals.
- Breaching organization.
- Mass.
- Synchronization.

INTELLIGENCE

11-31. Well-rehearsed drills and SOPs and redundancy in breaching assets can offset a lack of obstacle intelligence (OBSTINTEL) in breaching operations involving simple obstacles or lightly defended obstacles. Detailed OBSTINTEL, however, is imperative for a successful breach of a complex obstacle. Without thorough information on the obstacle itself and the defense it supports, the breach force will be at risk. At a minimum, OBSTINTEL requirements for breach and maneuver planning should cover the following:

- **Bypasses and gaps.** The existence of adequate bypasses will affect the decision of whether a breaching operation is required. Gaps may influence what type of breach will be used.

- **Obstacle location and orientation.** These are factors in where the breach will be conducted.
- **Obstacle composition and depth.** These factors, which are critical to how the breach will be conducted, include the following:
  - Type of mines employed, by target type (antipersonnel, AT), positioning (buried, surface-laid), and/or method of activation (pressure, mechanical, magnetic).
  - Presence of anti-handling devices.
  - Size of the obstacle and whether it is tied into existing or reinforcing obstacles.
- **Location of the enemy's direct fire weapons (mounted and dismounted).** This influences actions on the objective during the breach, including how to suppress or obscure the enemy and/or seize terrain.
- **Topography. This will have an impact of the use of various types of breaching assets.** For example, because plows do not work well on rocky or uneven ground, plow settings may have to be adjusted, or the plow may be rendered totally unusable.

BREACHING FUNDAMENTALS

11-32. The following are the five basic steps that are part of every breaching operation—suppress, obscure, secure, reduce, assault (SOSRA):

- **Suppress.** Focus all available fires on the enemy to prevent him from placing effective fires on the breach and assault forces.
- **Obscure.** Employ screening or obscuring smoke to prevent enemy acquisition of friendly elements.
- **Secure.** Secure the breach site to prevent the enemy from interfering with obstacle reduction or passage of friendly forces through the cleared lanes. Security must be effective against all types of enemy elements that can influence these actions, including outposts and fighting positions near the obstacle, overwatching units, and counterattack forces.
- **Reduce.** Create lanes through or over the obstacle to allow the assault force to pass through and to enable follow-on forces to accomplish their missions.
- **Assault.** A breaching operation is not complete until friendly forces have assaulted to destroy the enemy on the far side of the obstacle that is capable of placing or observing direct and indirect fires on the reduction area. Also, if planned, battle handover with follow-on forces must be complete

BREACHING ORGANIZATION

11-33. The breach commander designates support, breach, and assault forces. The following paragraphs summarize the responsibilities and actions of the three elements during the breaching operation.

Support Force

11-34. The support element takes these actions:

- Establish support by fire positions and suppress the enemy with direct and indirect fires to prevent him from placing effective fires against friendly forces.
- Employ or call for smoke to obscure the enemy and/or to screen friendly movement.

Breach Force

11-35. The breach element takes these actions:

- Search for bypasses.
- Establish breach site security on the near side of the obstacle against mounted and dismounted enemy elements.
- Reduce the obstacle.
- Proof and mark lanes or bypasses.
- Establish breach site security on the far side against mounted and dismounted enemy elements to facilitate passage of the assault force.

Assault Force

11-36. The assault element takes these actions:

- As necessary, assist the support force with suppression during the initial reduction of the obstacle.
- As necessary, conduct an assault breach of protective obstacles.
- Secure the far side of the obstacle (this is defined as the area that can influence the breach site).
- As directed, conduct additional actions on the objective to destroy enemy elements on the far side of the obstacle.

MASS

11-37. Mass, a critical factor in the success of any breaching operation, is achieved when the friendly force is able to fix a majority of the enemy, to isolate or obscure the objective using smoke. The breach commander must plan for 50-percent redundancy in reduction assets. Favorable force ratios can be generated through the employment of additional combat multipliers.

SYNCHRONIZATION

11-38. Synchronization can best be achieved in a breaching operation through the use of detailed reverse planning, clear instructions to subordinate elements, effective C2, and extensive rehearsals. The emphasis is on the steps of SOSRA. Planning considerations for synchronization during the breach, listed in a possible reverse sequence, include the following:

- Reverse planning starts with actions on the objective.
- The planned actions on the objective will influence the size and composition of the assault force and the number and location of lanes to be created.

- Lane requirements, topography, and the type of obstacles will determine the type and number of reduction assets task organized to the breach force.
- The ability of the enemy's infantry to interfere with the breach will determine whether the breach site is secured by fires or by force.
- The enemy's ability to mass fires at the breach site will dictate the nature of the required suppression fires (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 will determine the location of the support force and its support by fire position.

Breach in Support of a Deliberate Attack

11-39. The following example situation provides information that a company team commander may consider when conducting a breach in support of a deliberate attack:

- The commander of Team A received a specified task from the task force OPORD to secure the TF Objective to deny the enemy's ability reposition forces against Team B (TF Main Effort). Team A is currently located in a TAA and has 36 hours to prepare for the attack.

- The enemy force on the objective is a MIP (+) that is part of a MIC defense. The MIP positions are not mutually supporting due to the terrain conditions. The MIP (+) will have been in position 24 to 36 hours at the time of LD, vehicles have hull down fighting positions, infantry squads have prepared fighting positions. Protective obstacles consisting of triple strand concertina wire and single impulse fuze AP mines are 25 to 50 meters in front of the prepared vehicle and infantry squad positions. The MIP has emplaced a fixing obstacle consisting of triple strand concertina wire and mixed single impulse fuze AP and AT row minefields approximately 120 to 150 meters in depth.

- The enemy mines may be buried 6 to 8 inches in the first row. Based upon the task force MDMP process Team A was task organized with two tank platoons (1st platoon has a plow and roller, 2d platoon has one plow tank), one mechanized infantry platoon, and one engineer Sapper platoon. The engineer Sapper platoon is comprised of three engineer squads with four M113s and two towed MICLICs.

11-40. The company commander and engineer platoon leader conduct mission analysis and conducts reverse planning to develop a COA. Key elements of the breach tenets (discussed in paragraph 11-30) considered during reverse planning are—

- The task force scout platoon was assigned NAIs to locate and confirm the location, disposition, and composition of the MICs obstacle. Task force S2 will deliver intelligence update at LD minus four hours.

- Enemy vehicle positions/squads will be destroyed sequentially by vehicle from East to West on the objective, the protective obstacles located in front of these positions must be breached requiring the assault force to have mobility assets (tank plow).

- One breach lane must be emplaced through enemy fixing obstacles. The obstacle composition favors the use of MICLICs as primary breach method. The soil conditions favor the use of tank plows or rollers as a proofing method. The depth of the obstacle requires a minimum of two MICLICs to emplace one lane.

- Team A was allocated priority of fires for artillery and mortars during this phase of the task force operation. There is a total of 10 minutes duration of artillery smoke and 6 minute duration of mortar smoke allocated to Team A. The breach force also must plan to use self-obscuration with smoke pots and vehicle smoke grenades. Team A must rehearse the mission to develop accurate triggers to initiate, build, and sustain obscuration throughout the reduction of the obstacle by the breach force.

- The enemy MIP positions are approximately 800 to 1,100 meters from the far side of the obstacle with infantry squads located 400 meters from the left and right limits of the obstacle. A platoon size maneuver element and an engineer Sapper platoon provides adequate near and far side security at the point of breach.

- Effective suppression requires a platoon sized element to prevent the enemy MIP vehicles and squads from repositioning and massing of fires on the breach force.

11-41. Table 11-1 provides an example of the allocation of assets for the company team breaching operation.

Table 11-1. Example of Company Team Breaching Assets

	PRIMARY	BACKUP
BREACH	MICLIC#1 MICLIC#2	Plow tank, then 1st engineer squad dismounted breach
PROOF	Plow tank	Roller tank then 1st engineer squad dismounted proof
MARK	2d Engineer squad	3d Engineer Squad

11-42. The company commander completes COA analysis and issues the OPORD. Initially the company commander and XO are located with the support force. Once the assault is initiated the commander will follow the assault element through the lane and the XO will move with the support force. The breach organization and key tasks to subordinate units are—

- **1st Tank Platoon (+): Breach Force.** The breach force consists of a tank platoon with plow and roller and the engineer Sapper platoon. The breach force must accomplish the following:
  - Identify the point of breach. Confirm the location, composition and disposition of the obstacle.
  - Breach, proof and mark one lane through the obstacle.
  - Secure near and far side of the point of breach to protect the assault force.
- **2d Tank Platoon: Assault Force.** The assault force is equipped with four tanks with one tank plow. The assault force must accomplish the following:
  - Secure the far side of the obstacle.
  - Be prepared to breach protective obstacles.
  - Destroy the remaining elements of the MIP and seize the objective.
- **3d Mechanized Platoon: The Support Force.** The support force must accomplish the following:
  - Suppress enemy MIP on the objective to protect the breach force.
  - Follow and assume behind 2nd platoon and clear enemy dismounted positions on the objective.

11-1. Figure 11-5 through Figure 11-9 illustrates a company team breaching an obstacle during a deliberate attack.

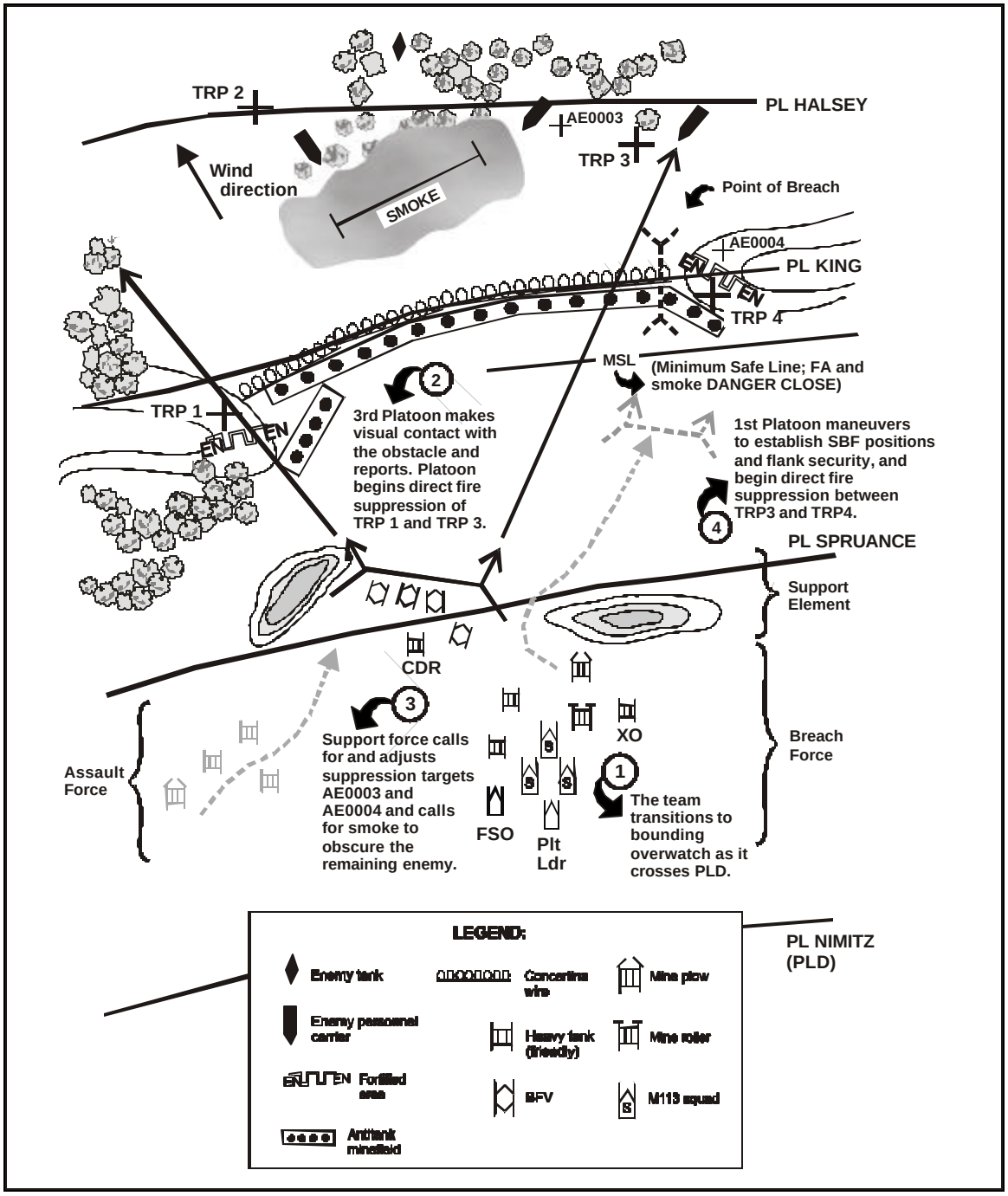


Figure 11-5. Company Team Sets the Conditions for the Breach

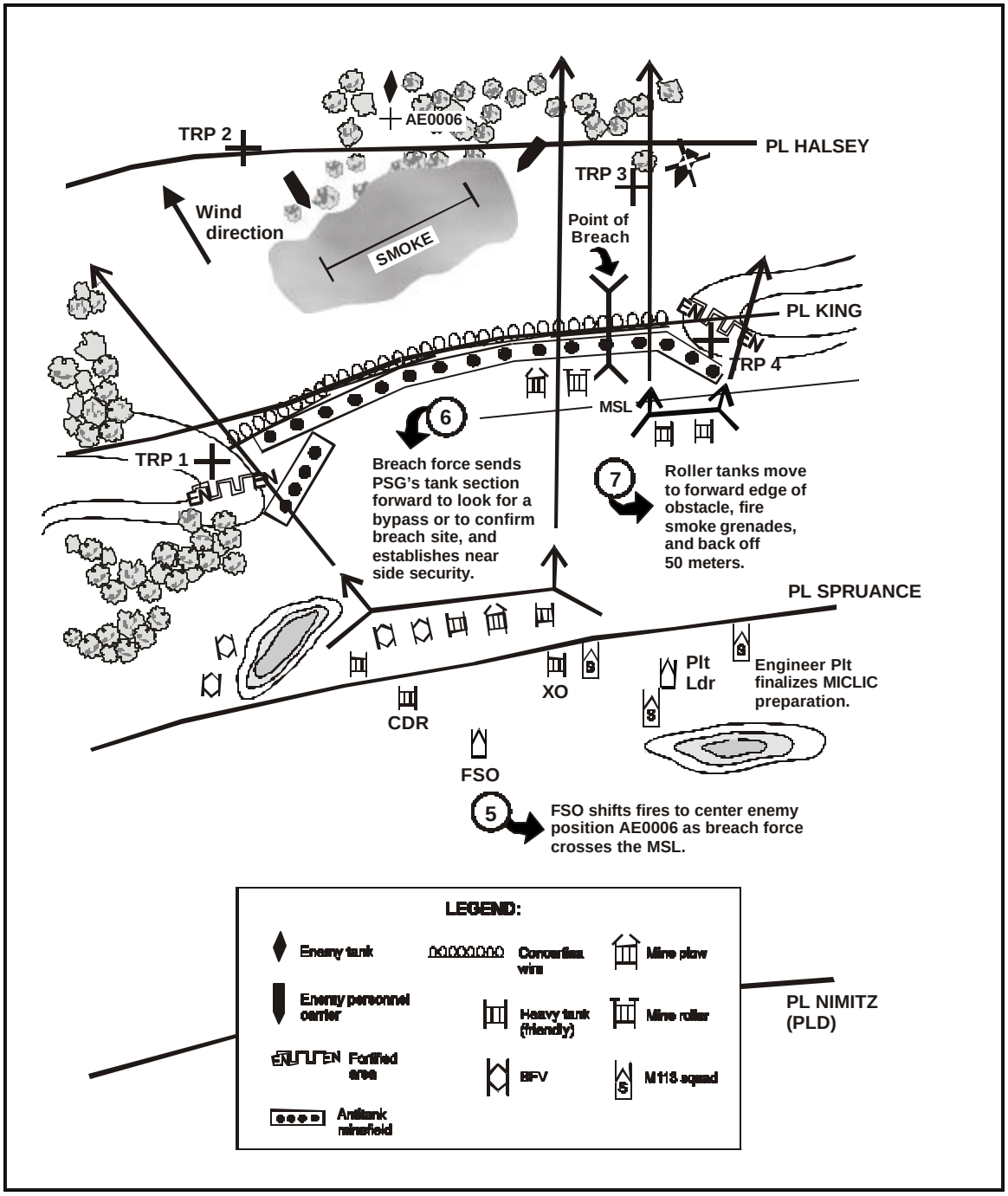


Figure 11-6. Company Team Establishes Security

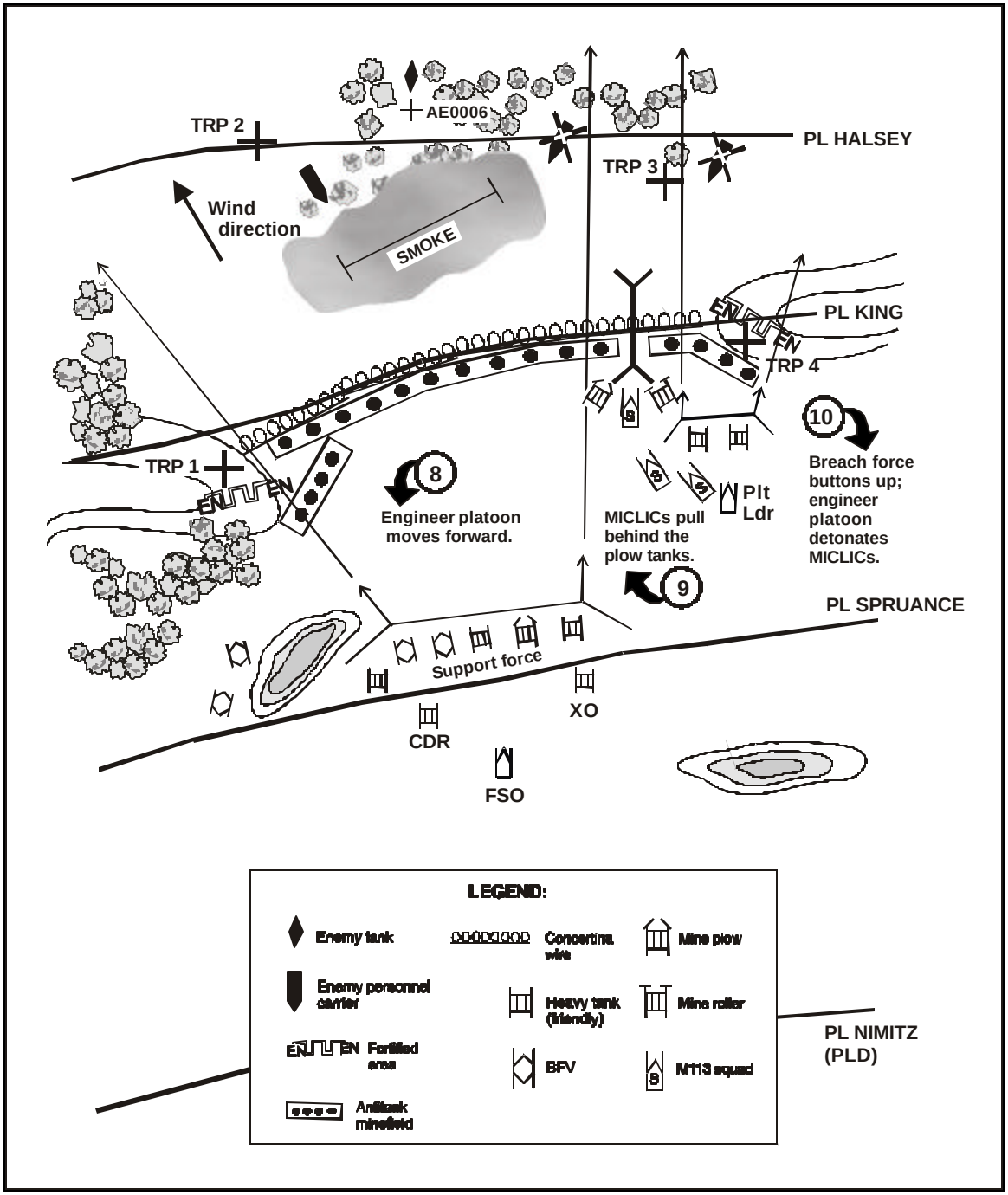


Figure 11-7. Company Team Conducts the Breach

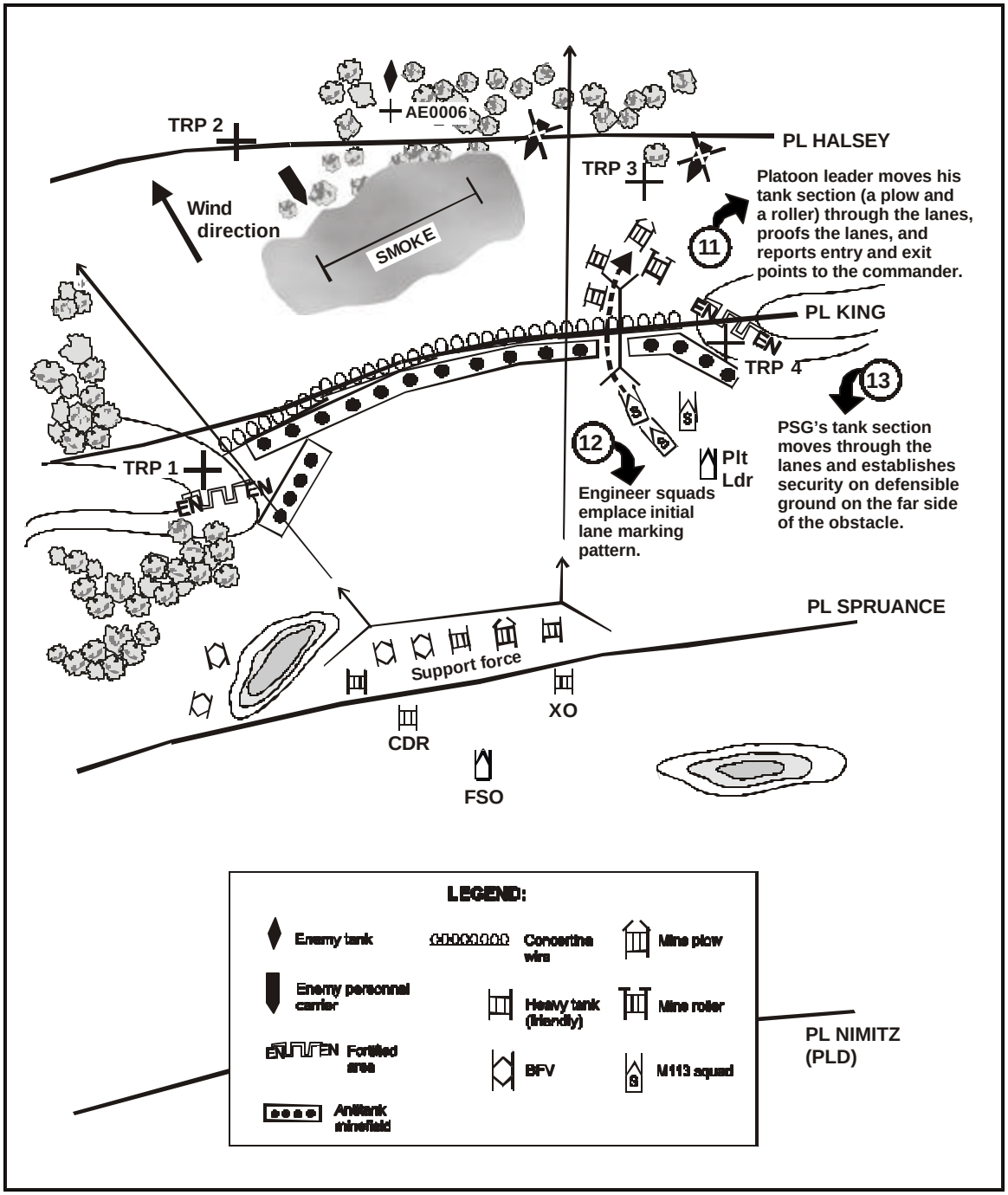


Figure 11-8. Breach Force Proofs the Lanes and Establishes Far Side Security

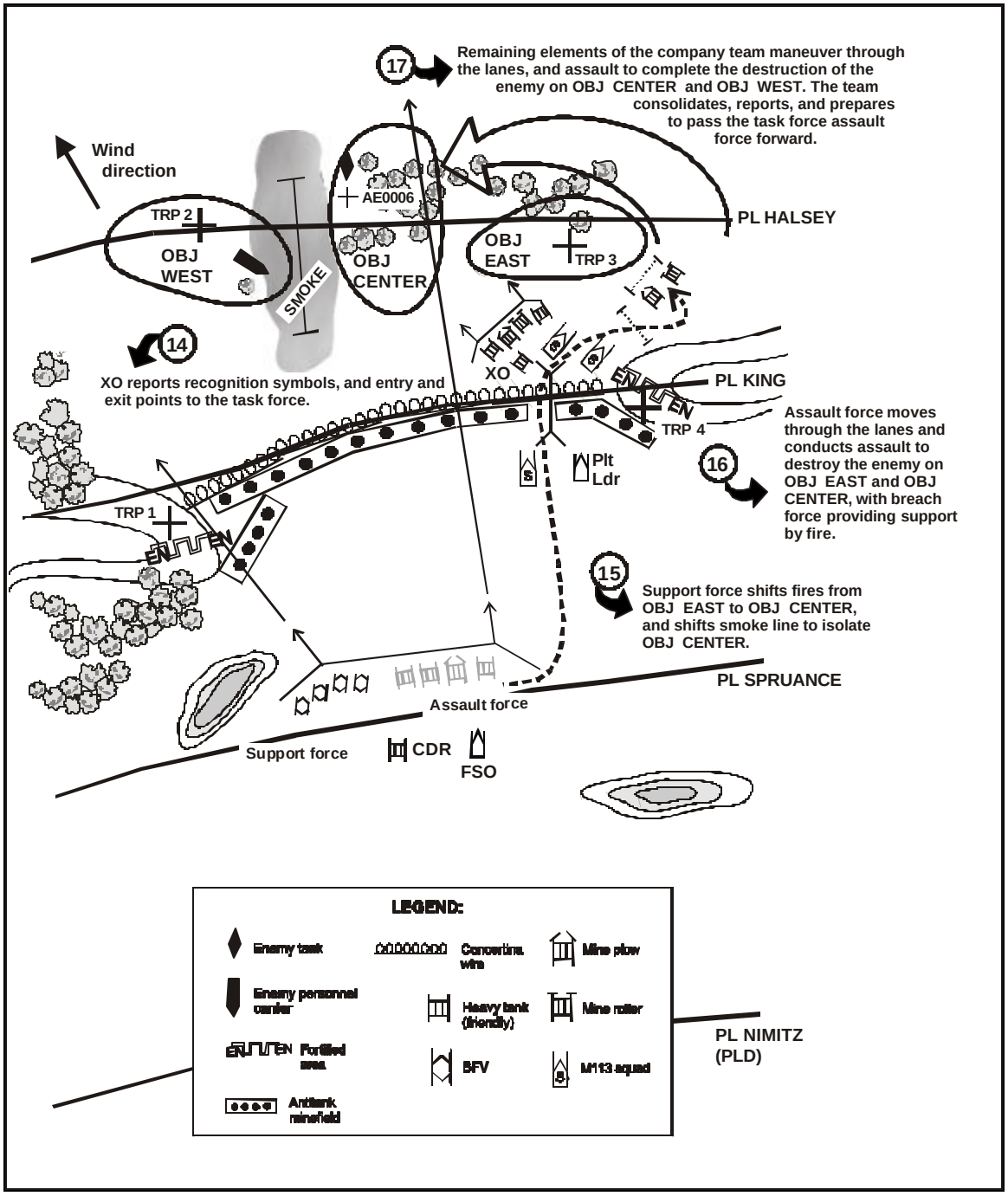


Figure 11-9. Assault Force Conducts the Assault and Secures the Objective

MOBILITY ASSETS

11-43. The following paragraphs summarize the capabilities and limitations of the breaching assets available to the company team.

MINE PLOW

11-44. Also known as the mine-clearing blade, the mine plow is used to breach and proof minefields. The system affords good survivability. When fully operational, a tank equipped with a mine plow can quickly clear two 68-inch-wide lanes, one in front of each track. (**NOTE**: The plow's dog bone assembly will detonate the tilt rods of mines in the area between the two plowed lanes; however, only plows equipped with the improved dog bone assembly (IDA), will defeat magnetically activated mines.)

11-45. The plow must be dropped at least 100 meters before the tank reaches the minefield. It then is not lifted until the tank is at least 100 meters past the far edge of the minefield. The plow must have 18 inches of spoil to be effective, limiting the tank's speed to 10 mph or less in the lane. The mine plow should be used only in a straight line; it does not work well on hard, rocky, or uneven ground where it cannot maintain adequate spoil. Mine detonation can cause violent upward movement of the blade; the tank's main gun must be traversed to the side during plowing to prevent damage to the gun tube. The plow's lifting straps can become entangled in wire obstacles. Manual lifting of the plow takes at least 10 minutes. Figure 11-10 shows the width of the mine clearing blade in relationship to the track widths of various tracked vehicles.

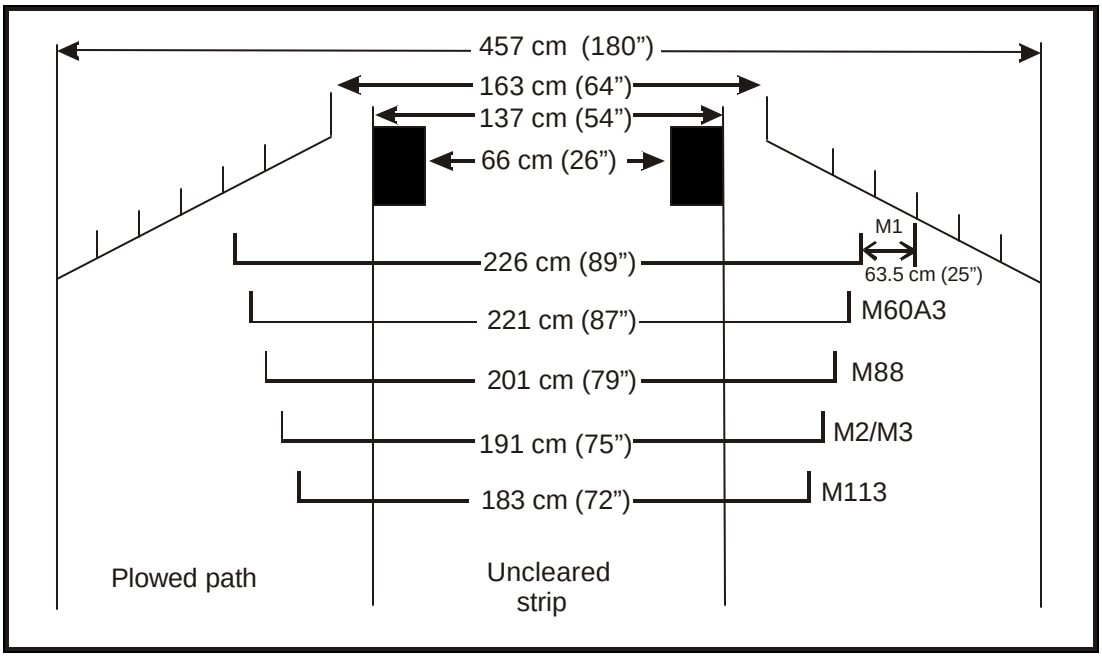


Figure 11-10. Width of Mine Clearing Blade as Compared to Other Armored Vehicles

MINE ROLLER

11-46. The mine roller is used to identify the forward edges of a minefield and to proof lanes. The roller sweeps a 44-inch path in front of each track and is also equipped with a dogbone assembly. It is also effective at breaching wire obstacles.

11-47. The roller, however, is not effective on broken or uneven ground. The mine roller, like the mine plow, will not defeat magnetically fuzed mines unless equipped with the IDA. The main gun must be traversed to the side or rear when contact with a mine is possible or imminent; detonation can throw the roller (or pieces of it) violently upward, possibly damaging the tube. Figure 11-11 shows the width of the mine roller in relationship to track widths of various tracked vehicles.

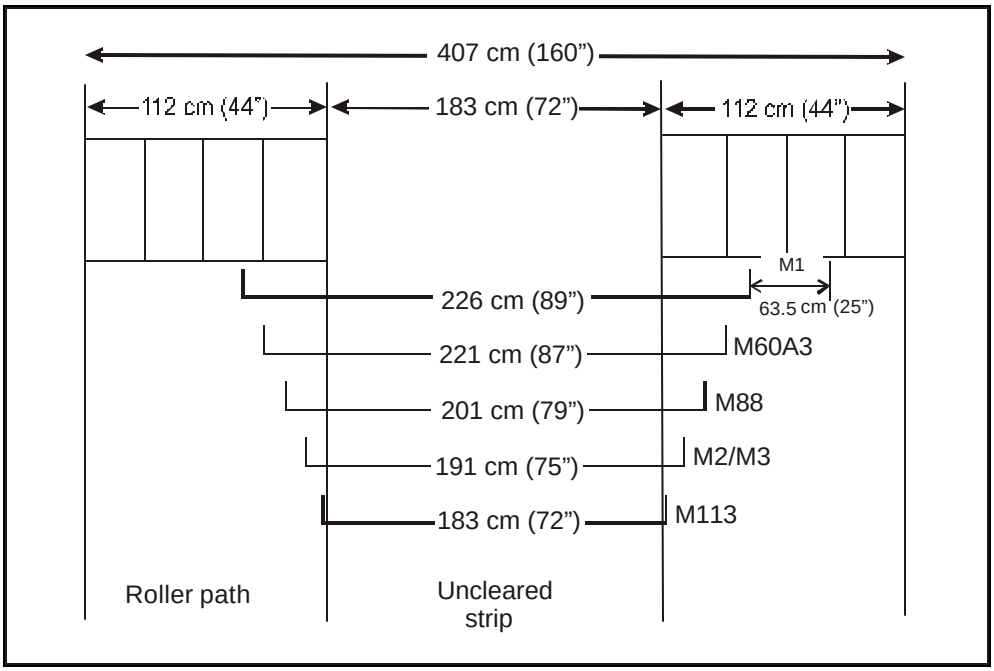


Figure 11-11. Widths of a Mineroller as Compared to other Armored Vehicles

MINE-CLEARING LINE CHARGE

11-48. Used to breach wire and mine obstacles, the MICLIC can be either towed or mounted on an M60A1 chassis (this vehicle is known as the AVLM). It clears a lane 100 meters deep and 14 meters wide. (**NOTE:** The MICLIC must be fired 62 meters from the obstacle to get the full 100 meters of depth.) The charge may create two skip zones, where the mines are not detonated, on the right and left side of the center line of the cleared lane. The skip zones, which are about 1.5 meters wide, require all MICLIC lanes to be proofed.

11-49. The MICLIC is effective against pressure-activated AT mines and against mechanically activated antipersonnel mines. Effectiveness is limited against magnetically activated mines, including scatterable mines, and those with multi-impulse (double-impact) or time-delay fuzes. The MICLIC is not effective on severely broken ground where the line charge cannot lay flat. When detonated, the MICLIC has danger area with a radius of 1,600 meters (see Figure 11-12 and Figure 11-13).

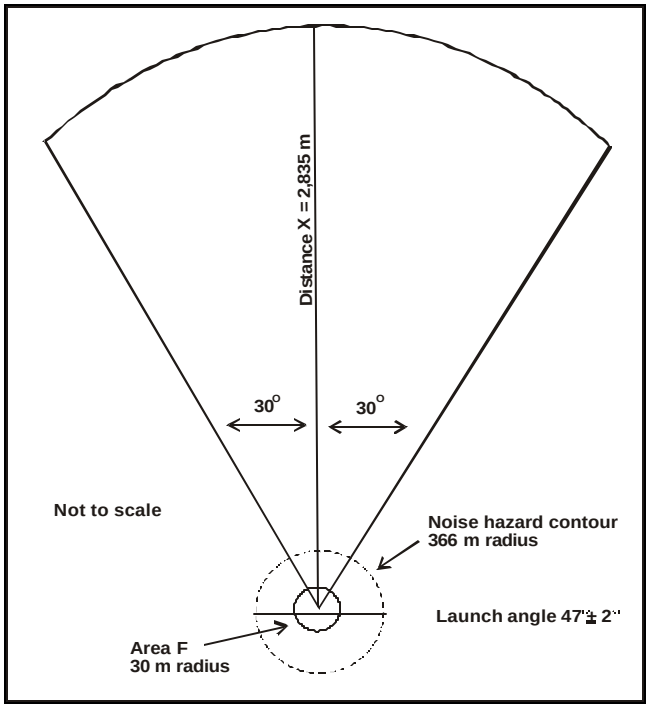


Figure 11-12. Surface Danger Zone for Firing the MICLIC

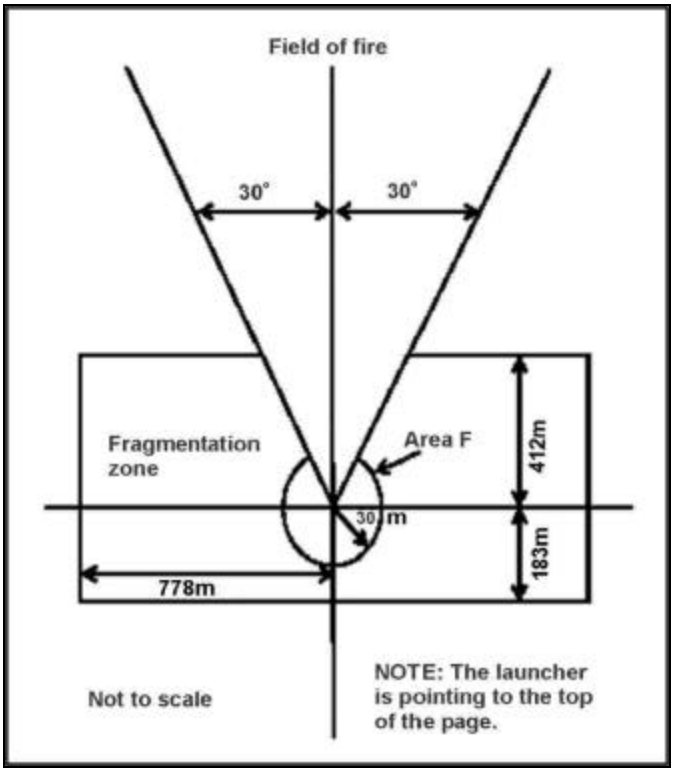


Figure 11-13. Area F and Fragmentation Zone for Firing the MICLIC

ARMORED COMBAT EARTHMOVER

11-50. Using its blade, the ACE can defeat reduce berms and AT ditches. The ACE may also breach or proof a minefield with its blade. However, it is more vulnerable and slower in this role than a plow tank or roller. The vehicle is further limited by its one-man crew. This skim technique is described in FM 3-34.2 (FM 90-13-1).

ARMORED VEHICLE LAUNCHED BRIDGE

11-51. The AVLB is primarily employed to cross short gaps, such as narrow streams, AT ditches, craters, canals, or partially blown bridges. Its span is 18 meters (60 feet) using prepared abutments and 17 meters with unprepared abutments. The capacity of the bridge is one military load class (MLC) 60 vehicle (this is waived for M1-series tanks in combat operations).

11-52. The AVLB launcher, which requires 10 meters of overhead clearance for transportation and operation, is most visible and vulnerable during launching of the bridge. An experienced crew can launch the bridge in two to five minutes.

ENGINEER SQUAD

11-53. The most versatile of all breaching assets, the engineer squad can conduct explosive or manual breaches, proof and can mark lanes through an obstacle. While it is conducting these breaching and proofing operations, however, the squad is extremely vulnerable to enemy direct and indirect fires and must be secured by tanks or BFVs when reducing an obstacle. The engineer squad can mark lanes and provide guides during breaching operations. Engineer squads are also well-equipped to provide local suppression of enemy forces overwatching an obstacle.

MECHANIZED INFANTRY RIFLE PLATOON OR TANK PLATOON

11-54. If other breaching assets are unavailable, a mechanized infantry or tank platoon can conduct explosive breaches (with hand-emplaced charges) and/or use manual breaching kits (normally consisting of grappling hooks, gloves, and wire cutters). At the same time, however, employment of either type of platoon organization in breaching operations has distinct disadvantages. The pace of the breach will be slow, and the operation will leave the platoon vulnerable to enemy attack. (See FM 3-21.71 [FM 7-7J] for a more detailed discussion of manual breaching techniques for the mechanized infantry rifle platoon.)

SECTION V – HASTY WATER CROSSING AND GAP CROSSING OPERATIONS

11-55. The company team may take part in three types of water crossing operations: hasty, deliberate, and retrograde. It normally participates in a hasty water crossing as part of a task force and in deliberate or retrograde crossings as part of a brigade or larger element. The team may also conduct a hasty gap crossing independently when supported by attached engineer assets.

METHODS AND PURPOSES OF WATER CROSSING OPERATIONS

11-56. Hasty water crossings are decentralized operations to cross inland bodies of water such as canals, lakes, or rivers. These operations include crossing by tactical bridging or by vehicle swimming or fording operations. (**NOTE:** See FM 90-13 [FM 3-97.13] and FM 3-34 [FM 5-114] for a detailed explanation of deliberate and retrograde water crossings.)

11-57. The task force commander (or company team commander, if applicable) may choose to conduct a hasty crossing when the momentum of the operation must be maintained, when the banks are lightly held or undefended, and when sufficient CS assets are available to support the crossing. Despite the use of the term "hasty," the commander must use all available time and assets to ensure that the conditions are set for the crossing. The crossing is similar to a breach in that suppression and obscuration normally precede any attempt to cross the obstruction.

COMPANY TEAM CROSSING CAPABILITIES

11-58. The company team's organic water crossing capabilities include the M113's ability to "swim" and the fording capability of M1-series tanks. The team may also have an AVLB or Wolverine attached for hasty water crossing. Other engineer assets for water crossing operations are covered in more detail in FM 3-97.13 (FM 90-13) and FM 3-34 (FM 5-114).

AMPHIBIOUS VEHICLES

11-59. Amphibious vehicles like the M113 series should cross bodies of water in groups, preferably by platoons. If there is no current, each group should cross in line formation. An echelon formation should be used to compensate when there is a current. Amphibious vehicles should cross downstream from tank fording sites. In preparing for crossing operations, commanders must take into account the time required to prepare the vehicles for swimming.

FORDING VEHICLES

11-60. Without special preparation, tanks can ford water obstacles up to 4 feet deep if the stream bed has a solid bottom and the banks have been prepared. (**NOTE:** If tactically feasible, bridges from the AVLB or Wolverine can be used to solidify the bottom of ford sites.) Ford sites should be proofed for obstacles before the crossing begins.

VEHICLE LAUNCHED BRIDGES

11-61. Units equipped with the AVLB can lay an 18-meter (60-foot) bridge, supporting MLC 60 vehicles, in about four minutes. The bridge can span unprepared gaps of up to 17 meters (57 feet). Units equipped with the Wolverine bridge vehicle can span a gap of more than 24 meters (75 feet) and cross vehicles up to MLC 70.

TASK FORCE HASTY WATER CROSSING OPERATIONS

11-62. The task force commander organizes his units into assault, support, and follow and support forces. The company team must be prepared to execute any of these missions as part of a task force water crossing mission.

ASSAULT FORCE

11-63. Transported by assault boats or air assault aircraft, this element conducts the initial assault across the body of water. It normally seizes immediate objectives on the far side to secure the crossing site for other task force elements. If it has the capability, the assault force then continues the

advance from the exit bank to the final objective. Infantry elements establish local security on the exit bank to permit development of the crossing site. Engineers move with the assault force to breach obstacles and open or improve trails.

SUPPORT FORCE

11-64. The support force normally consists of engineer elements and C2 elements from the controlling headquarters. It develops the crossing site, emplaces the crossing means (if applicable), and controls units moving into and away from the crossing site. The controlling commander may also position the support force where it can assist the assault force in the direct assault on the crossing site. The engineers provide these types of support for crossing operations:

- Improve mobility and reduce obstacles at the entrance and exit to the crossing site.
- Improve fording sites.
- Emplace assault boats, rafts, ferries, or bridges as the means of crossing the body of water. Bridges used by supporting engineers include the AVLB, Wolverine, and ribbon or medium girder bridges. In addition, engineers may repair an existing bridge so that it can support the crossing operation.

FOLLOW AND SUPPORT FORCE

11-65. The follow and support force's primary mission is to provide protection as the assault force moves to the far side of the water obstacle and seizes its immediate objectives. The follow and support force does this mainly by suppressing defending enemy elements with both direct and indirect fires and by firing or calling for smoke to screen the crossing site from enemy observation. It must also be prepared to take over the assault force's mission.

COMPANY TEAM HASTY GAP CROSSING OPERATIONS

11-66. In most circumstances, these operations are limited to “dry” gaps such as irrigation ditches, railroad embankments, and AT ditches. Operational considerations for a company team hasty gap crossing are similar to those for a breach, with the team task organized into support, breach, and assault forces. The primary crossing means in the company team hasty gap crossing is the AVLB or Wolverine, which moves as part of the breach force. Without a vehicle launched bridge, the team employs an ACE team to fill in or breach through the obstacle. Additionally, if the mechanical method is unavailable, the team may employ a field expedient method, such as the use of explosives, to facilitate the crossing.

SECTION VI – ROAD MARCHES AND ASSEMBLY AREAS

TACTICAL ROAD MARCH

11-67. The main purpose of the road march is to relocate rapidly, not to gain contact. It is conducted using fixed speeds and timed intervals. The discussion in this section examines tactical procedures and considerations for the road march. A tactical road march is a rapid movement used to relocate units within an AO to prepare for combat operations.

MARCH COLUMNS

11-68. The following paragraphs outline the three primary road march techniques. The commander bases his decision on the formation to be used during the march on which technique is employed. (**NOTE:** The road march is usually executed in column formation.)

OPEN COLUMN

11-69. The open column technique is normally used for daylight marches, though it can be used at night with blackout lights or thermal vision equipment. The distance between vehicles varies, normally from 50 meters to 200 meters, depending on light and weather conditions.

CLOSE COLUMN

11-70. The close column technique is normally used for marches conducted during periods of limited visibility. The distance between vehicles is based on the ability to see the vehicle ahead; it is normally less than 50 meters.

INFILTRATION

11-71. The infiltration technique involves the movement of small groups of personnel or vehicles at irregular intervals. It is used when sufficient time and suitable routes are available and when maximum security, deception, and dispersion are desired. Of the three road march techniques, infiltration provides the best possible passive defense against enemy observation and detection.

PLANNING CONSIDERATIONS

11-72. Standard tasks the company team commander (and subordinate leaders, as necessary) may perform prior to a tactical road march include the following:

- Designate a marshaling area to organize the march column and conduct final inspections and briefings.
- Conduct a METT-TC analysis to determine the enemy situation, including the probability of air or ground attack.
- Establish detailed security measures.
- Designate the movement route, including the SP, required checkpoints, and the RP. Additional control measures that the team may be required to identify include critical areas, defiles, choke points, rest and maintenance stops, and danger areas.
- Organize, brief, and dispatch the quartering party.
- Specify the march speed, movement formations, vehicle and serial intervals, catch-up speed, lighting, and times of critical events.
- Establish the order of march. Company trains assets should be positioned in the center of the march column in order to protect vulnerable CSS assets.
- Plan for indirect fire support and contingency actions, and rehearse actions on contact. Contingency plans should cover vehicle breakdowns, lost vehicles, and accidents.

- Coordinate for CSS, including refueling, mess operations, vehicle recovery, local police assistance, and MEDEVAC.

QUARTERING PARTY

11-73. Whether the company team is conducting the road march independently or as part of a task force, it will normally send out a quartering party to assist it in moving to and occupying a new assembly area. Dispatched prior to the departure of the main body, the company team quartering party assists the task force quartering party in reconnoitering the route of march. It then conducts its own reconnaissance of the feeder route from the RP to the proposed assembly area and of the assembly area itself. If either the route or the assembly area proves unsatisfactory, the quartering party recommends changes to the commander. (**NOTE:** If the task force does not send a quartering party, the company team party assumes sole responsibility for reconnoitering the route of march from SP to RP.)

11-74. Once the road march begins, members of the quartering party serve as guides along the feeder route and in the assembly area. The size and composition of the party is usually dictated by unit SOP, although it can be adjusted based on specific tactical requirements.

CONTROL MEASURES

11-75. The commander uses the control measures discussed in the following paragraphs to assist in controlling the company team during the road march.

GRAPHICS

11-76. Road march graphics should include whether digital or nondigital, at a minimum, the SP, the RP, and the route that have the following characteristics:

- The SP location represents the beginning of the road march route. It should be located on easily recognizable terrain. It is far enough away from the company team's initial position to allow individual elements to organize into the march formation at the appropriate speed and interval. The commander should determine the time required to move to the SP. This will help the team to arrive at the SP at the time designated in the task force OPORD and to continue movement onto the route of march without stopping.
- The RP marks the end of the route of march. It is also located on easily recognizable terrain. Elements do not halt at the RP. They continue to their respective positions with assistance from guides, waypoints, and/or other graphic control measures.
- The route is the path of travel connecting the SP and RP.

11-77. Digital overlays, which serve as a backup to maps with overlays, can provide valuable assistance for digitally equipped units. They display waypoints and other information concerning unit locations along the route of march, not only assisting the units in navigating accurately but in maintaining situational understanding as well.

KEY TERRAIN

11-78. These are locations along the route of march where terrain or other factors may interfere with movement or where timing is critical. They are represented using checkpoints. The SP, RP, and all checkpoints are considered critical points.

STRIP MAPS

11-79. A strip map (analog or digital) should be used to assist in navigation. It should include the SP, RP, checkpoints, marshaling areas, and refuel on the move (ROM) sites; it also lists the distances between these points. Detailed "blowup" sketches should be used for marshaling areas, locations of scheduled halts, ROM sites, and other places where confusion is likely to occur. Strip maps are included as an annex to the movement order; if possible, a copy should be provided to all vehicle drivers.

VISUAL SIGNALS

11-80. When radio silence is observed during a road march, hand-and-arm signals, flags, and lights may be employed as the primary means of passing messages between vehicles and between moving units.

TRAFFIC CONTROL

11-81. Road guides and traffic signs may be posted at designated traffic control points by the headquarters controlling the march. At critical points, guides assist in creating a smooth flow of traffic along the march route. MPs, members of the task force scout platoon, or designated elements from the quartering party may serve as guides. They should have equipment or markers that will allow march elements to identify them in darkness or other limited visibility conditions. There is normally an RP for every echelon of command conducting the road march (that is, there will be a task force RP, followed by a company team RP). Traffic problems may arise if actions at each of these points are not well rehearsed.

ACTIONS DURING THE MARCH

MOVEMENT TO THE START POINT

11-82. The company team must arrive at the SP at the time designated in the task force OPORD. The team commander may need to designate a marshaling area in which the quartering party and the main body can organize their march columns and conduct final inspections and briefings before movement. If the situation dictates, units may move directly to the column from their current positions. To avoid confusion during the initial moveout, leaders of all team elements should conduct a reconnaissance of the route to the SP, issue clear movement instructions, and conduct thorough rehearsals, paying particular attention to signals and timing.

ORIENTATION

11-83. Every vehicle in the formation has an assigned sector of orientation. Each vehicle commander should additionally assign sectors of observation to crewmen to achieve 360-degree observation.

HALTS

11-84. While taking part in a road march, the company team must be prepared to conduct both scheduled and unscheduled halts.

Scheduled Halts

11-85. These are conducted to permit maintenance, refueling, and personal relief activities and to allow other traffic to pass. The time and duration of scheduled halts are established in the movement order. Unit SOP specifies actions to be taken during halts; the first priority must always be to establish and maintain local security. A maintenance halt of 15 minutes is usually taken after the first hour of the march, with a 10-minute halt every two hours thereafter.

11-86. During long marches, the unit may conduct a ROM operation. The composition of the ROM site will depend both on OPSEC considerations and on the refueling capability of assets at the ROM site. The OPORD will specify the amount of fuel or the amount of time at the pump for each vehicle. It will also give instructions for OPSEC at the ROM site and at the staging area to which vehicles move after refueling.

Unscheduled Halts

11-87. The company team conducts unscheduled halts when the unit encounters unexpected obstacles or contaminated areas or when a disabled vehicle temporarily blocks the route. Whenever an unscheduled halt occurs, each vehicle commander sends a messenger to the vehicle to his front; the messenger obtains (or, if applicable, provides) information on the reason for the halt and on required follow-on actions. The movement commander then takes any further actions required to determine and/or eliminate the cause of the halt.

11-88. A disabled vehicle must not be allowed to obstruct traffic for lengthy periods. The crew should move the vehicle off the road immediately, report its status, establish security, and post guides to direct traffic. If possible, the crew repairs the vehicle and rejoins the rear of the column. Vehicles that drop out of the column should return to their original positions only when the column has halted. Until then, they move at the rear just ahead of the trail element, which usually comprises the maintenance team with the M88 recovery vehicle and some type of security (the XO will normally handle security if he is not part of the quartering party). If the crew cannot repair the vehicle, the vehicle is recovered by the trail element.

NOTE: Security during halts normally involves a combination of dispersion, weapons orientation, clearance of terrain that dominates the route of march, and employment of infantry squads to secure danger areas.

ACTIONS ON CONTACT

11-89. If enemy contact occurs during the road march, the company team executes actions on contact as described in Chapter 5 of this manual.

ACTIONS AT THE RELEASE POINT

11-90. The company team moves through the task force RP without stopping. The team's guide picks up the unit there and guides it to the company team RP (normally at the entrance to the team's position in the new assembly area). Each platoon then picks up its own assigned guide and follows the guide's signals to its position in the assembly area. Depending on terrain and the equipment available (GPS or POSNAV), guides and marking materials may be posted at or near exact vehicle locations (assembly areas procedures are covered in the following paragraphs).

ASSEMBLY AREAS

11-91. An assembly area is a site at which maneuver units prepare for future operations. A well-planned assembly area will have the following characteristics:

- Concealment from enemy ground and air observation.
- A location on defensible terrain.
- Good drainage and a surface that will support tracked and wheeled vehicles.
- Suitable entrances, exits, and internal roads or trails.
- Sufficient space for dispersion of vehicles and equipment.

QUARTERING PARTY OPERATIONS

11-92. Normally, the company team employs a quartering party (also known as an advance party) to assist in the occupation of an assembly area. The quartering party is established in accordance with task force or team SOP; for example, it may comprise one vehicle per platoon along with a vehicle from the headquarters section. It is normally led by the company team XO or 1SG or by a senior NCO. The quartering party's actions in preparing the assembly area include the following:

- Reconnoiter for enemy forces and NBC contamination.
- Evaluate the condition of the route to the assembly area and the suitability of the area itself (drainage, space, internal routes). (**NOTE:** If the area is unsatisfactory, the party requests permission from the commander to find a new location.)
- Organize the area based on the commander's guidance; designate and mark tentative locations for platoons, CP vehicles, and trains.
- Improve and mark entrances, exits, and internal routes.
- Mark bypasses and/or remove obstacles (within the party's capabilities).
- Mark tentative vehicle locations.
- Develops digital overlay of AA and sends to company main body and task force main CP.

OCCUPATION OF THE ASSEMBLY AREA

11-93. Once the assembly area is prepared, the quartering party awaits the arrival of the company team, maintaining surveillance and providing security of the area within its capabilities. Quartering party members guide the team as a whole from the task force RP to the team RP; they then guide individual elements from the team RP to their locations in the assembly area. SOPs and prearranged signals and markers (for day or night occupation) should be used to assist vehicle commanders in finding their positions. The key consideration is to move quickly, both to clear the route for other units and to assume designated positions in the assembly area.

11-94. The company team may occupy the assembly area as an independent element or as part of a task force (see Figure 11-10). In either situation, the team occupies its positions upon arrival using the procedures for hasty occupation of a BP. The commander establishes local security and coordinates with adjacent units. He assigns weapons orientation and a sector of responsibility for each platoon and subordinate element. If the team occupies the assembly area alone, it establishes a perimeter defense.

NOTE: See Chapter 6 for discussions of hasty occupation of a BP and conduct of a perimeter defense and Chapter 4 for information on OPSEC procedures.

ACTIONS IN THE ASSEMBLY AREA

11-95. Following occupation, the company team and its individual elements can prepare for future operations by conducting TLPs and priorities of work in accordance with task force and team OPORDs (see Figure 11-14). These preparations include the following:

- Establish and maintain security (at the appropriate REDCON level).
- Develop defensive fire plan (direct and indirect) and forward to task force main CP via FBCB2 if equipped.
- Employ infantry rifle squads to conduct dismounted security patrols to clear dead space and restrictive terrain where required.
- Conduct TLP.
- Perform maintenance on vehicles and communications equipment.
- Verify weapon system status; conduct boresighting, prepare-to-fire checks, test-firing, and other necessary preparations. (**NOTE:** The company team normally must coordinate test-firing activities with its higher headquarters.)
- Conduct resupply operations, including refueling and rearming.
- Conduct rehearsals and other training for upcoming operations.
- Conduct PCCs and PCIs based on time available.
- Conduct personal care and hygiene activities.
- Adjust task organization as necessary.
- Account for company team personnel and assigned sensitive items.

- Reestablish vehicle load plans.

Figure 11-14. Example Company Team Assembly Area (Occupation as Part of a Task Force)

THE DESERT LAAGER FORMATION

11-96. The desert laager formation affords the company team some distinct advantages in an open desert environment (see FM 3-97.3 [FM 90-3] for more information on desert operations and see Figure 11-15). The following considerations apply:

- Optics and weapons stand-off are maximized and the need for dismounted OPs are minimized.
- In the event the company team receives indirect fire, displacement to an alternate location is coordinated and efficient because all vehicles are oriented in the same direction and platoon formations are contiguous.
- Light skinned vehicles are protected inside the formation.

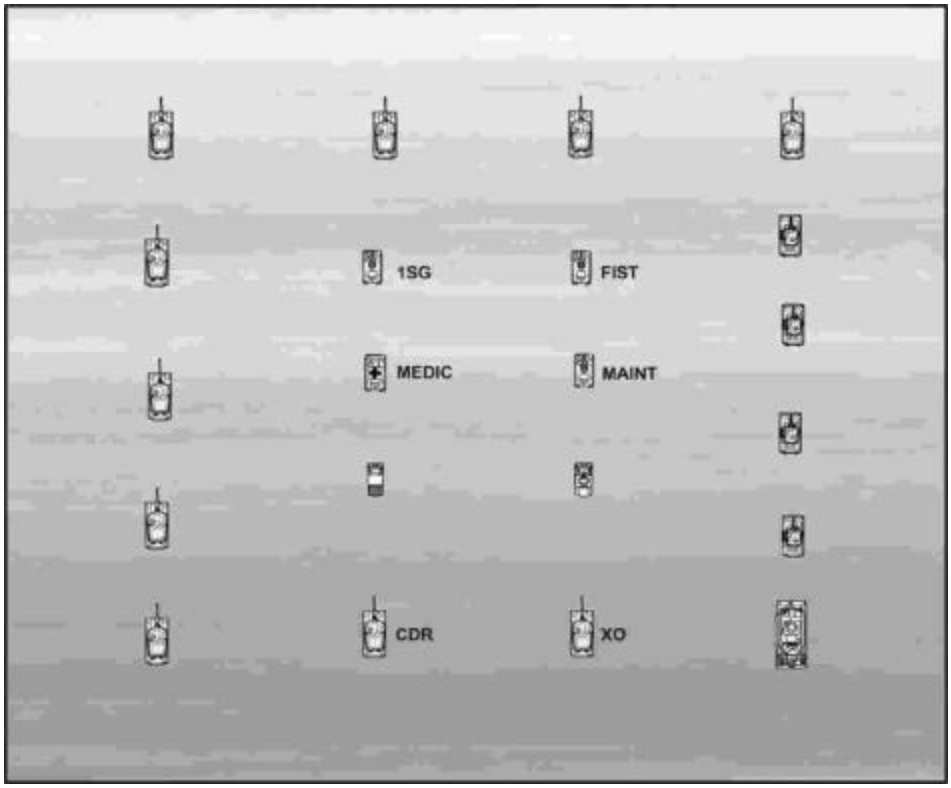


Figure 11-15. Example Company Team Assembly Area (Desert Laager Formation)

Appendix A

Combat Orders

Combat orders are the means by which commanders receive and transmit information, from the earliest notification that an operation will occur through the final phases of execution. They are absolutely critical to mission success. In a tactical situation, the company team commander and his subordinate leaders work with these vital tools on a daily basis; obviously, they must have precise knowledge both of the formats of various types of orders and of procedures for developing effective orders. At the same time, they must ensure that every member of the company team understands how to receive and respond to each type of order.

Operation Order A-1
Execution Matrix A-6

The company team commander must be familiar with the formats of WARNOs, OPORDs, and FRAGOs. He must be able to convert these into concise, yet thorough, orders for the team's subordinate leaders. This appendix includes a sample company team OPORD format and discusses the related technique of using execution matrixes. WARNOs and FRAGOs vary in format depending on the purpose of the order and the information available in a given situation; use of these orders is covered in Chapter 3 of this manual.

SECTION I – OPERATION ORDER

A-1. When sufficient time and information are available, the company team commander will normally issue a complete OPORD as part of TLP. The OPORD provides subordinate leaders with the essential information required to conduct the operation and to carry out the commander's intent.

A-2. Whenever possible, the OPORD is developed (FBCB2; written; overlay) and briefed orally in the five-paragraph format. This helps to ensure that required information is presented in a logical, organized manner. Although the five-paragraph format is straightforward, every commander will develop techniques that allow him to make a clearer, more concise OPORD presentation. Presentation and visualization techniques are discussed in Chapter 3 of this manual. Figure A-1 on pages A-2 through A-6 illustrates a sample company team OPORD format.

SAMPLE OPORD FORMAT

PARAGRAPH 1 - SITUATION.

a. Enemy forces (and battlefield conditions).

(1) Weather and light data.

- Precipitation.
- Temperature.
- Other weather conditions (such as wind, dust, or fog).
- Light data:

BMNT: Sunrise:
Sunset: EENT:
Moonrise: Moonset:
Percent Illumination:

(2) Terrain (factors of OAKOC).

- Observation and field of fires.
- Avenues of approach.
- Key terrain.
- Obstacles.
- Cover and concealment.

(3) Enemy forces.

- Identification.
- Composition/order of battle.
- Recent activities.
- Strength.
- Current location.
- Most probable COA.
- Most dangerous COA.
- Weaknesses.

b. Friendly forces.

- Higher commander's concept of the operation.
- Higher commander's mission and intent.
- Adjacent unit missions/locations.
- Unit(s) providing fire support.
- Other units supporting the task force.

Figure A-1. Sample Company Team OPORD Format

c. Attachments and detachments.
- Time(s) of attachment.
- Time(s) of detachment.
- Support relationship(s).

PARAGRAPH 2 - MISSION.

PARAGRAPH 3 - EXECUTION.

Commander's intent.

a. Concept of the operation.

(1) Scheme of maneuver.
- Offensive operations.
  - Passage of lines.
  - Axis or route.
  - Movement formations.
  - Movement techniques.
  - Actions on contact (prior to the objective).
  - Actions at obstacles.
  - Actions on the objective (decisive point).
  - Consolidation and reorganization.
  - On-order and be-prepared missions.
- Defensive operations.
  - Security operations.
  - Passage of lines of forward forces.
  - Battle handover.
  - Defense of initial and successive BPs.
  - Displacement.
  - Counterattack.
  - Consolidation and reorganization.

(2) Fires.
- Purpose of indirect fires.
- Priority of fires.
- Allocation.
- Triggers.
- Restrictions/coordinating instructions.
- Allocation and use of special fires (such as smoke, illumination, or CAS).

Figure A-1. Sample Company Team OPORD Format (Continued)

(3) Intelligence.
(4) Engineer support.
- Purpose of engineer effort.
- Priority of engineer effort.
- Priority of engineer support.
- Obstacle overlay.
- Obstacle list.
- Restrictions/coordinating instructions.

(5) Air defense.
(6) Information operations.
b. Tasks to maneuver units.
- Task and purpose.
- On-order missions.
- Specific instructions.

c. Tasks to CS units.
- Task and purpose.
- On-order missions.
- Specific instructions.

d. Coordinating instructions.
- Time or condition when a plan or order becomes effective.
- CCIRs and the tactical decisions associated with them.
- Risk reduction control measures.
- ROE and/or ROI.
- Environmental considerations and control measures.
- Force protection control measures.

PARAGRAPH 4 - SERVICE SUPPORT.

a. Concept of support.
- Organization of company team trains.
- Location of company team trains (in each phase of the operation).
- Current location of task force support area and combat trains.
- Current location of task force UMCP.
- Current location of task force aid station(s).
- Current and future designated MSRs and LZ/PZs.

b. Material and service.
(1) Supply.
- Class I.
- Class III.

Figure A-1. Sample Company Team OPORD Format (Continued)

- Class V.
- Class IX.

(2) Transportation.

- Location of task force MSR/ASR.
- Location of LRPs and collection points.
- Priority of movement on task force MSR.

(3) Service.

- Location of mortuary services.
- Procedures for evacuation of KIA personnel.

(4) Maintenance.

- Location of maintenance collection points (in each phase of the operation).
- Location of UMCP during the battle.
- Method of marking damaged vehicles.
- Task force recovery plan.

c. MEDEVAC and hospitalization.

- Location of CCPs (in each phase of the operation).
- Location of task force aid station(s) during the battle.
- Method of marking vehicles with wounded/KIA.
- Procedures for evacuation of wounded.

d. Personnel.

- Procedures for handling EPWs and location of company team EPW collection points.
- Location of task force EPW collection point.
- Personnel replacement.

e. Civil/military cooperation.

- CA assets and POCs.
- Mission of CA elements.
- Curfews.
- Collateral damage restrictions.
- Additional ROE/ROI considerations.

PARAGRAPH 5 - COMMAND AND SIGNAL.

a. Command.

- Location of company team commander, XO, and 1SG.
- Location of task force commander and S3.
- Location of task force main CP.
- Succession of command.

Figure A-1. Sample Company Team OPORD Format (Continued)

b. Signal.

- SOI in effect.
- Radio communications restrictions.
- FBCB2 protocols and configurations.
- Radio listening silence and the time it is in effect.
- Alternate frequencies and time or condition for changing frequency.
- Visual and pyrotechnic signals.
- During passage of lines.
- During movement.
- During breaching operations.
- On the objective.
- During defensive operations.
- Emergency signals.
- Code words and reports specific to the operation.
- COMSEC guidelines and procedures.

Figure A-1. Sample company team OPORD format (Continued)

SECTION II – EXECUTION MATRIX

A-3. The execution matrix, a tool that can help the commander to complete and execute the plan, shows the most critical tasks or events of the operation in a matrix format. The commander can use it to supplement his formal OPORD briefing as well as to assist him during the conduct of a mission. The matrix can also help to enhance subordinate leaders' understanding of the mission.

A-4. To construct a basic execution matrix for any operation, the commander lists his subordinate elements along one axis of the matrix and the events or phases of the operation along the other axis. In the corresponding boxes, he fills in the information that tells his subordinate leaders what each element is doing during each step of the operation.

A-5. Information in these blocks may include movement instructions (including order of march, movement technique, and movement formation); information on direct fire or observation responsibilities (such as TRPs or sectors); locations of indirect fire targets, triggers, and decision points; and virtually anything else the commander considers critical to the execution of the mission. Figure A-2 shows an example of a basic execution matrix.

ELEMENT EVENT	CDR	FSO/ ENGR	1ST PLT	2D PLT BFV	INFANTRY SQUADS	3D PLT	CSS	XO
Fighting patrol REACHES TRP 2	Order unit to respond	Secure BP 21; observe OP 20 area	Hide	OP 20 and BFVs destroy FP before it reaches the bridge; displace to BP 21	Hide	Hide	CP 4	Secure BP 32; send SITREP to task force
Security Element REACHES TRP 2	Order all platoons to occupy positions, with OPs recovered		BP 11	Hide	Hide	Hide	CP 4	Send SITREP to task force
Security Element CROSSES TRIGGER LINE	Order 1st Platoon to fire		BP 11	Hide	Hide	Hide	CP 4	Send SITREP to task force
Fixing Force REACHES TRP 2		Call AB4006; O/O call AB4003	BP 11 Near half	BP 21 Far right	Hide	BP 31 Far left	CP 4	Observe OP 30 area
Fixing Force(-) REACHES TRP 4	Order 1st and 3d Platoons to displace	Fire FPF 4001	Displace to BP 32 Near half	BP 21 Far right	BP 21 Protect flank	Displace to BP 12 Far left	Displace to CP 5	Displace to protect trains; report to task force
BRANCH PLAN 1								
BRANCH PLAN 2								

Figure A-2. Sample Execution Matrix

Appendix B

Direct Fire Control

Suppressing or destroying the enemy with direct fires is fundamental to success in close combat. Effective direct fires are essential to winning the close fight; they are the unique contribution of maneuver forces to the combined arms team. Because fire and movement are complementary components of maneuver, the tank or mechanized infantry company team commander must be able to effectively mass the fires of all available resources at critical points and times to be successful on the battlefield.

CONTENTS

Unitwide Surveillance and Target Acquisition.....B-1
Principles of Fire Control.....B-2
Mass the Effects of Fire.....B-2
Destroy the Greatest Threat First.....B-2
Avoid Target Overkill.....B-2
Employ the Best Weapon for the Target.....B-3
Minimize Friendly Exposure.....B-3
Prevent Fratricide.....B-3
Plan for Extreme Limited Visibility Conditions..B-3
Develop Contingencies for Diminished Capabilities.....B-4
Fire Control Measures.....B-4
Terrain-Based Fire Control Measures.....B-5
Threat-Based Fire Control Measures.....B-9
Fire Commands.....B-17
Alert.....B-17
Weapon or Ammunition (Optional).....B-17
Target Description.....B-18
Orientation.....B-18
Range (Optional).....B-18
Control (Optional).....B-18
Execution.....B-19
Fire Control Process.....B-19
Identify Probable Enemy Locations and Determine the Enemy Scheme of Maneuver..B-19
Determine Where and How to Mass Fires.....B-20
Orient Forces to Speed Target Acquisition.....B-21
Shift Fires to Refocus and Redistribute.....B-22
Direct Fire Planning.....B-24
Direct Fire Standing Operating Procedures.....B-24
SOP Element for Focusing Fires.....B-25
SOP Element for Distributing Fires.....B-25
SOP Element for Orienting Forces.....B-25
SOP Element for Avoiding Fratricide.....B-26

SECTION I – UNITWIDE SURVEILLANCE AND TARGET ACQUISITION

B-1. Acquiring the enemy is a precursor to direct fire engagement. Commanders must not assume that the unit will be able to see the enemy; they must expect him to use cover and concealed routes effectively when attacking and to make best use of flanking and concealed positions in the defense. As a result, the company team will not often have the luxury of a fully exposed enemy that can be easily seen.

B-2. Rather, the acquisition of the enemy will often be dependent on recognition of very subtle indicators that may be especially difficult to see while moving. Examples include exposed antennas, reflections from the vision blocks of enemy vehicles, small dust clouds, or smoke from vehicle engines or ATGM or tank fires. (See Figure 5-1 for more examples of these indicators.)

B-3. Because of the difficulty of target acquisition, the company team commander must develop unit surveillance plans to assist the team in acquiring the enemy. He must also be prepared to apply these techniques to help orient other friendly forces. Techniques for unit surveillance,

target acquisition, and orientation of subordinate elements are discussed in more detail later in this chapter. Target acquisition at the crew level and crew gunnery techniques are discussed in detail in FM 3-20.12 (FM 17-12-1/2) and FM 3-22.1 (FM 23-1).

SECTION II – PRINCIPLES OF FIRE CONTROL

B-4. Effective fire control requires a unit to rapidly acquire the enemy and mass the effects of fires to achieve decisive results in the close fight. When planning and executing direct fires, the commander and subordinate leaders must know how to apply several fundamental principles. The purpose of these principles of direct fire is not to restrict the actions of subordinates. Applied correctly, they help the company team to accomplish its primary goal in any direct fire engagement: to both acquire first and shoot first; they give subordinates the freedom to act quickly upon acquisition of the enemy. This discussion focuses on the following principles:

- Mass the effects of fire.
- Destroy the greatest threat first.
- Avoid target overkill.
- Employ the best weapon for the target.
- Minimize friendly exposure.
- Prevent fratricide.
- Plan for extreme limited visibility conditions.
- Develop contingencies for diminished capabilities.

MASS THE EFFECTS OF FIRE

B-5. The company team must mass its fires to achieve decisive results. Massing entails focusing fires at critical points and distributing the effects. Random application of fires is unlikely to have a decisive effect. For example, concentrating the company team's fires at a single target may ensure its destruction or suppression; however, that fire control technique will probably not achieve a decisive effect on the enemy formation or position.

DESTROY THE GREATEST THREAT FIRST

B-6. The order in which the company team engages enemy forces is in direct relation to the danger they present. The threat posed by the enemy depends on his weapons, range, and positioning. Presented with multiple targets, a unit will, in almost all situations, initially concentrate fires to destroy the greatest threat, then distribute fires over the remainder of the enemy force.

AVOID TARGET OVERKILL

B-7. Use only the amount of fire required to achieve necessary effects. Target overkill wastes ammunition and ties up weapons that are better employed acquiring and engaging other targets. The idea of having every

weapon engage a different target, however, must be tempered by the requirement to destroy the greatest threats first.

EMPLOY THE BEST WEAPON FOR THE TARGET

B-8. Using the appropriate weapon for the target increases the probability of rapid enemy destruction or suppression; at the same time, it saves ammunition. The company team 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, leaders should consider individual crew capabilities when deciding on the employment of weapons. The commander task organizes and arrays his forces based on the terrain, enemy, and desired effects of fires. As an example, when he expects an enemy dismounted assault in restricted terrain, the commander would employ his infantry squads, taking advantage of their ability to best engage numerous, fast-moving targets.

MINIMIZE FRIENDLY EXPOSURE

B-9. Units increase their survivability by exposing themselves to the enemy only to the extent necessary to engage him effectively. Natural or manmade defilade provides the best cover from kinetic-energy direct fire munitions. Crews and 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.

PREVENT FRATRICIDE

B-10. The commander must be proactive in reducing the risk of fratricide and noncombatant casualties. He has numerous tools to assist him in this effort: identification training for combat vehicles and aircraft; the unit's weapons safety posture; the weapons control status; recognition markings; and a COP. Knowledge and employment of applicable ROE are the primary means of preventing noncombatant casualties. (**NOTE:** Because it is difficult to distinguish between friendly and enemy dismounted infantry soldiers, the commander must constantly monitor the position of friendly infantry squads.)

PLAN FOR EXTREME LIMITED VISIBILITY CONDITIONS

B-11. At night, limited visibility fire control equipment enables the company team to engage enemy forces at nearly the same ranges that are applicable during the day. Obscurants such as dense fog, heavy smoke, and blowing sand, however, can reduce the capabilities of thermal and infrared (IR) equipment. The commander should therefore develop contingency plans for such extreme limited visibility conditions. Although decreased acquisition capabilities have minimal effect on area fire, point target engagements will likely occur at decreased ranges. Typically, firing positions, whether offensive or defensive, must be adjusted closer to the area or point where the commander intends to focus fires. Another alternative is the use of visual or IR illumination when there is insufficient ambient light for passive light intensification devices. (**NOTE:** Vehicles equipped with thermal sights can assist infantry squads in detecting and engaging enemy infantry forces in conditions such as heavy smoke and low illumination.)

DEVELOP CONTINGENCIES FOR DIMINISHED CAPABILITIES

B-12. Leaders initially develop plans based on their units' maximum capabilities; they make backup plans for implementation in the event of casualties or weapon damage or failure. 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 alternate sectors of fire provides a means of shifting fires if adjacent elements are knocked out of action.

SECTION III – FIRE CONTROL MEASURES

B-13. Fire control measures are the means by which the commander or subordinate leaders control fires. Application of these concepts, procedures, and techniques assists the unit in acquiring the enemy, focusing fires on him, distributing the effects of the fires, and preventing fratricide. At the same time, no single measure is sufficient to effectively control fires. At the company team 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. The following discussion focuses on the various fire control measures employed by the company team. Figure B-1 lists the control measures; it is organized by whether they are terrain-based or threat-based.

TERRAIN-BASED FIRE CONTROL MEASURES	THREAT-BASED FIRE CONTROL MEASURES
Target reference point (TRP)	Rules of engagement (ROE)
Engagement area (EA)	Weapons ready posture
Sector of fire	Weapons safety posture
Direction of fire	Weapons control status (WCS)
Terrain-based quadrant	Engagement priorities
Friendly-based quadrant	Trigger
Maximum engagement line (MEL)	Engagement techniques
Restrictive fire line (RFL)	Fire patterns
Final protective line (FPL)	Target array

Figure B-1. Common Fire Control Measures

TERRAIN-BASED FIRE CONTROL MEASURES

B-14. The company team commander 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. The following paragraphs describe the TTP associated with this type of control measure.

TARGET REFERENCE POINT

B-15. A TRP is a recognizable point on the ground that leaders use to orient friendly forces and to focus and control direct fires. In addition, when TRPs are designated as indirect fire targets, they can be used in calling for and adjusting indirect fires. Leaders designate TRPs at probable enemy locations and along likely avenues of approach. These points can be natural or man-made. A TRP can be an established site, such as a hill or a building, or an impromptu feature designated as a TRP on the spot, like a burning enemy vehicle or smoke generated by an artillery round. Friendly units can also construct markers to serve as TRPs, as illustrated in Figure B-2. Ideally, TRPs should be visible in three observation modes (unaided, passive-IR, and thermal) so they can be seen by all forces. Example of TRPs include the following features and objects:

- Prominent hill mass.
- Distinctive building.
- Observable enemy position.
- Destroyed vehicle.
- Ground-burst illumination.
- Smoke round.

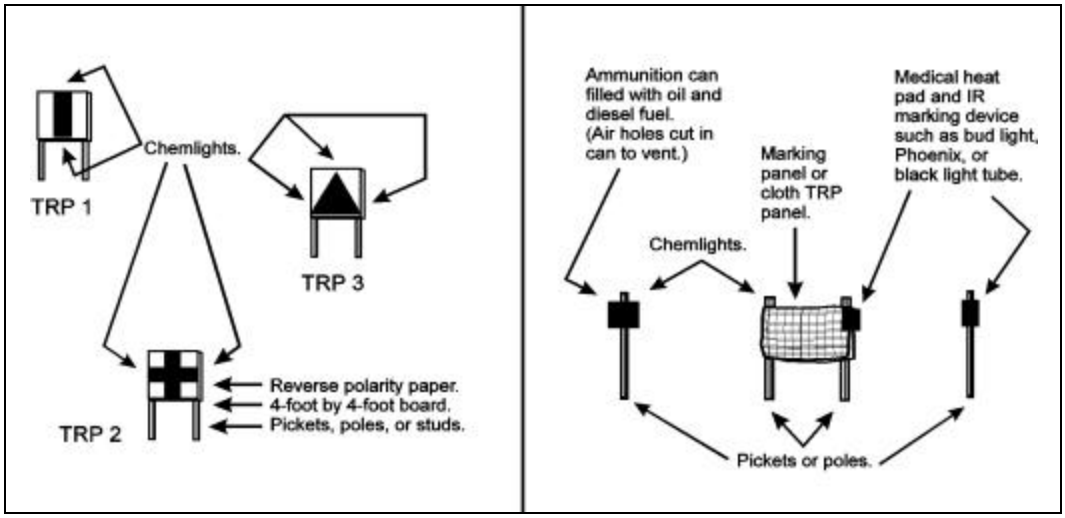


Figure B-2. Examples of Constructed TRP Markers

ENGAGEMENT AREA

B-16. This fire control measure is an area along an enemy avenue of approach where the commander intends to mass the fires of available weapons to 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 weapon systems in their firing positions and by the maximum range of those weapons. Typically, commanders delineate responsibility within the EA by assigning each platoon a sector of fire or direction of fire; these fire control measures are covered in the following paragraphs.

SECTOR OF FIRE

B-17. A sector of fire is a defined area that must be covered by direct fire. Leaders assign sectors of fire to subordinate elements, crew-served weapons, and individual soldiers to ensure coverage of an area of responsibility; they may also limit the sector of fire of an element or weapon to prevent accidental engagement of an adjacent unit. In assigning sectors of fire, commanders and subordinate leaders consider the number and types of weapons available. In addition, they must 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.
- Terrain-based quadrants.
- Friendly-based quadrants.

DIRECTION OF FIRE

B-18. 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 commonly employed when assigning sectors of fire would be difficult or impossible because of limited time or insufficient reference points. Means of designating a direction of fire include the following:

- Closest TRP.
- Clock direction.
- Cardinal direction.
- Tracer on target.
- IR laser pointer.

QUADRANTS

B-19. 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. Quadrants can be based on the terrain, on friendly forces, or on the enemy formation. (**NOTE:** The technique in which quadrants are based on the enemy formation is usually referred to as the target array; it is covered in the discussion of threat-based fire control measures.)

B-20. 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 the enemy formations are used simultaneously.

Terrain-based Quadrant

B-21. A terrain-based quadrant entails use of a TRP, either existing or constructed, to designate the center point of the axes that divide the area into four quadrants. This technique can be employed in both offensive and defensive operations. In the offense, the commander designates the center of the quadrant using an existing feature or by creating a reference point (for example, using a ground burst illumination round, a smoke marking round, 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, the commander designates the center of the quadrant using an existing or constructed TRP.

B-22. In the examples shown in Figure B-3, 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).

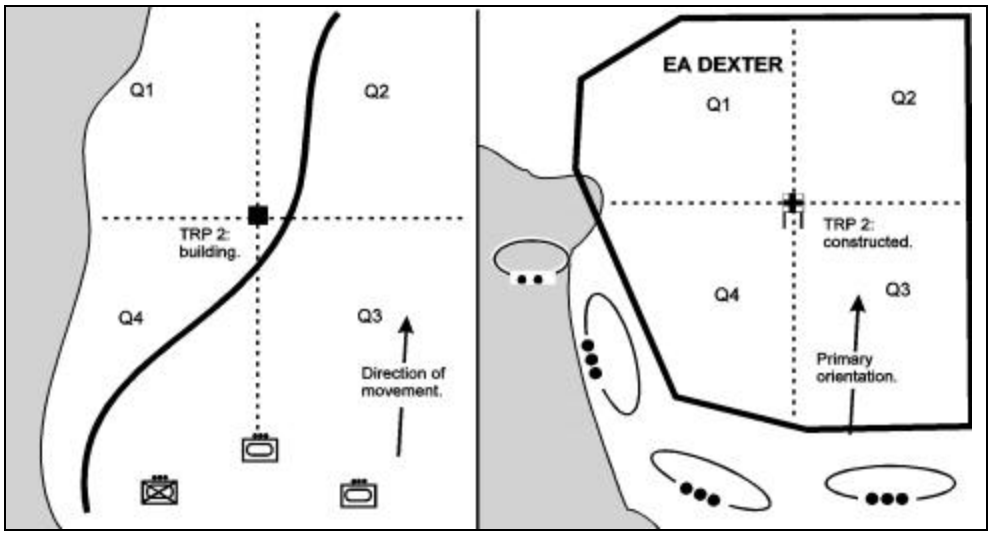


Figure B-3. Examples of Terrain-based Quadrants

Friendly-based Quadrant

B-23. 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 the axes run parallel and perpendicular to the general direction of travel. For rapid orientation, the friendly quadrant technique may be better than the clock direction method; this is because different elements of a large formation are rarely oriented in the same exact direction and because the relative dispersion of friendly forces causes parallax to the target. Figure B-4 illustrates use of friendly-based quadrants.

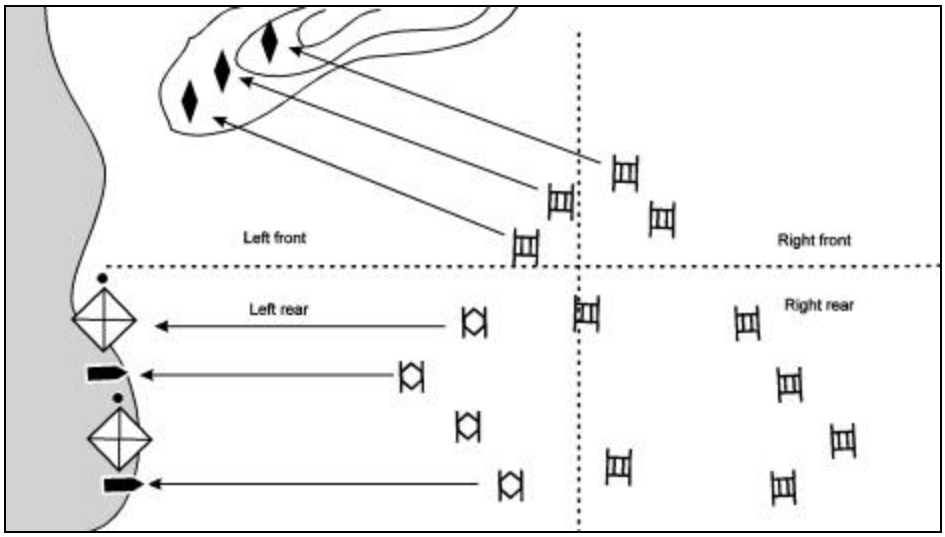


Figure B-4. Example of Friendly-based Quadrants

MAXIMUM ENGAGEMENT LINE

B-24. A maximum engagement line (MEL) is the linear depiction of the farthest limit of effective fire for a weapon or unit. This line is determined both by the weapon's or unit's maximum effective range and by the effects of terrain. For example, slope, vegetation, structures, and other features provide cover and concealment that may prevent the weapon from engaging out to the maximum effective range. An MEL serves several purposes. The commander may use it to prevent crews from engaging beyond the maximum effective range, to define criteria for the establishment of triggers, and to delineate the maximum extent of battle space on the sector sketch.

RESTRICTIVE FIRE LINE

B-25. A restrictive fire line (RFL) is a linear fire control measure beyond which engagement is prohibited without coordination. In the offense, the commander may 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 armored vehicles support the maneuver of infantry squads. In the defense, the commander may establish an RFL to prevent the unit from engaging a friendly rifle squad positioned in restricted terrain on the flank of an avenue of approach.

FINAL PROTECTIVE LINE

B-26. The final protective line (FPL) is a line of fire established where an enemy assault is to be checked by the interlocking fires of all available weapons. The unit reinforces this line with protective obstacles and with final protective fires (FPF) whenever possible. Initiation of the FPF is the signal for elements, crews, and individual soldiers to shift fires to their assigned portion of the FPL. They spare no ammunition in repelling the

enemy assault, a particular concern for machine guns and other automatic weapons.

THREAT-BASED FIRE CONTROL MEASURES

B-27. The company team commander uses threat-based fire control measures to focus and control fires by directing the unit to engage a specific enemy element rather than to fire on a point or area. The following paragraphs describe the TTP associated with this type of control measure.

FIRE PATTERNS

B-28. 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. The basic fire patterns, illustrated in Figure B-5, are the following:

- Frontal fire.
- Cross fire.
- Depth fire.

Frontal Fire

B-29. Leaders may initiate frontal fire when targets are arrayed in front of the unit in a lateral configuration. Weapon 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 targets are destroyed, weapons shift fires toward the center of the enemy formation and from near to far.

Cross Fire

B-30. 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 engagement area provides more flank shots, thus increasing the chance of kills; it also reduces the possibility that friendly elements will be detected if the enemy continues to move forward. As enemy targets are destroyed, weapons shift fires toward the center of the enemy formation.

Depth Fire

B-31. Leaders initiate depth fire when targets are dispersed in depth, perpendicular to the unit. Center weapons engage the closest targets; flank weapons engage deeper targets. As the unit destroys targets, weapons shift fires toward the center of the enemy formation.

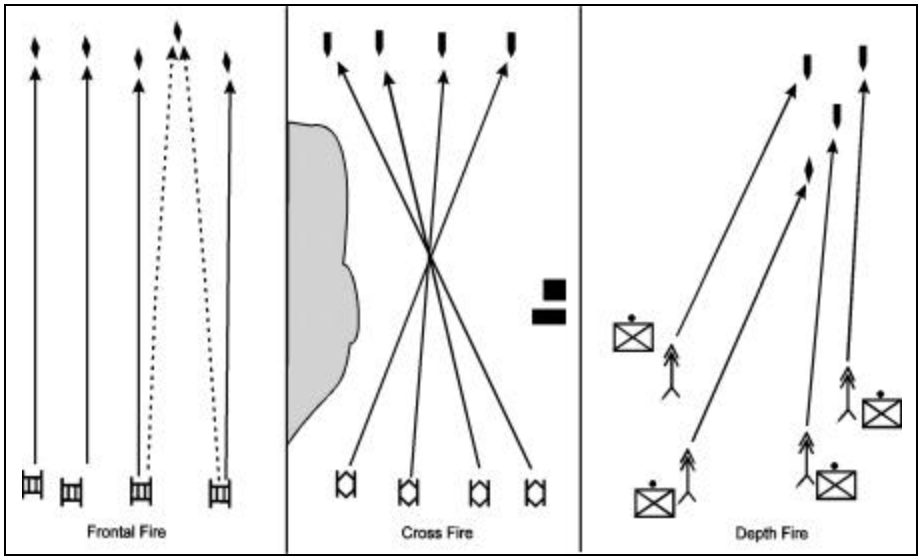


Figure B-5. Examples of Fire Patterns

TARGET ARRAY

B-32. Target array permits the commander to distribute fires when the enemy force is concentrated and terrain-based controls are inadequate. This threat-based distribution measure is created by superimposing a quadrant pattern over an enemy formation. The pattern is centered on the 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. However, it may prove less effective against an enemy that presents few organized formations or does not follow strict prescribed tactics. Quadrants are described using their relative locations. The examples in Figure B-6 illustrate the target array technique.

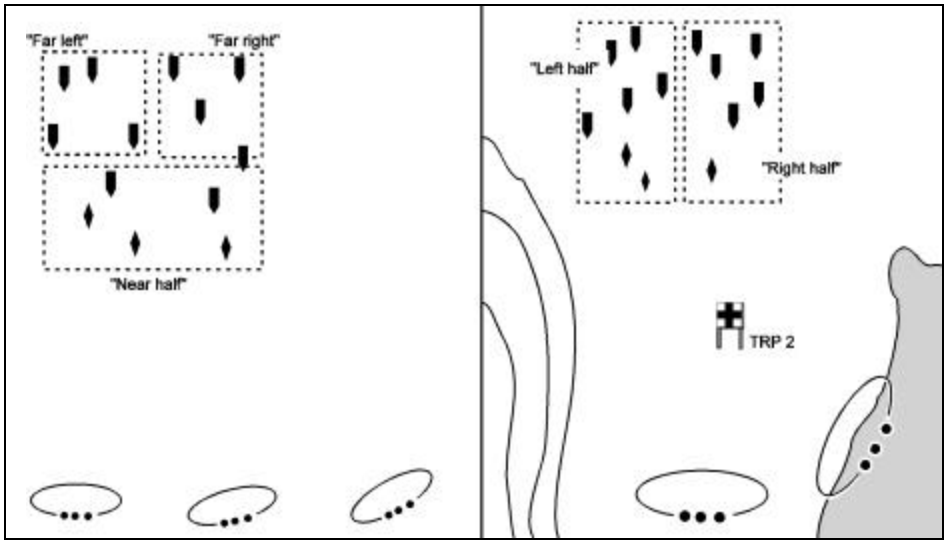


Figure B-6. Examples of Target Array

ENGAGEMENT PRIORITIES

B-33. Engagement priorities, which entail the sequential ordering of targets to be engaged, can serve one or more of the following critical fire control functions:

- **Prioritize HPTs.** In concert with his concept of the operation, the commander determines which target types provide the greatest payoff; he can then set these as a unit engagement priority. For example, he may decide that destroying enemy engineer assets is the best way to prevent the enemy from breaching an obstacle.

- **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 company team's tanks could be enemy tanks first, then enemy PCs; this would decrease the chance that the team's lighter systems will have to engage enemy armored vehicles.

- **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 commander may designate the enemy's tanks as the initial priority for one BFV platoon while making the enemy's PCs the priority for another platoon. This would decrease the chance of multiple TOWs being launched against two enemy tanks while the dangers posed by the PCs are ignored.

WEAPONS READY POSTURE

B-34. 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 company team, weapons ready posture affects the types and quantities of ammunition loaded in ready boxes, stowed in ready racks, and carried by rifle squads. The following considerations apply:

- For tanks, weapons ready posture is defined as the battlecarry.

- For BFVs, weapons ready posture covers the selected ammunition and the indexed range.

- For infantry squads, weapons ready posture is the selected ammunition and indexed range for individual and crew-served weapons. For example, an M203 grenadier whose most likely engagement is to cover dead space at 200 meters from his position might load high-explosive dual purpose (HEDP)

and set 200 meters on his quadrant sight. To prepare for an engagement in a wooded area where engagement ranges are extremely short, an antiarmor specialist might dismount with an AT4 instead of a Javelin.

TRIGGER

B-35. A trigger is a specific set of conditions that dictates initiation of fires. Often referred to as engagement criteria, a trigger specifies the circumstances in which subordinate elements are to engage. The circumstances can be based on a friendly or enemy event. For example, the trigger for a friendly platoon to initiate engagement could be three or more enemy combat vehicles passing or crossing a given point or line. This line can be any natural or man-made linear feature, such as a road, ridge line, or stream. It may also be a line perpendicular to the unit's orientation, delineated by one or more references points.

WEAPONS CONTROL STATUS

B-36. The three levels of WCS outline the conditions, based on target identification criteria, under which friendly elements may engage. The commander sets and adjusts the WCS based on friendly and enemy disposition and the clarity of the situation. In general, the higher the probability of fratricide, the more restrictive the WCS. The three levels, in descending order of restrictiveness, are the following:

- **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.

B-37. As an example, the commander may establish the weapons control status as WEAPONS HOLD when friendly forces are conducting a passage of lines. By maintaining SU of his own elements and adjacent friendly forces, however, he may be able to lower the WCS. In such a case, the commander may be able to set a WEAPONS FREE status when he knows there are no friendly elements in the vicinity of the engagement. This permits his 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. A further consideration is that the weapons control status is extremely important for forces using combat identification systems; establishing the WCS as WEAPONS FREE permits leaders to engage an unknown target when they fail to get a friendly response.

RULES OF ENGAGEMENT

B-38. 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, the mission and commander's intent, the operational environment, and the law of war. ROE always recognize a soldier's right of self-defense; at the same time, they clearly define circumstances in which he may fire.

B-39. For example, during stability operations the command may establish a WCS of main gun WEAPONS TIGHT during a cordon and search operation and the use of the tank main gun as an explosive breach technique may be explicitly restricted.

WEAPONS SAFETY POSTURE

B-40. Weapons safety posture is an ammunition handling instruction that allows the commander to precisely control the safety of his unit's weapons. Leaders' supervision of the weapons safety posture, as well as soldiers' adherence to it, minimizes the risk of accidental discharge and fratricide. Table B-1 outlines procedures and considerations for the company team in using the four weapons safety postures, listed in ascending order of restrictiveness:

- **AMMUNITION LOADED.**
- **AMMUNITION LOCKED.**
- **AMMUNITION PREPARED.**
- **WEAPONS CLEARED.**

B-41. In setting and adjusting the weapons safety posture, the commander 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 commander may establish the weapons safety posture as AMMUNITION LOADED. If the requirement for action is less immediate, he may lower the posture to AMMUNITION LOCKED or AMMUNITION PREPARED. Additionally, the commander may designate different weapons safety postures for different elements of the unit. For example, in the attack position, tanks and BFVs may switch to AMMUNITION LOADED while rifle squads riding in BFVs remain at AMMUNITION LOCKED.

Table B-1. Weapons Safety Posture Levels

ELEMENT SAFETY POSTURE	TANK WEAPONS AND AMMUNITION	BFV WEAPONS AND AMMUNITION	INFANTRY SQUAD WEAPONS AND AMMUNITION
AMMUNITION LOADED	Main gun ammunition loaded. Machine gun ammunition on feed tray; bolt locked to rear. Smoke grenades in launchers. Weapons on electrical safe.	25-mm rounds cycled to bolt. Coax rounds on feed tray; bolt locked to rear. TOW missiles in launchers. Smoke grenades in launchers. Weapons on electrical safe.	Rifle rounds chambered. Machine gun and SAW ammunition on feed tray; bolt locked to rear. Grenade launcher loaded. Weapons on manual safe.
AMMUNITION LOCKED	Main gun ammunition in ready rack. Machine gun ammunition on feed tray; bolt locked forward. Smoke grenades in launchers. Weapons on electrical safe.	25-mm rounds loaded into feeder, but not cycled to bolt. TOW missiles in launchers. Smoke grenades in launchers. Weapons on electrical safe.	Magazines locked into rifles. Machine gun and SAW ammunition on feed tray; bolt locked forward. Grenade launcher unloaded.
AMMUNITION PREPARED	Main gun ready rack filled. Machine gun ammunition boxes filled. Smoke grenades in launchers.	25-mm ready boxes filled. Coax ammunition boxes filled. TOW missiles in launchers. Smoke grenades in launchers.	Magazines, ammunition boxes, launcher grenades, and hand grenades prepared but stowed in pouches/vests.
WEAPONS CLEARED	Main gun ready rack filled. Machine gun cleared, with bolts locked to the rear.	25-mm feeder removed; feeder and chamber cleared. Coax bolt group removed and chamber cleared.	Magazine, ammunition boxes, and launcher grenades removed; weapons cleared.

ENGAGEMENT TECHNIQUES

B-42. Engagement techniques are effects-oriented fire distribution measures. The following engagement techniques, the most common in company team operations, are covered in this discussion:

- Point fire.
- Area fire.
- Simultaneous.

- Alternating fire.
- Observed fire.
- Sequential fire.
- Time of suppression.
- Reconnaissance by fire.

Point Fire

B-43. 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 of the unit's 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, then revert to area fire against other, less threatening point targets. (**NOTE:** Use of point fire is fairly rare because a unit seldom encounters a single, clearly identified enemy weapon.)

Area Fire

B-44. 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 effective suppression requires judicious control of the rate of fire.

Simultaneous Fire

B-45. Units employ simultaneous fire, to rapidly mass the effects of their fires or to gain fire superiority. For example, a unit may initiate a support by fire operation with simultaneous fire, then revert to alternating or sequential fire to maintain suppression. Simultaneous fire is also employed to negate the low probability of hit and kill of certain anti-armor weapons. As an example, a rifle squad may employ simultaneous fire with its AT4s to ensure rapid destruction of a BMP that is engaging a friendly position.

Alternating Fire

B-46. In alternating fire, pairs of elements continuously engage the same point or area target one at a time. For example, a company team may alternate fires of two platoons; a tank platoon may alternate the fires of its sections; or an infantry platoon may alternate the fires of a pair of 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.

Observed Fire

B-47. Observed fire is normally used when the company team is in protected defensive positions with engagement ranges in excess of 2,500 meters. It can be employed between elements of the company team, such

as the tank platoon lasing and observing while the BFV platoon fires, or between sections of a platoon. The commander or platoon leader directs one element or section to engage. The remaining elements or section observes fires and prepares 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.

Sequential Fire

B-48. 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 also help to prevent the waste of ammunition, as when an infantry rifle platoon waits to see the effects of the first Javelin before firing another. Additionally, sequential fire permits elements that have already fired to pass on information they have learned from the engagement. An example would be an infantryman who missed a BMP with AT4 fires passing range and lead information to the next soldier preparing to engage the BMP with an AT4.

Time of Suppression

B-49. Time of suppression is the period, specified by the commander, 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: 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 in a mechanized infantry platoon are given the task of suppressing an area to support the assault of another element.
- One BFV, firing 25-mm high-explosive incendiary tracer (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 three minutes.
- Given an adjusted basic load of 720 rounds of HE, a single BFV can sustain fire for four periods of three 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 three 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 (one section fires for three minutes while the other reloads), the platoon can sustain 120 rounds per minute for 24 minutes.

Reconnaissance by Fire

B-50. Reconnaissance by fire is the process of engaging possible enemy locations to elicit a tactical response, such as return fire or movement. This response permits the commander and subordinate leaders to make accurate target acquisition and then to mass fires against the enemy element. Typically, the commander directs a subordinate element to conduct the reconnaissance by fire. For example, he may direct an overwatching platoon to conduct the reconnaissance by fire against a probable enemy position before initiating movement by a bounding element.

SECTION IV – FIRE COMMANDS

B-51. Fire commands are oral orders issued by commanders and leaders to focus and distribute fires as required to achieve decisive effects against the enemy. They allow leaders to rapidly and concisely articulate their firing instructions using a standard format. Unit fire commands include these elements, which are discussed in detail in the following paragraphs:

- Alert.
- Weapon or ammunition (optional).
- Target description.
- Orientation.
- Range (optional).
- Control (optional).
- Execution.

ALERT

B-52. The alert specifies the elements that are directed to fire. It does not require the leader initiating the command to identify himself. Examples of the alert element (call signs and code words based on unit SOP) include the following:

- “GUIDONS” (all subordinate elements).
- “RED” (1st Platoon only).

WEAPON OR AMMUNITION (OPTIONAL)

B-53. This element identifies the weapon and/or 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:

- “TOW.”
- “TWO ROUNDS SABOT.”

TARGET DESCRIPTION

B-54. 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:

- "THREE PCs."
- "THREE TANKS AND TEN PCs."
- "TROOPS IN TRENCH."

ORIENTATION

B-55. This element identifies the location of the target. There are numerous 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)

B-56. The range element identifies the distance to the target. Announcing range is not necessary for systems that are range finder-equipped or that employ command-guided or self-guided munitions. For systems that require manual range settings, leaders have a variety of means for determining range, including the following:

- Predetermined ranges to TRPs or PLs.
- An M1A1/M1A2 tank crew announcing the range for an M2A2-equipped platoon.
- Hand-held range finders.
- Range stadia.
- Mil reticle.

CONTROL (OPTIONAL)

B-57. The commander may use this optional element to direct desired target effects, distribution methods, or engagement techniques. Subordinate leaders may include the control element to supplement the commander's instructions and achieve effective 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: "TANKS ENGAGE TANKS; BFVs ENGAGE PCs."
- Engagement technique. Example: "VOLLEY."
- Target effect. Example: "AREA."

EXECUTION

B-58. The execution element specifies when fires will be initiated. The commander 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."

SECTION V – FIRE CONTROL PROCESS

B-59. To successfully bring direct fires against an enemy force, commanders and 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 effective employment of weapons. Massing entails focusing fires at critical points and then distributing the fires for optimum effect. The following discussion examines target acquisition and massing of fires using these basic steps of the fire control process:

- Identify probable enemy locations and determine the enemy scheme of maneuver.
- Determine where and how to mass (focus and distribute) fire effects.
- Orient forces to speed target acquisition.
- Shift fires to refocus or redistribute their effects.

IDENTIFY PROBABLE ENEMY LOCATIONS AND DETERMINE THE ENEMY SCHEME OF MANEUVER

B-60. The commander and subordinate leaders plan and execute direct fires based on their estimate of the situation. An essential part of this estimate is the analysis of the terrain and the enemy force, which aids the commander 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 that provide both good fields of fire and adequate cover for a defender. Similarly, an attacking enemy will have only a limited selection of avenues of approach that provide adequate cover and concealment.

Coupled with available intelligence, an understanding of the effects of a specific piece of terrain on maneuver will assist the commander in identifying probable enemy locations and likely avenues of approach both before and during the fight. See Figure B-7 for an example of the commander's analysis of enemy locations and scheme of maneuver; he may use any or all of the following products or techniques in developing and updating the analysis:

- A SITEMP based on the analysis of terrain and enemy.
- A SPOTREP or contact report on enemy locations and activities.
- Reconnaissance of the AO.

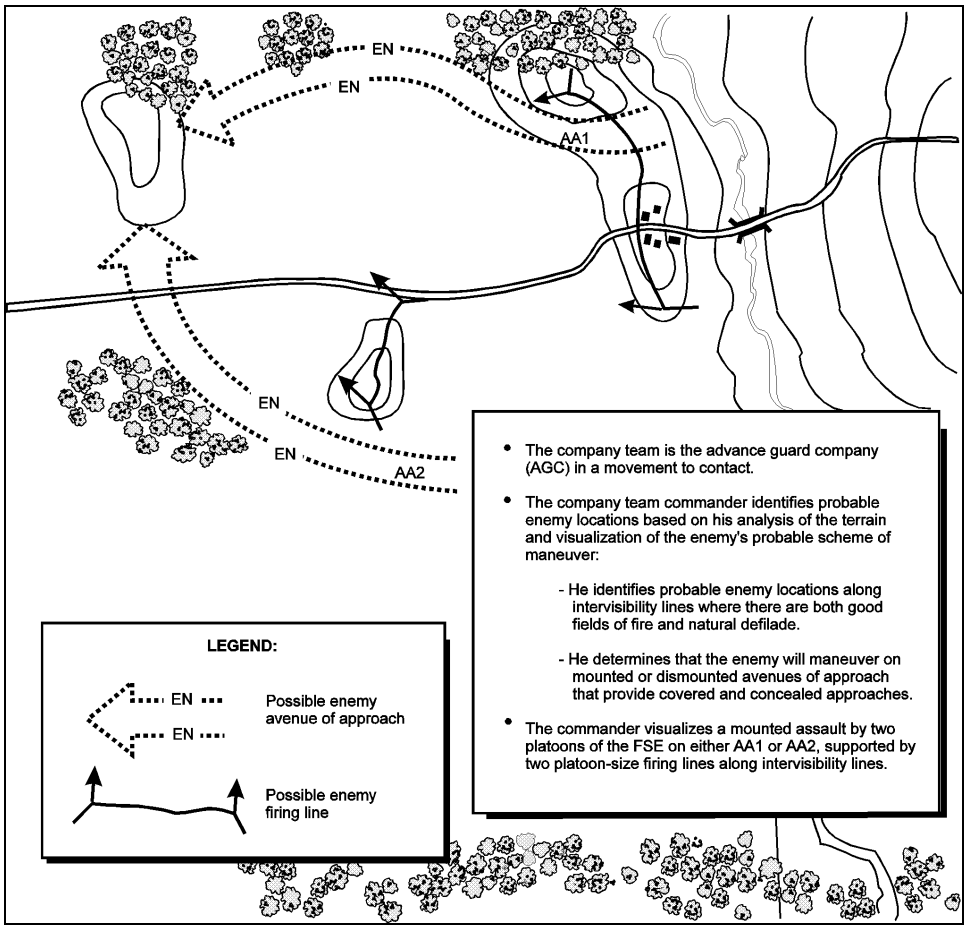


Figure B-7. Example of Identifying Probable Enemy Locations and Determining Enemy Scheme of Maneuver

DETERMINE WHERE AND HOW TO MASS FIRES

B-61. To achieve decisive effects, friendly forces must mass their fires. Effective massing requires the commander both to focus the fires of subordinate elements and to distribute the effects of the fires. Based on his estimate of the situation and his concept of the operation, the commander identifies points where he wants to, or must, focus the unit's

fires. Most often, these are locations he has 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 the commander wants to mass fires, he may issue a fire command to focus the fires. At the same time, the commander must use direct fire control measures to effectively distribute the fires of his elements, which are now focused on the same point. Figure B-8 illustrates how the commander masses fires against the enemy.

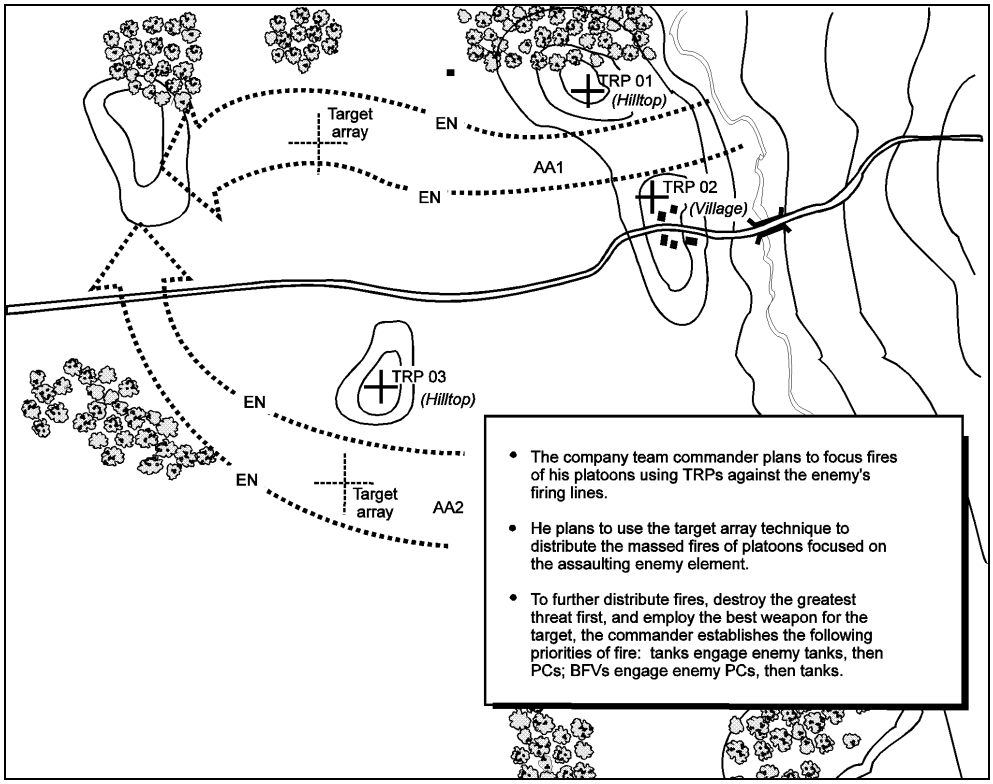


Figure B-8. Example of Determining Where And How to Mass (Focus and Distribute) Fire Effects to Kill the Enemy

ORIENT FORCES TO SPEED TARGET ACQUISITION

B-62. To effectively engage the enemy with direct fires, friendly forces must rapidly and accurately acquire enemy elements. Orienting friendly forces on probable enemy locations and on likely avenues of approach will speed target acquisition. Conversely, failure to orient subordinate elements will result in slower acquisition; this greatly increases the likelihood that enemy forces will be able to engage first. The clock direction orientation method, which is prescribed in most unit SOPs, is good for achieving all-around security; however, it does not ensure that friendly forces are most effectively oriented to detect the enemy. To achieve this critical orientation, the commander typically designates TRPs on or near probable enemy locations and avenues of approach; he orients his subordinate elements using directions of fire or sectors of fire. Normally, the gunners on crew-served weapons scan the designated

direction, sector, or area while other crewmen observe alternate sectors or areas to provide all-around security. Figure B-9 illustrates how the commander orients the company team for quick, effective acquisition of the enemy force.

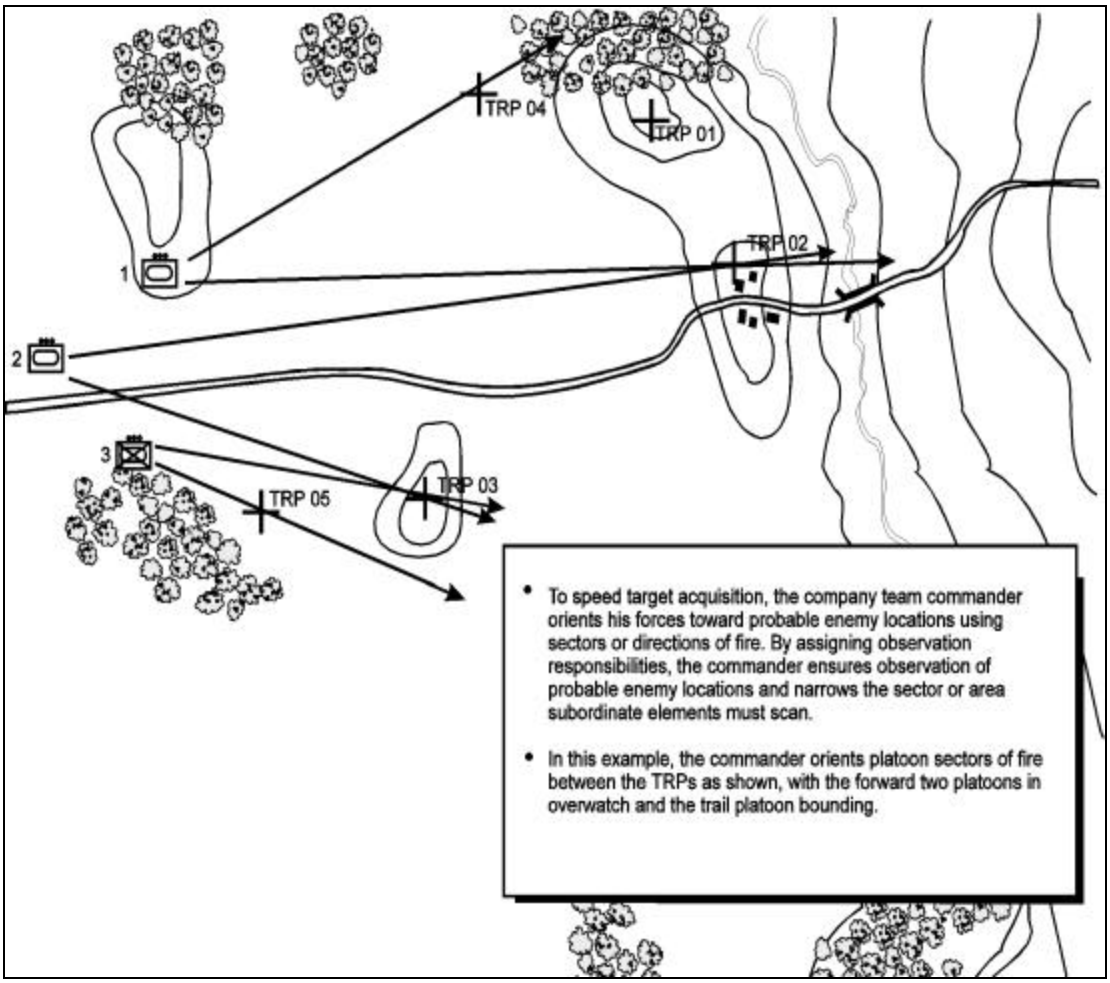


Figure B-9. Example of Orienting Forces to Speed Target Acquisition

SHIFT FIRES TO REFOCUS AND REDISTRIBUTE

B-63. As the engagement proceeds, leaders must shift fires to refocus and redistribute the effects based on their evolving estimate of the situation. See Figure B-10 for an illustration of this process. Situational awareness becomes an essential part of the fire control process at this point. The commander and subordinate leaders apply the same techniques and considerations, including fire control measures that they used earlier to focus and distribute fires. 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 that are engaging the enemy force.
- Change in the ammunition status of the friendly elements that are 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.

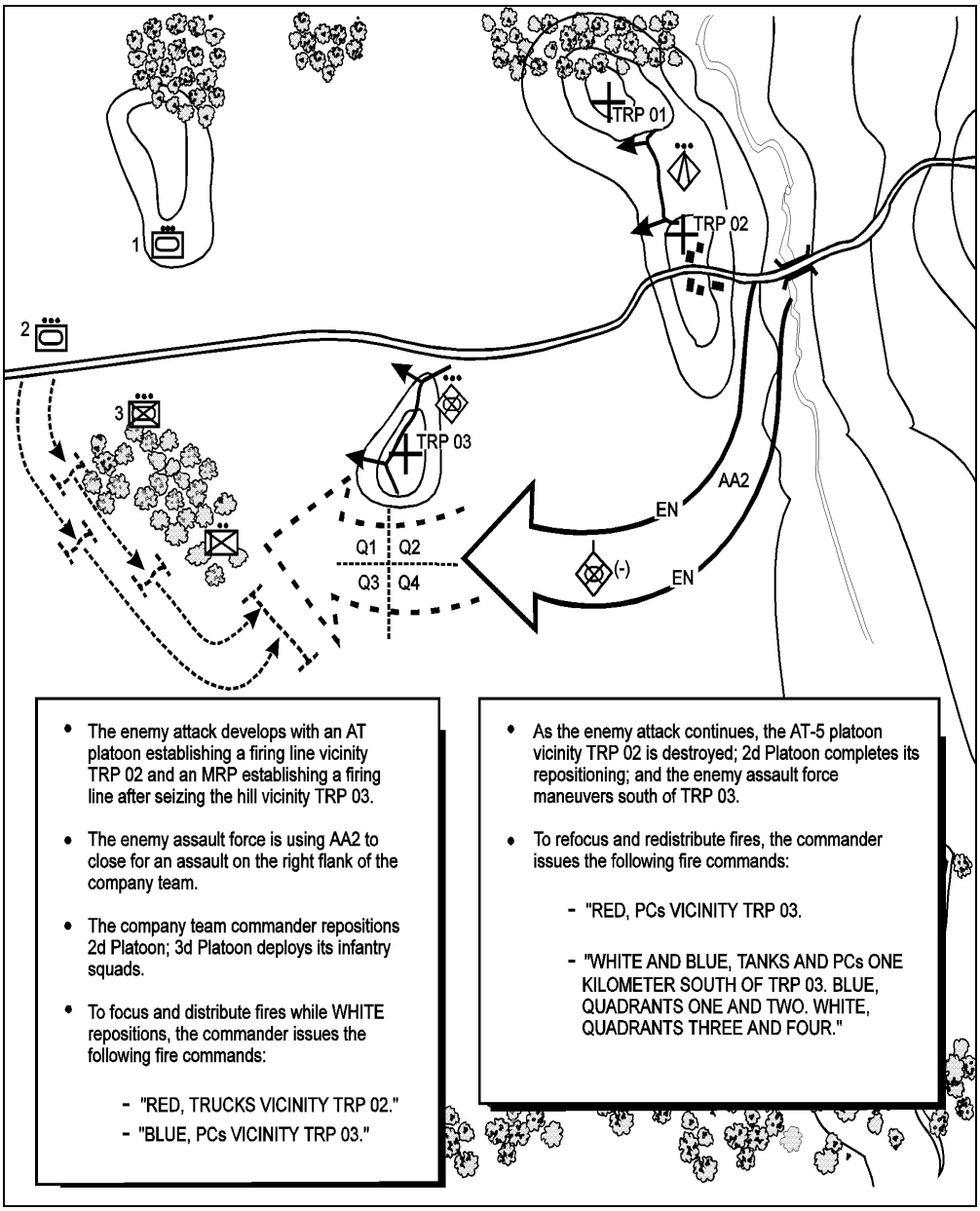


Figure B-10. Example of Shifting to Refocus and Redistribute Fires

SECTION VI – DIRECT FIRE PLANNING

B-64. The commander plans direct fires in conjunction with development of his estimate of the situation and completion of the plan. Determining where and how the company team can and will mass fires is also an essential step as the commander develops his concept of the operation.

B-65. After identifying probable enemy locations, the commander determines points or areas where he will focus combat power. His visualization of where and how the enemy will attack or defend will assist him in determining the volume of fires he must focus at particular points to have a decisive effect. In addition, if he intends to mass the fires of more than one subordinate element, the commander must establish the means for distributing fires effectively.

B-66. Based on where and how they want to focus and distribute fires, the commander and subordinate leaders can then establish the weapons ready postures for company team elements as well as triggers for initiating fires. Additionally, the commander must evaluate the risk of fratricide and establish controls to prevent it; these measures include designation of recognition markings, WCS, and weapons safety posture.

B-67. Having determined where and how they will mass and distribute fires, the commander and subordinate leaders then must orient elements so they can rapidly and accurately acquire the enemy. They also can war-game the selected COA or concept of the operation to determine probable requirements for refocusing and redistributing fires and to establish other required controls. Also during mission preparation, the commander plans and conducts rehearsals of direct fires (and of the fire control process) based on his estimate of the situation.

B-68. The commander and his subordinate leaders must continue to apply planning procedures and considerations throughout execution. They must be able to adjust direct fires based on a continuously updated estimate of the situation, combining situational awareness with the latest available intelligence. When necessary, they must also apply effective direct fire SOPs, which are covered in the following discussion.

SECTION VII – DIRECT FIRE STANDING OPERATING PROCEDURE

B-69. A well-rehearsed direct fire SOP ensures quick, predictable actions by all members of the company team. The commander bases the various elements of the SOP on the capabilities of his force and on anticipated conditions and situations. SOP elements should include standing means for focusing fires, distributing their effects, orienting forces, and preventing fratricide; these elements are examined later in this discussion. The commander should adjust the direct fire SOP whenever changes to anticipated and actual METT-TC factors become apparent.

B-70. If the commander does not issue any other instructions, the company team begins the engagement using the SOP. The commander can subsequently use a fire command to refocus or redistribute fires.

B-71. The following paragraphs discuss specific SOP provisions for focusing fires, distributing fires, orienting forces, and preventing fratricide.

SOP ELEMENT FOR FOCUSING FIRES

B-72. TRPs are a common means of focusing fires. 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 quickly determine and communicate the location of the TRPs.

SOP ELEMENT FOR DISTRIBUTING FIRES

B-73. Two useful means of distributing the company team's fires are engagement priorities and target array. One technique is to assign an engagement priority, by type of enemy vehicle or weapon, for each type of friendly weapon system. The target array technique can assist in distribution by assigning specific friendly elements to engage enemy elements of approximately similar capabilities. The following are example SOP elements for distributing the fires of a mechanized infantry company team (one tank platoon, two mechanized infantry platoons) moving in a wedge or line formation with the tank platoon in the center:

- Tanks engage tanks first, then PCs.
- BFVs engage PCs first, then other AT weapons.
- If the company team masses fires at the same target, the tank platoon engages tanks; the left flank platoon engages the left half of the enemy formation; and the right flank platoon engages the right half of the enemy formation.

SOP ELEMENT FOR ORIENTING FORCES

B-74. A standard means of orienting friendly forces is to assign a primary direction of fire, using a TRP, 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 sectors using a friendly-based quadrant. The following example SOP elements illustrate the use of these techniques:

- The center (front) platoon's primary direction of fire is TRP 2 (center) until otherwise specified; the platoon is responsible for the front two quadrants.
- The left flank platoon's primary direction of fire is TRP 1 (left) until otherwise specified; the platoon is responsible for the left two friendly quadrants (overlapping with the center platoon).

- The right flank platoon's primary direction of fire is TRP 3 (right) until otherwise specified; the platoon is responsible for the right two friendly quadrants (overlapping with the center platoon).

SOP ELEMENT FOR AVOIDING FRATRICIDE

B-75. A primary means of minimizing fratricide risk is to establish a standing weapons control status of WEAPONS TIGHT, which requires positive enemy identification prior to engagement. The SOP must also cover means for identifying friendly rifle squads and other dismounted elements; techniques include using arm bands, medical heat pads, or an IR light source or detonating a smoke grenade of a designated color at the appropriate time. A good time for minimizing the risk of fratricide in the company team is through FBCB2 (if equipped); however, this does not supplant the company team commander's responsibility to plan for fratricide avoidance.

B-76. At the bottom line, the SOP must address the most critical requirement of fratricide prevention—maintaining SU. It must direct subordinate leaders to inform the commander, adjacent elements, and subordinates whenever a friendly force is moving or preparing to move.

Appendix C

Heavy/Light Integration

The OE poses an increased asymmetric threat to the company team. Opponents will attempt to offset the company team's advantage in speed, firepower and shock effect by fighting during periods of reduced visibility in complex terrain and urban environments. Therefore, the ability of heavy and light forces to smoothly integrate has never been more important.

This appendix provides information that the company team commander must consider in conducting operations with light forces. It focuses on the two scenarios that are most likely to affect the company team: attachment of the team to a light brigade or battalion and attachment of a light platoon to the team. (See FM 3-21.20 [FM 7-20] and FM 3-20.15 [FM 17-15] for more detailed information on a heavy platoon attached to a light infantry battalion. See 3-21.10 [FM 7-10] for a more detailed discussion of heavy forces attached to a light infantry company.)

CONTENTS

Organization of Light Forces....C-1
Capabilities and Limitations....C-1
Organization of Light Force Brigades....C-2
Organization of Light Force Battalions....C-3
Organization of Light Force Companies and Platoons....C-3
Planning Considerations....C-5
Command and Control....C-5
Intelligence....C-6
Maneuver....C-6
Fire Support....C-7
Air Defense....C-7
Mobility and Survivability....C-7
Combat Service Support....C-8
Operations and Tasks....C-8
Task Organization Considerations....C-9
Task Organization Below Platoon Level....C-9
Additional Attachments to the Company Team....C-10
Operational Organization....C-10
Additional Operational Considerations....C-11
Dismounted Infantry Movement Rates....C-11
Tank-Mounted Infantry....C-12
Communications....C-12
Safety Considerations....C-12
Combat Service Support Operations....C-13
Planning and Integration....C-13
Supply Requirements....C-14
Operational Considerations....C-15

SECTION I – ORGANIZATION OF LIGHT FORCES

CAPABILITIES AND LIMITATIONS

C-1. Light forces have the capabilities to perform the following actions:

- Seize, occupy, and hold terrain.
- Move on foot or by aircraft, truck, or amphibious vehicle.
- Move in all types of terrain.
- Conduct operations with tank and mechanized infantry forces.

- Conduct air assault operations.
- Take part in counterinsurgency operations within a larger unit.
- Rapidly accept and integrate augmenting forces.

C-2. Light forces have the following limitations:

- They must depend on nonorganic transportation for rapid movement over long distances.
- Without protective clothing, they are vulnerable to the effects of prolonged NBC exposure.
- They require external support when they must operate for an extended period.
- Unless dug in with overhead cover, they are extremely vulnerable to indirect fires.
- Unless dug in, they are vulnerable in open terrain to long-range direct fires.

ORGANIZATION OF LIGHT FORCE BRIGADES

C-3. The heavy company team may support any of three primary types of light brigades—light infantry, airborne, and air assault. These organizations vary in capabilities and limitations and in their impact on the heavy force. For example, differences in the organization of the brigade headquarters and in anti-armor capability may affect the heavy company team mission. The company team commander must understand the organization of the brigade that the team will support.

LIGHT INFANTRY BRIGADE

C-4. Light infantry brigades have the most austere of the three headquarters organizations in terms of communications capabilities and the number of staff officers. There is no assistant S3, assistant S3-Air, or LNO. There are few vehicles in the main CP. Organizational maintenance is centralized at the brigade maintenance section. All Class I rations are prepared by the brigade mess team. Like the light infantry division, the brigade must depend on corps-level transportation assets. A key characteristic of the light infantry brigade is its limited anti-armor capability. There are 12 TOWs and 54 Dragons or Javelins per brigade. In addition, the light infantry division has only one attack helicopter battalion.

AIRBORNE BRIGADE

C-5. Once entry operations are complete, the airborne brigade essentially functions as a light infantry brigade. It has more CS and CSS assets than does the light infantry brigade and has 60 TOWs and 54 Dragons or Javelins. The airborne division has only one attack helicopter battalion.

AIR ASSAULT BRIGADE

C-6. Staff and CSS functions in the air assault brigade are similar to those in tank and mechanized brigades. The air assault brigade uses helicopters to extend its C2 and CSS capabilities. Antiarmor capability is the same as for the airborne brigade. The air assault division has a combat aviation brigade, consisting of two attack helicopter battalions, that adds to its anti-armor capability.

ORGANIZATION OF LIGHT FORCE BATTALIONS

C-7. The light infantry battalion is the most austere light battalion and the one whose organization is most different from that of a heavy battalion. There are only three rifle companies and a headquarters company in the battalion. It has four TOWs and 18 Dragons or Javelins. Organic fire support is provided by an 81-mm mortar platoon assigned to the headquarters company.

LIGHT INFANTRY BATTALION

C-8. Differences between this battalion and the air assault and airborne battalions are greatest in the organization of support and logistics elements. It has no trucks larger than its 27 cargo HMMWVs. The battalion has no mess team; Class I is prepared at brigade level. There is only one mechanic in the entire battalion; repairs are conducted at the brigade level. The battalion has only 18 long-range radios.

AIR ASSAULT AND AIRBORNE BATTALION

C-9. Once inserted, the air assault and airborne battalions perform much like the light infantry battalion, with walking a primary means of transportation. Each battalion has 10 two-and-a-half-ton trucks and 36 cargo HMMWVs and can conduct nontactical movement by truck. Each has a mess section and a 16-man maintenance platoon. Air assault and airborne battalions have 30 long-range radios, and both have 20 TOWs and 18 Dragons or Javelins. Their organic fire support is provided by an 81-mm mortar platoon assigned to the headquarters company.

ORGANIZATION OF LIGHT FORCE COMPANIES AND PLATOONS

LIGHT INFANTRY COMPANY AND PLATOON

C-10. The light infantry company has three platoons and a headquarters section, a total of 130 soldiers (see Figure C-1). The company headquarters contains both the anti-armor section, consisting of six Dragons or Javelins, and the mortar section, which has two 60-mm mortars. The rifle platoons, with 34 soldiers each, are organized into three squads and a headquarters section that controls the platoon's machine guns (see Figure C-2). Each rifle squad consists of two fire teams.

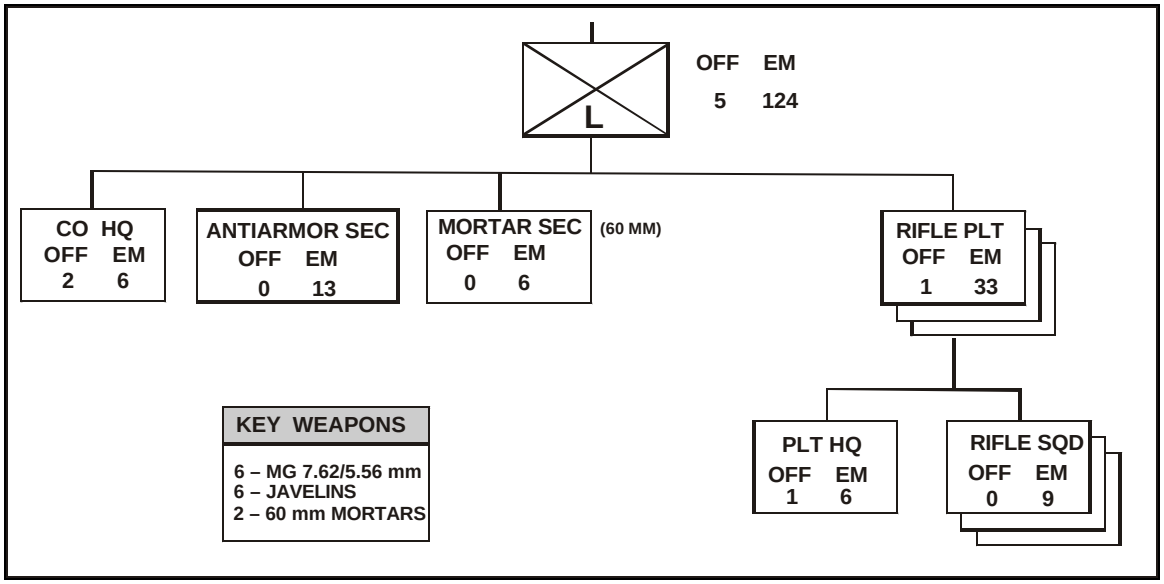


Figure C-1. Light Infantry Rifle Company

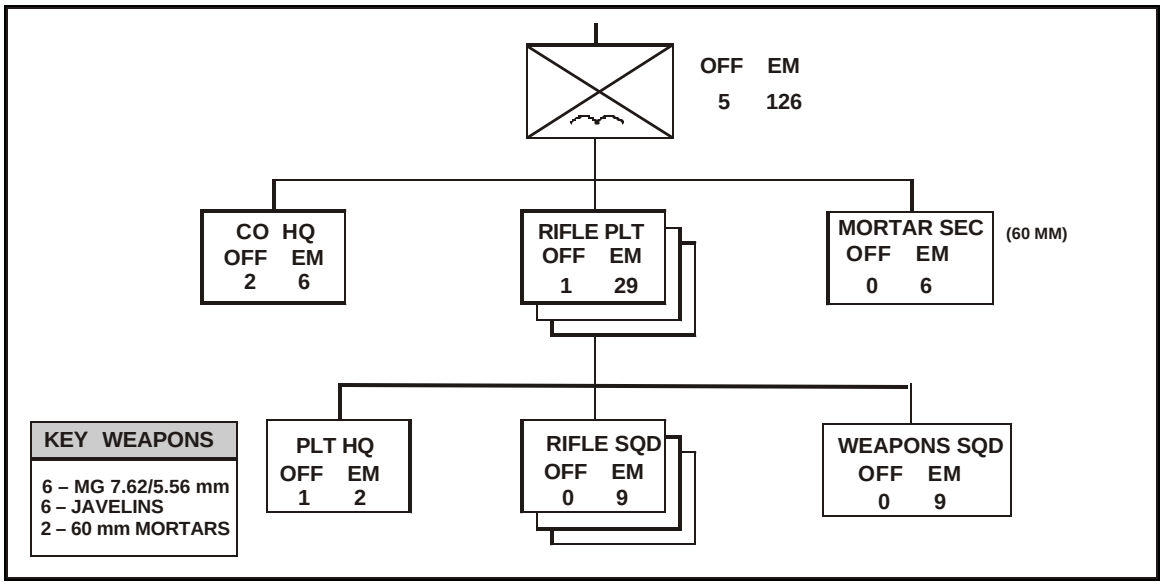


Figure C-2. Airborne Rifle Company

AIRBORNE AND AIR ASSAULT COMPANIES

C-11. Airborne and air assault companies are capable of more independent action than their light infantry counterpart. Each of the three rifle platoons has its own weapons squad, as well as three rifle squads (see Figure C-3). The weapons squads have both machine gun crews and anti-armor missile crews. The company headquarters retains control of the 60-mm mortar section.

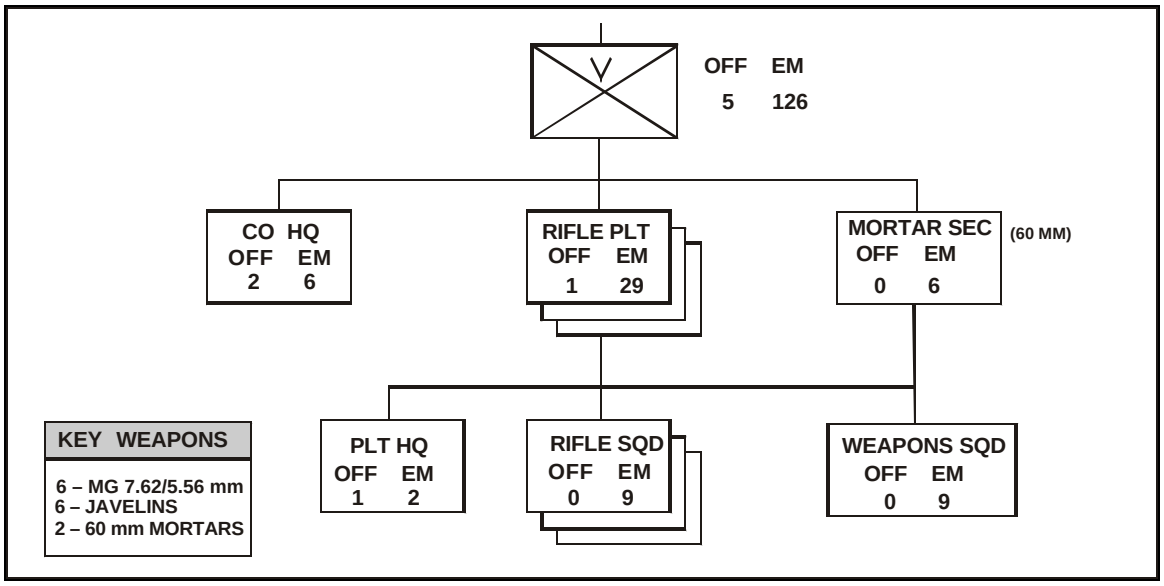


Figure C-3. Air Assault Rifle Company

SECTION II – PLANNING CONSIDERATIONS

C-12. Employment of heavy and light forces requires thorough integration of the operating systems of both types of units. This section focuses on considerations for each of the seven operating systems.

COMMAND AND CONTROL

C-13. The directing headquarters designates command relationships between light infantry and the tank or mechanized infantry force. The command relationship between a light unit and a heavy unit can be either attached or OPCON. A light unit attached to a heavy unit can normally be adequately supported. Attachment of a heavy unit to a light unit, however, requires considerable CS and CSS support from the heavy unit's parent organization or from higher-level support assets.

C-14. Light units normally have considerably less long-range communications capability than their heavy force counterparts. A gaining heavy unit must therefore thoroughly analyze the communications requirements of an attached light unit.

C-15. Units conducting light/heavy or heavy/light operations normally exchange LNOs, who assist in joint operational planning, coordinate the development of orders and overlays, and serve as advisors to the counterpart units. In addition, leaders from the attached unit may be required to perform special functions in the light/heavy or heavy/light configuration.

C-16. Additional C2 considerations include the following:

- LNOs and/or unit leaders may be required to conduct linkup and coordination, either in theater or prior to deployment.
- When a single tank or mechanized infantry company team is attached or OPCON to a light infantry brigade or battalion, personnel from the team's parent organization should be designated as LNOs, serving as planners and advisors for the supported unit's commander. A strong LNO team requires proper manning, equipment, and expertise; it must be capable of conducting 24-hour operations. It must have the equipment to communicate effectively with the supported unit as well as vehicles to move around the battlefield. Whenever possible, the team should include two officers and two NCOs (along with drivers as needed). The logistics LNO should be the senior soldier from the CSS slice, with expertise in Class I, III, and V resupply and medical and maintenance support. (**NOTE:** If an LNO team is not available, the company team CP should collocate with the brigade or battalion TOC.)
- When a single tank or mechanized infantry platoon is OPCON or a light infantry platoon is attached, the platoon leader serves as the principal advisor to the supported headquarters commander. For a tank or mechanized infantry platoon, the platoon leader normally works with a light infantry battalion commander; a light infantry platoon leader normally assists a company team commander.

INTELLIGENCE

C-17. Detailed intelligence is critical in integrating light infantry with tank and mechanized infantry forces. Light forces orient on concentrations of enemy units, including counterattack forces and artillery and air defense assets; they also focus on the enemy's infantry avenues of approach and LZs/PZs.

MANEUVER

C-18. Either the light force or the tank/mechanized infantry force can fix the enemy, allowing the other force to maneuver. Whether it conducts the fixing operation or maneuver, the light force requires the advantage of close terrain. These maneuver considerations apply in light/heavy or heavy/light employment:

- The light force is best suited to close and restricted terrain, where it can impede the enemy's mobility and nullify his ability to use long-range weapons and observation assets.
- The differences between the operational tempo of light infantry and that of tanks and mechanized infantry is always a key consideration, as are rehearsal schedules. An early rehearsal

may be required, both to allow light and heavy forces to take part jointly and to effectively resolve the operational differences.

- To help prevent detection, the movement of light infantry must be planned to coincide with limited visibility conditions such as darkness, severe weather, smoke, or fog.
- Direct and indirect fires should be mutually supporting during integrated operations. The company team can use its long-range direct fires to provide suppression, allowing infantry units to maneuver. Conversely, light infantry forces can provide overwatch or support by fire to the company team, allowing tanks and BFVs to maneuver in restricted terrain.
- Mechanized units can assist infiltration by augmenting security at the LD. They can use their thermal capability to scan the area for enemy forces and can provide direct fire support as necessary.

FIRE SUPPORT

C-19. Fire support assets available to both light and heavy forces must be integrated into the fire plan. Light infantry units have different indirect fire assets than do the heavy forces and have more limited communications assets associated with their indirect fire systems. Tank or mechanized infantry forces must recognize that dismounted infantry operations rely on stealth, which may not allow for preparatory and other preliminary fires. In addition, light forces are extremely vulnerable to indirect fires; as a result, light infantry positions should be designated as CFZs.

AIR DEFENSE

C-20. Air defense assets may be deployed to fight and provide protection within the scope and design of any organization. Because infantry forces frequently maneuver in restricted terrain, Avenger and BSFV coverage may not be feasible. In such operations, man-portable Stingers should be allocated to support the infantry.

MOBILITY AND SURVIVABILITY

C-21. A common obstacle plan must be developed for light/heavy or heavy/light operations. Light forces may be used to reduce obstacles and clear choke points for the tank and mechanized infantry forces. In breaching operations, light forces must ensure the breach is large enough for the widest vehicle in the operation.

C-22. Survivability remains the priority for light forces. They must be prepared to take advantage of the engineer assets available to the heavy forces.

C-23. In an NBC environment, light forces lack decontamination equipment and therefore are more limited than the tank or mechanized infantry force. The mobility of light forces is affected because soldiers must carry protective clothing in addition to their standard loads. When other transportation assets are not available, tank and mechanized infantry units should assist in carrying NBC equipment for light forces. Additionally, heavy battalions have expedient means to haul decontamination equipment and water, reducing the load for light infantry units. In planning for NBC operations, commanders must take METT-TC factors into account; they

must plan linkup points to ensure their light forces can obtain critical NBC-related items as they need them.

COMBAT SERVICE SUPPORT

C-24. Light units are not organized, equipped, or trained to meet the support requirements of a heavy unit. They must rely on considerable assistance from the heavy unit's organic elements and/or from corps-level support assets to support an attached heavy unit. Heavy units, however, should be able to provide support to a light infantry attachment. (See Chapter 10 for a more detailed discussion of CSS considerations.)

SECTION III – OPERATIONS AND TASKS

C-25. Table C-1 lists the operations normally performed by a light brigade or battalion, along with the heavy company team's supporting tasks or operations for each operation.

Table C-1. Light Brigade/Battalion Operations and Supporting Heavy Company Team Operations and Tasks

LIGHT BRIGADE/ LIGHT BATTALION OPERATIONS	HEAVY COMPANY TEAM OPERATIONS/TASKS
Movement to contact	Support by fire; attack by fire; assault; breach; follow and support; reserve; route clearance; convoy escort; checkpoint/roadblock operations.
Attack	Support by fire; attack by fire; assault; breach.
Exploitation	Serve as security force (screen); lead the exploitation (assault or attack by fire).
Pursuit	Serve as enveloping force, reserve (attack by fire or assault), or security force (screen); lead direct pressure force (support by fire, attack by fire, or assault).
Security (screen, guard, cover)	Screen; guard; defend; delay; attack by fire; assault.
Defend	Screen; guard; defend; delay; attack by fire (counterattack); assault (counterattack).
Retrograde (delay, withdrawal, retirement)	Defend; delay; screen; guard; attack by fire (counterattack); withdraw.
Breakout from encirclement	Serve as rupture force (assault or attack by fire) or rear guard (delay).

C-26. Table C-2 lists the operations and tasks normally performed by the tank or mechanized infantry company team, along with the light platoon's supporting tasks for each operation or task.

Table C-2. Heavy Company Team Operations and Tasks and Supporting Light Platoon Tasks

HEAVY COMPANY TEAM OPERATIONS AND TASKS	LIGHT PLATOON TASKS
Attack by fire	Secure an ABF position (reconnoiter an area or attack); provide local security or act as the blocking force (defend).
Support by fire	Secure an SBF position (reconnoiter an area or attack); provide local security; conduct overwatch/support by fire.
Bypass	Serve as the fixing force (defend); perform linkup with follow-on forces.
Assault	Attack; assault; breach; overwatch/support by fire; knock out a bunker; clear a trench line; clear a building.
Clearance in restricted terrain	Attack; assault; overwatch/support by fire; knock out a bunker; clear a trench line; clear a building; breach.
Defend	Defend; defend MOUT/building; construct an obstacle.
Screen/guard	Perform surveillance or screen.
Breach	Breach; overwatch/support by fire; assault.
Hasty water/gap crossing	Cross water obstacles; assault; overwatch/support by fire.
Delay	Delay; break contact.
Withdrawal	Break contact; serve as advance party (assembly area procedures).

SECTION IV – TASK ORGANIZATION CONSIDERATIONS

TASK ORGANIZATION BELOW PLATOON LEVEL

C-27. In some circumstances, tank or mechanized infantry sections may be task organized to light infantry companies, normally as OPCON elements. The infantry company is the lowest level to which a heavy section should be task organized. (**NOTE:** Individual vehicles should never be task organized.)

ADDITIONAL ATTACHMENTS TO THE COMPANY TEAM

C-28. In addition to the organic and attached elements normally associated with a company team (as discussed in Chapter 2), the company team may receive additional CS and CSS elements when it is OPCON or attached to a light force. Table C-3 summarizes these potential augmentation assets.

Table C-3. Heavy Company Team Augmentation Assets

AUGMENTATION ASSET	PROVIDED BY:
Support section (with 2 or 3 cargo HEMTTs, 2 fuel HEMTTs, mess team)	Parent heavy battalion
DS maintenance contact team (shop office section with limited ASL; automotive team; armament section with limited DX; communications/electrical section; 5,000-gallon POL tankers)	Parent heavy FSB
Mechanized engineer platoon	Parent heavy division engineer brigade
Air defense section	Parent heavy division ADA battalion

C-29. The heavy company team should be attached to a light brigade when the team's parent unit is not adjacent to the brigade's zone or sector and is not close enough to provide adequate logistical support for the heavy team. Attachment requires the light brigade to support the heavy company. To do this, the light brigade and its parent division must receive CSS attachments from the corps. These should include assets to provide Class III and Class V resupply, transportation, and heavy maintenance. It may be possible to provide assets from the company team's parent division to the light division, routing them through the corps.

OPERATIONAL ORGANIZATION

C-30. There are no special organizational considerations when a light platoon is attached to a heavy company team. The platoon operates as a single maneuver element under the control of the company team commander.

C-31. When the company team operates in support of light forces, it may deploy in one of several different configurations based on mission and situational requirements. These options, which may be limited by the task organization of the company team, include the following:

- As a single element under control of the company team commander. The company team may provide support either under brigade control or under control of a designated battalion.
- Split into two company(-) organizations (if four platoons are available), with the company team commander controlling one element and the XO controlling the other. Another C2

arrangement would have the company team commander controlling the company at a central location from the team CP while the two company(-) maneuver elements operate under control of the senior platoon leader in each. The XO may be tasked to control one of these elements as required.

- Partially task organized, with one or two platoons attached to outside battalions. The company team headquarters and remaining platoon(s) are retained under the parent brigade's control or are task organized to a battalion.
- With individual platoons attached directly to outside battalions. The company team commander is located at the battalion with the most critical mission.

SECTION V – ADDITIONAL OPERATIONAL CONSIDERATIONS

C-32. The following considerations apply in the employment of the heavy company team during light/heavy or heavy/light operations.

DISMOUNTED INFANTRY MOVEMENT RATES

C-33. Commanders of heavy forces often overestimate (or simply fail to recognize) the speed with which dismounted elements can move. Numerous factors can affect the rate of march for light forces: tactical considerations, weather, terrain, march discipline, acclimatization, availability of water and/or rations, morale, individual soldiers' self-confidence, and individual loads. Table C-4 summarizes dismounted rates of march for normal terrain.

Table C-4. Dismounted Rates of March (Normal Terrain)

	ROADS	CROSS-COUNTRY
Day	4.0 kmph	2.4 kmph
Night	3.2 kmph	.6 kmph

C-34. The normal distance covered by a dismounted force in a 24-hour period is from 20 to 32 kilometers, marching from five to eight hours at a rate of 4 kmph. A march in excess of 32 kilometers in 24 hours is considered a forced march. Forced marches increase the number of hours marched, not the rate of march, and can be expected to impair the unit's fighting efficiency. Absolute maximum distances for dismounted marches are 56 kilometers in 24 hours, 96 kilometers in 48 hours, or 128 kilometers in 72 hours.

TANK-MOUNTED INFANTRY

C-35. An additional maneuver consideration for a light/heavy or heavy/light operation is the decision of whether to move infantrymen on tanks. This mode of transportation can be difficult, but it is not impossible. It does, in fact, afford some significant advantages. The mounted infantry can provide additional security for the company team. When the team conducts a halt or must execute a breach or other tactical tasks, infantry assets are readily available to provide support and security. The commander must weigh the potential dangers of carrying dangers of carrying tank-mounted infantrymen against the advantages of mobility and security they can provide. (See FM 3-20.15 [FM 17-15] for specific procedures and safety considerations involved in mounting infantry on tanks.)

COMMUNICATIONS

C-36. Communication between vehicle crews and soldiers on the ground is difficult, even under the best of circumstances. On M1-series tanks, the crew can route wire from the AM-1780 through the loader's hatch or vision block to a field phone attached to the outside of the tank. Infantry squads can communicate with the BFV crew using the external wire connection located on the rear of the vehicle. In addressing the communications issues inherent in light/heavy or heavy/light operations, the commander may also consider altering radio net configurations and/or prearranging visual signals.

SAFETY CONSIDERATIONS

C-37. At least initially, most infantrymen will not be familiar with the hazards that may arise during operations with tanks, BFVs, and other armored vehicles. The most obvious of these include the dangers associated with main gun fire and the inability of armored vehicle crews to see people and objects near their vehicles.

C-38. Leaders of heavy and light units alike must ensure that their troops understand the following points of operational safety:

- Tank sabot rounds and BFV antipersonnel rounds discard stabilizing petals when fired, creating a downrange hazard for infantry. The aluminum petals of the tank rounds are discarded in an area extending 70 meters to the left and right of the gun-target line out to a range of 1 kilometer. The danger zone for BFV rounds extends 30 degrees to the left and right of the gun-target line out to 200 meters from the vehicle. Infantrymen should not be in or near the direct line of fire for the tank main gun or BFV cannon unless they are under adequate overhead cover.
- Tank main guns create noise in excess of 140 decibels. Repeated exposure to this level of noise can cause severe hearing loss, even deafness. In addition, dangerous noise levels may extend more than 600 meters from the tank. Single-layer hearing protection, such as ear plugs, will allow infantrymen to work within 25 meters of the side or rear of the tank without significant hazard.
- Crewmen on tanks and BFVs have very limited ability to see anyone on the ground to the side or rear of the vehicle. As a

result, vehicle crews and dismounted infantrymen share responsibility for avoiding the hazards this may create. Infantrymen must maintain a safe distance from armored vehicles at all times. In addition, when they work close to an armored vehicle, dismounted soldiers must ensure that the vehicle commander knows their location at all times.

NOTE: A related hazard is that M1-series tanks are deceptively quiet and may be difficult for infantrymen to hear as they approach. As noted, vehicle crews and dismounted infantrymen share the responsibility for eliminating potential dangers in this situation.

- M1-series tanks have an extremely hot exhaust plume that exits from the rear of the tank and angles downward. This exhaust is hot enough to burn skin and clothing.
- The TOW missile system has a dangerous area extending 75 meters to the rear of the vehicle in a 90-degree "cone." The area is divided into a 50-meter danger zone and a 25-meter caution zone.

SECTION VI – COMBAT SERVICE SUPPORT OPERATIONS

C-39. CSS planning and execution are critical elements for integration of light and heavy forces. Light brigades are not organized, equipped, or trained to meet the support requirements of a heavy company team. CSS may be further complicated if the heavy team is operating across a large geographical area to meet the demands of a decentralized mission. On the other hand, a heavy organization will normally be able to meet the logistical needs of an attached light unit; this includes the attachment of a light platoon to the company team. The following discussion covers CSS considerations that may affect light/heavy and heavy/light operations.

PLANNING AND INTEGRATION

C-40. Light/heavy operations may require the heavy team to integrate into the light brigade organization early in the deployment phase. In turn, this may require CSS assets to move into the theater of operations very early as well, usually at the same time as the C2 elements. Specific support requirements, including the needed quantities of supplies, will depend on the mission; they must be planned and coordinated as early as possible. In addition, because the light brigade does not possess the required logistical redundancy to sustain the heavy company team, it is imperative that mission requirements calling for division- or corps-level CSS assets be identified early in the planning process. In contrast, when a heavy brigade receives a light battalion, higher echelon CSS units must augment the heavy brigade with additional ground transportation assets.

SUPPLY REQUIREMENTS

C-41. Operations with a light brigade create many unique supply considerations for the heavy company team. The sheer bulk and volume of supplies required by the heavy team merit special attention during the planning and preparation phases. The following paragraphs examine some of these supply-related considerations.

CLASS I

C-42. Class I food requirements are determined based on the heavy team's personnel strength reports. This process may be complicated by unique mission requirements imposed on the team, such as rapid changes in task organization or dispersion of subordinate team elements over a wide area.

CLASS II

C-43. Many Class II items required by tank and BFV crews, such as specialized tools and Nomex clothing, may be difficult to obtain in a light organization. Although such items can be ordered through normal supply channels, the heavy company team may face significant delays in receiving them. To overcome this problem, the heavy team should identify any potential shortages and arrange to obtain the needed supplies before leaving its parent organization. Likewise, with the number of battery operated night vision and target designating systems used by light forces, the heavy organization must anticipate increased battery consumption and requests.

CLASS III

C-44. The fuel and other POL products required by the heavy company team are extremely bulky; they present the greatest CSS challenges in planning and preparing for light/heavy operations. Transportation support must be planned carefully. For example, planners must consider the placement of fuel HEMTTs during all phases of the operation. They must also focus on general-use POL products, such as lubricants, that are not ordinarily used by the light brigade. As noted previously, the heavy team should stock its basic load of these items, as well as make necessary resupply arrangements, before attachment to the light brigade.

CLASS IV

C-45. The heavy company team does not have any unique requirements for barrier or fortification materials. The main consideration is that any Class IV materials that the team commander wants may have to be loaded and carried prior to attachment.

CLASS V

C-46. Along with POL products, ammunition for the heavy company team presents the greatest transportation challenge in light/heavy operations. Planning for Class V resupply should parallel that for Class III; key considerations include anticipated mission requirements and the availability of HEMTTs. Ammunition may be prestocked based on expected consumption rates. Conversely, when receiving a light infantry platoon

attachment, the company team must anticipate increased requests of small arms ammunition, fragmentation grenades and hand held smoke grenades.

CLASS VI

C-47. Light/heavy operations create no unique requirements for personal demand items and sundries.

CLASS VII

C-48. Class VII consists of major end items; this includes entire vehicles, such as a "float" tank or BFV the company team requires as a replacement for one its organic vehicles. The handling of these items requires thorough planning to determine transportation requirements and positioning in the scheme of the operation.

CLASS VIII

C-49. The heavy company team must consider the likelihood of higher casualties when light infantry is attached, especially in an urban environment. Obviously, light infantry soldiers do not have armor protection and the volume of casualties may be significantly higher, therefore increased consumption rates of Class VIII supplies is a consideration for the heavy company team.

CLASS IX

C-50. Repair parts for combat vehicles are essential to the sustainment of the heavy company team. Requirements for items on the team's PLL and ASL must be carefully considered before light/heavy operations begin. The team may find it advantageous to prestock selected items to meet its anticipated needs. Likewise, small arms repair parts (SARP) are high demand items for the light infantry platoon who should report with sufficient prestock.

OPERATIONAL CONSIDERATIONS

C-51. The variety of organizational options for the heavy company team, such as deployment as a single unit or attachment of separate platoons, requires that the team's CSS organization be both flexible and adaptable. Most CSS assets supporting the heavy team will operate from the BSA/TFSA. The company team trains, under control of the 1SG, will generally operate as a single entity in support of detached platoons and other team assets. The exception is when the heavy team is operating as two equal company(-) elements. If the team has sufficient assets, it can split its CSS effort into two separate support elements, each working directly with a company(-) element.

Appendix D

Limited Visibility Operations

The company team may conduct limited visibility operations to accomplish the following purposes:

- Achieve tactical surprise and shock through maneuver during an unexpected time.
- Gain positions of advantage by means of concealment.
- Exploit success and maintain momentum.

Other than darkness the following conditions may restrict visibility as well:

- Dust and sandstorms.
- Smoke.
- Obscuration factors caused by weapons firing and movement of soldiers and equipment.
- Rain, snow, and fog.

If it is to use its superior technology and basic combat skills to sustain continuous operations and destroy the enemy, the company team must train to fight effectively in all types of visibility conditions. The team should first master the execution of tasks under optimum visibility conditions and then continue its training in progressively more difficult situations.

CONTENTS

Equipment....D-1
Command and Control and Leader Systems D-2
Vehicle Systems D-2
Crew-Served System Sights D-2
Individual Equipment D-3
Visible and Nonvisible Light Control....D-3
Navigation....D-4
Vehicle Identification....D-4
Tactical Movement and Offensive Operations D-4
Planning....D-4
Preparation....D-5
Execution....D-5
Defensive Operations....D-5
Planning....D-5
Preparation....D-6
Execution....D-6

SECTION I – EQUIPMENT

D-1. The company team is equipped with a variety of equipment, described in the following paragraphs, that enhances its ability to operate under limited visibility conditions.

COMMAND AND CONTROL AND LEADER SYSTEMS

D-2. The following devices are available to the company team's leaders for use in signaling and target designation:

- **IR Signaling Devices.** These generate an IR light source that is visible through passive sights; they can be used for marking a variety of locations, such as TRPs, passage points, sectors of fire, obstacles, checkpoints, and routes.
- **IR Pointers or IR Laser Designators.** Infantry platoon leaders and squad leaders can use these to designate targets, allowing them to focus fires more effectively and enhancing their command and control capability. These systems project IR light onto the target and are visible in passive sights. Examples of pointers and designators are listed below:
  - AN PEQ-2.
  - AN/PAQ 4 C/D.
  - GCP-1A ground commander's pointer.

VEHICLE SYSTEMS

D-3. Vehicles organic to the company team are equipped with the following devices applicable to limited visibility operations:

- Driver's night vision viewer (AN/VVS-2 passive sight). This system will soon be replaced by the driver's vision enhancer (DVE).
- Gunner's primary sight, commander's extension, and integrated sight unit (ISU) and the improved Bradley acquisition system (IBAS) thermal sights.
- Commander's independent thermal viewer (CITV) and commander's independent viewer (CIV) on the M1A2 and M2A3 respectively.
- FBCB2 (M1A2, M1A1D, M2A2 with appliqué and M2A3).

CREW-SERVED SYSTEM SIGHTS

D-4. Several of the company team's organic systems are equipped with sights that allow them to be used effectively in limited visibility conditions. These crew-served systems include the following:

- M2 HB machine gun AN/TVS-5 (thermal sight heavy).
- M240B machine gun AN/TVS-4 (thermal sight medium).
- M249 squad automatic weapon (SAW) AN/TVS-4.
- AT missile AN/PAS-13 thermal sight.

D-5. Table D-1 lists the comparative characteristics, capabilities, and limitations of passive and thermal sight systems.

Table D-1. Comparison of Passive and Thermal Sights

PASSIVE SIGHTS	THERMAL SIGHTS
Limited by amount of available light.	Not affected by light conditions.
Can be “washed out” by bright flashes of light.	Not affected by flashes of light.
Narrow field of view.	Choice of wide or narrow field of view.
Poor depth perception.	Poor depth perception.
Excellent capability for identifying sources of light, including IR.	Unable to detect sources of light.
Adverse weather conditions limit the range of the sight and may render it useless.	Adverse weather conditions limit the range of the sight. On the other hand, the target acquisition capability of the sight may exceed the capability of the LRF to receive a return and compute an automatic ballistic solution.

INDIVIDUAL EQUIPMENT

D-6. The following equipment used by individual crewmen enhances the company team’s limited visibility capability:

- PVS-7, PVS-7B, PVS-7D and AN/PVS-14 passive vision devices.
- AN/PVS-4 (passive vision device for the M16A2).
- AN/PAQ-4 C/D aiming lights for infantrymen’s individual weapons.

VISIBLE AND NONVISIBLE LIGHT CONTROL

D-7. On the battlefield of the future, it is highly likely that any significant enemy will have access to various types of night vision devices. Obviously, the enemy will use these devices any way he can to gain the advantage. There is a related problem as well. If used improperly by friendly soldiers, aiming lights, laser pointers, and IR illumination not only will be of no tactical advantage, but may also give away the locations of friendly forces to an enemy element with night vision capability.

D-8. Commanders must establish positive controls over the use of such devices, establishing and enforcing unit SOPs at all levels. As an example, the use of mortar-fired illumination rounds, both visible and nonvisible (IR), should be controlled centrally because of the effects that the illumination may have on units adjacent to one calling for the rounds. Smaller IR illumination rounds, such as those fired from a grenade launcher, should be controlled at platoon or squad level. Visible and nonvisible chemical lights can be very helpful on the battlefield if employment is standardized and

carefully controlled. Otherwise, use of chemlites can be counterproductive, even giving away friendly positions.

SECTION II – NAVIGATION

D-9. The commander uses several tools and techniques to help him navigate in limited visibility conditions: the GPS and/or position navigation (POSNAV), terrain association, and the compass and odometer method.

SECTION III – VEHICLE IDENTIFICATION

D-10. The problem of vehicle identification is compounded in limited visibility conditions. Vehicle commanders must be able to distinguish the vehicles of the company team and of other friendly elements from those of the enemy. Most unit SOPs cover vehicle marking and identification procedures. In addition, the commander may elect to use the following techniques to enhance C2 and to help prevent fratricide:

- Attach color-coded lights or chemical lights to the rear of the turret or hull.
- Replace the brake light cover with color-coded plastic (such as green, blue, or yellow).
- Use luminous or thermal tape to “outline” vehicles or to mark battle boards.
- Use radio and FBCB2 systems to provide the commander with frequent updates of friendly information.

SECTION IV – TACTICAL MOVEMENT AND OFFENSIVE OPERATIONS

D-11. The fundamentals for executing tactical movement and offensive operations discussed elsewhere in this manual are applicable during periods of limited visibility. The following paragraphs cover additional considerations for the planning, preparation, and execution of these operations when visibility is restricted.

PLANNING

D-12. The commander and subordinate leaders must pay particular attention to routes, formations, and navigational aids. They must conduct a detailed map reconnaissance to identify locations where the unit could become disoriented. This reconnaissance must also focus on finding rough or restricted terrain that will be more difficult to negotiate in limited visibility. Such terrain may require a change in formation or movement technique or employment of dismounted ground guides. If the company team commander

is able to, he may conduct a route reconnaissance to supplement his map reconnaissance.

PREPARATION

D-13. The commander conducts rehearsals in as many types of adverse conditions as possible to prepare the company team for potential C2 problems. He must stress light discipline. During the PCI, he should view each vehicle using a passive sight to ensure that sources of light have been dimmed or covered so they are not visible. During confirmation briefings and rehearsals, the commander must ensure that all leaders understand the unit's projected actions during each phase of the operation. One technique is to designate waypoints or PLs as trigger points for the company team's actions.

EXECUTION

D-14. The company team commander and subordinate leaders must assume that the enemy possesses the same limited visibility observation capabilities as their own unit. Vehicle commanders use the PVS-7, FBCB2 and CITV (as applicable) to assist their drivers with navigation and to enhance situational understanding. Use of terrain to mask movement and deployment remains critical since limited visibility may create a false sense of protection from observation. During movement, the distance between vehicles may be reduced to allow them to observe each other and to decrease the time necessary to react to enemy contact.

D-15. When the company team encounters enemy elements, an effective technique is to have the vehicle that makes contact fire a steady burst of machine gun fire in the direction of the enemy to orient the rest of the team. The team must adhere strictly to applicable control measures, especially those covering the employment of direct fires. In addition to orienting the company by machine gun fire, the platform in contact if equipped with FBCB2 can orient the rest of the company team by using the far target locator on FBCB2. A rapid digital SPOTREP following initial contact will assist in the reduction of fratricide and assist in rapid massing of friendly direct fires.

SECTION V - DEFENSIVE OPERATIONS

D-16. The fundamentals of the defense are applicable during limited visibility. The following paragraphs outline additional considerations for planning, preparation, and execution of the defense in limited visibility.

PLANNING

D-17. The company team commander and subordinate leaders conduct a thorough reconnaissance, usually during daylight hours, to mark positions and routes. They must keep in mind that obscurants that limit visibility may also degrade the effectiveness of their thermal sights and LRFs. This may force them to designate alternate BPs that are closer to the company

team's EA(s). In marking their positions, they use material that will facilitate occupation either in daylight or under limited visibility conditions. Units equipped with FBCB2 can input waypoints in the POSNAV systems of the M1A2 tank to assist in locating alternate and supplemental BPs.

PREPARATION

D-18. The commander ensures that trigger lines, TRPs, and artillery targets are "thermalized" to allow for positive identification during limited visibility. Examples of how to mark TRPs are shown in Appendix B. Used with a sector sketch during direct fire engagements, thermalized TRPs also help vehicle commanders to more accurately estimate the range to their targets when smoke or other factors inhibit the use of the LRF. Ideally, rehearsals of occupation and displacement are conducted in limited visibility conditions; the same applies to preparation and occupation of fighting positions and to any necessary repositioning. If time permits, when FBCB2 or PLGR equipped units emplace TRPs, the ten digit grid coordinates to each TRP should be entered into FBCB2. By having this information readily available, the defending unit can estimate range by the locations of the friendly vehicles and locations of TRPs in relationship to the enemy vehicles inside the EA.

D-19. OPSEC is strictly enforced during all phases of defensive preparation. OPs are critical in providing security and early warning of enemy activities. The commander emplaces mounted OPs to take advantage of the capabilities of his vehicles' thermal sights in scanning the team's assigned sector and the engagement area. Dismounted OPs provide local security and augment mounted OPs with short-range observation and the ability to act as listening posts (LP).

EXECUTION

D-20. As the company team enters the execution phase, the commander must ensure that all leaders thoroughly understand the occupation and displacement criteria and that they strictly enforce all fire control measures. Vehicle commanders use sketch cards and the CITV/CIV (if applicable) and FBCB2 to estimate target range when visibility factors prevent use of the LRF.

Appendix E

NBC and Smoke Operations

Because many potential adversaries have the capability to employ NBC weapons, the company team must prepare to fight in an NBC environment, as well as to collect, process, and disseminate NBC hazard information. To survive and remain effective on the battlefield, the team must be proficient in the three fundamentals of NBC defense: contamination avoidance, NBC protection, and decontamination. The company team NBC NCO conducts NBC training and assists and advises the commander in planning NBC operations. Additional-duty NBC personnel, designated in the team SOP, serve as crewmen for platoon NBC vehicles, as the decontamination team, and as chemical agent detection and radiological survey/monitoring teams. (See FM 3-11.3 [FM 3-3], FM 3-11.34 [FM 3-4-1], and FM 3-11.5 [FM 3-5] for additional information on NBC operations.)

Smoke is used extensively by enemy and friendly elements in both offensive and defensive operations. The company team's success on the battlefield may depend on how well the commander understands the effects of smoke on enemy and friendly acquisition systems in various weather conditions.

CONTENTS

Contamination Avoidance E-1
General Avoidance Measures E-2
Defense Before a Nuclear Attack E-3
Defense Before a Chemical Attack E-3

NBC Protection E-4
MOPP Levels and SOP Requirements E-4
Alarms and Signals E-4
Defense During a Nuclear Attack E-5
Defense After a Nuclear Attack E-5
Defense During a Chemical Attack E-7
Defense After a Chemical Attack E-7
Biological and Chemical Casualties E-7
Marking Contamination E-8

Unmasking Procedures E-9
All-Clear Signal E-10
Warning and Reporting Systems E-10

Movement in an NBC Environment E-10
Crossing a Chemically/Biologically Contaminated Area E-10
Crossing a Radiologically Contaminated Area E-11
Decontamination E-11
Types of Contamination E-11
Levels of Decontamination Operations E-12
Smoke Operations E-17
Planning Considerations for Smoke Employment E-18
Use of Smoke E-18
Sources of Smoke E-21
Tactical Considerations in Smoke Operations E-22
Countermeasures Against Enemy Smoke ... E-24

SECTION I – CONTAMINATION AVOIDANCE

E-1. Avoidance is the most important fundamental of NBC defense because the best way to survive is to avoid being the object of a chemical or nuclear attack. Avoiding contaminated areas minimizes the risk of

additional casualties; it also prevents the degradation of combat power that results when a unit must operate in MOPP level 3 or 4 for extended periods of time. In addition, the unit is not required to spend the time and resources needed for decontamination. Contamination avoidance measures include using passive avoidance techniques, locating contaminated areas, identifying NBC agents, warning other members of the company team as well as other units, and reporting NBC threats to higher headquarters.

GENERAL AVOIDANCE MEASURES

PASSIVE AVOIDANCE

E-2. Passive avoidance measures can decrease the possibility of NBC attack or reduce the effects of an attack already under way. Effective use of concealment, dispersion, prepared positions, OPSEC, and signal security reduces the company team's chances of being acquired as a target. The team should continually analyze its vulnerability to NBC attack and take appropriate protective measures.

DETECTION, ALARMS, AND REPORTING

E-3. Attacks and contamination must be detected quickly and reported to adjacent units and higher headquarters. The company team must have an effective method of quickly giving the alarm in the event of an NBC attack. Alarms can be passed by radio, audible signals, or hand-and-arm signals. Company team SOPs should specify criteria for increasing or reducing the MOPP level; they should also cover procedures for the marking of vehicles and MOPP suits with detection paper, for employing detection teams, and for submitting the required NBC reports following an NBC attack or when contamination is encountered.

RECONNAISSANCE AND EVALUATION

E-4. Whenever possible, all movement routes and future positions should be reconnoitered for nuclear and chemical contamination. Quartering party personnel should be prepared to conduct monitoring operations; if they detect contaminated areas, they identify, report, and mark them. The quartering party can then evaluate the location and type of hazard (nuclear radiation or chemical agent) to determine the best plan for bypassing, crossing, or operating in the contaminated area. Based on the situation, the company team commander must be able to implement protective measures specified in the SOP to minimize personnel losses and limit the spread of contamination.

BIOLOGICAL DEFENSE

E-5. The key protective measure against a biological attack is maintaining a high order of health, personal hygiene, and sanitation discipline. Biological attacks are difficult to detect. If an attack occurs, the chances of survival are better if personnel are healthy and physically fit and maintain good personal hygiene. Keeping the body clean helps to prevent ingestion of biological agents. Small cuts or scratches should be covered and kept germ-free by means of soap, water, and first-aid measures. Since insects may carry biological agents, soldiers should prevent insect bites by keeping clothes buttoned and skin covered and by using approved insect repellents. The biological integrated detection system (BIDS) is a corps- or division-level asset that can detect and identify biological agents.

E-6. After an attack, the company team must assume that all surfaces have been exposed to germs. Do not eat food or drink water that may be contaminated. Eat or drink only food or water that has been stored in sealed containers; consume it only after washing and cleaning the outside of the container. All water must be boiled for at least 15 minutes.

DEFENSE BEFORE A NUCLEAR ATTACK

E-7. The best defense against a nuclear attack is to dig in. Unit defensive positions, which range from individual foxholes to full-scale improved fighting positions, should be prepared whenever the tactical situation permits. Personnel should keep their individual weapons, equipment, clothing, and other issue items in their vehicles. Inside the vehicle, equipment and any loose items must be secured because the blast wave can turn unsecured objects into lethal missiles. Supplies, explosives, and flammable materials should be dispersed and protected.

E-8. Reverse slopes of hills and mountains give some nuclear protection. The initial radiation and the heat and light from the fireball of a nuclear blast tend to be absorbed by hills and mountains. The use of gullies, ravines, ditches, natural depressions, fallen trees, and caves can also reduce nuclear casualties.

DEFENSE BEFORE A CHEMICAL ATTACK

ATTACK PREPARATIONS

E-9. The company team commander and subordinate leaders must ensure that all personnel have their protective masks available and must make sure each mask fits and functions properly. The team commander will determine the appropriate MOPP level based on the higher headquarters' designated MOPP level and IPB information; he cannot reduce the MOPP level below that directed by higher headquarters. All personnel should wear the proper protective clothing in accordance with the MOPP level designated by the commander. The commander may consider having vehicle drivers begin offensive operations in MOPP 4 when it is likely that the enemy will use chemical or biological weapons; this will allow the unit to continue to move while the rest of the crew goes to MOPP 4. All equipment and supplies should be protected from liquid chemical contamination by keeping them organized and covered.

CHEMICAL ALARMS

E-10. The M8A1 or M-22 automatic chemical agent alarm system is the primary means of detecting an upwind chemical attack. The system provides two essential elements of survival: detection of a toxic agent cloud and early warning to troops in the monitored position.

E-11. The company team commander, in coordination with the NBC NCO and subordinate leaders, decides where to place the chemical alarms. In stationary operations, first determine the wind direction, then place available detector units upwind of the nearest unit position to be protected; detector units should be no more than 150 meters upwind of that unit position. Space available detector units approximately 300 meters apart, and make sure each detector unit is connected to an alarm unit by telephone cable (ND-1). Position the alarm units near radiotelephone assets; this makes it easy to alert the unit to an attack. Operation of the alarm can be affected by blowing sand or dust, rain, sleet, snow, tropical conditions, and temperatures below 40 degrees Fahrenheit (4.5 degrees Celsius).

SECTION II – NUCLEAR, BIOLOGICAL, CHEMICAL PROTECTION

E-12. Soldiers on the integrated battlefield face a combination of nuclear, biological, chemical, and conventional attacks. If the company team cannot avoid an NBC hazard, it must be prepared to protect personnel and equipment from the effects of exposure. The type and degree of protection required is based on the unit's mission and the hazard. Note that the line between contamination avoidance and protection is not distinct. Many actions contribute to both areas of NBC defense.

MOPP LEVELS AND SOP REQUIREMENTS

E-13. The key to effective protection in an NBC environment is the company team's proficiency in automatically and correctly implementing NBC defense SOPs. Individual and unit protection against chemical attack or contamination hinges on effective use of the MOPP and on individual proficiency in basic NBC skills. The five levels of MOPP, shown with corresponding equipment requirements in Table E-1, should also be outlined in the SOP.

Table E-1. MOPP Levels and Equipment Requirements

MOPP Level Equipment	MOPP READY	MOPP 0 (ZERO)	MOPP 1	MOPP 2	MOPP 3	MOPP 4	Command (mask only)
Mask	Carried	Carried	Carried	Carried	Worn [1]	Worn	Worn
Overgarment	Ready [3]	Available [4]	Worn [1]	Worn [1]	Worn [1]	Worn	
Vinyl overboots	Ready [3]	Available [4]	Available [4]	Worn	Worn	Worn	
Gloves	Ready [3]	Available [4]	Available [4]	Available [4]	Available [4]	Worn	
Helmet protective cover	Ready [3]	Available [4]	Available [4]	Worn	Worn	Worn	
Chemical protective undergarment 2	Ready [3]	Available [4]	Worn [2]	Worn [2]	Worn [2]	Worn [2]	

1 In hot weather, coat or hood can be left open for ventilation.
2 The chemical protective undergarment is worn under the BDU (this primarily applies to armor vehicle crewmen and special operations forces).
3 These items must be available to the soldier within two hours, with a second set available within six hours.
4 These items must be positioned within arm's reach of the soldier.

ALARMS AND SIGNALS

E-14. When an NBC attack is recognized, everyone in the company team must receive the warning and assume the appropriate MOPP level (see Table E-1). 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. Units that are not immediately

affected need the information as well, either to prepare for the hazard or to change plans.

E-15. If an NBC hazard is located, the contaminated area should be marked. The NBC warning and reporting system (NBCWRS) and standardized contamination markers contribute to orderly warning procedures. Warning methods include automatic alarms (M8 series or M-22), vocal alarms (a shout of "GAS" is the most frequently used alarm), nonvocal alarms (horn blasts or banging of metal-to-metal objects), and visual alarms, most commonly the appropriate hand-and-arm signals.

DEFENSE DURING A NUCLEAR ATTACK

DISMOUNTED DEFENSE

E-16. Immediately drop flat on the ground (face down) or to the bottom of a foxhole or other low area, with head toward the blast. Cover as much exposed skin as possible. Close your eyes. Remain down until the blast wave has passed and debris has stopped falling. Stay calm, check for injury, check weapons and equipment for damage, and prepare to continue the mission.

MOUNTED DEFENSE

E-17. As time permits, take the following actions:

- Position the vehicle with the rear facing the blast and the gun pointed away from the blast.
- Lock the brakes.
- Secure loose equipment inside the vehicle to prevent injuries and equipment damage.
- Secure all exterior components that could be damaged by the blast (such as water cans, duffel bags, and antennas) inside the vehicle.
- Turn off all radios as well as turret and master power.
- Close and lock all hatches, including ballistic shields.
- Wear your helmet and protect your eyes.
- Stow the CITV (M1A2) or TOW (BFV).

DEFENSE AFTER A NUCLEAR ATTACK

GENERAL ACTIONS

E-18. Once the attack has ended, the company team and subordinate elements should be prepared to take these actions:

- Prepare and submit NBC-1 nuclear reports.
- Organize survivors; assist and treat casualties.
- Secure and organize equipment.
- Repair and reinforce the BP.
- Improve protection against possible fallout.

- Begin continuous monitoring.
- Prepare to move, on order, to a less hazardous area if the radiation dose rate reaches a hazardous level after fallout has ended.

OPERATING IN THE CONTAMINATED AREA

E-19. When operating in or crossing radiologically contaminated areas, vehicles should be closed tightly. Crewmen should wear their protective masks; cargoes should be covered by tarps or tenting. Mission permitting, vehicles should keep their speed down to prevent dust and should maintain adequate following distance to stay out of the dust raised by preceding vehicles.

E-20. After the unit exits a contaminated area, personnel, equipment, and cargo should be checked for contamination and, if necessary, decontaminated. Dose rates should be monitored closely to ensure compliance with the OEG. The RES should be updated daily.

FALLOUT WARNING

E-21. The first person to detect the arrival of fallout is usually a member of the radiological survey and monitoring team. As soon as the recorded dose rate reaches 1 cGy/hr (or rad per hour) or higher, he issues a fallout warning. All personnel hearing the warning relay it to others. If the mission allows, soldiers should get into a shelter with overhead cover and stay there until given an “ALL CLEAR” signal or until otherwise directed to move. If the unit cannot take cover, decontamination becomes more important and, in many cases, more difficult.

RADIOLOGICAL MONITORING

E-22. The company team commander designates a point in the team area where readings will be taken and notes the grid coordinates of the point. He directs the monitor operator to take readings at least once each hour from this point; he makes sure the operator zeroes or resets the radiacmeter before taking each reading and uses the device properly. The operator must immediately report all readings showing the presence of radiation, as well as the time of these readings. The NBC NCO, in coordination with the commander, uses this information and the location of the readings to prepare an NBC-4 report. The operator monitors continuously if any of the following conditions occur:

- A reading of 1 cGy/hr or more is obtained.
- A fallout warning is received.
- A nuclear burst is seen, heard, or reported.
- An order to monitor is received.
- The unit begins to move.

E-23. Continuous monitoring continues until readings show a dose rate of less than 1 cGy/hr or until operators are directed to stop.

TACTICAL DOSIMETRY

E-24. The company team will normally be issued eight dosimeters (either IM-93 or DT-236 radiacmeters). Before the operation begins, the commander ensures that all dosimeters are zeroed (this applies to the IM-93 only). The AN/VDR-75 reads the DT-236; the PP-1578 zeroes the

IM-93. The following considerations and procedures apply in conducting dosimetry:

- If a charger for the IM-93 is not available, note the original reading on the dosimeter and adjust subsequent readings accordingly.
- Make sure survey readings are reported accurately.
- Collect readings at least once daily.
- Average the readings, round to the nearest 10, and report this average to higher headquarters.

DEFENSE DURING A CHEMICAL ATTACK

E-25. The first soldier or element to detect a chemical attack or hazard gives the appropriate alarm. All unmasked soldiers put on their protective masks and other MOPP gear. All personnel should move inside their vehicles; in most cases, they should place their hatches in the closed position to protect against gross contamination. Crews of vehicles that are equipped with NBC overpressurization turn the system on. The commander directs use of the M256 chemical agent detector kits to determine the type of agent and forwards an NBC-1 chemical report. The company team continues the mission when the appropriate defensive measures are completed.

NOTE: Tactical and safety factors (such as observation of the terrain, enemy disposition, and the amount of gross contamination that may be spread inside the vehicle) may outweigh the need to keep the vehicle's hatches closed. In addition, unit SOP may require vehicle commanders to keep hatches in the open or open-protected position.

DEFENSE AFTER A CHEMICAL ATTACK

E-26. As specified by unit SOPs, the commander forwards follow-up NBC-1 chemical reports and directs these actions:

- Treat casualties.
- Perform immediate decontamination as required.
- Mark the contaminated area.

BIOLOGICAL AND CHEMICAL CASUALTIES

E-27. Potential adversaries may have access to a wide variety of biological and chemical toxins on the modern battlefield. These agents can be dispensed alone or with other carriers or agents. Casualties resulting from live biological agents or chemical toxins require medical treatment as quickly as possible.

E-28. The first step in the treatment process is usually appropriate self-aid and buddy-aid measures. These vary depending on the agent. Soldiers should first mask to prevent inhaling or ingesting additional agents; then they should remove agents from exposed skin, either by washing with soap and water or by using the M291 kit. Soldiers use buddy-aid procedures to observe each other for early symptoms of toxic exposure and to request medical assistance.

E-29. The company team commander should select separate casualty collection points for contaminated and noncontaminated casualties to prevent cross-contamination. All contaminated casualties should be decontaminated as thoroughly as the situation allows before being evacuated. The company team will include in its casualty evacuation request the number of contaminated patients; this will allow the evacuation team to send the proper number of vehicles for pickup.

E-30. Chemical agents fall into four major categories: nerve, blister, blood, and choking. Their primary routes of attack on the body are through the respiratory system and the skin. These agents are especially dangerous because they can kill or incapacitate quickly. The first, and most important, step in dealing with them effectively is to recognize symptoms so proper treatment can be administered. Table E-2 lists protection and detection measures, symptoms, and treatment and decontamination procedures for chemical agents.

Table E-2. Chemical Agents

AGENT TYPE	NERVE	BLISTER	BLOOD	CHOKING
Protection	Protective mask and suit	Protective mask and suit	Protective mask	Protective mask
Detection	M8A1, M256A1, CAM, M8/M9 paper	M256A1, M8/M9 paper, CAM	M256A1	Odor only (resembles new-mown hay or green corn)
Symptoms	Difficult breathing, drooling, nausea, vomiting, convulsions, blurred vision	Burning eyes, stinging skin, irritated nose (no symptoms with mustard or nitrogen mustard)	Convulsions and coma	Coughing, choking, nausea, headache, tightness in chest
Effects	Incapacitates	Blisters skin and damages respiratory tract	Incapacitates	Floods and damages lungs
First aid	Mark 1 NAAK	Same as for second- and third-degree burns	NONE	Avoid movement and keep warm
Decontamination	Use M291 kit and flush eyes with water	Use M291 kit and flush eyes with water	NONE	NONE

MARKING CONTAMINATION

E-31. Contamination must be marked so unsuspecting personnel will not be exposed to it. When company team monitoring assets detect or suspect an NBC hazard, they mark all likely entry points into the area and report contamination to higher headquarters and to adjacent and/or affected units. The only exception to this policy is if marking the area would help the enemy. If this exception is made by the commander, the hazard must still be reported to protect friendly units. (See FM 3-11.3 [FM 3-3] for information on marking of contaminated areas.)

E-32. Units discovering a marked contaminated area do not have to conduct elaborate, time-consuming surveys. They simply check the extent of contamination and use the information to adjust their plans, if necessary. If the size of the hazard has changed, they relocate the signs. If the hazard is gone, they remove the signs. Changes are reported to higher headquarters.

UNMASKING PROCEDURES

E-33. Soldiers should unmask as soon as possible except when a live biological or toxin attack is expected. Use the procedures outlined in the following paragraphs to determine if unmasking is safe.

UNMASKING WITH M256/M256A1 DETECTOR KIT

E-34. 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 (including 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, they move to a shady place; bright, direct sunlight can cause pupils in the eyes to constrict, giving a false symptom.
- Selected soldiers unmask for 5 minutes, then clear and reseal masks.
- Observe the soldiers for 10 minutes. If no symptoms appear, request permission from higher headquarters to signal “ALL CLEAR.”
- Watch all soldiers for possible delayed symptoms. Always have first-aid treatment immediately available in case it is needed.

UNMASKING WITHOUT M256/M256A1 DETECTOR KIT

E-35. 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; use M8 paper to check the area for possible liquid contamination. Conduct unmasking using these procedures:

- The senior person selects one or two soldiers. They take a deep breath and break their mask seals, keeping their eyes wide open.
- After 15 seconds, the soldiers clear and reseal their masks. Observe them for 10 minutes.
- If no symptoms appear, the same soldiers break seals, take two or three breaths, and clear and reseal masks. Observe them for 10 minutes.

- If no symptoms appear, the same soldiers unmask for 5 minutes, then remask.
- If no symptoms appear in 10 minutes, request permission from higher headquarters to signal "ALL CLEAR." Continue to observe all soldiers in case delayed symptoms develop.

ALL-CLEAR SIGNAL

E-36. The all-clear signal is passed by word of mouth through the chain of command. It is initiated by higher headquarters after testing for contamination proves negative. 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.

WARNING AND REPORTING SYSTEMS

E-37. The NBCWRS is a rapid means of sending reports of an NBC attack. These reports inform other affected units of clean areas and possible contamination. They are also used to provide this information up and down the chain of command and to adjacent units. Each report has a specific purpose and uses standard codes to shorten and simplify the reporting process.

SECTION III – MOVEMENT IN A NUCLEAR, BIOLOGICAL, CHEMICAL ENVIRONMENT

E-38. As with other combat elements, one of the basic tactical requirements for the company team is to be able to move through and operate in a contaminated area. To do so safely, the team should follow the procedures outlined in this section.

CROSSING A CHEMICALLY/BIOLOGICALLY CONTAMINATED AREA

E-39. Once a contaminated area has been identified, all company team elements must make preparations for crossing. While part of each element (such as a section or squad) provides security, other soldiers and vehicles in the element, positioned in a covered and concealed location, take the necessary steps. For example, vehicle crews remove all externally stored equipment, ensure mounted M8A1 or M-22 alarms are functioning, affix M9 detector paper to vehicles, assume MOPP 4, and/or prepare the vehicle over pressurization system (as available and if METT-TC factors permit). Dismounted elements assume MOPP 4 and assist the crews of the vehicles on which they ride. Once the necessary preparations are completed, vehicles move into overwatch positions; the rest of the company team's vehicles then move to covered and concealed positions and follow the same procedures.

E-40. When all elements have been prepared, the company team uses standard tactical movement techniques (such as bounding overwatch) to cross the contaminated area. During this movement, vehicle crews continuously monitor the M8A1 or M-22 and the M9 paper. Drivers and

vehicle commanders must take precautions to avoid low ground, overhanging branches, and brushy areas as much as possible. While the unit is in the contaminated area, all personnel observe each other for signs of chemical poisoning.

E-41. Once the company team has successfully crossed the contaminated area, it halts temporarily. During the halt, detection teams monitor for the presence of chemical agents. As needed, vehicle crews and individual soldiers execute immediate decontamination. With higher headquarters' approval, they initiate unmasking procedures or request support for operational or thorough decontamination. Once these procedures are complete, the team continues its mission.

CROSSING A RADIOLOGICALLY CONTAMINATED AREA

E-42. The procedures involved in crossing a radiologically contaminated area are similar to those for a chemically or biologically contaminated area, with the following additional considerations:

- **Vehicle preparation.** Crews may store external equipment in the vehicle or cover it with a tarp. This prevents contaminated dust particles from accumulating on the equipment. Place wet sandbags or other materials on the vehicle floor to increase the amount of radiation shielding. When available, turn on the turret overpressure system to protect the crew compartment from contaminated dust.
- **Movement.** Vehicles should limit their speed to minimize dust. In addition, they must maintain the correct dust interval.
- **Monitoring.** Ensure that dosimeters (IM-93 and DT-236) are zeroed and/or operational (as applicable). Conduct continuous monitoring, ensuring that the unit does not exceed the commander's OEG.
- **Decontamination.** During decontamination, each soldier should cover his nose and mouth with a handkerchief or cloth to avoid breathing contaminated dust particles.

SECTION IV – DECONTAMINATION

TYPES OF CONTAMINATION

NONPERSISTENT AGENTS

E-43. Nonpersistent contamination generally does not require decontamination; however, the duration and effectiveness of the chemical or biological agent employed will depend on a series of factors, including the following:

- Type of contamination.
- Temperature.
- Wind speed.
- Amount of sunlight.
- Humidity and precipitation.

- Density and droplet size of the contaminant.
- Composition of the contaminated surface and/or type of soil/terrain.

PERSISTENT AGENTS

E-44. During continuous operations in areas of persistent chemical or biological contamination, decontamination is essential in preventing casualties and severe combat degradation. The company team will gain maximum benefit from the available time and decontamination resources by observing these considerations:

- The company team should begin decontamination as soon as possible and as far forward as possible.
- Decontamination should be conducted only to the extent that is necessary to ensure the team's safety and operational readiness.
- Decontamination priorities should be strictly observed to ensure unit safety and mission accomplishment.

LEVELS OF DECONTAMINATION OPERATIONS

E-45. The principles listed for decontamination involving persistent agents are consistent with doctrine that places the burden of decontamination at the task force level. Nonetheless, the company team must develop a thorough SOP, covering decontamination methods and priorities, that will allow it to use all available assets efficiently and as required.

E-46. The remainder of this section provides a detailed discussion of the levels of decontamination activities in which the company team may be involved. (See FM 3-11.5 [FM 3-5] for a more detailed explanation of NBC decontamination procedures.)

IMMEDIATE DECONTAMINATION

E-47. Immediate decontamination is a basic soldier survival skill carried out by soldiers as soon as possible after they discover they are contaminated. Its basic purposes are to minimize casualties, save lives, and limit the further spread of contamination. Any contact between chemical or toxic agents and bare skin should be treated as an emergency. Some agents can kill if they remain on the skin for longer than a minute. The best technique for removing or neutralizing these agents is to use the M291 skin decontamination kit. Leaders must ensure that their soldiers are trained to execute this technique automatically, without waiting for orders.

E-48. Personal wipedown should begin within 15 minutes of contamination. The wipedown removes or neutralizes contamination on the hood, mask, gloves, and personal weapon. For chemical and biological contamination, soldiers use mitts from the M295 individual equipment decontamination kit (IEDK). For radiological contamination, they wipe off the contamination with a cloth or simply brush or shake it away.

E-49. Operator's spraydown of equipment should begin immediately after completion of personal wipedown. The spraydown removes or neutralizes contamination on the surfaces operators must touch frequently to perform their mission. For chemical and biological contamination, operators can use

on-board decontamination apparatuses, like the M11/M13, or the M295 IEDK to decontaminate surfaces to which DS2 cannot be applied. (**NOTE:** DS2 must be washed off surfaces no more than 30 minutes after application. If necessary, use 5-gallon water cans or other water sources to assist in removing DS2.) For radiological contamination, they brush or scrape away the contamination with whatever is at hand or flush it with water and wipe it away.

OPERATIONAL DECONTAMINATION

E-50. Operational decontamination allows a force to continue fighting and sustain momentum after being contaminated. It limits the hazard of transferring contamination by removing most of the gross contamination on equipment and nearly all the contamination on individual soldiers. This speeds the weathering process and allows clean areas (people, equipment, and terrain) to stay clean. Following operational decontamination, soldiers who have removed sources of vapor contamination from their clothing and equipment can use hazard-free areas to unmask temporarily and eat, drink, and rest.

E-51. The two types of operational decontamination, unsupported and supported, are covered in the following discussion. (See FM 3-11.5 [FM 3-5] for a complete discussion of operational decontamination.) Table E-3 provides an operational decon checklist.

Unsupported (Assistance From the Task Force Only)

E-52. The company team uses its own resources, with personnel assistance from the task force, to conduct this type of operational decontamination. The procedure involves two decontamination techniques—vehicle washdown and MOPP gear exchange.

E-53. Vehicle washdown is conducted as far forward as possible with the assistance of the power-driven decontamination equipment (PDDE) crew provided by the task force; the crew moves using a five-ton truck (normally from the support platoon, located near the task force TOC). The PDDE crew provides specialized lightweight decontamination equipment for the washdown. (**NOTE:** Before performing vehicle washdown, company team elements should conduct operator's spraydown to increase the effectiveness of decontamination.)

E-54. Vehicles should be washed with hot, soapy water for two to three minutes. Because speed is important and detection is difficult, crews should not check for contamination after the washdown. The equipment used to conduct the washdown should be able to provide 60 to 120 psi, the amount of pressure needed to remove gross contamination from vehicles. Unheated soapy water or plain water may be used if necessary but will be less effective. Crews can also apply the decontaminant with mops and stiff brooms, using 30-gallon trash cans as containers for the decontamination solution and water supply if no other equipment is available.

Table E-3. Operational Decontamination Checklist

STEP	ACTIONS TAKEN
Coordination	Company team commander/XO/1SG conducts coordination with the task force chemical section on where to meet. Decontamination should be done between one and six hours after contamination.
Site selection	The company team NBC NCO chooses the decon site in coordination with the company team commander and the task force NBC NCO. Factors in site selection include the following: • The site should be off the main route but with easy access to the route. • The site should be large enough to accommodate the unit being decontaminated, with at least 100 square meters per squad-size element. • The site should afford adequate overhead concealment and facilitate effective security. • There must be an adequate water source; plan for 100 gallons per vehicle. • The site must afford good drainage.
Rendezvous	Ensure that the task force PDDE crew knows the location, time, and number/types of vehicles to be decontaminated. The unit supply sergeant delivers decontaminants and replacement MOPP gear.
Site setup	The NBC NCO ensures that PDDE is positioned properly and is ready to dispense hot, soapy water. He ensures that the company team conducts MOPP gear exchange at the same time as vehicle washdown.
Site control and security	The NBC NCO ensures that vehicle drivers know when to move into position at the washdown location. The company team commander establishes site security.
Processing	The commander, XO, and/or 1SG ensure that the decon NCOIC processes vehicles at a rate of three minutes per vehicle. They ensure that soldiers complete MOPP gear exchange as needed.
Cleanup	The decon NCOIC ensures that the MOPP gear exchange area is cleaned up.
Marking and reporting	The decon NCOIC directs his team to properly mark the decontamination site and forwards an NBC-5 report to higher headquarters.

E-55. The MOPP gear exchange, conducted at the same time as the washdown, is best performed using the buddy system. The task force PDDE crew or the company supply team normally brings all the equipment required for the exchange. Vehicle drivers exchange their MOPP gear once vehicles have been washed down. (See FM 3-11.5 [FM 3-5] for a listing of equipment requirements for MOPP gear exchange.)

Supported by the Decontamination Platoon

E-56. The company team conducts supported operational decontamination with assistance from a chemical decontamination platoon supervised by the

task force NBC NCO. The platoon includes three decontamination squads, equipped with an M12A1 power-driven decontamination apparatus or M17 lightweight decontamination systems, and a support squad with the capability of hauling 2,400 gallons of water.

E-57. The platoon can establish and operate two separate operational decontamination sites for vehicle washdown and MOPP gear exchange; as an alternative, it can operate a single, dual-lane site. (**NOTE:** Uncontaminated vehicles and personnel should not undergo either technique.)

THOROUGH DECONTAMINATION

E-58. Thorough decontamination operations restore the combat power of maneuver units by removing nearly all contamination from soldiers, vehicles, and individual equipment. Executed promptly and correctly, these detailed procedures reduce the danger of contamination exposure to negligible risk levels. Just as important, they allow soldiers to operate equipment safely for extended periods at reduced MOPP levels. (See FM 3-11.5 [FM 3-5] for a detailed discussion of thorough decontamination.)

E-59. Thorough decontamination is conducted to support operations throughout the battlefield or as part of a major reconstitution effort in brigade, division, or corps support areas. Below brigade level, units generally lack the quantities of decontamination resources (such as water, decontaminants, and time) required for coordination and execution of such an extensive process. In a very few cases, a contaminated unit may be able to conduct thorough decontamination with organic assets; an example is an FSB, which normally has four to six M17 decontamination systems. Most units, however, must depend on support from a chemical platoon.

E-60. When detailed equipment decontamination (DED) operations are required, the chemical unit usually selects a site, sets it up, and performs detailed procedures with assistance from the contaminated unit. See Table E-4 for a list of personnel and equipment requirements for a DED site equipped with M12A1 apparatuses. Contaminated units conduct detailed troop decontamination (DTD) under the supervision of unit NBC personnel. Table E-5 on page E-17 lists the personnel and equipment required for a DTD site.

E-61. After completing thorough decontamination, the unit continues the mission or moves into an adjacent assembly area for reconstitution. Support elements from the brigade, division, or corps support area replenish combat stocks, refit equipment, and replace personnel and equipment. The newly reconstituted unit leaves the assembly area fully operational and fit to return to battle. A small risk from residual contamination remains, so periodic contamination checks must be made following this operation.

NOTE: Thorough decontamination does the most complete job of getting rid of contamination and related hazards, but as noted, it requires large quantities of valuable resources that may not be immediately available. In addition, under a variety of tactical or operational conditions, it will be impossible to execute such a major effort. The next best solution is to decontaminate only to the extent necessary to sustain the force and allow it to continue the mission. This entails using a combination of immediate and operational decontamination procedures.

Table E-4. Personnel and Equipment Requirements for Detailed Equipment Decontamination Site

STATION	DECON PLATOON	SUPPORTED UNIT	EQUIPMENT
Station 1 - Washdown	Squad leader 2 PDDE operators 4 sprayers	4 scrubbers	• 2 M12A1 apparatuses • 2 3,000-gallon tanks • 2 65-gpm pumps • 6 long-handled brushes • 8 TAP aprons • Liquid detergent
Station 2 - DS2 application	Squad leader 3 appliers	9 appliers	• 18 long-handled brushes • 9 mops with extra • mop heads • 3 30-gallon containers • 9 M13 DAPs • Sufficient DS2
Station 3 - Wait/ interior decontamination	1 NCO	2 interior decon assistants	• 2 AN/VDR-2s or • AN/PDR-27s • 3 TAP aprons • 6 30-gallon containers • 10 books M8 paper • 30 sponges • 8 M256A1 kits • 50 trash bags • Clipboard and pen • Stopwatch
Station 4 - Rinse	Squad leader PDDE operator 2 pump operators	2 sprayers	• 1 M12A1 apparatus • 1 3,000-gallon tank • 3 65-gpm pumps • 2 TPUs • 2 TAP aprons
Station 5 – Check	2 CAM operators (NCOs)		• 2 CAMs • 10 M256A1 kits • 20 books M8 paper • 2 AN/VDR-2s or • AN/PDR-27s • 2 M8A1 alarms.
Command and control	Platoon leader PSG		• 1 HMMWV/CUCV • with radio • 3 NBC marking kits
TOTAL PERSONNEL	**20**	**17**	

Table E-5. Personnel and Equipment Requirements for Detailed Troop Decontamination Site

STATION	PERSONNEL	EQUIPMENT
Station 1 - Individual gear decontamination	2 attendants 1 monitor (CAM operator)	• 3 30-gallon containers • 2 long-handle brushes • 2 ponchos or plastic sheets • 1 CAM • 8 books M8 paper • 4 M256A1 kits • 100 trash bags
Station 2 - Overboot and hood decontamination	1 attendant	• 2 cutting tools • 60 M258A1 or M295 kits • (or 1 per person) • 2 ponchos or plastic tarps • 100 trash bags
Station 3 - Overgarment removal	1 attendant	• 10 M258A1 or M295 kits • 2 30-gallon containers • 100 trash bags
Station 4 - Overboot and glove removal	1 attendant	• 2 30-gallon containers • 100 trash bags • Engineer tape • Cutting tool
Station 5 - Monitoring	1 attendant (CAM operator) 1 aidman or combat lifesaver	• 1 CAM • 5 books M8 detector paper • 24 M258A1 or M295 kits
Station 6 - Mask removal	2 attendants	• 1 M8A1 chemical alarm
Station 7 - Mask decontamination	2 mask decontamination attendants 1 monitor	• 4 3-gallon containers • 1 CAM • 2 sponges • 1 case paper towels • 1 immersion heater with container • Mask sanitizing solution
Station 8 - Reissue point	Unit supply sergeant Unit NBC NCO	• Mask PLL

SECTION V – SMOKE OPERATIONS

E-62. One of the key features of the modern battlefield is the extensive use of smoke. Effective smoke is a combat multiplier. It can be used for identification, signaling, obscuration, deception, or screening. At the same time, employment of smoke must be carefully planned and coordinated to prevent interference with friendly units.

E-63. As the company team prepares for an operation, the commander should plan to take advantage of smoke from all available sources. Mission accomplishment, however, should never depend on smoke for success; the commander must develop alternative plans in case smoke delivery systems are not available.

PLANNING CONSIDERATIONS FOR SMOKE EMPLOYMENT

E-64. Planning for the use of smoke on the battlefield, either by friendly or enemy forces, is an essential part of the overall tactical plan. As noted, smoke is a combat multiplier, but its employment must be carefully planned so it does not hinder the maneuver of other friendly units. Planning considerations include the following:

- Commanders must develop alternate plans in case artillery, mortars, smoke generators, or smoke pots are not available on the battlefield.
- Smoke screens for breach forces should be placed either directly on the enemy or between the enemy and the obstacle. Wind direction will dictate the source and type of smoke (such as artillery rounds, generated smoke, or smoke pots) used for the screen. Use artillery when the wind direction is from the enemy to the unit; use generated smoke when the wind is blowing toward the enemy. Careful consideration is necessary in determining which element (support force, breach force, or assault force) will use available smoke pots.
- Lifting or shifting of the smoke screen may be necessary because of the dangers posed by WP rounds. See the discussion of tactical considerations in smoke employment later in this section.
- The effectiveness of smoke is highly dependent on weather conditions. (See the discussion of tactical considerations.)
- The company team commander will sometimes control maneuver of smoke units that are conducting task force-directed smoke missions.
- The enemy's thermal imaging capability is a critical factor in the use of IR smoke, which can be approved by higher headquarters only.

USES OF SMOKE

E-65. The following paragraphs examine general uses of smoke on the battlefield.

MARKING

E-66. Smoke is used to mark targets, supply and evacuation points, and friendly positions during CAS operations. As a means of prearranged battlefield communications, it can be employed to initiate such operations as displacement.

OBSCURING

E-67. Obscuring smoke is delivered directly on or immediately in front of the enemy's positions, normally by projected means (such as artillery and

mortars). The primary use of obscuring smoke is to blind the enemy or degrade his vision both within and beyond his positions. It can also defeat enemy target acquisition and guidance systems at their source.

E-68. Smoke can be fired on enemy positions to degrade the vision of gunners and known or suspected OPs, preventing them from seeing or tracking targets and thereby reducing their effectiveness. Employed against an attacking force, nonthermal smoke can cause confusion and disorientation by degrading the enemy's C2 capabilities; at the same time, friendly units retain the ability to engage the enemy using thermal sights. IR smoke, employed against an enemy with thermal imaging capability, can cause similar confusion and disorientation while defeating threat sensors/seekers. (**NOTE:** At the same time, however, friendly commanders considering use of IR smoke must weigh the cost to their own forces in terms of lost thermal sight capability.) Smoke is also useful at night to degrade enemy night vision devices.

E-69. Another important use of obscuring smoke is to cause enemy vehicles to become silhouetted as they emerge from the smoke. If smoke employment is planned and executed correctly, this will occur as the enemy reaches the trigger line (see Figure E-6).

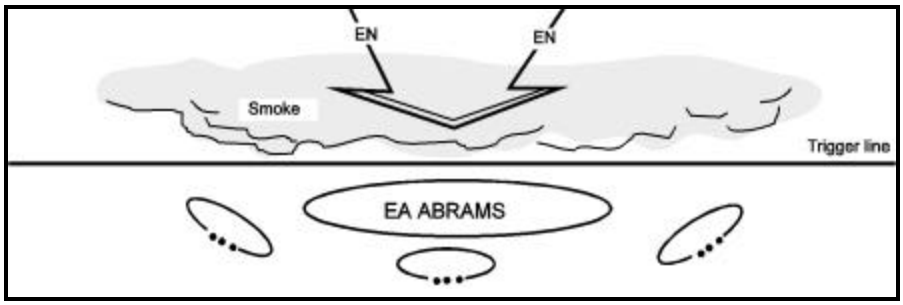


Figure E-6. Using Smoke to Confuse the Enemy and Silhouette His Vehicles

PROTECTING

E-70. Friendly forces use protecting smoke on the battlefield to defeat enemy guidance systems. For example, when enemy gunners have already fired ATGMs or have used laser designators, the commander can immediately employ protecting smoke to screen vehicle movement and defeat enemy guidance links.

E-71. Another important use of protecting smoke is to attenuate the effects of some types of enemy weapons, including directed-energy weapons and nuclear weapons. It does this by absorbing, reflecting, or refracting the energy generated by the weapon. In an active nuclear environment or when employment of nuclear weapons is likely, commanders can plan the use of protecting smoke to attenuate the thermal energy of nuclear detonation. When other resources are not available to defeat the enemy's smart weapons, IR smoke can increase survivability of friendly forces. (**NOTE:** IR smoke reduces the friendly force's ability to maneuver freely on the battlefield; commanders must take this into consideration during planning.)

DECEPTION

E-72. Deception smoke is used as part of the overall deception plan to mislead the enemy regarding friendly intentions. For example, it can be employed on several avenues of approach at once to deceive the enemy as to the direction of the main attack. In the defense, smoke may be fired at a remote location for the sole purpose of attracting attention and confusing the enemy. (**NOTE:** Deception smoke must complement other aspects of the deception plan; it should not be used alone to sell the "story.")

SCREENING

E-73. Smoke is used in the friendly area of operations or in areas between friendly and enemy forces to degrade enemy ground and aerial observation and to defeat or degrade enemy acquisition systems. Screening smoke helps to conceal the company team as it displaces from a BP or as it conducts tactical movement approaching enemy positions. Smoke can also be employed to conceal the team as it conducts a bypass, breach, or assault mission. Figure E-7 through Figure E-9 illustrates uses of screening smoke.

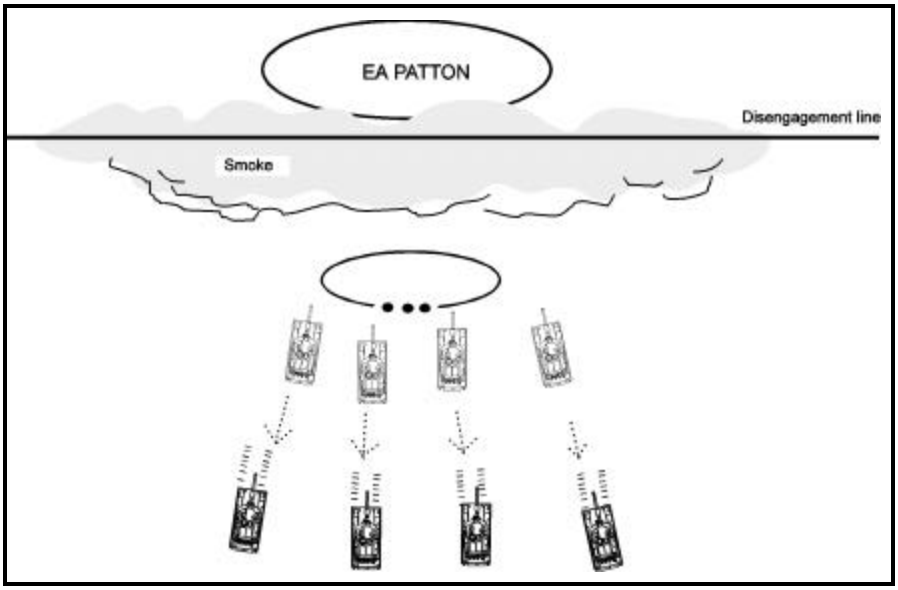


Figure E-7. Using Screening Smoke to Conceal Displacement

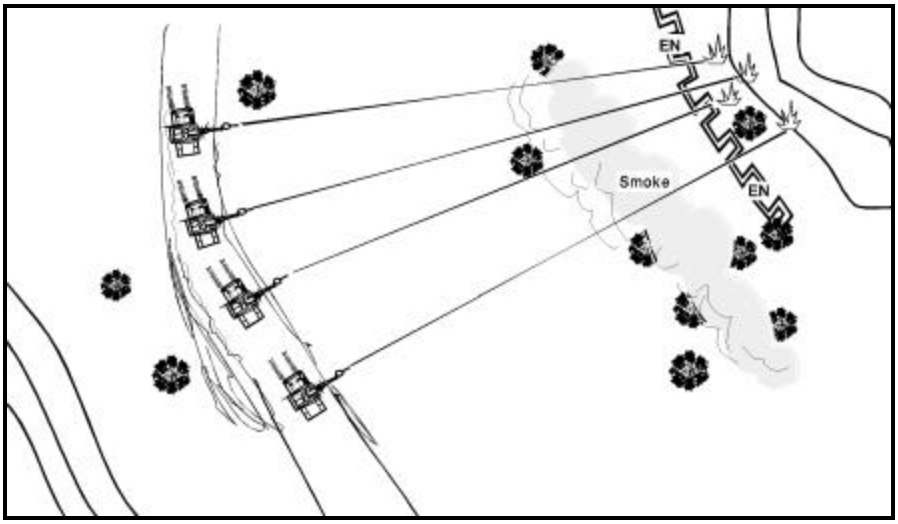


Figure E-8. Using Screening Smoke to Conceal a Bypass

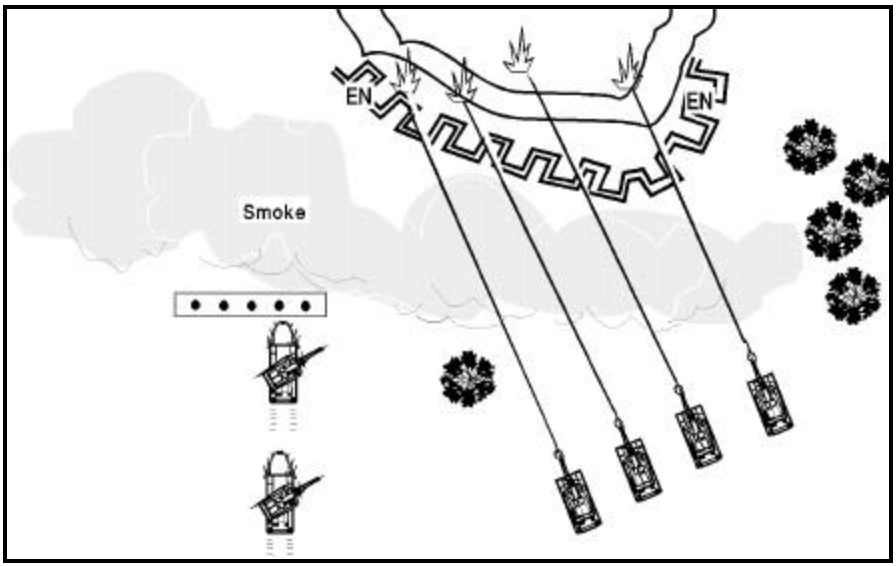


Figure E-9. Using Screening Smoke to Conceal a Breaching Operation

SOURCES OF SMOKE

E-74. There are a number of sources of smoke on the battlefield, including the residual effects of burning vehicles, equipment, storage facilities, and other structures. Depending on availability, the company team commander can employ the following smoke delivery systems during tactical operations.

MORTARS

E-75. Mortar support, provided by the task force mortar platoon, is the most rapid and responsive means of indirect fire smoke delivery. The company team commander coordinates the planning and execution of mortar smoke missions with the team FIST. Most mortars (but not all) use WP rounds, which can degrade the effectiveness of thermal sights.

FIELD ARTILLERY

E-76. Cannons are used to place smoke on distant targets. Artillery assets can deliver either WP smoke or HC smoke; HC has less effect on thermal sights than does WP. Artillery smoke has a longer duration than mortar smoke; however, it may not be available unless it is planned and coordinated well in advance.

SMOKE POTS

E-77. These produce a large volume of white or grayish-white smoke that lasts for extended periods. The smoke has minimal effect on thermal sights. This is the only system that floats on water and that can be delivered by hand or vehicle. The company team may employ smoke pots to screen displacement or breaching operations.

HAND-HELD SMOKE GRENADES

E-78. These can produce white or colored smoke. White smoke grenades are most often used to screen individual vehicles. Colored smoke grenades are primarily used to signal displacement and other critical events or to identify (mark) friendly unit positions and breach and evacuation locations. Smoke from hand-held grenades has minimal effect on thermal sights.

VEHICLE SMOKE GRENADE LAUNCHERS

E-79. Grenade launchers, which can produce a limited amount of smoke, are used as a self-defense measure to screen or conceal the vehicle from enemy AT gunners. They can also be used to screen individual vehicle displacement. Smoke from vehicle-launched grenades can degrade thermal sights.

VEHICLE ENGINE EXHAUST SMOKE SYSTEM

E-80. The vehicle engine exhaust smoke system (VEESS) injects diesel fuel into the engine exhaust to produce smoke. It serves primarily as a self-defense measure for individual vehicles, but a vehicle crew can also employ it to screen other friendly vehicles if wind conditions and the direction of vehicle movement allow. This system consumes fuel at the rate of one gallon per minute of operation. It can be used only with diesel fuel because other fuels, such as JP-8, create a fire hazard.

TACTICAL SMOKE GENERATORS

E-81. These wheel- or track-mounted systems are available through chemical units; their use is prescribed at battalion or brigade level. The generators can produce large-area smoke screens covering several square kilometers. This type of smoke normally does not affect thermal sights; however, the new M56 (wheel-mounted) and M58 (track-mounted) systems can produce IR smoke, which can defeat both friendly and enemy thermal imaging capabilities.

TACTICAL CONSIDERATIONS IN SMOKE OPERATIONS

WEATHER

E-82. The effectiveness of smoke in tactical situations (including the time required to build the cloud and cloud duration) depends in large measure on the weather. Wind direction, wind speed, humidity, and cloud cover are important considerations. If the wind is strong or blowing in the wrong direction, it may be impossible to establish an effective smoke screen. Smoke clouds build up faster and last longer the higher the humidity and the greater the cloud cover. The best time to use smoke is when the ground

is cooler than the air. The commander should evaluate the weather before using smoke, conducting a test of the conditions whenever possible.

TYPE OF SMOKE

E-83. Certain types of smoke will degrade visual, infrared, and thermal sights. Enemy capabilities and the desired effect of the smoke (such as screening or obscuration) will dictate what type is requested. (**NOTE:** Even types of smoke that do not affect thermal sights may prevent the vehicle's laser range finder from computing an accurate ballistic solution. Under such conditions, crewmen must rely on such techniques as range estimation and battlesighting.)

NAVIGATION

E-84. Navigational aids such as POSNAV, GPS (including precision lightweight global positioning system receiver [PLGR]), and thermal sights assist individual vehicles during movement through smoke, while FBCB2 and other digital systems help the commander to maintain situational understanding and control of the company team.

Maneuver

E-85. The following paragraphs discuss the impact of smoke on company team maneuver, with procedures, techniques, and considerations for offensive and defensive operations.

Offense

E-86. A defending enemy may employ smoke to confuse and disorient the attacker. Whenever the company team is traveling through smoke, whether it is of friendly or enemy origin, the vehicle commander must remember that his vehicle will be silhouetted as it emerges from the smoke. The critical consideration is for all vehicles to emerge at the same time. The navigational tools discussed previously enable the commander to maintain C2 during movement and to posture the team to mass fires against previously unidentified enemy vehicles as it exits the smoke.

E-87. During an assault, friendly smoke should be shifted in advance of the arrival of the assault element. The use of multispectral smoke for obscuration must be carefully planned. The duration of the effects of the smoke should be controlled based on the capability of enemy and friendly units to acquire and engage targets through the smoke and on the ability of friendly units to maintain situational understanding during movement.

Defense

E-88. An attacking enemy may employ smoke on the company team's positions or in the team's EA. As noted, this may not only "blind" thermal sights but also prevent laser range finders from determining accurate ranges to targets. One solution is to occupy alternate BPs that conform with the commander's intent, but that are not obscured by smoke. If multispectral smoke does not disable thermal sights, the vehicle commander can use sector sketches with grid lines, range bands, and TRPs to estimate the target range in the absence of a laser-computed range.

COUNTERMEASURES AGAINST ENEMY SMOKE

E-89. The company team commander must be prepared to react instantly and effectively when the enemy employs smoke on the battlefield. Countermeasures include the following:

- See through the smoke. Thermal sights can see through most types of smoke with little or no degradation. If this is the case, the company team can fight as planned. If smoke degrades sights to the point that execution is affected, however, the commander must move the team closer to the EA or obstacle or adjust the EA closer to his positions.
- Use countersmoke to blind enemy defenders. This tactic is used when the enemy produces a smoke screen in front of the attacking company team. When the team exits the screen, its vehicles will be silhouetted by the smoke and can be effectively engaged by enemy gunners. To prevent this, the commander can place smoke between the enemy's screen and the objective using mortar or FA fires. This smoke will blind the enemy and cover the team's movement to the objective.
- Use enemy smoke to cover friendly movement. When the enemy places smoke directly on the company team's defensive position or when he establishes a screen in front of his advancing units, the team can use the concealment provided by the enemy smoke to move to alternate or supplementary positions covering the enemy's route of advance.

Appendix F

Sniper Operations

The primary mission of a sniper in combat is to support combat operations by delivering precise long-range fire on selected targets. By this, the sniper creates casualties among enemy troops, slows enemy movement, frightens enemy soldiers, lowers morale, and adds confusion to their operations. The secondary mission of the sniper is collecting and reporting battlefield information.

A well-trained sniper, combined with the inherent accuracy of his rifle and ammunition, is a versatile supporting arm available to an infantry commander. The importance of the sniper cannot be measured simply by the number of casualties he inflicts upon the enemy. Realization of the sniper's presence instills fear in enemy troop elements and influences their decisions and actions. A sniper enhances a unit's firepower and augments the varied means for destruction and harassment of the enemy. Whether a sniper is organic or attached, he will provide that unit with extra supporting fire. The sniper's role is unique in that it is the sole means by which a unit can engage point targets at distances beyond the effective range of the M16 rifle. This role becomes more significant when the target is entrenched or positioned among civilians, or during riot control missions. The fires of automatic weapons in such operations can result in the wounding or killing of noncombatants.

Snipers are employed in all levels of conflict. This includes conventional offensive and defensive combat in which precision fire is delivered at long ranges. It also includes combat patrols, ambushes, countersniper operations, forward observation elements, military operations in urbanized terrain, and retrograde operations in which snipers are part of forces left in contact or as stay-behind forces. (See FM 3-22.10 [FM 23-10] for detailed discussion of sniper operations.)

CONTENTS

Sniper Teams....F-1
Control and Employment....F-2
Movement....F-2
Commander's Role....F-2
Offensive Employment....F-4
General Considerations....F-4
Movement to Contact....F-5
Attack....F-5
Defensive Employment....F-6
Defensive Tasks....F-6
Employment Considerations....F-6
Retrograde Employment....F-7
Urban Operations Employment....F-7

SECTION I – SNIPER TEAMS

F-1. Snipers are employed in two-man teams; each team consists of one sniper and one observer, normally cross-trained. The sniper uses the sniper weapon system, while the observer carries an M16-series rifle. Each has a side arm. A key operational concept is that sniper teams should avoid

sustained battles. During long periods of observation, team members help each other with range estimation, round adjustment, and security.

CONTROL AND EMPLOYMENT

F-2. Sniper teams should be centrally controlled by the commander or mechanized infantry platoon leader. Once they are deployed, however, snipers must be able to operate independently if necessary. This requires them to have a thorough understanding of the commander's intent, his concept of the operation, and the purpose for their assigned tasks. It also allows them to exercise initiative within the framework of the commander's intent and to support the commander's concept and achievement of the unit's mission.

F-3. Sniper teams are effective only in areas that offer clear fields of observation and fire. To ensure these requirement are fulfilled, teams must be able to choose their own positions once they are on the ground. The number of sniper teams employed in a particular operation depends on availability, the expected duration of the mission, and enemy strength.

MOVEMENT

F-4. Sniper teams should move with a security element (squad or platoon) when possible. This allows the teams to reach their AO faster and safer than if they operated alone. The security element also protects the teams during the operation. When moving with a security element, snipers follow these guidelines:

- The leader of the security element leads the sniper team.
- Snipers must appear to be an integral part of the security element. To do this, they use the following techniques:
  - Each sniper carries his weapon system in line with and close to his body to hide the weapon's outline and barrel length. Sniper-unique equipment (optics, ghillie suit) is also concealed from view.
  - Snipers' uniforms must be the same as those of the security element members.
  - Proper intervals and positions in the element formation are maintained.

COMMANDER'S ROLE

F-5. History has proven that commanders must be educated on the proper use of snipers. Commanders who understand the abilities and limitations of their snipers can employ them effectively in the fight. In developing their estimate of the situation, commanders should carefully consider all METT-TC factors as they relate to sniper employment. The following discussion covers these considerations.

MISSION

F-6. The sniper's primary mission is to support combat operations by delivering precise rifle fires from concealed positions. The mission assigned to a sniper team for a particular operation consists of the tasks the commander wants the sniper team to accomplish and the reason (purpose) for these tasks. The commander must decide how he wants his sniper team

to affect the battlefield. Then he must assign missions to achieve this effect. The commander should prioritize targets so snipers can avoid involvement in sustained engagements. Regardless of how missions and targets are designated, however, the sniper team must be free to change targets to support the commander's intent. The following methods may apply:

- The commander may describe the effect or result he expects and allow the sniper team to select key targets.
- The commander may assign specific types of targets. For example, if he wants to disrupt the defensive preparations of the enemy, he may task snipers to accomplish one or more of the following tasks:
  - Kill operators of bulldozers and other engineer equipment.
  - Disable enemy vehicles carrying supplies.
  - Engage enemy soldiers as they dig defensive positions.
- The commander may also assign specific targets. These can include enemy leaders, C2 operators, antitank guided missiles (ATGM) gunners, armored vehicle commanders, or weapons crews. In cases where large crowds pose a threat to US forces, snipers can single out selected individuals. In populated areas where casualties should be kept low, the snipers can be assigned to kill enemy snipers.

ENEMY

F-7. The commander must consider the characteristics, capabilities, strengths, weaknesses, and disposition of the enemy. Is the enemy force heavy or light, rested or tired, disciplined or not? Is it motorized infantry or towed artillery? Is it well supplied or short of supplies? Is it patrolling aggressively, or is it lax in security? Is it positioned in assembly areas or dug in?

F-8. The answers to such questions help the commander determine the enemy's susceptibility and reaction to effective sniper operations. Naturally, a well-rested, well-led, well-supplied, and aggressive enemy with armored protection poses a greater threat to snipers than one whose forces are tired, poorly led, poorly supplied, lax in security, and unprotected. In addition, the commander needs to know if enemy snipers are present and if they are effective; they can pose a significant danger to his own snipers. The enemy's directed-energy weapons (DEW) capability should be considered as well. Snipers use optical devices, so they are particularly vulnerable to the directed-energy threat.

TERRAIN

F-9. The commander must evaluate both the terrain in his snipers' AO and the terrain they must travel to reach it. He must consider the time and effort snipers will expend getting into position, as well as the effect of weather on the snipers (especially in terms of visibility). Snipers need good firing positions, with adequate fields of observation and fire. They prefer positions at least 300 meters from their target area. Operating at this distance allows them to avoid effective fire from enemy rifles and to take advantage of the effective range of the sniper rifle (800 to 1,000 meters).

TROOPS

F-10. The commander must decide how many sniper teams to use. This depends on their availability, on the duration of the operation, and on the expected opposition. Another key factor is the number and difficulty of tasks and/or targets assigned to the snipers. Commanders must always keep in mind the effects of the human dimension on sniper operations.

TIME AVAILABLE

F-11. The commander must consider how long the snipers will have to achieve the results he expects. He must allocate time for snipers to plan, coordinate, prepare, rehearse, move, and establish positions. He must understand how the snipers' risk increases when they lack adequate time to plan or conduct such actions as moving to the area of operations.

F-12. Movement factors for snipers moving with a security element are the same as for any infantry force. When snipers are moving alone in the AO, however, they move slowly; their movement can be measured in feet and inches. The sniper team members themselves are best qualified to determine how much time is required for a particular movement.

F-13. The amount of time a sniper team can remain in a position without loss of effectiveness (due to eye fatigue, muscle strain, or cramps) depends mostly on the type of position the team is occupying. Generally, snipers can remain in an expedient position for six hours before they must be relieved. They can remain in belly positions or semi permanent hides up to 48 hours. Mission duration times average 24 hours. (**NOTE:** FM 3-22.10 [FM 23-10] provides guidance on sniper position considerations, construction, and preparation and occupation times.)

SECTION II – OFFENSIVE EMPLOYMENT

F-14. Offensive operations carry the fight to the enemy to destroy his capability and will to fight. By killing enemy targets that threaten the success of the attack, the sniper can play a major role in offensive operations.

GENERAL CONSIDERATIONS

F-15. During offensive operations, snipers can be employed to perform the following tasks:

- Conduct countersniper operations.
- Overwatch movement of friendly forces and suppress enemy targets that threaten the moving forces.
- Place precision fires on enemy crew-served weapons teams and into exposed apertures of bunkers.
- Place precision fires on key enemy personnel, including leaders, armored vehicle drivers or commanders, and FOs.
- Place precision fires on small, isolated, and/or bypassed forces.
- Place precision fires on targets that are threatening a counterattack or are fleeing.
- Provide supplemental fires to assist in screening a flank.

- Dominate key terrain, using precision fires to control access to the terrain.

MOVEMENT TO CONTACT

F-16. The commander has several options in employing snipers to support a movement to contact. Sniper teams can move with the lead element. They can also be deployed 24 to 48 hours before the unit's movement to perform these tasks:

- Select positions.
- Gather information about the enemy.
- Dominate key terrain, preventing enemy surprise attacks.

ATTACK

F-17. Although snipers can play only a limited role in a mounted attack, their firepower and mobility make them a valuable asset in a dismounted assault. The following employment considerations apply:

- Snipers can be placed with lead elements, moving to positions that allow them to overwatch the dismounted maneuver of the infantry squads and to provide long-range small arms fires.
- Snipers may also be placed with a mounted support element, with the assignment of suppressing, fixing, or isolating the enemy on the objective.
- Snipers can infiltrate with task force scouts and observe NAIs in and around the objective area and also call for fires.
- If time permits, snipers may be deployed as soon as the element reaches the dismount point.
- Snipers may move with infantry squads approaching the objective. They can then occupy a close-in support by fire position from which they can help to suppress or destroy targets threatening the assault of the infantry squads.
- To increase security and surprise, snipers may move covertly into position in an objective area well before the main attack and mounted forces arrive.
- If their fires are masked, snipers must reposition as soon possible.
- During consolidation, snipers may displace forward to new positions. These positions, which are not necessarily on the objective, allow the snipers to provide precision fires against bypassed enemy positions, enemy counterattack forces, or other enemy positions that could degrade the unit's ability to exploit the success of the attack.

SECTION III – DEFENSIVE EMPLOYMENT

F-18. Snipers can be effective in enhancing or augmenting any unit's defensive fire plan. They must be able to analyze the terrain that will be used in the defense and then recommend employment options to the commander.

DEFENSIVE TASKS

F-19. The sniper team can perform the following tasks in support of the unit's defensive operations:

- Cover obstacles, minefields, roadblocks, and demolition missions.
- Perform counterreconnaissance tasks to kill enemy reconnaissance elements.
- Engage enemy OPs, armored vehicle commanders (while they are exposed in their vehicles' turrets), and ATGM teams.
- Damage vehicle optics to degrade enemy movement capabilities.
- Suppress enemy crew-served weapons.
- Disrupt follow-on units with long-range small arms fires.

EMPLOYMENT CONSIDERATIONS

F-20. Sniper teams add considerable flexibility to the commander's defensive scheme of maneuver. They can be employed in the following ways:

- Snipers are generally positioned to observe or control one or more avenues of approach into the defensive position. Their stealth, mobility, and available weapon systems make them ideal for use against secondary avenues of approach. This enhances the unit'sall-around security and allows the commander to concentrate his combat power against the most likely enemy avenue of approach.
- Snipers can establish alternate and supplementary positions to further enhance all-around security.
- Snipers can be positioned to overwatch key obstacles or terrain, such as river crossing sites, bridges, and minefields that canalize the enemy directly into EAs.
- Snipers can play an integral part in the counterreconnaissance effort. They can help to acquire or destroy targets, or both.
- Snipers should be tasked to support any unit that is defending a strongpoint. The characteristics of the sniper team enable it to perform independent harassment and observation tasks in support of the force in the strongpoint, either from within or outside of the strongpoint.

SECTION IV – RETROGRADE EMPLOYMENT

F-21. In supporting a retrograde operation, sniper teams must understand the commander's concept, intent, and scheme of maneuver.

They must also have a complete grasp of critical information for the operation, including withdrawal times, conditions, and/or priorities; routes; support positions; rally points; and locations of obstacles. The commander must thoroughly plan and coordinate engagement and disengagement criteria for the operation to ensure that snipers can achieve the desired effect without compromising their positions. (See Chapter 5 for a discussion of retrograde operations.)

F-22. The following considerations apply for sniper employment during retrograde operations:

- Snipers may be assigned any of the following specific tasks during retrograde operations:
  - Delay the enemy by inflicting casualties.
  - Observe avenues of approach.
  - Cover key obstacles with precision fire.
  - Direct artillery fires against large enemy formations.
- Snipers can assist the delaying force in forcing the enemy to deploy prematurely during retrograde operations. They do this by inflicting casualties with accurate, long-range small arms fire.
- Because delaying forces risk being bypassed or overtaken by attacking enemy forces during retrograde operations, commanders may have to provide transportation to move snipers to successive positions.
- When snipers find themselves behind the enemy's front, they must be prepared to infiltrate back to friendly positions. Infiltration plans must be fully coordinated to prevent fratricide as sniper teams attempt to re-enter the friendly position.

SECTION V – URBAN OPERATIONS EMPLOYMENT

F-23. The value of sniper teams to a unit operating in an urban area depends on several factors, including the type of operation, the level of conflict, and the applicable ROE. Where ROE allow destruction of enemy elements, snipers may have an extremely limited role because other weapon systems available to the mechanized force have greater destructive effect. When the ROE prohibit collateral damage, however, snipers may be the most valuable tool the commander has.

F-24. The following considerations apply for sniper employment during UO:

- Sniper effectiveness depends in part on the terrain; control is degraded by the characteristics of the urban area. To provide timely and effective support, snipers must have a clear picture of the scheme of maneuver and commander's intent.
- Snipers should be positioned in buildings of masonry construction. Positions should afford long-range fields of all-around observation and fire.
- Snipers should operate throughout the AO, moving with and supporting company teams as necessary.
- Specific sniper tasks in UO include the following:
  - Conduct countersniper operations.
  - Kill targets of opportunity. Sniper teams prioritize these targets based on their understanding of the commander's intent. For example, they may attack enemy snipers first, followed by (in order) leaders, vehicle commanders, radio operators, engineers, and machine gun crews.
  - Control key terrain by denying enemy access to certain areas or avenues of approach.
  - Provide supporting fires for barricades and other obstacles.
  - Maintain surveillance of flank and rear avenues of approach (screening operations).
  - Support local counterattacks with precision fires.

Appendix G

Deployment

Force projection is the military element of our nation's instruments of power. Force projection is the demonstrated ability to alert, mobilize, deploy rapidly, and operate effectively anywhere in the world. The US Army, as a key member of the joint team, is required to be ready for global force projection actions with an appropriate mix of combat, CS, and CSS forces to fight and win our nation's battles. To meet the force projection requirements, the company team must be ready to meet all deployment timelines and activities. Peacetime preparation, speed, in-depth coordination, rehearsals, and knowledge are necessary if the company team is to meet its deployment timelines.

CONTENTS

Force Projection G-1
Deployment Phases G-2
Predeployment Activities G-2
Fort-to-Port Movements G-4
Reception, Staging, Onward Movement, and Integration G-6

SECTION I –FORCE PROJECTION

G-1. Force projection is the military component of power projection. Force projection encompasses a series of processes that occur in a continuous, overlapping, and iterative sequence. These activities include—

- **Mobilization.** Mobilization is the process by which the Armed Forces or parts of them are brought to a state of readiness for war or other national emergency. This includes activating all or part of the reserve components (RC) as well as assembling and organizing personnel, supplies, and materiel.
- **Deployment.** Deployment is the movement or relocation of forces and materiel from their home stations to the desired AOs.
- **Employment.** Employment is the application of force/forces to attain specified military objectives. Employment concepts determine the scope of mobilization, deployment, sustainment, and redeployment activities.
- **Sustainment.** Sustainment is the provision of personnel, logistics, and other support required to maintain and prolong operations or combat until successful accomplishment of the mission or of the national objective.
- **Redeployment.** Redeployment is the transfer of a unit, an individual, or supplies deployed in one area to another area for the purpose of employment, or return to home station.

SECTION II – DEPLOYMENT PHASES

G-2. Deployment is the relocation of forces and materiel to a specific operational area to conduct operations outlined in a plan or order. It encompasses all activities from origin or home station through destination, specifically including intracontinental US, intertheater, and intratheater movement legs. Each division will have differing methods to prepare a unit for deployment. Company team leadership must be thoroughly knowledgeable in the deployment steps outlined by the higher headquarters and installation.

G-3. Unit deployments consist of three distinct and interrelated phases.

- Predeployment activities taken at home stations.
- Movement to port of debarkation (POD) (fort-to-port and port-to-port activities).
- Reception, staging, onward movement and integration (RSOI) (port to destination).

PREDEPLOYMENT ACTIVITIES

G-4. The Army's challenge in becoming more strategically responsive begins at home station by decreasing the amount of time required to execute all predeployment activities. Predeloyment activities are those actions taken to prepare the company team for deployment. These tasks are essentially constant and ongoing activities performed at the home station before, and during the predeployment phase to prepare forces for deployment. These tasks are conducted before and after the issuing of a warning or alert notification. Predeployment activities are not limited to the deploying unit, but include supporting units and the installation staff. Predeployment activities include—

- **Planning and Training Validation.** The company team conducts peacetime training on those METL tasks they expect to execute in wartime. In addition to the company team METL tasks, the company team focuses on the individual and collective tasks that support their wartime mission. The company team, with assistance from the higher headquarters, prepares mobilization, deployment plans and deployment training. Typical planning and training that occurs are—
  - Mobilization training and preparation.
  - Unit movement officer/NCO activities.
  - Unit load team training and vehicle marking.
  - Hazardous materials (HAZMAT) cargo certification.
  - Airload planning for all company vehicles and equipment.
  - Soldier readiness preparations (SRP) and personnel asset inventory (PAI).
  - Conduct deployment exercises/rehearsals.

- Family support group (FSG) meetings.
- Classes III, V, and VIII deployment stocks reviewed/updated.
- Verification of Class IV blocking, bracing and tie down materials.
- Submit requests for batteries and other PLL)/authorized stockage list (ASL) shortages.
- Conduct individual and crew served weapons qualifications.
- Submit access rosters for personnel requiring access to secure facilities.

- **Alert.** This phase begins with the receipt of a WARNO for deployment. Based upon the Time-Phased Force and Deployment Data List (TPFDDL), the company team may have from hours as the Individual Ready Company (IRC) to several days from notification to movement. Specific activities during this phase are—
  - Receipt and verification of deployment orders.
  - Recall of company team soldiers.
  - Initiation of n-hour sequence of events.
  - Completion of SRP activities.
  - Upload of vehicles with equipment.
  - Configure pallets and containerized loads.
  - Issue COMSEC materials.
  - Issuance of movement orders and instructions.
  - Prepare manifest lists for movement.
  - Transfer all nondeploying equipment to rear detachment.
  - Update critical equipment shortage lists.
  - Pick up ammunition from the ammunition supply point (ASP).
  - Conduct OPSEC sweeps of the company area.
  - Conduct analysis of division order.
  - Upload of contingency stocks for Class I and chemical detection equipment (CDE).
  - Conduct personal property inventories of deploying soldiers.
  - TC-AIMS II and military shipping labels are prepared for all vehicles and personnel.

- **Deployment.** During this phase, the company takes the necessary steps to clear the installation, finalize deployment plans, conduct any final coordination with the higher headquarters/installation and deploys an advance party to the aerial port of debarkation (APOD). Other activities include—
  - Leaders will conduct a tactical exercise without troops (TEWT) to all deployment nodes.
  - Leaders (CDR, XO, 1SG, and unit movement officer [UMO]) conduct all coordination with the battalion S4 for movement times and routes from company team marshalling areas to the APOD/SPOD.
  - Rear detachment confirms barracks security, POV storage areas, and arms rooms.
  - Movement from company areas to the deployment nodes.

G-5. **Planning and Training Validation.** During this phase, the company team must complete all training and preparations in anticipation for deployment. The company team must take all possible steps and actions to reduce the number of excess predeployment activities. The time spent to complete or redo any of the predeployment training and preparations increases the time your unit is ready for employment or adds to the time before the company team can be employed in theater.

FORT-TO-PORT MOVEMENTS

MOVEMENT TO PORT OF EMBARKATION

G-6. Early deploying IRCs and company teams will move directly from their home stations with equipment and vehicles via AMC airlift into the theater of operations for immediate employment. These IRCs are normally mechanized infantry company teams minus with a small support package. Traditional company teams will either send their equipment from the home station to a port of embarkation (POE) for onward movement or fall in on pre-positioned stocks in theater. Once the unit completes all training, the personnel will move into the theater via airlift and fall in on their equipment at the POD.

MOVEMENT TO PORT OF EMBARKATION CONSIDERATIONS

G-7. Most of the company team's vehicles and equipment will be rail loaded from the post directly into the theater or to a seaport for movement to the theater.

- Verification of route and movement times with the task force S3.
- Conduct a route reconnaissance to POE.
- Properly mark all company team vehicles.
- Check for security of onboard equipment and TOE equipment.
- Pre-brief all drivers and vehicle commanders.

- Provide strip maps to all vehicles.
- Verification of vehicle load plans.
- Joint inspection of vehicles and equipment to air/sea port authorities.
- Center of gravity markings on all vehicles and trailers.
- One hundred percent of all tie down equipment available and serviceable.
- HAZMAT items identified and labeled.
- Vehicles reduced to lowest possible dimensions.
- Vehicles and fuel cans filled to 3/4 full.
- Vehicle antennas removed and radios are waterproofed.
- All vehicle drivers are licensed for their vehicle.
- Generators are purged.

PORT OF EMBARKATION COORDINATION

G-8. The company team leadership must ensure that all coordination and activities are completed prior to the arrival of the unit's vehicles at the rail-loading site. This is usually completed during the predeployment phase and should be the execution of rehearsed SOP events. However, company team leaders should expect problems, delays, and confusion at the POE. Your company team is probably not the only unit deploying or attempting to coordinate movement activities. Ensure you know the locations of staging/marshalling areas, joint inspection criteria, and understand the entire movement plan. Take positive actions to facilitate the movement of your unit by being present at critical times, always having communications with the POE authorities, and facilities to take care of your soldiers.

PORT-TO-PORT MOVEMENTS

G-9. This phase begins with the departure of your equipment from the POD (either by sea, rail or air) and ends with the arrival at the POE. At this point, all your personnel are either conducting final training with borrowed equipment, en route to the POE via air/sea lift or waiting in theater for your equipment's arrival. Keep in close contact with the movement officer and track the status of your equipment's movement. Upon your arrival at the POE, immediately check with the movement office to verify the expected time of your equipment's arrival. Have load teams and drivers standing by; ready to assist with the download of equipment upon arrival. If you are traveling with your equipment, coordinate with the flight crew, train engineer or ships' cargo loading officer to determine if you can make periodic checks of your equipment. Generally, if you prepared your equipment prior to departure correctly, it will travel without any mishaps. Your main concern should be for the welfare and morale of the accompanying soldiers. Keep your soldiers informed of where you are and what is going to happen when you arrive at the POE. Use this time to complete staff planning and review of basic soldier warfighting skills and crew drills.

RECEPTION, STAGING, ONWARD MOVEMENT, AND INTEGRATION

G-10. Upon arrival in the theater, you receive your equipment and make preparations for integration into the theater commander's plans. This process is known as RSOI. During this phase, the company team can expect CS and CSS elements to assist in processing the company team through the POD. The four steps in the RSOI are—

- **Reception.** The process of unloading personnel and material from strategic seaport, marshaling the deploying units, transporting them to staging areas, if required, provide life support to deploying personnel.
- **Staging.** Staging is the process of assembling, holding and organizing all arriving personnel and equipment into units and forces for movement. During staging, you incremental build combat power and prepare units for onward movements while providing life support until the unit becomes self-sufficient.
- **Onward Movement.** The onward movement process is the movement of units and accompanying material from reception facilities and staging areas to tactical assembly areas. This includes the movement of non unit personnel to gaining commands and moving sustainment material from reception facilities to distribution sites.
- **Integration.** Integration is the synchronized transfer of authority over units and forces for employment in the theater.

G-11. As the initial step in the introduction of combat power, reception can determine the success or failure of an entire operation. Your actions during the reception phase must be thoroughly planned and carefully executed. Reception from strategic lift assets will be near your APOE and should provide you all support required until your equipment and vehicles arrive.

G-12. Prior to departing the APOE/SPOE for your assembly area, you must ensure that all your equipment and personnel are ready for war. This is your only chance to get things straight prior to departure. RSOI considerations include—

- Verification/accountability of all sensitive items, keys to all vehicles and equipment.
- Top-off of all vehicle fluids.
- Issue and upload all ammunition.
- Receive all classes of supply and water.
- Complete all vehicle PMCS and order needed parts.
- Conduct communication checks on all radios.
- Receive updates on the condition of the local security and threat.
- Verify routes, checkpoints, and assembly areas.
- Conduct necessary repairs to equipment.
- Receive specialized theater specific equipment issue.

Appendix H

Directed-Energy Weapons

While conventional weapons rely on either the kinetic or chemical energy of a sizable projectile to cause casualties and target damage, directed-energy weapons produce these effects by depositing energy on the target. This appendix provides the company team commander and subordinate leaders with an overview of directed-energy weapons and how to defend against them.

CONTENTS

Characteristics of Directed-Energy H-1
Lasers H-1
Microwave Radiation Emitters H-2
Particle Beam Weapons H-2
Defense Against Directed Energy H-2
Lasers H-3
Microwave Radiation Emitters H-3
Attack Reporting H-3
Laser MOPP H-4

SECTION I – CHARACTERISTICS OF DIRECTED-ENERGY WEAPONS

H-1. Directed-energy weapons destroy targets by bombarding them with either subatomic particles or electromagnetic waves at or near the speed of sound. These weapons include lasers, particle beam generators, and microwave radiation emitters. Currently, directed-energy weapons are only capable of damaging soft targets, including personnel, or the soft components of hard targets, such as optical components or communications equipment.

LASERS

H-2. As the role of laser devices continues to grow on the modern battlefield, it becomes increasing clear that any laser-emitting device, such as a target designator or a range finder, has the potential to be used as a weapon. The most probable targets for such systems will be optical and electro-optical systems, such as sights and vision viewers, and the personnel operating those sights and viewers. (See AR 385-11 for additional information on laser safety.)

H-3. Any laser beam entering a direct-view optical system (a tank or BFV sight, for example) has its power increased by the magnification of the system. Soldiers using the sight could suffer burns to their eyes; injuries may range from temporary flash blinding and mild burns to total, permanent blindness. The severity of such injuries, the permanence of the damage, and the time required to heal depend on a variety of factors:

- Weather conditions.
- Intensity of the laser.
- Frequency of the laser.

- Range to the laser source.
- Magnification of the optical device.
- Duration of exposure to the laser.

H-4. A laser beam entering a nonsee-through electro-optical device, such as a thermal imagery device, can cause damage either through the effects of intense heat on the device's sensor screens or by the sudden surge of electricity produced by the laser's energy.

MICROWAVE RADIATION EMITTERS

H-5. High-intensity microwaves can severely damage or destroy electronic components such as microchips; they do this by overloading the components with electrical current. Soldiers may suffer the following symptoms from long-term exposure to high-intensity microwaves:

- Pain.
- Erratic heartbeat.
- Fatigue, weakness, or dizziness.
- Nose bleeds.
- Headaches.
- Disorientation.

PARTICLE BEAM WEAPONS

H-6. Particle beam weapons use a directed flow of atomic or subatomic particles to cause target damage. These highly energetic particles, when concentrated into a beam, can melt or fracture target material and generate X rays around the point of impact.

SECTION II – DEFENSE AGAINST DIRECTED-ENERGY WEAPONS

H-7. Without accurate information on the nature and capabilities of directed-energy weapons, soldiers are likely to develop a number of misconceptions. For example, it may appear that these weapons wreak devastating effects on personnel and equipment and that defense against them is nearly impossible. Leaders must counter these false assumptions by directly confronting their soldiers' fears. They should take these steps:

- Provide soldiers with a basic understanding of how directed-energy weapons work.
- Cover the specific defensive procedures outlined in this section.
- Reinforce the knowledge that directed-energy injuries, while potentially serious and worthy of concern, are both rare and preventable.

LASERS

H-8. The best defense against lasers incorporates the following techniques:

- Use laser-safe goggles and optic filters.
- Use night vision viewers or thermal viewers when scanning areas in which lasers are likely to be employed.
- Use smoke rounds to temporarily defeat laser devices.
- Use sound tactics to prevent being pinpointed for attack by lasers.

MICROWAVE RADIATION EMITTERS

H-9. Effective defense against microwave radiation emitters entails using the following techniques:

- Disconnect all electronic equipment when not in use.
- Shield smaller electronic items by placing them in empty ammunition cans.
- Employ terrain masking, which provides some protection against microwave radiation.
- Limit the time personnel are exposed to microwave emissions.

NOTE: The defensive measures outlined in this section for lasers and microwave radiation are also effective in protecting personnel and equipment from the effects of particle beam weapons.

SECTION III – ATTACK REPORTING

H-10. All attacks from directed-energy weapons should be reported. Reporting procedures are similar to those for NBC attacks. Tables H-1 and H-2 summarize reports for laser attacks on the battlefield; these reports use the established formats for the NBC-1 report (observer's initial attack) and the NBC-3 report (immediate warning of expected contamination/laser usage). (**NOTE:** The report formats also reflect the addition of a laser reporting column to GTA 3-6-3.)

Table H-1. Format for Laser Attack Report (Based on NBC-1, Observer's Initial Report)

LINE	DESCRIPTION
B	Position of observer
C	Direction of attack from observer
D	Date-time group for detonation/attack
F	Location of area attacked
G	Means of delivery (state what weapon system, if known, delivered the laser)
ZC	Area or point from which laser was delivered (if known)

Table H-2. Format for Laser Attack Report (Based On NBC-3, Immediate Warning of Expected Contamination/Laser Usage)

LINE	DESCRIPTION
A	Strike serial number
D	Date-time group for start of attack
F	Location of probable area of attack

SECTION IV – LASER MISSION-ORIENTED PROTECTIVE POSTURE

H-11. The laser MOPP (L-MOPP) levels outlined in Table H-3 are based on enemy activity and the known use of lasers in the company team's area of operations.

Table H-3. Laser Mission-Oriented Protective Posture Levels

L-MOPP LEVEL	LASER USE	PROTECTIVE ACTIVITY
L-0 (zero)	No known laser technology. **OR** No known use in AO. **OR** Use of laser technology highly unlikely.	Laser-protective eyewear properly prepared and in close proximity.
L-1	Threat possesses laser technology. **OR** Laser-capable delivery systems spotted in AO. **OR** Use of laser technology possible.	Laser-protective eyewear ready for use and carried on person.
L-2	Use of threat/friendly lasers reported in AO. **OR** NBC/laser reporting system in effect. **OR** Use of laser technology probable or highly likely.	Laser-protective eyewear worn at all times.

Appendix I

Risk Management/Fratricide Avoidance

This appendix will focus on two aspects of force protection, safety, or risk management, and the avoidance of fratricide. Risk is the chance of injury or death for individuals and damage to or loss of vehicles and equipment. Risks, and/or the potential for risks, are always present in every combat and training situation the company team faces. Risk management must take place at all levels of the chain of command during each phase of every operation; it is an integral part of all tactical planning. The company team commander, platoon leaders, PSGs, squad leaders, and all other soldiers must know how to use risk management, coupled with fratricide reduction measures, to ensure that the mission is executed in the safest possible environment within mission constraints. This appendix provides examples of risk management tools to help leaders assess identified hazards, develop controls, and make risk decisions. The tools should be tailored to suit particular situations and missions. (See FM 5-19 [FM 100-14] for additional information on risk management.)

CONTENTS

Risk Management I-1
Step 1 – Identify Hazards I-1
Step 2 – Assess Hazards to Determine Risks .. I-3
Step 3 – Develop Controls and Make Risk Decisions I-4
Step 4 – Implement Controls I-5
Step 5 – Supervise and Evaluate I-5
Fratricide Avoidance I-7
Magnitude of the Problem I-7
Risk Identification and Prevention Measures I-7
Planning I-8
Preparation I-8
Execution I-8
Fratricide Reduction Measures I-9
Fratricide Avoidance Considerations I-10

SECTION I – RISK MANAGEMENT

I-1. This section outlines the five steps of risk management. Leaders in the company team must always remember that the effectiveness of the process depends on SU. They should never approach risk management with "one size fits all" solutions to the hazards the company team will face. Rather, in performing the steps, they must keep in mind the essential tactical and operational factors that make each situation unique.

STEP 1 – IDENTIFY HAZARDS

I-2. A hazard is a source of danger. It is any existing or potential condition that could entail injury, illness, or death of personnel; damage to or loss of equipment and property; or some other sort of mission degradation. Tactical and training operations pose many types of hazards.

I-3. The company team commander must identify the hazards associated with all aspects and phases of the company team's mission, paying particular attention to the factors of METT-TC. Risk management must never be an afterthought; leaders must begin the process during their TLPs and continue it throughout the operation.

I-4. Table I-1 lists possible sources of risk that the company team might face during a typical tactical operation. The list is organized according to the factors of METT-TC.

Table I-1. Examples of Potential Hazards

SOURCES OF BATTLEFIELD RISK
MISSION • Duration of the operation. • Complexity/clarity of the plan. (Is the plan well developed and easily understood?) • Proximity and number of maneuvering units.
ENEMY • Knowledge of the threat situation. • Threat capabilities. • Availability of time and resources to conduct reconnaissance.
TERRAIN AND WEATHER • Visibility conditions, including light, dust, fog, and smoke. • Precipitation and its effect on mobility. • Extreme heat or cold. • Additional natural hazards (broken ground, steep inclines, water obstacles).
TROOPS • Equipment status. • Experience the units conducting the operation have working together. • Danger areas associated with the company team's weapon systems. • Soldier/leader proficiency. • Soldier/leader rest situation. • Degree of acclimatization to environment. • Impact of new leaders and/or crew members.
TIME AVAILABLE • Time available for TLPs and rehearsals by subordinates. • Time available for PCCs/PCIs.
CIVIL CONSIDERATIONS • Applicable ROE and/or ROI. • Potential stability and/or support operations involving contact with civilians (such as NEOs, refugee or disaster assistance, or counterterrorism). • Potential for media contact/inquiries.

STEP 2 – ASSESS HAZARDS TO DETERMINE RISKS

I-5. Hazard assessment is the process of determining the direct impact of each hazard on an operation (in the form of hazardous incidents). Use the following steps:

- Determine which hazards can be eliminated or avoided.
- Assess each hazard that cannot be eliminated or avoided to determine the probability that the hazard can occur.
- Assess the severity of hazards that can not be eliminated or avoided. Severity, defined as the result or outcome of a hazardous incident, is expressed by the degree of injury or illness (including death), loss of or damage to equipment or property, environmental damage, or other mission-impairing factors (such as unfavorable publicity or loss of combat power).
- Taking into account both the probability and severity of a hazard, determine the associated risk level (extremely high, high, moderate, and low). Table I-2 summarizes the four risk levels.
- Based on the factors of hazard assessment (probability, severity, and risk level, as well as the operational factors unique to the situation), complete the risk management worksheet.

Table I-2. Risk Levels and Impact on Mission Execution

RISK LEVEL	MISSION EFFECTS
Extremely high (E)	Mission failure if hazardous incidents occur in execution.
High (H)	Significantly degraded mission capabilities in terms of required mission standards. Not accomplishing all parts of the mission or not completing the mission to standard (if hazards occur during mission).
Moderate (M)	Expected degraded mission capabilities in terms of required mission standards. Reduced mission capability (if hazards occur during the mission).
Low (L)	Expected losses have little or no impact on mission success.

I-6. Figure I-1, Risk Management Worksheet (blank), provides a starting point to logically track the process of hazards and risks. It **can** be used to document risk management steps taken during planning, preparation, and execution of training and combat missions and tasks. Company team commanders are given the flexibility to modify the form to fit their specific needs (to include the addition of a "Risk Decision Authority" block) so long as they don't detract from the basic information contained on the form (US Army Safety Center hhtp://safety.army.mil).

A. Mission or Task:	B. Date/Time Group:	C. Date Prepared:
HHC 4-37 AR SWIM SITE SET-UP	**Begin:** *010600RJunXX* **End:** *061200RJunXX*	*22 May XX*

D. Prepared By: (Rank, Last Name, Duty Position) *1LT Young, XO* — Page 1 of 6

E. Task:	F. Identify Hazards:	G. Assess Hazards:	H. Develop Controls:	I. Determine Residual Risk:	J. Implement Controls: ("How To")
Swim Site Set-Up	1. Collision of vehicles during troop movement to swim site	MEDIUM	1a. Safety brief covering route, march speed, intervals, use of seat belts 1b. Drivers properly licensed to operate their vehicles 1c. Route reconned to reduce chance of accidents 1d. Vehicle dispatched to ensure it completes QA/QC	LOW	1a. Safety brief at 0530 1b. Licenses checked during PCI 1c. Route reviewed during safety brief 1d. Dispatches valid; verified by COC 1e. Vehicle 5988E inspected by COC

K. Determine overall mission/task level after controls are implemented (Circle one):

LOW (L) MODERATE (M) HIGH (H) EXTREMELY HIGH (E)

Figure I-1. Example Risk Management Worksheet

STEP 3 – DEVELOP CONTROLS AND MAKE RISK DECISIONS

DEVELOPING CONTROLS

I-7. After assessing each hazard, develop one or more controls that will either eliminate the hazard or reduce the risk (probability and/or severity) of potential hazardous incidents. When developing controls, consider the reason for the hazard, not just the hazard by itself.

MAKING RISK DECISIONS

I-8. A key element in the process of making a risk decision is determining whether accepting the risk is justified or, conversely, is unnecessary. The decision-maker (commanders and leaders) must compare and balance the risk against mission expectations. He alone decides if the controls are sufficient and acceptable and whether to accept the resulting residual risk. If he determines the risk is unnecessary, he directs the

development of additional controls or alternative controls; as another option, he can modify, change, or reject the selected COA for the operation.

STEP 4 – IMPLEMENT CONTROLS

I-9. Controls are the procedures and considerations the unit uses to eliminate hazards or reduce their risk. Implementing controls is the most important part of the risk management process; this is the chain of command's contribution to the safety of the unit. Implementing controls includes coordination and communication with appropriate superior, adjacent, and subordinate units and with individuals executing the mission. The company team commander must ensure that specific controls are integrated into OPLANs, OPORDs, SOPs, and rehearsals. The critical check for this step is to ensure that controls are converted into clear, simple execution orders understood by all levels.

I-10. If the leaders have conducted a thoughtful risk assessment, the controls will be easy to implement, enforce, and follow. Examples of risk management controls include the following:

- Thoroughly brief all aspects of the mission, including related hazards and controls.
- Conduct thorough PCCs and PCIs.
- Allow adequate time for rehearsals at all levels.
- Drink plenty of water, eat well, and get as much sleep as possible (at least 4 hours in any 24-hour period).
- Use buddy teams.
- Enforce speed limits, use of seat belts, and driver safety.
- Establish recognizable visual signals and markers to distinguish maneuvering units.
- Enforce the use of ground guides in assembly areas and on dangerous terrain.
- Establish marked and protected sleeping areas in assembly areas.
- Limit single-vehicle movement.
- Establish SOPs for the integration of new personnel.

STEP 5 – SUPERVISE AND EVALUATE

I-11. During mission execution, it is imperative for leaders to ensure that risk management controls are properly understood and executed. Leaders must continuously evaluate the unit's effectiveness in managing risks to gain insight into areas that need improvement.

SUPERVISION

I-12. Leadership and unit discipline are the keys to ensuring that effective risk management controls are implemented. All leaders are responsible for supervising mission rehearsals and execution to ensure standards and controls are enforced. In particular, NCOs must enforce established safety policies as well as controls developed for a specific operation or task. Techniques include spot checks, inspections, SITREPs, confirmation briefs, buddy checks, and close supervision.

I-13. During mission execution, leaders must continuously monitor risk management controls, both to determine whether they are effective and to modify them as necessary. Leaders must also anticipate, identify, and assess new hazards. They ensure that imminent danger issues are addressed on the spot and that ongoing planning and execution reflect changes in hazard conditions.

EVALUATION

I-14. Whenever possible, the risk management process should also include an after-action review (AAR) to assess unit performance in identifying risks and preventing hazardous situations. Leaders should then incorporate lessons learned from the process into unit SOPs and plans for future missions.

I-15. The company team commander gives the company team's direction, sets priorities, and establishes the command climate (values, attitudes, and beliefs). Successful preservation of combat power requires him to embed risk management into individual behavior. To fulfill this commitment, the company team commander must exercise creative leadership, innovative planning, and careful management. Most important, he must demonstrate support for the risk management process. The company team commander and others in the company team chain of command can establish a command climate favorable to risk management integration by taking the following actions:

- Demonstrate consistent and sustained risk management behavior through leading by example and by stressing active participation throughout the risk management process.
- Provide adequate resources for risk management. Every leader is responsible for obtaining the assets necessary to mitigate risk and for providing them to subordinate leaders.
- Understand their own and their soldier's limitations, as well as their unit's capabilities.
- Allow subordinates to make mistakes and learn from them.
- Prevent a "zero defects" mindset from creeping into the company team's culture.
- Demonstrate full confidence in subordinates' mastery of their trade and their ability to execute a chosen COA.
- Keep subordinates informed.
- Listen to subordinates.

I-16. For the company team commander, his subordinate leaders, and individual soldiers alike, responsibilities in managing risk include the following:

- Make informed risk decisions; establish and then clearly communicate risk decision criteria and guidance.
- Establish clear, feasible risk management policies and goals.
- Train the risk management process. Ensure that subordinates understand the who, what, when, where, and why of managing risk and how these factors apply to their situation and assigned responsibilities.

- Accurately evaluate the company team's effectiveness, as well as subordinates' execution of risk controls during the mission.
- Inform higher headquarters when risk levels exceed established limits.

NOTE: Commanders must ensure that detailed planning and rehearsals that emphasize fratricide prevention are conducted prior to all missions.

SECTION II – FRATRICIDE AVOIDANCE

I-17. Fratricide avoidance is a complex problem defying simple solutions. Fratricide can be defined broadly as the unforeseen and unintentional death or injury to friendly personnel and damage of or loss of equipment as a result of employing friendly weapons and munitions with the intent of killing the enemy or destroying his equipment or facilities. This section focuses on actions leaders can take to reduce the risk and occurrence of fratricide using current resources.

MAGNITUDE OF THE PROBLEM

I-18. The modern battlefield is more lethal than any battlefield in history. The tempo of operations is rapid, and the nonlinear nature of the battlefield creates C2 challenges for unit leaders. The accuracy and lethality of modern weapons make it possible to engage and destroy enemy targets at extended ranges. However, the ability of US forces to acquire targets using thermal imagery and other sophisticated sighting systems exceeds its capability to accurately identify these targets. Consequently, friendly elements can be engaged unintentionally and destroyed in a matter of seconds. Added to this is battlefield obscuration, which becomes a critical consideration whenever thermal sights are the primary source of target identification. Rain, dust, fog, smoke, and snow degrade identification capability by reducing the intensity and clarity of thermal images. On the battlefield, positive visual identification cannot be the sole engagement criteria at ranges beyond 1,000 meters. A COP, either digital or analog, is essential and must be maintained throughout any operation.

RISK IDENTIFICATION AND PREVENTIVE MEASURES

I-19. Reduction of fratricide risk begins during the planning phase of an operation and continues through preparation and execution. Risk identification must be conducted at all levels during each phase and the results clearly communicated up and down the chain of command so risk assessment can begin. The following paragraphs cover considerations influencing risk identification and focuses on measures the leader can implement to make the identification process more effective and help prevent friendly fire incidents from occurring.

PLANNING

I-20. A thoroughly developed, clearly communicated, and completely understood plan helps minimize fratricide risk. The following factors affect the potential for fratricide in a given operation:

- Clarity of the enemy situation.
- Clarity of the friendly situation.
- Clarity of the commander's intent and concept of operations.
- Complexity of the operation.
- Planning time available at each level.

I-21. Graphics are a basic tool commanders at all levels use to clarify their intent, add precision to their concept, and clearly communicate their plan to subordinates. Graphics can be a very useful tool in reducing the risk of fratricide. Each commander must understand the definitions and purposes of operational graphics and the techniques of their employment. FM 1-02 (FM 101-5-1) defines each type of graphic control measure.

PREPARATION

I-22. Confirmation briefs and rehearsals are primary tools for identifying and reducing fratricide risk during preparation for an operation. The following are considerations for their use:

- Confirmation briefs and rehearsals ensure subordinates know where fratricide risks exist and what to do to reduce or eliminate them.
- Briefbacks ensure subordinates understand the commander's intent. They often highlight areas of confusion or complexity or planning errors.
- The type of rehearsal conducted determines the types of risks identified.
- Rehearsals should extend to all levels of command and involve all key players.
- The following factors may reveal fratricide risks during rehearsals:
  - Number and type of rehearsals.
  - Training and proficiency levels of units and individuals.
  - The habitual relationships between units conducting the operation.
  - The physical readiness (endurance) of the troops conducting the operation.

EXECUTION

I-23. Risk assessments continuing during execution and improvisation can overcome unforeseen fratricide risk situations.

I-24. The following are factors to consider when assessing fratricide risks:

- Intervisibility between adjacent units.
- Amount of battlefield obscuration.

- Ability or inability to identify targets positively.
- Similarities and differences in equipment, vehicles, and uniforms between friendly and enemy forces.
- Vehicle density on the battlefield.
- The tempo of the battle.

I-25. Maintaining a COP of friendly forces at all levels and at all times is another key to fratricide avoidance as an operation progresses. Units develop and employ effective techniques and SOPs to aid leaders and crewmen in this process, to include—

- Monitoring the next higher radio or digital net.
- Radio and digital cross-talk between units.
- Accurate position reporting and navigation.
- Training, use, and exchange of liaison officers.

FRATRICIDE REDUCTION MEASURES

I-26. The following measures provide a guide to actions that can reduce fratricide risk. Use of these measures is not required, nor are they intended to restrict initiative. Apply them as appropriate based on the specific situation and METT-TC factors:

- Identify and assess potential fratricide risks in the estimate of the situation. Develop a simple, decisive plan and express these risks in an order (WARNO, OPORD, or FRAGO).
- Focus on areas such as current intelligence, unit locations and dispositions, denial areas (minefields and FASCAM), contaminated areas such as ICM and NBC, SITREPs, and METT-TC factors.
- Ensure positive target identification. Review vehicle and weapon ID cards. Know at what ranges and under what conditions positive identification of friendly vehicles and weapons is possible.
- Establish a command climate that stresses fratricide prevention. Enforce fratricide prevention measures and emphasize the use of doctrinally sound techniques and procedures. Ensure constant supervision in the execution of orders and the performance of all tasks and missions.
- Recognize the signs of battlefield stress. Maintain unit cohesion by taking quick, effective action to alleviate battlefield stress.
- Conduct individual, leader, and collective (unit) training covering fratricide prevention, target identification and recognition, and fire discipline.
- Use SOPs that are consistent with doctrine to simplify mission orders. Periodically review and change SOPs as needed.
- Strive for maximum planning time for your subordinates.
- Use doctrinally correct standard terminology and control measures, such as fire support coordination line and RFLs.
- Ensure thorough coordination is conducted.

- Plan for and establish effective communications (to include visual).
- Plan for collocation of command posts whenever it is appropriate to the mission, such as during a passage of lines.
- Ensure ROE are clear.
- Include fratricide risk as a key factor in terrain analysis (OAKOC).
- Conduct rehearsals whenever the situation allows time to do so.
- Be in the right place at the right time. Use position location and navigation devices (GPS and POSNAV); know your location and the locations of adjacent units (left, right, leading, and follow-on). Synchronize tactical movement.
- Plan and brief OPSEC (challenge and password, sign and countersign).
- Whenever possible, the risk management process should also include AAR to assess unit performance in identifying risks and preventing hazardous situations. Leaders should then incorporate lessons learned from the process into unit SOPs and plans for future missions.
- Stress the importance of the chain of command in the fire control process (see Appendix C); ensure soldiers get in the habit of obtaining target confirmation and permission to fire from their leaders before engaging targets they assume are enemy elements.
- Ensure fire commands are accurate, concise, and clearly stated. Make it mandatory for soldiers to ask for clarification of any portion of the fire command that they do not completely understand.

FRATRICIDE AVOIDANCE CONSIDERATIONS

I-27. Table I-3 contains key factors and considerations in fratricide avoidance, paralleling the five-paragraph operations order format. This is not a change to the OPORD format but is a technique to ensure fratricide avoidance measures are included when completing the plan during the TLP. The factors and considerations are listed where they would likely appear in the OPORD, but they may warrant evaluation during preparation of other paragraphs.

Table I-3. Fratricide Avoidance Checklist

TASK ORGANIZATION:

- Has the unit worked under this task organization before?
- Are SOPs compatible with the task organization (especially with attached units)?
- Are special markings or signals (for example, cats' eyes, chemlites, or panels) needed for positive identification of uniforms and equipment?
- What special weapons and equipment are to be used? Do they look or sound like enemy weapons and equipment?

1. **SITUATION**.

a. ***Enemy Forces***.

(1) *Weather*:

- What are the expected visibility conditions (light data and precipitation) for the operation?
- What affects will rain, heat, and cold have on soldiers, weapons, and equipment?

(2) *Terrain*:

- Do you know the topography and vegetation (urban, mountainous, hilly, rolling, flat, desert, swamp/marsh, prairie/steppe, jungle, or open woods) of the expected AO?
- Have you evaluated the terrain using the factors of OAKOC?

b. ***Friendly Forces***.

- Among the allied forces, are there differences (or similarities with enemy forces) in language, uniform, and equipment that could increase fratricide risk during combined operations?
- Could differences in equipment and uniforms among US armed forces increase fratricide risk during joint operations?
- What differences in equipment and uniforms can leaders stress to help prevent fratricide?
- What is the friendly deception plan?
- What are the locations of your unit and adjacent units (left, right, leading, and follow-on)?
- What are the locations of neutrals and noncombatants?
- What are the locations of your own forces?
- What is the status of training activities?
- What are the levels of individual, crew, and unit proficiency?
- Will fatigue be a factor for friendly forces during the operation? Has an effective sleep plan been developed?
- Are friendly forces acclimatized to the AO?
- What is the age (new, old, or mixed) and condition of equipment in friendly units?
- What is the status of new equipment training?
- What are the expected MOPP requirements for the operation?

c. ***Attachments and Detachments***.

- Do attached elements understand pertinent information regarding enemy and friendly forces?
- Will gaining units provide this pertinent information to detached elements?
- Are communications systems compatible (digital/analog)?

2. **MISSION**.

- Do all elements clearly understand the mission and all associated tasks and purposes?

	POTENTIAL RISK CATEGORIES (WITH VARIABLE CONDITIONS AND POINT VALUES)		
FACTORS AFFECTING FRATRICIDE	**LOW RISK (1 POINT)**	**MEDIUM RISK (2 POINTS)**	**HIGH RISK (3 POINTS)**
UNDERSTANDING OF THE PLAN			
Commander's intent	Clear		Vague
Complexity	Simple		Complex
Threat situation	Known		Unknown
Friendly situation	Clear		Unclear
ROE/ROI	Clear		Unclear
ENVIRONMENTAL FACTORS			
Intervisibility	Favorable		Unfavorable
Obscuration	Clear		Obscured
Battle tempo	Slow		Fast
Positive target ID	100 %		None (0 %)
CONTROL MEASURES			
Command relationships	Organic		Joint/combined
Audio communications	Loud / clear		Jammed
Visual communications	Easily seen		Obscured
Graphics	Standard		Not understood
SOPs	Standard		Not used
Liaison personnel	Proficient		Untrained
Location/navigation	Sure		Unsure
EQUIPMENT (compared to US equipment)			
Friendly	Similar		Different
Threat	Different		Similar
TRAINING			
Individual proficiency	MOS-qualified		Untrained
Unit proficiency	Trained		Untrained
Rehearsals	Realistic		None
Habitual relationships	Yes		No
Endurance	Alert		Fatigued
PLANNING TIME (based on 1/3 - 2/3 rule)			
Higher headquarters	Adequate		Inadequate
Own unit	Adequate		Inadequate
Subordinate elements	Adequate		Inadequate
Overall risk assessment (by total point value)	**Low risk 26 - 46 points**	**Medium risk 42 - 62 points**	**High risk 58 - 78 points**

NOTE: Point values alone may not accurately reflect fratricide risk. The commander must tailor his assessment to the unit's requirements.

Figure I-2. Fratricide Risk Assessment Worksheet

Appendix J

Tactical Missions Tasks

This appendix is intended to provide the mechanized infantry and tank company team leadership a quick reference guide to assist them in the planning process when assigning common tactical tasks to subordinate units and leaders.

J-1. The following tactical mission tasks in this appendix describe the results or effects the commander wants to achieve-the what and why of a mission statement. These tasks have specific military definitions that are different from those found in a dictionary. (See FM 3-90 [FM 100-40] or FM 1-02 [FM 101-5-1].)

- **Effects on Enemy Force.**
  - *Block.* A tactical task assigned to a unit that requires it to deny the enemy access to a given area or to prevent enemy advance in a given direction or an avenue of approach. It may be a specified time. Units assigned this mission may have to retain terrain and accept decisive engagement.
  - *Canalize.* To restrict operations to a narrow zone by use of existing or reinforcing obstacles, fires or unit maneuvering or positioning.
  - *Contain.* To restrict the enemy movement by stopping, holding or surrounding his forces.
  - *Destroy.* A tactical task to physically render an enemy force combat-ineffective unless it is reconstituted.
  - *Defeat.* A tactical task to either disrupt or nullify the enemy force commander's plan and subdue his will to fight so that he is unwilling or unable to further pursue his adopted course of action and yields to the will of his opponent..
  - *Fix.* A tactical task in which actions are taken to prevent the enemy from moving any part of his forces either from a specific location or for a specific period of time by holding or surrounding them to prevent their withdrawal for use elsewhere.
  - *Interdict.* A tactical task which is oriented on the enemy to prevent, hinder, or delay the use of an area or route by enemy forces.
  - *Isolate.* A tactical mission that requires a unit to seal off–both physically and psychologically–an enemy from his sources of support, deny him freedom of movement, and prevent him from having contact with other enemy forces.
  - *Neutralize.* To render enemy personnel or material incapable of interfering with a particular operation.

- *Suppress.* Direct and Indirect fires, electronic countermeasures or smoke brought to bear on enemy personnel, weapons, or equipment to prevent effective fire on friendly forces.

- **Actions by Friendly Force.**
  - *Attack by fire—fires (direct and indirect).* Employed to destroy the enemy from a distance, normally used when the mission does not dictate or support occupation of the objective. This task is usually given to the supporting element during the offensive and as a counterattack option for the reserve during defensive operations. An attack by fire is not done in conjunction with a maneuvering force. When assigning this task, the commander must specify the intent of fire-either to destroy, fix, or suppress.
  - *Breach.* The employment of any means available to break through or secure a passage through an enemy defense, obstacle, minefield, or fortification.
  - *Bypass.* A tactical task that involves maneuvering around an obstacle, position, or enemy force to maintain the momentum of advance. Bypassed obstacles and enemy forces are reported to higher headquarters.
  - *Clear.* A tactical task to remove all enemy forces and eliminate organized resistance in an assigned zone, area, or location by destroying, capturing, or forcing the withdrawal of enemy forces such that they cannot interfere with the friendly unit's ability to accomplish its mission
  - *Demonstrate.* Type of attack that is a deception similar to a feint, with the exception that no contact with the enemy is sought.
  - *Disengagement.* Breaking contact with the enemy and moving to a point where the enemy can neither observe nor engage the unit by direct fire.
  - *Displace.* To leave one position and take another.
  - *Exfiltrate.* The removal of personnel or units from areas under enemy control by stealth, deception, surprise, or clandestine means.
  - *Follow and support.* An operation in which a committed force follows a force conducting an offensive operation; normally an exploitation or pursuit. Such a force is not a reserve but is committed to accomplish any or all of these tasks: destroy bypassed units, relieve in place any direct pressure or encircling force which has halted to contain the enemy; block movement of reinforcements, secure lines of communication , guard prisoners, key areas, and installations, secure key terrain, and control refugees.

- *Occupy.* A tactical task in which a force moves onto an objective, key terrain, or other man-made or natural terrain area without opposition, and controls that entire area.
- *Reduce.* A tactical mission task that involves the destruction of and encircled or bypassed enemy force. Reduce is also a mobility task that involves creating sufficient lanes through an obstacle to negotiate its intended effect.
- *Retain.* A tactical task to occupy and hold a terrain feature to ensure it is free of enemy occupation or use.
- *Secure.* A tactical task to gain possession of a position or terrain feature, with or without force, and to deploy in a manner which prevents its destruction or loss to enemy action. The attacking force may or may not have to physically occupy the area.
- *Seize.* A tactical task to clear a designated area and obtain control of it.
- *Support by fire.* A tactical task in which a maneuver element moves to a position on the battlefield where it can engage the enemy by direct fire to support a maneuvering force by either support by fire by overwatching or establishing a base of fire. The maneuver element does not attempt to maneuver to capture enemy forces or terrain.
- *Suppress.* A tactical mission task that results in the temporary degradation of the performance of a force or weapon system below the level needed to accomplish its mission.

Appendix K

Environmental Protection

Protection of natural resources has become an ever-increasing concern. It is the responsibility of all unit leaders to decrease, and if possible eliminate, damage to the environment when conducting all types of operations.

CONTENTS

Environmental Risk Management Process K-1
Step 1 – Identify Hazards K-1
Step 2 – Assess the Hazards K-1
Step 3 – Make Environmental Risk Decisions K-1
Step 4 – Brief the Chain of Command K-2
Step 5 – Implement Controls K-2
Step 6 – Supervise K-2
Environmental Risk Assessment Worksheet K-2

SECTION I – ENVIRONMENTAL RISK MANAGEMENT PROCESS

K-1. Environmental risk management parallels safety risk management and is based on the same philosophy and principles. (See Appendix C for the discussion of safety risk management.) The environmental risk assessment and management process consists of the six steps outlined in the following paragraphs.

STEP 1 – IDENTIFY HAZARDS

K-2. The company team's leaders must identify potential sources of environmental degradation during their analysis of METT-TC factors. These environmental hazards are conditions with the potential for polluting air, soil, or water and/or destroying cultural or historical structures, sites, or artifacts.

STEP 2 – ASSESS THE HAZARDS

K-3. Leaders can use the environmental risk assessment worksheet in Figure K-1 on page K-3 to analyze the potential severity of environmental degradation for each training activity. The worksheet allows them to quantify the risk to the environment as extremely high, high, medium, or low. The risk impact value is an indicator of these levels of severity.

STEP 3 – MAKE ENVIRONMENTAL RISK DECISIONS

K-4. Based on the results of the risk assessment, the team's leaders make decisions and develop measures to reduce significant environmental risks. Risk decisions are made at a level of command that corresponds to the degree of risk.

STEP 4 – BRIEF THE CHAIN OF COMMAND

K-5. Leaders should brief all responsible individuals and agencies (to include the installation environmental office, if applicable) on the proposed operational and training plans and on pertinent high-risk environmental factors.

STEP 5 – IMPLEMENT CONTROLS

K-6. The company team commander and subordinate leaders implement environmental protection measures at all stages of operational planning, preparation, and execution. They integrate these measures into plans, orders, SOPs, training performance standards, and rehearsals.

STEP 6 – SUPERVISE

K-7. Company team leaders enforce environmental protection standards during supervision of all training activities.

SECTION II – ENVIRONMENTAL RISK ASSESSMENT WORKSHEET

K-8. To use the environmental risk assessment worksheet for a specific operation or training event, the company team commander and subordinate leaders first determine the impact level for each of the five types of unit activities listed in the top part of the worksheet (movement of heavy vehicles and equipment; movement of personnel and light vehicles and equipment; assembly area activities; field maintenance activities; and garrison maintenance activities) (see Figure K-1). This risk impact is assigned a value from 0 (lowest risk) to 5 (highest risk) for each activity.

K-9. The second part of the worksheet allows leaders to assess the risk impact of these unit activities in seven critical areas of environmental concern. The leaders determine which of the five activities will affect each area and enter the corresponding risk impact value. For example, the company team commander determines that movement of heavy vehicles (which he has assigned a risk value of 5), "light" movement (a value of 2), and assembly area activities (a value of 4) will affect air pollution during the company team's upcoming training exercise. He enters those values in the appropriate columns, then adds them together for a total risk impact value of 11 for air pollution. He repeats this process for the other environmental areas of concern.

K-10. The total of the risk impact values for the seven environmental areas is the overall risk impact value for the operation or exercise. As with other types of risk assessment, decisions concerning environmental risk must be made, and appropriate controls implemented, at the proper level of command. The decision-maker (whether it is the company team commander, a subordinate leader, or a higher commander) uses the risk impact values as a guide in ensuring that the environment in the operational area is protected and preserved.

Environmental Risk Assessment Worksheet						
Environmental area:	**Rating:**					
Unit Operations:	**Risk Impact:**					
Movement of heavy vehicles/systems	5	4	3	2	1	0
Movement of personnel and light vehicles/systems	5	4	3	2	1	0
Assembly area activities	5	4	3	2	1	0
Field maintenance of equipment	5	4	3	2	1	0
Garrison maintenance of equipment	5	4	3	2	1	0

Overall Environmental Risk Assessment Form						
	Movement of heavy vehicles/systems	**Movement of personnel and light vehicles/systems**	**Assembly area activities**	**Field maintenance of equipment**	**Garrison maintenance of equipment**	**Risk impact value**
Air pollution						
Archaeological and historical sites						
Hazardous material/waste						
Noise pollution						
Threatened/endangered species						
Water pollution						
Wetland protection						
OVERALL RISK IMPACT VALUE						

Risk Impact Value Categories			
Category	**Range (Points)**	**Environmental Damage Risk**	**Decision-maker**
Low	0-58	Little or none	Appropriate level
Medium	59-117	Minor	Appropriate level
High	118-149	Significant	Division commander
Extremely High	150-175	Severe	MACOM commander

Figure K-1. Environmental Risk Assessment Worksheet

Glossary

A2C2	Army airspace command and control
A2C2S	Army airborne command and control system
AA	assembly area
AAR	after-action review
ABCS	Army Battle Command System
ABF	attack by fire
AC	active component
ACA	airspace coordination areas
ACE	armored combat earthmover
ACP	air control points
AD	air defense
ADA	air defense artillery
ADAM	area denial antipersonnel mine
ADC	area damage control
ADCOORD	air defense coordinator
ADO	air defense officer
ADW	air defense warning
AFATDS	Advanced Field Artillery Tactical Data System
AG	Adjutant General
AGL	above ground level
AGM	air-to-ground missile
AH	attack helicopter
AHB	assault helicopter battalion
AHD	antihandling device
AI	area of interest
A/L	administration/logistics
amb	ambulance
AO	area of operation
AOAP	Army oil analysis program
AOC	air operation center
AOE	Army of Excellence
AOR	area of responsibility

APAM	antipersonnel/antimaterial
APC	armored personnel carrier
APOD	aerial port of debarkation
ARFOR	Army forces
ARNG	Army National Guard
ARSOF	Army special operations forces
armt	armament
ARTEP	Army Training and Evaluation Program
arty	artillery
AS	artillery smoke
ASAS	all source analysis system
ASL	authorized stockage list
ASP	ammunition supply point
AT	antitank
ATCCS	Army Tactical Command and Control System
ATGM	antitank guided missile
atk	attack
AVLB	armored vehicle launched bridge
AVLM	armored vehicle launched MICLIC
AVUM	aviation unit maintenance
AWACS	airborne warning and control system
AWOL	absent without leave
AXP	ambulance exchange point

BAS	battalion aid station
BCT	brigade combat team
bde	brigade
BFV	Bradley Fighting Vehicle
BFSV	Bradley Fire Support Vehicle
BIDS	Biological Identification Detection System
BII	basic issue item
BMNT	beginning morning nautical twilight
BMO	battalion maintenance officer
BOS	battlefield operating system
BP	battle position

BPV	battle planning and visualization
br	branch
BSA	brigade support area
BSFV	Bradley Stinger Fighting Vehicle
btry	battery
C2	command and control
CA	civil affairs
CAFAD	combined arms for air defense
CAS	close air support
CASCOM	combined arms support command
CASEVAC	casualty evacuation
CBRNE-CM	chemical, biological, radiological, nuclear, and high yield explosive consequence management
CBU	cluster bomb unit
CCIR	commander's critical information requirements
CCP	casualty collection point
CDE	chemical detection equipment
CFF	calls for fire
CFFZ	call-for-fire zone
CFL	coordinated fire line
CFZ	critical friendly zone
cgo	cargo
chem	chemical
CI	counterintelligence
CITV	commander's independent thermal view
CIV	commander's independent viewer
CLU	command launch unit
cmd	command
CMOC	civil military operations center
CMT	company maintenance team
co	company
COA	course of action
COLT	combat observation lasing team
COMSEC	communications security

COP	common operational picture
COSCOM	Corps Support Command
CP	command post
CRT	combat repair teams
CS	combat support
CSM	command sergeant major
CSOP	combat security outpost
CSS	combat service support
CTCP	combat trains command post
CTIL	commander's tracked items list

DA	Department of the Army
DAAP	downed aviatior pickup point
DC	displaced civilians
DED	detailed equipment decontamination
det	detachment
DEW	directed energy weapons
DLIC	detachment left in contact
DOD	Department of Defense
DP	decision point
dvr	driver
DS	direct support
DSO	domestic support operations
DST	decision support template
DTD	detailed troop decontamination
DSVT	digital secure voice terminal
DTSS	digital topographic support system
DVE	driver's vision enhancer
DZ	drop zone

EA	engagement area
EEFI	essential elements of friendly information
EENT	end evening nautical time
eff	effective

EMT	emergency medical treatment
EPLRS	Enhanced Position Location Reporting System
EFST	essential fire support task
EPW	enemy prisoners of war
equip	equipment
ESTAT	equipment status reports
EW	electronic warfare

FA	field artillery
FARP	forward arming and refueling point
FASCAM	family of scatterable mines
fax	facsimile
FBCB2	Force XXI Battle Command Brigade and Below
FEBA	forward edge of the battle area
FED	forward entry device
FFIR	friendly forces information requirements
FHA	foreign humanitarian assistance
FIST	fire support team
FIST-V	fire support team-vehicle
1SG	first sergeant
FLOT	forward line of own troops
FM	field manual; frequency modulation
FO	forward observer
FP	fighting patrol
FPCON	force protection
FPF	final protective fires
FPL	final protective line
FRAGO	fragmentary order
FRS-H	forward repair system-heavy
FSB	forward support battalion
FSC	forward support company
FSE	fire support element
FSEM	fire support execution matrix
FSO	fire support officer

FSV	fire support vehicle
FWF	former warring factions

gnr	gunner
GP	general purpose
GPS	global positioning systems
grd	ground
grp	group
GS	general support
GS-R	general support-reinforcing
GSR	ground surveillance radar
G/VLLD	ground vehicle laser locator designator

HAZMAT	hazardous materials
HE	high explosive
HEAT	high-explosive antitank
HEDP	high-explosive dual purpose
HEI-T	high-explosive incendiary tracer
HEMTT	heavy expanded mobility tactical truck
HHC	headquarters and headquarters company
HMMWV	high mobility multipurpose wheeled vehicle
HPT	high-payoff target
hq	headquarters
hr	hour
HSS	health service support
HUMINT	human intelligence
HVT	high-value target

I2	image intensification
IBASI	Improved Bradley Acquisition System
ICM	improved conventional munitions; in coordination with
IDA	improved dogbone assembly
IEDK	individual equipment decontamination kit

IEW	intelligence and electronic warfare
IFC	integrated fires command
IFF	identification, friend, or foe
IFSAS	initial fire support automated system
INFOSYS	information systems
INS	infrared night sight
IO	information operations
IPB	intelligence preparation of the battlefield
IR	infrared; information requirements
IRC	individual ready company
IREMBASS	Improved Remotely Monitored Battlefield Sensor System
ISR	intelligence, surveillance, reconnaissance
ISU	integrated sight unit
IVIS	intervehicular information system
IVL	intervisibility line
JAAT	joint air attack team
JFACC	joint forces air component commander
JSEAD	joint suppression of enemy air defense
JSTARS	joint surveillance target attack radar system
KCLFF-E	kitchen, company level, field feeding-enhanced
KIA	killed in action
km	kilometers
kmih	kilometers in the hour
kmph	kilometers per hour (as a unit of measure that indicates motion)
kp	kitchen police
kph	kilometers per hour (as a unit of measure only)
KY	Kentucky
KZ	kill zone

LD	line of departure
ldr	leader
LLD	laser locator/designator
LNO	liaison officer
LOA	limit of advance
LOC	line of communication
log	logistics
LOGPAC	logistics package
LOS	line of sight
LP	listening posts
LRAS3	Long-Range Advanced Scout Surveillance System
LRP	logistics release point
LZ	landing zone

m	meters
MANPAD	man-portable air defense
MBA	main battle area
MCOO	modified combined obstacle overlay
MCS	Maneuver Control System
MDMP	military decision-making process
mech	mechanized
med	medical
MEDEVAC	medical evacuation
MEL	maximum engagement lines
METL	mission essential task list
METT-TC	mission, enemy, terrain and weather, troops and support available, time available, and civil considerations
MI	military intelligence
MIA	missing in action
MIBN	mechanized infantry battalion
MIC	mechanized infantry company
MICLIC	mine clearing line charge
MIJI	meaconing, intrusion, jamming, and interference
MIP	mechanized infantry platoon
MOE	measures of effectiveness

MOGAS	motor gasoline
MOOTW	military operations other than war
MOPMS	modular pack mine system
MOPP	mission-oriented protective posture
MP	military police
MPAT	multipurpose antitank (round)
mph	miles per hour
MRE	meals ready to eat
MSL	minimum safe line
MSR	main supply route
MST	maintenance support team
MT	mechanical time (fuze)
MTOE	modified table of organization and equipment
MTW	major theater of war

NAI	named areas of interest
NATO	North Atlantic Treaty Organization
NCA	National Command Authorities
NBC	nuclear, biological, chemical
NBCWRS	NBC warning and reporting system
NCA	National Command Authorities
NCO	noncommissioned officer
NCOIC	noncommissioned officer in charge
NCS	net control station
NEO	noncombatant evacuation operations
NFA	no-fire area
NGF	naval gunfire
NGO	nongovernmental organization
NMC	nonmission capable
NVD	night-vision devices
NVG	night-vision goggles

OAKOC	obstacles, fields of fire, avenues of approach, key terrain, observation and fields of fire, cover and concealment
obj	objective
OBSTINTEL	obstacle intelligence
OE	operational environment
OEG	operational exposure guidance
OIC	officer in charge
OP	observation post
OPCON	operational control
OPFOR	opposing forces
OPLAN	operation plan
OPORD	operation order
ops	operations
OPSEC	operations security
ord	ordnance
org	organization
ORP	objective rally point

PA	public affairs
PAO	public affairs office
PCC	precombat checks
PCI	precombat inspection
PD	point denotating
PDDE	power-driven decontamination equipment
PE	peace enforcement
PEO	peace enforcement operations
PERSTAT	personnel status
petrl	petroleum
PEWS	platoon early warning system
PGM	precision-guided munitions
PIR	priority intelligence requirement
PKO	peacekeeping operations
PL	phase line
PLD	proable line of deployment
PLGR	precision lightweight global positioning system receiver

PLL	prescribed load list
plt	platoon
PMCS	preventive maintenance checks and services
PME	peacetime military engagements
PO	peace operations
POD	port of debarkation
POE	port of embarkation
POL	petroleum, oil, and lubricants
pos	position
POSNAV	position navigation
POW	prisoner of war
PP	passage points
PSG	platoon sergeant
PSYOP	psychological operations
PX	post exchange
PZ	pickup zone

QM	Quartermaster Corps
QRF	quick-reaction force

RAAMS	remote antiarmor mine system
RAG	Regimental Artillery Group
RAP	rocket-assisted projectile
RC	reserve component
RCPA	relative combat power matrix
RCU	remote control unit
recon	reconnaissance
REDCON	readiness condition
regt	regiment
REMBASS	remotely monitored battlefield sensor systems
RES	radiation exposure status
RI	relevant information
ROE	rules of engagement
ROI	rules of interaction

ROM	refuel on the move
RP	release point; red phosphorus
RPG	rocket propelled grenades
RPV	remotely piloted vehicle
R&S	reconnaissance and surveillance
RSOI	reception, staging, onward movement, and integration
RTD	return to duty
RTO	radiotelephone operator

S1	Adjutant/Personnel Officer
S2	Intelligence Officer
S3	Operations and Training Officer
S4	Logistics
S5	Civil-Military Operations Officer
S6	Signal Officer
SALT	size, activity, location, and time
SALUTE	size, activity, location, unit, time, and equipment
SARP	small arms repair parts
SAW	squad automatic weapon
SBF	support by fire
SE	security element
SEAD	suppression of enemy air defense
SEE	small emplacement excavator
SENSEREP	sensitive report
SHORAD	short-range air defense
SINCGARS	single channel ground and airborne radio system
SITEMP	situation template
SITMAP	situation map
SITREP	situation report
SOF	special operation forces
SOI	signal operation instructions
SOP	standing operating procedures
SOSRA	suppress, obscure, secure, reduce, and assault
SPOTREP	spot report
SRP	soldier readiness preparation

SSC	smaller-scale contingencies
S&T	supply and transportation
STATREP	status report
SU	situation understanding
SVML	standard vehicle mounted launchers
TACFIRE	tactical fire direction system
TC	tank commander
TCF	tactical combat force
T&E	traverse and elevation (mechanism)
TEWT	tactical exercise without troops
TF	task force
TFSA	task force support area
tgt	target
THAAD	theater high-altitude air defense
TI	tactical internet
TIM	toxic industrial materials
TLP	troop-leading procedures
tm	team
TOW	tube-launched, optically tracked, wire-guided
TPFDDL	time-phased force and deployment data list
TRADOC	United States Army Training and Doctrine Command
trkd	trucked
trmt	treatment
TRP	target reference point
TSOP	tactical standing operating procedures
TTP	tactics, techniques, and procedures
UAV	unmanned aerial vehicle
UMCP	unit maintenance collection point
UMO	unit movement officer
UMT	unit ministry team
UO	urban operations
US	United States

USAARMC	United States Army Armor Center
USAF	United States Air Force
USMC	United States Marine Corps
VEESS	vehicle emitted exhaust smoke system
vic	vicinity
VT	variable time (fuze)
WARNO	warning order
WCS	weapon control status
WIA	wounded in action
WO	warning order
WP	white phosphorus
WSRO	weapon system replacement operations
XO	executive officer

Bibliography

AR 40-66. *Medical Record Administration and Health Care Documentation*. 3 May 1999.

AR 385-11. *Ionizing Radiation Protection (Licensing, Control, Transportation, Disposal, and Radiation Safety*. 1 May 1980.

ARMOR Magazine. *Air-Ground Integration: Proven TTPs* by CPT Thomas M. Feltey, MAJ Brian K. Serota, and CPT Erick W. Sweet, II. July-August 2002.

ARMOR Magazine. *Busting the Barricades: How Armor was Employed in the Urban Battle of Seoul* by CPT Matthew H. Fath. September-October 2001.

ARMOR Magazine. *Clearing the Defile: A Doctrinal Discussion* by CPT John W. Miller, III. November-December 1994.

ARMOR Magazine. *Company Team Command Post: The Missing Link* by CPT Dave Thompson. July-August 1996.

ARMOR Magazine. *Crisis in Battle: The Conduct of the Assault* by MAJ David J. Lemelin. July-August 1995.

ARMOR Magazine. *Direct Fire Planning* by MAJ Derek Miller and CPT Rick Averna. November-December 1993.

ARTEP 7-247-11-DRILL. *Battle Drills for the Mechanized Infantry Platoon and Squad (M2-Equipped)*. 24 March 1987.

ARTEP 17-237-10-MTP. *Mission Training Plan for the Tank Platoon*. 25 September 1996.

ARTEP 71-1-MTP. *Mission Training Plan for the Tank and Mechanized Infantry Company and Company Team*. 28 April 1999.

DA Form 1155. *Witness Statement on Individual*. June 1966.

DA Form 1156. *Casualty Feeder Report* .June 1966.

DA Form 1355. *Minefield Record*. March 1987.

DA Form 1355-1-R. *Hasty Minefield Record*. September 2001.

DA Form 1594. *Daily Staff Journal or Duty Officer's Log*. November 1962.

DA Form 5988E. *Equipment Maintenance Inspection Worksheet*. 1990.

DD Form 1380. *US Field Medical Card*. December 1991.

FM 1-02 (FM 101-5-1). *Operational Terms and Graphics*.To Be Published.

FM 2-01.3 (FM 34-130). *Intelligence Preparation of the Battlefield*. 8 July 1994.

FM 3-0 (FM 100-5). *Operations*. 14 Jun 2001.

FM 3-06 (FM 90-10). *Urban Operations.* To Be Published..

FM 3-06.11 (FM 90-10-1). *Combined Arms Operations in Urban Terrain.* 28 February 2002.

FM 3-07 (FM 100-20). *Stability Operations and Support Operations.* To Be Published.

FM 3-07.3 (FM 100-23). *Peace Operations.* 30 December 1994.

FM 3-07.7 (FM 100-19). *Domestic Support Operations.* 1 July 1993.

FM 3-11.3 (FM 3-3). *Chemical and Biological Contamination Avoidance.* 16 November 1992, Change 1, 29 September 1994.

FM 3-11.5 (FM 3-5). *NBC Decontamination*. 28 July 2000, Change 1, 31 January 2002.

FM 3-11.14 (FM 3-4). *NBC Protection*. 29 May 1992, Change 2, 21 February 1996.

FM 3-11.34 (FM 3-4-1). *Multiservice Tactics, Techniques, and Procedures for NBC Defense of Theater Fixed Sites, Ports, and Airfields.* 29 Sep 2000.

FM 3-20.12 (FM 17-12-1/2). Mobile Gun System Gunnery. 5 May 1998.

FM 3-20.15 (FM 17-15). *Tank Platoon.* 1 November 2001.

FM 3-20.95 (FM 17-95). *Cavalry Operations.* 24 December 1996.

FM 3-20.96. Cavalry Squadron (RSTA). To Be Published.

FM 3-20.97 (FM 17-97). *Cavalry Troop*. 3 October 1995.

FM 3-20.98 (FM 17-98). *Scout Platoon.* 10 April 1999.

FM 3-21.10 (FM 7-10). *The Infantry Rifle Company.* 14 December 1990, Change 1, 31 October 2000.

FM 3-21.20 (FM 7-20). *The Infantry Battalion*. 6 April 1992, Change 1, 29 December 2000.

FM 3-21.60 (FM 21-60). *Visual Signals.* 30 September 1987.

FM 3-21.71 (FM 7-7J). *Mechanized Infantry Platoon and Squad (Bradley).* 7 May 1993.

FM 3-21.98 (FM 7-98). *Operations in a Low-Intensity Conflict.* 19 October 1992.

FM 3-22.1 (FM 23-10). *Sniper Training*. 17 August 1994.

FM 3-23.1 (FM 23-1). *Bradley Gunnery.* 18 March 1996.

FM 3-24.32 (FM 20-32). *Mine/Countermine Operations.* 29 May 1998, Change 2, 22 August 2001.

FM 3-34 (FM 5-114). *Engineer Operations Short of War*. 13 July 1992.

FM 3-34.1 (FM 90-7). *Combined Arms Obstacle Integration.* 29 September 1994.

FM 3-34.2 (FM 90-13.1). *Combined-Arms Breaching Operations.* 31 August 2000, Change 2, 23 February 2001.

FM 3-34.112 (FM 5-103). *Survivability.* 10 June 1985.

FM 3-90 (FM 100-40). *Tactics.* 4 July 2001.

FM 3-90.2 (FM 71-2). *The Tank and Mechanized Infantry Battalion Task Force.* 27 September 1988, Change 1, 17 August 1994.

FM 3-90.3 (FM 71-3). *The Mounted Brigade Combat Team.* 1 November 2001.

FM 3-93 (FM 100-7). *Decisive Force: The Army in Theater Operations.* 31 May 1995.

FM 3-97.3 (FM 90-3). *Desert Operations.* 24 August 1993.

FM 3-97.4 (FM 90-4). *Air Assault Operations.* 16 March 1987.

FM 3-97.5 (FM 90-5). *Jungle Operations.* 16 August 1982.

FM 3-97.6 (FM 90-6). *Mountain Operations.* 28 November 2000.

FM 3-97.22 (FM 90-22). *Cold Weather Operations.* 12 April 1968.

FM 4-02.2 (FM 8-10-6). *Medical Evacuation in a Theater of Operations Tactics, Techniques, and Procedures.* 14 April 2000.

FM 4-02.26 (FM 8-10-26). *Employment of the Medical Company (Air Ambulance).* 16 February 1999, Change 1, 30 May 2002.

FM 4-93.50 (FM 63-20-1). *Tactics, Techniques, and Procedures for the Forward Support Battalion (Digitized).* 2 May 2002.

FM 5-19 (FM 100-14). *Risk Management.* 23 April 1998.

FM 6-0 (FM 100-34). *Command and Control.* To Be Published.

INDEX

A

actions during the march, 11-30
- halts, 11-31
- movement to the start point, 11-30
- orientation, 11-30

actions,
- on contact, 5-18 thru 5-31, 6-19, 8-24 thru 8-26
- on contact, 11-31

Adjutant (S1), 10-21

administrative/logistics (A/L), 2-13, 3-68

advance guard, 8-23

advance in contact, 5-21 thru 5-33

Advanced Field Artillery Tactical Data System (AFATDS), 3-67. 9-10

aerial port of,
- debarkation (APOD), G-4
- embarkation (APOE), G-6

after-action,
- report, 3-25
- reviews (AAR), I-6

air control point (ACP), 9-32

air defense, 3-37, 3-40, 3-69, 5-376, 6-8, 9-28 thru 9-30, 11-4. *See also BOS, air defense.*

air defense,
- artillery (ADA), 3-38, 9-25 and 9-26
- officer (ADO), 6-9

air movement, 9-32

all-source analysis system (ASAS), 5-19

ambulance exchange point (AXP), 10-23,

ambush, 3-5, 5-51. *See also attack.*

ammunition supply point (ASP), G-3

anti-armor fires, 3-8

antitank guided missiles (ATGM), 7-31 and 7-32, F-3

area,
- damage control (ADC), 1-8
- denial antipersonnel mine (ADAM), 9-6, 9-16, 9-20
- of influence, 1-5
- of interest (AI), 1-5
- of operations (AO), 1-1 thru 1-5, 2-8, 3-13, 3-20, 3-66, 4-1, 4-21, 5-2, 5-38 thru 5-41, 5-56, 6-38, 8-26, F-8
  - *contiguous, 1-1, 1-6*
  - *noncontiguous, 1-1, 1-5 and 1-6*

armored,
- cavalry regiment (ACR), 9-12
- combat earthmover (ACE), 2-1, 11-25
- personnel carrier (APC), 2-2, 2-14, 2-15
- vehicle launched bridge (AVLB), 5-5, 9-12, 11-25 thru 11-27
- vehicle launched MICLIC (AVLM), 11-23

armorer, 2-14

arms control, 8-5

Army Battle Command System (ABCS), 5-19

Army Oil Analysis Program (AOAP), 10-4

Army Tactical Command and Control System (ATCCS), 5-20

assault force, 5-44, 5-52, 5-65 thru 5-76, 6-37. *See also assault; breaching, urban operations; water crossing operations.*

assembly areas, 3-36, 8-24, 11-32 and 11-33

attack, 5-41 through 5-54, F-5. *See also offensive operations.*
- by fire, 5-26
- deliberate, 5-42 thru 5-46
- hasty, 5-42

authorized stockage list (ASL), G-3

Avenger, 9-25 and 9-26

avenues of approach. *See OAKOC.*

axis planning, 6-35

B

battalion,
- aid station (BAS), 2-14 and 2-15, 10-6, 10-19, thru 10-23
- maintenance officer (BMO), 10-18

battle command, 3-1 thru 3-72
- command, 3-1 thru 3-11
- company team TLPs, 3-12 thru 3-52
- company team CP, 3-71 and 3-72
- communications, 3-63 thru 3-69
- communications security, 3-69 thru 3-71
- control, 3-53 thru 3-72
- mission command, 3-2 and 3-3

operational picture and COP, 3-53
plans and orders, 3-4 thru 3-11
relevant information, 3-53
reporting, 3-60 thru 3-62
seeing the battlefield, 3-53 and 3-54
situational understanding (SU), 3-54 thru 3-60
SOP, 3-62 and 3-63
steps, 3-13 thru 3-52
battle drills, 5-22
battle handover, 11-3
battle position (BP), 3-12, 3-36, 3-56, 3-59, 4-18, 6-2, 6-9, 6-14, 6-20 thru 6-29, 10-14. *See also defensive operations.*
battlefield organization, 1-6 thru 1-9
battlefield operating system (BOS),
air defense, 3-37, 3-40, 3-69, 5-37, 6-8, 9-28 thru 9-30, C-7
combat service support (CSS), 1-1, 1-4, 2-1, 2-8, 2-14, 3-26, 3-32 thru 3-41, 4-8 thru 4-15, 6-1 thru 6-3, 6-12, 6-26, 7-4 and 7-5, 7-16, 7-39 and 7-40, 7-54, 7-57, 8-3, 9-22, 10-1 thru 10-29, 11-3, C-3, C-5, C-8
command and control (C2), 1-2, 1-5, 2-10, 3-1 thru 3-3, 3-29, 3-52 and 3-53, 4-7, 4-10 and 4-11, 5-6, 6-26, 7-16, 7-21, 9-26, 9-32 , 11-4, C-5 and C-6
fire support, 5-5, 5-67 and 5-68, 7-50, 9-1 thru 9-3, 9-22, C-7
intelligence, 9-21, C-6
maneuver, 5-16 thru 5-18, 5-72, 9-21, C-6
mobility and survivability, 5-68 and 5-69, 6-9 thru 6-12, 6-30, 9-22, 9-24, C-7 and C-8
nuclear, biological, chemical (NBC), 2-2, 2-7, 2-13, 3-37, 3-49, 5-60, 9-30 and 9-31, 10-27
battlespace, 1-6, 6-10
beginning morning nautical twilight (BMNT), 3-24
biological operations. *See NBC.*
Biological Identification Detection System (BIDS), E-2
Bradley Fighting Vehicle (BFV), 2-1, 2-5, 3-68, 4-5, 4-15, 5-24, 5-39, 5-40, 5-56, 5-63 and 5-64, 5-73 and 5-74, 6-4, 7-4, 7-27 thru 7-30, 7-43, 7-48, 7-52 and 7-53, C-12, H-1
Bradley Fire Support Vehicle (BFSV), 9-2
Bradley Stinger Fighting Vehicle (BSFV), 2-8, 2-14, 3-52, 3-69, 5-5, 6-8, 6-9, 9-25 *See also air defense/ADA.*
breaching,
company team breaching assets, 11-16 thru 11-21
force, 11-13
fundamentals, 11-12
in support of a deliberate attack, 11-14
intelligence, 11-11
organization, 11-12
tenets, 11-11
brigade,
combat team (BCT), 1-7, 5-19, 5-36
support area (BSA), 5-26, 6-52, 5-58 and 5-59, C-15
Bypass, 5-26, 5-56 thru 5-59

C

calls for fire, 3-67
casualty evacuation (CASEVAC), 1-4, 2-10, 2-15, 3-39, 3-67, 4-11, 6-12, 7-5, 7-20, 7-48, 7-57, 9-32, 10-22 and 10-23, 10-28 and 10-29. *See also MEDEVAC.*
casualty collection point (CCP), 2-15, 7-57
checkpoint, 8-13 thru 8-16
chemical, biological, radiological, nuclear, and high yield explosive consequence management, (CBRNE-CM), 8-29
chemical detection equipment (CDE), G-3
chlorobenzaymalononitrile (CP) (teargas), I-19
civil affairs (CA), 2-8, 7-53
civil-military operations center (CMOC), 8-31 and 8-32
classes of supply, 10-8 and 10-9
Class I, 10-3, 10-8, 10-14, C-14
Class II, 10-8, C-14
Class III, 4-11, 5-6, 8-7, 10-6, 10-8, 10-13 and 10-14, 10-27, C-14, G-3
Class IV, 6-11 thru 6-13, 8-7, 10-3, 10-8, 10-16, 10-13, C-14, G-3
Class V, 4-11, 5-6, 5-55, 6-11 thru 6-13, 6-22, 8-7, 10-6 thru 10-16, C-14 and C-15
Class VI, 10-9, C-15
Class VII, 10-9, C-15
Class VIII, 10-6, 10-9, C-15, G-3
Class IX, 10-9, C-15
Class X, 10-9
clear, 5-59 and 5-60, 6-19

close air support (CAS), 5-39, 5-68, 6-2 and 6-3, 6-8, 7-28, 9-1

combat repair team (CRT), 2-12 thru 2-14, 10-8, 10-18

combat service support (CSS), 1-1, 1-4, 2-1, 2-8, 2-14, 3-26 thru 3-41, 4-11, 4-8 thru 4-10, 4-15, 6-1, 6-3, 6-12, 6-26, 7-4 and 7-5, 7-16, 7-39 and 7-40, 7-54, 8-3, 10-01 thru 10-29, 11-4, C3, C-5*, C-8,* G-2, G-6

- communications, 10-7
- execution, 10-2
- individual responsibilities, 10-2 thru 10-5
- maintenance team chief, 10-4
- platoon sergeant, 10-4
- responsibilities, 10-1 thru 10-5
- supply sergeant, 10-3
- trauma specialist/company/ platoon medics, 10-5

combat security outpost (CSOP), 3-29, 3-35, 3-42, 5-27 and 5-28, 5-66, 5-69

combat support (CS), 1-1, 1-4, 2-1, 2-8, 3-13, 3-26, 3-32 thru 3-40, 4-8 thru 4-15, 5-34 thru 5-37, 5-48, 5-69, 6-1, 7-4 and 7-5, 9-1, C-3, C-5, G-1, G-6. *See also air defense, ADA; BOS; engineers; FA; fire support; NBC operations.*

combined arms for air defense (CAFAD), 9-24 and 9-25

command, 2-1 thru 2-11, 3-1 thru 3-12. *See also battle command; C2; control.*

- combat orders, 3-6
- guidance, 6-33 and 6-34
- mission command, 2-2 and 2-3
- plans and order, 3-4 thru 3-11
- relationships, 3-51 and 3-52
  - *assigned, 3-51*
  - *attached, 3-52*
  - *OPCON, 3-52*
  - *organic, 3-51*

command and control (C2), 1-2, 1-5, 2-10, 3-1 thru 3-3, 3-29, 3-40 and 3-41, 3-52 and 3-53, 4-7, 5-6, 6-26, 7-16, 7-21, 9-26, 9-32, 11-4, D-2, F-3, G-1, G-6. *See also BOS, C2.*

command and launch unit (CLU), 2-7, 3-24

command and support relationships, 3-51 and 3-52

command post (CP), 2-12 and 2-13, 3-29, 3-71 and 3-72, 5-14, 8-8 and 8-9, 8-17, 10-25

combat trains command post (CTCP), 10-26

commander (company team), 2-9, 3-67, 3-51, 3-67

commander's critical information requirements (CCIR), 3-53 thru 3-55, 8-8

commander's independent thermal viewer (CITV), D-2, D-5

commander's independent viewer (CIV), D-2, D-5, E-5

commander's intent, 3-6 and 3-7, 3-45

commanders tracked items list (CTIL), 10-7

common operating picture (COP), 3-53 and 3-54, 3-66, 5-17 thru 5-20, 9-2

communications, 3-63 thru 3-68, 7-49, C-12

- communications specialist (duties), 2-12 and 2-13
- digital, 3-66 and 3-67
- means of, 3-64 and 3-65
- radio net, 3-65 thru 3-67

communications security (COMSEC), 3-69

- active protection measures, 3-70
- antijamming procedures, 3-70
- reporting, 3-70

company maintenance team (CMT), 2-8 thru 2-12, 10-18

company team. *See also tank platoon; mechanized infantry platoon.*

- command post, 3-71
- configuration, 3-71
- functions, 3-72
- manning, 3-71
- tasks, 8-5 thru 8-27
- troop-leading procedures (TLP), 3-12 thru 3-52,

company team operations,

- air defense, 9-24 thru 9-30
- aviation CS missions, 9-32
- clearance of fires, 9-10
- countermobility planning considerations, 9-14 thru 9-24
- early warning procedures, 9-27
- engineer support, 9-11 thru 9- 24
- equipment capabilities, 9-12 and 9-13
- final protective fires planning, 9-6 and 9-7
- fire support planning, 9-3 thru 9-11
- fire support team, 9-1 and 9-2
- FIST employment, 9-2
- intelligence, 9-31 and 9-32
- linking fire support tasks and maneuver purpose, 9-3 thru 9-6
- mobility planning considerations, 9-13

NBC support, 9-30 and 9-31
organization and organic equipment, 9-11
reaction procedures, 9-27 thru 9-30
survivability planning considerations, 9-24
systems, organization, and capabilities, 9-24 thru 9-26
target refinement, 9-7 thru 9-10
consolidation and reorganization, 7-19 and 7-20
contiguous areas. *See area of operations, contiguous.*
control, 3-53 thru 3-72
command; C2; communications; direct fire control.
decision making, 3-54
operational picture and common operational picture, 3-53
relevant information, 3-53
seeing the battlefield, 3-53
situation understanding (SU), 3-54
control measures, 11-29
graphics, 11-29
key terrain, 11-30
strip maps, 11-30
traffic control, 11-30
visual signals, 11-30
convoy escort, 8-20,
counterattack, 3-5 thru 3-8, 6-36 and 6-37, F-5
counterintelligence (CI), 2-8, 9-31
counterdrug, 8-5
countermobility, 6-10 thru 6-12. *See also engineers, mobility and countermobility; obstacles.*
counterreconnaissance. *See reconnaissance.*
course of action (COA), 3-10 thru 3-13, 3-26 thru 3-28, 3-34, 3-48, 3-61 thru 3-63, 5-11, 5-19 thru 5-26, 5-50, 8-25.
cover and concealment, 6-15
crew served system sights, D-2 and D-3
cross-attachment considerations, 10-19

D

deception, 11-3
decisive operations, 1-6 and 1-7
decontamination.*See also NBC operations, nuclear operations.*
power driven, E-13
defensive operations, 1-3, 2-9, 3-5, 3-20 thru 3-23, 5-1 thru 5-44, D-5 and D-6. *See also BPs, delay, EA, reserve operations; withdrawal.*
adjacent unit coordinator, 6-26
air defense, 5-68
Class IV/V supply points and mine dumps, 6-13
combat service support (CSS), 6-12
consolidation and reorganization, 6-3
counterattack, 6-3
defend a BP, 6-8
defend a perimeter, 6-31 thru 6-33
defend a strongpoint, 6-28 thru 6-30
displacement planning, 6-14 thru 6-16
enemy assault, 6-3
engagement area (EA) development, 6-16 thru 6-22
in sector, 6-27
main attack, 6-2
mobility and survivability, 6-9 thru 6-12
occupation of, 6-2 and 6-3
plan, 6-3 thru 6-16, 6-33 thru 6-36, D-5 and D-6
positional reserve, 6-37 and 6-38
preparation and integration, 6-16 thru 6-26, D-5 and D-6
retrograde operations, 6-38 thru 6-44
sequence of the defense, 6-1 thru 6-3
techniques, 6-27 thru 6-33
urban operations, 7-41 thru 7-57
weapons positioning, 6-3
defensive positions. *See defensive operations.*
delay, 3-5, 7-56 and 7-57
demonstration, 3-5, 5-50
deployment, G1 thru G-6
activities, G-2 thru G-4
force projection, G-1
fort-to-port movements, G-4 and G-5
phases, G-2 thru G-6
reception, staging, onward movement, and integration, G-6
desert laager formation, 11-34 and 11-35
detachment left in contact (DLIC), 2-10, 6-42
detailed equipment decontamination (DED), E-15 and E-16
detailed troop decontamination (DTD), E-15 thru E-17
digital laser locator designator (LLD), 9-2
direct fire, 3-40, 5-8, 5-69, 6-15, 6-35

direct fire control, B-1 thru B-26
alert, B-17
avoid target overkill, B-2 and B-3
control (optional), B-18
destroy the greatest threat first, B-2
determine where and how to mass fires, B-20 and B-21
develop contingencies for diminished capabilities, B-4
direction of fire, B-6
employ the best weapon for the target, B-3
engagement area (EA), B-5 and B-6
engagement priorities, B-11
engagement techniques, B-14 thru B-17
execution, B-19
final protective line (FPL), B-8 and B-9
fire commands, B-17 thru B-19
fire patterns, B-9
identify probable enemy locations and determine the enemy scheme of maneuver, B-19 and B-20
mass the effects of fire, B-2
maximum engagement line, B-8
measures, B-4 thru B-17
minimize friendly exposure, B-3
orient forces to speed target acquisition, B-21 and B-22
orientation, B-18
plan for extreme limited visibility conditions, B-3
planning, B-24
prevent fratricide, B-3
principles, B-2 thru B-3
process, B-19 thru B-23
quadrants, B-6 and B-7
range (optional), B-18
restrictive fire line, B-8
rules of engagement (ROE), B-13
sector of fire, B-6
shift fires to refocus and redistribute, B-22 and B-23
SOP, B-24 thru B-26
SOP element for avoiding fratricide, B-26
SOP element for distributing fires, B-25
SOP element for focusing fires, B-25
SOP for orienting fires, B-25 and B-26
target array, B-10
target description, B-18
target reference point (TRP), B-5
terrain-based, B-5 thru B-9
threat-based, B-9 thru B-17
trigger, B-12
unitwide surveillance and target acquisition, B-1 and B-2
weapon or ammunition (optional), B-17
weapon ready posture, B-11 and B-12
weapons control status, B-12
weapons safety posture, B-13
direct support (DS), 2-14, 3-52, 10-79
directed-energy weapons (DEW), F-3
attack reporting, H-3 and H-4
characteristics, H-1 and H-2
defensive measures, H-2 and H-3
laser, H-1 and H-2
laser MOPP (L-MOPP), H-4
microwave radiation emitters, H-2
particle beam weapons, H-2
displaced civilians (DC), 7-3
displacement, 6-14 thru 6-16
downed aviator pick-up point (DAAP), 5-4
Dragons, C-2 and C-3
driver's vision enhancer (DVE), D-2
duties and responsibilities (company team personnel), 2-9 thru 2-15. *See also commander, FSO; 1SG; XO; platoon leader; PSG.*
commander, 2-9
communications specialist, 2-12
executive officer (XO),
FSO, 2-11
maintenance team chief, 2-14
master gunner, 2-14
NBC NCO, 2-13 and 2-14
platoon leader, 2-11
PSG, 2-11
senior medic, 2-15
supply sergeant, 2-13

E

effects, 6-10 thru 6-12, 9-4
blocking, 6-11
disrupting,6-10
fixing, 6-11
protective, 6-12
turning, 6-11
electronic warfare (EW), 3-41, 6-2, 9-1, 10-27. *See*

also communications; COMSEC.

emergency medical treatment (EMT), 2-15, 10-21

end evening nautical twilight (EENT), 3-24

enemy. *See also defensive operations; EPW; METT-TC; offensive operations.*

enemy COAs (ECOA), 6-16

enemy scheme of maneuver, 6-17 and 6-18

enemy prisoners of war (EPW), 5-57, 5-75, 5-63, 7-20, 10-3, 10-13, 10-25 thru 10-27

engagement areas (EA), 3-20 thru 3-22, 3-36, 3-56, 3-60, 4-3, 6-2, 6-10 and 6-11,
6-16, 6-20 thru 6-35, 7-48. *See also BPs; defensive operations; direct fire control.*

engineers, 7-48 and 7-49

engineer support, 9-11

Enhanced Position Location Reporting System (EPLRS), 3-50, 3-65

environmental, K-1 thru K-3

- controls, K-2
- protection, K-2 and K-3
- process, K-1 and K-2
- steps, K-1 and K-2
- worksheet, K-3

equipment, D-1 thru D-4

essential elements of friendly information (EEFI), 3-55, 4-19

essential fire support tasks (EFST), 3-55, 6-7 and 6-8, 9-3 and 9-4

execution, D-5 and D-6

execution matrix, A-6 thru A-7

executive officer (XO), 1-8, 2-2, 2-9, 3-3, 3-30, 3-38 thru 3-40 thru 3-51, 3-67, 3-70, 4-10, 4-16, 5-7, 6-22, 6-43, 7-40, 10-1, 10-2, 10-4, 10-13, C-11, G-2

exploitation, 3-5

F

family of scatterable mines (FASCAM), 3-18, 9-6

family support group (FSG), G-3

feint, 3-5, 5-49 and 5-50

field artillery (FA). *See also fire control measures; fire support; FSO; FIST; indirect fire.*

fields of fire, 7-54. *See also OAKOC.*

- final protective fires (FPF), 2-12, 5-75, 6-8, 6-21, 6-30, 7-48, 9-6. *See also fire control measures; indirect fires.*

fire support, 2-12, 5-5, 5-67 and 5-68, 7-50 9-1 thru 9-3, 9-22. *See battlefield operating system (BOS), FA; FPF, fire support; FSO; FIST; indirect fire.*

- element (FSE), 2-12
- execution matrix (FSEM), 9-4
- officer (FSO), 2-11, 3-38 thru 3-40, 3-46, 5-7, 5-31, 6-7, 6-36, 9-3, 9-7. *See also fire support; FIST; indirect fire; forward observers (FO).*
- personnel, 9-2
- planning, 6-36, 9-3
- team (FIST), 3-6, 3-22, 3-63, 3-67, 9-1 thru 9-3
- team vehicle (FIST-V), 3-71, 5-44, 6-8
- vehicle (FSV), 9-2

first sergeant (1SG), 1-8, 2-2, 2-9 and 2-10, 2-13, 2-15, 3-30, 3-38, 3-40, 3-45 and 3-46 thru 3-51, 3-68 and 3-69, 7-40, 10-2, 10-4, 10-6, 10-13, 10-21 thru 10-25, G-4

follow and support forces, 5-56 thru 5-58

follow-on missions, 4-11

force, 7-17

- assault, 7-17, 11-13
- breach, 7-17, 11-13
- projection, 8-2 and 8-3, 8-8
- protection, 8-2
- reconnaissance,
- reserve, 7-17
- support, 7-17, 11-13

Force XXI, 5-20, 5-22, 5-52, 10-1, 10-5 thru 10-7

Force XXI Battle Command Brigade and Below (FBCB2), 2-1, 3-47, 3-50, 3-53, 3-65 and 3-66, 5-2, 5-8, 5-21, 7-10 and 7-11, 9-10, 10-2, 10-7, 11-2, 11-7, 11-33, A-1, D-4 thru D-6

Foreign Humanitarian Assistance (FHA), 8-27 thru 8-31

Foreign Internal Defense (FID), 3-5

formations,

- coil and herringbone, 5-16
- column, 5-12
- desert laager, 11-35
- echelon, 5-15 and 5-16
- on line, 5-12 and 5-13
- vee, 5-12
- wedge, 5-12

forward arming and refueling point (FARP), 5-4

forward edge of the battle area (FEBA), 3-36, 5-2, 6-3

forward line of own troops (FLOT), 4-9, 4-15, 10-5 and 10-6

forward observer (FO), 2-12, 5-34, F-4

forward passage of lines. *See passage of lines, forward.*

forward repair system heavy (FRS-H), 10-6
forward support battalion (FSB), 10-6
forward support company (FSC), 1-4, 2-8, 10-1, 10-4
fragmentary orders (FRAGO), 3-4 thru 3-11, 3-43 thru 3-51, 3-72, 5-25, 5-31, 5-33, 5-42, 5-45, 5-66, 5-71, 6-23, 7-31, 11-10, A-1, I-9. *See also orders.*
fratricide. *See Risk Management/Fratricide Avoidance.*
free fire area (FFA),
friendly force information requirements (FFIR), 3-55
full spectrum operations, 1-1

G

general support (GS), 3-52
general support-reinforcing (GS-R), 9-25
global positioning systems (GPS), 3-50, 11-4, I-10
graphics. *See control measures.*
ground surveillance radar (GSR), 2-8
ground vehicular laser locator designator (G/VLLD), 9-2, 9-8
guard operations, 4-14 thru 4-18
  advance guard, 4-14 thru 4-15
  flank guard, 4-15
  moving flank guard, 4-17
  purposes, 4-14
  rear guard, 4-15
  stationary guard, 4-15

H

halts,
  scheduled, 11-31
  unscheduled, 11-31
handover. *See battle, handover.*
hasty attack, 5-42 and 5-43. *See also attack; offensive operations.*
hazardous materials (HAZMAT), G-2 thru G-5
Headquarters and Headquarters Company (HHC), 1-4, 10-4 thru 10-11
hazardous materials (HAZMAT), G-2
health service support (HSS), 2-15, 10-19 thru 10-23
heavy/light integration, C-1 thru C-15
  additional attachments to the company team, C-10
  additional operational considerations, C-11 thru C-13
  air assault and airborne brigade, C-3
  airborne and air assault companies, C-5
  airborne brigade, C-2
  airborne rifle company, C-4
  air defense, C-7
  capabilities and limitations, C-1 and C-2
  combat service support, C-8
  combat service support operations, C-13 thru C-15
  command and control, C-5 and C-6
  communications, C-12
  dismounted infantry movement rates, C-11
  fire support, C-7
  HEMTT, 10-11
  intelligence, C-6
  maneuver, C-6 and C-7
  organization of light forces, C-1 thru C-5
  infantry brigade, C-2
  light infantry battalion, C-3
  light infantry company and platoon, C-3 and C-4
  light infantry rifle company, C-4
  mobility and survivability, C-7 and C-8
  operational considerations, C-15
  operational organization, C-10
  operations and tasks, C-8 and C-9
  organization of battalions, C-3
  organization of light infantry brigade, C-2
  organization of light force companies and platoons, C-3 thru C-5
  planning and integration, C-13
  planning considerations, C-5 thru C-8
  safety considerations, C-12 and C-13
  supply requirements, C-14
  tank mounted infantry, C-12
  task organization below platoon level, C-9 thru C-11
hexachloroethane-zinc (HC), 9-6
high explosive (HE), 5-68, 7-9
high mobility multipurpose wheeled vehicle (HMMWV), 2-2 and 2-3, 5-5, 6-43, 10-5, C-3, C-14
high-payoff target (HPT), 6-8
Hornet, 9-18 and 9-19
human intelligence (HUMINT), 7-4, 7-18

humanitarian assistance, 3-5. *See also support operations.*

I

identification, friend, or foe (IFF), 9-25

improved conventional munition (ICM), 7-15, I-9

Improved Bradley Acquisition System (IBAS), D-2

Improved Remotely Monitored Battlefield Sensor System (IREMBASS), 2-8

indirect fire, 2-8, 3-40, 4-10, 5-8, 5-71, 6-15, 8-24. *See also fire, indirect; FA; fire support, FSO; FIST; FIST-V.*

information. *See also civil affairs; deception; EW; OPSEC; PSYOP; public affairs.*

- environment, 1-5 and 1-6
- requirements, 3-53, 3-59
- systems (INFOSYS), 1-5

infrared night sight (INS), 9-6

integrated sight unit (ISU), D-2

intelligence. *See battlefield operating system (BOS), intelligence.*

Intelligence Officer (S2), 3-27 and 3-28

intelligence preparation of the battlefield (IPB), 2-10

intelligence surveillance, and reconnaissance (ISR), 1-2, 3-31, 3-59, 5-19, 5-21

intent statement, 3-7

internet controller (INC), 3-65

intervehicle information system (IVIS), 3-47, 3-50

intervehicular information system (IVIS), 3-47. *See also digital systems.*

J

Javelin, C-2 and C-3

joint force air component commander (JFACC), 9-27

K

kill zone, 5-51, 8-25

killed in action (KIA), 10-3, 10-13, 10-23

kitchen company level field feeding-enhanced (KCLFF-E), 10-8, 10-12

kitchen police (KP), 10-12

L

landing zone (LZ), 6-8, 8-7, 9-32, C-6

laser locator/designator (LLD), 9-2, 9-8

laser MOPP (L-MOPP), H-4

lasers, H-1 and H-2

liaison officer (LNO), 8-17, C-6

light/heavy operations. *See heavy/light integration.*

limit of advance (LOA), 4-10, 5-1

limited visibility, D-1 thru D-6

See also weather.

- C2 and leader systems, D-2
- crew served system sights, D-2 and D-3
- defensive operations, D-5 and D-6
- equipment, D-1
- execution, D-5 and D-6
- individual equipment, D-3
- navigation, D-4
- operations, D-1 thru D-6
- planning, D-5
- preparation, D-5 and D-6
- tactical movement and offensive operations, D-4 and D-5
- vehicle identification, D-4
- vehicle systems, D-2
- visible and nonvisible light control, D-3 and D-4

line of departure (LD), 3-35, 3-39, 3-49, 3-71, 4-2, 5-20

line of sight (LOS), 5-32, 5-52

linebacker, 9-25

lines of communication (LOC), 1-2, 5-57

listening posts (LP), 7-49 thru 7-51, D-6

lodgment areas, 8-5 thru 8-7

Logistics Officer (S4), 2-13

logistics package (LOGPAC), 7-40, 10-3, 10-10, 10-20 thru 10-26. *See also resupply operations.*

logistics release points (LRP), 10-3, 10-11, 10-27

long range advanced scout surveillance system (LRAS3), 5-19

M

main battle area (MBA), 6-37, 7-49

main body, 8-23

main effort, 1-9

main supply route (MSR), 8-26

maintenance operations, 10-17 and 10-18. *See also CSS.*

maintenance team chief, 1-9

major theater of war (MTW), 1-1

maneuver, 5-67, 5-72. See also BO*S; direct fire; indirect fire; tactical movement.*

- base of fire element, 5-16 and 5-17
- bounding element, 5-17
- positioning of platoons and other elements, 5-18

relationships of tactical movement, actions on contact, maneuver, and tactical tasks, 5-18
maneuver control system (MCS), 5-19
man-portable air defense (MANPAD), 9-25
march columns,
close, 11-28
infiltration, 11-28
open, 11-28
master gunner, 2-14
maximum engagement lines (MEL), 3-29, 6-22
meals ready-to-eat (MRE), 7-40
measures of effectiveness (MOE), 8-32
mechanized infantry, 2-2 and 2-3, 3-25. *See also company team; infantry.*
battalion (MIBN), 3-30, 6-10, 9-5
capabilities and limitations, 2-5
company (MIC), 2-2 and 2-3, 3-26, 5-45, 5-70, 5-72, 6-31
personnel and equipment, 2-5
platoon (MIP), 2-5 thru 2-7, 2-6, 3-27, 3-34 and 3-35, 5-44, 8-23, 10-5, 11-14
medical evacuation (MEDEVAC), 8-9, 10-22 and 10-23, 10-29. *See also CASEVAC; CSS; evacuation; health service support; MEDEVAC.*
messengers, 3-64. *See also communications.*
military decision-making process (MDMP), 3-12, 11-14
military intelligence (MI), 4-8
military operations other than war (MOOTW), 1-1
military police (MP), 1-5, 7-53
mine clearing blade (MCB), 9-12
mine clearing rollers (MCR), 9-13
mine clearing line charge (MICLIC), 3-35, 5-5, 9-11 and 9-12, 11-15, 11-23 thru 11-25
mine,
dumps, 6-13, 10-17
MICLIC, 11-23
plows, 2-4, 11-22
rollers, 2-4, 11-22
scatterable,
Volcano, 9-11, 9-13, 9-17, 9-20
warfare, 9-32
minimum safe line (MSL), 9-9
ministry services. *See UMT.*
mission, enemy, terrain and weather, troops and support available, time available, and civil considerations (METT-TC), 1-4, 1-9, 2-8, 3-8 thru 3-15, 3-31 and 3-32, 3-50, 3-53, 3-62, 4-4 thru 4-11, 5-5 thru 5-11, 5-17 and 5-18, 5-34 thru 5-36, 6-4, 6-16, 6-19, 6-24, 7-2, 7-4, 7-16 thru 7-57, 8-12, 8-24, 8-26, 8-30, 9-11, 10-5, 10-10, E-10,F-2, I-2, I-9. *See also OAKOC; TLPs.*
mission essential task list (METL), 2-10
mission oriented protective posture (MOPP), 3-45, C-2, E-4 and E-5, E-10, E-13 and E-14
mission, organization, capabilities, and limitations, 2-1 thru 2-8
mobile defense. *See also defensive operations.*
mobility and survivability, 5-68 and 5-69, 6-9 thru 6-12, 6-30, 9-22. *See battlefield operating system (BOS), mobility, countermobility, and survivability.*
modified combined obstacles overlay (MCOO), 3-15 thru 3-28, 3-40
modified tables of organization and equipment (MTOE), 3-71
modular pack mine system (MOPMS), 6-12, 9-17 and 9-18
mortars. *See fire control measures; fire support; FSO; FIST; indirect fire.*
motor gasoline (MOGAS), 10-8
movement. *See tactical movement; tactical road march.*
movement to contact, 3-5, 4-9, F-5. *See also maneuver; tactical movement.*
multipurpose antitank round (MPAT), 9-29

N

named areas of interest (NAI), 4-10 and 4-11, 4-16, 11-15, F-5
naval gunfire (NGF), 9-1
negotiations, 8-9 thru 8-11. *See also stability operations.*
net control station (NCS), 2-9, 3-70
night-vision,
devices, 5-38
goggles, 5-9, 7-26
noncombatant evacuation operations (NEO), 3-5, 8-3
noncommissioned officer in charge (NCOIC), 3-51, 3-71, 10-16
noncontiguous. *See areas, noncontiguous.*
no fire areas (NFA), 6-21
nonmission capable (NMC), 3-24

North Atlantic Treat Organization (NATO), 7-13 and 7-14

nuclear, biological, chemical (NBC), 2-2, 2-4, 2-7, 2-13, 3-38, 3-49, 5-60, 9-1, 9-30 and 9-31, 10-27, C-2, C-7 and C-8, E-1 thru E-24, H-3. *See also mobility and survivability; smoke.*

alarms and signals, E-4 and E-5

all-clear signal, E-10

avoidance measures, E-1 thru E-4

biological and chemical casualties, E-7 and E-8

chemical agents, E-8

crossing a chemically/biologically contaminated area, E-10 and E-11

crossing a radiologically contaminated area, E-11

decontamination, E-11 thru E-17

immediate, E-12

levels, E-12 thru E-17

operational, E-13

supported, E-14 and E-15

thorough, E-15

types, E-11 and E-12

unsupported, E-13

defense after a chemical attack, E-7

defense after a nuclear attack, E-5 thru E-7

defense before a chemical attack, C-3 and C-4

defense before a nuclear attack, E-3

defense during a chemical attack, E-7

defense during a nuclear attack, E-5,

detailed equipment decontamination (DED), E-15 and E-16

detailed troop decontamination (DTD), E-15 thru E-17

dismounted defense, E-5

fallout warning, E-6

general avoidance measures, E-2 and E-3

M291 kit, E-7

marking contamination, E-8

MOPP level and SOP requirement, E-4

mounted defense, E-5

NBC NCO, 2-13 and 2-14

nonpersistent agents, E-11 and E-12

operating in the contaminated area, E-6

operational decontamination checklist, E-14

persistent agents, E-12

planning considerations,

power-driven decontamination equipment (PDDE), E-13

protection, E-4 thru E-10

radiological monitoring, E-6

smoke,

countermeasures against enemy, E-24

deception, E-20

marking, E-18

obscuring, E-18 and E-19

operations, E-17 thru E-24

protection, E-19

screening, E-20

sources of, E-21 and E-22

tactical considerations in, E-22 and E-23

use of, E-18 thru E-21

tactical dosimetry, E-6

unmasking procedures, E-9

warning and reporting system (NBCWRS), E-5

weapon and reporting systems, E-10

O

objective rally point (ORP), 5-51

observations and fields of fire, avenues of approach, key terrain, obstacles, cover and concealment, (OAKOC), 3-17 thru 3-25, 5-60, A-2. *See also METT-TC; obstacles; terrain; weather.*

observation posts (OP), 2-7, 3-37, 3-60, 4-3, 4-7 thru 4-13, 4-21 and 4-22, 5-4, 5-66, 6-16, 6-21, 7-49, 7-51, 7-56, 8-12, D-6, F-6

obstacles, 7-45, 7-48, I-10, 11-3. *See also breaching operations; engineers; mobility and survivability; OAKOC.*

belts, 9-15

directed, 9-20

effects, 6-10

groups, 9-15

integration, 6-15, 9-14

intent, 9-14

reserve, 9-20

situational, 9-16

tactical, 9-15 and 9-16

turnover and transfer, 9-21

worksheet, 9-23

zones, 9-15
obstacle intelligence (OBSINTEL), 9-13, 11-11
offensive operations, 1-3, 2-9, 3-5, 3-20 thru 3-23, 5-1 thru 5-76, D-4 and D-5
actions on contact, 5-18 thru 5-33
advance in contact, 5-31
air defense artillery, 5-5
attack, 5-41
attack by fire, 5-52
base of fire elements, 5-17
bypass, 5-58 and 5-59
clear, 5-59 thru 5-65
command and control, 5-6
developing actions on contact, 5-20
execution, D-6
follow and support, 5-56
four steps of actions on contact, 5-26
infiltration, 5-8
intelligence, 5-2
logistics, 5-6
maneuver, 5-2
mobility and survivability, 5-5
movement formations, 5-11
movement techniques, 5-7
overwatch, 5-8
planning, D-5
positioning of platoons and other elements, 5-18
preparation, D-5
relationship of tactical movement, 5-21
search and attack, 5-37
special purpose attacks, 5-48
support by fire, 5-54
suppress, 5-56
tactical tasks, 5-18 and 5-19
time requirements, 5-21
officer in charge (OIC), 2-10
operating systems. *See BOS.*
operation order (OPORD). 2-9 thru 2-12, 3-4 thru 3-13, 3-29 thru 3-31, 3-37 thru 3-41, 3-64, 9-8, 10-25, 11-33, A-1 thru A-7, I-5, I-9
operation plan (OPLAN), I-5
operational and exposure guidance (OEG), 2-13
operational control (OPCON),
3-21, 7-2, 7-48, C-9 and C-10
operational environment, 1-1, 1-3 thru 1-6, 3-25, C-1
framework, 1-3 thru 1-6
full-spectrum operations, 1-2 and 1-3
operations, 3-5
and Training Officer (S3), 3-68
counterinsurgency, 8-4
decentralized, 8-2
decisive, 1-6 and 1-7
insurgency, 8-4
maintenance, 10-17 thru 10-19
shaping, 1-7
stability, 8-1 thru 8- 33
support, 1-1 thru 8-33
sustaining, 1-8 and 1-9
urban. *See urban operations.*
operations security (OPSEC), 4-18 thru 4-22, 5-50, 6-34, 8-12 and 8-13, 11-7, G-3
information security, 4-20
OPs, 4-21 and 4-22
physical security, 4-20
security measures, 4-19
signal security, 4-20
organization and capabilities, 2-1 thru 2-15, 8-17
armorer, 2-14
battlefield focus, 2-8
commander, 2-9
company team, 2-8 and 2-9
communications specialist, 2-12 and 2-13
CSS assets, 2-8
duties and responsibilities of key personnel, 2-9 thru 2-15
FSO, 2-11 and 2-12
1SG, 2-10
maintenance team chief, 2-14
master gunner, 2-14
mechanized infantry company headquarters, 2-2 and 2-3
mechanized infantry platoon, 2-5 thru 2-8
mission, organization, capabilities, and limitations, 2-1 thru 2-8
NBC NCO, 2-13 and 2-14
platoon leader, 2-11
supply sergeant, 2-13
platoon sergeant, 2-11
senior company medic, 2-15
tank company headquarters, 2-2
tank platoon, 2-3 thru 2-5
XO, 2-9

overwatch, 5-7 thru 5-11
alternate, 5-8
bounding, 5-7 and 5-8
successive, 5-8
traveling, 5-7

P

passage lanes, 11-3
passage of lines,
forward, 11-5
rearward, 11-6

passive air defense, 9-28
passive and thermal sights, D-3
Patriot, 9-25
patrol operations, 4-11
patrolling, 8-17
peace operations. *See also stability operations.*
peacekeeping, 3-5, 8-4
peace enforcement, 3-5, 8-4
peacetime environment, 1-1
personnel services. *See also CSS.*
EPWs processing and evacuation, 10-25
financial services, 10-24
legal services, 10-24
postal services, 10-24
public affairs, 10-24 and 10-25
unit ministry team, 10-24
personnel status (PERSTAT), 8-8
petroleum, oils, and lubricants (POL), 3-62, 10-1 thru 10-8, C-14
phase line (PL), 3-42
physical security, 4-20. *See also OPSEC.*
physician assistant (PA), 2-15, 10-20
pickup zone (PZ), 8-6, 9-32, C-6
planning, 3-25, 5-51, 6-33, 8-2 and 8-3, 8-17, C-13, D-5 and D-6
considerations, 5-51, 6-33, 8-2 and 8-3, 8-17, 11-28 and 11-29
timelines, 3-25
plans, 3-4
platoon,
early warning system (PEWS), 4-20
leader, 2-11, 3-67, 3-40, 3-51, 3-67
duties, 3-67 and 3-68
in communications, 3-67 and 3-68
in succession of command, 3-51
sergeant (PSG) 2-3, 2-11, 3-68, 3-40, 3-67, 10-4 and 10-5, 10-12, 10-18, 10-28
duties,2-11
in communications, 3-67 and 3-68
in CSS operations,
port of debarkation (POD), G-2 thru G-5
port of embarkation (POE), G-4 and G-5
position navigation (POSNAV), 11-4, D-4, E-23, I-10
post exchange (PX), 10-9
power-driven decontamination equipment, E-13
precision-guided missile (PGM), 9-6
precision lightweight global positioning system receiver (PLGR), 3-65, E-23
precombat checks (PCC), 3-31, 3-44, 10-26, I-5
precombat inspections (PCI), 3-31, 3-34, 10-12, 10-26, I-5
predeployment activities, G-2 thru G-4
preplanned product improvement (P3I),
prescribed load list (PLL), 10-6 thru 10-11, 10-18, C-15, G-3
preventive maintenance checks and services (PMCS), 10-16, G-6
priority intelligence requirement (PIR), 3-55
private volunteer organization, 8-3
probable line of deployment (PLD), 3-39, 5-47, 5-71
psychological operations (PSYOP), 7-53
public affairs (PA), 8-30, 10-24
public affairs officer (PAO), 8-3
pursuit, 3-5

Q

quartering party, 11-29 thru 11-32
quick reaction force (QRF), 8-8

R

radio communications, 3-65 thru 3-72. *See also communications; single channel ground and airborne radio system (SINCGARS).*
radiotelephone operator (RTO), 8-9, 9-2
raid, 3-5. *See also attack; offensive operations.*
readiness condition (REDCON), 3-14, 4-20, 6-54, 8-26, 11-33
reception, staging, onward movement and integration (RSOI), G-2, G-6
reconnaissance,
aggressive, 4-2
and security, 4-1 thru 4-22, 7-49
and coordination, 11-4 and 11-5
and surveillance (R&S), 3-10, 4-1 thru 4-22, 6-2
approach of the enemy air attack, 6-2
area, 4-7, 8-5
before and after operations, 4-2 and 4-3
by fire, 4-3
dismounted, 4-3

during operations, 4-3
execution, 4-2
forces, 5-34 thru 5-37
forms, 4-4 thru 4-6
in force, 4-4
mounted, 4-3
occupation, 6-2
planning, 4-1
route, 3-5, 4-4 thru 4-6
stealthy, 4-2
support, 9-31
zone, 3-5, 4-6 and 4-7, 7-44
recovery, 8-33
rehearsals, 9-8, 10-28. *See also TLPs.*
guidelines,3-48
actions before the OPORD is issued, 3-48
conditions, 3-48
general, 3-48
priorities, 3-48
progression of rehearsal activities, 3-48
occupation, 6-2
full-dress, 3-47
map, 3-47
radio/digital, 3-47
reduced force, 3-47
sketch map, 3-47
terrain model, 3-47
types, 3-46
backbrief, 3-46
battle drill or SOP rehearsals, 3-47
combined arms, 3-46
confirmation brief, 3-46
support, 3-46
relative combat power analysis (RCPA), 3-33
release point (RP), 4-9, 11-32
relief, 11-8 thru 11-10
disaster, 8-29
humanitarian, 8-29
sequential, 11-9
simultaneous, 11-10
remote antiarmor mine system (RAAMS), 9-6, 9-16, 9-20
remotely monitored battlefield sensor system (REMBASS), 9-31
reorganization. *See consolidation and reorganization.*
reorganization and weapon replacement, 10-25 and 10-26
integration and preparation for combat, 10-26
replacement and cross-leveling of personnel, 10-25
replacement and salvaging equipment, 10-26
weapon system replacement operations, 10-26
replacement/return to duty (RTD), 2-10
reports, 3-60 thru 3-67, 5-23
BRIDGEREP, 3-62
CROSSREP, 3-62
cycle of, 3-61
guidelines, 3-61
Intelligence, 3-62
logistics, 3-62
personnel, 3-62
NBC, 3-62
NBC-1, 3-62, 3-67, E-5, E-7, H-3
NBC-3, 3-62
NBC-4, 3-62, H-3 and H-4
NBC-5, 3-62
ROUTEREP, 3-62
SALT, 3-61, 9-10
SENSEREP, 3-62
SITREP, 3-61
SPOTREP, 3-61
types, 3-61
reserves operations, 6-30 thru 6-38, 7-50, 8-23 thru 8-27, G-1
restricted fire lines (RFL), 11-6
resupply operations, 1-4, 10-10 thru 10-16
emergency, 10-14
LOGPAC operations, 10-10
methods, 10-12
preparation, 10-11
prestocking operations, 10-14
routine resupply, 10-10
retirement, 3-5
retrograde operations, 3-5, 6-38 thru 6-44. *See also defensive operations.*
delay, 6-38 and 6-39
retirement, 6-38, 6-44
withdrawal, 6-38, 6-44
risk management/fratricide avoidance, I-1 thru 12
evaluation, I-6 and I-7
fratricide avoidance, I-7 thru I-12
considerations, I-10 thru I-12
execution, I-8 and I-9
fratricide avoidance checklist, I-11
fratricide risk assessment worksheet, I-12
magnitude of the problem, I-7
planning, I-8
preparation, I-8
reduction measures, I-9 and I-10
risk identification and preventive measures, I-7
management, I-1 thru I-7
potential hazards, I-2
risk levels, I-3

steps, I-1 thru I-5
supervision, I-5
worksheet, I-4
role of the tank/mechanized company team, 1-1 thru 1-9
area of operations, 1-4 and 1-5
area of influence, 1-5
area of interest, 1-5
battlespace, 1-6
battlefield organization, 1-6 thru 1-9
decisive operations, 1-6 and 1-7
full spectrum operations, 1-2 and 1-3
information environment, 1-5 and 1-6
main effort, 1-9
operational environment, 1-1 and 1-2
operational framework, 1-3 thru 1-5
shaping operations, 1-7
supporting effort, 1-9
sustaining operations, 1-8 and 1-9
rocket-propelled grenade (RPG), 7-1
route reconnaissance. *See reconnaissance.*
rules of engagement (ROE), 3-25, 4-21, 7-2, 7-8, 7-12, 7-22 and 7-23, 7-29, 7-50 thru 7-53, 8-2, 8-9 and 8-10, 8-17, 8-24, F-7, F-22 and F-23. *See also stability operations.*
rules of interaction (ROI), 3-25, 4-21, 8-2, 8-9 and 8-10. *See also negotiations; stability operations.*

S

safety considerations, C-12 and C-13
Sapper, 9-11
screen operations, 4-11 thru 4-14
alternate bounds by individuals OP, 4-13
alternate bounds by unit, 4-13
moving flank, 4-13
stationary, 4-12 thru 4-14
secure, 5-64
security. *See also guard operations; local security; OPSEC; screen operations.*
area, 4-9
assistance, 3-5
guard operations, 4-14 thru 4-18
measures, 4-19
operations, 4-7 thru 4-19
planning, 4-7 thru 4-11
senior medic, 1-8, 2-15, 10-20 and 10-21
shaping operations, 1-7
show of force, 8-4
signal operation instructions (SOI), 3-64, 6-26. *See also communications.*
signals security (SIGSEC), 4-20. *See also COMSEC; OPSEC.*
Single Channel Ground and Airborne Radio System (SINCGARS), 3-65, 3-69, 5-4. *See also communications; radio communications.*
situation report (SITREP), 3-61, 3-72, 10-1, A-7, I-5, I-9
situational template (SITEMP), 3-10, 3-14, 3-26 thru 3-32, 3-40, 3-49, 5-66 and 5-67, 9-8
situational understanding (SU), 2-1, 3-54 thru 3-60, 5-19
small emplacement excavator (SEE), 9-11, 9-13
smaller-scale contingencies (SSC), 1-1
smoke, 6-15, 9-31
sniper operations, F-1 thru F-8
attack, F-5
commander's role, F-2
control and employment, F-2
in defensive operations,
in offensive employment, F-4 and F-5
in retrograde employment, F-7
METT-TC factors, F-4 and F-5
movement, F-2
movement to contact, F-5
teams, F-1 and F-2
urban operations employment, F-7 and F-8
soldier readiness preparations (SRP), G-2
sound signals, 3-64. *See also communications.*
special operations force (SOF), 8-4
spoiling attacks, 3-5
spot report (SPOTREP), 3-45, 3-61, 5-22, 5-47, 7-49, 8-24 and 8-25, 9-30, D-5
squad automatic weapons (SAW), D-2
stability and support operations, 2-8, 3-5, 8-1 thru 8-23. *See stability operations; support operations.*
stability operations, 1-3, 3-5, 8-1 thru 8-33. *See also support operations.*
arms control and nation assistance, 8-5
combating terrorism, 8-4
company team tasks, 8-5 thru 8-27
noncombatant evacuation operations (NEO), 8-3

planning, 8-1 and 8-2
peace enforcement operations, 8-4
peace enforcement, 8-4
peacekeeping operations, 8-4
show of force, 8-4
support to counterdrug operations, 8-5
support to domestic civil authority, 8-4
support to insurgency and counterinsurgency operations, 8-4
standard vehicle mounted launchers (SVML), 9-26
standing operating procedure (SOP), 3-1, 3-10, 3-31, 3-45 thru 3-47, 3-61 thru 3-3-64, 5-23, 5-42, 6-15, D-3, E-4, I-5
status report (STATREP), 3-49, 3-64, 3-72. *See also reports.*
strongpoint, 6-29, 7-54 and 7-55
succession of command, 3-51, 3-69
supply and transport (S&T), 10-3
supply operations. *See also classes of supply, CSS; resupply operations.*
supply sergeant, 2-13
support by fire, 5-26, 5-54 and 5-55, 5-65
support force. *See also breaching operations; MOUT; support by fire; water crossing operations.*
support operations, 1-3, 8-1 thru 8-33. *See also humanitarian assistance; stability operations.*
categories of support operations, 8-29 thru 8-31
community assistance, 8-30
considerations for, 8-31 thru 8-33
coordinate actions with other agencies, 8-31 and 8-32
establish measures of effectiveness, 8-32
handover to civilian agencies as soon as feasible, 8-32
phases of, 8-32 and 8-33
provide essential support to the largest number of people, 8-31
recovery, 8-33
response, 8-33
restoration, 8-33
transition to combat, 8-32
foreign humanitarian assistance, 8-28
relief operations, 8-29
support to civil law enforcement, 8-30
types of support operations, 8-27 and 8-28
supporting effort, 1-9
suppress, obscure, secure, reduce, and assault (SOSRA), 11-12 and 11-13
survivability. *See BOS, mobility and survivability.*
sustaining operations, 1-8 and 1-9
synchronization, 11-13 thru 11-21

T

table of organization and equipment (TOE), G-4
tactical enabling operations, 11-1 thru 11-35
breaching operations, 11-10
ACE, 11-25
AVLB, 11-25
breaching fundamentals, 11-12
engineer squad, 11-25
organizations, 11-12 and 11-13
breaching tenets, 11-11
breach theory, 11-10 and 11-11
bypass, 11-11
intelligence, 11-11 and 11-12
mechanized infantry rifle platoon or tank platoon, 11-25
MICLIC, 11-23 and 11-24
mine plow, 11-22
mine roller, 11-22 and 11-13
mobility assets, 11-21 thru 11-25
synchronization, 11-13 thru 11-21
forward passage of lines, 11-5
hasty water crossing and gap crossing operations, 11-25 thru 11-27
amphibious vehicles, 11-26
assault force, 11-26
company team crossing capabilities, 11-26
follow and support force, 11-27
fording vehicles, 11-28
methods and purposes, 11-28 and 11-27
support force, 11-27
task force, 11-26
vehicle launched bridges, 11-26

linkup, 11-1 and 11-2
linkup situations, 11-1
passage of lines, 11-3 thru 11-6
phases of linkup operations, 11-2
planning considerations, 11-3 and 11-4
rearward passage of lines, 11-6
reconnaissance and coordination, 11-4 and 11-5
relief in place, 11-7 thru 11-10
conducting the relief, 11-8
coordination, 11-7 and 11-8
planning the relief, 11-7
road marches and assembly areas, 11-27 thru 11-25
actions at the release point, 11-32
actions during the march, 11-30
actions in the assembly area, 11-33
actions on contact, 11-31
control measures, 11-29 and 11-30
desert laager formation, 11-34 and 11-35
march columns, 11-28
planning considerations, 11-28 and 11-29
quartering party, 11-29
tactical road march, 11-27
tactical combat force, 1-8
tactical exercise without troops (TEWT), 6-4
tactical internet (TI), 3-65
tactical movement offensive operations, D-4 and D-5
tactical road march, 4-9
tactical operations center (TOC), 2-10, 3-42
tactical mission tasks, J-1 thru J-3
actions by friendly forces, J-2 and J-3
effects on enemy forces, J-1
tank company, 2-2
tank platoon, 2-3 thru 2-5
capabilities, 2-4 and 2-5
in breaching operations,
in reconnaissance,
limitations, 2-5
organization, 2-4 and 2-5
tanks, 7-48
target reference point (TRP), 2-14, 3-37, 3-56, 5-28, 5-60, 6-18, 6-28, 9-9, A-6 and A-7, D-6. *See also direct fire; fire control measures; fire support; indirect fire.*
task,
force support area (TFSA), 10-3, 10-6, 10-10, C-15
organization considerations, 8-3
terrorism, 3-5, 8-4 and 8-5
Theater High Altitude Air Defense (THAAD), 9-25
time-distance (TDIS), 3-6
conversion factors, 3-6, 6-35
rates, 3-6
time-phased force and development list (TPFDL), G-3
toxic industrial materials (TIM), 7-3
traverse and elevation (mechanism) (T&E), 11-7
troop-leading procedures (TLP). *See also battle command; C2; METTC; orders; plans; rehearsals.*
tube-launched, optically tracked, wire-guided missile (TOW), 2-7, 5-56, 6-4, 7-9 and 7-10, 7-25, 7-28, C-2 and C-3, D-5

U

unit maintenance collection point (UMCP), 10-4 thru 10-24
unit ministry team (UMT), 10-24
United Nations (UN), 8-3
unmanned aerial vehicle (UAV), 4-8, 5-9, 5-19, 9-25
urban operations, 7-1 thru 7-57
areas, 7-5 and 7-6
assault a building, 7-22 thru 7-25
attack of a block or group of buildings, 7-25 and 7-26
characteristics, 7-1 thru 7-5
combat service support, 7-16, 7-39 and 7-40, 7-57
command and control, 7-10 thru 7-12
communications, 7-2
defense of a block or group of buildings, 7-49 and 7-50
defense of a village, 7-46 thru 7-49
defense of an urban strongpoint, 7-54 and 7-55
defense of key urban terrain, 7-50 thru 7-54
defensive operations, 7-41 thru 7-57

defensive techniques, 7-42 thru 7-44
delay, 7-56 and 7-57
enemy forces outside the urban area, 7-41
enemy forces within the urban area, 7-41
fire support, 7-15 and 7-16
hasty attack, 7-26
hasty defense, 7-44
isolate an urban objective, 7-20 thru 7-22
maneuver, 7-14 and 7-15
movement to contact and reconnaissance, 7-26 and 7-27
NATO Standard Marking SOP, 7-13 and 7-14
occupation and preparation of positions, 7-45
offensive operations, 7-16 thru 7-39
planning considerations, 7-1 thru 7-16
rehearsals, 7-45
seizure of key urban terrain, 7-27 thru 7-39
tactical changes,
tactics, techniques, and procedures for marking, 7-12 and 7-13
task organization, 7-17 thru 7-20
vehicles and equipment characteristics, 7-6 thru 7-16

V

variable time (VT), 7-15
vehicle emitted exhaust smoke system (VEESS), E-22
vehicle identification, D-4
vehicle systems, D-2
visual signals, 3-64
Volcano, 9-11, 9-13, 9-17, 9-20

W

war-gaming,
avenue in depth, 3-39
belt techniques, 3-39
box techniques, 3-39
considerations, 3-40
warning order (WARNO), 3-4 thru 3-14, 3-30, thru 3-36, 3-43, 3-48, 3-72, 6-42, A-1, G-3, I-9
weapon control status (WCS), 9-27
weapon system replacement operations (WSRO), 10-26
weapons positioning, 6-4 and 6-5
depth and dispersion, 6-4 and 6-5
flank, 6-5 and 6-6
reverse slope, 6-6 and 6-7
weather, 3-23 and 3-24
cloud cover, 3-24
light data, 3-24
precipitation, 3-24
temperature and humidity, 3-24
visibility, 3-23
wind speed and direction, 3-24
white phosphorus (WP), 7-22, 9-6, E-18 thru E-24
wire communications, 3-64
withdrawal, 3-56, 6-42 thru 6-44
assisted, 6-44
unassisted, 6-43
wolf tail marking device, 7-13
Wolverine, 9-12, 11-26
wounded in action (WIA), 10-21

X

XO. *See executive officer.*

Z

zone reconnaissance, 3-5, 4-6 and 4-7, 7-44. *See also reconnaissance.*

By order of the Secretary of the Army:

ERIC K. SHINSEKI
General, United States Army
Chief of Staff

Official:

JOEL B. HUDSON
Administrative Assistant to the
Secretary of the Army
0233106

DISTRIBUTION:

Active Army, Army National Guard, and US Army Reserve: To be distributed in accordance with the initial distribution number 110505, requirements for FM 3-90.1.

PIN: 080547-000