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FM 71-3 THE ARMORED AND MECHANIZED INFANTRY BRIGADE

TABLE OF CONTENTS

Preface

Chapter 1 . The Brigade

- Section I. Mission, Capabilities, and Limitations
- Section II. Organizations and Functions
- Section III. Army Operations
- Section IV. Brigade Battlefield Focus
- Section V. The Threat Environment

Chapter 2 . Fundamentals of Brigade Operations

- Section I. Force Projection
- Section II. Tactical Battlefield Framework
- Section III. Battlefield Operating Systems

Chapter 3. Battle Command

- Section I. General
- Section II. Organization and Facilities
- Section III. Communication
- Section IV. Command Post Operations
- Section V. Brigade Rehearsals

Chapter 4 . Offensive Operations

- Section I. Fundamentals of Offensive Operations
- Section II. Forms of Tactical Offense
- Section III. Brigade as a Covering Force
- Section IV. Combined Arms Breaching Operations
- Section V. Night Offensive Doctrine

Chapter 5. Defensive Operations

- Section I. Fundamentals of Defensive Operations
- Section II. Conducting Defensive Operations
- Section III. Combined Arms Obstacle Integration
- Section IV. Brigade Covering Force Operations
- Section V. US Night Defensive Doctrine

Chapter 6. Other Tactical Operations

- Section I. Linkup Operations
- Section II. Relief in Place
- Section III. Passage of Lines
- Section IV. Retrograde Operations
- Section V. Breakout from Encirclement
- Section VI. Rear Operations
- Section VII. River Crossing
- Section VIII. Approach March

Chapter 7. Support of Combat Operations

- Section I. General
- Section II. Fire Support
- Section III. Combat Air Support
- Section IV. Joint Air Attack Team Operations
- Section V. Naval and Marine Fire Support
- Section VI. Mobility and Survivability
- Section VII. Nuclear, Biological, and Chemical Operations
- Section VIII. Smoke Operations
- Section IX. Air Defense Support
- Section X. Intelligence and Electronic Warfare Support
- Section XI. Military Police Support
- Section XII. Signal Support

Chapter 8. Combat Service Support

- Section I. Command and Support Relationships
- Section II. Combat Service Support Overview
- Section III. Brigade Combat Service Support System
- Section IV. Forward Support Battalion
- Section V. Personnel Service Support
- Section VI. Brigade Combat Service Support Planning
- Section VII. Reconstitution
- Section VIII. Weapon Systems Replacement Operations

Appendix A. Operations Other Than War

- Section I. Overview
- Section II. Planning
- Section III. Peacekeeping
- Section IV. Peace Enforcement
- Section V. Training
- Section VI. Conduct of Operations
- Section VII. Armor/Light Considerations

Appendix B. Joint and Multinational Operations

- Section I. The Joint Environment
- Section II. Marine/Army Integration
- Section III. Multinational Operations

Appendix C. Armored Operations with Light Infantry and Special Operations Forces

- Section I. Introduction
- Section II. Armored Brigade and Light Infantry Battalion Operations
- Section III. Light and Armored Operations
- Section IV. Special Operations Forces

Appendix D. Movement and Assembly Areas

Section I. Tactical Road March

Section II. Assembly Areas

Appendix E. Digitization of the Combined Arms Brigade

Section I. Introduction to Digitization

Section II. Digitized Doctrine and Training

Section III. Digitization of the Mounted Combined Arms Brigade

Section IV. Digitized Tactical Operations

Appendix F. Fratricide Prevention

Section I. Magnitude of the Problem

Section II. Risk Identification and Preventive Measures

Section III. Risk Assessment

Section IV. Fratricide Reduction Measures

Section V. Fratricide Risk Considerations (OPORD Format)

Appendix G. Brigade PREPO AFLOAT Operations

Section I. Fundamentals

Section II. Deployment

Section III. Theater Reception and Onward Movement

Section IV. Redeployment

Section V. Commander's Guide to Deployment Operations

Section VI. N-Hour Sequence

Appendix H. Tactical Standing Operating Procedures

Section I. General

Section II. Battle Command Procedures

Section III. Standing Operating Procedures

Section IV. Reports

Appendix I. Decision Making

Section I. Deliberate Decision-making Process

Section II. Abbreviated or Accelerated Decision-making Process

Glossary

References

Index

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Preface

FM 71-3 describes the employment of the armored and mechanized infantry brigade through full dimension operations as outlined in FM 100-5. This manual is intended to assist brigade commanders, their staffs, and subordinate commanders in planning and conducting brigade operations. Familiarity with FM 100-5 and FM 71-100 is essential to use this manual.

Incorporated in this manual are tactics, techniques, and procedures (TTP) for the tactical employment of the armored and mechanized brigade and tactical standing operating procedures (TSOP). FM 71-3 is the foundation for the continuing development of TTPs. The TSOP is generic and is intended for use by any armored and mechanized infantry brigade.

The proponent of this publication is TRADOC. Send comments and recommendations on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to Commandant, USAARMS, ATSB-SBD-D, Fort Knox, Kentucky 40121-5200.

The term "armored" applies to armor and mechanized infantry forces where employed. Unless otherwise stated, masculine nouns and pronouns do not refer exclusively to men.

CHAPTER 1 THE BRIGADE

CONTENTS
Section I. Mission, Capabilities, and Limitations
Section II. Organizations and Functions
Section III. Army Operations
Section IV. Brigade Battlefield Focus
Section V. The Threat Environment

Armored and mechanized brigades are organized to fight successful engagements in conventional and various operations other than war (OOTW) activities. They are subordinate commands of a division and corps and perform major tactical operations as part of a division or corps operation. Regardless of the threat environment,

the key to victory is to impose our will on the enemy by forcing him to conform to the brigade's desired end state. This requires the brigade commander and staff to identify the decisive point(s) and synchronize the efforts of subordinate maneuver battalions, combat support (CS), combat service support (CSS), and available higher headquarters' combat power in support of the brigade effort.

SECTION I. MISSION, CAPABILITIES, AND LIMITATIONS

MISSION

The primary mission of the brigade is to deploy on short notice and destroy, capture, or repel enemy forces, using maneuver and shock effect. Brigades also conduct various OOTW activities, independently or as part of a joint or multinational headquarters in peacetime and conflict environments.

CAPABILITIES AND LIMITATIONS

The brigade has special capabilities and limitations. Table 1-1 shows the capabilities and limitations of the brigade.

Brigade Capabilities	Brigade Limitations
Conducts sustained combat operations with proper augmentation. Accomplishes rapid movement and deep penetrations. Exploits success and pursues a defeated enemy as part of a larger formation. Conducts security operations for a larger force. Conducts defensive, retrograde, and other operations. Conducts offensive operations. Conducts operations with light and special operations forces. Conducts OOTW. Deploys rapidly onto pre-positioned equipment.	Mobility and firepower are limited by -- <ul style="list-style-type: none"> ● Urban areas. ● Dense jungles and forces. ● Very steep and rugged terrain. ● Significant water obstacles. Strategic mobility is limited by heavy equipment. Consumption of classes III, V, and IX supplies is extremely high.

Table 1-1. Brigade capabilities and limitations.

SECTION II. ORGANIZATION AND FUNCTIONS

BRIGADES

Brigades are organized as follows:

- As a combination of armored and mechanized infantry battalions.
- Often times composed with an aviation battalion or task force.
- Occasionally composed of a light infantry battalion, and other supporting units grouped under the command of a brigade headquarters.
- CS and CSS units are task organized to the brigade as necessary.
- Brigades normally operate as part of a division or corps.

The functions of brigades are to:

- Perform tactical tasks under the command of a division, corps, or a joint task force headquarters.
- Participate in division or corps operations according to the principles and concepts in FM 71-100 and FM 100-15.
- Task organize as directed.

The only permanent unit assigned to a brigade is its headquarters and headquarters company (HHC) (see Figure 1-1). For an example of a divisional brigade task organized, see Figure 1-2.

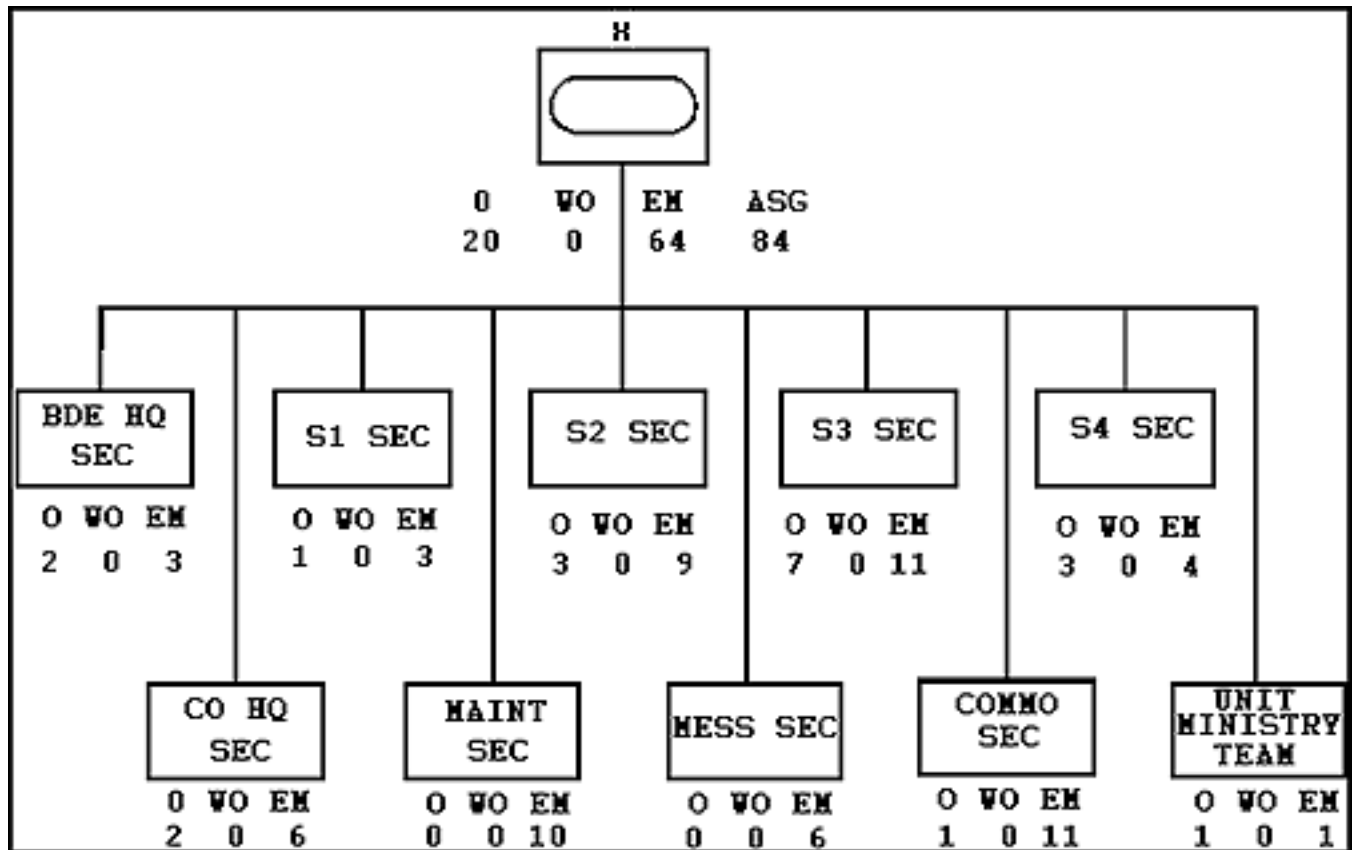


Figure 1-1. A divisional brigade headquarters and headquarters company organization.

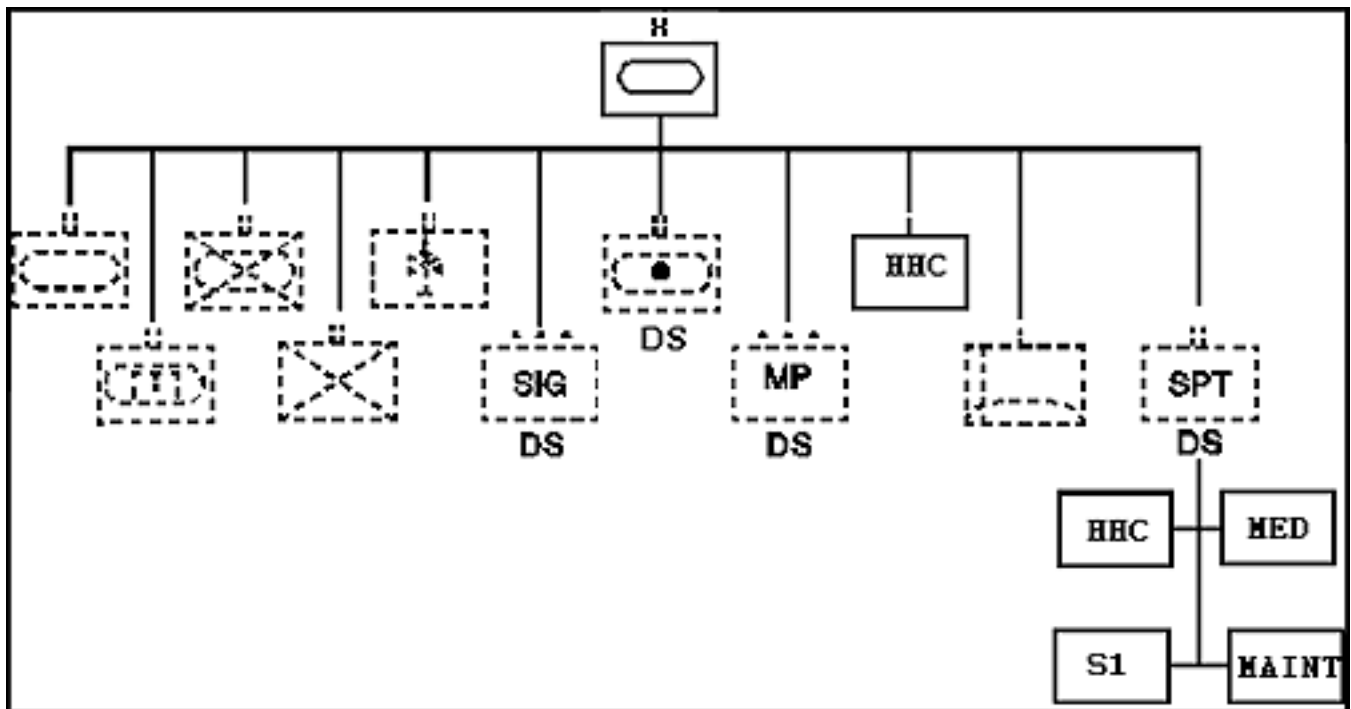


Figure 1-2. Sample divisional brigade task organized.

SEPARATE BRIGADES

Separate brigades normally conduct operations under corps command, and are organized to provide their own support. The enhanced brigades of the Army National Guard are separate brigades. Their only enhancement is in an authorized over structure in personnel. These brigades have a formal training association with corps and divisions to further enhance their training readiness. Units organic to the separate brigade include:

- A brigade HHC to provide command and control.
- Limited CS assets to include military police (MP), chemical, and air defense elements.
- Armored and mechanized infantry battalions.
- An armored cavalry troop.
- An engineer battalion.
- A military intelligence (MI) company.
- A support battalion of several support units with the added ability to link directly with corps support command for augmentation.
- A FA battalion to provide fire support (FS).

Additional combat, CS, and CSS units may be attached to a separate brigade as required by the brigade's mission and operating circumstances. The separate brigade may be attached to a division (less support), but is usually controlled by a corps (see Figure 1-3 and Figure 1-4).

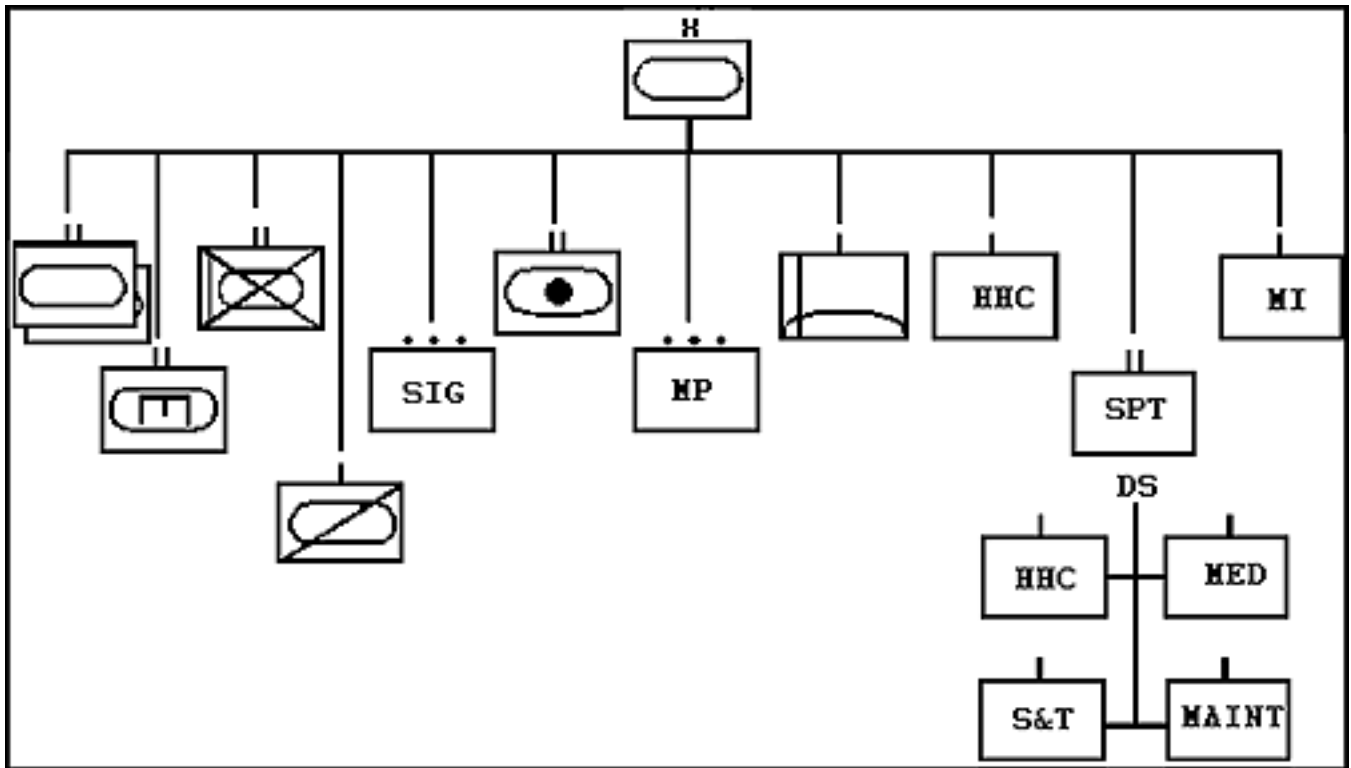


Figure 1-3. Separate brigade organization.

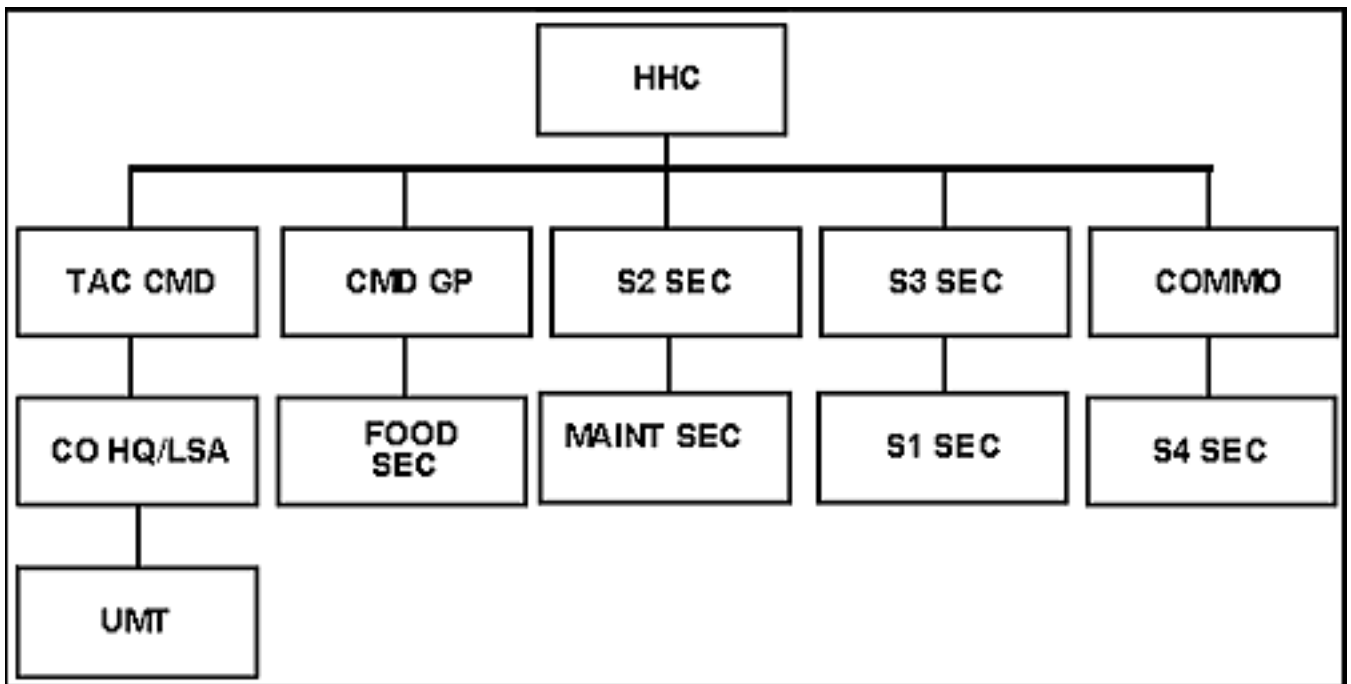


Figure 1-4. Headquarters and headquarters company armor separate brigade.

SECTION III. ARMY OPERATIONS

Army operations doctrine describes our approach to generating and applying combat power at the operational and tactical levels. It is based on securing or retaining the initiative and exercising it aggressively to accomplish the mission. Brigade commanders and staffs must understand the brigade's mission in relationship to the operational plan (OPLAN) as they fight engagements and participate in battles as part of the tactical battlefield. It consists of the brigade's area of operations (AO), battle space,

and organization of the battlefield (deep, close, and rear). Deep and rear operations are essential to winning close operations. The brigade commander develops his intent and accepts risks to achieve decisive results. He secures the initiative and conducts operations to impose his will on the enemy. The commander maneuvers the brigade to position strength against weakness, throw the enemy off balance, and synchronize combat power to complete the enemy's defeat or destruction.

The brigade commander must understand the intent of the division commander and the corps commander to properly employ his forces. Additionally, the brigade commanders intent must be understood by his subordinates two levels down. Brigade tactics emphasize the use of fire and maneuver to destroy, delay, or disrupt enemy forces. Commanders and staffs must integrate and synchronize a variety of functions to generate overwhelming combat power at the decisive point(s). While this is critical during war, it is equally important in all environments.

The brigade commander sets the conditions for success. He then uses all of his precision organic and supporting systems at maximum capability to meet these conditions. Maneuver, then, is employed to decisively defeat the enemy with minimum risk to his soldiers.

ARMY OPERATION TENETS

The tenets of Army operations apply throughout the full range of military operations. Success on the battlefield, or during OOTW, depends on the brigade's ability to fight in accordance with (IAW) the five basic tenets of Army operations:

- Initiative.
- Depth.
- Agility.
- Synchronization.
- Versatility.

Initiative

Initiative is the ability to set or change the terms of battle by action. The armored force is the only force with the mobility, lethality, shock effect, survivability, agility, and staying power in all weather conditions and climates capable of seizing and exploiting the initiative. Initiative implies an offensive spirit when conducting an operation. To do this, the brigade commander trains subordinates to take risks and to be bold, innovative, and aggressive. By understanding the intent of the next two higher commanders, the brigade commander may confidently operate with mission-type orders and exploit success. The brigade commander sets the terms of battle by

- Conducting an estimate of the situation to quickly gather the essentials of the tactical situation.
- Implementing a decision-making process that rapidly provides clear, concise orders to subordinate battalion commanders and staffs.
- Incorporating intelligence preparation of the battlefield (IPB) to support the decision-making process and the construction of the decision support template (DST). IPB helps refine the priority information requirements (PIR).
- Designing tactical plans that provide a reserve force poised to strike the enemy in depth, conduct counterattacks, and occupy flank or positions in depth.
- Conducting quick decision making from existing combat orders and issuing fragmentary orders (FRAGO) based on common operational procedures and control measures to adjust to changing situations and to exploit opportunities.

In the future, automated command and control systems will provide commanders with the ability to see their forces in relation to the enemy. This information, and a clear understanding of the higher commander's intent, will allow commanders to rapidly identify and exploit tactical opportunities.

Depth

Depth is the extension of operations in time, space, and resources. Brigade commanders and staffs must forecast and anticipate events so the enemy is attacked simultaneously throughout the entire depth of the battlefield. The brigade commander uses depth by:

- Synchronizing combat and CS assets to isolate enemy formations and to deny the enemy commander an opportunity to generate combat power.
- Developing comprehensive plans for the security of the brigade rear area against Level I, II, and III threats.
- Employing formations that enhance depth, security, and agility.
- Aggressively employing internal reconnaissance and security assets.
- Attacking the enemy beyond the forward edge of the battle area (FEBA) with indirect fires, close air support (CAS), electronic warfare (EW), and attack helicopters.
- Developing a logistics plan to support brigade operations.

Automated command and control systems and CS assets enhance the maneuver brigade's ability to attack enemy forces with precision and in depth. The all-source analysis system (ASAS) provides maneuver commanders with accurate information on the enemy that can be used to plan maneuver and fires. CS systems like the M109A6 Paladin and enhanced mortars provide the commander with the ability to synchronize and maintain sustained accurate fires for deep and close targets simultaneously.

Agility

Agility is the ability of friendly forces to react faster than the enemy and is a prerequisite for seizing and holding the initiative. Agility requires flexible organizations and quick-minded, flexible leaders who can act faster than the enemy to retain the initiative. At brigade level this means:

- Defining responsibilities among the tactical command post (TAC CP), the main CP, and the rear CP to streamline command and control procedures that reduce decision-making time.
- Positioning the TAC CP and the command group forward to see and control the battle.
- Using IPB to predict probable enemy intentions and to operate within the enemy decision cycle.
- Using well-defined standing operating procedures (SOP) to provide accurate reporting and rapid reaction on the battlefield. This includes adjusting CS and CSS assets when the maneuver plan or task organization changes.
- Training the brigade staff and assigned battalions to respond quickly to changing situations with minimum guidance, while remaining consistent with the commander's intent.

Automated command and control systems and FS and surveillance systems provide commanders the ability to quickly access information on friendly combat and logistical capability and the capabilities of the enemy in near real time. This capability allows commanders to control the tempo of military operations in a manner that allows his forces to exploit the situation.

Synchronization

Synchronization is arranging activities in time and space to mass the effects of combat power at the decisive time and place. The product of effective synchronization is maximum use of every resource to make the greatest contribution to success. Brigades synchronize their operations by:

- Ensuring that IEW operations are linked to the commanders requirements and respond in time to influence decisions and operations.
- Designating and resourcing the brigade main effort.
- Coordinating and integrating CS and CSS assets.
- Using the logistics estimate to ensure adequate resources are available and allocated.

- Rapidly massing combat power effects at the decisive point to achieve local surprise, mass, and shock effect without lengthy explanations or orders.
- Planning in advance to exploit the opportunities created by tactical success.
- Allowing decentralized execution of operations.
- Using synchronization tools.
- Conducting rehearsals.

Versatility

Versatility is the ability of a brigade to shift focus, to tailor forces, and to move rapidly and efficiently from one mission to another. Versatility implies a capacity to be multifunctional, to operate through the full range of military operations. At the brigade level, versatility requires:

- Understanding the commander's intent two levels up.
- Anticipating major changes based on the tactical and political situation.
- Providing clearly defined objectives and guidance to subordinates.
- Conducting detailed planning in depth.
- Improvising as needed.
- Applying the military decision-making process and principles.

GENERATING COMBAT POWER

Maneuver, firepower, protection, and leadership comprise the dynamics of combat power. Combat power is the effect created by combining the four dynamics in combat action against an enemy. Commanders generate combat power by anticipating future operations and, once committed, applying the dynamics of combat power. Information about enemy and friendly forces capabilities is key to generating and sustaining combat power.

Maneuver

Maneuver is the employment of forces on the battlefield through movement, supported by fire or fire potential, to achieve a position of advantage in respect to the enemy in order to accomplish the mission. It is the means of concentrating forces at decisive points to achieve surprise, psychological shock, physical momentum, and dominance. Maneuver and firepower are complementary dynamics of combat power. Although one might dominate a phase of the battle, the synchronized effects of both characterize all operations.

Firepower

Firepower provides the destructive force essential to destroying the enemy's ability and will to fight. Firepower includes the focusing and resourcing of direct and indirect fires (lethal and nonlethal), and other combat multipliers with maneuver to destroy the enemy.

Protection

Protection conserves the fighting potential of a force so commanders can apply it at the decisive time and place. It has four components:

- The first component counters the enemy's firepower and maneuver by making soldiers, systems, and units difficult to locate, strike, and destroy. This is accomplished by implementing passive and active measures such as camouflaging, fortifying fighting positions, conducting security and reconnaissance activities, and enforcing strict operations security (OPSEC) standards.

- The second component includes conducting and maintaining all CSS activities to keep soldiers healthy and to maintain their fighting morale.
- The third component is safety. Commanders enforce safety procedures in training, planning, and conducting operations to preserve combat power.
- The fourth component is the prevention of fratricide. Commanders seek to lower the probability of fratricide while not overly constricting boldness and audacity in combat by planning, rehearsing, and controlling direct and indirect fires.

Leadership

The most essential dynamic of combat power is competent and confident leadership. Leaders determine the degree to which maneuver, firepower, and protection are maximized, effectively balanced, and brought against the enemy. Commanders at all levels develop tactical and technical leaders by stressing regular study of military doctrine, theory, and history and by providing a training environment that allows for practical experience.

SECTION IV. BRIGADE BATTLEFIELD FOCUS

Inherent in Army operations is the simultaneous attack of enemy forces. The brigade's primary focus is to defeat the enemy while protecting its CS, CSS, and command and control facilities. The brigade must be poised to exploit every opportunity to disrupt the enemy's timetable by combining the effects of fires, barriers, and maneuver throughout the depth of the battlefield. Simultaneous operations open opportunities for decisive action by reducing the enemy's ability to generate combat power and creating periods of friendly superiority to gain or retain the initiative. Simultaneous operations are based on the characteristics of effective intelligence. Intelligence must be timely, relevant, accurate, and predictive. Intelligence will support the brigade through the intelligence battlefield operating system (BOS).

A brigade may conduct deep operations with fixed-wing air, artillery interdiction, and Army combat aviation. The commander and staff identify high-payoff targets (HPT) and synchronize organic and supporting higher headquarters' attack assets to destroy them. Offensive EW systems must be designated with FS assets to affect deep targets. Deception can also be used to delay and disrupt enemy forces. The use of information generated from the division ASAS enhances the brigade's ability to plan and synchronize operations.

Each echelon of command creates the time and space necessary for its major subordinate echelons to defeat enemy forces in contact before engaging those not in contact. This is done by attacking enemy forces or functions to delay, disrupt, and destroy them before they can affect operations of subordinates. The subordinate commander may request the superior commander to take specific measures against deeper enemy forces, normally in the subordinate's battle space that may impede accomplishment of his mission. The subordinate commander should specify what effect he wants done to the enemy: delay for a specific time, canalize along a specific avenue of approach, or defeat in a specific area.

Brigades normally fight as part of a division. Separate brigades are organized for and normally conduct sustained operations under corps control. In either case, brigades most often fight as part of a larger force. Divisional brigades are tactical headquarters that control mission-tailored battalion task forces. When operating with a division in war, brigades normally direct engagements against enemy battalions and regiments beyond the forward line of own troops (FLOT) by controlling task forces and attack helicopter units, by establishing priorities of supporting artillery fires, and by coordinating CAS operations (joint and combined). Brigades direct and coordinate the actions of subordinate task organized units. Brigade commanders select the ground for the battle and the form of maneuver to accomplish the mission. The brigade influences an engagement mainly through synchronizing reconnaissance and security efforts, task organizing maneuver battalions, assigning subordinate missions and tasks, applying combat multipliers, assigning and shifting priorities of CS and CSS assets, and constituting and committing a reserve. The brigade fights the battle through integration of the combined arms team. The end result of effective synchronization appears to the enemy as one continuous fight.

SECTION V. THE THREAT ENVIRONMENT

The brigade no longer faces a single, monolithic, well-defined threat. During the Cold War, planning was centered on confronting numerically superior heavy opposing forces (OPFOR) in Europe, the Far East, or Southwest Asia. Now the brigade must focus on conducting contingency operations (CONOP) as part of a force projection operation. These brigades must be able to conduct these operations across the range of military operations (peace, conflict, and war) against threats ranging in size from major regional powers, lesser powers, and terrorist groups to insurgents.

Emerging regional threats are more diverse and less predictable than former Cold War adversaries, but are just as deadly. These threats reflect the more traditional threat concept such as armor, infantry, and artillery formations maneuvering on a battlefield with CAS and the possibility of using weapons of mass destruction. However, the brigade may also be called upon to conduct operations in the midst of a nontraditional threat.

The brigade may face a nontraditional threat while conducting OOTW. Though a brigade may not be initially deployed to conduct some of these operations, it could conduct them as part of the post-conflict phase of some other CONOP.

With the diversity of the threat, the IPB process becomes even more important at the brigade level. No longer will the threat always fit into a neat time-distance (TDIS) scenario. Potential adversaries may use a wide variety of doctrine, tactics, and equipment. The staff supports the commander by conducting IPB throughout the entire operation.

CHAPTER 2

FUNDAMENTALS OF BRIGADE OPERATIONS

CONTENTS
Section I. Force Projection
Section II. Tactical Battlefield Framework
Section III. Battlefield Operating Systems

Army operations reflect the changing nature of war. Brigades must be versatile organizations capable of deploying anywhere in the world on short notice. Brigades operate within joint, multinational and/or multiagency operations and must synchronize all available systems.

Fighting and winning battles and engagements remain the brigades primary purpose. Commanders mass the effects of combat power, when and where necessary, to accomplish missions. New technology gives commanders the capability to attack the enemy simultaneously throughout the depth of the battlefield. This chapter discusses the fundamentals of brigade operations under three main topics:

- It addresses brigade doctrine for force projection operations.
- It depicts a framework for tactical battlefields.
- It discusses the BOS as fundamental to brigade operations.

SECTION I. FORCE PROJECTION

GENERAL

Force projection is the demonstrated ability to rapidly alert, mobilize, deploy and operate anywhere in the world throughout the spectrum of Army operations. Force projection operations extend from mobilization to deployment and subsequently to redeployment.

STAGES OF FORCE PROJECTION

Force projection usually begins as a rapid response to a crisis although it may involve a deliberate, slower buildup and deployment. During peacetime, the brigade includes deployment as part of its training.

Brigades generally execute force projection operations in six stages. The ensuing discussion provides a general overview of each stage and addresses key implications for the brigade. An example N-Hour sequence is at Appendix G.

Predeployment Activities

Predeployment activities include planning, task organizing and echeloning the brigade, as well as preparing personnel and equipment for deployment. When alerted, the brigade may have to modify existing OPLANs. These modifications may include readjusting task organizations for initial entry and follow-on forces into the AO, sequencing of forces, and refining sustainment requirements. The key to the brigades deployment is task organizing, echeloning, and tailoring forces. Task organizing is the process of forming combined arms task forces with limited self sustainment capability for rapid deployment. Echeloning is organizing and prioritizing units for movement. Echelons are often divided into elements such as advanced parties, initial combat forces, follow-on forces and closure forces. Each echelon has a designated commander. Task organizing and echeloning occur during initial planning. Force tailoring is the adding or subtracting from planned task organizations and occurs after a thorough mission, enemy, terrain, troops and time available (METT-T) analysis by the commander and his staff.

Following receipt of a mission, the brigade prepares its personnel and equipment for deployment through preparation for overseas movement activities. These activities ensure that deploying units meet all requirements to deploy into another theater of operations.

Deployment

The proper arrival sequence of forces into an AO contributes to the stabilization of the situation and maintains a viable force protection capability. The time-phased force deployment data programs the arrival of equipment. Units arrive in a theater, by air or sea, and then move rapidly through marshaling areas, staging areas, and tactical assembly areas before executing operations.

Entry Operations

The brigade arrives in theater either as an entry force or a follow-on force. Entry forces are tailored to carry out initial combat operations to secure the lodgment. Follow-on forces expand lodgments and build up combat power to conduct combat operations. The brigade may conduct either an opposed or unopposed entry.

During an opposed entry, the brigade conducts a forcible entry into an area that may contain hostile forces. In this situation initial entry forces are primarily combat forces.

During an unopposed entry, the brigade may serve as a deterrent, act as an advance party for a larger force, or participate in noncombat operations. The brigade may also conduct an unopposed entry under hostile conditions. The brigade deploys into an area where combat operations are ongoing or imminent but the points of debarkation (POD) are secure. In either opposed or unopposed entry operations, consider security of the force when tailoring the initial entry units.

Operations

Operations are the missions executed by the brigade that contribute to overall mission accomplishment. The brigade may conduct both combat and noncombat operations. During combat operations the brigade conducts offensive, defensive, and other operations discussed in later chapters. Another section in this chapter discusses noncombat operations as part of OOTW.

War Termination and Postconflict Operations

War termination and postconflict operations are activities taken to restore conditions in the AO that are favorable to US national policy. During this period, the brigade focuses on force security and preparing for redeployment.

Planning and versatility are two vital components of successful post-conflict operations. Commanders and their staffs begin planning postconflict operations before cessation of combat operations. This planning includes: adjusting the rules of engagement (ROE), force protection measures, host-nation considerations and the transfer of responsibilities to units assuming control of the brigades AO.

Postconflict activities include a variety of tasks from enemy prisoner of war (EPW) control to civil affairs (CA) of the host nation. The brigade also begins retraining its units on critical tasks and preparing for follow-on missions. Transferring responsibilities (for the brigade) is normally conducted as a relief in place.

Redeployment and Reconstitution

Redeployment is situation dependent and requires task organizing and echeloning similar to deployment. Some units and personnel will depart early, such as advance parties, nonessential personnel, and equipment. During this phase units continue to train on individual and mission essential task list (METL) tasks.

The objective of reconstitution is to prepare for follow-on missions rapidly. These activities include rebuilding unit integrity and accounting for soldiers and equipment. These activities continue after arrival in continental United States (CONUS) or home theater. The focus is on reconstitution of units to predeployment levels of readiness.

SECTION II. TACTICAL BATTLEFIELD FRAMEWORK

The battlefield framework helps the commander visualize how to best employ his forces. It relates friendly forces to one another and the enemy in terms of time, space, resources, and purpose. At the tactical level, the battlefield framework consists of three interrelated concepts: AO, battle space, and an organization of the tactical battlefield.

The next higher headquarters normally assigns the brigade commander an AO. He then visualizes the battle space where he will employ his combat power to dominate the enemy. In visualizing his battle space, the commander considers key and decisive terrain, direct and indirect fires, and probable enemy courses of action (COA). The commander thinks in depth and visualizes how to engage the enemy simultaneously throughout the depth of the battlefield.

AREA OF OPERATIONS

An AO is designated by higher head-quarters and is depicted by graphic control measures. At a minimum, the AO should be large enough for the commander to employ all of his organic, assigned, and supporting assets. The brigade commander establishes control measures within his AO to assign responsibility, coordinate fires and maneuver, and to control other activities. Both war and OOTW use the concept of AO.

BATTLE SPACE

A commander's capability to acquire and, more importantly, dominate the enemy determines a physical volume called battle space. It includes the brigade commander's vision of how he will employ his assets and actions to dominate the enemy. Battle space can change as the commander's vision of the battlefield changes. It also changes according to how the commander positions his assets. All friendly combat power that the commander can bring to bear on the enemy is included in his vision of battle space. Agility, lethality, and speed of both friendly and enemy combat systems influence battle space.

TACTICAL BATTLEFIELD ORGANIZATION

Commanders must consider all aspects of the three-dimensional battlefield and use standard control measures to organize their AO. Battlefields may be linear, asymmetrical, or noncontiguous and generally include deep, close, and rear components. Deep, close, and rear are not separate fights; each is part of the entire tactical battle.

Deep Operations

The best way to defeat the enemy is by fighting him simultaneously throughout the depth of the battlefield. Deep operations are normally those operations conducted against enemy forces not in the close fight. Deep operations prevent the enemy from using his forces when and where he wants on the battlefield. These operations are not necessarily a function of depth, but a function of what forces are being attacked and the intent of the operation. Deep operations are conducted in both the offense and defense.

Simultaneous deep and close engagements prevent the enemy from concentrating his strength. The perceived or actual threat of a force against an enemy's weakness may be sufficient to divert the enemy and force him to protect that vulnerability. Simultaneous attacks force the enemy to fight in one direction and protect himself in another. This results in the enemy committing his forces where he did not intend and disrupts his overall plan.

The commander and staff must have a clear understanding of the purpose and objectives of deep operations. They must recognize the benefits of deep operations versus operations against committed forces on the FLOT.

Close Operations

Close operations consider and include reconnaissance and security, a main effort and a reserve. Battalions in immediate contact are fighting the close battle.

The brigade commander decides when and where the close battle will occur. Concentrating the effects of his combat power in support of ground forces becomes the brigade commanders focus in close operations.

Reconnaissance and Security

Reconnaissance and security are critical to the brigades success. In general, reconnaissance and security are two missions. At brigade both are closely related. Reconnaissance actions yield information on the disposition and intentions of enemy forces and direct friendly units into the fight. Security protects and conserves the combat power of the brigade.

Main Effort

The main effort is assigned to only one unit at a time. Designating a main effort provides the focus that each subordinate needs to link his actions to the actions of those around him. The commander and staff must be flexible enough to shift the main effort as needed.

Reserves

Reserves give a commander options and flexibility. Reserves exploit success and expedite victory. They are used to weight the main effort to maintain momentum, provide security, and defeat enemy counterattacks. Missions for the reserve are planned and are not solely in response to unforeseen enemy actions.

Rear Operations

The objective of rear operations is to ensure freedom of maneuver and continuous operations. Rear operations are generally concerned with maintaining lines of communication (LOC) and support during an engagement. This includes securing main supply routes (MSR) against level I and II threats. Additionally, rear operations maintain the rate of supply necessary to sustain the current operation.

SECTION III. BATTLEFIELD OPERATING SYSTEMS

INTELLIGENCE

BOS intelligence to the commander drives the brigades intelligence effort. His role does not begin with the current crisis or operation, but well before and is continuous throughout the operation. The commander focuses the intelligence effort and ensures it is responsive to his information requirements (IR) and those of his subordinates. He focuses the effort by stating his priority intelligence requirements (PIR) and targeting priorities. In his PIR and IR, he includes his requirements for intelligence support to force protection and battle damage assessment (BDA). Through his S2, the commander ensures the intelligence BOS, both his own and that of higher echelons is responsive to his needs and focused on his requirements.

It is especially critical that an up-to-date enemy data base be prepared during the IPB process by the brigade S2 to support offensive operations and to answer the commander's PIR. The threat estimate and data base are used to identify specific enemy vulnerabilities and weaknesses. This information assists the brigade commander in properly concentrating his available combat power.

The development of PIR and IPB is a continual process throughout the planning and execution of the operation. The brigade intelligence section answers PIR using a detailed reconnaissance and surveillance (R&S) plan developed and coordinated by the brigade and battalion task force S2s and S3s. The brigade

S2 requests additional information and collection assets from its higher headquarters when the brigade commander's PIR cannot be gathered by organic brigade assets.

During the operation, the brigade S2 provides the commander continuous updates of enemy activities and anticipated enemy COAs. His sources include reports from the ASAS, monitoring of battalion radio nets, and analysis of reported sightings of enemy activities.

MANEUVER

The brigade commander employs all of his organic and supporting systems to create the conditions for success. The brigade commander then maneuvers his forces to defeat the enemy with minimum risk to his soldiers.

By maneuver the brigade gains the potential to destroy the enemy or hinder his movement through the direct or indirect application of lethal combat power. As the brigade commander develops his concept of the operation and considers the maneuver of all his forces, he must retain a balance in the application of maneuver, firepower, and protection. The nature of this balance establishes the priorities and relationships of maneuver to other operating systems as the commander translates the art of his vision of operations to the science of detailed planning and execution of combat functions.

FIRE SUPPORT

FS can deliver a variety of Army and joint munitions throughout the depth of the battlefield. The brigade is normally supported by a DS FA battalion. Additional FS assets may include

- CAS.
- Naval gunfire (NGF).
- Army aviation.
- Reinforcing and GS reinforcing FA battalions.

The brigade fire support element (FSE) is the focal point for the integration of all FS for the brigade. The brigade FSCOORD is the DS FA battalion commander. He is assisted by the brigade FSO. When the FSCOORD is not available, the FSO advises the maneuver commander on FS. To effectively integrate FS into the operation, the FSCOORD must understand the mission, the commander's intent, the concept of the operation, and the commander's guidance for FS. The FSCOORD is critical to the planning process from the outset. The FSCOORD ensures FS assets are properly employed and synchronized.

AIR DEFENSE

The division commander's ADA priorities determine what ADA resources the brigade will receive. Normally, the brigade receives a battery of ADA.

The air defense officer (ADO) must understand the commander's mission, intent, and concept of the operation. Continued involvement of the ADO in the planning process is critical to the successful integration of ADA support with the brigade concept. The ADO recommends air defense priorities to the brigade commander, and coordinates with the brigade S3 for terrain requirements for ADA weapons and sensors.

Mobile systems such as the Bradley Stinger fighting vehicle (BSFV), man-portable air defense (MANPAD), and in certain situations, Avenger, will support the maneuver force in the forward area. If MANPADs are used in the forward area, provisions for armor protection, command and control, and early warning must be made.

The entire combined arms team has a role in counterair operations. All units practice air defense early warning and passive air defense measures. Also, tanks, crew-served weapons, indirect fires, intelligence, and EW systems, add to the all-around protection of the force. During offensive operations beyond the

range of forward area air defense (FAAD) sensors and voice communications, special provisions for early warning throughout the brigade must be planned, coordinated, and implemented.

MOBILITY AND SURVIVABILITY

This BOS includes both engineer and nuclear, biological, chemical (NBC) functions. Specifically, it addresses mobility, countermobility, survivability, and NBC defense operations.

Engineer

Engineer operations provide mobility to the brigade, degrade the enemy's ability to move on the battlefield, and provide protective emplacements for personnel and equipment. Mobility, countermobility, and survivability operations are planned to be consistent with the commanders intent and to complement the concept of the operation.

The brigade engineer must receive clear guidance and priorities for the engineer effort. He is an integral part of the development of the concept of the operation; he coordinates with the S3, FSO, ADO, S2, and S4 to integrate and synchronize engineer operations.

Nuclear, Biological, and Chemical Defense Operations

Division assets available to support brigade offensive operations include NBC decontamination, NBC reconnaissance, and smoke. These assets are normally platoon-size organizations. Based on the factors of METT-T, these organizations may be OPCON, attached, DS, or GS to the brigade.

Decontamination

Brigade decontamination operations during the offense focus on immediate and operational decontamination operations. Thorough decontamination operations are designed for reconstitution operations. Operational decontamination operations are conducted at the battalion level using organic lightweight decontamination equipment.

The brigade commander identifies mission-critical assets and establishes priorities for decontamination within the brigade. The S4 coordinates logistics support for decontamination and provides it through normal supply channels.

Reconnaissance

All brigade units have an implied mission to conduct NBC reconnaissance using organic detection and identification equipment. The brigade S3 establishes the NBC reconnaissance requirements and tasks based on the brigade chemical officer's recommendations. The procedures for detecting, marking, identifying, and reporting of contaminated areas are established in SOPs according to relevant Standardization Agreements (STANAG).

Smoke

The brigade conducts smoke operations to screen friendly forces and obscure or deceive enemy forces. Normally, smoke is employed with at least one deceptive screen for every primary smoke screen. Assets that are available to provide smoke include the vehicle engine exhaust smoke system (if using DF2), smoke pots, artillery and mortar smoke, and generated smoke. To conduct a successful smoke mission, the brigade must provide the following information to the supporting smoke unit:

- Commander's intent.
- Location of target.
- Length of mission.
- Start time.

- Visibility requirements.

COMBAT SERVICE SUPPORT

The brigade S4 identifies and coordinates the specific logistics needs of the maneuver brigade. Based on the brigade S4's planning estimate, the forward support battalion (FSB) commander and his staff tailor a mobile CSS package to be pushed forward to support the brigade. Specific coordination for locations of ammunition transfer points (ATP), unit maintenance collection points (UMCP), and MSR outside of the brigade support area (BSA) are coordinated between the FSB S3 and brigade S4 at the rear CP and approved by the brigade S3. This coordination ensures the integration of the CSS plan with the tactical plan.

FSB logistics support must be continuous. The FSB displaces priority resupply classes by bounds to support the momentum of the offense. The movement of the FSB is coordinated among the FSB, rear CP, and main CP to ensure continuous support and to avoid impeding maneuver elements.

COMMAND AND CONTROL

The command group, augmented by other special staff as desired by the commander, is positioned to see, sense, and control the battle. By being well forward, the commander can feel the tempo of the battle, improve communications, and influence the main effort with his presence. The command group moves much of the time and relies on the brigade main CP to maintain communications with higher and flanking units.

For security, the TAC CP and the main CP should move frequently. Usually, one section is stationary while the other repositions. While the main CP displaces, the TAC CP may require augmentation to adequately perform the command, control, communications, and intelligence function. Therefore, the TAC CP may be augmented with personnel from the current operations, intelligence, operations support, and FS sections out of the main CP. The signal section leapfrogs FM retransmission systems and mobile subscriber equipment (MSE) forward to maintain communications.

The main CP continues to perform its essential current battle coordination; however, the main CP focuses its effort toward future battle planning. This is possible because the disruption of frequent displacement has caused much of the command, control, communications, and intelligence structuring for working the current battle to be pushed forward to the TAC CP and command group.

The rear CP and FSB commander are heavily committed to pushing CSS forward through the cluttered battlefield to sustain operations. The rear CP and FSB commander are initially concerned with sustaining forward units; providing rear area security; clearing MSR; evacuating casualties, equipment, and EPWs; and preparing to reestablish CSS base areas forward. The rear CP and FSB commander are responsible for terrain management in the BSA.

CHAPTER 3 BATTLE COMMAND

CONTENTS

Section I. General
Section II. Organization and Facilities
Section III. Communication
Section IV. Command Post Operations
Section V. Brigade Rehearsals

Battle command is the art and science of battlefield decision making and leading soldiers and units to successfully accomplish the mission. The battle command basic elements are decision making, leading, and controlling. The battle command system at brigade level enables commanders to lead, prioritize, and allocate assets required to employ and sustain combat power. The

brigade commander must see further, process information faster, and strike more precisely and more quickly. If information is the medium of the battle command process, the battle command system must provide the commander with timely and accurate information on which to base the commanders decision.

SECTION I. GENERAL

DEFINITION

Command and control is not one word as commonly perceived and used. The words "command" and "control" are separate and distinct, with differing applications to how the brigade fights. Command is the art of assigning missions, prioritizing resources, guiding and directing subordinates, and focusing the entire brigade's energy to accomplish clear objectives. Control is the science of defining limits, computing requirements, allocating resources, prescribing requirements for reports, monitoring performance, identifying and correcting deviations from guidance, and directing subordinate actions to accomplish the commander's intent. The size of the CP depends on the amount of control the commander and higher headquarters demand.

The command and control process is comprised of:

- Coordinating.
- Planning.
- Directing.
- Controlling.

The command and control process is executed through:

- Leadership.
- Command and control facilities.
- The planning process.
- Communication.

Command and Control

In battle, leaders at all levels are challenged by the magnitude of available information that will continue to increase in the future. They must use this information to apply direction to their efforts to achieve victory. The commander leads, conceptualizes, visualizes, synchronizes, and makes timely key decisions. The brigade staff acquires, synchronizes, and disseminates decisions and information. The commander must be where he can best influence the battle, where his moral and physical presence can be felt, and where his will to achieve victory can best be expressed, understood, and acted upon. Command remains a personal function. The commander must appreciate time and distance factors, looking beyond the immediate operation. He must continually evaluate the situation and wargame COAs. He must understand the factors of METT-T and know his force sustainment and force protection requirements.

Command includes the responsibility of accomplishing assigned missions as well as a responsibility to the nation for the lives of the soldiers entrusted to them.

To control is to define limits. Control within the brigade is the science of computing requirements, allocating means, and integrating efforts. It monitors the status of organizational effectiveness, identifies variance from set standards and guidance, and corrects the deviations. It acquires and applies the means to accomplish the commander's intent and develops specific instructions from general guidance.

Control serves its purpose if it allows the commander freedom to operate, delegate authority, lead from any critical point on the battlefield, and synchronize brigade operations across its AOs. The command and control system must support the ability of the commander and his staff to adjust plans for future operations while focusing on the current fight. The tools for implementing command decisions include orders, SOPs, communications, and computers.

Command and Control Guidelines

Some basic, time-tested imperatives to improve successful command and control are listed below. These imperatives drive the successful development and efficient operations of the brigade's CPs and determine their effectiveness in combat. The guidelines are

- A headquarters must be small to be efficient.
- Just as there can be only one brigade commander, there can be only one brigade CP exercising control of any specific organizational area on the battlefield at any one time.
- If a commander is to be effective in a crisis, he must limit the number of voices he hears.
- If the commander wants his staff to keep him informed, he should avoid lengthy prepared briefings and rely on unstructured, unscheduled discussions. This does not mean that some structured and scheduled briefings will not occur within the brigade.
- When a commander gives a subordinate a new or revised mission, he should deliver or explain it orally and preferably face-to-face, if time and circumstances permit.
- A CP is organized to acquire and disseminate information in a prioritized fashion.

SECTION II. ORGANIZATION AND FACILITIES

BRIGADE COMMANDER

The brigade commander analyzes and restates the mission, designs the concept of operations, organizes the forces, determines the main effort, establishes the brigade reserves, transmits his own and the higher commander's intent, and provides support to subordinate units. The brigade commander controls the ongoing battle and provides planning guidance for future operations. He positions himself to follow and influence operations and maintains communications with higher, lower, and adjacent units. The commander must be totally mobile and not depend on a fixed site, CP, or specific vehicle to exercise his command and control responsibilities. He reacts immediately to directions from his higher commander to release and receive forces. When his organization or mission changes, he reorganizes only as needed. Teamwork, functional SOPs, and a clear understanding of the mission permit his subordinates to quickly translate a broad mission order into action.

The commander should not stay in the main CP. The best way for him to get information is from firsthand observation, by visiting subordinate CPs, and by listening to subordinate command nets, to include battalion and company nets when necessary. The commander should not fail to make independent decisions about today's battle for fear that they may be inconsistent with what he wants to do tomorrow.

The commander's intent describes the desired end state. It is a concise expression of the purpose of the operation and must be understood two echelons below the issuing commander. It must clearly state the purpose of the mission and is the single unifying focus for all subordinate elements. It is not a summary of the concept of the operation. Its purpose is to focus subordinates on the desired end state. Its utility is to

focus subordinates on what has to be accomplished to achieve success, even when the plan and concept of operations no longer apply, and to discipline their efforts toward that end. The intent statement is usually written but can be verbal when time is short. It should be concise and clear; long, narrative descriptions of how the commander sees the fight tend to inhibit the initiative of subordinates. A brigade commander's order should contain the intent statement of the division or next higher commander.

Chain of Command

The commander issues orders and receives information through the chain of command. He issues all orders to the commander of the next lower unit. Bypassing commanders should occur only in urgent situations. In such instances, the bypassed commander should be notified by the commanders involved as soon as possible.

The Staff

Functions

Staff officers assist their commander in accomplishing the mission. They help the commander make decisions by acquiring, analyzing, and coordinating information. Staff officers present critical information and a recommendation to the commander so he can make good decisions (see FM 101-5 for more detailed information). Common staff functions include:

- Providing information.
- Making estimates.
- Making recommendations.
- Preparing plans and orders.
- Supervising the execution of decisions.

Responsibility and Authority

Staff officers are assigned functional areas of interest and responsibility. Normally, the commander delegates authority to the staff to take final action on matters within command policy. The assignment of staff responsibility does not connote command authority over other staff officers or over any other command element.

Relationship with Subordinate Commands

Staff officers support subordinate units and establish good working relationships with subordinate commanders and staffs. The staff should make recommendations and offer advice to subordinate commanders; they may not, however, deny or refuse a subordinate commander's request, except in those areas where the commander has delegated authority for them to do so. Staff officers contact a subordinate command, in the commander's name, only to transmit orders or instructions, but they may offer assistance or exchange information in their own or in the commander's name. If a staff officer determines a subordinate command is not complying with the commander's directives, the staff officer advises the subordinate commander or his staff of the noncompliance. The staff officer then reports his observation and recommendation to his commander. Staff officers normally honor informal requests for information from the higher level staff; they should be open for suggestions from subordinate units.

Command and Staff Communications

The command channel is the direct, official link between echelon headquarters and commanders. Orders and instructions to subordinate units pass on this channel. Within their authority, staff officers may use command channels when acting in the commander's name. The staff channel is the staff-to-staff link between headquarters for coordination and transmission of information.

Coordination

Coordination is critical to the commander's synchronization of the battle. It must occur internally with combat, CS, and CSS units and externally with higher and adjacent units. It prevents the enemy from exploiting unit boundaries and enables the commander to produce maximum relative combat power at the decisive time and place.

COMMAND AND CONTROL ORGANIZATION

The successful commander delegates authority and fosters an organizational climate of mutual trust, cooperation, and teamwork. The brigade staff working within the TAC CP, main CPs, and rear CPs is composed of personal, coordinating, and special staffs. Coordinating staff officers are the commander's main staff assistants. They assist the commander by coordinating the plans and operations of the brigade.

Personal Staff

The personal staff consists of the deputy commander or executive officer (XO) and the command sergeant major (CSM) who work under the immediate control of the commander and directly assist him in the exercise of command. FM 101-5 contains more detailed information on specific staff positions.

Deputy Commander

In the separate armored brigade, a deputy commander is authorized to assist the commander in the performance of his duties. The deputy commander is kept informed by the staff of operations, plans, intentions, goals, and problems so he can assume command at any time. The deputy commander normally operates within specific areas defined by the commander. These areas may include responsibility for the operation of the BSA, logistics support of the operation, coordination and execution of rear operations, and main CP and BSA interface.

Executive Officer

The XO performs a variety of functions for the commander. The XO is the chief of staff responsible for assignment of tasks and for the efficient, coordinated, prompt response of the staff in support of the commander. He is responsible for the operation of the main CP. The XO directs and coordinates CS with the commander's plan and ensures continuous CSS. During certain periods, the XO may personally go to the trains to determine the status of CSS operations. The XO remains current on the tactical situation and is prepared to assume command. The XO is responsible for the conduct of rear operations because of his duties of coordinating the staffs of the main and rear CPs.

Command Sergeant Major

The brigade CSM's primary role is to advise the brigade commander on matters concerning the enlisted soldiers of the brigade. The CSM is not an administrator, but he understands the administrative, logistics, and operational requirements of the brigade. The CSM is the most experienced enlisted soldier in the brigade and keeps his finger on the pulse of the command. The CSM receives taskings from the brigade commander and acts as a troubleshooter. The CSM focuses attention on functions critical to the success of the operation.

Coordinating Staff

Adjutant (S1)

The S1 normally operates in the brigade operations support section located in the BSA with the S4 section. The S1 is responsible to the brigade commander for the maintenance of unit strength, personnel, morale, discipline, and law and order. The S1 supervises and coordinates various special staff sections including those of the public affairs officer (PAO), chaplain, and surgeon. He is a point of contact for other activities including the inspector general (IG), civil affairs (CA), and judge advocate general (JAG). In the separate

brigade, the S1 also serves as the adjutant general. The S1 sections cross-train to enable them to conduct continuous operations.

Intelligence Officer (S2)

The S2 and the DS MI company commander are a team whose mission is to provide IEW support to the commander. As a team, they are responsible to the commander for planning and directing the intelligence activities of the brigade. The S2 is the senior intelligence officer and primary staff officer for intelligence. He directs and supervises the commanders EW operations including counter-intelligence. He ensures the commander is supported with timely intelligence, targets, and BDA. Additionally, he coordinates with the S3 and FSO to ensure EW is fully integrated with FS.

Operations and Training Officer (S3)

The S3 is the commander's primary assistant in planning and coordinating operations of the brigade and CS elements. The S3 is located in the brigade TAC CP and assists the commander in fighting the current battle. The brigade S3 is the OIC of the TAC CP when it is deployed forward. The S3, through the brigade TOC, coordinates closely with the S4 to keep abreast of the current CSS status. The S3 ensures his personnel are trained and equipment maintained to support the brigade XO in the main CP.

Logistics Officer (S4)

The S4 is responsible for operation of the rear CP. He provides logistics information to the commander and functions as the brigade's logistics planner.

The S4 coordinates with the battalion's XOs and S4s about the status of equipment and supplies. The S4 has representatives in both the main and rear CPs. The S4 participates in the planning process when it occurs. The S4 coordinates with the FSB commander and support operations officer to ensure the brigade commander's logistics priorities are understood and supported.

Civil Affairs Officer (S5)

An S5 is organic to a separate brigade and is assigned to a divisional brigade staff by division or corps when needed. The S5 is responsible for all matters pertaining to political, economic, and social aspects of military operations. The S5 is the brigade's liaison between civil authorities and the civilian populace in the brigade's AO. The S5 is located at the main CP.

Special Staff

The special staff aids the commander in professional, technical, or other functional areas. The specific number and duties of special staff officers vary at each level of command based on table of organization and equipment (TOE) authorizations, desires of the commander, and the size and level of command. The special staff functions are described in FM 101-5.

Air Defense Officer

The brigade ADO is the commander of the DS battery that normally supports the brigade. The ADA battery commander integrates ADA weapons and sensors throughout the brigade sector or zone to protect the force and provide early warning. In the absence of an ADA battery in support of the brigade, an ADA LO may serve as the ADO for the brigade. The ADO or ADA LO advise the brigade commander on all air defense matters. To assist the employment and planning for air defense assets the ADA battery CP collocates with the brigade TOC.

Air Liaison Officer

The air liaison officer (ALO) is an Air Force officer who is a member of the tactical air control party (TACP). The ALO is the brigade commander's advisor on support that includes the employment of TACAIR as CAS, joint suppression of enemy air defenses (JSEAD), reconnaissance, and airlift. The ALO

coordinates CAS missions with the FSE. The ALO provides the commander and staff enemy TACAIR and air defense capabilities. The ALO supervises the TACP and forward air controllers (FAC). The ALO is located with the command group.

Air Naval Gunfire Liaison Officer

If operating near coastal waters, the brigade may be provided naval air and gun FS. Air naval gunfire liaison officer (ANGLICO) personnel are provided to advise the commander, request, coordinate, and control naval air and NGF.

Army Aviation Liaison Officer

The combat aviation brigade provides an Army aviation LO to work in the main CP when aviation assets are employed by the maneuver brigade. Primary duties of the aviation LO include:

- Advising the commander on employment of aviation assets.
- Assisting the S3 in preparation of aviation portions of estimates, plans, orders, and reports.
- Functioning as part of the airspace management element.
- Coordinating with the brigade S3/XO for positioning of aviation assets including the forward arming refuel point (FARP) within the brigade AO.
- Coordinating with the S4 in matters concerning Army aircraft for CSS operations.

The Army aviation LO is located at the main CP, but may move with the brigade commander or lead battalion.

Brigade Engineer

The brigade engineer is normally the commander of the engineer battalion supporting the brigade. The engineer battalion commander advises and assists the brigade commander in all aspects of engineer planning, coordination, and execution. The brigade engineer determines the requirements for engineer support to include recommending the support relationship. The assistant brigade engineer is the commander's principal staff planner in the brigade main CP. He is assisted by other members of the engineer battalion staff. The brigade engineer prepares engineer estimates and engineer portions of the plans and orders to include the engineer annex. The brigade engineer provides the commander and staff information on the enemy's capabilities.

Chaplain

The brigade chaplain pastors to the HHC and provides ministry for casualties, EPWs, civilian internees, refugees, and collocated elements that do not have an assigned unit ministry team (UMT). He assists the commander by monitoring the leadership practices of the command to ensure the highest moral, ethical, and humanitarian standards. The chaplain is located at the rear CP.

Chemical Officer

The chemical officer advises the commander on all NBC matters. He participates in the planning process and prepares the NBC estimate. He also plans and coordinates decontamination operations. The chemical officer works under the direct supervision of the S3, and is located in the main CP.

Direct Support Military Intelligence Company Commander

The DS MI company commander plans and directs the employment of his subordinate IEW assets. He must understand the supported commander's intent and PIR operational and tactical objectives, overall scheme of maneuver and fires, and intelligence collection plan to effectively employ his IEW efforts. The MI commander may be frequently absent from his CP to coordinate with the S2 and to personally oversee the IEW operations of subordinates. He is the principal advisor to the brigade commander on IEW asset

capability. The DS MI company commander must be able to deconflict terrain issues with the brigade S3 for GS or other reinforcing MI assets operating in the brigade AO. The DS company CP is normally collocated with the brigade main CP.

Fire Support Coordinator

The commander of the DS artillery battalion serves as the brigade FSCOORD. The FSCOORD advises and assists the brigade commander in all aspects of FS planning and coordination. The FSCOORD is normally in the main CP during planning and is a part of the orders group. The FSCOORD provides a full-time FSE to the main CP. The brigade FSO is the OIC of the brigade FSE when the FSCOORD is not present. The brigade FSO may be part of the brigade command group during the battle.

Forward Support Battalion Commander

The FSB commander is the advisor to the supported brigade commander concerning supply, maintenance, field and health services, and the implementation of the CSS functions throughout the supported brigade. He coordinates logistic support missions with the brigade XO, S4, and division support command (DISCOM) elements operating in the BSA. The FSB commander exercises OPCON over CSS units operating in the BSA (see Chapter 8 for a discussion on the FSB commander's duties). In the separate brigade, the support battalion commander usually works through the deputy brigade commander and performs those duties normally associated with the DISCOM commander in the division.

Headquarters and Headquarters Company Commander or Headquarters Commandant

The HHC commander or headquarters commandant works closely with and answers to the brigade XO. The HHC commander is responsible for the training of assigned personnel, maintenance of organic equipment, and the support, security, and movement of the brigade main CP and TAC CP IAW unit SOP. Three members of the brigade staff are unique in that they are also major subordinate commanders (battalion size) in the brigade. These officers must command and control their own units as well as coordinate major functional areas including but not limited to their direct subordinates.

Military Police Platoon Leader

The MP platoon leader is the staff adviser on MP combat, CS, and CSS operations. The MP platoon leader directs the actions of the brigade MP platoon in DS to a maneuver brigade. The MP platoon leader is located at the rear CP. In a separate brigade, the PM section is located in the main CP. In all other cases, the MP platoon leader is located in the main CP.

Signal Officer

The brigade signal officer (SO) is the signal expert to the maneuver commander and is located at the main CP. He advises the commander and staff on all signal support matters. He works for the unit and closely interacts with the S3 and other unit staff officers. The brigade SO plans communications assets and resources to support current and future operations. The primary focus is brigade to task force command and control communications. The brigade SO is responsible for information transfer, networking automated systems, and standardization of communications policy, procedure, and training. He coordinates with the next higher echelon SO for additional communications support, if required. As a special staff officer, the brigade SO does the following:

- Acts as the brigade commanders advisor on communication matters.
- Recommends the location of the headquarters and signal facilities, and the use of signal activities for deception.
- Controls assigned or attached signal units.
- Controls communications assets assigned or attached to brigade.

Surgeon

The brigade surgeon advises and assists the commander on matters concerning force protection of the command to include preventive, curative, restorative care, and related services. The brigade surgeon is located at the brigade clearing station in the BSA.

COMMAND AND CONTROL FACILITIES

Brigades are controlled from echeloned command and control facilities with varying levels of staff participation at each echelon. The facilities include a command group, TAC CP, main CP, and rear CP (see Figure 3-1).

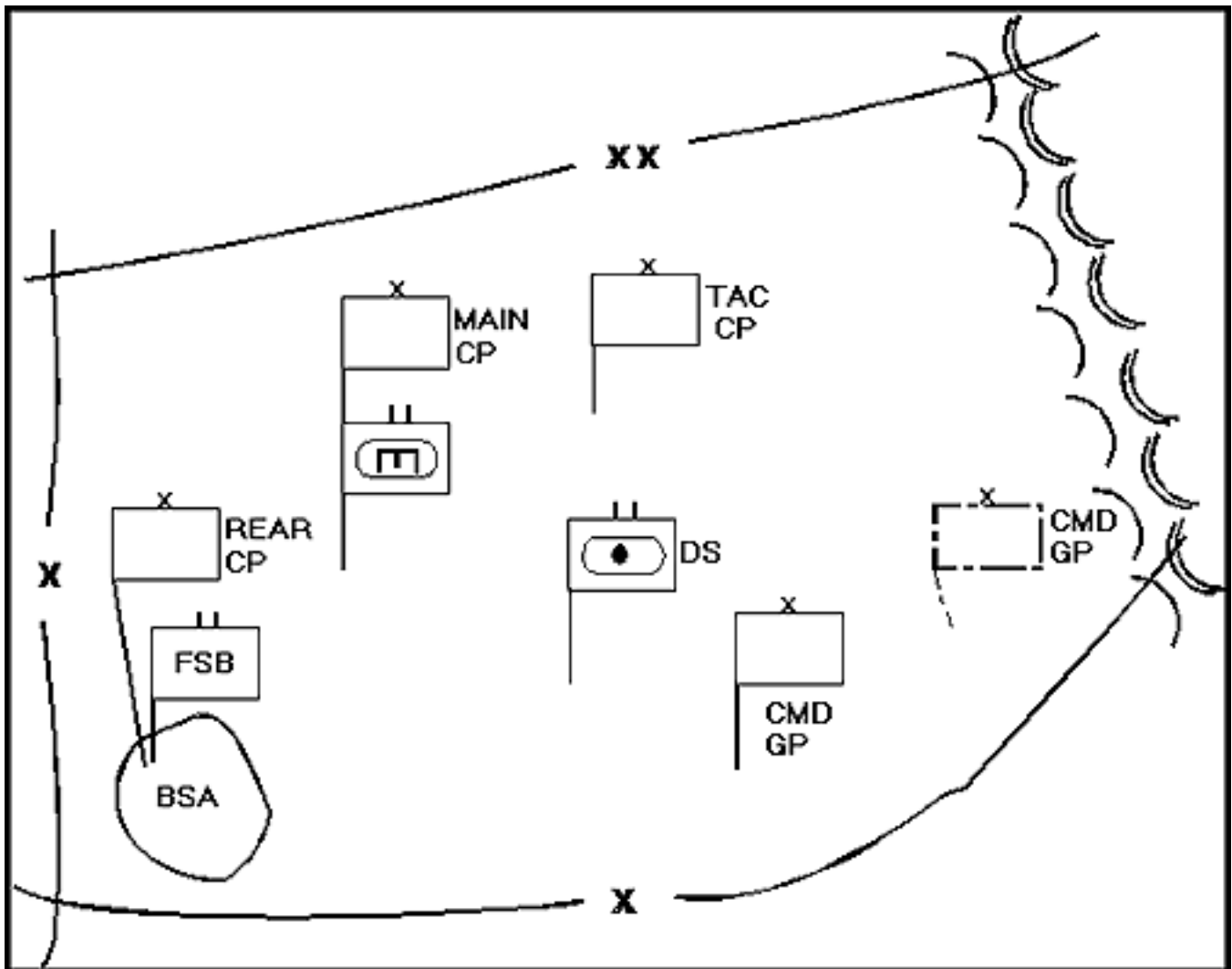


Figure 3-1. Echeloned brigade command posts organization.

Command Group

The command group is normally comprised of the brigade commander and selected staff, normally the S3, FSCoord, and TACP. The brigade commander is in charge of the command group and operates it forward at critical locations during a battle. The commander must be close enough to communicate with his battalion commanders and make face-to-face contact if necessary. The actual placement of individual personnel is made by the commander. The commander makes his decision based on his experience, analysis, needs, judgment, and on the mission; however, the functions for each CP remain constant.

Tactical Command Post

The TAC CP controls current operations, providing the commander with combat critical information, and disseminates the commander's decisions. It is located as far forward as the battalion main CPs to facilitate communications with subordinate commanders, and the main CP. It is composed of the brigade S3, TAC CP, M577, and the brigade commander's M113. Only key representatives of the command group and current operations section are present at the TAC CP. Due to its small size it is highly mobile, and relies on frequent displacement, and comparatively low electronic signature to provide security. Battle command occurs primarily through combat net radio; this CP may also have MSE access through a mobile subscriber radio terminal (MSRT).

The TAC CP may consist of representatives from operations, IEW, air support, FS, Army airspace command and control (A2C2) section, engineers, chemical, and other areas as needed. They provide the commander with combat critical information and disseminate his decisions concerning CS and CSS to the main CP for implementation. The brigade S3 is responsible for coordinating activities at the TAC CP. See Figure 3-2 for a diagram of this facility.

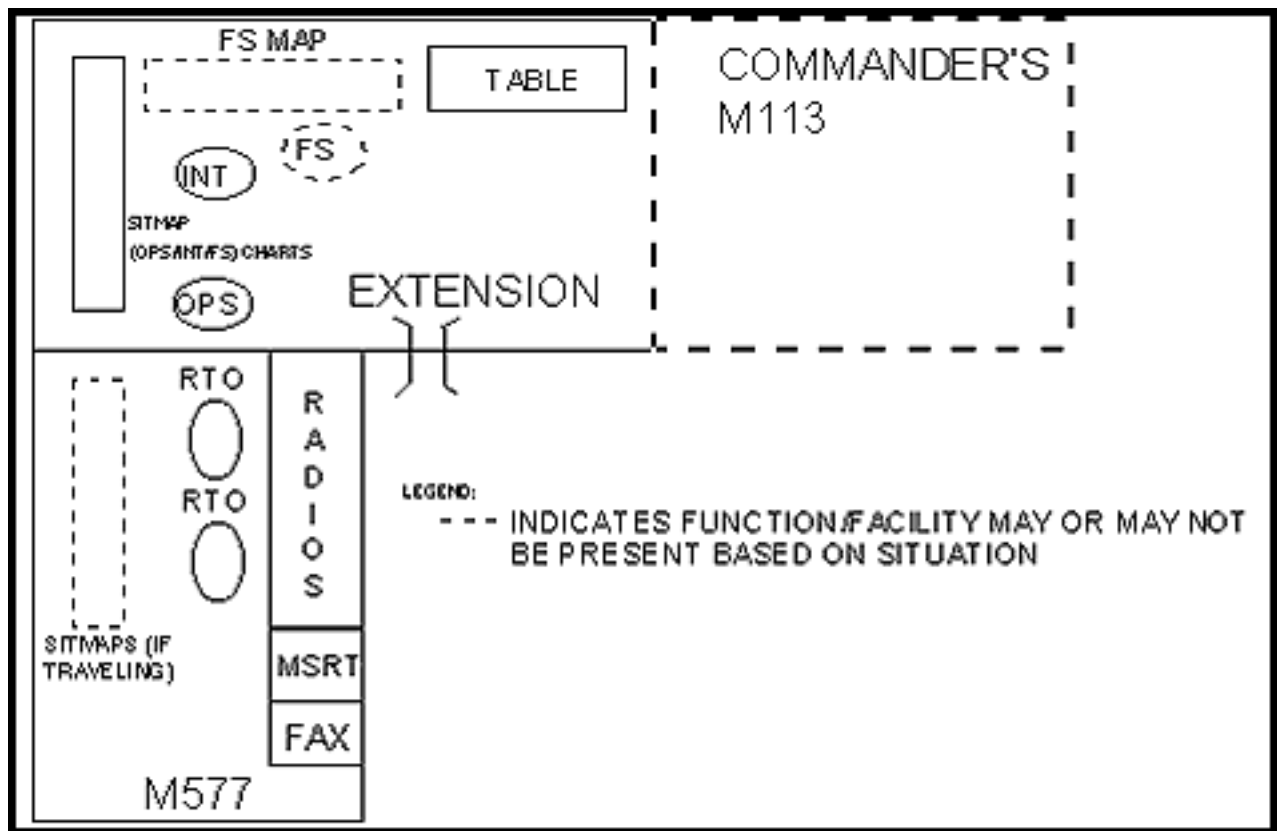


Figure 3-2. Example of brigade tactical command post.

Due to the mobility of the TAC CP, the primary means of communications is secure FM. MSRTs provide an alternative to FM usage. The minimal radio net capabilities required are:

- Division command or higher per attachment.
- Division HF voice net (on call).
- Division operations and intelligence (OI).
- Brigade command.
- Brigade HF voice net (on call).
- Brigade OI.
- Air Force coordination nets (FM, HF, UHF, VHF).*
- FS nets.*

- Net radio interface is provided by the division signal battalion. * Asset will be present if command group collocates with TAC CP.

Main Command Post

The brigade main CP is the control, coordination, and communications center for combat operations. See Figures 3-3 through 3-5 for diagrams of this facility. All configurations suggested are techniques. The main CP:

- Assists the brigade and task force commanders.
- Plans future operations.
- Coordinates operations throughout the depth of the AO.
- Synchronizes CS and CSS assets as directed by the brigade commander.
- Executes planned deep attacks.
- Monitors the close fight.
- Fights rear operations.
- Keeps higher headquarters in-formed.
- Coordinates with adjacent units.
- Maintains continuous operations for extended periods.
- Assumes command and control of close operations if the TAC CP is destroyed.

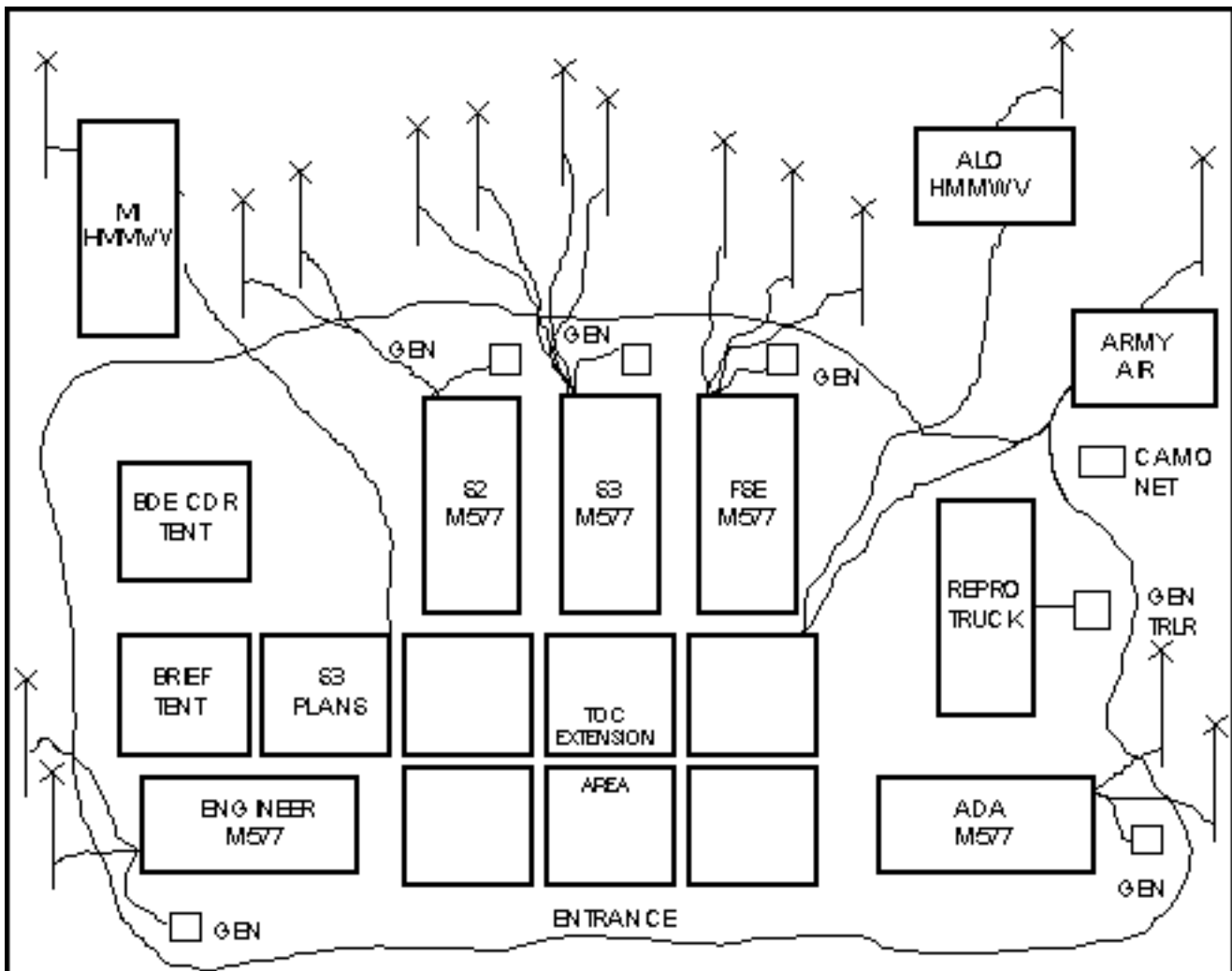


Figure 3-3. Example of brigade main command post macro view.

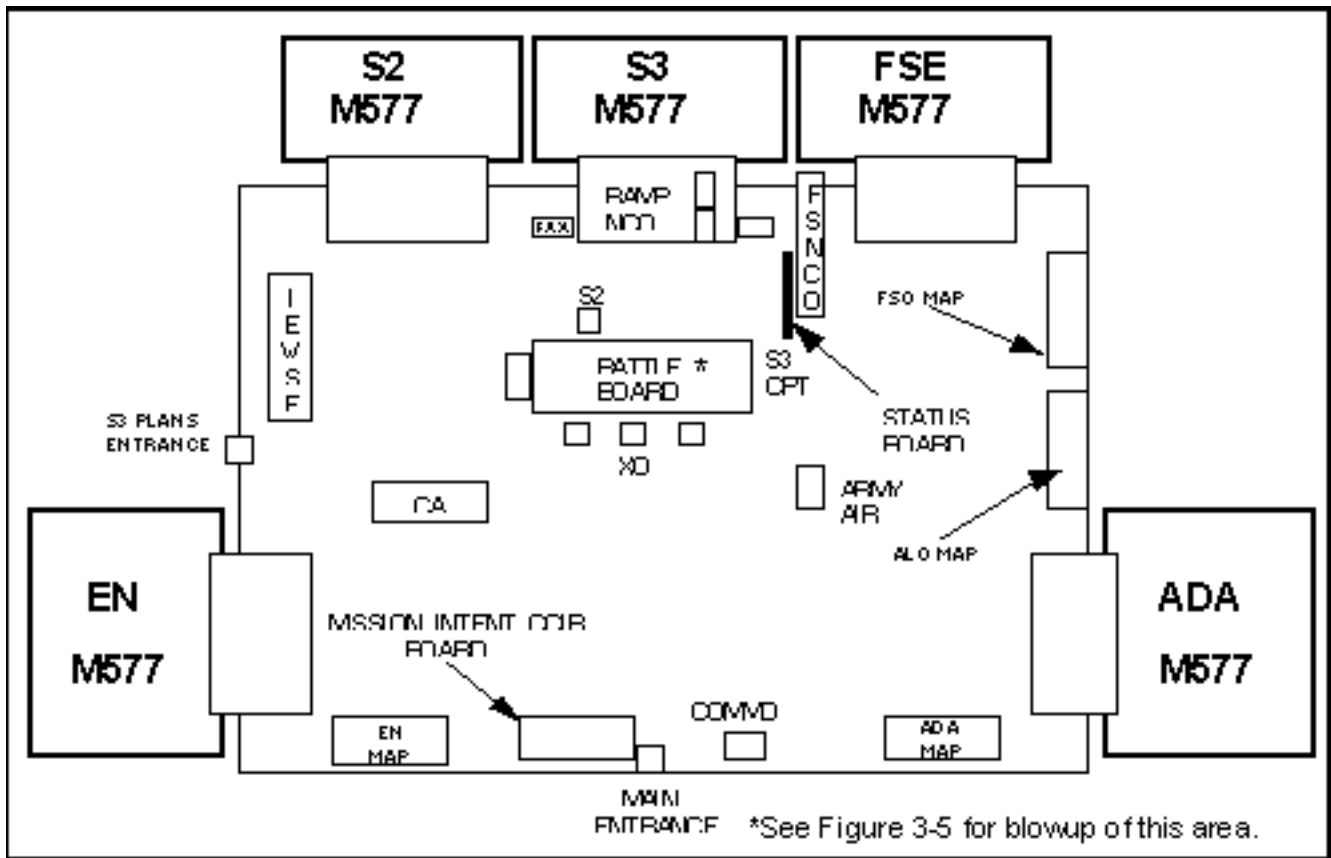


Figure 3-4. Example of brigade main command post internal layout.

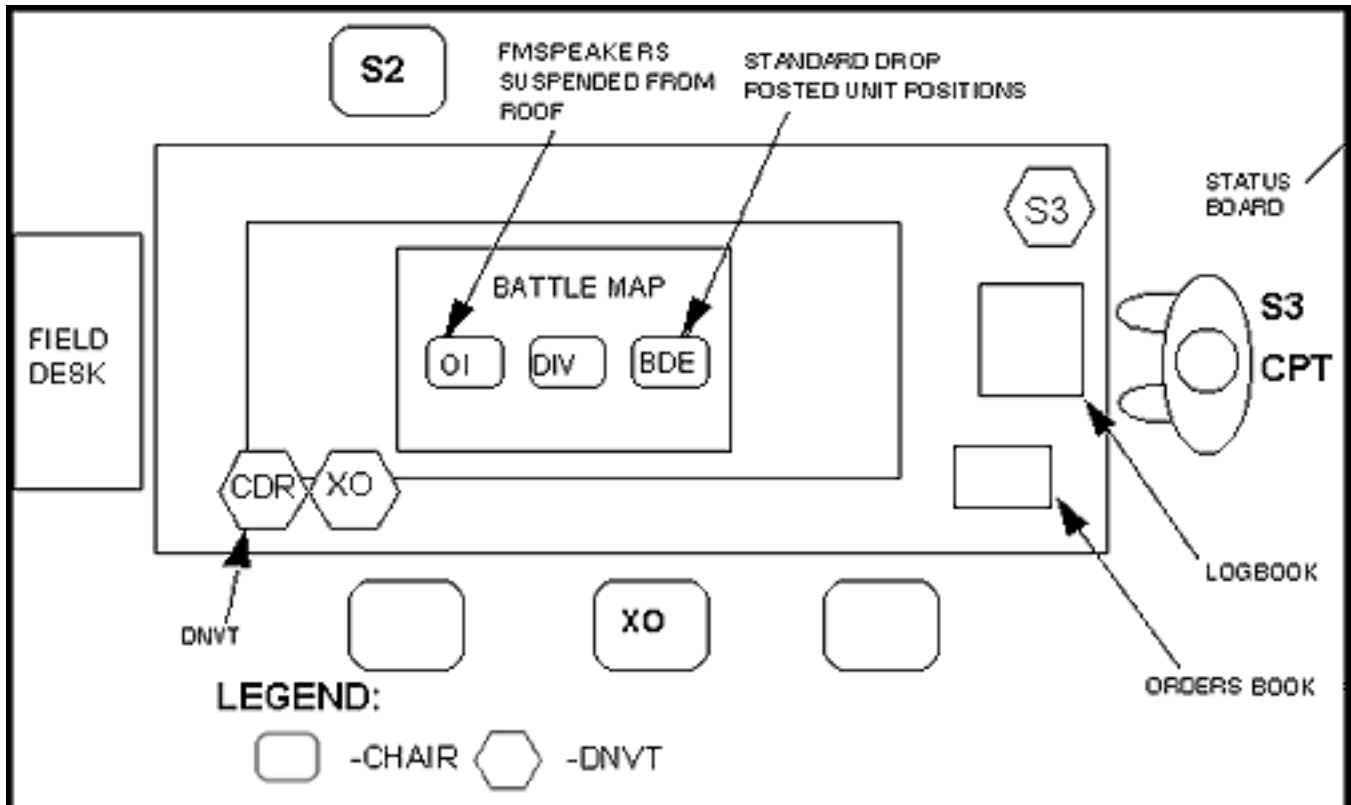


Figure 3-5. Example of brigade main command post battle board.

The brigade staff is functionally organized to help plan and conduct deep, close, and rear operations. The components of each functional section within each CP is not fixed. Staff specialists are represented on more than one functional section and participate in the activities of those sections. Sections located at the brigade main CP are normally:

- **Current Operations Section.** This section consists of those elements necessary to provide the commander with direct control over the battle. Representation is provided as required in operations, IEW air support, FS, A2C2 section, engineers, chemical, and other areas. Representatives from this section may be required to operate the TAC CP when displaced forward. The brigade S3 is responsible for coordinating activities of the current operations and plans sections.
- **Plans Section.** This section maintains a current and projected view of the whole battle and continually updates proposals to the commander for the execution of the future battles. The personnel in this section provide expertise in operations, intelligence, IEW, FS, air defense, logistics support, engineer, chemical, psychological operations Army aviation liaison, Air Force liaison, and special staff as desired by the commander.
- **Intelligence Section.** This section includes the S2, IEWSE, and in the separate brigade, the staff weather officer. They receive, analyze, and disseminate intelligence information to the commander and all brigade elements. The S2 coordinates activities in this section.
- **FS Section.** This section coordinates FS for the brigade. It consists of the FSO, FSE, and ALO. Other representatives that work closely with the FS section are the S3-Air, ADA officer, assistant brigade engineer, and MI company commander. The brigade FSCOORD controls this section. It conducts :
 - Application of the products of the targeting teams target value analysis (TVA).
 - Integrated fire planning.
 - Coordination of all FS for the brigade.
 - Coordination of EW.
 - Command and control warfare.
- **Engineer Section.** This section consists of either the engineer battalions operations cell or the assistant brigade engineer cell. This section conducts engineer coordination as it applies to current and future operations.
- **A2C2 Section.** This section conducts routine coordination, and regulates the brigade's airspace. The A2C2 section includes the aviation LO, ADO or air defense LO, and representatives from the FSE and Air Force liaison element. The brigade S3-Air coordinates the activities of this section.

Rear Command Post

The brigade rear CP has the following functions:

- Tracks current battle.
- Sustains current deep and close operations.
- Forecasts future CSS requirements.
- Conducts detailed CSS planning.
- Serves as the entry point for units entering the brigade rear area.
- Coordinates with the FSB CP (collocate).

See Figure 3-6 for a diagram of the brigade rear CP.

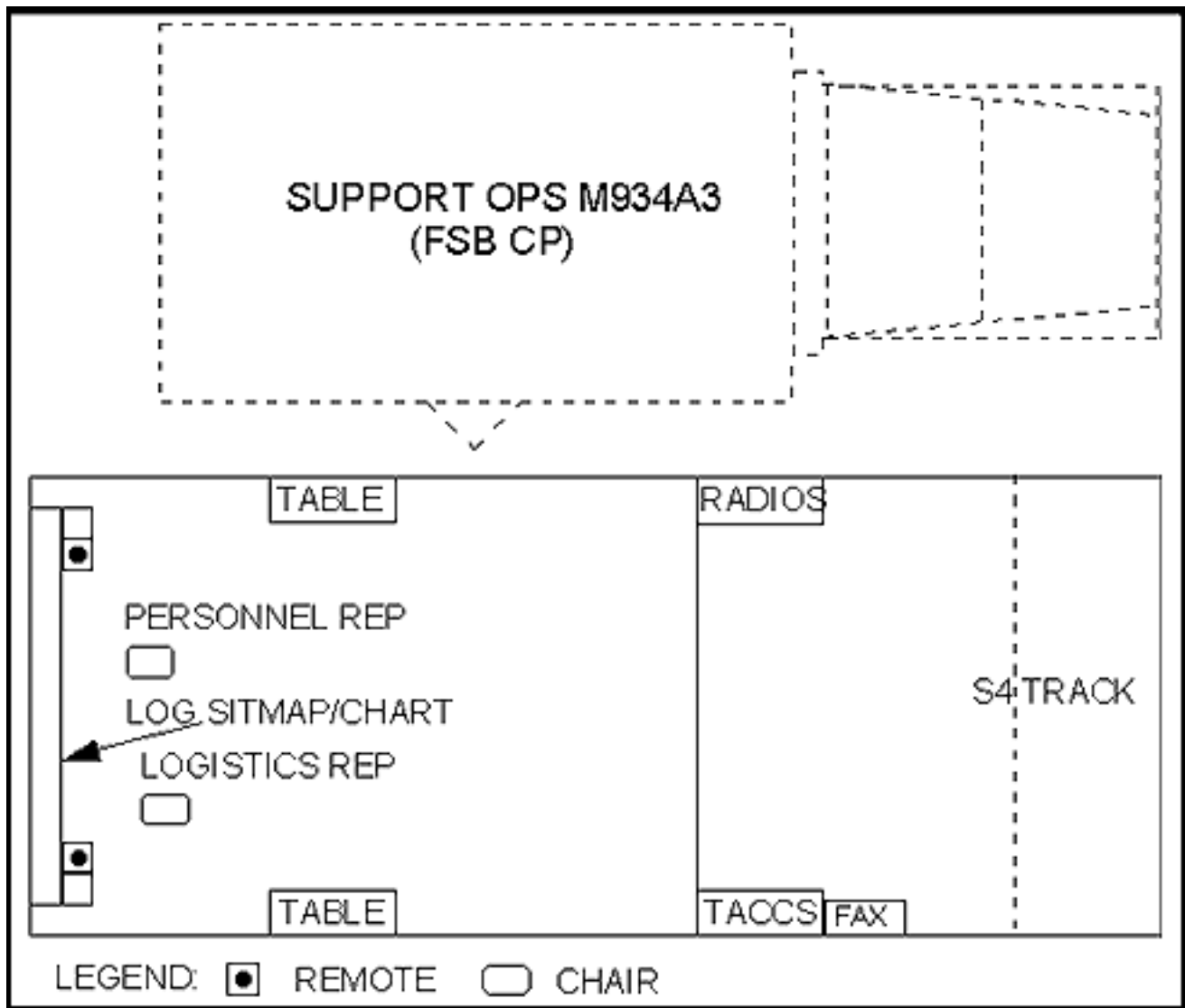


Figure 3-6. Example of brigade rear command post.

The operations support section is located at the rear CP. The S1, S4, S5, surgeon, chaplain, PAO, and MP elements are members of this section. The rear CP is collocated with the FSB CP in the BSA and is under the OPCON of the FSB commander for defense of the BSA. The FSB commander works with the brigade S1 and S4 to coordinate the functions in this section.

The rear CP collocated with the FSB CP is also a large communications and automation hub. Multiple CSS automation systems are employed here as are numerous gateways into different types of communications systems. The FSB relies heavily on MSE/TPN and to a lesser extent on combat net radio. The rear CP must plan for FM range extension due to its distance from the MBA.

SECTION III. COMMUNICATION

GENERAL

Communication is the means through which battle command is exercised. The commander and staff must understand the capabilities, limitations, and vulnerabilities of the brigade communications system. Because enemy and friendly radar, radios, and lasers operate in the same electromagnetic spectrum, commanders plan for interference. Terrain, atmospheric conditions, or electromagnetic pulse emitted by nuclear blast hinder transmissions. The commander:

- Provides for redundancy in means of communications. Prioritize for backup means at key locations.
- Ensures subordinates know what to do during interruptions in communications.
- Avoids overloading the communications systems and uses them only when absolutely necessary.
- Minimizes the use of radios to preserve them.
- Ensures proper signal security (SIGSEC) practices are followed.
- Pays particular attention to maintaining effective lateral communications.
- Considers the employment of re-transmission equipment for each operation.

RESPONSIBILITIES

Responsibilities for communications are:

- Senior to subordinate.
- Supporting to supported.
- Reinforcing to reinforced.
- Passing to passed (for forward passage of lines).
- Passed to passing (for rearward passage of lines).
- Left to right.
- Rearward to forward.

All units should take prompt action to restore lost communications. These responsibilities also apply to the establishment of liaison between headquarters.

COMMUNICATIONS SECURITY

Brigade commanders protect their command, control, communications and intelligence systems by using command and control warfare. The commander and staff execute these countermeasures through the integrated, complementary employment of OPSEC, jamming, deception, and physical destruction.

Command and control warfare consists of two separate, but closely related functions:

- Communications protection measures protect friendly communications from enemy attack and deception.
- Communications countermeasures degrade the enemy's command and control ability.

OPSEC, jamming, deception, and physical destruction are applicable to both functions, but the commander and staff determine how to best implement them based on the factors of METT-T. The brigade's OPSEC program is managed by and is the responsibility of the S3. He analyzes the commander's concept of the operation to determine the essential elements of friendly information (EEFI) that must be protected from exploitation by enemy intelligence. The S3 and S2 develop appropriate OPSEC measures; based on their assessment of enemy intelligence collection capabilities and on the friendly indicators that may compromise the EEFI. These OPSEC measures are primarily procedural in nature and include

- SIGSEC to protect operational information by practicing (COMSEC) and electronic security techniques.
- Information security to prevent disclosure of operational information through written, verbal, or graphic communications.
- Physical security that consists of physical measures that protect personnel; prevent unauthorized access to equipment, facilities, materiel, and documents; and guard against espionage, sabotage, damage, or theft.

Jamming contributes to communications protection by defending and screening friendly communications and intelligence. Jamming is used to disrupt and deceive threat command, control, communications, and intelligence. The brigade has no organic jamming assets. In most instances, EW assets are deployed as GS to the division, with detailed planning for EW operations conducted at division. When EW assets are in GS to the division, the brigade S3 requests EW support for designated targets. EW assets respond to these requests according to the priorities established by the division commander, G2, and G3. When EW assets directly support brigade, the S3 is responsible for planning and coordinating the operations of the EW units. This includes integrating EW with fire and maneuver to ensure supporting EW resources are used effectively to support brigade and battalion operations.

The brigade's primary role in deception is to execute division and corps battlefield deception plans. Brigade units may or may not know that they are participating in a deception effort. The brigade's participation may be limited to practicing sound OPSEC measures or employing active deceptive measures such as demonstrations, feints, ruses, or displays.

SECTION IV. COMMAND POST OPERATIONS

BRIGADE TACTICAL OPERATIONS CENTER OPERATIONS

Command Group

The command group, operating under the brigade commander, operates well forward at the critical location of the battle. The primary function of the command group is to influence the battle through personal presence. Other functions include providing planning guidance, conducting ongoing close operations, and disseminating the commander's decisions.

Tactical Command Post

The TAC CP, with the S3 in charge, is the forward-most CP in the brigade. It operates as far forward as the battalion main CPs. The TAC CP consists of intelligence, operations, and FS personnel. The brigade command group goes forward from this CP to see the critical location of the battle.

Main Command Post

The main CP, under the supervision of the XO, locates in the brigade area generally forward of the division main CP, but behind the battalion main CPs. The main CP consists of staff personnel representing all facets of brigade operations. The main CP has a support area with assets that provide CSS to the brigade's command and control elements. Assets in the support area also help provide security for the main CP. The alternate CP is normally the TAC CP or a battalion CP.

Rear Command Post

The rear CP, with the S1 in charge, is collocated with the FSB CP and has administrative/logistics (A/L) personnel. The rear CP is responsible for coordinating the A/L activities of the brigade.

COMMAND POST OPERATION TECHNIQUES

Communications

Commanders and staffs must understand their communications capabilities and skillfully use them. They must also understand the impact of automation systems on a digitized battlefield.

CP radio operators must understand who is on what net and how to reach net members via alternate nets or means. Contingency plans made by the SO for alternate and back-up systems must be understood by all those working in a CP. CPs should routinely prioritize nets and specify back-up equipment to support those priorities during the planning process of any mission.

Battle staffs must maintain awareness on available communications and rapidly disseminate changes in status throughout the CP. CP users with MSE/TPN access need to understand how the MSE systems work and how to use its capabilities such as conference and precedence calls and commercial interface, effectively. Staffs should also know how to use the combat net radio interface (CNRI) function that allows FM users to call into the system and vice versa. MSRT phones as well as FM radios should be remoted into the CPs.

Maps

CPs maintain information in the form of easily understood map graphics and charts. Status charts can be combined with situation maps (SITMAP) to give commanders friendly and enemy situation snapshots that are needed for the planning process. The information can be updated quickly. For simplicity, all map boards should be the same size and scale, and overlay mounting holes should be standard on all map boards. This allows for easy transfer of overlays from one board to another.

COMMAND POST POSITIONING

There are several considerations in positioning CPs. CPs should be located on ground that is trafficable, even in poor weather. The area around the CP should be large enough to contain all vehicles. Other considerations for positioning CPs are:

- Ensure line of sight (LOS) communications with higher, lower, and adjacent units.
- Encourage redundancy of communications.
- Mask signals from the enemy.
- Use terrain for passive security (cover and concealment).
- Collocate with tactical units for mutual support and local security.
- Locate the CP near an existing road network out of sight from possible enemy observation. Subordinate commanders and LOs must be able to find the CP.

COMMAND POST SECURITY

Consider the following OPSEC measures when positioning CPs:

- The brigade CPs best security comes from frequent repositioning.
- Do not erect any signs advertising CP locations. Disperse CP vehicles and ensure all vehicles and equipment are camouflaged. Maintain noise and light discipline.
- Post a security force to protect CPs. Establish security force positions as in any defensive position and maintain a 360-degree perimeter. Position the security force far enough out from CPs to prevent enemy direct fires on the CPs and equip it with antitank (AT) weapons to protect CPs from enemy armor. Also establish a reserve reaction force. Establish communications between the security force and the CPs. Always rehearse the execution of the perimeter defense.
- At brigade level, the security force consists of support area personnel and off-duty personnel. Battalions normally rely on off-duty personnel. The command group may assist in securing a CP if they happen to be collocated. Units are rarely able to employ combat elements to help secure a CP. Often, however, CP survivability depends on concealment and mobility.

The following are some OPSEC techniques to consider:

- The enemy threat is reduced when command, control, and communications assets are positioned off major enemy mounted avenues of approach. CPs should be positioned so the enemy bypasses them.
- If antennas are remoted outside the perimeter, employ listening posts (LP) or OPs to secure them.

- Disseminate near and far recognition signals to all subordinate units and elements of the CP. These signals, challenges, and passwords are used to control access into the CP perimeter.
- In case of artillery or air attack, designate a rally point and an alternate CP location at a minimum of 500 to 1,000 meters away.

COMMAND POST DISPLACEMENT

CPs displace as a whole or by echelon. Displacement as a whole is normally done for short movements, with communications maintained by alternate means and at minimal risk of degrading CP operations. CPs normally displace by echelon. A portion of the CP, called a jump CP, moves to the new location, sets up operations, and takes over OPCON of the battle from the main CP. The remaining portion of the CP then moves to rejoin the jump CP. The jump CP consists of the necessary vehicles, personnel, and equipment to temporarily take over CP operations while the remainder is moving.

The XO or S3 selects a general location for the new CP site. The jump CP can be accompanied by a quartering party. The quartering party may consist of a security element and personnel and equipment for quartering the remainder of the CP. The SO, who is usually part of the quartering party, ensures communications on all nets can take place from the new site. When the jump CP becomes operational, it also becomes the net control station (NCS) for the unit's nets. The remainder of the CP then moves to rejoin the jump CP. The S3 SGM supervises the breakdown of the main CP at the current location and the setup at the new location.

At brigade level, the role of the jump CP can be performed by the TAC CP if necessary. In this case, the TAC CP may or may not be positioned at the new location. Jumping in this manner can be done in both offensive and defensive operations. If it has radios, the plan section's M577 can serve as an alternative jump CP.

During offensive operations, the main CP normally moves with the main body. The main CP deploys temporarily to enhance planning for future operations.

SECTION V. BRIGADE REHEARSALS

GENERAL

A rehearsal is the act or process of practicing an action in preparation for the actual performance of that action. Rehearsing key combat actions allows participants to become familiar with the operation and to translate the relatively dry recitation of the tactical plan into visual impression. This visual impression assists them in orienting themselves to both their environment and to other units during the execution of the operation. Moreover, the repetition of combat tasks during the rehearsal leaves a lasting mental picture of the sequence of key actions within the operation. Rehearsals also provide a forum for subordinate units and leaders to analyze the tactical plan to ascertain its feasibility, common sense, and the adequacy of its command and control measures before it is too late. To be effectively and efficiently employed in combat, rehearsals need to become habitual in training. All units at every level should routinely train and practice a variety of rehearsal techniques. Local SOPs should identify appropriate rehearsal techniques and standards for their execution.

Time is probably the most precious resource available to commanders and units. Rehearsals take time. The time required for rehearsal varies with the complexity of the task to be rehearsed, the type of rehearsal, and the level of participation. For this reason, the emphasis on rehearsals should be at the lowest level possible, using the most thorough technique possible given the time available.

REHEARSAL TYPES

Full-Dress

Full-dress rehearsals are the most effective form of rehearsals. However, they consume the most time and resources. This technique may involve up to every soldier and system taking part in the operation. If possible, the unit conducts the full-dress rehearsal under the conditions (weather, time of day, terrain) expected to be encountered during the actual operation. In defensive operations, the unit can conduct a full-dress rehearsal over the actual terrain. In an offensive operation, the unit conducts the rehearsal on any available terrain that closely matches the terrain of the zone of attack. These rehearsals are the most productive type of rehearsal, however, they are also the most resource and time-intensive.

Key Leader

This type of rehearsal takes less time and resources than the full-dress rehearsal because it involves only the key leaders of the unit. The unit conducts the rehearsal under conditions expected during combat operations. This type of rehearsal requires the commander to decide the level of leader involvement. Selected leaders rehearse the plan in their assigned tactical vehicles over the terrain. The terrain requirements remain the same as those for the full-dress rehearsal; only the number of participants change. Because of the reduced number of participants, the key leader rehearsal takes less time than a full-dress rehearsal. This type of rehearsal is often accomplished during defensive operations.

Terrain Model or Sand Table

This technique is accomplished relatively quickly and normally involves key leaders. Since this type of rehearsal is most often used when time and resources prohibit the full-dress or key leader rehearsal, it is probably used most often. The terrain model is discussed in greater detail later in this section.

Sketch Map

A sketch rehearsal takes even less time and resources than a terrain model rehearsal. Units can conduct this rehearsal almost anywhere day or night. The procedures are the same as for a terrain model rehearsal, except the commander uses a sketch in place of a model. However, sketches must be large enough for all participants to see as the commander and his staff talk each subordinate leader through a sequential, interactive, verbal execution of the operation.

Map

This technique has two variations. The most common is to use a large scale (1:25,000) map and operations overlay, laid horizontally with subordinate commanders seated around it. This technique is especially suited for inclement weather or at night, since the rehearsal can take place in a tent or building. Markers (such as cardboard cutouts or micro armor) are used to track each unit as it moves and each key event as it happens. Each participant is responsible for placing and moving his own markers. Another option is to move to a location that allows a view of the AOs, with each participant following the rehearsal using his own map and operations overlay. This technique has the added advantage of terrain familiarization for the participants, but it has the disadvantage of allowing potential misinterpretations and terrain management conflicts.

Radio

A radio rehearsal is less time- and resource-intensive than the map rehearsal, but is not as desirable because participants do not share information face-to-face. The brigade can conduct a radio rehearsal at any time. This technique is used extensively by FS units. To conduct a radio rehearsal, the commander and his staff transmit an interactive verbal execution of critical portions of the operation over the FM radio net. For this technique to be effective, every participant must have operable communications, a copy of the brigade OPORD, and all appropriate overlays. The unit rehearses only the essential/critical phases of the operation. Prolonged FM radio communications, even when conducted with secure radios, may offer the enemy vital

intelligence and targeting information on the operation. A commander should use this method only as a last resort. In some cases radio rehearsals are essential to verify the communications system will work. If you intend to execute the FS plan digitally, use a radio rehearsal to test the system.

Backbrief

A backbrief is a briefing to the higher commander in which the commander describes how he intends to accomplish his mission. This type should be used when time is severely constrained.

Special

Although the majority of rehearsals planned and conducted by maneuver units are rehearsals of combat actions by subordinate maneuver units, rehearsals of special tasks or special functional groups are sometimes desirable.

Some examples of special rehearsals include command group, TOC shift, decontamination, R&S plan, and engineer reserve demolition target turnover. The decision concerning which special rehearsals to conduct, if any, is the commanders. Special rehearsals may be as formal or informal as necessity dictates and time allows.

Special rehearsals do not fit neatly into the type and level classifications presented above. How extensive the rehearsal should be and who should participate are dependent on time available, task complexity, and unit training. (For example, the TOC shift rehearsal is probably nothing more than a talk-through of key information and actions likely to be executed by the TOC, set against the framework of the S2s event template.) Rehearsing decontamination may be a Level III, full-scale, type A rehearsal on actual terrain when a certain unit must cross a known contaminated area. The battalion S2 may conduct a Level II, type D rehearsal of the patrolling portion of the battalion R&S plan with the scout platoon.

Special rehearsals do not replace other rehearsals. Rather, they augment, supplement, or reinforce other maneuver rehearsals. Special rehearsals can be conducted at any time during the TLPs, just like any other rehearsal.

EXAMPLE TERRAIN MODEL REHEARSAL

Site Selection

Brigade staffs should select rehearsal sites that facilitate the type of rehearsal being conducted. Consider the factors of METT-T to ensure the site is secure, large enough to allow the type of rehearsal selected and, when possible, allows a view of the AO.

Participants should come with maps, overlays, and binoculars, prepared to view the AO during the rehearsal. Brigade staffs plan for, and provide security from, ground and air attacks. A rally point is identified in case the rehearsal site is attacked. Parking is provided, but the dismount point and the parking area must not attract the enemy's attention. Terrain models and maps should be oriented to the north. If the AO can be viewed, key terrain is identified on the ground and on the model or map.

Preparing a Terrain Model Rehearsal

The terrain model rehearsal takes less time and fewer resources than the full-dress rehearsal and the key leader rehearsal and can be conducted day or night. Constructed accurately, this terrain model rehearsal technique can be an excellent three-dimensional aid to assist subordinate leaders and staffs in visualizing the battle.

Preparation of terrain models requires the unit to maintain a number of materiel. Once assembled, inventory the materiel and maintain them like basic issue items (BII) for the designated vehicle carrying the

materiel. The materiel must enable the builder to accurately depict all required information. Recommended materiel for a terrain model kit include

- Tape measure (100 yards/meters long).
- Engineer tape (minimum of 500 meters).
- String to mark grid lines.
- Yarn (red, blue, green, and yellow).
- Nails and tent stakes.
- Index cards (3x5 and 5x7 laminated).
- Alcohol pens.
- Grease pencils.
- Premade military and unit symbols.
- Magnetic compass.
- Hammer.
- Chalk.
- Entrenching tool.
- Sandbags.
- Cotton balls.
- Spray paint (red, blue, green, and yellow).

Identifying and training personnel to construct terrain models are responsibilities shared by the brigade S3 plans officer and the operations SGM. The brigade S3 section trains two primary and four alternative terrain model builders at home station. The size of the terrain model or the time available may necessitate using additional personnel. The size of the terrain model can vary, from a tabletop arrangement (sandbox) to a model where the participants actually walk through a scaled-down version of the terrain. A terrain model large enough to allow the key leaders to walk over a scaled-down version of the terrain helps participants to visualize the battlefield.

The first step in creating an accurate terrain model is to prescribe the scale. This is easily accomplished by walking off several steps per kilometer, or using some other form of measurement. For example, if the brigade zone of attack is 10 kilometers by 6 kilometers, the builder of the terrain model could assign one step per kilometer and walk off the scale of the terrain model.

The second step in developing an accurate terrain model is to lay down selected grid lines based on the tactical map. With the grid lines established, the builder has a handy reference to measure the size and locations of the terrain features. This simple step increases the accuracy of the terrain model and ensures that the terrain features are the proper scale.

The terrain model should depict all required information shown on the operations overlay and brigade SITMAP to include key terrain features, enemy positions (known and suspected), and fire control measures. Place an arrow on the terrain map to depict North for orientation. Label all PLs, numbered hills, and objectives with their appropriate names. The terrain should mirror the brigade operations and enemy overlays.

Once the terrain model is complete, position a map and operations overlay behind or at the side of the model as a point of reference. Attendance at the brigade rehearsal should include, at a minimum, the brigade commander, FSCOORD, brigade XO, coordinating staff, special staff, and all battalion task force commanders with their S3s and FSOs. LOs from higher or adjacent units may attend.

Conducting the Rehearsal

The commander leads the rehearsal; his staff runs it. The director of the rehearsal is the brigade XO. As such, he rehearses his role during the operation. He ensures tasks are accomplished by the right unit at the right time and cues the commander to upcoming decisions. The XO's script is the synchronization matrix

and the DST. These are the foundations for the OPORD recorded in chronological order. A terrain model rehearsal takes a proficient brigade from one to two hours to execute to standard. The following example outlines a step-by-step process for conducting a brigade rehearsal.

Step 1. Start at the appointed time and conduct a formal roll call. Ensure everyone brings binoculars, maps, and necessary equipment.

Step 2. Ensure that the XO or the S3 orients the terrain model to the actual ground, the operations overlay, and the map. Describe and point out the overall AOs and explain the markers used on the terrain model.

Step 3 Brief the timeline. The brigade XO should do this, or the S3 in lieu of the XO. Designate the rehearsal start time. For example, have the rehearsal begin by depicting the anticipated situation one hour before line of departure (LD). Set the time interval to be used to start and track the rehearsal. For example, specify a ten-minute interval to equate to one hour of real time during the operation.

Step 4. Designate a recorder. This should be the S3, or a designated representative from the operations cell. Highlight the ground rules and incorporate ground rules into the brigade SOP. They include who controls the rehearsal (brigade XO), who actually walks the terrain board, how the rehearsal will be controlled, and when special staff officers brief. Special staff officers should brief by exception when a friendly or enemy event occurs within their BOS.

Step 5. The brigade S3 reads the mission statement, the commander reads his commander's intent, and the S3 lays out the friendly situation as it currently exists, using the terrain model.

Step 6. The brigade S2 briefs the current enemy situation. He then briefs the most likely enemy COA. (The enemy situation should already be set up on the terrain model.) The S2 also briefs the status of the brigade R&S plan, for example citing any patrols still out and OP positions.

Step 7. The brigade S3 briefs friendly maneuver unit dispositions at the rehearsal start time, including security forces. Other brigade staff officers brief their subordinate unit positions at the start time, as well as any particular points of emphasis. For example, the chemical officer briefs mission-oriented protection posture (MOPP) level, and FSO shows range of friendly and enemy artillery.

Step 8. The commander gives appropriate commands. Brigade FSOs/FSCOODs tell when they initiate fires, who is firing, from where, the ammunition, and the desired target effect. Task force commanders tell when they initiate fire IAW their FS plans. If FISTs are present, they initiate calls for fire. The brigade XO talks for any staff section not present, and ensures all actions listed on the synchronization matrix or DST are addressed at the proper time or event. Avoid re-wargaming except as absolutely necessary, to ensure subordinate unit commanders understand the plan. If the staff has developed an order that addresses contingencies, do not wargame the operation at the rehearsal site.

Step 9. The enemy is portrayed by the S2 section. The S2 section walks the enemy through the most likely COA (situation template), stressing reconnaissance routes, objectives, security force composition and locations, initial contact, initial fires (artillery, air, attack helicopters), probable main force objectives or kill sacks, likely chemical attack times and locations, and the commitment of reserves. The S2 must be specific by tying enemy actions to specific terrain or friendly unit actions. The walk-through should be an accurate portrayal of the event template.

Step 10. Terminate the first phase of the rehearsal after the desired end state (from the commander's intent) is achieved. In the attack, this is usually on the objective after consolidation. In the defense, this is usually after the decisive action, such as the commitment of the brigade reserve and the final destruction or withdrawal of the enemy.

Step 11. When it becomes obvious that additional coordination is required to ensure success of the operation, try to accomplish it immediately. This coordination is one of the key points of the rehearsal. Ensure it is understood by all participants and captured by the recorder, and all changes to the published

OPORD are in effect. However, this is not the time to make major changes. Changes are kept to only those that are vital. As soon as possible, the brigade S3 should collect the verbal FRAGOs into a written change to the OPORD.

Step 12. After the initial walk-through of the base order, backstep to the situation at the initial DP. State the criteria for a decision to change the plan. Assume these criteria have been met and then refight the fight from that point forward, until the desired end state is attained. Complete any coordination to ensure understanding and requirements is met. Record any changes.

Step 13. Go to the next DP and ensure that the criteria have been met. Repeat step 12.

Step 14. Repeat step 13 until all DPs have been rehearsed.

Step 15. Key CS and CSS actions need to be briefed. These items should be integrated into the rehearsal at the appropriate times. Summarizing these actions at the end of the rehearsal adds to the value of the rehearsal as a coordination tool.

Step 16. After the rehearsal is complete, the recorder should restate any changes, coordination or clarifications directed by the commander, and estimate the time that a written FRAGO to codify the changes that follow.

Step 17. The commander should stress any points needing additional emphasis. He should consider reiterating his intent (purpose, method, end state), to remind all participants that the goal is to accomplish the brigade's mission.

See FM 101-5 for more details on rehearsals.

CHAPTER 4 OFFENSIVE OPERATIONS

CONTENTS
Section I. Fundamentals of Offensive Operations
Section II. Forms of Tactical Offense
Section III. Brigade as a Covering Force
Section IV. Combined Arms Breaching Operations
Section V. Night Offensive Doctrine

During offensive operations the brigade commander sets the conditions for successful operations. He accomplishes this by employing all of his organic and supporting systems with precision. These systems are employed at their maximum capability to meet the conditions set by the brigade commander. The commander then maneuvers his force to decisively defeat the enemy.

SECTION I. FUNDAMENTALS OF OFFENSIVE OPERATIONS

CHARACTERISTICS OF OFFENSIVE OPERATIONS

The offense is the primary means of gaining and maintaining the initiative. Through constant offensive pressure on the enemy, the brigade commander is able to force the enemy to conform to his intent and retain his own freedom of maneuver. Even in the defense the commander seeks to regain the initiative through offensive action at the earliest opportunity.

The success of the attack depends on the proper application of the four offensive characteristics of initiative:

- Surprise.
- Concentration.
- Tempo.
- Audacity.

Surprise

Commanders achieve surprise by attacking the enemy at a time or place and in a manner for which he is not physically or mentally ready. The commander must anticipate the enemy commanders intent and deny the enemy the ability to collect intelligence on friendly forces. Surprise is achieved by the direction, timing, boldness, and force of the attack. Sudden and violent attacks have a devastating effect on the enemy as do attacks from unexpected directions. Surprise can also be achieved from unexpected changes in tempo.

Concentration

Concentration is achieved by massing the effects of combat power. To achieve concentration on the modern battlefield, and provide security for the force, the commander uses a combination of dispersion, concentration, deception, and attack. The commander designates a main effort and allocates enough CS and CSS to accomplish his desired end state. The plan must be flexible enough to allow the commander the ability to shift the main effort to the supporting effort if the situation provides a greater opportunity for success.

Tempo

Tempo is the rate of speed of military action and may be either fast or slow. Controlling and altering the tempo are essential to maintaining the initiative. While a rapid tempo is often preferred, the tempo is adjusted to ensure synchronization. Controlling and altering enemy and friendly tempo promotes surprise, keeps the enemy off balance, denies the enemy freedom of action, and contributes to the security of the attacking force.

Audacity

Audacity is key to successful offensive action. This is the ability of leaders to understand and decisively and boldly operate within the commanders intent. This type of action often negates the disadvantage of numerical inferiority. The commander takes advantage of opportunities and plans for success throughout his battle space.

ORGANIZATION OF OFFENSIVE BATTLES

To organize the battlefield, the commander and staff must view tactical offensive battles as operations in depth, which consist of three interrelated parts:

- Deep operations. In vital parts of the attack zone, deep operations contribute to the success of the brigades close fight. Deep operations limit the enemys options and disrupt its coordination and synchronization. Brigade deep operations are closely linked with division operations. Identification of division deep operations assists the brigade in targeting units and setting priorities for brigade deep operations.
- Close operations. These operations include reconnaissance and security actions, the main effort, and reserve actions.
- Rear operations. Rear operations are necessary to maintain offensive momentum. This may include fighting enemy airborne and airmobile units within the BSA until augmented by combat units from brigade or division and conducting the necessary activities to sustain the brigades offensive momentum.

PLANNING FOR OFFENSIVE OPERATIONS

Successful offensive action requires the concentration and synchronization of all assets. Available ground and air maneuver forces, engineers, FA, ADA, attack helicopter, CAS, and EW assets must be concentrated at the decisive point and time to ensure tactical success. This requires that the brigade mission be analyzed and translated into specific objectives that, when secured, permit control of the area or facilitate destruction of the enemy force. The brigade plan designates:

- The deep attack.
- The main attack and main effort.
- The supporting attack.
- The reserve.
- Follow-and-support forces, if any.
- Reconnaissance and security forces.

The deep attack is focused on utilizing the brigade's available deep fires (lethal and nonlethal) to disrupt enemy functions or to delay or destroy enemy forces. The deep fight will set and maintain the conditions for success in the close fight. Inherent in deep operations planning is the detail necessary to ensure that the forward observers on the battlefield are linked (redundantly if possible) to the delivery systems. This effort contributes to the success of the deep fight.

The main attack is directed to secure the objectives that contribute the most to mission accomplishment. The supporting attack contributes to the success of the main attack in one or more of the following ways:

- Fixing enemy forces to facilitate the main attack.
- Controlling terrain that facilitates maneuver of the main attack.
- Destroying enemy forces that hinder the main attack.
- Deceiving the enemy as to the location of the main attack.
- Preventing or delaying enemy concentration against the main attack.

Reserves are constituted to be committed at the decisive time and place to exploit success or to ensure mission accomplishment. They should not be used to reinforce failure in the hope of reversing a defeat. A reserve provides the commander with the flexibility to deal with unforeseen contingencies. It also adds to security, although this is not its primary function. Reserves may consist of maneuver and CS units. The reserve is specifically used to:

- Exploit success by moving to attack an enemy weakness or vulnerability.
- Reinforce or maintain momentum by passing through or around units held up by enemy forces.
- Defeat enemy counterattacks.

The size of the reserve is determined by METT-T. The more vague the situation, the larger the reserve. Whenever possible, one-third or more of the available combat power is retained in reserve. The reserve is positioned to:

- Permit rapid movement to points of probable employment.
- Weight the main attack by destroying or blocking enemy counters to the main attack.
- Provide security to unoccupied terrain within the brigade sector.
- Provide maximum protection from hostile observation and fire consistent with mission requirements.

Reserve missions should be sufficiently detailed to provide the reserve force commander a clear understanding of the brigade commanders intent and commitment criteria. Plans are made to reconstitute a reserve at the earliest opportunity after the original reserve is committed. Designating on-order reserve missions to committed units is a recommended technique.

Follow and support is an assigned mission from a higher headquarters. The follow-and-support force is not a reserve; it is a committed force that accomplishes the following tasks:

- Destroys bypassed units.
- Relieves units that have halted to contain enemy force.
- Blocks enemy reinforcements.
- Secures LOCs, EPWs, or key areas.
- Controls refugees.

Follow and assume, like follow and support, is not a form of the offense. A follow-and-assume force is also a committed force. It plans and prepares to take over and complete the mission of the force it is following. This mission is common in offensive operations. A follow-and-assume force will often follow the main attack.

Reconnaissance is the precursor to all operations. It focuses on locating the enemy and provides information on terrain. While conducting reconnaissance, the brigade relies on limited assets. This reinforces the importance of a focused R&S plan designed to confirm the adopted enemy course of action.

In the offense, as in all operations, the brigade commander secures his force. Surveillance, fires, OPSEC, and the effective use of obstacles and security forces protect the brigade.

SYNCHRONIZATION OF OFFENSIVE OPERATIONS

Successful offensive operations require coordination, integration, and synchronization of all combat, CS, and CSS elements within the brigade AO. Synchronization of the BOS occurs vertically from corps and division through brigade to battalion and separate company. It also occurs horizontally among the staff sections. Major considerations for integration of the BOS in offensive operations follow.

Intelligence

The brigade commanders guidance to the S2 should contain the commanders PIR. After coordinating with the S3, additional intelligence requirements may be recommended to the commander during the S2s and staffs IPB.

It is especially critical that the brigade S2 prepare an up-to-date enemy data base during the IPB process to support offensive operations and to answer the commanders PIR. The threat estimate and data base are used in identifying specific enemy vulnerabilities and weaknesses. This information assists the brigade commander in properly concentrating his available combat power.

The development of PIR and IPB is a continual process throughout the planning and execution of the offensive operation. The brigade intelligence section answers PIR using a detailed R&S and collection plans developed and coordinated by the brigade S2 and the battalion task force S2s and S3s. The brigade S2 requests additional information and collection assets from its higher headquarters when the brigade commanders PIR cannot be gathered by organic brigade assets.

During the operation, the brigade S2 provides the commander continuous updates of enemy activities and anticipated enemy COAs. His sources include reports from the ASAS, monitoring of battalion radio nets, and analysis of reported sightings.

Maneuver (Army Aviation)

Elements from the divisional aviation brigade may be placed OPCON to the brigade commander to accomplish a mission or for the duration of an operation. Cavalry elements conduct reconnaissance and security operations. Assault elements conduct air assault operations and provide limited CSS functions. Attack helicopter battalions augment and extend the brigades maneuver capability and are most effective against massed enemy armor and stationary or moving artillery. They are also well-suited to conduct reconnaissance and security missions.

Aviation units operating with the brigade or in the brigade AO coordinate locations for assembly areas, forward assembly areas, and FARPs through the depth of the zone with the brigade S3. In offensive operations, these areas will be used in sequence as the main body advances.

Aviation units placed OPCON to the brigade remain the responsibility of the aviation brigade for logistics support. Efficient distribution of certain critical classes of supply may require coordination with the brigades FSB.

For a detailed discussion on ground maneuver see Section II of this chapter.

Fire Support

FS can deliver a variety of munitions to support brigade operations. FS assets available to the brigade are normally one DS FA battalion and organic battalion mortars. Additional FS assets may include:

- CAS.
- NGF.
- Army aviation.
- Reinforcing and general support reinforcing battalions.
- Electronic warfare assets.

The brigade FSE is the focal point for integration of all FS for the brigade. To effectively integrate FS into the operation, the FSCOORD must understand the mission, the commanders intent, the concept of the operation, and the commanders guidance for FS. The FSCOORD must be involved in the planning process from the outset. Using the products of the IPB and TVA processes, the FSCOORD and the FSO jointly wargame COAs with the brigade command and his staff. Following the commanders decision, the

FSCOORD produces the FS plans or execution matrix, an attack guidance matrix, and the HPT list. These tools fully integrate FS for the operation by focusing attack and acquisition systems on enemy systems that must be eliminated. The FSCOORD ensures FS assets are properly employed and synchronized.

Specific considerations for the employment of FS in offensive operations include:

- Weighting the main attack by assigning priorities of FS to lead elements.
- Isolating the point of attack.
- Softening enemy defenses by delivering effective preparatory fires.
- Suppressing enemy weapon systems to reduce the enemy stand-off capability.
- Suppressing and obscuring overwatching enemy forces during breach operations.
- Screening maneuver forces adjacent to enemy units.
- Suppressing bypassed enemy elements to limit their ability to disrupt friendly operations.
- Interdicting enemy counterattack forces, isolating the defending force, and preventing its reinforcement and resupply.
- Providing counterfire to reduce the enemy's ability to disrupt friendly operations and to limit the enemy's ability to rapidly shift combat power on the battlefield.
- Supporting rear operations.

Air Defense

The division commander's ADA priorities determine what ADA resources the brigade will receive. Normally, the brigade receives a battery of ADA attached, OPCON, or DS.

The ADO must understand the commander's mission, intent, and concept of operations. Continued involvement by the ADO in the planning process is critical to the successful integration of ADA support with the brigade concept. The brigade S3 needs to consider terrain requirements to optimize ADA weapon systems and ground-based sensor/light and special division interim sensor coverage.

Considerations for employing ADA in the offense are:

- To concentrate ADA to achieve massive fires at decisive points.
- To integrate ADA weapon systems throughout the brigade.
- To weight the main effort with ADA protection.
- To assist the S2 during the IPB process and in analyzing air avenues of approach.
- To identify potential choke points and plan their protection.
- To ensure the supporting ADA unit is as mobile as the supported force.

The ADA battery should be task organized to support the operation from the LD to the objective. In the offense, the following are normal air defense priorities:

- Maneuver forces.
- Choke points.
- Command, control, communications, and intelligence assets.
- CSS assets.

Mobility and Survivability

The brigade engineer plans and coordinates mobility, countermobility, and survivability tasks to support the offensive mission. He links engineer planning at division level and execution at battalion task force level.

The engineer develops a scheme of engineer operations, through terrain visualization, that focuses on providing mobility support throughout the depth of the attack. The combined arms breaching tenets provide the framework for planning breaching operations:

- Intelligence.
- Organization.
- Fundamentals.
- Mass.
- Synchronization.

The engineer battalion is task organized forward to support in-stride, deliberate, or assault breaching operations. The staff engineer officer (S2, S3, and ABE) work closely with the brigade S2 in developing obstacle intelligence. The data is collected and used to develop the obstacle and situation templates. Countermobility planning in the offense includes the coordination and wargaming of FASCAM delivery assets by the brigade engineer to close potential flank avenues of approach, fix enemy forces, and close retreat routes for engaged enemy units. Upon consolidation of the objective, tactical obstacles are emplaced to support the defense against enemy counterattacks.

Survivability missions are of lower priority during offensive maneuvers; they become important upon consolidation on the objectives and must be anticipated.

The brigade engineer must receive clear guidance and priorities for engineer efforts. He is an integral part of the development of the scheme of maneuver; he coordinates with the S3, FSO, ADA officer, S2, and S4 to integrate and synchronize engineer operations.

Nuclear, Biological, and Chemical

Division assets available to support brigade offensive operations include NBC decontamination, NBC reconnaissance, and smoke. These assets will normally be platoon-size organizations. Based on the factors of METT-T, these organizations may be OPCON, attached, DS, or GS to the brigade.

Decontamination

Brigade decontamination operations during the offense focus on immediate decontamination operations. Thorough decontamination operations are designed for reconstitution operations. Operational decontamination operations are conducted at the battalion level using organic lightweight decontamination equipment. To facilitate decontamination operations, the brigade decontaminates:

- As soon as possible.
- Only when necessary.
- As far forward as possible.
- By priority.

The brigade commander identifies mission-critical assets and establishes priorities for decontamination within the brigade. Logistics support for decontamination is coordinated by the S4 and provided through normal supply channels.

Reconnaissance

All brigade units have an implied mission to conduct NBC reconnaissance, using organic detection and identification equipment. The brigade S3 establishes the NBC reconnaissance requirements and tasks based on the brigade chemical officers recommendations. The detection, marking, identification, and reporting of contaminated areas are established in SOPs according to relevant STANAGs.

Smoke

The brigade conducts smoke operations in the offense to screen friendly forces and to obscure or deceive enemy forces. Assets that are available to provide smoke include the vehicle engine exhaust smoke system, smoke pots, artillery and mortar smoke, and smoke generators. To conduct a successful smoke mission, the brigade must provide the following information to the supporting smoke unit:

- Commanders intent.
- Location of target.
- Length of mission.
- Start time.
- Visibility requirements.

Combat Service Support

CSS operations in the offense are designed to maintain the momentum of the attack. The FSB commander prepares and executes a logistics plan developed to support the maneuver brigades tactical plan.

The specific logistics needs of the maneuver brigade are identified and coordinated by the brigade S4. Based on the brigade S4s planning estimate, the FSB commander and his staff tailor a mobile CSS package to be pushed forward to support the brigade. Specific coordination for locations of ATPs, UMCPs, and MSRs outside the BSA are coordinated between the FSB S3 and brigade S4 at the rear CP and approved by the brigade S3. This coordination ensures the integration of the CSS plan and the tactical plan.

FSB logistics support must be continuous. The FSB displaces priority resupply classes by bounds to support the momentum of the offense. The movement of the FSB is coordinated among the FSB, rear CP, and main CP to ensure continuous support and to avoid impeding maneuver elements.

Command and Control

The command group, augmented by other special staff as desired by the commander, is positioned to see and sense the battle. By being well forward, the commander can feel the tempo of the battle, improve communications, and influence the main effort with his presence. The command group moves much of the time and relies on the brigade TOC to maintain communications with higher and flanking units.

The TAC CP and the main CP are required to move frequently during offensive operations. The TAC CP has command and control for the main CP during these relocations. Therefore, the TAC CP may be augmented with more people from the current operations, intelligence, operations support, and FS sections out of the main CP. The signal section will leapfrog multichannel and FM retransmission systems forward to maintain communications.

The main CP will continue to perform its essential current battle coordination; however, the main CP will weight its effort toward future battle planning. This is possible because the disruption of frequent displacement causes much of the command, control, communications, and intelligence structuring for working the current battle to be pushed forward to the TAC CP and command group.

The rear CP and the FSB commander are heavily committed to coordinating and facilitating the pushing of CSS forward through the cluttered battlefield to sustain the attack. The rear CP and the FSB commander are initially concerned with sustaining forward units; providing rear area security; clearing MSRs; evacuating casualties, equipment, and EPWs; and preparing to reestablish CSS base areas forward.

FORMS OF MANEUVER

The five basic forms of maneuver are envelopment, turning movement, infiltration, penetration, and frontal attack. The brigade can conduct a frontal attack, penetration, and envelopment. The brigade can participate as one element of a turning movement conducted by corps. Subordinate infantry units can conduct an infiltration as part of the brigade's larger mission.

Envelopment

Envelopment is the basic form of maneuver that seeks to apply strength against weakness. Envelopment avoids the enemy's front where forces are most protected, attention is focused, and fires are most easily concentrated. The attacker fixes the defender with supporting attacks. The attacker maneuvers the main attack around or over the enemy's defenses to strike at its flanks and rear. Detailed IPB and reconnaissance of the enemy defensive position are required for successful envelopments. If there is no open flank or gaps leading to a flank, gaps can be created by fires, maneuver, or by deception operations.

Successful envelopment often depends on speed to prevent the enemy from reacting quickly and with enough force to slow the attack. Brigade envelopments usually require fixing the enemy with a battalion supporting attack. Remaining battalions then maneuver past the enemy flank to rear positions. The enemy is then forced to fight in several directions or to abandon positions.

Envelopment is the preferred form of maneuver. Striking from several directions at once or from unexpected directions forces the enemy to fight along unprepared, lightly defended, or undefended avenues of approach (see Figure 4-1). The double and the single envelopment are variations of the envelopment.

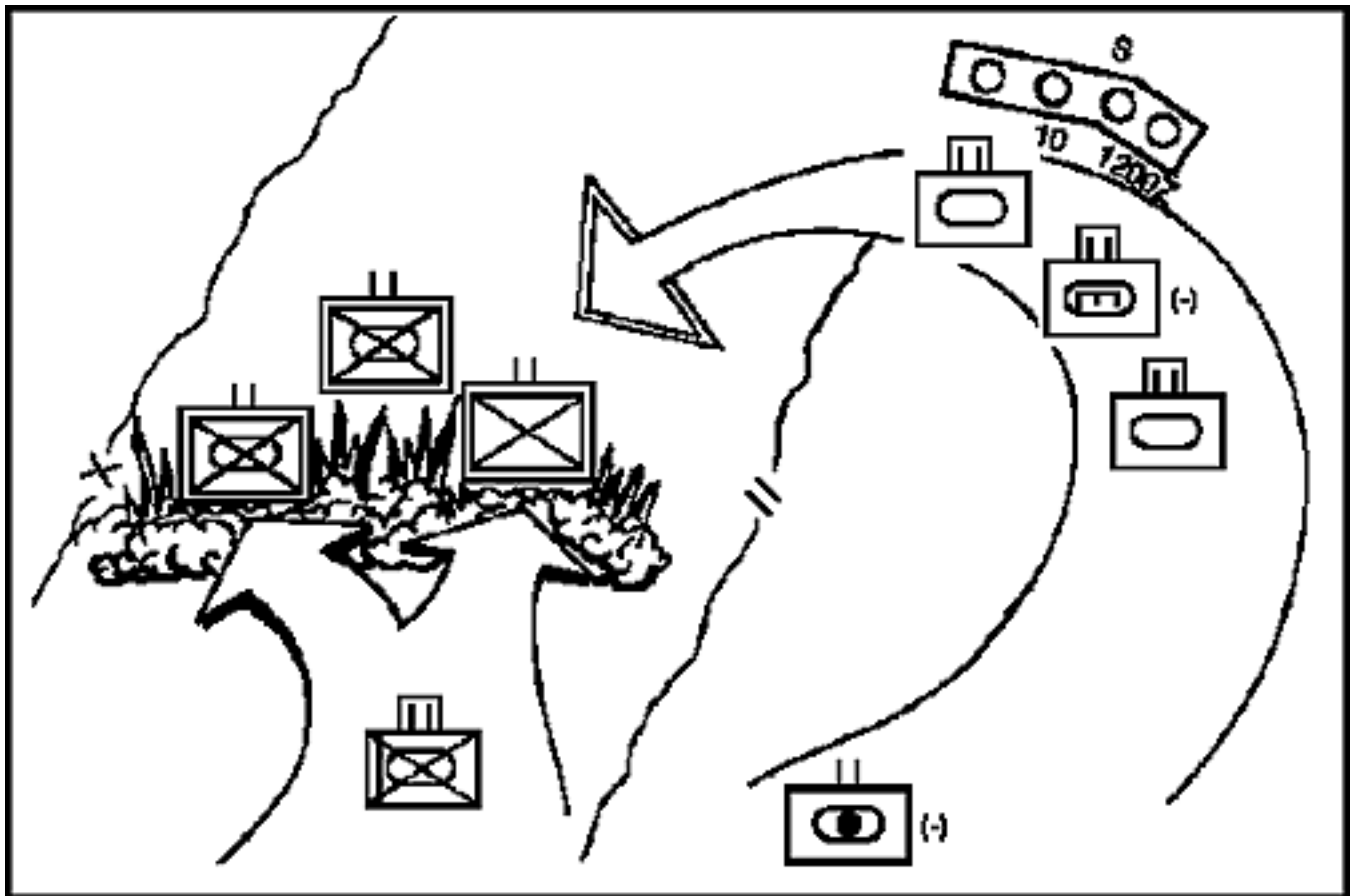


Figure 4-1. Envelopment

Turning Movement

A turning movement is a large scale envelopment in which the attacking force passes over and around the enemy defense to secure objectives deep in the enemy's rear. As a result, the enemy's position is made untenable. The enemy is forced to "turn" and attack to his rear, or attempt a retrograde operation. Brigades participate in turning movements as part of a larger force.

Infiltration

Infiltration is the covert movement (mounted or dismounted) of all or part of the attacking force through enemy lines to a favorable position in the enemy's rear. An armored brigade cannot expect to infiltrate all its combat elements through the enemy's defense. The brigade attacks after infiltration or uses infiltration to obtain intelligence and to harass the enemy. Though it is not restricted to small units or dismounted infantry, the brigade normally employs infiltration techniques with a part of its units and performs offensive operations with the remaining units.

Dismounted infiltration is particularly effective when both threat forces are mechanized and unaccustomed to defending against dismounted troops. In these instances, infantry with supporting engineers infiltrate, followed quickly by mounted attacks. FS assists infiltration by supporting the deception plan. The commander centralizes control of FS to preclude the loss of surprise and fratricide as the infiltration is conducted.

Normally infiltration is conducted with light infantry forces assigned to a brigade for the purpose of attacking elements along the FEBA or in the security zone to facilitate friendly maneuver. Targets normally include company defenses located on terrain within a major choke point that hinders the brigades ability to maintain its momentum.

Penetration

The penetration attempts to rupture enemy defenses on a narrow front and create both assailable flanks and access to the enemy's rear. Penetration is used when enemy flanks are not assailable, when enemy defense is overextended, or when time does not permit some other form of maneuver. Penetrations typically comprise three stages: initial rupture of enemy positions, roll-up of the flanks on either side of the gap, and exploitation to secure deep objectives.

A successful penetration depends on the ability of the attacker to suppress enemy weapons, mass forces and fires to overwhelm the defender at the point of attack, and quickly pass sufficient forces through the gap to rupture the defense. Once this is accomplished, the commander has two options. He can continue forward to rupture successive defense lines and ultimately enter enemy rear areas, or he can turn forces to roll-up enemy positions from the flanks.

Frontal Attack

The frontal attack is the least desirable form of maneuver. A frontal attack is used to strike the enemy across a wide front and over the most direct approaches. The purpose of the frontal attack is to overrun and destroy or capture a weakened enemy in position or to fix an enemy force in place to support another friendly attack elsewhere. Although the frontal attack strikes along the entire front within the zone of the attacking force, it does not require that all combat forces be employed in line or that all combat forces conduct a frontal attack. During a frontal attack, the commander seeks to create or take advantage of conditions that permit a penetration or envelopment of the enemy position. Fires are delivered across the zone of the attacking force, then shifted to the points of penetration or envelopment to facilitate rapid movement through enemy positions.

BRIGADE FORMATIONS FOR OFFENSIVE ACTIONS

The brigade may use any of several basic formations in offensive operations. The scheme of maneuver identifies the initial attack formation that offers the best chance for success. These formations are not restrictive drills but general techniques for employment of subordinate battalion task forces.

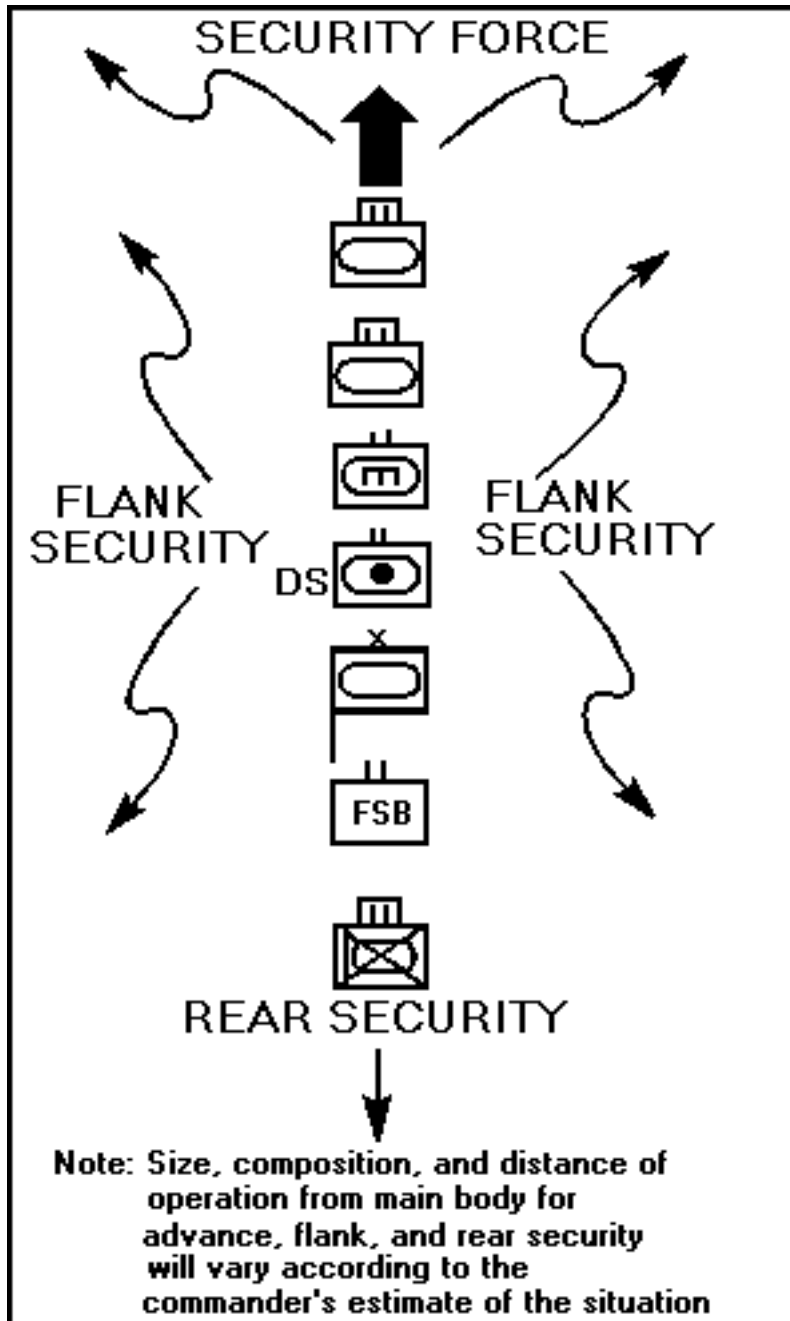


Figure 4-2. Brigade in column.

Brigade in Column

A column of battalion task forces may be adopted for the initial attack when terrain or enemy defenses force the brigade to attack on a narrow front (see Figure 4-2). In certain situations, the strength, composition, and location of enemy reserves may require the brigade to adopt this formation to provide the depth necessary for a sustained attack. This formation facilitates retention of the initiative and permits flexibility because the following battalion task forces are in position to move through or around the leading elements to maintain the momentum of the attack. It also provides a degree of security because the following battalions are in position to counter a threat from either flank and support the uninterrupted advance of the leading companies. However, brigades in column can concentrate only a small portion of their combat power to the front initially and are subject to piecemeal commitment and slower deployment to the front.

Brigades require multiple routes in their zones if they are to attack effectively from columns. Passage of the brigade through a given area using this formation usually requires more time than when other formations are used.

Brigade Vee

The brigade vee may be employed when great depth in the attack is not required, such as in a limited-objective attack (see Figure 4-3). It may also be used in the initial attack against a weak enemy, vulnerable to defeat by an attack on a relatively wide front. In the envelopment, this formation can be used when the brigade can envelop an assailable flank on a broad front. Lead task forces receive priority for FS.

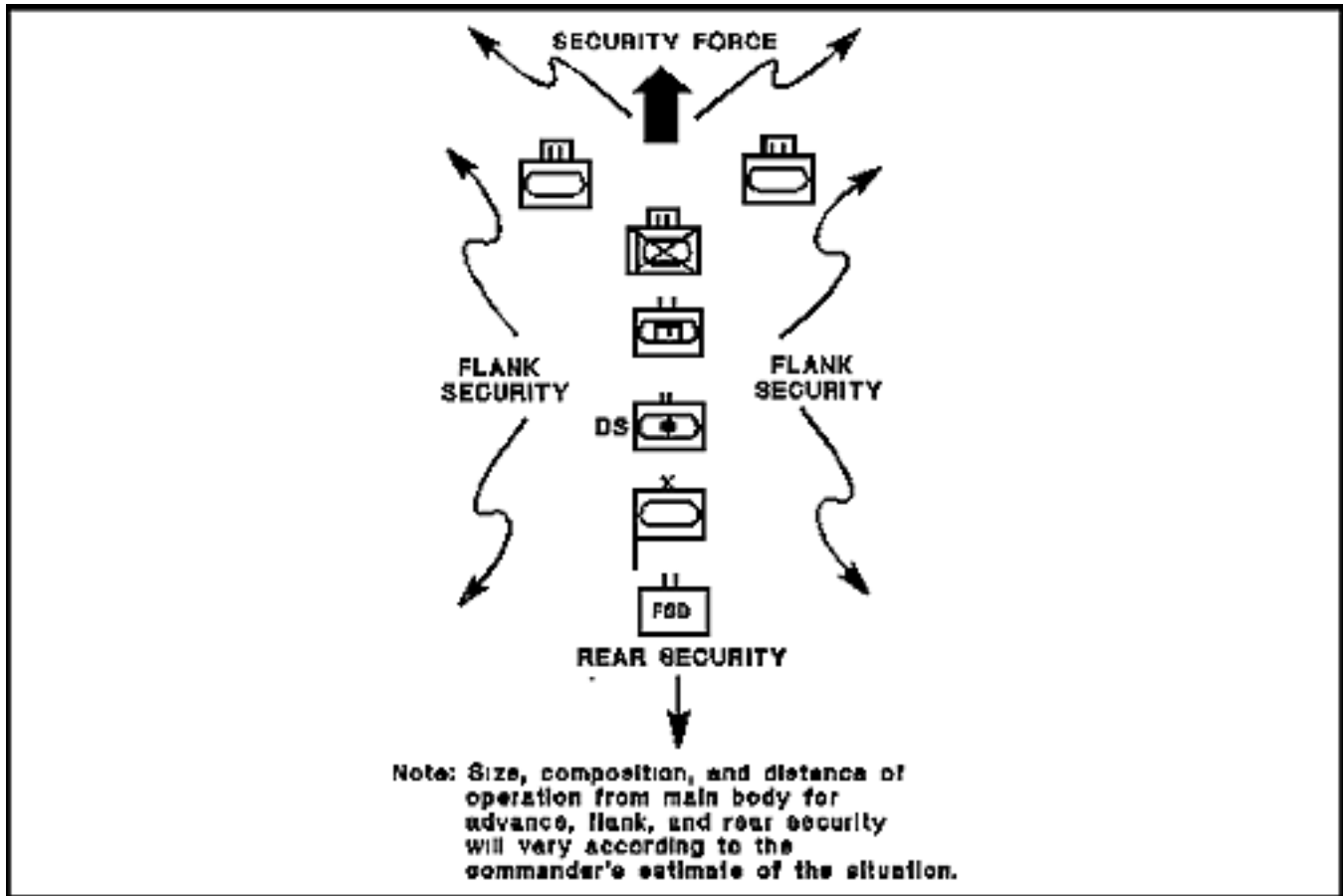


Figure 4-3. Brigade vee.

Brigade on Line Without a Reserve

Normally, the brigade commander retains some degree of flexibility in his initial attack by withholding part of his force in reserve; however, where METT-T warrants, a formation with two or more task forces abreast without a reserve may be used successfully (see Figure 4-4). Inherently dangerous, it is considered when the enemy has been routed and is incapable of a large-scale counterattack. This might occur during a corps or division exploitation or pursuit. FS is usually positioned well forward to provide maximum continuous fires as the brigade attacks. The fundamental consideration for using this formation is whether the mission dictates a rapid advance on a broad front.

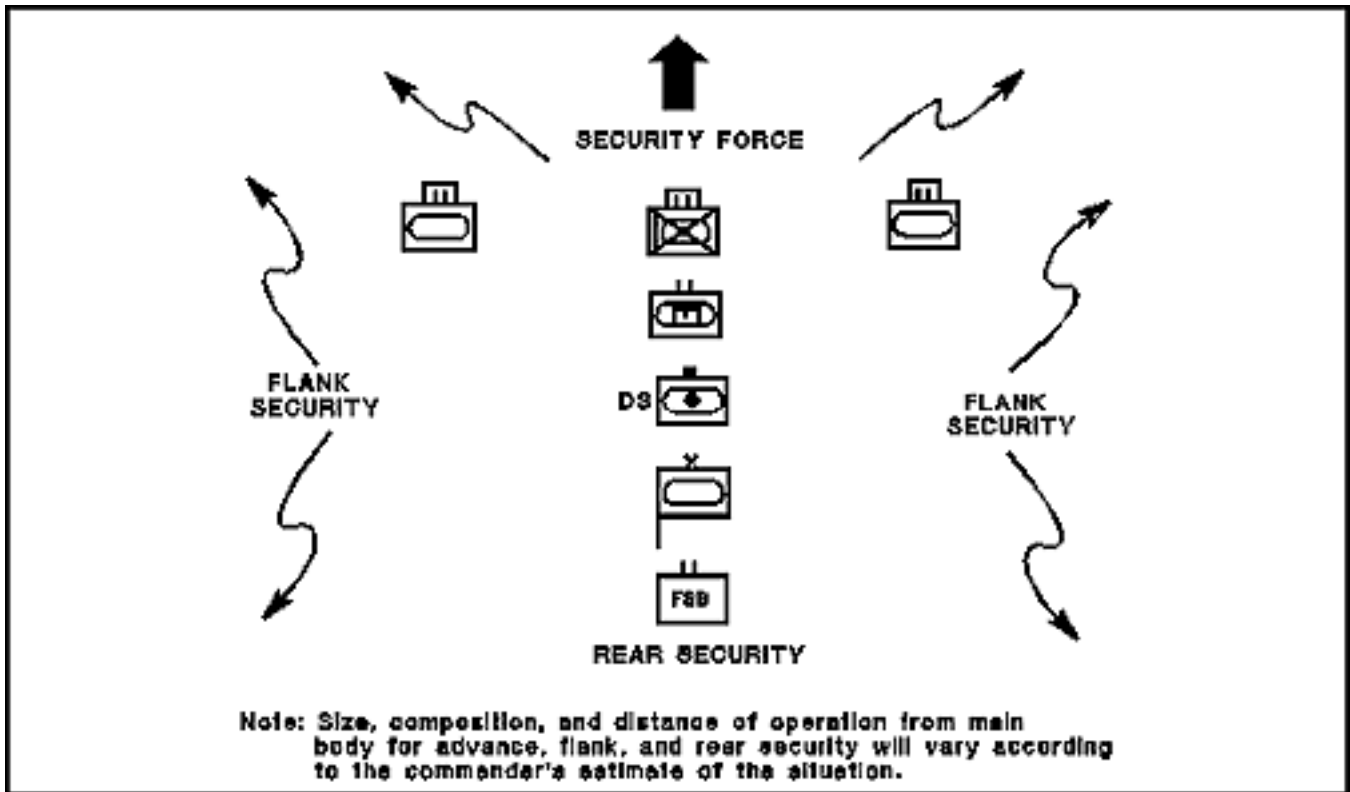


Figure 4-4. Brigade on line without a reserve.

After commitment to battle, the brigade can rapidly alter its formation and organization for combat to conform to the changing situation. The brigade's scheme of maneuver should ensure superior combat power at the point of decision. Regardless of the initial formation for an attack, rigid adherence to formations and FS plans contradicts the basic concepts of the attack. Subordinates freely exercise initiative to exploit enemy weaknesses within the context of the operation to achieve the commander's intent.

Brigade Box

The brigade box provides combat power forward over a relatively broad front. The box allows the commander to employ the rear elements in mutually supporting attacks. He can converge the combat power of leading units into one coordinated assault. The box formation also allows the commander to gain information across a broad front (see Figure 4-5). Gaps, weak points or flanks of the enemy's disposition are more rapidly discovered.

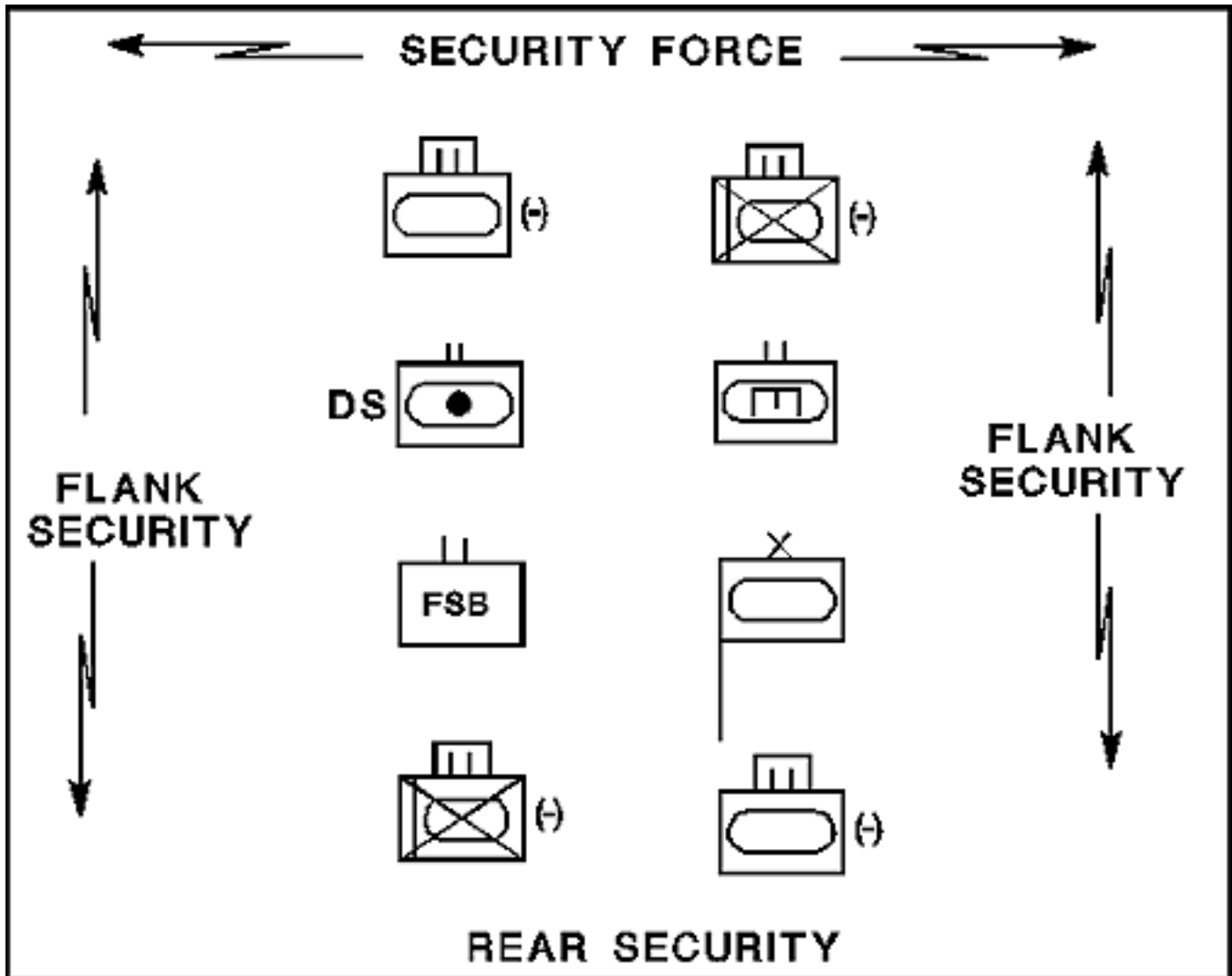


Figure 4-5. Brigade box.

Brigade Wedge

The brigade wedge/diamond allows the commander to gain contact with minimal combat power. This formation also provides the commander flexibility in massing combat power once contact is made (see Figure 4-6). The wedge/ diamond provides good 360-degree security for the brigade.

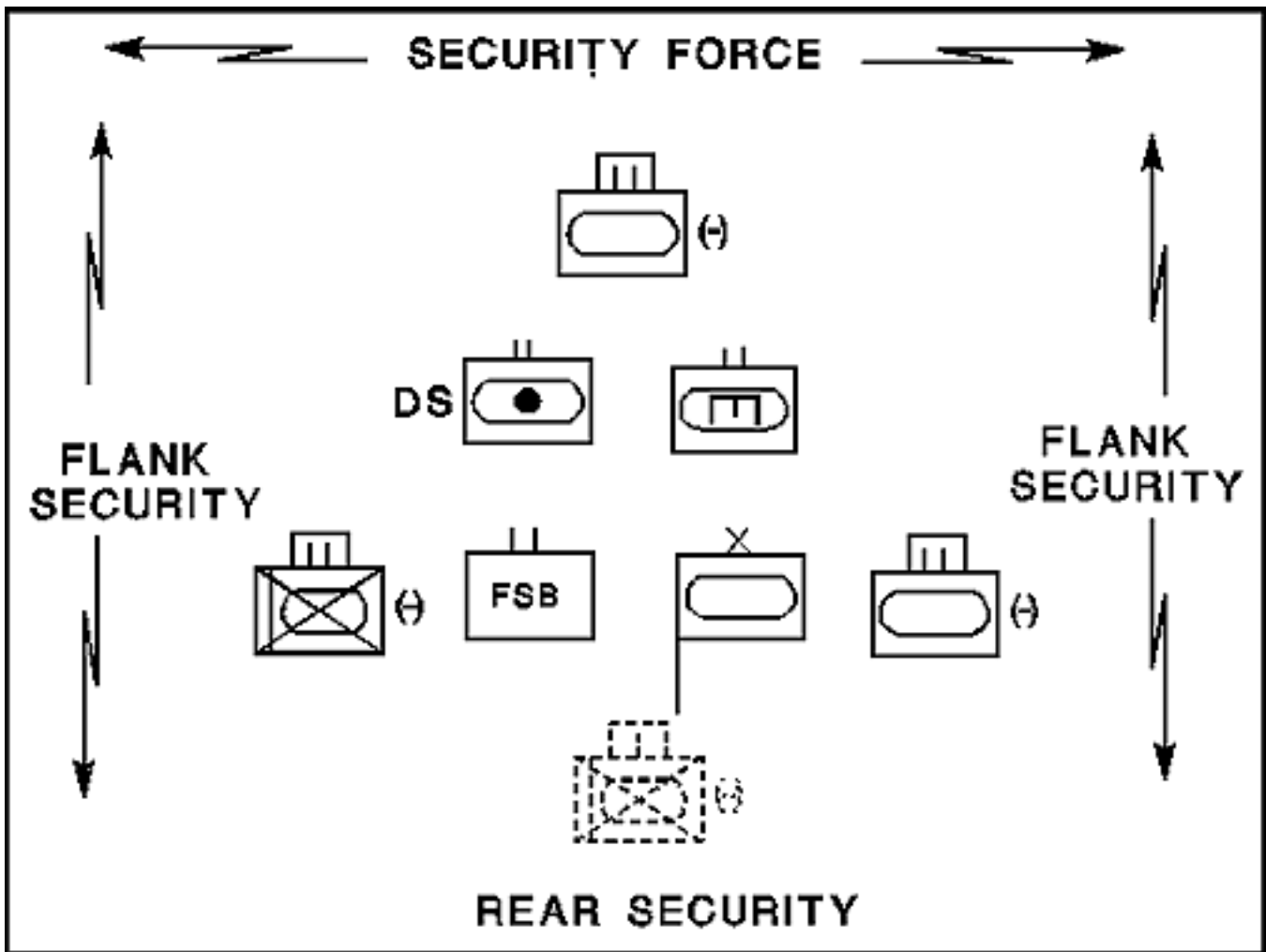


Figure 4-6. Rear Security.

SECTION II. FORMS OF TACTICAL OFFENSE

The forms of brigade offensive operations are:

- Movement to contact.
- Planning.
- Security force.
- Advance guard.
- Flank and rear security.
- Main body.
- Preparation.
- Execution.
- Attack.
- Hasty attack.
- Planning.

- Advance of reconnaissance and security forces.
- Deployment of reconnaissance and security forces.
- Assault by the main body.
- Preparation.
- Execution.
- Deliberate attack.
- Planning.
- Support force.
- Mission.
- Composition.
- Employment
- Maneuver force.
- Mission.
- Composition.
- Employment.
- Actions on the objective.
- Scheme of maneuver.
- Preparation.
- Execution.
- Continuation of the attack.
- Feint.
- Raid.
- Demonstration.
- Exploitation.
- Pursuit.

The brigade is trained and task organized to pass from one operation to another without delay. The types of operations may be conducted in sequence in a successful battle, beginning with a movement to contact to locate the enemy and ending with the destruction of the enemy through pursuit.

Each of these offensive operations will be disclosed in terms of planning, preparation, and execution.

MOVEMENT TO CONTACT

When the enemy situation in the objective area is vague, a movement to contact is conducted to gain or reestablish contact with the enemy. It is used to develop the situation early to provide an advantage before decisive engagement (see Figure 4-7). The movement to contact is characterized by decentralized control and rapid commitment of forces from the march. If the brigade gains contact with the enemy, the operation ends in an attack, a defense, a withdrawal, or a bypass.

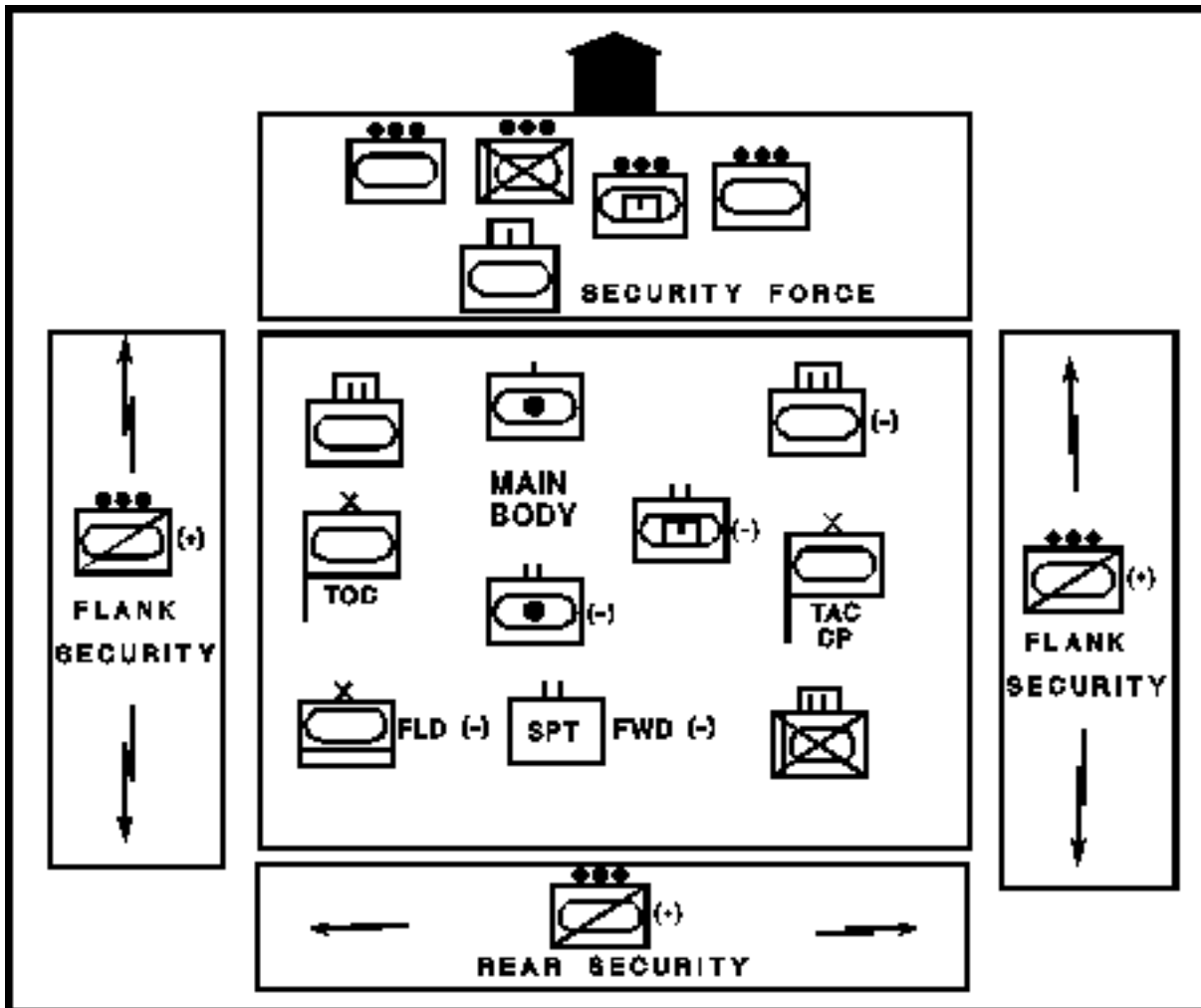


Figure 4-7. Movement to contact.

During the movement to contact, the brigade provides security by posting flank and rear security screens as appropriate. This is not necessary when the flank(s) or rear is protected by adjacent or following friendly units. Forward security is established by the use of a forward security force.

In the separate brigade, this is an ideal mission for the brigade's cavalry troop. In divisional brigades, the forward security force is provided by the lead battalion task force. The size and composition of the force are based on METT-T, particularly the width of the brigade sector and the enemy situation. The forward security force:

- Conducts reconnaissance.
- Develops the situation.
- Destroys enemy reconnaissance elements.
- Secures key terrain.
- Reports and breaches obstacles (if possible).

- Prevents unnecessary or premature deployment of the main body.

The main emphasis is placed on the best use of roads and terrain. The brigade conducts aggressive reconnaissance to identify enemy locations, obstacles, and areas of possible NBC contamination and prepares to overcome obstacles and rapidly pass through defiles. Normally, movement is conducted in multiple columns. Subordinate battalions adopt the formations that enable them to accomplish their missions.

The brigade integrates FS into march columns and attack formations. Normally, this includes one FA battery immediately behind the lead task force and the remainder of the battalion behind the following task force.

Brigade air defense protection is provided by attached ADA assets and organic weapon systems. ADA occupies selected sites along the route of march and integrates into the moving column. These elements provide low-altitude air defense. See FM 44-16 for discussions of air defense procedures applicable to this offensive operation.

The decision to attack, bypass, defend, or withdraw must be made rapidly at each echelon. This decision is governed by the understanding of the division commander's intent. Commanders should not hesitate to take appropriate action in the absence of orders. While efforts to retain the initiative remain decentralized, the decision to commit the entire force or to halt the attack remains with the senior commander.

Planning

The primary consideration in planning a movement to contact is the determination of actions that are anticipated during the movement. This drives the organization of the brigade for the mission. Potential threat defensive locations, OPs, EAs, and obstacles are among those items that must be identified early and incorporated into the R&S plan.

Security forces for a brigade movement to contact may consist of the advance, flank, and rear guards. When a brigade is moving as part of a division movement to contact, it can provide elements to reinforce or augment the division covering force, and provide and control either right or left flank guard and/or rear guard.

Security Force

The security force locates the enemy, develops the situation, and prevents the unnecessary or premature deployment of the main body. Its missions may include destroying enemy reconnaissance, securing key terrain, or containing enemy forces. The security force operates well forward of the main body.

When planning for the security force, the commander considers whether there has been any contact with the enemy, the enemy has broken contact, or the enemy situation is vague. The commander must move his forces toward an objective until it is reached or there is enemy contact. To maintain flexibility of maneuver after contact, he must put forward the minimum force possible. The mission best suited to execute security of a movement to contact is a guard. The main factors that determine which mission is used are the enemy situation, the terrain, and the amount of risk assumed by the commander. His risk is keyed to the amount of time the security force gives the commander to maneuver his other elements.

Advance Guard

The advance guard is normally furnished and controlled by the leading element of the main body. It is organized to fight through small concentrations of enemy forces identified by the covering force or to make sure the main body can deploy uninterrupted into attack formations. Necessary CS, such as engineers and artillery, is integrated into the advance guard. Reconnaissance assets and surveillance systems are used to assist the advance guard in detecting the enemy before actual contact.

Flank and Rear Security

Flank and rear security protect the main body from observation, direct fire, and surprise attack. These forces may be strong enough to defeat an enemy attack or to delay it long enough to allow the main body to deploy. The commander must perform a risk analysis to tailor the size of the security force.

Flank and rear security operate under the control of the brigade main body. Flank security travels on routes parallel to the route of the main body. It moves by continuous marching or by successive or alternate bounds to occupy key positions on the flanks of the main body. During the movement to contact, the flank security also maintains contact with the advance guard. Rear security follows the main body. A rear or flank guard is similar to an advance guard in strength and composition. If the flanks or rear of the brigade are secured by adjacent or following units, the size of the brigade security force can be reduced.

The Main Body

The main body contains the bulk of the brigades combat power. It is organized and deployed to conduct a hasty attack or defense on short notice. March dispositions of the main body must permit maximum flexibility during the movement and after contact with the main enemy force.

Elements of the main body may be committed to reduce pockets of resistance contained or bypassed by the covering force, or may be left for elimination by follow-and-support units. Elements of a covering force that are assigned containing missions are relieved as rapidly as possible to rejoin the covering force and avoid dissipating their strength.

The main FS task in a movement to contact is to provide immediate responsive suppressive fires to the maneuver units in contact.

The staff engineer plans and wargames critical engineer tasks. His objective is to integrate and synchronize the tasks with other BOS. In a movement to contact, he considers the enemy situation and allocates his forces accordingly. He recommends a task organization for the advance guard and forward task forces to support in-stride breaching. The objective is to maintain the speed of the main body and not become impaired by obstacles. The brigade engineer anticipates and assigns a "be prepared" deliberate breach mission. His thought process includes the tenets of breaching (intelligence, mass, synchronization, organization, and fundamentals) as he conducts the wargaming process. See FM 90-13-1 for additional information.

Air defense protects both the forward ground forces and the main body. Some air defense assets accompany the maneuver forces, moving with them as part of the tactical formation, and others will bound with the force, providing protection from a stationary position.

Because movement to contact is characterized by increased consumption of petroleum, oils, and lubricants (POL), increased vehicular maintenance requirements, and reduced ammunition expenditure, planning should be geared toward pushing supplies forward. The speed of the operation and the high POL consumption necessitate careful planning of CSS operations; moreover, the brigades support organization must be capable of sustaining uninterrupted delivery of supplies. As a result, the support units will often require reinforcements during movement to contact. Additional MP units may also be necessary to ensure adequate traffic control.

The brigade main CP would normally displace as far forward as possible before beginning movement to contact to support the operation with a stable command and control environment. The location depends on the depth of the movement to contact, time available, and location of the division command and control facilities. The TAC CP and command group would operate forward with the main body to facilitate decision making and transition to other offensive tactical missions (see Figure 4-8 and Figure 4-9).

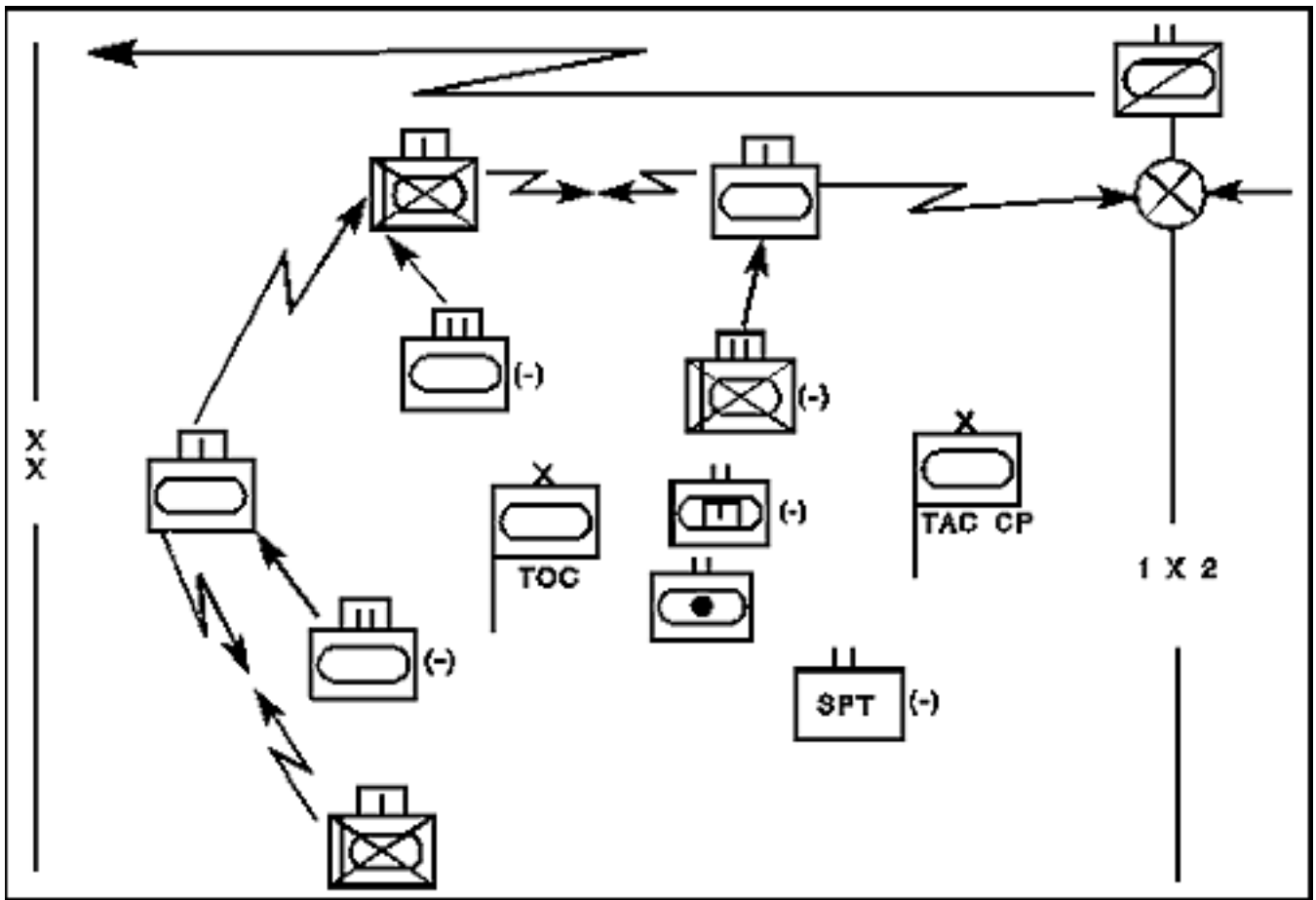


Figure 4-8. Brigade movement to contact as part of a division movement.

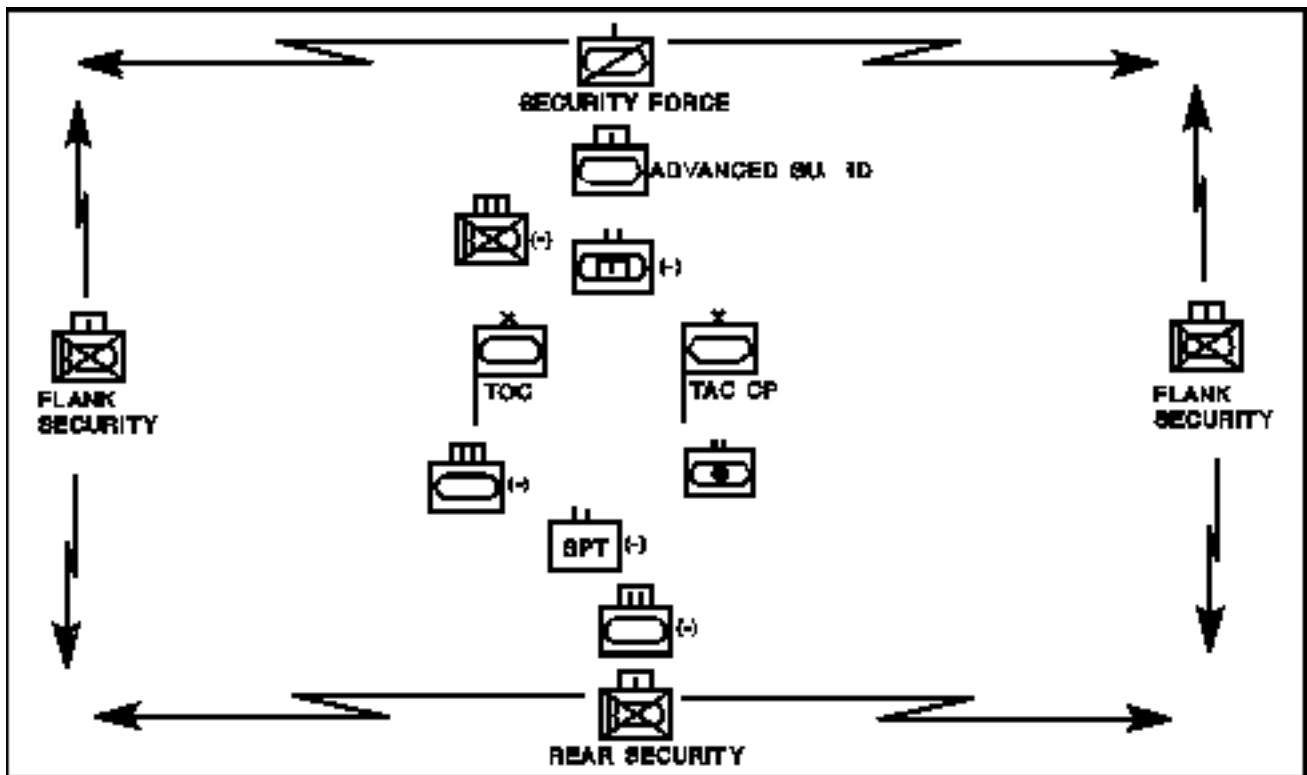


Figure 4-9. Separate brigade movement to contact (independent movement).

Preparation

When preparing for movement to contact, the primary concern of the commander is that his subordinate commanders understand their individual missions within the context of his intent. This is partially accomplished after the order is issued by an immediate backbrief. Once the battalion task force commanders have an opportunity to conduct their own TLPs, they may be recalled to the brigade commander for a rehearsal and update.

The commander must think through the entire operation before rehearsal. He must identify possible choke points and examine the enemy's probable COAs.

When conducting the rehearsal, he must ensure the brigade players understand their individual and team responsibilities. Options and contingency planning are essential during rehearsal so virtually every eventuality is addressed. He must point out where formations may have to change, or where speed of the operation is adjusted as a result of the terrain or suspected enemy. Integration and coordination between combat, CS, and CSS elements will go a long way toward lessening the support problems after crossing the LD.

Each commander rehearses what to do when making contact with the enemy, not only for his benefit but so the other commanders understand their responsibilities to the element in contact. The S2 should role-play the enemy commander.

The most critical decision the brigade commander must make is the commitment of his reserve force. It is paramount that he be provided timely and accurate intelligence on the situation so the reserve is effectively committed. Even after the reserve is committed to the fight, the commander should look for forces to create a new reserve.

As with maneuver, it is important to rehearse the FS plan. The brigade commander reviews the conduct of battery movement and the brigade FS plan with his FSCOORD, and ensures subordinate maneuver commanders understand their role in executing the plan.

The engineer commander and staff ensure task organization linkup is complete, monitor precombat checks and inspections, and supervise rehearsals. The engineer battalion commander is the key player at the brigade rehearsal. He talks through critical engineer missions, tasks, actions, and decisions as the battle is played out.

CSS rehearsal is very important in a movement to contact due to the extended lines and speed of the operation. Planned LRPs should be checked during rehearsal as should any scheduled refueling operations. Route security and convoy security are especially important as there are no established enemy lines. Moreover, the possibility of bypassing undetected enemy forces is all too real and could become a severe threat to CSS operations. The echeloning of trains is an effective technique for moving CSS assets without creating overwhelming space control problems.

Execution

The brigade moves as directed by the brigade commander. The mission is to regain contact with the enemy. The enemy may leave nuisance minefields; or he may leave obstacles guarded by small stay-behind parties to slow the brigades movement. It must be assumed the enemy will overwatch choke points and defiles.

The commander must be aware of these delaying actions, and give bypass criteria so the speed of the main body is not impaired. Unless an enemy stay-behind force provides a significant threat to one of the formations, it is fixed, bypassed, and handed over to a follow-on support force.

Forward and flank security forces execute their mission in terms of both the commanders intent and the R&S plan. The movement of the brigade can be controlled using PLs and checkpoints on easily identifiable terrain. Unit orientation is first directed in zone with respect to the formation itself, and second toward those areas suspected of posing a threat to the brigade.

Movement to contact ends with the occupation of an objective or limit of advance without enemy contact, or when contact is made and the enemy cannot be defeated or bypassed. This occurs in a series of engagements and/or hasty attacks. In an encounter with a moving force, action should take place without hesitation. Battalions use fire and movement to fix the enemy. The decision to attack, bypass, or defend must be made rapidly at each echelon. The decision must be governed by an understanding of the division commanders intent.

In the execution of the movement to contact, the FS plan should continuously be updated to reflect the availability of more detailed information provided by the maneuver units and the S2s refinement of the situation template. This includes changes to the maneuver plan made by the commander in response to enemy actions.

During movement, engineer assets must be protected by the combat maneuver elements. Only after an obstacle has been identified and no bypass route found, will the engineers move forward to breach. However, during the reconnaissance for bypass routes, an engineer element may move forward to conduct initial reconnaissance and assessment of the obstacle to confirm or deny whether planned engineer support will accomplish the mission. On order of the maneuver commander, engineer assets found in the follow-on forces have the additional responsibility to reduce obstacles bypassed by the advance guard, or to breach obstacles encountered by the flank guards.

As the air defense elements maneuver with the brigade, the air defense plan must be continuously refined to reflect any changes in the enemy situation.

CSS elements follow the main body and are protected by the rear guard. As forces require refueling and resupply, the support elements move forward in logistic packages (LOGPAC). UMCPs are established as required.

The most critical control measures are objectives, PLs, checkpoints, axes of advance, and boundaries. Intermediate objectives may be used to coordinate the essential movements of attacking forces, but their excessive use can reduce the momentum of the attack. On-order objectives are used to orient following forces and reserves quickly and to increase the flexibility of tactical maneuver throughout the force.

Attacking units may bypass local obstacles and stubborn pockets of resistance that do not threaten overall success according to the higher commanders intent. Bypassed enemy forces then become the responsibility of the higher commander. Also, the directing maneuver headquarters needs to retain some ability to reinforce fires and redirect maneuver with minimum oral instructions. The most effective means of accomplishing this goal is with an operation overlay that reflects the higher commanders intent and scheme of maneuver (see Figure 4-10). The overlay gives each command echelon flexibility to mass fires and modify maneuver plans as the situation develops.

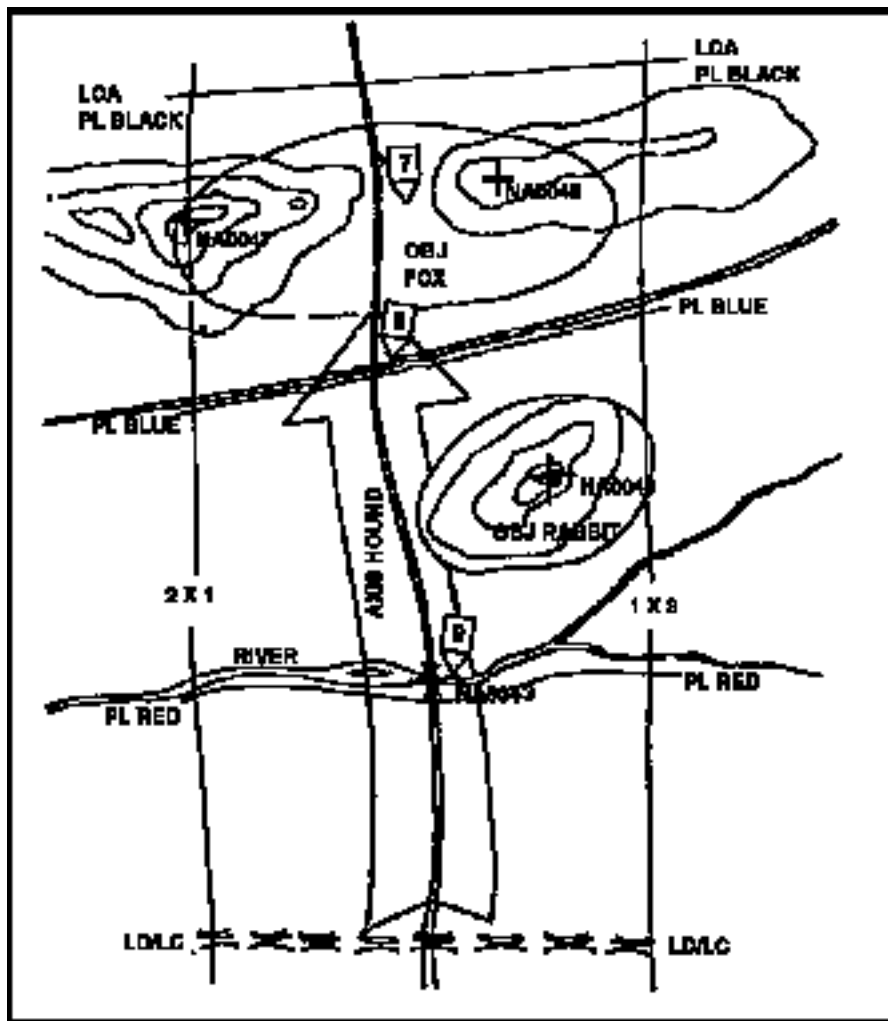


Figure 4-10. Sample operations graphics for a brigade movement to contact.

ATTACK

Hasty Attack

A hasty attack is conducted to gain or maintain the initiative. Before mounting a hasty attack, the commander must develop the situation, determine enemy strength, and rapidly mass firepower against the enemy. A hasty attack is usually conducted following a movement to contact. To maintain momentum, it is conducted with the resources immediately available.

Planning

The commander has a vague picture of where and how the enemy defends, based on input from the S2 as well as his own experience. Much of the planning for a movement to contact is based on the desired outcome on contact. If the situation is vague and the enemy is a considerable distance away, he may choose to lead with a large number of reconnaissance elements spread over a wide area to develop the situation and retain the main body in a tighter, more responsive formation.

Regardless of the formation selected for reconnaissance and security elements, the hasty attack normally occurs in the following sequence. Therefore, the drills and SOP tasks that are associated with each step should be reevaluated within the context of the current situation.

● **Advance of Reconnaissance and Security Forces**

In planning the advance of reconnaissance and security elements, the commander should identify the direction of movement, possible danger areas, objectives to be occupied, and bypass criteria. This planning is the same process used in the movement to contact planning.

● **Deployment of Reconnaissance and Security Forces**

Once contact has been made with the enemy, the security force attempts to develop the situation. In planning, the major consideration for deployment is task organization. Reconnaissance elements generally are not heavy enough to deploy against an enemy and must be augmented by armored forces. The commander ensures that the organization of the security force is a mix of armored and reconnaissance elements.

Based on the commander's guidance, the reconnaissance force will move to the flanks or continue its reconnaissance. In either case this force maintains contact with the enemy until the security force arrives. Again, the organization must be based on METT-T considerations. One of the key points the commander should remember is that the enemy may want to slow the main body by making it deploy. The advance guard must have enough firepower to destroy smaller size elements. If it does not, the enemy will have accomplished its mission. If the enemy encountered is too strong for the advance guard, it must be prepared to become the support force for an assault by the main body.

● **Assault by the Main Body**

As the security force suppresses the enemy with direct and indirect fires, the main body changes from a movement to contact formation to an assault formation. The size of the actual assault force is determined by the intelligence generated by the advance guard. The planning for this assault is generally limited to templated or suspected enemy defensive locations. In this regard, the identification of areas such as checkpoints corresponding to these and other easily identifiable locations allows the maneuver units to execute quickly from FRAGOs. However, not all maneuver units will be committed to the assault. The commander maintains security throughout the operation; therefore, he identifies which units maintain security if the main body is deployed.

Preparation

The commander prepares for the brigade hasty attack while rehearsing the movement to contact. Specifically, he must run the brigade staff and commanders through a series of enemy COAs. This exercises command and staff drills and SOPs. There are several enemy actions to consider during rehearsals:

- The advance guard makes contact with a small force. Options may include fix and bypass so as not to sacrifice speed, or conduct a hasty attack.
- The advance guard makes contact with a large force. Options include possible hasty attack, suppressing for the main body attack, or hasty attack while the main body bypasses.
- A flank security force makes contact with a small force. The flank security force can fix and bypass or conduct a hasty attack. What does the rest of the main body do in the meantime?
- A flank security force makes contact with a large force. The flank security force suppresses the enemy, while elements of the main body conduct the attack. What does the remainder of the formation do during the attack?

The commander reinforces his intent throughout the rehearsal, and identifies any possible difficulties in execution. The S2 ensures the enemy COA is accurately portrayed.

During the rehearsal, the commander verifies that his control measures are adequate for the hasty attack. More often than not, the hasty attack will be a FRAGO. Therefore, the commander ensures "on order"

graphics are adequate to control the hasty attack. The commander ensures control measures sufficiently control movement and direct and indirect fires.

Execution

The commander has a particularly difficult role during the hasty attack. He allows his subordinates to develop the situation and make decisions quickly, with very little planning. It is paramount, therefore, that subordinate commanders understand the brigade commanders intent; likewise, the brigade commander must trust the judgment of his battalion commanders. Once the brigade commander decides to conduct a hasty attack, he puts his full weight into assuring that each subordinate commander gets the necessary support. Any CAS sorties that may be allocated to the brigade should be synchronized to augment the fires of the assault force. Each element must move quickly as in a drill. Commanders talk laterally and vertically, making suggestions and maneuvering as a team. The brigade operates as a close-knit unit, where each knows his role and that of his teammate. The commander must know, through continuous information flow from subordinate commanders, what to expect of each element and what he can give in return.

The element that makes initial contact has the responsibility to develop and make a quick assessment of the situation. In particular, the commander of the unit in contact must quickly decide whether to fix and bypass, attack, or become the support force for an attack by the main body. Also, his report to higher headquarters drives the decisions of the higher commander. Assuming the situation is such that the advance guard must lay down a base of fire for a hasty attack by the main body, thus becoming the support force, the advance guard commander must move to a position of advantage over the enemy force. Specifically, the support force attempts to fix the enemy to deny their freedom of movement. While this occurs, the commander of the support force constantly updates the higher commander about the situation and attempts to identify the most effective direction of attack for the assault force. The brigade commander quickly gives instructions for the CS elements to support the brigade designated main effort. For example, the artillery positions forward to range to the identified enemy, probable adjoining enemy positions, and enemy counterattack avenues of approach.

The force designated to conduct the assault must rapidly change formation from whatever it was for the movement to contact to the appropriate attack formation. The assault force commander communicates with the support force commander to coordinate direct and indirect fires as the assault force conducts their movement to the enemy position and during the final assault of the enemy position. In particular, the assault force commander isolates the position quickly from other possible enemy positions and suppresses the enemy's ability to observe or engage the assault force. This is accomplished by a combination of direct and indirect fire. In the meantime, reconnaissance elements must screen to any exposed flank(s) of the assault force, ensuring security.

Deliberate Attack

A deliberate attack is a fully synchronized operation. Due to the detailed planning and synchronization required, a brigade may conduct a deliberate attack from a defensive posture. If in an offensive posture, a brigade may transition to deliberate attack immediately after entering an area of operations. In either case, the enemy situation is known and the brigade commander has enough combat power to defeat the enemy. This is accomplished through a detailed reconnaissance effort that identifies the enemy's weakness. Once identified, the brigades combat power is focused on this weakness and is exploited to the extent that leads to the enemy's defeat, destruction, or neutralization. Brigade commanders plan deliberate attacks when directed or as the opportunity warrants and execute them to support the overall purpose of operations.

Planning

The factors of METT-T influence each situation in which a deliberate attack must be made and prevent development of a standard organization for combat. While the commanders estimate process must be conducted for each deliberate attack, general rules can be stated. The brigade commander organizes forces to fix and to maneuver against the enemy. Engineers are task organized to the force penetrating the

enemy's defensive positions. An intelligence collection effort is conducted to locate enemy reserves and second-echelon forces.

FS planning is characterized by the full integration of intelligence-gathering sources into the targeting process. The brigade DS FA battalion uses the DIVARTY, intelligence officer, and brigade controlled and supporting intelligence sources to locate HPTs. Fires are planned for HPTs. FS systems are positioned well forward and in depth to provide continuous support throughout the attack. Displacement of FS systems is executed to maintain continuous FS.

Brigades conduct deliberate attacks through coordinated battalion task force attacks consisting of fire and maneuver. A battalion task force participates in a brigade deliberate attack as a main effort or as a supporting effort. Key to the main attack achieving its purpose, a battalion task force is designated as the main effort. The brigade commander designates the supporting effort, ensuring the main effort accomplishes its mission through supporting attacks, a follow-and-support role, or follow-and-assume-the-main-effort role.

● **Supporting Effort**

The mission, composition, and employment of the supporting effort are explained in the following paragraphs.

● **Mission**

The supporting effort sets and maintains the conditions necessary for the success of the main effort. A battalion task force, as the supporting effort, fixes enemy forces by attacking objectives that support the main effort's objective. The supporting effort can also suppress large forces that it cannot destroy, allowing the main effort to have maneuver options. These may be forces that the main effort is attacking directly or they may be forces that could influence the successful attack of the main effort. Tasks for supporting forces are offensive or defensive in nature. They include fix, attrit, suppress, or delay, and also may include seize, secure, or destroy.

● **Composition**

Supporting efforts at brigade level normally consist of battalion task forces, or in some situations, a portion of a task force that is working directly for the brigade. They are still allocated resources for successful mission accomplishment, but supporting efforts are only allocated enough to accomplish their missions so that the main focus will be the main effort. In some cases, direct or indirect fire assets may be increased to set the conditions for the main effort.

● **Employment**

Depending on the missions given, supporting efforts attack as any other force. The difference is that the supporting effort must plan with the main effort in mind. (How will direct and indirect fires assist the main effort? How will maneuvering of forces aid the main effort and not mask its forces?) Additionally, the supporting effort must also be prepared to engage targets of opportunity within the commander's intent. Similarly, the supporting effort must be prepared to move to other positions from which it can continue to aid the main effort.

● **Main Effort**

The mission, composition, and employment of the main effort are discussed in the following paragraphs.

- **Mission**

The main effort closes with the enemy to defeat, destroy, or neutralize him. In most cases, tasks are purely offensive in nature, e.g., seize, destroy, secure, or neutralize.

- **Composition**

The maximum possible strength should be placed in the main effort. When possible, it should be a combined arms unit of tanks, mechanized infantry, engineer, and aviation. The main effort should be supported to the fullest extent possible with artillery and CS/CSS assets.

- **Employment**

The main effort closes with the enemy as quickly and directly as possible to exploit the effects of the supporting efforts. It is usually committed so that it has mass, and when possible, it seeks to attack at an identified weak point in the enemy's defense. Once the main effort is committed, it should proceed with all the speed and violence at its command. The advance should be timed so the elements of the main effort arrive on the objective simultaneously. Tanks and mechanized infantry can then provide mutual support. As the objective is reached and overrun, the supporting effort shifts its attention to the flanks and rear of the enemy's defense.

- **Actions on the Objective**

As the assault force secures the objective, the brigade begins to focus on the enemy elements that could counterattack. The brigade commander will reposition battalion task forces on the objective either to defend against an enemy attack or to prepare for future operations. The brigade continues to synchronize the consolidation on the objective. Based on the end state combat power of each battalion task force, the commander may adjust task organization.

- **Scheme of Maneuver**

This is the detailed plan for the placement and movement of the main attack into advantageous positions on the objective with respect to the enemy. In developing the scheme of maneuver, consideration is given to its possible effects on future operations.

Preparation

In preparation for the deliberate attack, the commander rehearses the maneuver and synchronization of the brigades assets. Specifically, the commander ensures that his commanders understand both the maneuver plan and his intent, so that if they must deviate from the maneuver plan it is within the context of his intent.

The brigade commander first ensures that the supporting efforts understand their role within the maneuver plan. He must be prepared to maneuver supporting efforts so they maintain continuous and effective pressure on the enemy force. He must then determine where they will shift their focus once the main effort closes on its objective. (Where will they shift their direct and indirect fires? What criteria should be developed that allows them to join the main attack or assume the main effort?)

Likewise, the main effort must demonstrate the best use of terrain to support his approach to the objective. He must be prepared to conduct hasty breaches of obstacles and change his maneuver formation to suit the terrain and enemy situation. Finally, and most importantly, he must rehearse the final assault on the objective. Can he effectively suppress the objective or will it require help from a supporting effort as he closes? How has the objective been divided into battalion/company objectives? What happens if the assault force is counterattacked just as they are about to assault? How can this be prevented? Where is the limit of advance? How are the task forces using their scouts during the assault? What actions are being taken to deny effective enemy fires from adjacent and depth positions? These are only a sampling of the questions that must be answered as the commander conducts the rehearsal.

Execution

An indirect-fire preparation may be delivered immediately before the attack (see Figure 4-11). The preparation is coordinated with the movement of attacking units, depending on the amount of surprise desired or necessary to soften the point of attack. The preparation must have a specific purpose. Criteria must be developed prior to execution. This criteria may include:

- All targets must be confirmed.
- The targets justify the loss of surprise and expenditure of ammunition.
- The targets justify the risk to the DS artillery battalion.

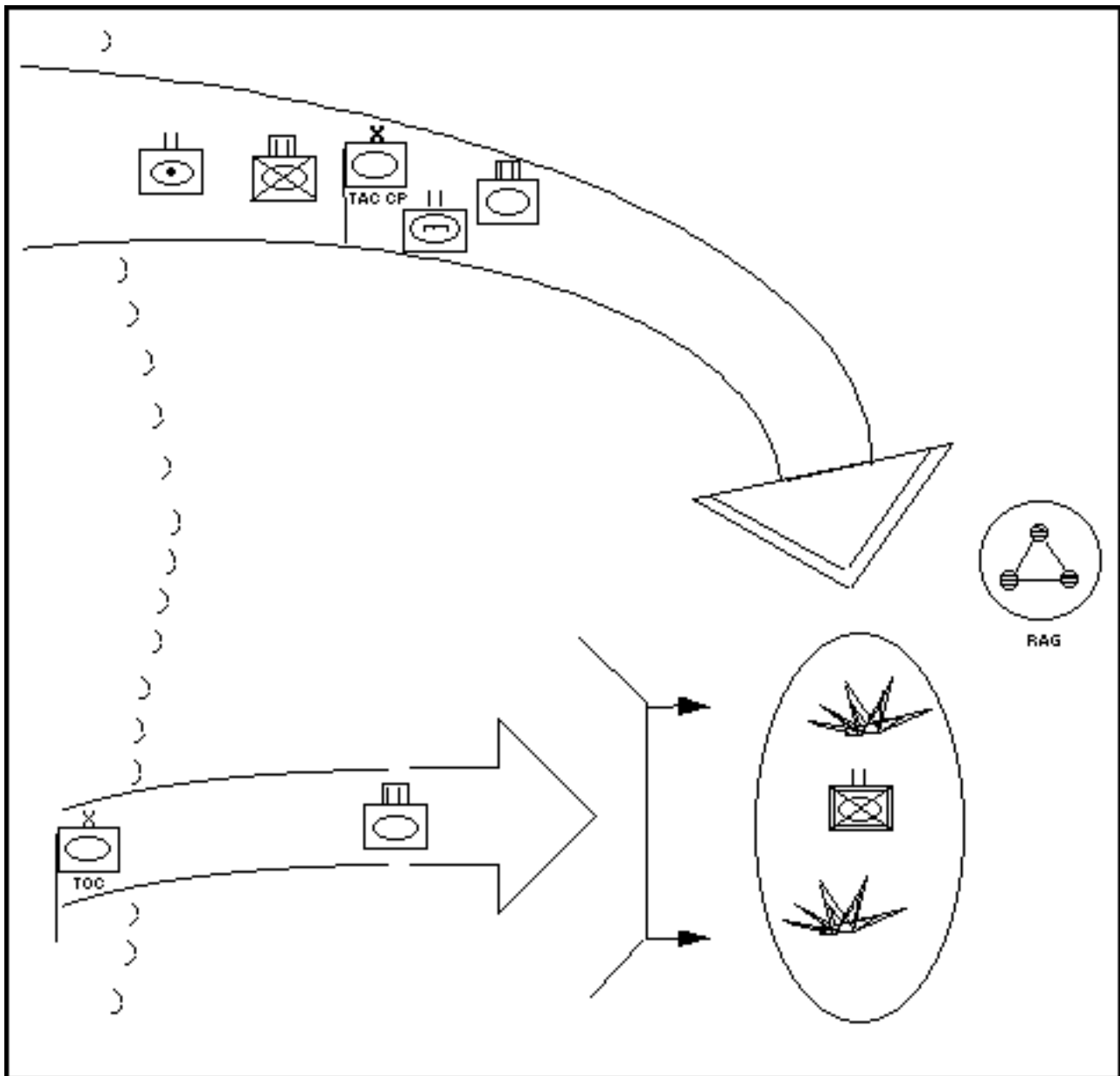


Figure 4-11. Indirect fire preparation.

Desired effects on the target are established.

The attack plan is vigorously executed, and all favorable developments are exploited. If the attack lags in one portion of the zone, the main effort is shifted to another portion offering a greater opportunity for success.

The progress of the attack is not delayed to preserve the alignment of units or to adhere to the original plan of attack. Follow-and-support units reduce isolated enemy resistance as necessary.

The attack may be a single, rapid advance and assault until the brigade objective is secured, neutralized, destroyed, or overrun, or it may be a series of rapid advances and assaults to obtain the same results. As enemy resistance is encountered, the attacking echelons converge, following close behind their supporting fires, until they are within assaulting distance of the hostile position. After the assault, attacking units disperse as rapidly as possible (to preclude forming lucrative targets), continue the attack, or prepare for other operations.

The reserve is kept ready for immediate employment. The reserve moves within the overall formation of the brigade and is positioned to permit rapid movement to the point of probable employment and to provide security by its presence. When conditions dictate its use, the reserve is committed without hesitation. With the compression of TDIS factors inherent in the mobility of the brigade, teams of the reserve can be assigned a specific short-term mission and the reserve quickly reconstituted.

Continuation of the Attack

When the brigade objective is secured, reorganization is accomplished rapidly, and all means are used to continue the attack (if so ordered). Maximum use of supporting fires is made during this critical period. Minimum forces normally retain control of objectives and remaining units disperse to defend themselves and the objective, prepare to continue the attack, and block enemy avenues of approach, if required. Ground mobile or air assault units maintain contact with the enemy, keep the enemy off balance, and obtain information.

Continuing the attack or exploitation must be an integral part of the attack plan. The commander's intent includes the disposition of the force as part of his end state. Immediate reorganization of the force is necessary to maintain momentum and prepare for the next phase.

Continuing the attack frequently depends on the ability to resupply attacking forces. Large quantities of ammunition, POL, and equipment expended during the attack must be replenished. Provisions for this logistic support are an integral part of the attack plan. During continuous day and night operations, leading elements of the brigade are rotated to provide time for rearm and refit operations.

The commander must anticipate halts and prepare orders to include the time or circumstances of the halt, missions and locations of subordinate units, and command and control measures. To prevent congestion, some units may be diverted into defensive positions before the halt of the entire brigade.

Feint

A feint is a limited objective attack; it is a show of force intended to deceive the enemy and draw attention and (if possible) combat power away from a main attack. Feints must be of sufficient strength and composition to cause the desired enemy reaction. Feints must appear real; therefore, some contact with the enemy is required. The feint is most effective when it reinforces the enemy's expectations, when it appears as a definite threat to the enemy, when the enemy has a large reserve that has been consistently committed early, or when there are several feasible COAs open to the attacker. Some of the desired reactions are to force the enemy into improper employment of its reserves, attract enemy supporting fires away from the main attack, force the enemy to reveal defensive fires, or accustom the enemy to shallow attacks in order to gain surprise with a deep main attack. Normally, the brigade executes a feint as part of a corps or division attack plan. Planning for a feint follows the same sequence as any other offensive operation.

Raid

A raid is usually a small-scale offensive tactical operation. It is based on detailed intelligence, involves swift movement into hostile territory, and ends with a planned withdrawal. Typical raiding missions are

- Capture prisoners, installations, or enemy materiel.
- Destroy enemy materiel or installations.
- Obtain specific information of a hostile unit such as its location, disposition, strength, or operating scheme.
- Deceive or harass enemy forces.
- Liberate friendly, captured personnel.

The raid operation is appropriate to the brigade because of its capabilities for shock, speed, mobility, and firepower. Normally, raids are so short in time and distance that only a limited amount of supplies can be carried on the combat vehicles. Maintenance support is confined to the crews ability to make minor repairs.

FS systems are positioned during a raid to support the attacking force throughout the operation. HPTs are attacked to provide the maximum shock effect on the enemy's force. Interdiction fires, counterfires, and FASCAM are delivered to reduce the enemy's ability to react to the raid.

After reaching the objective and accomplishing the mission, the raiding force can anticipate vigorous enemy reaction in the area through which they have passed. For this reason, the withdrawal of the raiding force is usually over alternate routes. Brigade forces should avoid main LOCs and should consider using routes for attack and withdrawal that are not usually considered feasible for mechanized movement. Once the brigade raid objective has been achieved, no time is wasted in returning to friendly territory. The longer the withdrawal is delayed, the greater the chance the enemy has of defeating the raiding force. In this phase of the raid, the operation corresponds to techniques used during linkup.

When Army aviation assault and attack helicopter assets are available, an aerial raid may be conducted with dismounted infantry to quickly move behind enemy lines, perform the required mission, and return.

Demonstration

A demonstration is an attack or show of force in an area where a decision is not being sought. It is made with the intention of deceiving the enemy; however, no contact with enemy forces is made. Demonstration forces use fires, movement of maneuver forces, smoke, EW assets, and communication equipment to support the deception plan to include firing false artillery preparations and delivering fires comparable to a thrust forward in a deliberate attack.

EXPLOITATION

Exploitation is an offensive operation that follows a successful attack to take advantage of weakened or collapsed enemy defenses. Its purpose is to prevent reconstitution of enemy defenses, prevent enemy withdrawal, secure deep objectives, and destroy command and control facilities and enemy forces. During the exploitation, the brigade advances on a wide front (if the terrain and road net permit), retaining only those reserves necessary to ensure flexibility, momentum, and security. The exploitation is initiated when an enemy force is having recognizable difficulty in maintaining its position. Although local exploitations may appear insignificant, their cumulative effects can be decisive.

Depending on the situation and its task organization, the brigade can exploit its own success; it can be used as an exploiting force for a higher echelon; or it can follow and support another exploiting force. The heavy brigades inherent mobility, firepower, and shock effect make it an ideal exploiting force. Exploiting forces can have the mission of securing objectives deep into the enemy's rear, cutting LOCs, surrounding and destroying enemy forces, denying escape routes to an encircled force, and destroying enemy reserves. Preparation for the exploitation entails planning, issuing WOs, grouping of exploiting forces, planning for CSS, and establishing communications. The commander must be ready at all times to use every

opportunity afforded by the enemy for exploitation. Exploitation opportunities are indicated by an increase in prisoners captured; an increase in abandoned materiel; and the overrunning of artillery, command facilities, signal installations, and supply dumps. The transition from the deliberate attack to the exploitation may be so gradual that it is hardly distinguishable, or it may be abrupt. The abrupt transition occurs most frequently when nuclear or chemical munitions are used. After transition to the exploitation, every effort is made to continue the advance without halting, bypass enemy resistance when possible, and use available FS to the maximum when appropriate targets are presented. FS target acquisition systems and observers are positioned well forward with lead elements.

Once the exploitation begins, it is carried out to the final objective. The enemy should be given no relief from offensive pressure. Enemy troops encountered are not engaged unless they are a threat to the brigade or cannot be bypassed. The decision to bypass or engage these enemy forces rests with the next higher commander. Normally, freedom of action is delegated to commanders in the exploitation. The leading elements of the brigade habitually attack from march column to reduce roadblocks and small pockets of resistance and to perform the reconnaissance necessary to develop the situation.

Follow-and-support units clear the bypassed areas and expand the zone of exploitation. Follow-and-support units are assigned missions to assist exploiting forces by relieving them of tasks that would slow their advance (such as preventing the enemy from closing the gap in a penetration and securing key terrain gained during a penetration or envelopment). Follow-and-support forces are allocated FS as the situation dictates. As the exploiting brigade advances farther into the enemy's rear areas, the follow-and-support units secure lines of communication and supply, support the exploiting elements of the brigade, destroy pockets of bypassed enemy, and expand the area of exploitation from the brigade axis.

Follow-and-support units relieve brigade elements blocking or containing enemy pockets, or protecting areas or installations, thereby enabling these elements to rejoin the exploiting force. Liaison must be maintained between lead units and follow-and-support units to facilitate coordination.

Decentralized execution is characteristic of the exploitation; however, the commander maintains enough control to prevent overextension of the command. Minimum control measures are used. CSS operations are normally centralized.

Reconnaissance systems maintain contact with enemy movements and keep the commander advised of enemy activities. CAS aircraft, deep FA fires, and attack helicopters attack moving enemy reserves, withdrawing enemy columns, and enemy constrictions at choke points. CAS, FA, and attack helicopters may also be used against enemy forces that threaten the flanks of the exploiting force.

Petroleum consumption rates are high; therefore, provision for rapid resupply is essential. Since forward elements may be operating to the rear of bypassed enemy forces, security of ground supply columns must be considered. Aerial resupply may be necessary. Exploiting forces take advantage of captured supplies whenever possible.

In the exploitation, the attacker seeks to follow up the gains of a successful penetration. The attacker drives deep into the enemy's rear to destroy his means to reconstitute an organized defense or to initiate an orderly withdrawal.

PURSUIT

The pursuit normally follows a successful exploitation. The primary function of pursuit is to complete the destruction of the enemy force. As a successful exploitation develops and the enemy begins to lose the ability to influence the situation, the brigade may be ordered to execute the pursuit. Unlike exploitation, in which the attacking force avoids enemy units in order to destroy their support system, in the pursuit the brigade may point its advance toward a physical objective; however, the mission is the destruction of the enemy's main force.

Friendly forces in the exploitation are alert for indicators of an enemy collapse that would permit a pursuit operation. There are several indicators of a weakening enemy:

- Continued advance without strong enemy reaction.
- An increased number of captured prisoners, abandoned weapons, and unburied dead.
- A lessening of hostile artillery fire.
- A lack of enemy countermeasures.

The pursuit is ordered when the enemy can no longer maintain its position and tries to escape. The commander exerts unrelenting pressure to keep the enemy from reorganizing and preparing its defenses. The brigade may conduct a pursuit operation as part of a corps or division pursuit, functioning as either the direct-pressure or encircling force.

SECTION III. BRIGADE AS A COVERING FORCE

A covering force is a tactically self-contained security force that operates a considerable distance to the front or rear of a moving or stationary force. Its mission is to develop the situation early; defeat hostile forces (if possible); and deceive, delay, and disorganize enemy forces until the main force can cope with the situation.

The brigade may participate in a covering force mission as part of a division that is in turn the covering force for a corps, or as a complete covering force for a division or corps. Because the brigade as a covering force is operating on a broad front, a well-prepared, coordinated plan is required. The plan must reflect centralized, coordinated planning and decentralized execution. Control measures governing the rate and direction of movement are specified. The rate of movement is controlled by successive march objectives, checkpoints, and PLs. The axis of advance or withdrawal is controlled by establishing boundaries between battalion task forces. Army aircraft may be used to provide auxiliary communication, liaison, and other controls between commands.

As a covering force, the brigade will normally operate forward and without the support of the divisions main body. The brigade may have up to three or more task forces abreast operating in task force zones keyed on high-speed routes. Tank-heavy battalion task forces usually lead the advance. Engineers are kept well forward with the task forces. When the brigade conducts a covering force operation, supporting CS and CSS assets are attached to preserve unity of command. Small tank-heavy reserves may be maintained at both battalion and brigade level to influence local actions.

Covering force actions are characterized by speed and aggressiveness (especially in reconnaissance) by developing situations rapidly with strength, by unhesitating commitment of reserves, and by keeping the enemy off balance. The brigade concentrates its attention against enemy forces that are of sufficient size to threaten the main force. Minor resistance is bypassed. Every action is directed toward ensuring the uninterrupted advance of the main body.

Tailored, mobile, high-demand CSS is moved forward with the brigade. Limited Classes III and V supplies and medical triage and evacuation assets move with and are provided march security by the reserve battalion of the brigade.

PLANNING

The commander plans for the operation by task organizing his forces to suit the mission. In this example, he commands an element consisting of the divisional cavalry squadron, an armored and mechanized infantry battalion, and a DS artillery battalion. Knowing that the cavalry squadron operates in zones, essentially with a ground and an air troop working together in each one, the commander designates a task force to follow and support in each zone. He task organizes the battalions so that each task force is able to respond to a variety of threats, generally 2 x armor and 2 x mechanized, with the mechanized task force retaining the ITV company (in an M113-equipped mechanized battalion). The artillery trails, yet remains within the body of the formation.

Based on the commander's bypass criteria, the mission of the covering force is to identify and destroy those enemy elements that can influence the divisions maneuver. In effect, the cavalry troops and the

battalion task forces become "hunter/killer" teams. However, some enemy forward detachment positions may be too strong for the covering force battalions. When this occurs, the covering force commander must attempt to find a bypass route that cannot be observed or influenced by a forward detachment. He should also fix the position with indirect fire and, if available, Army aviation or CAS assets.

PREPARATION

The brigade commander conducts a rehearsal following the issuance of the OPORD to confirm that each subordinate commander understands his mission within the context of the intent. In particular, the commander reviews actions on contact and the bypass criteria. Commanders must overcome the temptation to focus on each enemy element that attempts to engage the force, but at the same time, they must clear the axis of enemy elements that may significantly impair the movement of the main body. It is the responsibility of the brigade commander to exercise this decision making during the rehearsal and to ensure that the subordinate commanders operate as a team.

The commander observes the rehearsal and provides comments when appropriate. Generally, however, he allows his subordinate commanders to demonstrate their knowledge of the plan and their decision making within the context of the commander's guidance. For his part, the commander practices his use of the DST in an effort to anticipate likely enemy actions. Once he has made a decision, he then rehearses synchronizing his resources to achieve the greatest effect. The commander must resist making changes. Normally, there will not be enough time to coordinate a change in the operation throughout the entire force. Subordinate commanders will already have prepared (and probably issued) their OPORDs. At this point in the process, changes will only increase the confusion that always exists in combat. The commander must continually weigh the amount of combat power he is willing to commit to an area against his overall mission to guard the division main body. Moreover, he must identify the conditions under which he would no longer be able to effectively operate as the covering force, such as increasing strength of the enemy defense, his own attrition, or a combination of the two. The impact of having a covering force become ineffective prior to reaching the enemy's main defensive belt is that the attacking force would have to commit prematurely, arriving at the objective area at less than the desired combat strength. Ultimately, this could be the difference between success and failure.

EXECUTION

As the brigade advances along the division axis of advance, enemy units are identified by the divisional cavalry squadron. This information is passed to the battalion task forces, which in turn maneuver against the enemy position. In execution, the cavalry troop hands over the enemy to the scout platoon of the following task force. Elements of the air troop may continue to observe the enemy until the arrival of the task force. The cavalry and scout platoons should have gathered enough information about the enemy position so that, upon arrival, the task force can be directed into the assault. This hasty attack should be supported with an appropriate level of CS to ensure success; otherwise, the operation could develop into a deliberate attack and consequently slow the covering force operation significantly.

Weak enemy elements are handed over to the advance guard battalions or brigade main body for destruction. Conversely, those enemy positions that the covering force clearly cannot destroy are maintained under observation by reconnaissance elements; a bypass route is selected around the area, out of direct fire and observation. All information concerning the enemy position is relayed to the division commander, who must then decide to continue to bypass or destroy the position.

As the covering force nears the enemy force, the cavalry squadron probes to confirm possible weaknesses in the enemy's array. The task forces adopt a hasty defense that maintains the shoulders of the division penetration and also supports the attack of the main body elements. The cavalry screens farther forward of the hasty defending battalions to provide flank security, or it may continue to infiltrate depending on the division commander's concept of the operation. At this point, the covering force operation ceases, and the brigade commander awaits further instructions or possible task organization changes.

One of the commander's greatest challenges is the control of the two task forces when one is in contact conducting a hasty attack and the other is continuing to move. The commander must stay abreast of the

location and situation of the task force in the other zone. He must also guard against focusing too much attention on the action in his own zone. The maintenance of a consistent rate of march through the use of PLs, and the continual adjustment to the speed of each task force in its zone, are essential to a unified action across a broad front.

SECTION IV. COMBINED ARMS BREACHING OPERATIONS

BREACHING TENETS

Commanders and staffs plan breaching operations as a part of all offensive missions. Successful combined arms breaching is a function of applying the four tenets of breaching. The tenets are:

- Intelligence.
- Breaching fundamentals and organization.
- Mass.
- Synchronization.

See FM 90-13-1 for additional information on breaching operations.

Intelligence

In any operation where enemy obstacles can interfere with friendly maneuver, obstacle intelligence becomes a PIR. Finding enemy obstacles or seeing enemy obstacle activity validates and refines the S2s picture of the battlefield. Obstacle intelligence does several things:

- Supports the situation template.
- Helps determine enemy intentions as well as the strength of his defenses.
- Focuses intelligence-gathering assets.
- Drives breach/maneuver planning.

Breaching Fundamentals

Suppress, obscure, secure, and reduce (SOSR) are breaching fundamentals. These fundamentals apply to all types of breaching operations (in-stride, deliberate, assault, and covert) with some variations based on the situation.

Suppress

Suppression is the mission-critical task for breaching operations. Direct and indirect fires serve to isolate the breach site/point of penetration and protect forces reducing and maneuvering through the obstacle.

Obscure

Effective emplacement of smoke degrades enemy observation and target acquisition and conceals friendly activities and movement.

Secure

The force secures the breaching operation site to prevent the enemy from interfering with obstacle reduction and passage of the assault forces. Security by fire or force depends on the enemy situation. The security force secures the breach site by suppressing outposts and fighting positions near the obstacle, and against overwatching and counterattacking forces.

Reduce

Reduction means creating lanes through the obstacle to allow the attacking force to pass. The actual breaching of obstacles is a major part of actions on the objective. The number and width of lanes varies with the situation and type of breaching operation. Reduction cannot be accomplished until the other SOSR fundamentals are applied.

Breaching Organization

The commander organizes the forces to accomplish SOSR. This requires him to organize support, breach, and assault forces with the necessary assets to accomplish their roles.

Support Force

The support forces primary responsibility is to eliminate the enemy's ability to interfere with the breaching operation. It must:

- Isolate the battlefield with fires and suppress enemy fires covering the obstacle.
- Mass direct and indirect fires to fix the enemy in position and to destroy any weapons that are able to bring fires on the breaching force.
- Control obscuring smoke to hinder enemy-observed direct and indirect fires.

Suppression is critical for a successful breach. The first priority of force allocation is the support force. The commander allocates direct and indirect-fire systems to achieve the support force ratio of 3 to 1 for a deliberate breach.

Breach Force

The breach force is a combined arms force. Its primary mission is to create the lanes that enable the attacking force to pass through the obstacle and continue the attack. It includes engineers, breaching assets, and a maneuver element capable of providing internal SOSR operations. The breach force commander can be the engineer commander or any subordinate commander working for the brigade commander in a command relationship.

The commander allocates engineer platoons and equipment based on the number of lanes required. The breach force must be capable of creating a minimum of one lane for each assaulting company or two lanes for an assaulting task force. The commander should expect a 50 percent loss of mobility assets in close combat. Therefore, breaching a lane in close combat requires at least an engineer platoon in the breach force.

Assault Force

The assault forces primary mission is to destroy or dislodge the enemy on the far side of the obstacle. It secures the far side by physical occupation in most deliberate or light-force breaching operations. The assault force may be tasked to assist the support force with suppression while the breach force reduces the obstacle.

If the obstacle is defended by a small force, the assault force mission may be combined with the breach force mission. This simplifies command and control and provides more immediate combat power for security and suppression. Combat power is allocated to the assault force to achieve a 3 to 1 ratio on the assault objective.

Mass

Combined arms breaching is conducted by rapidly applying combat power to reduce the obstacle and rupture the defense.

Maneuver Unit	Instride	Deliberate	Assault	Covert	Enemy Size Overwatching Obstacles
Brigade	X X	X *	X	X	Battalion Company Platoon
Task Force	X	X *	X	X X	Battalion Company Platoon
Company		X	X	X X	Battalion Company Platoon
X - Type of breach normally conducted * - Possible variation depending on scheme of maneuver					

Table 4-1. Types of breaching operations versus enemy size.

Massed combat power is directed against an enemy weakness. The location selected for breaching depends largely on a weakness in the enemy defense where its covering fires are minimized. If the attacker cannot find a natural weakness, he creates one by fixing the majority of the defending force and isolating a small part of it for attack.

The need to generate enough mass strongly influences which echelon can conduct a breaching operation (see Table 4-1). A company team generally cannot simultaneously mass sufficient fires, breach the obstacle, and also assault the defending position unless it is a simple obstacle defended by no more than a squad. A task force has sufficient combat power to attack an obstacle defended by a company and is normally the echelon used to execute the breach.

The brigade has sufficient combat power to attack a complex and well-defended obstacle but has difficulty deploying all its combat power within range. Normally, the brigade breaches by isolating a small segment of the defense (platoon or company) that a task force can then attack as the breaching echelon. If the obstacle and defense are in-depth (large scale), brigades would normally receive additional support (such as artillery, engineer, aviation) from division for large-scale breaching operations. A large-scale breach is defined as a deliberate operation conducted by brigades and divisions to create a penetration through well-prepared defenses so that follow-on brigades and divisions can pass through them.

The commander also masses his engineers and breaching equipment to reduce the obstacle. The breach force is organized and equipped to use several different reduction techniques in case the primary technique fails (a key breaching asset is destroyed or casualties render dismounted engineers ineffective). Additional breaching assets are available to handle the unexpected. Normally, 50 percent more than required are positioned with the breach force.

Synchronization

Breaching operations require precise synchronization of SOSR by support, breach, and assault forces (see Table 4-2). The commander ensures synchronization through proper planning and force preparation. Fundamentals to achieve synchronization are:

- Detailed reverse planning.
- Clear subunit instructions.
- Effective command and control.
- A well-rehearsed force.

Synchronizing the combined arms breach begins by using the reverse planning process to ensure actions at obstacles support actions on the objective. Planning a breach without regard to actions on the objective leads to disaster. The commander first decides how he must attack an objective to accomplish his mission. This decision drives where, how, and with what force he must support, breach, and assault through the enemy's obstacles and take the objective.

ACTION	ELEMENT	TIME (MINUTES)	CONTROLLED BY
Develop situation (verifying boundary of enemy obstacles system)	Force in contact	M to 2	S3
Maneuver support force into overwatch position	Support	M+2 to 15	Support Cdr
Maneuver assault force into covered assault position	Assault	M+2 to 15	Assault Cdr
Call for artillery	DS artillery	M+2 to 15	FSO
Build smoke	Mortars	M+5 to 10	FSO
Suppress enemy with direct fires	Support	M+15 to 29	Support Cdr
Suppress enemy with artillery fires	DS artillery	M+10 to 29	FSO
Maintain smoke	DS artillery/mortars	M+10 to 30	FSO
Maneuver breach force to breach location	Breach	M+20 to 23	Breach Cdr
Reduce obstacle Prepare two lanes	Breach	M+23 to 30	Engineer Leader
Place smoke pots	Breach	M+23 to EOM	Breach Cdr
Shift direct fires off of OBJ	Support	M+29 to 30	Assault Cdr
Shift indirect fires beyond OBJ	DS artillery	M+29 to 30	Assault Cdr
Assault to destroy enemy on far side of obstacle	Assault	M+30 to 45	Assault Cdr
Reorganize to continue mission	TF	M+45 to EOM	S3
		M = contact with obstacle	

Table 4-2. Breach complexity.

The most effective synchronization tool available to the commander is the rehearsal. The inherent complexity of a breaching operation makes rehearsals at every level essential to success. The commander must afford his subordinates the time to plan how they will execute their assigned missions and to rehearse that plan with their unit. Breaching operations are a part of every rehearsal.

TYPES OF BREACHING OPERATIONS

In-Stride

In-stride breaching is a very rapid technique using standard actions on contact and normal movement techniques. It consists of preplanned, well-trained, well-rehearsed breaching actions and reduction procedures by predesignated combined arms elements. The force uses the in-stride breach against either weak defenders or very simple obstacles and executes it from the march. Subordinate forces always move configured to execute an in-stride breach with organic and task organized engineer assets. A brigade in-stride breach is a deliberate breach for a task force.

Deliberate Breach

The maneuver force attacks a stronger defense or more complex obstacle system with a deliberate breach. It is similar to a deliberate attack, requiring detailed knowledge of both the defense and the obstacle system. Units conduct a deliberate breaching operation when:

- The unit fails an attempted in-stride breach of enemy tactical obstacles.
- Force ratios indicate that a confirmed enemy situation is beyond the capabilities of a subordinate unit.

A brigade conducts a deliberate breach using one or more task forces in support, breach, and assault roles. Breach task organization considerations and application of SOSR breaching fundamentals are the same as for the task force deliberate breach. The brigade scheme of maneuver must address how task forces maneuver to accomplish their support, breach, and assault missions. Since the brigade deliberate breach involves the maneuver of task forces, the brigade commander and staff are responsible for detailed planning, centralized rehearsals, and synchronization.

Assault

The maneuver force uses an assault breach to break a dismounted force through enemy protective obstacles onto the enemy position. Depending on the size and difficulty of the defensive obstacle system, this breaching procedure can be a variation of either deliberate or in-stride breaching techniques.

Covert

Light and dismounted forces use covert breaching operations to pass secretly through obstacles. The covert breach also uses elements of the deliberate or in-stride breach. Surprise is the primary consideration that drives the commander to a covert breach. Covert breaching centers around using stealth to reduce the obstacle with support and assault forces executing their mission only if reduction is detected.

A brigade with automated capabilities can conduct deliberate and in-stride breaching operations with greater speed and precision than a conventional unit. Rehearsals are still key, because breach operations are complex, yet the entire breaching operation can be conducted with greater confidence of success; this includes during periods of limited visibility. Units designated to conduct reconnaissance for the breach force unit can transmit accurate bypass information to the brigade with waypoints. This keeps units from blundering into the obstacle and allows for rapid passage through the obstacle system. Accurate and timely information on enemy and friendly forces allows the brigade to disperse, provide accurate direct and indirect fires on the enemy, and aggressively move to continue attacking the enemy. The brigade uses unmanned aerial vehicles (UAV), scouts, and other observation systems to accurately locate deep enemy targets (artillery, logistics) and attacks them prior to the assault forces arrival.

SECTION V. NIGHT OFFENSIVE DOCTRINE

Night offensive operations are conducted to exploit the possibilities for security and surprise or to continue combat operations. By conducting night operations the commander expects to conceal his action from the enemy, achieve surprise, exploit earlier success, or maintain the momentum. In each case, the focus is gaining or retaining the initiative.

Note. All limited visibility operations require more detailed planning, rehearsals, and graphic control measures.

ADVANTAGES AND DISADVANTAGES

Advantages

Advantages of night offensive operations include:

- Defenses are more susceptible to infiltration.
- Despite increased efforts at protection, the defender is more susceptible to NBC attack because of reduced efficiency and sleep rotations.
- Movement of large forces is concealed by darkness.

- Physical and psychological factors favor the attacker. Shock, disorientation, and isolation are more easily achieved.
- Air assets can operate more safely due to difficult observation.
- Surprise is enhanced. Defenders are more susceptible to deception techniques (dummy lights, noise, smoke, and fires).
- The speed at which a defender can employ his reserves is reduced at night. DPs must be farther out in time and space.

Disadvantages

Disadvantages of night offensive operations include:

- Command and control and coordination of units become more difficult, and it is easier for the defender to react to a changing situation and alter operations than it is for the attacker.
- It is difficult for the attacker to determine the limits of obstacles.
- Attackers can be deceived with light, smoke, noise, and fires.
- The attacker can lose momentum during the final assault because of the reduced speed of the attack.
- Navigation is difficult for night attacks. Units may be separated, command and control lost within units, and support elements moved out of position.
- The battlefield can be changed during darkness. Obstacles that escape reconnaissance can be emplaced under darkness.
- Adjustment of indirect fire is difficult, even with the use of night-vision devices (NVD) or illumination.
- Units require significantly larger quantities of signal ammunition (smoke, tracers, flares, and illumination rounds).
- Locating and evacuating casualties is very difficult.
- Use of FA illumination can render the artillery vulnerable to counterfire.
- Muzzle flash from the artillery guns can be detected easily.

TACTICAL PLANNING CONSIDERATIONS

The following is a list of tactical planning considerations, by BOS, that are different for a night offensive operation when compared to a daylight offensive.

Intelligence

Reconnaissance of the enemy should not be confused with reconnaissance of the routes to the objective. Units should reconnoiter their routes and rehearse if possible. Reconnaissance assets may be tasked to provide guides to a point on the battlefield, but are best used to pinpoint enemy fortifications. Reconnaissance of night objectives should include:

- Presence and number of searchlights and NVDs.
- Location of illumination points.
- "Duty" positions, that is, those that are continuously manned. These may also be false positions for daylight occupation only.
- Locations of AT weapons and FA guns.
- Forward locations of the reserve, command and OP positions, and counterattack routes.

Maneuver

The forms of maneuver for the night offense are the same as for the daylight offense; however, conditions of METT-T may change the commander's perception of which form of maneuver best ensures mission accomplishment. Some additional planning considerations for night maneuver are:

- If attacking an enemy that has technological parity in night observation equipment and training or has the means to fully illuminate the battlefield, the envelopment or the turning movement can take advantage of darkness to flank or avoid enemy fields of fire, since not all areas of the defense will have equal coverage of night-vision equipment.
- Conversely, if the attacker has the advantage in night observation technology or is better trained than the defender, darkness may be used to conduct a penetration, infiltration, or frontal attack that may not have been feasible in daylight.

Unit reconnaissance of routes and axes is invaluable in conducting a night maneuver. Plans for night movement should include:

- Leader reconnaissance, in daylight, as far forward as possible.
- Measuring distances to check-points, PLs, and other control measures along the route of advance.
- Designation of guides for the combat formations.

Fire Support

The adjustment of indirect fire by human observation becomes degraded at night. Darkness and the use of NVDs both degrade depth perception. To counter these effects, plans should include the use of radar, illumination, and terminally guided munitions to ensure accuracy of adjustments. Each fire support team vehicle (FISTV) has a ground/vehicle laser locator/designator (G/VLLD) that can be dismounted to provide increased observation capability. The following considerations apply when conducting night attacks:

- Plan for illumination. A nonilluminated attack plan ceases to be one with the first enemy illumination round. Contingency plans should be made to illuminate at any point of the attack or to switch to continuous illumination.
- Plan counter observation to degrade night observation devices (NOD). Illumination rounds can white out enemy image intensification sights, and smoke can obscure the ambient light needed to use intensification devices.
- Initiate and cancel fires for prearranged handheld illumination.
- Place fire support coordination measures (FSCM) on identifiable terrain. Permissive measures should be as close as possible in front of friendly forces.
- Exercise caution when using FASCAM at night because it is difficult to see.
- Mark targets for ground burst illumination for ground forces as well as for CAS.

If possible, register as many targets as possible during daylight.

Mobility and Survivability

The process of planning and preparing combined arms breaching during hours of darkness is the same as during daylight. The only difference is the inherent command and control difficulties experienced when conducting night operations. The tenets of combined arms breaching are planned and the operation wargamed and synchronized. Special considerations for breaching at night include:

- Covert breaching. Consideration must be given to decreasing the signature of firing demolitions.
- Additional time required to position forces and conduct the breaching operations.
- Control measures for moving and positioning forces.
- Night marking devices (far recognition, final approach, and lanes).
- Fire control measures.
- Rehearsals (night).

Air Defense

At night, identification, friend, or foe (IFF) relies mostly on electronic interrogation. Visual detection capability depends on the ambient light available.

Forward area air defense (FAAD) has immense signatures; it should not be positioned where it brings return fire onto adjacent units.

Combined arms for air defense should not normally be employed at night, except for immediate self-defense.

Combat Service Support

Units in a night offensive must be resupplied, rearmed, and refueled before execution. Logistics activity is much tougher at night.

Casualty location, identification, and evacuation require additional control measures and ground resources. The battalion aid station should be farther forward, and plans for aeromedical evacuation must include marking signals for the pickup zones.

Pre-positioning supplies and services forward helps support night attacks. OPSEC must be maintained so that an imminent offense is not detected.

CSS should be brought forward rapidly at first light to allow the momentum of the offense to continue.

Command and Control

This is the area of tactical planning that changes most during night offensive operations. That is because centralized control can simplify synchronization of the plan in this instance.

Graphic control measures are usually more restrictive for a night attack. There are graphic control measures that apply specifically to limited visibility, point of departure, and probable line of deployment (see FM 101-5-1). All leaders must be familiar with these terms and symbols. All control measures should translate into easily identifiable locations on the ground, under all levels of visibility.

Navigation at night must be planned in greater detail and take advantage of visual and nonvisual technological capabilities. It may also include the use of guides and traffic control points.

Communications must also be planned in greater detail. Plan redundant means of communication. Place particular emphasis on COLT, scout, and FS links. Specify communications events in the synchronization matrix and plan event triggers. Pre-position single vehicles forward to act as manual radio relays to back up retransmission failure. Link vulnerable communication teams with scouts and MPs for force protection.

Scout and other reconnaissance elements such as COLTs, ADA scouts, MPs, or engineer scouts require highly detailed signal support and extensive back-up. Reconnaissance elements operating well forward at night should not plan operations beyond their communications ranges. This is even more true during air insertions and dismounted/light scout operations.

CHAPTER 5 DEFENSIVE OPERATIONS

CONTENTS

Section I. Fundamentals of Defensive Operations
Section II. Conducting Defensive Operations
Section III. Combined Arms Obstacle Integration
Section IV. Brigade Covering Force Operations
Section V. US Night Defensive Doctrine

As in offensive operations, the brigade commander sets the conditions for success in defensive operations. He uses all organic and supporting systems with precision and at their maximum capability. Ground combat power is then applied to defeat the enemy.

SECTION I. FUNDAMENTALS OF DEFENSIVE OPERATIONS

THE PURPOSE OF THE DEFENSE

The main purpose of a defensive operation is to cause an enemy attack to fail. Brigades normally conduct defensive operations as part of a division- and corps-level defense. They may attack, defend, or delay as part of the security area, MBA, or reserve force. Brigades may also conduct offensive operations across the FLOT while the majority of the division or corps defends, or they may serve as a ground tactical combat force in support of rear operations. Armored brigades possess the type of combat power and mobility ideally suited for mobile defenses. While normally conducting the mobile defense as a part of division or corps operation, in a force projection Army, the brigade commander may find situations where a mobile defense is the best option available at his level.

At times, the brigade may be required to retain key terrain or facilities, or conduct an attack as the striking force of a division or as a reserve force for the corps. The brigade's mission to retain key terrain may be ordered if it assists or creates an opportunity for the higher headquarters to shift to the offensive. Inevitably, the brigade defense focuses on regaining the tactical initiative or creating the opportunity for its higher headquarters to shift to the offensive.

OPERATIONS IN DEPTH

The commander conducts simultaneous operations in depth and organizes the battlefield into three complementary elements of deep, close, and rear operations.

Deep

Deep operations are directed against enemy forces and functions beyond the close battle. Generally, the brigade needs additional assets from division to conduct deep operations. These assets may include electronic jamming equipment and attack helicopters. The brigade commander must synchronize these additional assets to simultaneously attack the enemy throughout the depth of the battlefield. Brigades may also maneuver as part of the divisions deep attack.

Close

The MBA comprises the area we typically designate as close operations. Brigades generally array the bulk of their combat power within the MBA. Normally brigades defend within the MBA, act as the higher commander's reserve, or act as part of the division or corps striking force.

The brigade could act as the security force for the higher commander or it could provide its own security force, although this is not desirable. In either case, the brigade conducts passive and active reconnaissance and security measures throughout the depth of AOs.

The brigade commander retains a reserve force based on the threat force assessment. The task and purpose for the brigade reserve unit are identified during the wargaming process. The reserve is committed at the decisive point to ensure the defeat of the enemy force.

Rear

The brigade's rear operations include self-protection of its units and protection and maintenance of its LOCs. The brigade normally designates a tactical force to react to rear threats. Rapid response ability to a rear area threat, particularly Levels II and III threats, is integral to the commander's ability to sustain a viable defense. The brigade may also be tasked to provide tactical forces to support the higher commander's AO.

DEFENSIVE PATTERNS

Mobile

A brigade generally does not conduct a mobile defense, but conducts area defensive or offensive operations as part of the divisions defense (see Table 5-1). A mobile defense orients on the destruction of the attacking force by permitting the enemy to maneuver to a position of disadvantage that exposes him to the striking force. A brigade may conduct a movement to contact or deliberate attack as part of a division or corps striking force.

MOBILE DEFENSE	AREA DEFENSE
Orients on the enemy (destruction or defeat)	Deny enemy access to designated terrain for a specific time
Mobility greater than or equal to the enemy	Mutual supporting positions and in depth
Defend with minimum force	Defend with maximum force
Fire and maneuver	Interlocking fires
Striking force	Smaller mobile reserve for local counterattacks
Striking force used at the decisive point	

Table 5-1. Characteristics of forms of defense.

Area

A brigade conducts an area defense as part a division or corps defense. Area defense orients on retention of terrain or facilities for a specified time. When planning the area defense, the brigade commander decides the decisive point, when to concentrate his main effort, and where to economize forces based on his own estimate of the situation and the higher commander's concept. He then assigns missions; allocates forces, fires, and other support; and sets priorities for resources to fight a combined arms battle.

The brigade commander elects to defend forward or in depth based on METT-T and higher commanders intent. A defense in the forward part of the sector requires early commitment of the main defensive effort. This may be achieved either by an initial forward deployment of forces or by planning counterattacks well forward in the MBA or even forward of the MBA. A defense in depth may be selected when missions are less restrictive, defensive sectors are deep, and key terrain lies deep in the sector. A defense in depth relies on elements in the security force area and forward elements in the MBA to identify, define, and control the depth of the enemy attack. The flanks of the enemy main effort are counterattacked to isolate and destroy enemy forces in the MBA.

SYNCHRONIZATION OF DEFENSIVE OPERATIONS

The brigade commander integrates and synchronizes all assets to maximize combat power. To effectively focus combat power, the brigade commander designates the brigade main effort; this links each subordinate commander's actions to those around him, providing cohesion and synchronization. As the brigade commander develops his battle plan for the employment of maneuver forces, he must visualize

how he will synchronize his FA, air defense, EW, NBC, engineer, CAS and any joint or multinational supporting assets at the decisive time and place on the battlefield.

Intelligence

The brigade S2 focuses on IPB in planning for the defense and analyzing the close operation to predict and confirm enemy intentions. Before the battle, the brigade commander requires specific information about:

- The composition, equipment, strengths, and weaknesses of the advancing enemy force.
- The location, direction, and speed of enemy reconnaissance elements.
- The location and activities of enemy follow-on forces.
- Enemy initial and follow-on regimental or brigade command, control, and communication facilities.

The brigade staff prepares a detailed R&S plan to focus reconnaissance assets at enemy decision points, thus confirming the enemy's adopted course of action.

Maneuver (Aviation)

The inherent speed, agility, flexibility, and lethality of aviation elements make them an offensive asset that the brigade can employ to assist in seizing and retaining the initiative. Army aviation can also be used to attack and destroy the enemy when and where he is most vulnerable. Aviation units OPCON to the brigade can conduct attack operations, air assaults, reconnaissance, and security missions with ground operations. Attack helicopter battalions/aviation task forces should be augmented with ground forces when assigned guard and/or covering force missions.

Logistics support of aviation units remains the responsibility of the aviation brigade; however, forward support aviation logisticians are coordinated with the FSB operations section in the BSA.

For a detailed discussion on ground maneuver, see Section II of this chapter.

Fire Support

The brigade commander weights the main effort by establishing FS priorities. FS is synchronized with maneuver forces to disrupt and weaken the enemy's attack to provide opportunities for friendly counterattack. The FSCoord uses the IPB process, intelligence gathering resources, and the TVA process to focus all supporting fires.

Control of FS assets is centralized for defensive operations. Ammunition is pre-positioned and firing positions are surveyed in advance. The FSCoord focuses his planning effort on the following tasks:

- Engaging the enemy early to disrupt the cohesion of its attack and reduce its intelligence gathering capability. As the enemy enters the security area and MBA, FS will continue to reduce enemy intelligence gathering ability to mass combat power.
- Supporting rear operations.
- Providing deep fires to delay and disrupt reinforcing units.
- Screening friendly movements.
- Providing counterfire to limit the enemy's ability to shift combat power rapidly.
- Integrating fires with the brigade obstacle plan.

The brigade synchronizes the MBA to mass the effects of all FS assets.

Air Defense

The brigade uses a combination of passive and active air defense measures. Priorities shift toward protection of the covering force, FS elements, BSA, and command and control facilities. Maneuver units are integrated into the counterair plan by engaging appropriate targets within the capabilities of the weapon systems. Collection and early dissemination of air threat information are required to make this system work. ADA units require engineer support to dig firing positions for Bradley Stinger fighting vehicle (BSFV) systems.

In defensive operations, air defense assets are positioned to achieve mass. Normally, the priority of protection will begin with the command and control facilities. That is because these are generally fixed sites with high electronic signatures, which makes them susceptible to identification and targeting by threat aircraft. Therefore, the brigade air defense representative will examine the air avenues of approach toward the command and control facilities and position both guns and missiles in a manner that disallows the threat aircraft to reach the target.

Mobility and Survivability

The priority of engineer effort in the security area is normally given to mobility of the passing units of the covering force, then to countermobility to delay the advance of threat units. Priority for engineer support in the MBA is determined by the brigade commander based on METT-T. A trade-off between countermobility and survivability exists because of limited resources. Obstacles are emplaced in depth to support the maneuver commander's scheme and are integrated into the FS plan to maximize the effect of friendly fires. Counterattacks may require improvement of mobility corridors to ensure success. Priority of engineer effort in the rear is given to mobility, then to survivability for command, control, and communications, reserve, and CSS assets.

Defensive operations require intensive management of engineer resources allocated to support the brigade plan. The resources usually consist of a combination of divisional and corps engineer units. The assistant brigade engineer and the brigade S4 coordinate early to forecast and request the large quantities of required Classes IV and V materials and munitions.

Nuclear, Biological, and Chemical Defense

Throughout the planning process, the brigade commander plans for possible enemy use of NBC weapons and for employment of NBC defense units.

The commander also determines decontamination priorities. All plans and operations of forces and installations are analyzed by the S3 and chemical section to determine their vulnerability to these weapons. The commander specifies the degree of risk he is willing to accept. The brigade chemical section can suggest changes to the concept of the operation if the concept involves unacceptable risks from enemy weapons.

Chemical Reconnaissance

Brigade NBC reconnaissance operations in the defense normally focus on identifying clean areas, BPs, movement routes, decontamination sites, and contaminated areas that directly affect operations. The information gathered from the reconnaissance effort is immediately passed to higher, lower, and adjacent units and periodically updated.

Combat Service Support

The S4 and the FSB commander must understand the brigade commander's intent so that service support priorities can be established and logistical operations planned to ensure the supportability of the operation. Real estate management of the BSA and plans to conduct operations against Levels I and II rear area threat must be incorporated into the plan. The following considerations and operational techniques improve the CSS provided to a defending unit:

- Limited amounts of ATP-stocked ammunition (25 percent of basic load) are pre-positioned in the MBA on centrally located positions.
- Push-packages of certain critical items (ammunition, POL, selected repair parts, barrier materials, medical supplies, and NBC supplies) are dispatched from rear areas (division support areas to brigade support areas to unit trains) on a scheduled basis so that interruptions in communications do not disrupt the flow of supplies.
- Class IV and Class V point for countermobility push-packages are established.
- Resupply during periods of limited visibility reduces chances of threat interference. Resupply vehicles infiltrate forward to reduce chances of detection.
- CSS units are echeloned in depth throughout the defensive area. When a forward CSS unit is required to displace to the rear, another unit picks up the workload until the displacing unit is again operational.
- Maintenance contact teams are employed and dispatched as far forward as possible to cut down on the requirement to evacuate equipment. The thrust of the maintenance effort is to fix as far forward as possible.
- Different types of maintenance contact teams (vehicle, armament, missile) are consolidated to use the available vehicles.

Command and Control

After completing the estimate of the situation, the brigade commander announces his decision and concept of the operation to key members of the staff. The concept is in enough detail for his staff to understand how he intends to conduct the battle. Staff preparation of plans and orders is based on the commander's concept. Subordinates are given maximum possible time to prepare since the effectiveness of the defense depends on time-consuming tasks, such as reconnaissance, fire planning, preparation of positions, installation of obstacles, positioning of supplies, and improvement of routes. WOs and subsequent oral instructions are used to get the word out. Commanders do not wait for the complete plan to begin preparations.

SECTION II. CONDUCTING DEFENSIVE OPERATIONS

AREA DEFENSE

Planning

Brigade commanders need information to fight the close-in battle of the brigade against the OPFOR. They also need accurate intelligence about OPFOR elements that can close on their area of operation before the current engagement can be decisively concluded.

The brigade commander needs specific information about the:

- Composition, equipment, strengths, and weaknesses of advancing forces.
- Location, direction, and speed of OPFOR battalions and their subordinate companies.
- Location and activities of OPFOR follow-on echelons capable of reinforcing the first echelon.
- Location of OPFOR indirect-fire weapon systems and units.
- Location of gaps, assailable flanks, and other tactical weaknesses in the threat's order of battle and OPSEC posture.
- Locations of anti-aircraft and missile artillery units.
- Location of surface-to-air missile units.
- Location of radioelectronic combat units.
- Effects of weather and terrain on current and projected operations.
- Most likely withdrawal routes for threat forces.

- Anticipated timetable or event schedule associated with the threat's most likely COA.

Specific information about OPFOR command, control, and communications facilities is of paramount concern to the brigade commander. He seeks to know the specific locations of threat

- Division forward and main CPs.
- Regimental and battalion CPs.
- Fire direction control (FDC) centers.
- CPs and OPs.
- Radio and radar reconnaissance sites.
- Radioelectronic combat sites.
- Target acquisition sites.

The suppression, neutralization, and/or destruction of threat command, control, and communication systems and facilities are critical to the success of the close-in battle. Brigade S2s, in concert with supporting division and corps IEW, maneuver, and FS units, use all available means to identify, locate, disrupt, and destroy these targets. Their objective is to neutralize the threat commander's capability to command and control troops. Normally, the brigade S2 receives his information from the following sources:

- Maneuver unit observation spot reports (SPOTREP)/patrols.
- FA units. Weapons locating radar, cannon, rocket, mortar.
- Air defense units. Forward area air defense command and control communications and intelligence (FAADC3I).
- MI assets.
- GSRs
- Remote sensors.
- Counterintelligence support.
- Prisoner of war interrogation (IPW) teams.
- Aerial surveillance side looking airborne radar (SLAR).
- Ground EW assets collection and jamming.
- UAVs.
- Aviation.
- Reconnaissance flights.
- In-flight reports.
- Divisional special purpose countermeasure system
- Quick fix 11B.
- All source analysis system (ASAS).

The brigade commander determines where to position his forces based on the enemy's maneuver options. He desires to build depth based on terrain and how it affects the enemy's maneuver options. If the terrain is restrictive and does not allow depth behind him, he compensates by early commitment of main defensive forces. If necessary, counterattacks may expand the forward area if the opportunity exists. Further depth is created by security forces and deception operations that lead the enemy to believe that the main defensive battle area is further back. When the terrain or mission is less restrictive, the brigade commander builds depth with security and covering forces by selecting key terrain deeper in the area of operations and conducting deception operations that lead the enemy to believe that the defense is forward.

Brigade commanders organize the battlefield for defense by assigning either sectors or BPs to subordinate battalions or task forces.

Sectors give the battalion task forces freedom to maneuver and decentralize fire planning. They allow the task force commander to distribute his teams to suit the terrain and plan a battle that integrates direct and indirect fires. The brigade commander conducts a backbrief with the battalion commanders to approve and deconflict their plans. A defense in sector requires continuous contact with flank units for security. BPs are used when the brigade commander wishes to control maneuvering and positioning of his task forces. They are also used when it is necessary to concentrate task forces rapidly. When the brigade commander establishes BPs, he controls maneuver outside those BPs. He prescribes primary directions of fire by the orientation of the position, and is responsible for fire and maneuver planning between positions of different battalions. If he assigns a BP and a sector, he is giving the task force commander specific guidance on initial positioning of forces.

A strongpoint is a heavily fortified BP tied to the natural and reinforcing obstacle to create an anchor for the defense. A strongpoint is located on a terrain feature critical to the defense or used to block a bottleneck formed by terrain obstacles. Strongpoints in small urban areas, astride routes, or along assembly areas may halt a superior threat force for a considerable time. To be most effective, the strongpoint should be a surprise to the threat. It causes congestion and limits the threat force's maneuver. It is best used to set up a counterattack. Strongpoints must be well camouflaged and protected.

Control measures, such as PLs, boundaries, contact points and passage points (PP), checkpoints, direction of attack arrows, and objectives combined with fire control measures to provide a means of controlling the battle.

The commander's tactical scheme must include plans for deep, close, and rear operations. The objective of the defense is to halt the enemy, seize the initiative, and go to the offensive. The commander's tactical scheme must include plans to counterattack against the threat rear or flank whenever possible. The brigade reserve is the key to the execution of offensive operations.

The Reserve

The brigade commanders most critical decision during the defense is the commitment of the reserve. Commitment of the reserve is the most effective way the brigade commander can influence the battle. Once committed, the reserve becomes the brigade main effort. Early in his planning, the brigade commander makes fundamental decisions concerning the size, composition, and mission of the reserve. A major purpose of the reserve is to regain initiative through offensive action. The reserve does this by conducting counterattacks, spoiling attacks, and raids against the enemy, preferably to its flanks and rear. Other purposes of the reserve are to:

- Block penetrations.
- Contain enemy forces that have penetrated.
- React to rear area and flank threats.
- Relieve depleted units and provide for continuous operations.

If the brigade commander does not have sufficient reserves of his own, he may require his subordinate task force commanders to obtain his permission before the employment of their reserves. He may also specify the location of their reserves. METT-T will dictate the size and composition of the reserve. The reserve must remain concealed until committed. This protects it from enemy attack and enhances the shock effect when it is committed.

The brigade commander immediately reconstitutes a new reserve as soon as the original reserve is committed. This restores his ability to influence the battle with maneuver forces. Even a small reserve can be decisive in tipping the balance of victory.

The brigade commander uses DPs developed during the construction of the DST to trigger execution of contingency plans for his reserve (see Figure 5-1). The reserve makes maximum use of the defensive preparation time to rehearse each contingency plan, in priority.

Rehearsals are conducted, both day and night, to the lowest level possible. Target areas of interest (TAI) are developed to support the reserve when it is committed.

In planning contingencies for offensive actions of the reserve, the brigade commander considers the enemy situation and estimates the TDIS factors related to follow-on enemy echelons based on the IPB process. Then he determines which of his units will attack, where they will attack and be positioned after the attack, and what interdiction or deep attack is necessary to isolate the enemy. The commander must also consider the TDIS factors required to focus his combat power at the decisive point to defeat the desired enemy force.

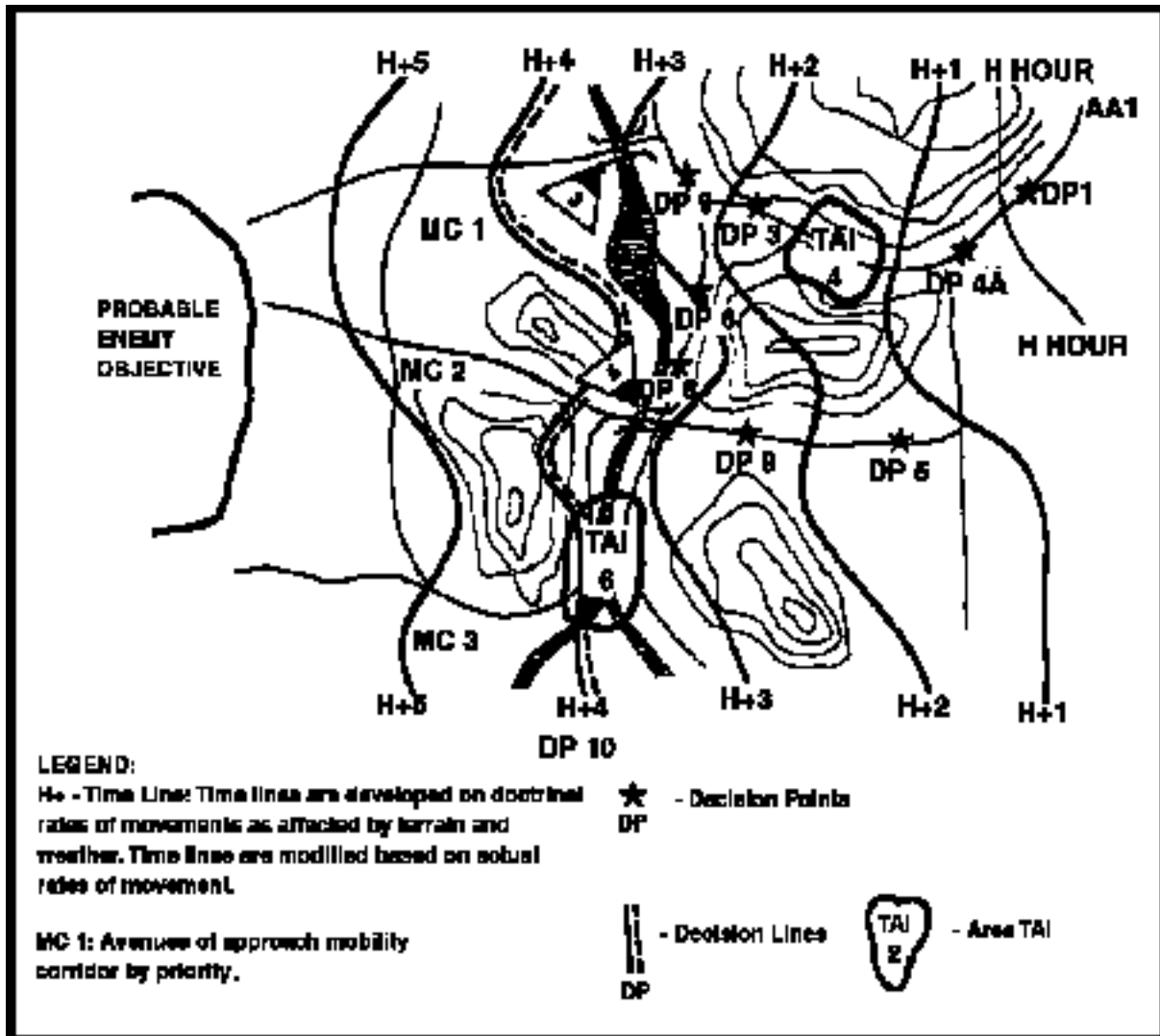


Figure 5-1. Decision points.

Although he plans for the counterattack, the brigade commander must realize that it is unlikely the action will correspond exactly to expectations. As the situation develops, the commander answers these basic questions:

- Will an attack facilitate the higher commanders intent?
- Is an attack feasible or should the reserve be employed to contain enemy success?
- When and where should the attack be executed?
- In the event of multiple penetrations, which should be attacked and which should be blocked or contained?

- Is the window of opportunity large enough to complete the counter-attack before the closure of the next enemy echelon?

The Reserve and the Spoiling Attack

At times, reserves are used in a spoiling attack role to throw the enemy preparations for the attack off stride. Basic considerations for the spoiling attack follow:

- The spoiling attack delays, disrupts, and destroys the enemy's capability to launch its attack or commit a following echelon.
- The objective of the attack is to destroy enemy personnel and equipment, not to secure terrain and other physical objectives.
- Spoiling attacks are not conducted if the loss or destruction of the force jeopardizes the ability of the command to accomplish its defensive mission.
- Mobility of the force available for the spoiling attack should be equal to or exceed that of the enemy force.
- FS assets attack available enemy reinforcements to ensure the success of the spoiling attack.

Commanders coordinate plans for counterattacks and spoiling attacks using the attack techniques discussed in Chapter 4, Offensive Operations. The spoiling attack has many of the characteristics of hasty attack and raid operations.

Reinforcing with the Reserve

In some situations, the brigade commander determines that he cannot counterattack with a reasonable chance of success. He positions the reserve to contain or delay the enemy to gain time for the employment of the reserve of the higher echelon.

The transition from a defensive posture to the offensive is not exclusively the responsibility of the reserve. A variety of tactical situations may offer the opportunity for, or even require, defending units to launch hasty or immediate attacks. Such situations include:

- Breakout from encirclement.
- Relief of encircled forces.
- Raids and spoiling attacks.
- Collapse of enemy resistance or unanticipated enemy withdrawal.

As they plan their battle, the brigade commander and staff consider how reinforcing battalions and companies will be integrated into the defensive scheme. This planning includes placement of BPs, the routes, and the command and control arrangements. Supporting engineer and MP assets must maintain route trafficability to enable timely movement of the reserve throughout the brigade sector. For the MP, this includes ensuring designated routes remain clear of dislocated civilians. Positioning and movement of reinforcements are enhanced by designating the routes and providing traffic control personnel and guides at contact points to lead reinforcements and brief them on the situation.

One way the brigade commander weights the main effort is by establishing FS priorities. Close and deep fires are synchronized with maneuver forces to disrupt and weaken the enemy's offensive action and to provide windows of opportunity for friendly offensive action. The FSCOORD uses the IPB process, full integration of intelligence gathering resources, and the TVA process to focus FS on the systems vital to the enemy's success.

Synchronization of direct and indirect fires with obstacles multiplies effects on the enemy. An obstacle is an excellent location for preplanned artillery/mortar fires and for eliminating small breaching teams. The indirect fire effects will contribute to the enemy's difficulties in attacking through the obstacle, making it

more effective and providing direct-fire systems a higher probability of kill. Only critical obstacles should be targeted. The FA battalion cannot cover all obstacles. To be effective, the FA should be massed only on those obstacles that are key to the success of the battle, and can best maximize all brigade weapon systems.

Preparation

The object of a successful defense is to know what the enemy will do before he does it. During the rehearsal, subordinate commanders explain their R&S plan; who they call upon sighting the enemy; and the specific PIR for which they should be looking. The commander decides the COA appropriate for the situation. The maneuver commanders must demonstrate their flexibility in adapting to a rapidly changing situation.

The commander rehearses the synchronization of his combat multipliers with the maneuver. The intent of the brigade commander is to practice the controlling of these assets as a single activity.

The brigade engineer and staff monitor the preparation, revise the timeline, and keep the brigade commander informed. Task force plans and overlays are checked to ensure EAs are properly developed and the commander's intent achieved. Execution matrices should reflect a clear synchronization between the obstacle intent and fires.

There is no substitute for a thorough ground reconnaissance to confirm the plan. Obstacle siting procedures confirm the linkage between fire control and obstacle intent.

Execution

The brigade commander, with key staff, normally fights the battle from the TAC CP; however, his personal presence may be required at critical points, such as battle handover from security forces or commitment of the reserve.

Because command and control facilities are more static than in the offense, emphasis must be placed on locating them in hardened areas or protective terrain and reducing electronic signature. The main CP should be located as far to the rear as possible while maintaining reliable communications with the TAC CP, deep assets, and subordinate battalions. The main CP focuses on monitoring the progress of the battle, forwarding information (higher and lower) and support requests (higher), and coordinating supporting units.

The rear CP anticipates future support requirements; it coordinates with the FSB commander to ensure continuous logistics support to enable friendly units to regain the offensive. It also focuses on continuity of support for current operations and control of brigade CSS units moving forward from the BSA. The rear CP must continuously monitor the battle and be prepared to immediately assume the role of the main CP, if necessary.

MOBILE DEFENSE

A brigade commander conducts a mobile defense if directed by his higher headquarters or it is determined as a result of his estimate of the situation and approved by his higher commander. A mobile defense is generally conducted when the enemy possesses inferior mobility, or when defending vast featureless terrain against a sizable enemy force. Likely situations when a brigade would conduct a mobile defense are when it is the assault echelon for a division or when conducting an economy-of-force role on a flank of a division or corps defense. In both situations the enemy force will most likely outnumber the friendly force as assessed over a given time period.

The brigade commander normally employs a covering force, fixing force or forward defensive force, striking force, and reserve force (if forces are available).

The covering force has the task of covering for the main body, identifying the enemy main effort, and assisting in shaping the battlefield for commitment of the striking forces. The covering force should be a self-contained force. The commander for the covering force is augmented with available FS assets as

needed to assist the brigade commander in shaping the battlefield and destroying selected deep targets. Units in the covering force must clearly understand the brigade commander's intent and what actions or events that appear to the enemy as successful. It is important for all units in the covering force to allow the enemy to move in a specific direction without a great deal of influence if the enemy is moving towards the striking forces' EAs.

The forward defense force has the task to delay and fix the enemy force for a specific time to allow the striking force time and space to maneuver. The forward defense force may consist of any appropriate force necessary to conduct delaying and fixing tasks as determined from the commander's estimate of the situation. Continuous coordination with the covering force must be maintained to ensure no enemy reconnaissance or maneuver forces bypass them and interrupt the maneuver of the striking force.

The striking force is comprised of the maximum combat power available to the commander at the time of attack. The striking force must have equal or greater combat power and mobility than the enemy. Combat power should factor in such things as surprise and include all available forces, ground and air maneuver, and FS assets (joint and combined). The striking force is a committed force and is the main effort of the brigade upon its commitment. While destruction of the enemy is normally the primary objective, other objectives may include breaking up the enemy's momentum, disrupting his timetable, or causing him to shift his forces, all of which buy time for friendly forces.

A reserve force, if available, may be employed to assist in shaping the battlefield or to destroy enemy forces that bypass the forward defense force. Attack helicopters are ideally suited to conduct a counterattack to stop an enemy penetration.

The brigade commander specifies the defensive pattern in his mission statement and ensures all tasks assigned to subordinate units support his scheme of maneuver.

Engineer assets must resource the forward defense force and the striking force. Priority of effort to the forward defense force is survivability and countermobility. Priority of effort to the striking force is mobility and then countermobility. The brigade commander designs a plan that uses obstacles to turn and fix the enemy but ensures attack routes for the strike force are clear. Aerial delivered mines should be planned to help shape the battlefield. A maneuver force element within a striking force organization may have to conduct a hasty breach and attack through a short duration minefield after the minefield has been disarmed. The brigade plans and rehearses all breaching operations to ensure no time is wasted, which may impact on commitment of the striking force.

The brigade commander retains control of the striking force and the reserve force, if designated. The brigade is the echelon conducting a mobile defense, and all other subordinate units not in the striking force conduct an area defense, strongpoint, or delay in sector for a specific time. The brigade commander provides the striking force commander with the decisive point, objective, and EAs where the enemy force is to be destroyed. The brigade commander clearly understands and articulates to the striking force maneuver commander the size and composition of penetrating enemy forces to be destroyed within the EAs. The striking force commander is provided updated information on the enemy as it moves toward designated EAs.

A mobile defense assumes risk because the defending brigade retains the majority of its combat power in the striking force or is positioned to support the striking force. The risks are twofold. First, the forward defense force is not adequate in strength to accomplish the mission alone. The success of the mobile defense depends on successful commitment and accomplishment of the assigned purpose of the striking force. Second, the enemy may not maneuver or be forced into an area where the brigade commander intended and commitment of the striking force is not accomplished.

Detailed rehearsals at brigade and battalion levels are essential to ensure all forces understand their assigned tasks and purposes, and they can execute them without detailed guidance from the commander. Communications is key to success and assets must be planned and positioned to support each transition phase without disruption.

The supplies required when conducting a mobile defense vary based on the task assigned to units within the overall scheme of maneuver. The covering force requires Class III and V (maneuver and engineer) increases to support its operations. Medical evacuation (MEDEVAC) and recovery evacuation assets may need augmentation and must be carefully planned and rehearsed to support the covering force. The defending force requires significant quantities of Class V and Class IV. The striking force requires greater amounts of Class III during the attack and Class V, maintenance, and medical support after the attack. The commander designates his priority of CSS by phase and develops a flexible plan to shift priority as the situation changes.

SECTION III. COMBINED ARMS OBSTACLE INTEGRATION

Obstacle control is a tool that commanders use to assign responsibility and to provide control for obstacle emplacement (see FM 90-7 for more information). To achieve obstacle control, commanders use obstacle control measures and obstacle effects graphics that allow a commander to graphically define the area in which subordinates can plan tactical obstacles.

OBSTACLE CONTROL MEASURES

Obstacle Zones (Division) and Belts (Brigade)

The division commander uses obstacle zones and the brigade commander uses obstacle belts to limit the area where subordinates are authorized to employ tactical obstacles so that there will be no conflict with the higher commander's plans for maneuver. Commanders draw obstacle zones and belts to give subordinate commanders maximum flexibility to use obstacles but still ensure that effect of the obstacle supports the overall plan. Obstacle control measures imply authorization to employ all types of obstacles not listed as restricted within the confines of the obstacle control measure.

Obstacle Belts

Brigade obstacle planning concentrates on the development of obstacle belts to further focus the location and effect of tactical obstacles within the brigade sector. Obstacle belts are the primary means the brigade commander uses to further control brigade tactical obstacle employment within his AO. The brigade commander designates obstacle belts within his assigned obstacle zone(s) that further define areas where battalions are authorized to employ tactical obstacles. Belts enable the brigade commander to directly link tactical obstacle effects to the brigade FS plan and the direct fire responsibilities for assigned task forces.

Obstacle belts are simply a refinement or subset of the obstacle zone in which they are planned. The area defined by the belt must not violate the boundaries of the parent zone. Obstacle restrictions imposed by the parent zone apply to all belts within the zone. The brigade commander may add restrictions to a particular belt, but they are in addition to any imposed by the division obstacle zone.

The brigade commander assigns each obstacle belt a specific obstacle effect. This gives purpose and direction to task force obstacle planning. Both the FS plan and direct fire responsibilities are brigade driven. The brigade commander must also assign specific obstacle effects to each belt to ensure obstacles within the belt complement the brigade fire plan. The commander's intent conveys the overall effect that must be achieved by fire and obstacles against a specific target within the defined belt of his task force commanders.

The brigade commander uses obstacle belts to attack the maneuver of enemy brigades/regiments. Belts are planned and allocated against brigade avenues of approach based on battalion mobility corridors. This is consistent with the brigade planning, which allocates companies against battalion mobility corridors and task organizes battalions to defeat enemy brigades.

Obstacle Groups

Task force obstacle planning focuses exclusively on establishing an inseparable union between obstacle effects and the fire plan by planning obstacle groups. An obstacle group is a collection of individual

obstacles designed and arrayed to produce a singular, specific effect on an enemy battalion-size formation. Detailed task measures and fixed company responsibilities allow the task force commander to fix both group effect and location to support his fire plan.

Obstacle Restrictions

Commanders use obstacle restrictions to limit certain types of obstacles inside an obstacle control measure. These restrictions ensure that subordinate commanders do not employ obstacles with characteristics that impair future operations. It also allows the commander to focus the use of limited assets and resources for the main effort by restricting their use elsewhere. Obstacle restrictions preclude employment of the designated type of obstacle within the obstacle control measure. Battalion commanders have the right to be more restrictive than the brigade commander; however, the battalion commander cannot lower the brigade commander's restrictions.

TYPES OF TACTICAL OBSTACLES

Tactical obstacles are used to directly attack the enemy's ability to maneuver, mass, and reinforce. All tactical obstacles produce a specific obstacle effect. They are integrated into the force's scheme of maneuver, and direct and indirect fire plans. Types of tactical obstacles are directed, reserve, and situational obstacles.

Directed

All tactical obstacles produce one of four primary obstacle effects: to block, to turn, to fix, or to disrupt (see Figure 5-2). Obstacle effects manipulate the enemy in a way that supports the commander's intent and scheme of maneuver. Obstacle effect drives integration, focuses subordinates' fires, focuses obstacle effort, and multiplies the effects of firepower. Remember that obstacle effects occur because of fires and obstacles, not just obstacles alone. The brigade commander and staff must understand the exact effects that tactical obstacles produce. Precise use of the obstacle effects are necessary to translate concepts to fire and obstacle planning.

Obstacle effect is always expressed using the standard tactical obstacle effects. The desired obstacle effect must be clear to subordinates since it provides a common expectation of the effect fires and obstacles have on enemy maneuver. The brigade commander uses standard obstacle effects graphics to convey obstacle intent to his staff and subordinates. Tactical obstacle effects are unique for each type.

Blocking

Blocking obstacles are used to integrate fire planning and obstacles to stop an attacker along a specific avenue of approach. Fire plans covering blocking obstacles are primarily oriented on stopping enemy maneuver. This effect focuses on retaining terrain and protecting the integrity of the obstacle rather than completely destroying the attacking force. The success of the blocking obstacle is measured by the impact on the enemy advance rather than enemy losses. The blocking obstacle is the most resource intensive type of tactical obstacle; commanders should use it only at critical points in the battle.

BLOCKING OBSTACLE

- VERY HIGH LINEAR DENSITY WITH DEPTH
- GREATER THAN 100% LETHALITY
- FORCES UNIT TO HALT
- DEFEATS ALL OF ATTACKING COMPANY
- DEFEATS ALL BREACHING ASSETS

TURNING OBSTACLE

- HIGH LINEAR DENSITY WITH INTERCONNECTED DEPTH
- 60-100% LETHALITY
- FORCES UNIT TO HALT OR BYPASS
- DEFEATS ALL OF ATTACKING COMPANY
- DEFEATS ALL BREACHING ASSETS

FIXING OBSTACLE

- MEDIUM LINEAR DENSITY WITH DEPTH
- 30-60% LETHALITY
- DEFEATS A MINIMUM OF ONE PLATOON TO A MAXIMUM OF TWO PLATOONS PER ATTACKING COMPANY
- FORCES COMMITMENT OF 1/3 TO 1/2 OF ALL BREACH ASSETS
- FORCES UNIT TO MOVE IN COLUMN OR BYPASS

DISRUPTING OBSTACLE

- LOW LINEAR DENSITY
- 10-30% LETHALITY
- DEFEATS A MINIMUM OF ONE VEHICLE OR A MAXIMUM OF ONE PLATOON PER ATTACKING COMPANY
- FORCES COMMITMENT OF ONE BREACH ASSET
- FORCES UNIT TO MOVE IN COLUMN OR BYPASS

Figure 5-2. Obstacles function versus lethality.

Turning

Turning obstacles are used to divert an enemy into an EA and expose his flanks. Commanders use turning obstacles within EAs to divert an enemy formation off one avenue of approach to another avenue in support of the scheme of fire. Fire control must be planned to maintain pressure on the enemy throughout the turn and exploit his exposed flank. Fire control to complement the turning obstacle must initially promote overwhelming volumes of lethal fires at the start of the turn and then maintain fires on the enemy.

Fixing

Fixing obstacles are used to focus fire planning and obstacle effort to slow an attacker within a specified area, normally an EA. Obstacles and fires are planned in depth and build with intensity to complete the enemy's destruction within the specified area. The fixing obstacle allows fires to defeat the enemy in detail or gain the necessary time for forces to reposition while inflicting maximum casualties. To complement the obstacle, the direct and indirect fire plan must:

- Cause the enemy to deploy into attack formation.
- Allow the enemy to advance within the EA.
- Make the enemy fight in multiple directions once in the EA.
- Depth, increasing intensity, and interlocking fires are all vital characteristics of fire plans covering the fixing obstacle.

Disrupting

Disrupting obstacles are used to break up an enemy's formation, interrupt his timetable, cause the premature commitment of breach assets, and piecemeal his attack. This obstacle effect may be used to separate combat echelons or separate combat forces from their logistical support. In close operations, obstacles are normally used just forward of EAs or in support of forward positions within a defensive sector. Control measures covering the disrupting effect combine obstacles and indirect fires against a portion of the enemy to break up the formation while direct fires mass against the force allowed to bypass the obstacles.

Reserve

Reserve obstacles are those for which the commander restricts execution authority (road crater and bridge). These are "on order" obstacles. The commander usually specifies the unit responsible for obstacle emplacement, guarding, and execution. The brigade commander must clearly identify the conditions under which the obstacle is to be executed.

Obstacle location is a vital component of obstacle intent since it ties the obstacle effects and target to the scheme of maneuver. Wherever possible, commanders give obstacle locations relative to maneuver or fire control measures to integrate the effects of obstacles.

Situational

Situational obstacles are obstacles that units plan, and possibly prepare, before beginning an operation; however, they do not execute the obstacles unless specific criteria are met. Therefore, units may or may not execute situational obstacles, depending on the situation that develops during the battle. They are "be prepared" obstacles and provide the commander flexibility for emplacing tactical obstacles based on battlefield development. For further information see FM 90-7.

The primary tool used for countermobility by the force are mines and wire. The mines that are employed by divisional combat engineers are conventional and scatterable mines. For detailed information see FM 20-32. The FASCAM systems are:

- Area denial artillery munition (ADAM) (M731) is an artillery-delivered, AP mine activated by deployed tripwires. A single M483, 155-mm howitzer shell dispenses 36 ADAM mines.
- Remote antiarmor mine (RAAM) (M741) is an artillery-delivered antiarmor magnetically activated by passing vehicles. A single M483, 155-howitzer round dispenses 9 RAAMs.
- Gator (CBU-89/B) is a tactical-fixed-wing-delivered, AP and AT mine system activated by both tripwire and magnetic influence. A single CBU-89/B load will cover an area of 200 by 650 meters.
- Volcano (M87) is a modular mine delivery system for rapid dispensing of AP and AT mines from a five-ton dump truck, the UH-60 helicopter, and the M548A1 tracked cargo carrier. A single Volcano load of 960 mines can produce a minefield 1,110 meters by 120 meters wide.
- The modular pack mine system (MOPMS) is a man-portable, 162-pound, suitcase-shaped mine dispenser that can be emplaced anytime before dispensing mines. When dispensed, 21 (17 AT and 4 AP) mines are propelled in a 35 meter semicircle to the front of the container.

Obstacle Integration

Obstacle integration creates an inseparable link between fires and obstacles. Neither fires nor obstacles employed by themselves can match the effectiveness achieved by both when they are integrated. Fire control and obstacle planning combine to achieve the commander's intent. Commanders must establish their obstacle intent concurrent with organizing and developing the fire plan. Each component of obstacle intent directly impacts on the fire plan. Fire control measures are required to maximize obstacle effect.

Obstacle planning does not drive fire planning. Both obstacles and fire control measures must be planned, adjusted, and executed to meet the commander's intent. Each tactical obstacle effect produces a unique result on enemy maneuver and demands unique fire control. The relationship between obstacle effects and fire control must be understood by all echelons.

SECTION IV. BRIGADE COVERING FORCE OPERATIONS

PLANNING

A brigade may be given a defensive covering force mission when the division has sufficient resources and the intent of the commander is to influence and shape the battlefield forward of the MBA. Covering force operations may run the spectrum from a division cavalry squadron conducting a screen, to a reinforced squadron conducting a guard, to a brigade-controlled element operating independently as a covering force.

A brigade given a covering force mission may consist of the division cavalry squadron, three to five armored or mechanized battalions, and an attack helicopter battalion (see Figure 5-3). This organization is responsible for inflicting casualties forward, but not to the point of discouraging the enemy from attacking according to its plan. It is important that the covering force shape the battle so that the forces in the MBA can complete the final destruction of the enemy.

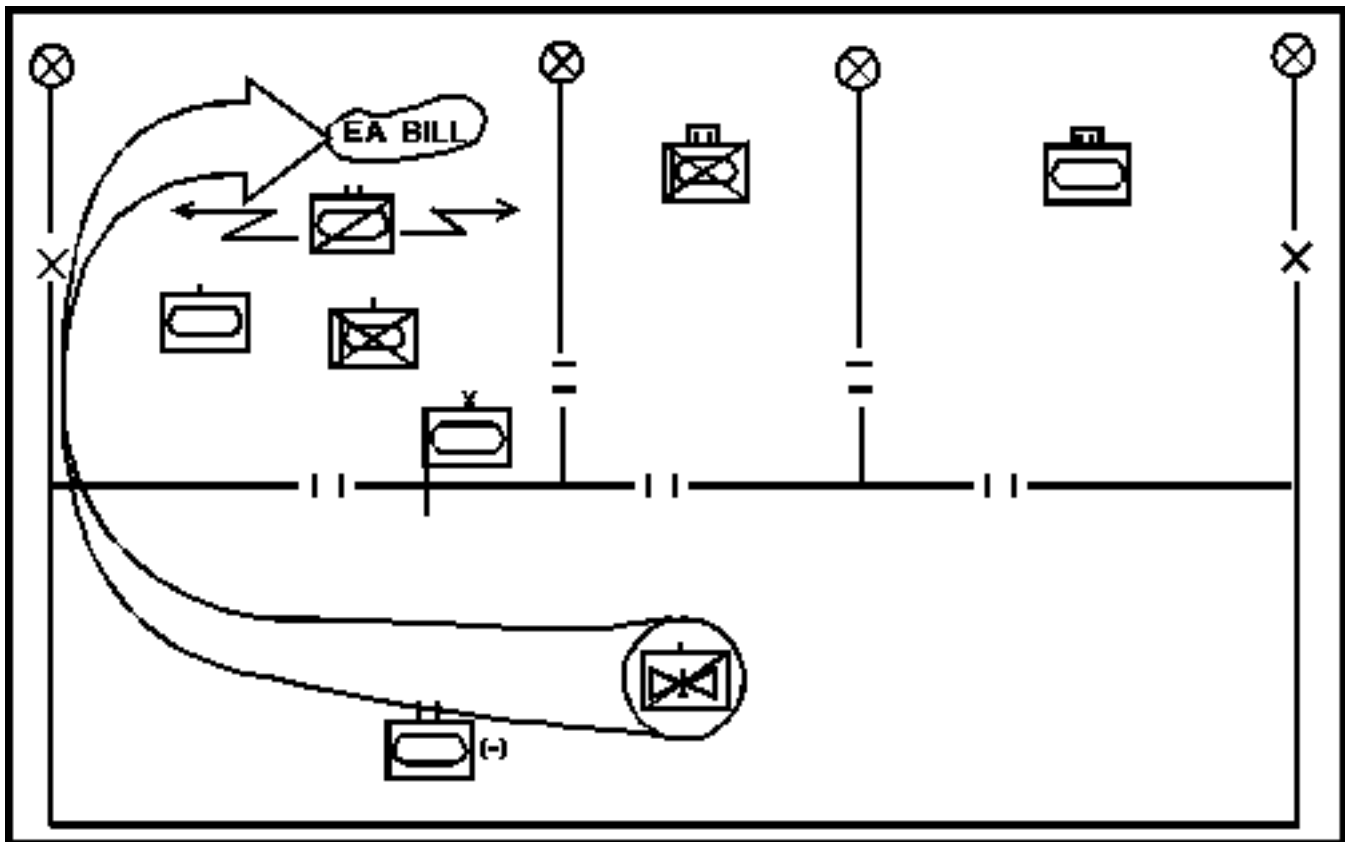


Figure 5-3. Example brigade defensive covering force plan.

The IPB for the covering force operation is extremely important, as the division commander wants to identify the enemy's main effort and location of follow-on forces for the brigades in the MBA. The actual IPB planning is accomplished as it would for defensive operations; however, the S2 has to concern himself with more avenues of approach and a larger number of enemy forces. The S2 plans his IPB with the assistance of the division cavalry squadron and attack helicopter battalion S2s, who may have their own specific intelligence needs. They are used to work in operations with a divisional scope. They may provide valuable input in terms of the special considerations inherent to covering force operations of which the brigade S2 (as an MBA player) may not be aware.

The brigade FS plan is essential to the commander and his projection of firepower to the enemy in depth. In particular, he wants the FS plan to separate enemy echelons so that they can be defeated one at a time. Further, along the axis of the enemy's secondary effort, FASCAM and interdicting fires are planned to complete the enemy's loss of momentum. The actual planning and coordination of the fire plan occurs as for any brigade defensive operation with one exception: the artillery will not only accompany the covering force but also fire exclusively in its support. Therefore, the FS plan is prepared with more certainty in terms of the amount, timeliness, and sustainment of fires.

The obstacle plan is developed concurrently with the FS and maneuver plans. Given the frontage in which the brigade must operate, the ability of the engineers to construct barriers is limited to carefully selected targets designed to enhance the effect of both direct and indirect fires. Larger obstacles designed to turn and shape the enemy's maneuver simply may not be possible unless the brigade receives large amounts of engineer support.

The brigade S4 and the FSB commander must be prepared to support the covering force forward of the MBA. However, due to the fluidity of the operation and the knowledge that the covering force conducts a rearward passage of lines at the completion of the mission, CSS assets remain mobile so as not to impede the movement of the covering force. To accomplish this, the BSA consists of only those essential activities determined by the FSB commander within the guidance of the brigade commander. This lighter and more mobile FSB should be oriented on evacuation of casualties and damaged equipment, resupply of Classes III and V, and to a limited extent, vehicle and weapon maintenance. Coordination is made with the support systems of MBA brigades to augment the evacuation of casualties and vehicles through AXPs and UMCPs, which are positioned where the depth units can assist in the evacuation.

Much of the command and control of the covering force battle is decentralized due to the distances covered and the decisions each battalion task force or squadron commander (SCO) is required to make during the operation. The brigade commander wants to position himself and the TAC CP in the sector adjacent to the enemy's main effort, as this is the most critical area of the battlefield. The S3 observes the enemy's secondary effort and ensures that he maintains communication with the brigade commander. Due to the lack of an additional headquarters element to accompany the S3, he collocates with the battalion task force or squadron main CP. In this manner, he ensures communications with the brigade main CP and the TAC CP without degrading his mobility.

PREPARATION

The commander ensures that his intent is understood and that his subordinates can execute as a team without further guidance. He ensures that he controls the operation and maintains flank coordination through every phase. He rehearses the synchronization of the counterattacks and engagements in main kill zones. He checks the TDIS analysis against the DST to ensure that his forces can arrive at the decisive point of the battle at the correct time. In particular, he exercises the execution of brigade priority targets and reserve demolitions to ensure that they contribute to the effectiveness of the plan as desired. Finally, the commander reviews the coordination necessary to effect the rearward passage of lines at the completion of the operation.

The covering force reserve, whether ground or air, rehearses how it plans to maneuver to each sector. This determines if there are any conflicts between the obstacle plan and the counterattack plan. Similarly, the air routes used by the attack helicopters should be checked against the FS and air defense plans. Airspace coordination measures should be coordinated through the division A2C2 element in the division TOC.

The brigade S4 and FSB commander conduct a CSS rehearsal coincidentally with the maneuver rehearsal. The ability of the support elements to sustain the force during combat is essential to the success of the operation. In particular, the support players verify that the MSRs and lateral supply routes remain unencumbered by the obstacle plan and that support elements reach each maneuver element. Prestocks and LRPs should be checked against BP locations. Linkage with CSS elements from the MBA should be checked to ensure coordination is complete. If possible, representatives from the MBA attend the rehearsal.

EXECUTION

As the enemy's reconnaissance elements reach the CFA, they are engaged and destroyed by the battalion task forces and cavalry squadron. Whether their mission is to defend or delay, it is essential to blind the enemy divisional commanders by stripping away their ability to collect information. The commander closely monitors the front line trace of the covering force to ensure that his subordinate commands maintain flank coordination throughout the operation. In particular, he ensures that the battle is being shaped according to the plan. Therefore, in the center and right sectors where the battalions have been given a defend mission, he must be prepared to divert assets to augment their lethality. In this regard, the ground reserve must be prepared to block enemy penetrations or reinforce the defensive positions while attack helicopters may be called forward to inflict casualties in the depth of the EA.

As the covering force moves closer to the MBA, the brigade commander coordinates with his counterpart brigade commanders. The main CP and TAC CP collocate with the MBA brigade CPs in preparation for the rearward passage of lines. Maneuver elements from the MBA are alerted to cover the rearward passage of the covering force, and a battle handover line (BHL) is confirmed. The covering force fights and withdraws to positions within the protection of the MBA forces. At this point, massive combined arms fires should be brought to bear against the lead enemy elements. This temporary enemy paralysis should allow the complete passage of the covering force, free of significant enemy pressure and the intermingling of forces.

The artillery plan is executed in the same manner as in a defense or delay. A significant difference is that as the covering force moves closer to the MBA, the covering force fire support officer coordinates with the MBA brigade FSO for positioning of the covering force's DS battalions.

The covering force engineer monitors the operation, paying special attention to the execution of target turnover and brigade reserve demolitions. In particular, he advises the commander during the course of the battle concerning techniques to further slow enemy momentum if required. For example, he coordinates with the brigade FSO for the emplacement of ADAMs/RAAMs and with the S3 to ensure the obstacle is covered by fire. As the force moves closer to the MBA, obstacles take on increasing importance in helping the covering force maintain separation from the enemy. If the BHL is placed along a natural obstacle, such as a river, prepared bridge demolitions or armored vehicle launched bridge (AVLB) or heavy assault bridge (HAB) crossings sites should be monitored to ensure their execution following the crossing of the last maneuver element. Subordinate commanders report execution to the covering force main CP so that the brigade commander can verify the safe crossing of his maneuver elements and the inability of the enemy to maintain pressure.

The brigade S4 continually coordinates with the FSB commander to ensure that CSS operations are executed according to plan. He coordinates with the engineers to monitor the road conditions and the status of any bridges and coordinates for the implementation of on-order MSRs or other alternate routes depending on the situation. He also keeps abreast of the expenditure of Class III and Class V and of emergency resupply vehicles moving to units heavily involved in combat. As the covering force nears the MBA, the S4 also coordinates with the MBA brigade S4s. The control depends on the ability of recovery and evacuation assets to tow disabled vehicles to the rear and to keep the egress routes open. Assets from the MBA may assist in this effort, freeing the brigade's equipment for use in the forward area of the covering force battle.

SECTION V. US NIGHT DEFENSIVE DOCTRINE

PLANNING AND PREPARATION

As in all night operations, the night defense takes more time, detailed planning, preparation, rehearsals, and coordination than daylight operations.

ADVANTAGES AND DISADVANTAGES

The advantages and disadvantages of a defensive operation at night are parallel to those identified for night offensive operations in Chapter 4.

TACTICAL PLANNING CONSIDERATIONS

The following is a list of tactical planning considerations, by BOS, that are different for a night offensive operation when compared to a daylight offensive.

Intelligence

Assign scouts to assigned smaller, critical areas to observe, such as NAIs and TAIs.

Coordinate all reconnaissance activity in detail. This precludes friendly fire and fratricide between subunits. The FSO must also monitor calls for fire to prevent one unit from engaging another.

Increased use of remote sensors and GSRs covers areas no longer visible at night.

Maneuver

Security operations by all units is the key to maintaining the integrity of the defense. Night amplifies the defender's vulnerability.

Rehearse moving in darkness.

Set an observation plan for each EA, delineating what number and mix of observation devices are used.

Fire Support

Plan and support counterbattery fires to take away the use of illumination.

Survey and register final protective fires (FPF) in daylight.

Centralize authority for the use of illumination by weapon type and duration.

Smoke magnifies the effect of darkness on the attacker's formations and on his image intensification devices.

Adjustment of fires is inaccurate if only visual means are employed.

Mobility and Survivability

FASCAM is more effective at night; it can be emplaced rapidly and is difficult to spot.

Increase engineer work time as light decreases.

Provide engineers with security forces at night.

Sound travels farther at night. Use sound to deceive or cover by artillery fire.

Air Defense

Give assets point (critical) targets to defend, rather than area targets.

The pairing of systems with IFF capability with those that do not have it allows both systems to engage targets.

Combat Service Support

The threat to rear areas increases at night; therefore plan CSS accordingly.

Rehearse MEDEVAC routes in the dark.

Class I served between 0200 and 0400 hours counters the physiological "low" of the body.

Plan increases in supply rates for flares, illumination rounds, batteries, light sticks, smoke pots, wire, and general ammunition in advance.

Command and Control

Control measures are usually more restrictive at night. These include routes to and from BPs, light lines, and no-fire zones.

Wire is the preferred communications method, followed by messenger, radio, visual signals, and event-oriented plans.

Communications plans for recon teams must be rehearsed prior to sending personnel and equipment out. Use GSRs to vector moving units, such as patrols, LPs/OPs, and scouts.

CHAPTER 6 OTHER TACTICAL OPERATIONS

CONTENTS
Section I. Linkup Operations
Section II. Relief in Place
Section III. Passage of Lines
Section IV. Retrograde Operations
Section V. Breakout from Encirclement
Section VI. Rear Operations
Section VII. River Crossing
Section VIII. Approach March

Other tactical operations encompass a wide range of special purpose operations undertaken routinely during offensive and defensive operations. While not the main focus, these other tactical operations must be synchronized.

SECTION I. LINKUP OPERATIONS

GENERAL

Linkup operations to join two or more friendly forces are conducted to:

- Complete the encirclement of an enemy force.
- Assist breakout of an encircled friendly force.
- Join an attacking force with a force operating in the enemy's rear area.

FORMS OF LINKUP

Regardless of the purpose of the linkup, in execution, the operation takes on one of two forms:

- Linkup of a moving force and a stationary force.
- Linkup of two moving forces.

Linkup of a Moving Force with a Stationary Force

To ensure the forces join without engaging one another, linkup points are selected at locations where the axis of advance of the linkup force intersects the security elements of the stationary force (see Figure 6-1). These points must be readily recognizable to both forces. Alternate points are chosen in the event enemy activities cause linkup at places other than those planned. The number of linkup points selected depends on the terrain and number of routes used by the linkup force. Personnel in the linkup force must be thoroughly familiar with mutual identification procedures and plans for rapid passage of lines. Stationary forces assist in the linkup; they open lanes in minefields, breach or remove selected obstacles, furnish guides, and design assembly areas. Use of a common radio frequency enhances coordination and responsiveness between executing forces.

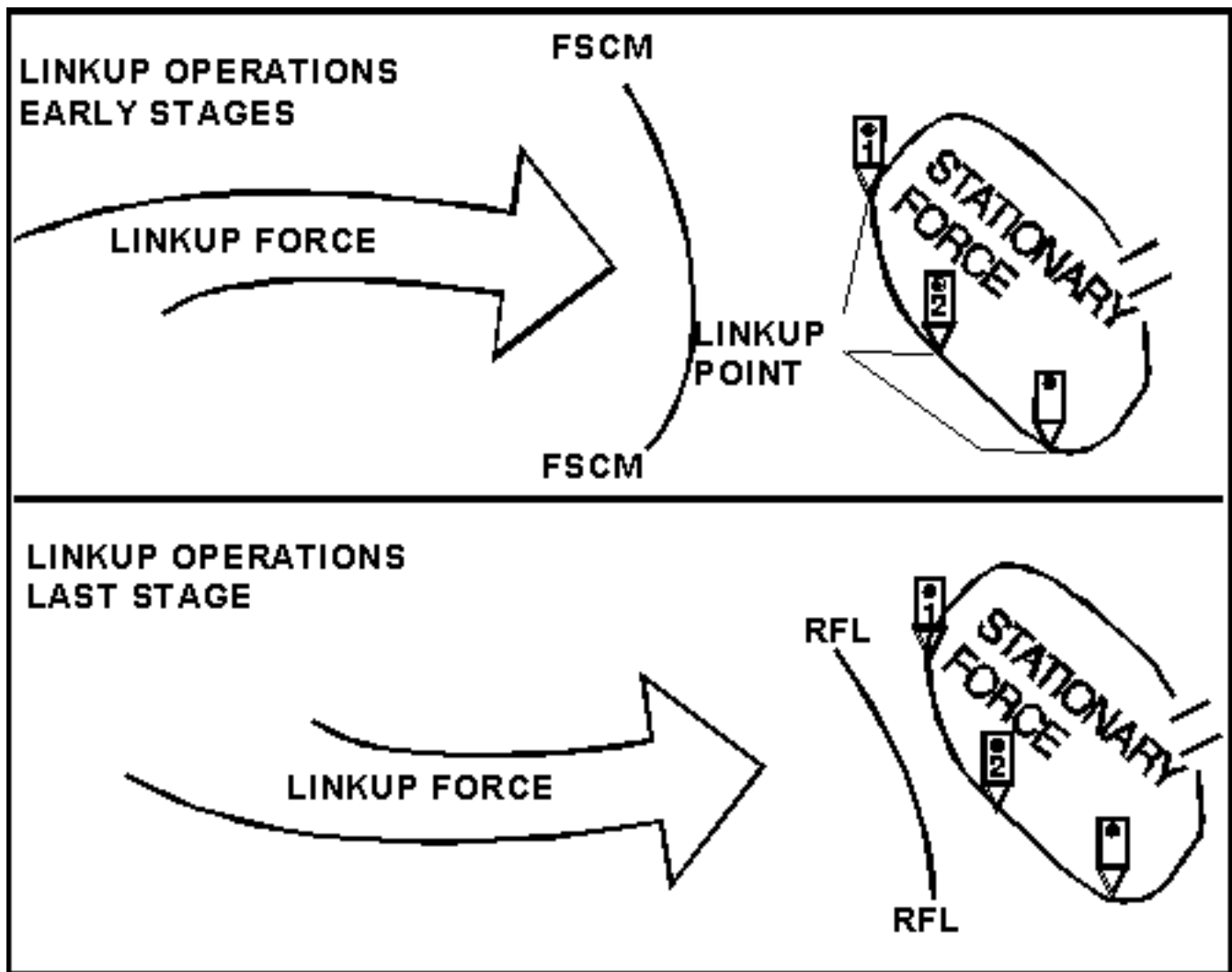


Figure 6-1. Linkup of a moving force and a stationary force.

Linkup of Two Moving Units

Linkup between two moving units is one of the most difficult operations (see Figure 6-2). It is normally conducted to complete the encirclement of an enemy force. Primary and alternate linkup points for two moving forces are established on boundaries where the two forces are expected to converge. As linking units move closer, positive control must be coordinated to ensure they avoid firing on one another and to ensure the enemy does not escape between the two forces. Leading elements of each force should monitor a common radio net.

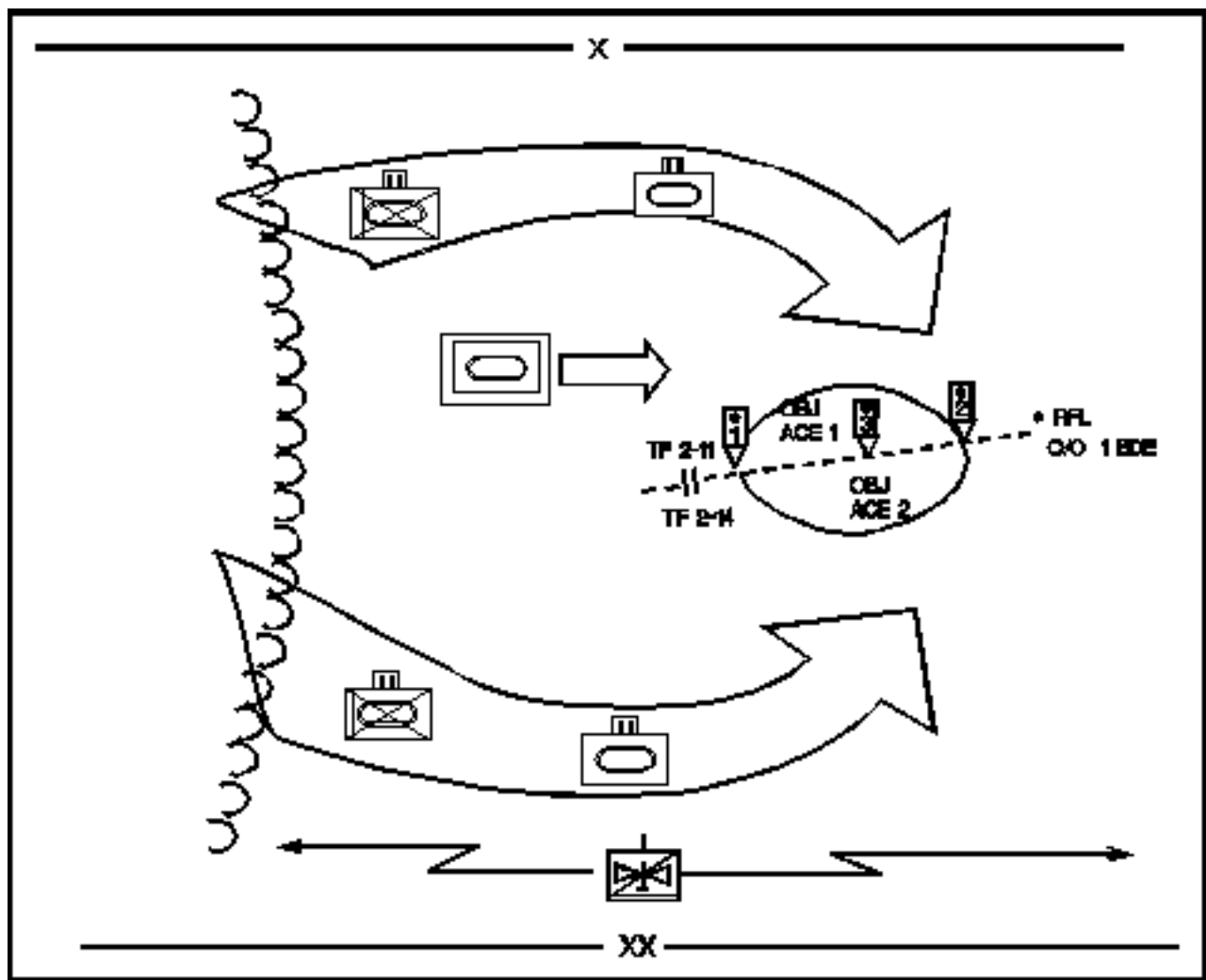


Figure 6-2. Linkup of a two moving forces.

Actions Following Linkup

When the linkup is made, the linkup force may join the stationary force or may pass through or around to continue the attack. If the linkup force is to continue operations with the stationary force, a single commander for the overall force should be designated. Plans for these operations must be made in advance. If the linkup is made under conditions of nuclear warfare, objectives for the linkup must provide for dispersion in relation to the stationary force. The linkup force may immediately pass through the perimeter of the stationary forces, be assigned objectives within the perimeter, or be assigned objectives outside the perimeter, depending on its mission.

When a brigade directs a linkup operation, it normally establishes a restrictive fire line (RFL) for both forces. RFLs are adjusted as one force moves toward the other until one RFL is established between the forces when necessary, usually at the point where the two forces plan to establish contact.

PLANNING

The linkup is a complex operation requiring detailed planning and coordination. The following paragraphs describe the importance of planning the linkup.

Plans for a linkup are coordinated as far in advance as possible. The two forces carefully define and coordinate their schemes of maneuver with particular attention given to graphic control measures and the

subsequent mission to be performed by each force after linkup is complete. Alternate linkup points are planned to provide needed flexibility.

- Liaison is normally established during planning and continues throughout the operation. As the distance closes between the forces, the requirement to maintain close liaison increases. Use of aircraft can improve and expedite this coordination.
- Linkup operations frequently require a passage of lines. Once through the friendly lines, the brigade moves out as in an exploitation to effect the linkup. The action is characterized by speed, aggressiveness, and boldness. Enemy forces that threaten the successful accomplishment of the mission are destroyed. Others are bypassed and reported. If possible, the linkup force avoids interference with its mission and concentrates its efforts on completing the linkup. (For a complete discussion of passages of lines, see Section III of this chapter.)

The headquarters directing the linkup operation must establish command relationships and responsibilities of the forces involved. Both the linkup force and the force with which linkup is to be made can remain under control of the directing headquarters.

The communication plan includes the channels for radio communication between the two forces. It must prescribe day and night identification procedures, including primary and alternate means. Aircraft can be used to extend communications range. Visual signals such as flares or panels may be used during daylight, and flashlights or infrared devices may be employed during darkness.

To prevent friendly troops from exchanging fires, recognition signals must be established. They may be pyrotechnics, arm bands, vehicle markings, panels, colored smoke, distinctive light patterns, and passwords.

Logistical support requirements may be greater during linkup operations than during other offensive actions. Additional considerations for planning logistical support in linkup operations include:

- Distance to the objective area.
- Time the objective area is to be held.
- Planned operations or movement out of the objective area.
- Resupply of the stationary unit.
- Movement of support assets of airborne or air assault units involved in the linkup.
- Whether brigade LOC will be secured by follow-on units.

Supply requirements for a linkup operation may exceed the transportation capability of the brigade. The brigade may have to request additional vehicles or resupply by air.

In linkup operations with airborne and air assault units, priority for supply by air is given to the units assaulting the objective area. Supplies for the linkup forces normally move by land transportation. However, when the objective area is to be defended jointly by the linkup and airborne or air assault force, supplies for the linkup force may be flown into the objective area and stockpiled.

Evacuation of equipment and EPWs may create major problems for the linkup force. If supply routes are open, the normal evacuation procedures apply. When ground routes are not secure, helicopters may be used for evacuation of wounded while damaged equipment may be moved forward with the linkup forces until a suitable opportunity for evacuation is available.

PREPARATION

Due to the time-sensitive nature of the operation, the commander issues his order and attempts to at least walk the battalion task force commanders through the operation. He particularly stresses the linkup and the coordination required to effect the linkup without confusion. Moreover, he ensures that each battalion commander is prepared to respond to an enemy meeting engagement or attack coincidental to the linkup.

The brigade commander's major concern is that his subordinate commanders do not lose sight of their objective - the linkup.

The brigade FSCOORD ensures that the counterpart force in the linkup operation, whether moving or stationary, has the FS plan. Specifically, he ensures all FSCMs are completely understood by both forces. Further, if these control measures are moved during the operation, the conditions and signals under which the change takes place must also be coordinated.

The trains organize as for any offensive operation; however, as mentioned earlier, they carry additional supplies and materiel if the force with which they are conducting the linkup has been encircled. Generally, this includes Classes I, III, V, and VIII items. The brigade S4 also ensures that each battalion task force understands the MSR and alternate MSR plan, to include traffic control. In particular, he pushes as much materiel forward as possible during the operation. This is because the brigade will expend resources during the attack and any other mission that may occur after the actual linkup.

EXECUTION

The initial conduct of the linkup is identical to a movement to contact or deliberate attack, depending on the enemy situation. As the brigade begins its maneuver, it attempts to establish and maintain contact with its corresponding friendly force. Each force monitors the progress of the other, making adjustments to the plan as necessary. For example, if the linkup force is unable to travel at a speed commensurate with the plan, yet the breakout force is making a very rapid advance, the location of the linkup point may be moved closer to the linkup force. Similarly, the FSCM is also moved.

As the two forces draw closer, the battalion task forces are advised by the brigade. If possible, the battalion task forces in turn also attempt to establish contact on a predesignated frequency to control the actual linkup. At this point, the momentum of the operation slows to help prevent fratricide. The tradeoff may be that some enemy forces may slip between the two closing forces. Coordination signals are then used to identify each force as they approach the linkup point.

FSCMs are changed or emplaced based on the progress of the forces and the enemy situation. Specifically, the CFLs are canceled. An RFL is also placed into effect to prevent fratricide between the converging forces. Once the linkup has occurred, the FS for the brigade and its linkup force is organized as per the higher headquarters plan for future operations.

The commander positions himself to observe the progress of the operation. Generally, this means that he follows the lead battalion task force. If a particular flank is of concern during the operation or a supporting attack is required to penetrate the enemy's lines, then the brigade S3 places himself where he can observe the brigade's secondary action. The commander and S3 must remain in communication throughout the battle, using the main CP, if necessary, to relay messages. In particular, the commander must maintain the tempo of the operation, because once the force becomes stalled, it is very difficult to get it moving again. Therefore, he must have the ability to move forward from time to time to spur on his lead element.

The commander also monitors the action to ensure control measures that he established in planning the operation are still valid. He issues a FRAGO for changes as necessary. He attempts to remain in communication with his counterpart commander throughout the operation.

SECTION II. RELIEF IN PLACE

GENERAL

A relief in place is an operation in which a unit is replaced in combat by another unit. The responsibilities for the combat mission and the assigned sector or zone of action of the replaced unit are assumed by the incoming unit. A relief in place may be conducted during offensive or defensive operations and during various combat and OOTWs and during all weather and light conditions. The primary purpose for a relief

in place is to maintain the combat effectiveness of committed elements and should be conducted during a lull in combat if possible. A relief in place may be conducted to:

- Introduce a new unit into combat.
- Reconstitute a unit.
- Allow a unit to rest.
- Decontaminate a unit.
- Change the mission of a unit.
- Replace a peace enforcement unit with a peacekeeping unit.

PLANNING

Considerations for a relief in place are

- Units are normally relieved at night or during periods of limited visibility.
- Detailed prior reconnaissance by the incoming unit is essential.
- The incoming unit must fit into and accept the general defense plan of the outgoing unit until passage of command.
- Normal patterns of activity should be maintained.
- CS and CSS units normally should not be relieved at the same time as the units they support.

When a unit relieves another unit in place, the WO to the incoming unit must specify, as a minimum, the time for commencing and completing the relief and the priorities for use of routes involved. The two units conducting the relief must agree on procedures for accomplishing the items listed in the following paragraphs.

Exchange of Plans and Liaison Personnel

The incoming brigade commander and staff must be briefed and become thoroughly familiar with existing defensive plans. The outgoing brigade leaves liaison personnel with the incoming brigade. These personnel usually remain until the incoming units become familiar with the situation.

Sequence of Relief

The relief in place is executed by stages, either rear to front or front to rear. In determining the sequence of the relief, both commanders should consider the

- Subsequent mission of the brigade conducting the relief.
- Strength and combat efficiency of the brigade presently in place.
- Capability of the enemy to detect and react against the relief.
- Characteristics of the AO.

Passage of Command

The time or circumstances under which the incoming commander assumes responsibility for the area must be clearly established by both commanders. During the relief, the outgoing commander retains responsibility for the area and mission and exercises OPCON over all subordinate elements of the incoming brigade that have completed their portion of the relief. Responsibility passes to the incoming commander when all the battalions in the forward defense area have been relieved and adequate communications have been established.

Reconnaissance

Commanders and staff officers of all echelons of the incoming brigade conduct a thorough daylight reconnaissance.

A relieving unit reconnaissance element should include the brigade commander, the S3, S2, an LO, the FSO, battalion commanders, the S1/S4 party, and at least a tank or mechanized platoon for a security force. The relieved force commander should initially select at least two routes and contact points for the incoming unit. The incoming unit's reconnaissance and liaison element with the TOC and trains must move to the relieved unit's location immediately upon receiving the order from higher headquarters.

Security

All echelons of the incoming and outgoing units must prevent the enemy from learning that a relief is taking place. In addition to conducting the relief during periods of reduced visibility, the following security measures should be taken:

- Restrictions on the size of advance parties and reconnaissance parties must be enforced.
- Communications during the relief are conducted on the command frequency of the outgoing unit until the relief is complete.
- OPSEC is maintained throughout the operation.

Movement Control

Arrangements must be made between the incoming and outgoing units for control of units moving into and out of the area. Coordination must include:

- Routes to be used and priorities for their use.
- Responsibility for traffic control.
- Location of assembly areas.
- Common use of transportation, if necessary.

If terrain and road network allow, relieving and relieved units should be assigned separate routes and assembly areas to reduce congestion and to minimize massing of combat power. See Figure 6-3 for relief in place overlay techniques.

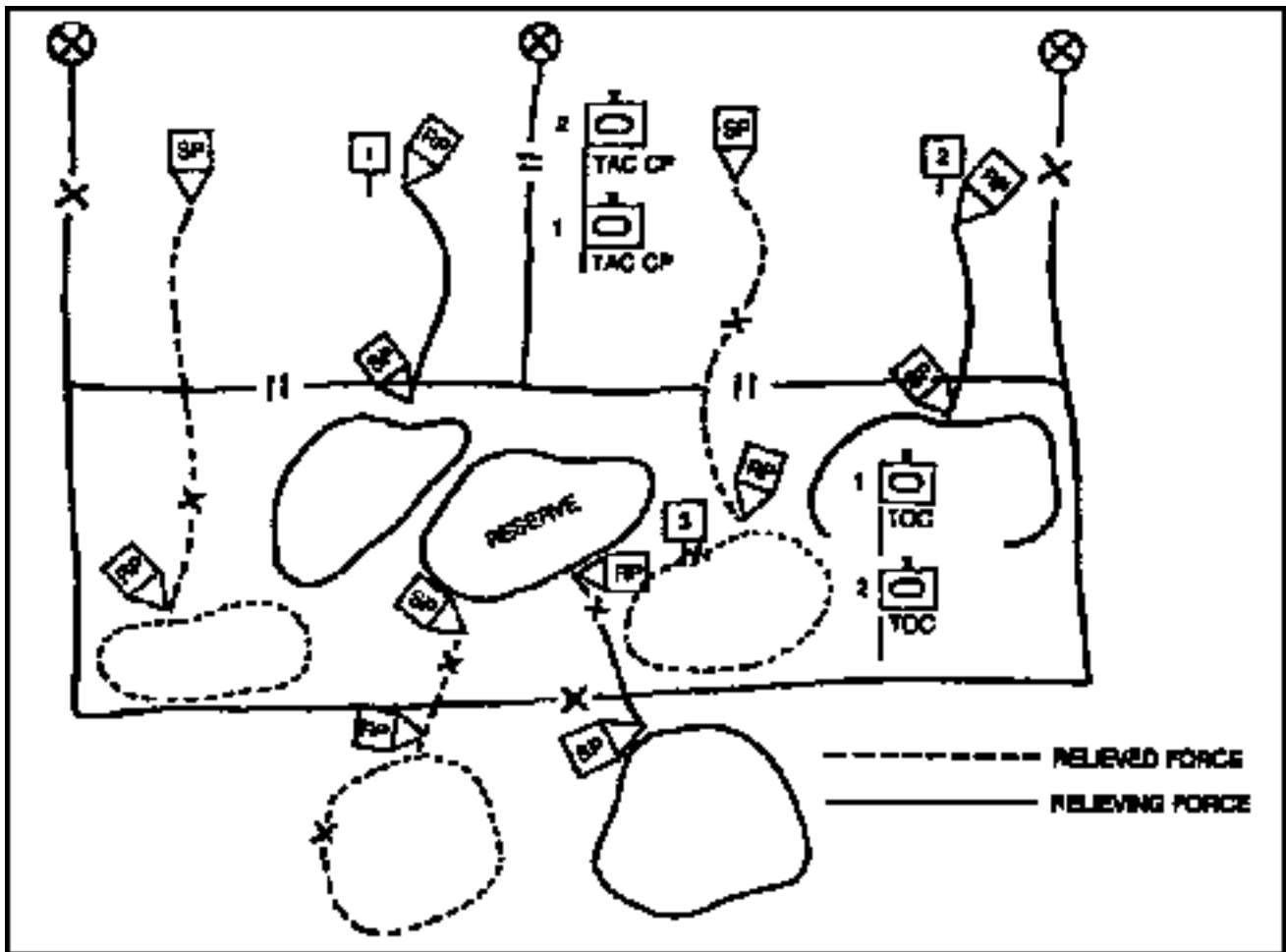


Figure 6-3. Brigade relief in place overlay.

The method of relieving FS units must be clearly established by the two FSCOODs. Normally, the FS units of the outgoing unit remain in position until the units in the forward defense have been relieved. By using this procedure, FS units that are familiar with the FS plans and the area are in position to fire during the critical period of the relief of forward units. Once FS plans are passed and coordinated, OPCON is not transferred until the maneuver unit is in place and has control.

Similar to a linkup operation, units coordinate information on obstacle intelligence and other engineer related intelligence. The brigade engineer becomes familiar with the existing defensive plans and considers making adjustments based on the subsequent mission. He makes plans to conduct a reconnaissance of the area and confirm the location, status, and integration of tactical obstacles.

In addition to conducting the relief of air defense assets in sector, the primary mission of ADA units is to provide increased coverage over all primary relief routes in sector. These tasks are accomplished jointly, and actual relief of ADA units is not scheduled until the relief of all maneuver units has been accomplished.

CSS relief is just as complicated as the tactical relief and requires the same degree of detailed planning; however, CSS relief probably occurs before the combat units execute to allow the relieved unit's FSB an opportunity to establish operations in preparation for the relieved unit's recovery. Therefore, the same considerations and operations apply to the brigade's CSS.

Rear CPs and FSB CPs of each unit collocate as do the CPs for each battalion's field trains. Some supplies are transferred to the relieving FSB (such as ATP stocks [main gun ammunition], engineer materiel, and possibly Class I [T-rations]). The factors of METT-T are examined to determine if the

relieving FSB can occupy an adjacent position or must use the existing support locations. Separate routes are coordinated by the relieving and relieved units to avoid two-way traffic

PREPARATION

A relief is executed in stages to ensure the most effective defense during the relief. As an example, reserves may be relieved first, followed by relief of forward elements. Normally, when minimum forces are employed on the FLOT, the relief is conducted from rear to front; when maximum forces are employed on the FLOT, the relief is conducted from front to rear. In determining the sequence of the relief, commanders should also consider:

- Strength and condition of elements in the relief.
- Subsequent missions of relieved and relieving units.
- The enemy situation and the capability of the enemy to detect and react against the relief.
- Characteristics of the AO.
- The need to vary the pattern of relief.

When sequence of relief has been determined, the commander then selects the method of relief for forward units. His choices include:

- Relief of the first of two forward task forces, to be completed before relief of the third task force, begins when two task forces are employed forward.
- Relief of two flank task forces simultaneously followed by the center task force when three task forces are employed forward.
- Relief of the center task force followed by the simultaneous relief of the flank task forces when three task forces are employed forward.
- Relief of all forward task forces simultaneously.

In analyzing these methods, the commander should consider:

- The enemy situation and capability of the enemy to detect and react against the relief.
- The characteristics of the AO.
- The time available for accomplishing the relief.
- The acceptable degree of concentration of forces.

Generally, simultaneous relief of all elements is the fastest option; however, it is also the least secure and the most difficult to control. Sequential reliefs involve only one element at a time; they are the slowest and most secure method and also the easiest to control. When relieving an element in a hide position, the incoming unit should occupy an adjacent position, if possible.

Because of the difficulty in accurately laying weapons at night, commanders of the incoming and outgoing units arrange for the mutual exchange of crew-served weapons that cannot be easily moved or that can, when necessary, ensure the effective delivery of fires. The exchange is on a weapon-for-weapon basis. The authority for this exchange is included in the relief order of the next higher commander. Intelligence and obstacle overlays are posted and disseminated. Further exchange of target folders, status of obstacles, emplacement of conventional and scatterable minefields, and reports of enemy minefield emplacement must be accomplished.

Figure 6-4 depicts radio nets employed during the relief.

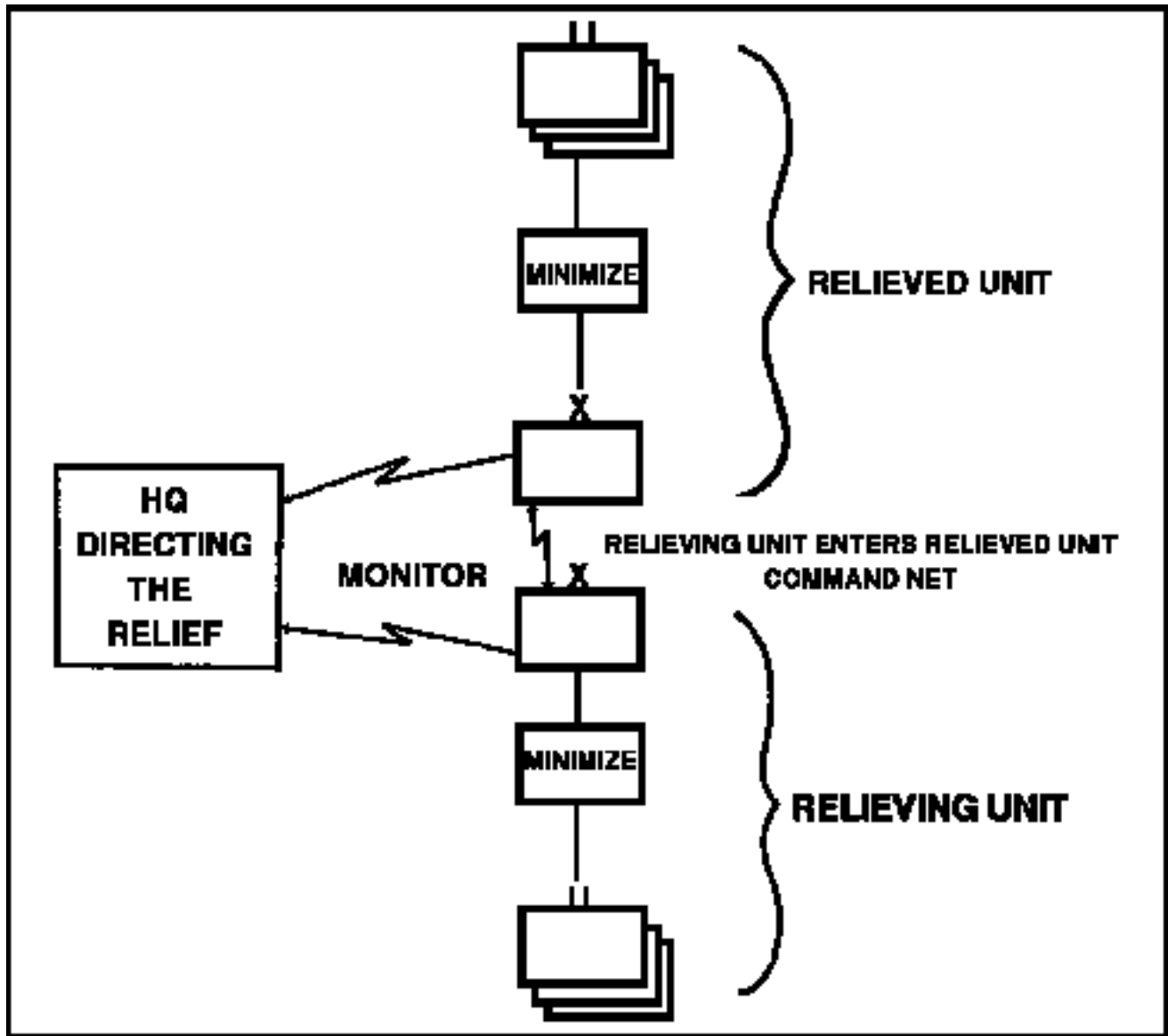


Figure 6-4. Radio net for a relief in place.

EXECUTION

During the relief, commanders at each echelon are together at the CP or OP of the outgoing unit. The incoming unit commander assumes responsibility for the defense when the majority of his unit is in position (or as agreed upon by the two brigade commanders) and command and control systems are established, at a time previously designated by the next higher commander. All units in position, regardless of their parent organization, come under the OPCON of the present commander if the sector comes under attack.

To limit confusion inherent in a relief and to avoid excessive massing, adjacent teams of task forces are not normally relieved at the same time. Elements of the outgoing battalions leave the area as soon as they are relieved and control is established.

Generally, the brigade does not permit battalions to designate assembly areas for units larger than company size. These company assembly areas are, in turn, separated as much as possible to minimize vulnerability to enemy fires. Delays within assembly areas are avoided by precise planning, timing, and execution.

In the conduct of the relief, mechanized infantry dismounts far enough to the rear to avoid compromising the relief and move forward to effect the relief on foot. The carriers move forward after completion of the relief by dismounted troops. Outgoing mechanized units exfiltrate carriers prior to relief, providing such action does not compromise the relief; otherwise, the carriers of the outgoing units do not move until the relief is completed.

At the brigade level, the relief is managed through the reports of the battalion task forces. Specifically, the main CP monitors the progress of each battalion task force, recording when each battalion has transferred command and when the relief is complete.

During the conduct of the relief, enemy contact is possible. If a relieved or relieving unit gains contact with an enemy force, it immediately notifies the other unit and the higher headquarters directing the relief. If command has not passed, the relieving unit comes under OPCON of the relieved unit, is absorbed into the relieving unit's positions, and continues normal radio traffic.

The brigade FSO monitors both the enemy situation, to which he may be required to respond with indirect fire, and the relief of the artillery units. Generally, FS assets are one of the first elements to collocate and the last to leave. Both relieving units and those being relieved fire in support of the operation. The relieving FA reinforces the fire of the artillery unit being relieved.

The incoming and outgoing engineer commander link up and monitor the handover of reserve targets and other overlays, verifying the status of tactical obstacles. Particularly in the case of lanes through minefields or other obstacles, it is important that the lanes are confirmed to facilitate the passage of reconnaissance forces.

Having already conducted the relief of the BSA, the CSS should be the same as for any defensive operation. With the possibility of enemy contact, the BSA must be prepared to initially support a force that may also include a significant portion of the relieved brigade. It is important for the relieved BSA to leave behind ATP stocks, engineer supplies, and Class I.

SECTION III. PASSAGE OF LINES

GENERAL

The coordinated movement of one or more units through another unit is a passage of lines. A brigade passage of lines is a complex operation requiring detailed coordination, extensive planning, and close supervision between brigades. A passage of lines may be designated as a forward or rearward passage of lines (see Figure 6-5 and Figure 6-6). The primary purpose of a passage of lines is to maintain the movement or maneuver of units. This operation is necessary when the factors of METT-T do not permit one unit the freedom of bypassing another friendly unit and therefore must pass through it. A passage of lines may be conducted to:

- Continue an attack or counterattack.
- Envelop an enemy force.
- Pursue a fleeing enemy.
- Withdraw covering forces or MBA forces.

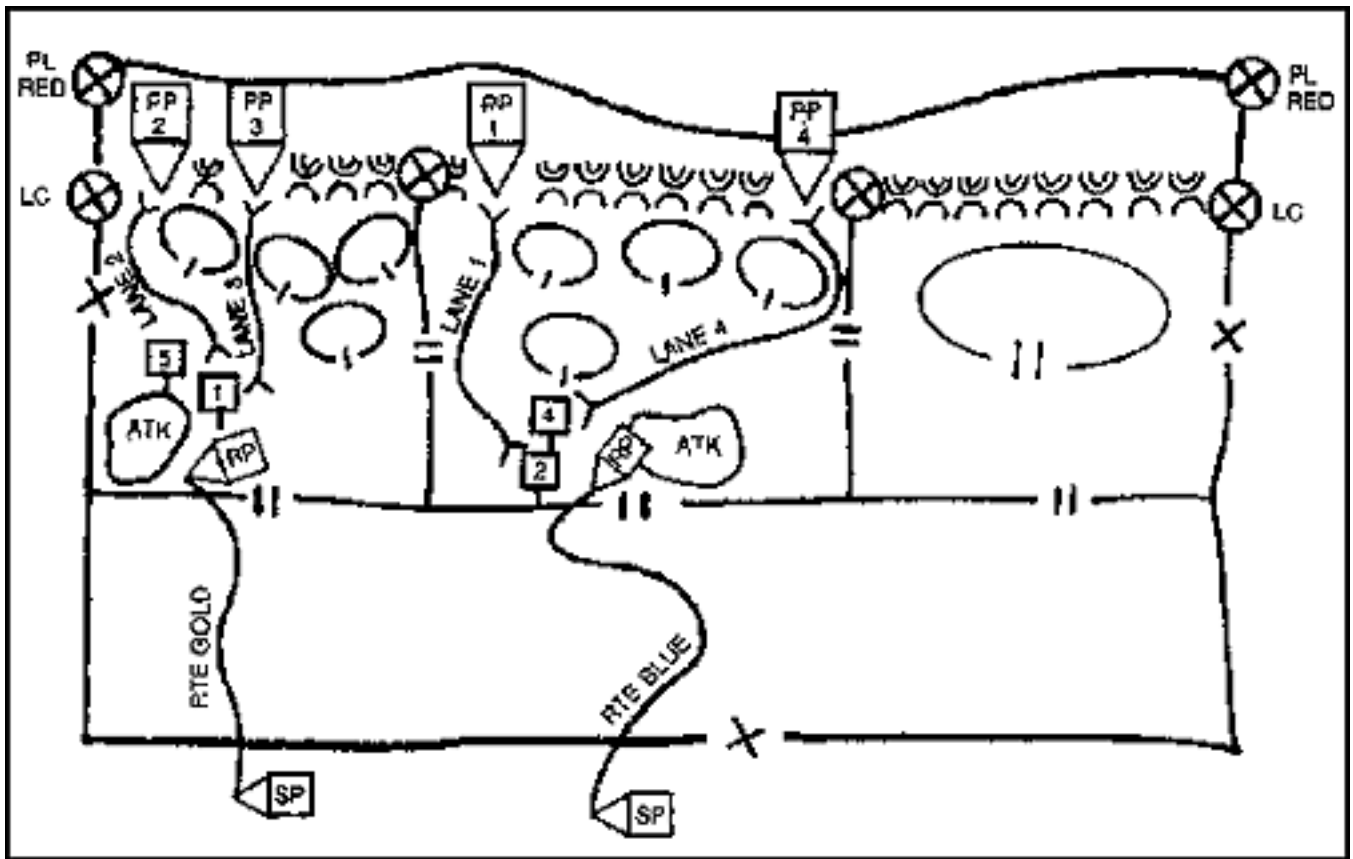


Figure 6-5. Forward passage of lines (deliberate attack).

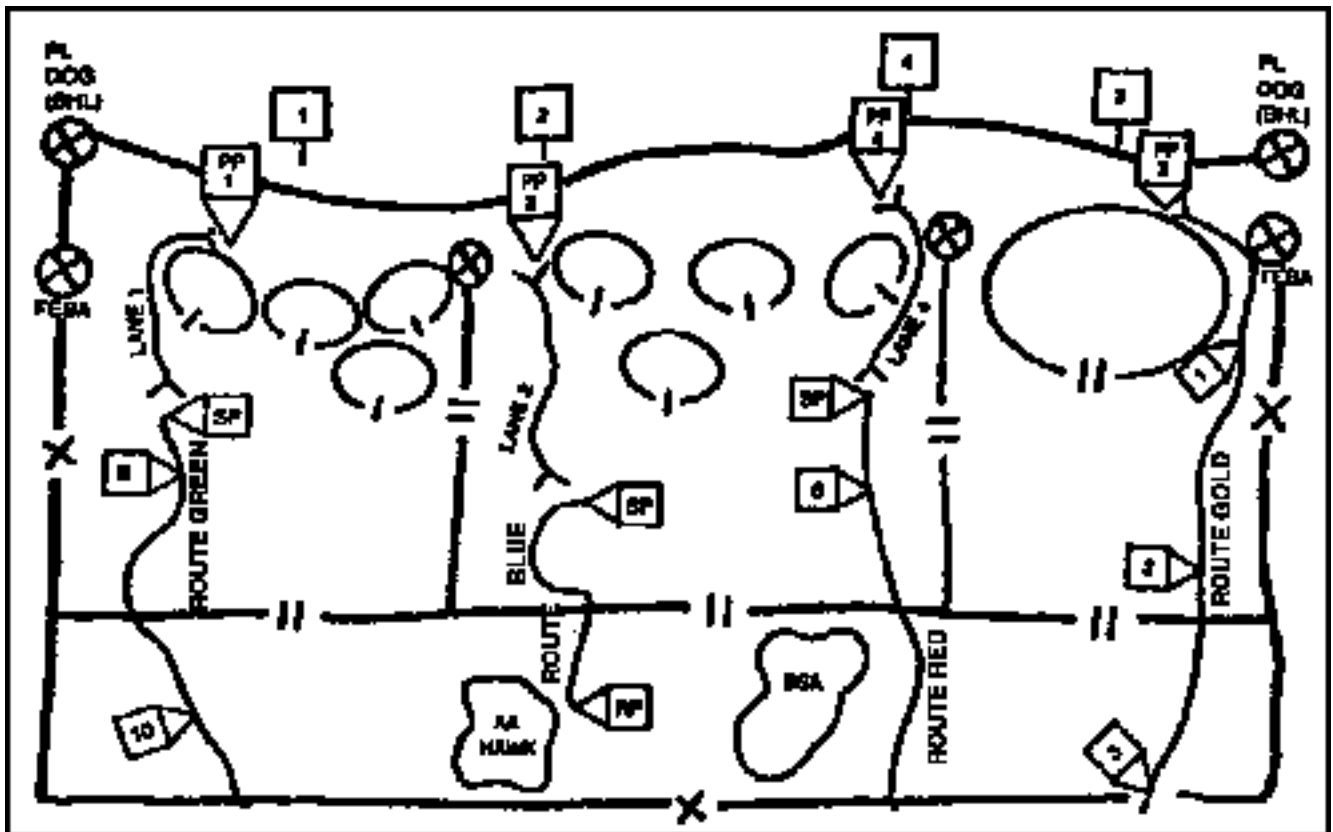


Figure 6-6. Rearward passage of lines.

PLANNING

The division or corps commander is responsible for planning and coordinating a brigade passage of lines. Certain basic considerations must be integrated into the planning process:

- Plans for the conduct of the passage must facilitate transition to the subsequent missions of both the passing and stationary brigades.
- Control of the zone or sector passes from one brigade to the other at a time and place directed by the higher common commander or mutually agreed upon by the stationary and passing brigade commanders.
- The passing brigade moves on multiple routes through the passed brigade and avoids the use of assembly areas. It does not halt within the passed brigades forward positions.
- Plan deception and smoke at dummy and actual unit locations and PPs.
- Integrate CS and CSS assets of the stationary brigade into the plan to support the movement of the passing force.
- Establish stringent graphic control measures to ensure a smooth passage.

One of the most critical aspects of a passage of lines is terrain management. The passing brigade's S3 coordinates with the stationary brigade's S3 to receive information concerning the disposition of friendly forces within the stationary brigade's AO. Unoccupied areas may represent possible locations to station future units of the passing brigade. With the IPB complete and a thorough understanding of the restrictions presented by location of the stationary brigade, the S3 prepares his tentative plan within the parameters established by the brigade commander. The S3 also examines the location of the contact points to determine whether they are compatible with the scheme of maneuver.

Once the contact points have been finalized, the S3 coordinates with the stationary force's S3 to establish the location of the passage lanes. Remember that the physical characteristics and number of the passage lanes determine the speed and disposition of the passing force as it crosses the LD. Therefore, when conducting a forward passage in preparation for a deliberate attack, it may be important to create passage lanes with sufficient width to allow the passing force to move in a tactical formation appropriate to the operation, such as company columns or a platoon wedge.

The brigade FSCOORD and FSO begin by examining the FS plan of the stationary brigade. Direct coordination between the two FSEs is critical. A clear FS battle handover or transfer of control must be identified and approved by the maneuver commander.

As noted earlier, terrain management becomes especially important because of possible requirements to plan space for additional artillery batteries and their support assets. Coordination with the stationary brigade's S3 is especially important to ensure that the artillery positions itself properly to support the attack. If a reinforcing FA unit is involved, it is critical to ensure that they are integrated into the plan. Mobility and terrain management is a major concern. The passing brigade engineer coordinates with the stationary engineer concerning the following:

- Threat engineer intelligence.
- Location and status of tactical obstacles.
- Location of lanes and bypasses.

The selection of passage lanes should be influenced by the location of friendly obstacles. Some obstacles may have to be reduced to facilitate the movement along designated routes. In this regard, coordination for the opening and closure of lanes must be made at the contact points.

In planning a passage of lines, air defense is absolutely essential. Whether passing forward or to the rear, the moving unit is forced to move slower and often in some type of column formation during the passage. Congestion in assembly areas either before or after the passage and the linear nature of the movement present a lucrative target to hostile aircraft. As a result, air defense must be coordinated with the stationary

unit. In many cases, the stationary brigade will be able to protect the passing force, allowing the passing force's supporting air defense assets to move with them. However, if the passing force requires static air defense, the terrain has to be coordinated with the stationary brigade's S3. Coordination should also be made to incorporate the moving force's ADA assets into the stationary force's air defense early warning net.

The CSS plan is an essential part of the passage of lines. CSS assets should be positioned to support the passage. UMCPs and emergency refueling points should be positioned where they can best keep the lane open and vehicles moving. Figure 6-7 shows the CSS plan for a rearward passage of lines.

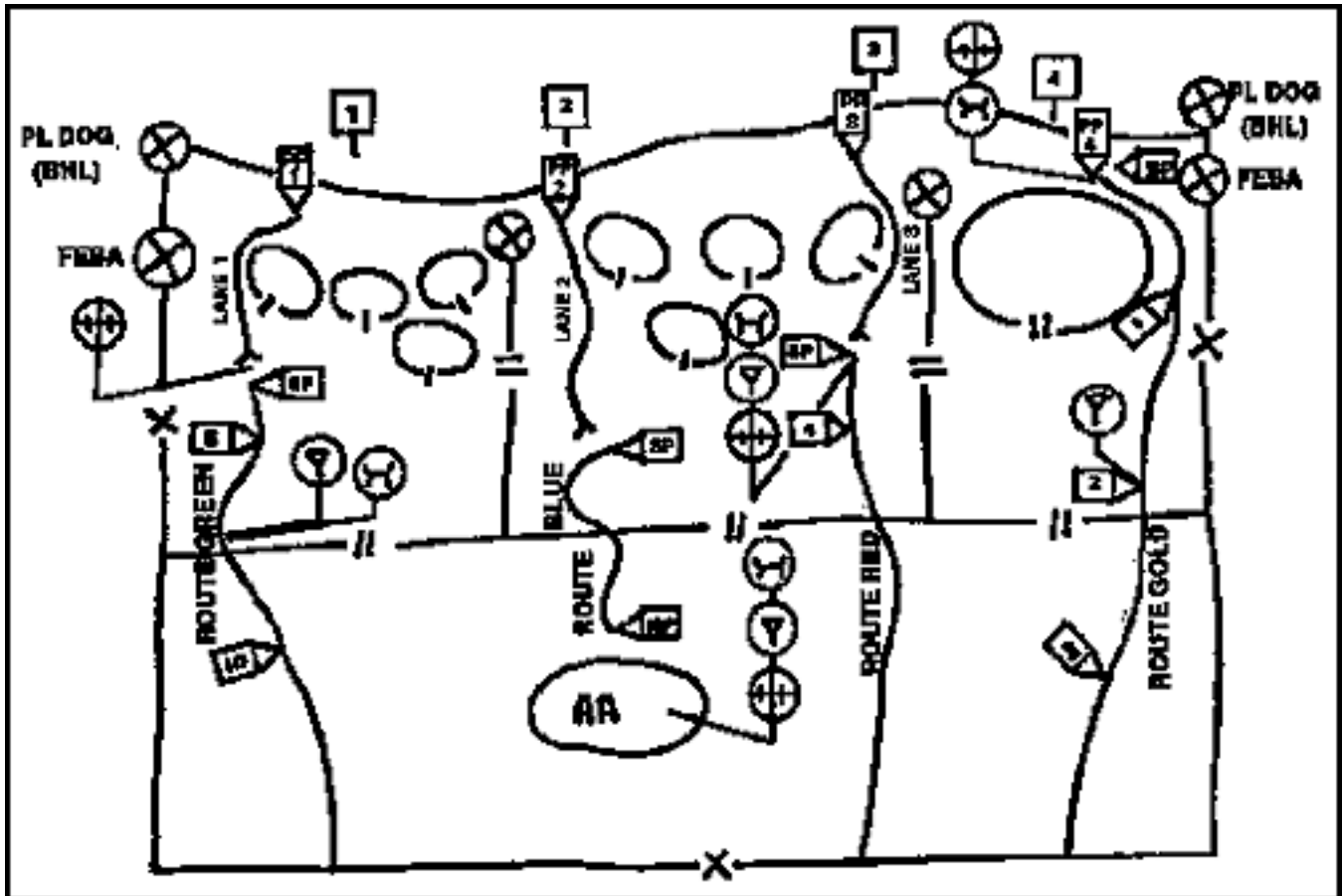


Figure 6-7. Combat service support plan for rearward passage of lines.

The collocation of headquarters in preparation for the passage of lines may be accomplished in several ways. The situation and terrain determine, for the most part, which type of collocation is best.

PREPARATION

The brigade commander and staff should wargame to ensure he has considered contingencies in the event of enemy contact during the passage of lines. The brigade prepares for the passage of lines by conducting a rehearsal. Generally, forward passages of lines may be incorporated into the offensive maneuver rehearsal. In a rearward passage of lines, however, (particularly following combat) there may not be time to conduct a complete level three rehearsal. In this case, the passage must be "rehearsed" as part of the orders confirmation brief.

The FS plan is rehearsed along with the passage rehearsal. In particular, the FSO must know when he may rely on the supporting fires of those batteries that are supporting the stationary force. The location of each battery in support of the passing brigade should be checked again with the stationary brigade's S3 to avoid any conflict during execution.

The brigade engineer ensures commanders understand the location and description of friendly obstacles along the passage lane. At the rehearsal, he covers lane marking and actions taken at the obstacle crossing. He also discusses the engineer scheme for the follow-on mission.

The air defense plan should be exercised during the passage rehearsal. Specifically, communications between the passing and stationary units should be checked to ensure that both are operating on the air defense early warning net.

The CSS plan should be rehearsed to ensure that the required support assets are properly positioned to assist in the passage. Moreover, the rehearsal should exercise the support system to identify any possible weaknesses in the responsiveness of the support plan. Movement of the BSA and other support assets occur as necessary before actual execution of the passage.

During the rehearsal, the commander ensures that each organization knows when and where to move as well as how to execute the required coordination. The TAC CP or TOC (or other designated headquarters element) collocates with the stationary brigade's main CP and conducts communications checks. Quarters parties from subordinate elements also move in preparation of the rearward passage.

EXECUTION

The commander monitors the operation from the initial actions at the contact point to the last element's final passage. The actual coordination at the contact points is handled by the battalion task force. Whether conducting a forward or rearward passage of lines, the key aspect of the passage is when to transfer control of the sector/zone.

Until transfer of responsibility of the zone or sector occurs, all indirect fire missions are coordinated and approved by the FSO who initially controls that area (most likely the stationary force).

The brigade engineer links up with the stationary engineer at the contact point and monitors the passage. He confirms the locations of obstacles and marked lanes or bypasses along passage lanes.

The primary mission of the CSS assets is to ensure unimpeded movement of the passing force. Maintenance assets are on call to remove and repair any vehicle disabled during the movement. Additionally, emergency resupply of POL is on standby to support as required. The stationary unit should provide the bulk of the support at the PP; however, the passing unit must be prepared to augment these assets as required.

The collocation of the TOCs ensures that the necessary information exchange occurs during the passage of lines. In particular, the passing brigade commander positions himself where he can best observe the conduct of the passage while retaining the ability to quickly join the force for future operations.

As each element reaches the contact point, the information is relayed to the collocated headquarters. The location of each element must be closely watched to ensure that delays by passing units do not have a negative impact on other forces. Should the passage occur slower than planned, FRAGOs are issued to the units waiting to pass, simply pushing back their time of execution. Units should remain in their assembly areas until it is time to move, rather than move to the contact point and wait in line.

BATTLE HANDOVER

A battle handover is a coordinated operation between two units that transfers responsibility for fighting an enemy force from one unit to the other. It is executed to sustain continuity of the combined arms fight and protect the combat potential of both forces involved. Battle handover is usually associated with conducting a passage of lines. Battle handover and passage of lines are inherent aspects of transferring responsibility for the battle between commanders while maintaining continuity of the fight.

Battle handover may occur during both offensive and defensive operations. During defensive operations, it is normally coordinated in advance so it requires minimum coordination when ordered to occur. In the

offense, it is often initiated by a FRAGO based on the situation. Clear TSOP allow units to quickly establish necessary coordination to preclude a loss of momentum in the attack. Use simple and standardized control measures.

There are three key players involved: the stationary commander, the passing commander, and their higher commander. Each commander has certain responsibilities. The higher commander defines the location and time for the handover and any specified tasks, receives confirmation briefs from both commanders, and monitors the execution during the handover. The passing and stationary commanders coordinate according to the TSOP and execute the handover. Until the handover is complete and acknowledged by the two commanders, the commander in contact is responsible for the fight. The higher commander specifies where the handover occurs and defines the resulting responsibility for the zone or sector.

Handover occurs along a line forward of the stationary force. The line is established by the higher commander in consultation with both commanders. The stationary commander has the major determination in the BHL location. This line is forward of the FEBA in the defense or the FLOT in the offense. It is drawn where elements of the passing unit can be effectively overwatched by direct fires of the forward combat elements of the stationary unit until the battle handover is complete.

While a line defines the battle handover, seldom do events allow this to happen cleanly. Physical handover should be viewed as a transition that occurs in the zone of BHL. Events may dictate that a force break contact forward of or behind the BHL, as in the gap between echelons of the attacking enemy force. Close coordination, physical and by radio, between the two units involved in the handover allows them to coordinate and execute this process at the small unit level. The stationary unit is just as active as the passing unit.

Battle handover begins on order of the higher commander of both units involved. 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 BHL. The BHL is normally considered the LD for the attacking unit.

Coordination for the battle handover normally flows from the commander out of contact to the commander in contact. The coordination for a battle handover overlaps with the coordination for a passage of lines; the coordination for both should be done simultaneously. This coordination is best established as a TSOP to facilitate rapid accomplishment. Coordination includes:

- Establishing communication.
- Providing updates on both friendly and enemy situations.
- Coordinating passage.
- Collocating command and control.
- Coordinating all fires (direct and indirect).
- Dispatching representatives to contact points.
- Establishing recognition signals.
- Determining status of obstacles and routes.
- Determining CS and CSS requirements.

SECTION IV. RETROGRADE OPERATIONS

GENERAL

A retrograde operation is an organized movement to the rear or away from the enemy. The operation may be forced by enemy action, or it may be executed voluntarily. In either case, it must be approved by the higher commander.

DELAY

Planning

A delaying action is an operation in which maximum delay and damage are inflicted on an advancing enemy without the delaying force becoming decisively engaged in combat. A brigade may conduct a delay as part of:

- A covering force for defending or withdrawing main bodies.
- An advance guard or covering force when encountering superior forces.
- An economy-of-force operation conducted to fix or contain an enemy attack on a less critical avenue of approach.
- A deception measure to set up a counterattack.
- A defense.

As a delaying force, the brigade must:

- Provide the required period of delay.
- Preserve the integrity of the battlefield by always maintaining contact with the enemy.
- Cause the enemy to plan and conduct successive attacks.
- Preserve the force, ensuring the delay mission is accomplished. A portion of the brigade may be required to accept decisive engagement to accomplish the delay mission.
- A delay differs from the defense in that it is not necessarily intended to achieve complete destruction of the enemy. The delaying unit avoids decisive engagement. A delaying action is characterized by operations on a wide front with maximum forces in contact and minimum in reserve. A delay is more difficult than a defend mission. For these reasons, there are key considerations that must be applied when executing a delay:
 - Centralized control and decentralized action. A delay results in a series of independent unit actions across the front in which each commander must be permitted freedom of action in engaging the enemy within the context of the commanders intent. In the conduct of the delay, the unit must maintain enemy contact and closely coordinate flank security.
 - Maximum use of terrain. Delay positions should be located on terrain features that control the likely enemy avenues of approach.
 - Forcing the enemy to deploy and maneuver. Engagement at maximum ranges of all weapons causes the enemy to take time-consuming measures to deploy, develop the situation, and maneuver to drive the delaying force from its position. An aggressive enemy commander will not deploy if he correctly determines that friendly forces are delaying; he simply uses his mass and momentum to develop sufficient pressure to cause friendly forces to fall back. Therefore, the delay must be sufficiently tenacious to leave him in doubt about the friendly mission. When the enemy commander believes he has encountered the main friendly defenses, he then deploys.
 - Maximum use of obstacles. Reinforcing and existing obstacles are used to canalize and slow enemy forward progress and provide security to the flanks of the delaying force.
 - Maintaining contact with the enemy. Continuous reconnaissance is conducted to establish and maintain contact with the enemy to prevent any attempt to bypass or envelop the flanks or penetrate between brigade units conducting the delay.
 - Avoiding decisive engagement. The delaying force normally displaces to the next delaying position before becoming decisively engaged. If units conducting the delay become decisively engaged, they may jeopardize the entire operation. It is not possible to delay successfully against an aggressive opponent unless the friendly force possesses a mobility advantage.

Preparation

The brigade commander begins by having the battalion task force commanders backbrief their individual operations, explaining how their missions fit into the overall brigade plan. The commander must ensure

that his control measures are understood by each commander and that flank coordination can be executed without hesitation.

Next, the commander checks that the battalions are able to maintain contact with the enemy without becoming decisively engaged. He examines the direct-fire instructions issued to the battalions by their commanders, paying special attention to the disengagement criteria. In particular, he should be satisfied that the battalions are able to inflict maximum destruction, yet retain their mobility. Disengagement execution should be linked to obstacles and indirect fire; however, the commander may identify areas within the plan when and where a battalion task force may require assistance in disengaging from the enemy. Assistance could be provided by aviation, FA, or the commitment of the brigade reserve. The reserve can both significantly augment the lethality of the delaying battalion and assist in their disengagement.

The movement from primary to secondary positions (as well as other subsequent moves) is the area of greatest risk to the force. Friendly forces are exposed and vulnerable to direct fire should the enemy be able to press the attack. Moreover, the delaying force must have a mobility advantage over the aggressor to allow time to occupy their next position. As a result, the commander verifies through the rehearsal and TDIS analysis that the forces are able to maintain their mobility. Again, in locations where there seems to be little margin for error, the commander considers the use of Army aviation assets or perhaps the reserve to overwatch the move.

The logistics plan must be checked to ensure that only necessary vehicles and equipment have remained behind to support the brigade. The recovery and evacuation plan should be checked to ensure that damaged vehicles can be removed to the rear rapidly. This is not easy due to the limited number of recovery vehicles. It is important for tanks with fire control damage to drag other vehicles to the rear as necessary. UMCPs should be used only long enough to transfer damaged vehicles to other recovery vehicles. Avoid collection of damaged equipment that exceeds the UMCPs' ability to transport it at a moments notice.

Prestocks of ammunition should be placed adjacent to subsequent positions. The stocks should not be so large as to prevent the unit from continuing the mission should the stocks be destroyed. The stocks should be kept on transport vehicles to make availability more flexible and to permit their evacuation rather than force destruction in the face of the enemy. The same technique holds true for fuel, although fuel requirements are easier to forecast than ammunition consumption. In this case, the fuel trucks must be available for emergency requisition. (Topping off before execution of the operation should be required to avoid emergency refueling during combat.) Again, the commander must ensure that his CSS plan allows the brigade to maintain mobility while providing the means to inflict maximum destruction.

The reserve may be called upon to execute several tasks, such as blocking an enemy penetration, reinforcing a weakened sector, assisting in disengagement, and counterattacking. Generally, the brigade reserve avoids missions that extend far forward of the FLOT. Rather, it is used to maintain the cohesive nature of the delaying force. As a result, the brigade commander must clearly define how, where, and under what conditions he uses the reserve. The same TDIS analysis required in defensive planning is essential in proper reserve force planning; its integration into the maneuver plan using the DST must be a matter of course.

During the rehearsal, the commander exercises the reserve in each of the missions which he has determined to be appropriate to the overall delay mission. Specifically, he must verify that the force can assume its required position prior to the arrival of the enemy. This also confirms his DST. In each case, he must know how long it takes the reserve to move from its hide position to the counterattack/overwatch position and prepare to fight. This should be based upon information provided by the reserve commander, who actually drove the route at tactical speed in preparation for the battle.

Execution

As the enemy moves toward the delaying force, the battalion scout platoons begin to report enemy maneuver. The task forces relay these reports to the brigade staff. The reports are reconciled against the commander's DST and event template to confirm the enemy's probable COA. In particular, the

commander makes an initial assessment of the enemy's strength. This information influences his estimate of the brigade's ability to conduct the operation as planned.

Reports of enemy activity approaching TAIs should initiate responses from the brigade, such as calls for indirect fire. Throughout the operation, the brigade commander must rely on the battalions in contact for information concerning the enemy's strength, disposition, and probable future operations.

The brigade commander controls the delay using the control measures assigned with the delay plan. Specifically, he requires the timely reporting of PL crossing, passing of checkpoints, coordination point contact, and the occupation of BPs. As the enemy presses the attack, attempting to maneuver against the delaying battalions, the commander monitors the action closely, in an effort to anticipate possible decisive engagement. The commander may weight a subordinate maneuver elements fight with CS to maintain separation with the enemy.

The use of Army aviation should be fully integrated into the plan and well thought-out as it is a limited resource. A most appropriate use of combat aviation is to shape the battlefield well in front of the ground units allowing them more freedom of maneuver. Early commitment of aviation assets may be a mistake if they are not in a position to significantly augment the killing power of the battalion in contact. A more appropriate use would be to assist the battalion in contact in maintaining its freedom of maneuver.

Due to the decentralized execution of the delay, the brigade commander must rely on his battalion commanders to execute the mission and ask for help when they need it. This places a heavy burden on the battalion commanders, particularly when considering the strength of the enemy force they will be facing. Therefore, the brigade commander ensures his subordinate commanders get what they need to do the job.

During actual execution of the delay, the commander must carefully monitor progress of each battalion. Because he is separate from the action, he can look at the actions without becoming mesmerized by the close-in fight. His anticipation of future enemy actions, or battalion needs, stimulates CS and CSS operations in a specific sector.

He must maintain the cohesiveness of the overall operation, ensuring that flank coordination is maintained at all times. Most important, he must carefully assess the situation to determine the most effective use of the brigade reserve. Once he reaches his DP, the commitment of the reserve must then receive all the support necessary to successfully accomplish its mission. It is imperative that the counterattack force strike quickly and violently. It must be withdrawn just as quickly so that it can be used again at another opportune moment.

WITHDRAWAL

A withdrawal is disengagement from the enemy, either unassisted or assisted by another force. It is conducted so that the battle may be handed over to another unit positioned to the rear of the withdrawing force, allowing the withdrawing force to prepare for future operations. Withdrawals may or may not occur under enemy pressure.

Assisted Withdrawal

The assisting force occupies BPs to the rear of the withdrawing brigade and prepares its defense. It can also assist the withdrawing brigade with withdrawal route reconnaissance, maintenance and supply support, and security. Detailed coordination is conducted with the withdrawing brigade, which then delays to the BHL, conducts a passage of lines, and moves to its final destination.

Unassisted Withdrawal

The brigade can establish a security force for the whole brigade. Usually this is at least a battalion task force. Front-line battalions withdraw behind the security force and continue their movement to the rear assembly area. The alternative is to require the battalions to provide their own security in their sectors.

Planning

During withdrawal, all or a portion of the brigade disengages from the enemy and moves away in an organized manner. Withdrawals are either assisted or unassisted. An assisted withdrawal uses a security force provided by the next higher headquarters to assist the brigade in breaking contact with the enemy and to provide overwatching fires. In an unassisted withdrawal, the brigades provide their own security covering force.

Withdrawal operations are conducted in several phases:

- Initiation of security force operations.
- Selection, reconnaissance, and necessary preparation of multiple routes, traffic control points (TCP), and on-order assembly areas.
- Preparation of obstacles to hinder the pursuit by the enemy.
- Evacuation of wounded, recoverable equipment and supplies, and movement of nonessential CSS units to the rear.
- Position of security forces.
- Preparation of deception operations.
- Deployment of rearward FA units not needed to support the withdrawing forces.
- Disengagement and movement of the withdrawing main body to new positions.
- Disengagement and withdrawal of security forces or security elements when directed to do so by the brigade commander.

Preparation

Critical to the success of a withdrawal is the coordination between the brigade and the covering force. The collocation of headquarters helps in solving some of the problems during preparation and execution. The withdrawing brigade must coordinate a rearward passage of lines as discussed previously. The BHL and recognition signals must be agreed upon. FSCM must be established to safeguard the rearward movement of the brigade. If time allows, members of the covering force should meet on the ground with the leaders of the withdrawing force to agree on contact points, PPs, passage lanes, obstacles, and FS plans.

The commander must rehearse the conduct of the withdrawal, paying particular attention to the possibility of reverting to the delay. Movement plans, followed by rearward passage of lines, should be stressed. Control must be maintained throughout the operation. Each player must understand his role in the operation.

The commander checks the coordination between the brigade and the covering force. The covering force should be kept informed of the activities of the brigade throughout the withdrawal. Collocating headquarters and providing LOs between headquarters help in reducing confusion. The commander and staff rehearse the conduct of the withdrawal, to include reverting to the delay in the event of an enemy attack. The DST and other tools must be at their disposal.

Execution

As the time of execution arrives, the brigade begins the deception plan. Artillery fires could trick the enemy into thinking the brigade is going on to the offensive and prevent him from detecting the withdrawal. The suppression should cover the withdrawing force's movement from the FEBA.

Security elements carefully monitor their assigned sectors, reporting any signs of enemy activity. As the force begins to move to the rear, the security force displaces to the next designated PL.

Accurate reporting and relaying of information through the battalion task force headquarters are essential to the proper assessment of the situation.

Security elements call for indirect fire to keep the enemy off balance and prevent him from closing with the main body. Once the screen reaches its last position, adjacent to the covering force, battle handover is effected and the enemy engaged as in a deliberate defense. If this is conducted properly, the enemy, in its haste to reestablish contact with the withdrawing force, plunges into the deliberate defense, sustaining heavy casualties.

As the battalions report they are clear of each brigade PL, the brigade informs the covering force that the PL represents the brigade CFL. This allows increased FS in the brigade sector and prevents the enemy from reestablishing contact.

From their final positions, the battalions begin passage of lines IAW the plan coordinated with the covering force. If there is no covering force, the detachment left in contact (DLIC) covers the movement of the brigade to the rear. After the battalions have passed to the rear of the covering force, they quickly form up in assembly areas to prepare for the road movement to their final destination. The covering force assumes responsibility for the sector once the brigade clears the BHL.

Throughout the operation, the commander's main concern is avoiding decisive engagement with the enemy. To do this, he must make his assessment based on reports of units in contact with the enemy. The commander should remember that an appropriate COA for one battalion may not suit another. A battalion may respond to enemy success by reverting to the delay while adjacent battalions continue to withdraw.

RETIREMENT

A retirement is a retrograde operation in which a force not in contact moves away from the enemy.

Planning

A retirement is made following a withdrawal or when there is no actual contact with the enemy. When a withdrawal precedes the retirement, the retirement begins after the main forces have broken contact with the enemy and march columns have been formed. A retirement is conducted to:

- Occupy more favorable terrain.
- Conform to the disposition of another force.
- Permit the employment of the force in another sector.
- Increase the distance between the defender and the enemy.

A tank-heavy rear guard supported by FA, ADA, and TACAIR support is normally required for a retirement. The rear guard uses delaying action techniques to slow the advance of the enemy and prevent interference with the movement of the main body.

The procedures for the conduct of a nontactical retirement are identical to those of a tactical road march. Nontactical movements are conducted only when contact with the enemy is unlikely. Enemy capability to employ airborne or air assault forces must be taken into consideration and route reconnaissance performed as required.

The brigade S4 plans rearming, refueling, and repair of the brigades equipment upon closure in its new assembly area.

The commander must ensure that the rear guard commander has everything needed to command and control the rear guard. Control measures should be clearly understood. The brigade commander positions himself where he can best control and monitor the operation. Actions upon contact should be rehearsed with each of the battalion commanders to ensure that they understand the proper procedures.

Preparation

The commander reviews the maneuver plan with the battalion commanders. He ensures each commander understands his mission and responsibilities. If the brigade is conducting a tactical movement, coordination between the rear guard and the main body will be addressed. The main body must not outrun the rear guard. Actions in rearward passage of lines with a stationary force must be rehearsed so each element understands which position to occupy before executing its rearward passage. The BHL must be understood by the rear guard as well as on-order CFLs. Order of march from each unit's final defensive positions to passage lanes and ultimately routes to the assembly area must be clearly understood.

Each battalion task force and brigade element must know when and where it is to travel on the rearward route to the assembly area. Emergency stop areas, maintenance halts, and rest halts should be identified as well as UMCPs and emergency fuel support.

Occupation of and actions within the assembly area should be reviewed so that each element understands the geographical boundaries of his area and his responsibilities upon occupation. A discussion of assembly area operations is in Appendix D.

Execution

The rear guard delays the enemy as required to protect the main body, fighting from subsequent lines of defense. The rear guard must not become decisively engaged.

The main body moves in column. As the brigade approaches its final positions before executing a rearward passage of lines, the units may have to temporarily adopt a hasty defensive position until each element is able to conduct its rearward passage of lines. This temporary halt may be expedited by increasing the number of passage lines.

Once the passage is complete, the brigade forms into march elements and begins the road movement to its designated assembly area. It may be advisable to occupy temporary assembly area positions to reorganize before beginning the road movement. Reconnaissance elements and MPs may assist in traffic control during this phase of the operation.

The brigade provides command and control for the rear guard as well as the retiring units. The commander travels in the area of the brigade where he can best influence the action. He temporarily collocates his CP with the stationary force CP to supervise the rearward passage of the brigade. Then he moves to a forward march unit to monitor movement all the way back to the assembly area.

SECTION V. BREAKOUT FROM ENCIRCLEMENT

GENERAL

A brigade is encircled when all ground routes of evacuation and reinforcement have been cut by enemy action. A force may become encircled when it is ordered to remain in a strong position on key terrain to deny the enemy passage through a vital choke point following an enemy breakthrough or left to hold the shoulder of a penetration. A unit might also be left in position behind the enemy by design or be given a mission with a high risk of being encircled. When this happens, the encircled commander must have a clear understanding of the higher commander's plan so the unit can continue to contribute to the mission.

PLANNING

Command Actions

The senior maneuver commander within the encirclement assumes control of all forces. He informs his superiors of the situation; simultaneously, he begins to accomplish the following tasks regardless of his subsequent mission:

- Reorganize all CS and CSS assets and bring under centralized control.
- Reestablish a chain of command. Fragmented units are reorganized, and a clear chain of command is established. Personnel not essential to CS and CSS are organized for combat operations or provided to battalion as replacements.
- Establish a viable defense. The command quickly establishes all-around defense; assigns sectors, BPs or strongpoints; and institutes an aggressive patrolling plan.
- Establish a reserve. A reserve must be constituted and positioned to take advantage of interior lines. Consider establishing more than one reserve.
- Organize FS. All indirect-fire assets in the encirclement are reorganized and brought under centralized control of the FSCOORD. Artillery and mortars are distributed throughout the pocket to limit their vulnerability to counterfire. The available FS from outside the encirclement is coordinated by the FSCOORD.
- Reorganize logistics. An early assessment is made of the logistics posture of the encircled command. Temporarily, all CSS comes under the centralized control of the senior logistician or designated individual. He rations key supplies, authorizes cannibalization, identifies equipment to be destroyed, and develops a casualty evacuation and stay-behind plan.
- Maintain morale. Commanders and leaders at all levels maintain the confidence of soldiers by resolute action and a positive attitude. They keep soldiers informed to suppress rumors.

Actions Upon Encirclement

The options available to the encircled brigade are:

- Conduct a breakout attack in the direction of a friendly force.
- Defend encircled.
- Attack deeper toward enemy forces and installations.
- Exfiltrate from the encircled position toward friendly forces.

The decision on which option the brigade should take is based on the intent or orders of the division commander. Regardless of the mission, contingency planning for a breakout should begin immediately. Once the brigade commander realizes that the force has become encircled, he turns to the S2 for a quick assessment of the enemy situation. This information is furnished by the S2s of all units within the encircled area and contained in reports from the encircled forces in contact. In particular, the S2 should attempt to identify the strengths, weaknesses, and vulnerability points of the encircling the brigade. These two pieces of information drive much of the commanders decision making.

Communications with higher headquarters and lateral communications with adjacent units are rapidly reestablished. It is important to receive instruction and to remain informed about the battle outside the encirclement. Encircled units can be important sources of information on the enemy's rear area and can perform important roles in defensive counterstrokes. Communications are essential when relief and linkup are imminent.

PREPARATION

Although there are several options available to the commander once encircled, this section only addresses the breakout in the direction of the friendly force. If the breakout is chosen, it is important that it take place as soon after the encirclement as possible. The enemy force may not realize that it has encircled the brigade. The longer the commander waits to conduct the attack, the more organized the enemy forces are likely to become. The difficulty lies in the fact that it takes time for the commander to organize his force properly to conduct the breakout; therefore, the commander must weigh the level of preparation against the time available.

The attack to break out of an encirclement differs from other attacks in that defensive operations are occurring simultaneously in other areas of the perimeter. The following tasks should be accomplished in both the planning and preparation for the breakout:

- Deceive the enemy as to time and place of the breakout. If it is not possible to break out immediately, the commander attempts to deceive the enemy by concealing his preparations and relocations. He must also make it appear that the force makes a resolute stand and awaits relief. Use of dummy radio traffic for the enemy to monitor or landlines that might be tapped are good means of conveying false information to the enemy. The direction for the breakout should not be the obvious route toward friendly lines unless there is no other alternative.
- Exploit gaps or weaknesses in the encircling force. Early in the encirclement there are gaps or weaknesses in the encircling force. Patrolling or probing action reveals these weaknesses. The attack should capitalize on them. Although the resulting attack may be along a less direct route or may be over less favorable terrain, such an attack is the best COA because it avoids enemy strength and increases the chance for surprise.
- Exploit darkness and limited visibility. The cover of darkness, fog, or severe weather conditions favors the breakout because the weapons of the encircling force are less effective in these conditions. It is difficult for the enemy to follow the movements of the breakout force during conditions of limited visibility. However, waiting for darkness or limited visibility may result in the consolidation of the enemy containment.
- Organize the forces for the breakout. The forces are reorganized so that available armored forces lead the attack if the terrain permits. The remainder of the forces fight a delaying action or defend the perimeter during the initial stage of the breakout. After the penetration, the main body moves out of the encircled area preceded by the attacking force and covered by a rear guard. CSS elements are integrated into the formation for the breakout. If the commander has sufficient forces, he may organize a diversionary attack just prior to the real breakout in an attempt to draw off enemy forces.
- Coordinate with supporting attacks. The breakout attack is assisted when a supporting attack by a nearby friendly force or by the reserve diverts enemy attention and assets from the breakout effort. The breakout attempt should be timed to occur just after the enemy reacts to the supporting attack.

The brigade commander directs the operation using FRAGOs to save as much time as possible. The brigade S3 assists the commander by coordinating with those units the commander does not have time to check. This should correspond to their positions during the execution of the operation as well.

EXECUTION

Forces

The forces for a breakout operation are divided into five distinct tactical groups.

Rupture Force

The rupture force attacks, creates a gap in the enemy's weak point (if it has been identified), and holds the shoulders for the remaining forces to pass through. The rupture force consists of a task force or reinforced task force. The rupture force must feasibly be able to penetrate the enemy line. A favorable combat power ratio must be achieved at the point of attack by means of surprise, troop strength, mobility, and firepower. Initially, this force is the brigade main effort. The task force commander probably has additional assets attached to his unit if he is the rupture force commander. These assets might include air defense assets or additional engineer personnel from the engineer company. The task force commander should integrate these assets properly for maximum combat power to achieve the rupture. AT systems could initially overwatch the rupture force and, after the gap has been opened, could secure the flanks from the shoulders.

Reserve Force

The reserve force follows the rupture attack to maintain attack momentum and to secure objectives past the rupture. After the rupture force secures the gap, the reserve force normally becomes the brigade's lead element. When a task force is given the mission of the reserve force, the commander must coordinate closely with the rupture force commander on the

- Location of the gap.
- Enemy situation at the rupture point.
- Enemy situation (if known) along the direction of attack past the rupture point.

Initially, the reserve force passes through the gap created by the rupture force. It is essential that the reserve force continues a rapid movement from the encircled area toward the final objective (probably a linkup point). If the reserve force is making secondary attacks, it is important that it does not become bogged down. Artillery preparation of these objectives may assist the reserve force in maintaining momentum out of the encircled area.

Main Body

The main body, which contains the CP elements, casualties, and CS and CSS elements, moves as a single group. It usually follows the reserve force through the gap created by the rupture force. The commander should be given command and control of this element to ensure orderly movement.

Diversionsary Force

Enemy attention must be diverted from the location of the rupture by a show of force elsewhere. The diversionsary attack should be as mobile as available vehicles and trafficability allow. Mobile weapon systems and tanks are ideally suited to the diversionsary force. The diversionsary attack should be directed at a point where the enemy might expect a breakout. Success of the diversionsary force is imperative for a successful breakout operation. If the force fails to deceive the enemy as to the brigade's intention, the full combat power of the enemy can be directed at the rupture point. This could lead to a failure of the entire breakout operation. To achieve deception, the task force should:

- Use smoke-producing assets to deceive the enemy as to the size of the diversionsary force.
- Increase radio traffic for size deception and as an indicator of an important operation.
- Use any available FS to indicate a false rupture point.
- Use mobility and firepower of the diversionsary force to maximum effect to deceive the enemy as to the size and strength of the diversionsary force.

The diversionsary force may achieve a rupture of enemy lines. If a rupture occurs, the diversionsary force commander must know the intent of the brigade commander. He may exploit this success, or he may disengage to follow the reserve force through the planned rupture point along the direction of attack.

Rear Guard

The rear guard consists of the personnel and equipment left on the perimeter to provide protection for the rupture and diversionsary attacks (if a diversionsary attack force exists). In addition to providing security, they deceive the enemy as to the encircled force's intentions. The rear guard must be of sufficient strength to maintain the integrity of the defense. Once the breakout commences, the rear guard and diversionsary force disengage or delay toward the rupture. If a task force is assigned the mission of rear guard, the commander must ensure he provides a viable defense on the entire perimeter. As other units (rupture force, reserve force, diversionsary force) pull off the perimeter, the rear guard commander must spread his forces over an extended area. This requires flexibility and mobility by the rear guard. The perimeter must withstand enemy pressure. If it does not, the enemy force simply follows the breakout forces through the gap and destroys them along the direction of attack.

Note. As the rear guard delays, it must maintain contact with the main body to prevent enemy forces from separating the two.

Combat Service Support

CSS assets move with the main body. Those items that cannot be transported are destroyed. Some prestocks may be left for the rear guard; however, they must be accompanied by some kind of detonation device. Control of CSS assets is difficult due to the lack of radios on the supply vehicles. Therefore, each driver must understand the mission and direction of attack. Visual signals should be agreed upon in advance, especially if special signals are required beyond the SOP. Air guards and flank protection are especially important to the soft-skinned vehicles. As a result, some combat forces should accompany the main body to provide that protection.

Command and Control

The commander should position himself where he can watch the rupture force conduct its attack. He determines the tempo of the operation, while the S3 observes the actions of the rear guard. The two must remain in communication so that each understands the overall condition of the battlefield and can synchronize their activities. Usually, the rear guard is given PLs from which to delay, corresponding to the forward movement of the rupture and reserve forces; therefore, close coordination and communication are essential. Figure 6-8 contains a graphic depiction of a breakout.

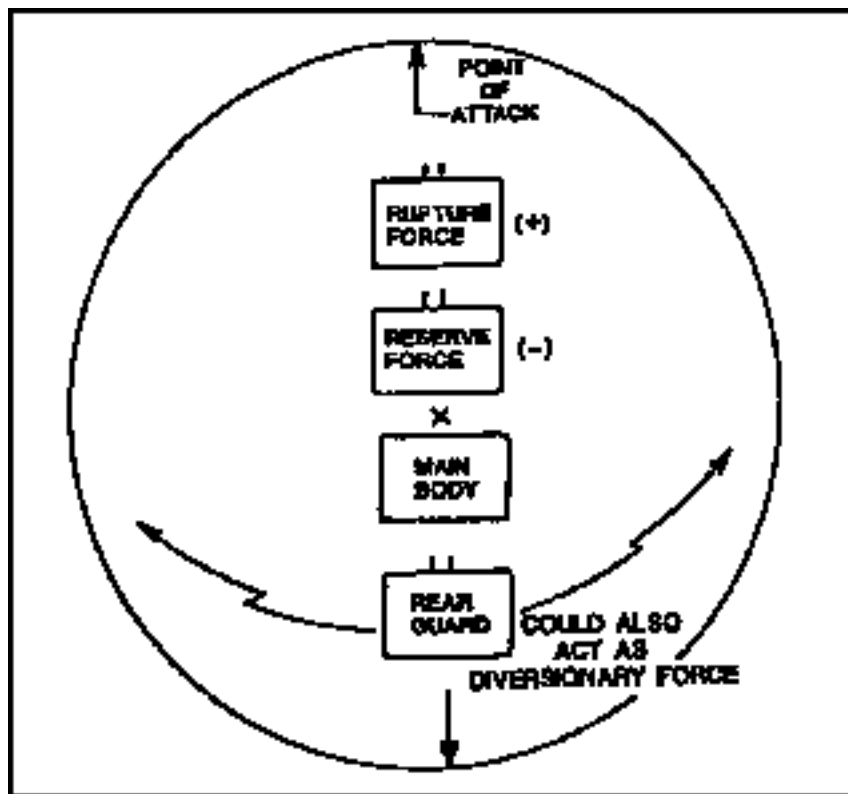


Figure 6-8. Brigade breakout from encirclement.

SECTION VI. REAR OPERATIONS

GENERAL

Army operations are fought simultaneously deep, close, and in the rear. The enemy attacks the entire depth and width of the battlefield to obtain victory. In the operational context, the primary purpose for conducting rear operations is to retain overall freedom of action for fighting close and deep operations.

Rear operations represent a critical fight for the brigade commander. Army operations cannot be won solely by fighting in the rear but could well be lost there.

Rear operations consist of those actions, including area damage control, taken by all units singly or in a combined effort, to secure the force, neutralize or defeat enemy operations in the rear, and ensure freedom of action in deep and close operations. It is a system designed to ensure continuous support. Rear operations are not just the protection of logistics facilities. Rear operations include movement of friendly units throughout the rear area. Tactical combat forces may be required to defeat the rear threat. Rear operations may divert forces from the brigade close operation.

The brigade commander is responsible for plans and operations throughout the depth of his AO. He assigns tasks to subordinate and supporting commanders to execute those responsibilities. The brigade S3 includes detailed planning for the entire rear area as part of operational planning for offensive and defensive missions.

The FSB commander is responsible for the BSA. For security purposes, this includes the OPCON of all elements operating within the BSA. Consistent with the commanders estimate and when allocated appropriate forces, the FSB commander may be assigned additional rear area functions. Brigade planning considerations for rear operations include:

- Securing rear areas and facilities.
- Preventing or minimizing enemy interference with command, control, and communications.
- Providing unimpeded movement of friendly units throughout the rear area.
- Finding, fixing, and destroying enemy incursions in the rear area.
- Providing area damage control after an attack.
-

BASE DEFENSE OPERATIONS

When developing his overall plan, the brigade commander ensures that the positioning and organization of the BSA supports the rear operation objectives. The FSB commander is responsible to the brigade commander for the security, positioning, and operation of the BSA.

Well-planned and tenacious base defense is the cornerstone of successful rear operations. Base defense operations include all actions that units occupying a base take to protect themselves from the enemy. They consist of a combination of passive and active measures, including MP patrolling, reconnaissance and response force operations, hardening and dispersal actions, cover and concealment, deception, and immediate reaction to enemy threat or attack. Base defense operations are enhanced by the extensive use of obstacles, sensors, surveillance devices, and OPs. Supporting units must be prepared to conduct small-unit security operations and defend themselves against all levels of threat.

Units operating within the BSA are OPCON to the FSB commander for security and positioning within the BSA. All elements operating within the BSA establish radio, wire, or messenger communications with the FSB TOC. The FSB CP and brigade rear CP collocate to facilitate coordination and rear area security.

Areas in the rear that are devoid of tactical units are isolated because troop disposition should be reconnoitered by MP patrols. Coordination with other divisional and nondivisional assets deployed within the brigade AO must occur to ensure overall linkage of rear OPLANs. The S3 coordinates patrolling and reporting with the MP unit commander as part of the MP area security mission.

DEFENSE OF THE BRIGADE SUPPORT AREA (BASE CLUSTER)

Defense of the bases within the BSA and defense of the base cluster known as the BSA is a difficult ongoing task. The requirements to have the BSA located so two or three roads pass through the cluster and so it is near an MSR does not make for easy passive security. Too many roads into a BSA decreases the commander's ability to secure the area. When locating the BSA, the commander should take advantage of every factor that increases his passive security.

Each unit located in the BSA is normally a few hundred meters from the next unit. All the units are in the BSA for the purpose of supporting the brigade. For defensive purposes, each unit sets up as individual bases. Each base must have a plan for the defense of its element, and each must integrate its defense plan with the FSB commander (base cluster commander). Each base should plan on assisting with access control duty on the main avenues entering and exiting the BSA. Those bases/units located along the BSA perimeter should plan on securing a sector of it.

Most units in the BSA have a heavy support mission and therefore have few personnel to give toward security. It is imperative that each unit have a thorough defense plan that is well rehearsed and uses everyone as an ongoing check of personnel in the area. Considerations for defense of a base include:

- Locate and prepare a fighting position for each individual or section in the unit
- Know who is in your unit.
- Challenge anyone who is unfamiliar or out of place.
- Have a plan of action if the enemy has infiltrated your assembly area or base.
- Have a specific signal/alarm to order people to fighting positions.
- Have a different alarm/signal to warn that enemy forces are in the internal area. This type of alarm can cause everyone to drop to the ground and fire on anyone left standing.
- Rehearse your plan for defense many times.
- Ensure your plan allows for some personnel, weapons, and equipment to be out on mission.
- Ensure you have coordinated with the bases near you.
- Use caution with fighting positions oriented near or toward other bases when firing weapons.
- Ensure it is understood and confirmed from which direction the BSA's reactionary force will come.
- Plan and use mobile (foot patrol) and static security. Static security is hard to detect and, therefore, effective. Mobile patrolling is an immediate deterrent for many small elements.

BRIGADE SUPPORT AREA/BASE CLUSTER DEFENSE CONSIDERATIONS

Developing and executing a defense plan for the BSA must include all those factors considered for a base, plus the following:

- In addition to the MP platoon, have a reactionary team identified and rehearsed to combat an enemy attack.
- Check each base's defensive plans on the ground.
- Use any available engineer assets to dig in equipment and prepare fighting positions.
- Take advantage of the knowledge of the MP platoon leader/sergeant in base/base cluster defense.
- Take advantage of all assets in the BSA, including temporary assets such as:
 - Inoperable weapon systems on inoperable tracks.
 - Combat soldiers awaiting repair of vehicles.
 - Lightly wounded soldiers awaiting return to units (at the medical company).
 - Reserve combat forces.
 - Scout platoons that are not performing missions for their battalion.

SECTION VII. RIVER CROSSING

GENERAL

A hasty water crossing is a decentralized operation to cross an inland body of water using organic, existing, or expedient crossing means. This operation is conducted in stride as a continuation of an operation to maintain momentum. For additional information see FM 90-13. Hasty water crossings are characterized by:

- Speed, surprise, and minimum loss of momentum.
- Decentralized operation with organic, existing, or expedient resources.
- Weak or no enemy defenses on both banks.
- Minimum concentration of forces.
- Quick continuation of the operation.

The planning considerations and organization of a river crossing are applicable to many operations.

Brigades conduct river crossings as part of the division or corps scheme of maneuver. Once given the mission to conduct a river crossing, the brigade commander starts planning for synchronization of all of his assets. He must ensure that he does not give up the initiative to the enemy by allowing a water obstacle to have a disproportionate impact on his scheme of maneuver. Whenever possible, brigades cross all obstacles in stride, using local material and organic assets.

In division operations, brigades are the assault forces. If the assault is conducted with two brigades forward, two brigade zones are designated within the crossing front. These zones coincide with crossing areas, with one designated for each assault bridge. The brigade commander normally provides his XO and a small staff to act as the crossing area commander to ensure all organic brigade assets are prepared for the crossing. Synchronization of organic assets and supporting combat multiplying assets are critical to the success of the crossing.

SECURING THE BRIDGEHEAD

The planning headquarters first reviews the objective area. Unless a bridgehead has been specified by higher headquarters, the crossing force decides what objectives must be controlled to ensure security and to facilitate future operations to defeat the enemy. The crossing force selects the bridgehead.

Securing the bridgehead requires control of an area on the exit bank large enough to accommodate the assault and essential support elements of the crossing force. In addition to accommodating the crossing force and facilitating future operations, the size of the bridgehead may be determined by defensive characteristics of the terrain. Not only must the enemy be defeated at the bridgehead, but it must also be prevented from effectively counterattacking the crossing force and/or destroying crossing sites once the bridgehead is secured. Thus, defensible terrain and space within the bridgehead are required in a defense against an enemy counterattacking to regain control of the river bank.

After selection by the crossing force, the bridgehead is graphically depicted by a bridgehead line that defines the outer limit of the area. Normally this line is located along identifiable terrain features, including crossing force objectives, and is connected to the river bank on the left and right flank of the crossing front. This arc orients the crossing force to the flanks as well as to the front. Usually, terrain or communications center objectives assigned by higher headquarters are within the bridgehead. If not, the attack proceeds from the bridgehead to secure these objectives. In either case, once the bridgehead is secured, the river-crossing operation is completed. Figure 6-9 shows a typical organization for securing a bridgehead.

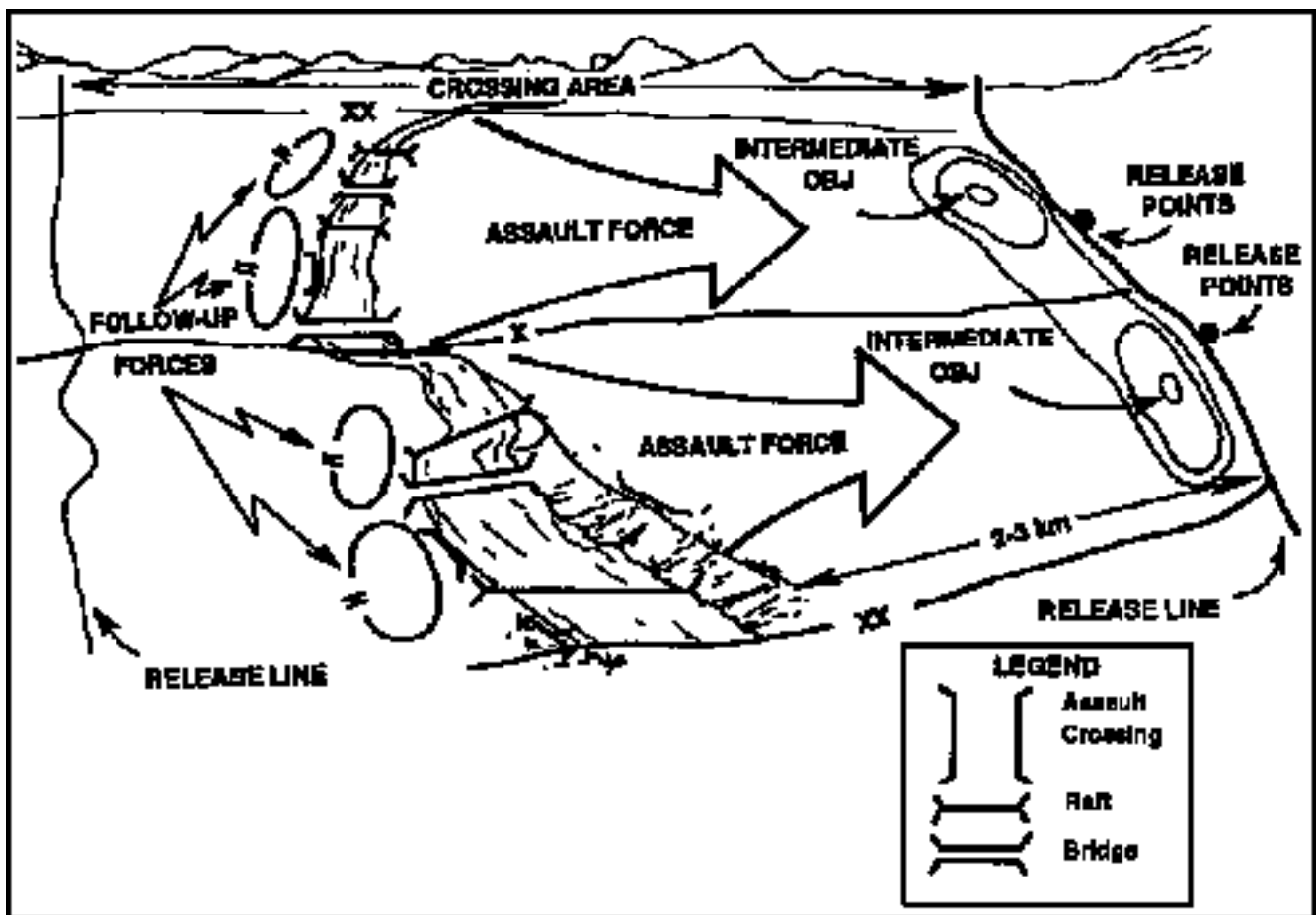


Figure 6-9. Bridgehead organization.

Objectives

To secure the bridgehead, objectives within this area are assigned to assault forces. Considerations for selection of objectives and the relative size of the forces needed to secure them do not vary from usual offensive operations. Ideally, objectives are attainable by the assault forces in one continuous attack from the river. The crossing force commander specifies only those objectives that must be controlled to secure the bridgehead. When terrain or enemy conditions warrant, intermediate objectives are assigned; however, judgment is required to avoid unnecessary slowing of assault forces. Plans must provide for a rate of crossing and buildup of combat, CS, and CSS forces on the exit bank that exceeds the rate at which the enemy can concentrate against the crossing force.

Whenever possible, assault forces advance directly from the exit bank to bridgehead objectives. When intermediate objectives have been assigned, they are secured with minimum delay en route to final or bridgehead objectives. At brigade level, assignment of intermediate objectives is appropriate. For example, it is difficult for the lead battalion or company of an assault force to attack continuously without securing intermediate objectives, except when advancing against weak enemy forces. Intermediate objectives serve the following purposes:

- Orient the direction of attack toward final objectives.
- Provide centralized control of the advance.
- Facilitate changes in lead companies and battalions of the assault.
- Gain an initial foothold on the exit bank when stubborn enemy resistance is expected.

Selection of intermediate objectives is dependent on terrain and enemy defensive dispositions. In areas of relatively open or unrestrictive terrain or against a weak enemy, few intermediate objectives are needed.

Where terrain is rugged or when enemy defensive positions have been prepared in depth, more objectives are appropriate. Possible objectives include hills, enemy positions, or control measures such as PLs.

Forces

The division's crossing force commander and his staff plan the river-crossing operation with the following tactical concepts in mind:

- The assault forces lead, making the initial assault of the river and continuing the advance from the exit bank to the final objectives.
- Support forces develop crossing sites, emplace crossing means, control units moving into and away from the crossing sites, and assist the assault force to the objectives.
- Follow-and-support forces provide overwatching DS and indirect support, crossing site security, and follow-and-support assistance to the assault force.
- CSS elements sustain the assault and subsequent advance to the bridgehead objectives.

Assault Forces

Assault forces close on the water obstacle and cross rapidly by any means available. Infantry elements establish local security on the exit bank to permit development of the crossing sites. Initial crossings may be limited to pneumatic assault boats and amphibious vehicles while tanks provide support from overwatching positions. Army aviation assets may lift the assault force over the obstacle with the assault across the water. TACAIR and ADA protect the crossing units and sites. Artillery fires and air strikes are effective in softening enemy resistance and may precede the assault with preparatory fires and/or a rolling barrage. Divisional engineers advance with lead elements to breach obstacles and open or improve trails to keep units moving. Tanks, using bridges or rafts installed by support forces, cross later in the assault.

Support Forces

Support forces accompany the assault force and provide the necessary support to the crossing area commander. Engineers improve crossing sites and ingress and egress routes at crossing sites as rapidly as time and security permit. Rafts and bridges are installed to transport heavy loads. MPs and other designated crossing unit personnel control the flow of traffic to and away from crossing locations.

Follow-and-Support Forces

Follow-and-support forces move close behind assault forces to add their combat power where needed. Using rafts and bridges, they cross quickly behind assault elements to overwatch, conduct follow and support tasks, or assume the mission of lead assault units. Artillery provides counterfires to protect the site, smoke to conceal the crossing, and fires in support of the lead assault elements. ADA protects the sites and provides an umbrella for Army aviation elements in the crossing area. Engineers develop overwatching and firing positions, then advance with the follow-on forces to reduce obstacles, improve bypasses, and install flank obstacles. Necessary maneuver, FS, and air defense elements secure crossing sites from guerrillas or local enemy counterattacks.

PLANNING

Intelligence of the enemy and terrain determine tactical and materiel requirements for the crossing and the command echelon capable of accomplishment. The division, in its mission statement to the brigade, may specify the requirement to conduct a river crossing or, in assigning a mission, imply the task of crossing a river. Accordingly, the S2 attempts to collect as much information as possible about the enemy and the water obstacle. Together with the brigade engineer, the S2 examines

- River width, depth, and velocity.
- Locations of possible entry and exit routes.

- Obstacles.
- Cover and concealment.
- Soil and weather conditions.
- Enemy composition and disposition.

The planning sequence is considered in reverse order of occurrence; the last task of securing the bridgehead is examined first. However, the river is examined before plans for securing a bridgehead and advancing from the exit bank are completed. General planning requirements for river crossings vary little from routine offensive planning:

- Objectives are selected and assigned.
- Areas or zones for forces are determined.
- Control measures are designated, forces are allocated, and missions are assigned.

Assault crossing plans may be completed at crossing force headquarters level or delegated to the assault force and crossing area commanders once attack zones and crossing areas have been specified. To maintain the speed of the advance without loss of momentum, plans for hasty crossings are often accomplished at the brigade or assault force level. On the other hand, plans for deliberate crossings require more time, and the buildup of combat power is normally a division or corps responsibility. Complete plans prepared at division and corps require detailed coordination with brigades to ensure the sequencing of units at the crossing sites complements the brigade's assault concept.

When the crossing force headquarters delegates planning for the assault crossing to the brigade, it provides guidance and support to the assault force and crossing commanders. Guidance may include:

- Time of attack and/or assault crossing.
- Specific crossing sites.
- Times that bridges are scheduled for use by forces other than the assaulting brigade.
- Available crossing support forces (engineer and MP).

Types of Attacks

Offensive river crossings are not an objective in themselves, but a part of the scheme of maneuver and overall offensive action to defeat the enemy. The commander has two basic attack options to secure the near and far side of the water obstacles. Based on the assessment of the enemy, terrain, and water obstacle, he may conduct either a hasty or deliberate attack (see Chapter 4).

Reverse Planning Process

The major concerns of the crossing and assault force commanders during any attack that includes a water obstacle are vulnerabilities of forces on the exit bank and a rapid advance to secure objectives. The latter is the overriding consideration; hence planning commences at the objectives and projects back toward the river. An accurate assessment of the enemy's expected counterattacks and indirect fire barrages is integrated into planning. This is particularly significant during early stages of the advance because the assault force is temporarily divided by the river, thus diminishing its combat power potential. To counter probable enemy reaction, counterfires and aerial attacks augment other planned fires to ensure the necessary rapid advance to overwhelm the enemy.

Once the S2 has constructed an enemy situation template and the engineer has identified possible crossing sites, the brigade FSCOORD begins to develop the FS plan. This plan must accomplish several missions simultaneously. In the initial stages of the operation, the artillery should suppress enemy positions that have observation and fields of fire over the crossing sites of the assault force. Smoke missions should also be fired to further add to the obscurity. Radar critical friendly zones should be developed on the crossing sites to protect the crossing force if attacked by enemy artillery. Using the S2's enemy template, radar call for fire zones should be recommended on suspected enemy artillery positions.

After the assault force gains a foothold, the indirect fires should assist the force in maintaining its position while the support force begins construction of rafts and bridges. It is essential that forward observers (FO) be included with the assault force, so that they can rapidly adjust fire on enemy locations. The FS plan at this point should include FPFs, in case the enemy launches a counterattack against the bridgehead.

As the force moves to the RP/line to begin the attack, the FS plan supports the maneuver as it would for any offensive operation. The artillery must provide close and continuous support to the leading assault units. Fires should be planned on enemy strongpoints and likely counterattack positions. Suppressive fires degrade enemy air defenses, and ADAM/RAAMS (if the situation permits) could provide some security along the flanks and slow enemy movement.

One corps ribbon bridge company is capable of supporting a task force crossing. It also can support a brigade unopposed crossing, if it has sufficient bridging to bridge the river. A brigade or divisional crossing requires additional corps bridge companies. Normally, each task force requires about one bridge company's assets to support crossing sites. A crossing brigade requires a minimum of two companies. This depends on river width and the number of crossing sites required to support the scheme of maneuver. If the brigade is conducting an opposed river crossing, the corps combat engineer battalion commander becomes the crossing area engineer. The engineers supporting the assault force are separate and distinct from the engineers conducting the crossing. They are task organized with the bridgehead and breakout forces oriented on the far shore combat missions, not the tasks associated with the river crossing.

The brigade engineer is a critical player in this operation. The brigade commander relies on his expertise in planning the river crossing. The brigade is augmented with corps bridging assets to conduct the operation. Special planning considerations include:

- Determine crossing sites.
- Determine method and means of crossing.
- Types of vehicles involved in crossing.

The crossing operation involves virtually every type of engineer activity: combined arms breaching, bridge and raft construction and control, mobility operations along the routes to the crossing sites, countermobility operations to prevent the enemy from reaching the bridgehead, and survivability at the bridgehead. In planning for the operation, the brigade engineer may consult the following information sources:

- Maps.
- Local inhabitants and prisoners.
- Aerial photographs and visual reconnaissance.
- Hydrographic studies.
- Strategic studies.
- Ground reconnaissance.
- Division's terrain detachment (G2).

The brigade ADO has several concerns in planning protection for the brigade. During initial stages of the operation, the brigade is concentrated near the river line. This includes maneuver elements as well as stockpiles of equipment needed for the actual crossing. Such highly congested areas are lucrative air targets and must be protected if the river crossing is to succeed.

Once the brigade begins the actual assault and construction of the bridges and rafts, enemy aircraft can be expected to zero in on these positions. Again, ADA assets must be positioned to protect these resources. Some assets may be placed directly on the bridge.

Finally, the force must be protected as it moves to the RP/line and into the attack. In this regard, some assets are dedicated to protect the force as in any offensive operation, while others remain behind to protect the bridgehead and the crossing sites.

As mentioned earlier in this section, CSS assets are essential to sustaining the attack. The brigade S4 must ensure that adequate supplies are pushed forward to the crossing sites, particularly any expedient materiel that may assist the operation. Suppression of enemy positions on the far side of the river expends large amounts of ammunition. Likewise, the assault force must hold the bridgehead until reinforcements can deploy; it must be given additional ammunition to sustain operations. With this in mind, the S4 must plan with the engineer, S2, and S3 to ensure supply vehicles are integrated into the crossing order as early as possible.

Assault force commanders, usually brigade commanders, command the assault forces from the brigade TAC CP. When the brigade enters the crossing area, control, not command, is then passed to the crossing area commander. Control then reverts to the assault force commander as the assault force leaves the crossing area.

The designated crossing area commanders may be division or brigade staff officers. Since the assault force is normally a brigade, the brigade XO is usually designated as the crossing area commander and operates from the brigade TOC. This allows the brigade (assault force) commander to focus his attention on the battle and serves to bind the assault crossing and tactical concept. Subordinate battalion XOs or LOs may collocate with the crossing area commander to provide detailed movement instruction for their units per the crossing area commander while leaving the brigade command net free to fight the battle on the far shore. Each crossing commander controls:

- Crossing units of the assault force while in the crossing area.
- Tactical elements that secure the crossing sites.
- Support force engineers who develop and maintain crossing sites and traffic.
- Control elements (primarily MPs) that direct and control crossing units in the crossing area.

The crossing force commander facilitates planning by dividing the operation into distinct and manageable segments:

- Advance to the river.
- Assault crossing of the river.
- Advance from the exit bank.
- Securing the bridgehead.

Figure 6-10 depicts the organization of river crossing command and control.

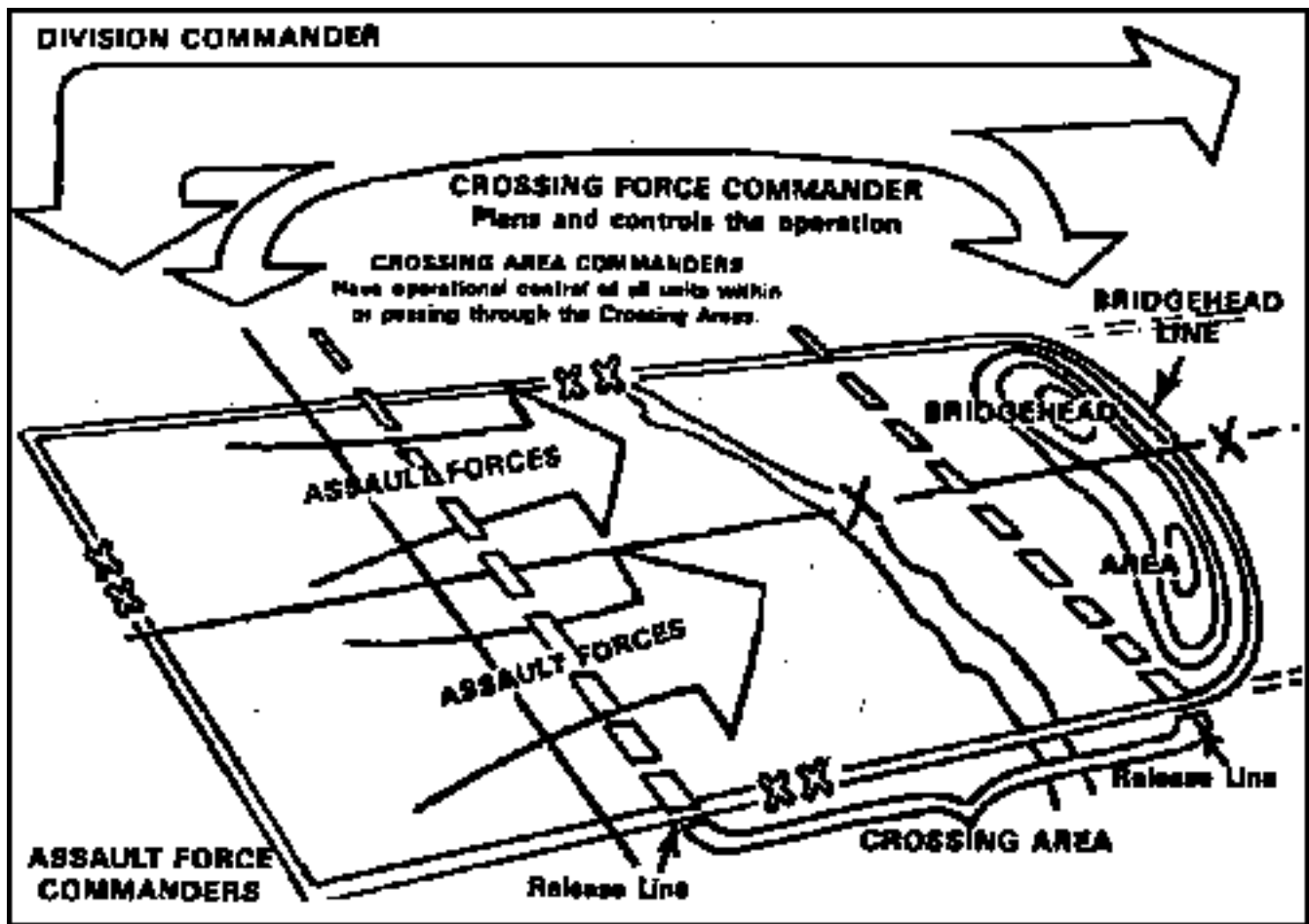


Figure 6-10. River crossing command and control.

PREPARATION

At this point, the commander rehearses each phase of the river-crossing operation.

Advance to the River

The brigade should be task organized for the operation before the advance to the river begins. Regardless of the events prior to the actual advance, the brigade's lead battalions either move to secure objectives that overwatch the proposed crossing sites, or secure the crossing by seizing enemy bridges or by conducting their own amphibious assault. Once these objectives have been secured, the control switches from the assault force commander to the crossing force commander.

Assault Crossing of the River

Once in position, the assault force neutralizes the enemy forces that can influence the crossing. The actual crossing may be executed using any number of methods: fording, assault/swimming, rafting, or bridging. Lead elements should be prepared to cross under fire. A line or wave formation crosses more forces than a column in equal time periods. However, it exposes more forces, increasing vulnerability and the chance of detection of the crossing effort. A column, using one or two entry points, concentrates forces but requires more time to build up combat power, providing the enemy more time to detect and concentrate fire on the crossing site. To reduce enemy obstacles and develop exit points on the far bank, the engineers should cross early.

Each lead battalion should have at least one fording or assault/swimming site. They should be oriented on close-in exit bank objectives, while subsequent sites should provide good ingress and egress routes to

enhance mobility and the buildup of combat power on the exit bank. Once the area is secured and the bridges and rafts are constructed, the force begins to pass as per the movement plan and crossing schedule.

Advance From the Exit Bank

The advance from the exit bank extends from the RP/line to the bridgehead objectives. At the RP/line, the crossing commander relinquishes control of units to the assault force commander for continuation of the attack. The forces then attack generally along a narrow or a broad front, depending on the number of crossing sites in the sector or zone. In the rehearsal, the commander must balance the number of forces collected on the far side of the river in preparation for the attack against the length of time it takes to marshal them. This solution must enable the commander to commit sufficient force to destroy the enemy and maintain sufficient momentum to gain ground.

Securing the Bridgehead

Securing the bridgehead requires control of an area on the exit bank that is large enough to accommodate the assault and essential support elements of the crossing force. Assault forces receive objectives that must be controlled for the area to be secure. Once in position, the forces move to ground and establish a hasty defensive perimeter around the bridgehead. A discussion of hasty defensive planning is in Chapter 5.

The river crossing rehearsal includes the positioning of assets on the near side of the river, the assault and clearing of obstacles from the far side, the preparation of each bank, and the construction of the bridges and rafts that transport the force across the river. This only ensures the physical preparation of the crossing site. The brigade engineer also reviews the crossing and movement schedule to confirm the timing and positioning of forces.

In addition to the actual river crossing, the engineers must rehearse the flow of traffic to each crossing point as well as emplacing obstacles to protect the bridgehead from enemy counterattacks.

EXECUTION

The brigade moves to the river using OPSEC measures to cloak their movement. If possible, the force will move at night or under the mask of smoke and suppressive artillery on known enemy positions. Pre-positioned reconnaissance elements adjust these indirect-fire measures to ensure optimum effectiveness. Once the assault force is in position, the support force commander calls for suppression of the far side objectives and enemy positions. As the fire begins to land, the force crosses the river under the supporting fire of stationary forces on the near side of the river.

Once the crossings have been secured, the assault force commander reports the status to the crossing force commander, who in turn directs the immediate construction of bridges and rafts. At this point, the crossing area commanders control all activities within the crossing area. Their initial concern, however, is the reinforcement of the assault force on the far side of the river. This ensures a secure bridgehead and protects the crossing operation.

As the follow-and-support forces cross the river and begin to assemble for the continued assault, they also assist the initial assault force in the protection of the perimeter, if necessary. However, once these forces are assembled, the assault force commander should begin the attack as quickly as possible. This serves two functions: it clears the area for the arrival of additional forces, and it maintains the momentum of the overall operation. When executed correctly, the attack keeps the enemy off balance and unable to effectively respond to the operation.

Other crossings, deception plans, and proper reconnaissance of enemy reserve locations are essential to the success of the operation. The enemy must be temporarily paralyzed during the establishment of the bridgehead, or its counterattacks could spell disaster for the assault force. In addition, the enemy should also be confused as to the actual intent of the crossing force, namely the locations of the crossings and objectives to be taken in support of the crossings.

During the operation, the FS plan must effectively suppress the enemy's ability to influence the assault force as it conducts its initial crossing of the river. Smoke missions mask the assault force initially; however, grazing fire across the surface of the river could cause many casualties and does not necessarily require target identification. As a result, reconnaissance elements must locate these enemy positions and target them as part of the preparation and suppressive fires during the assault.

Engineer forces initially concentrate on the clearance of obstacles on the far river bank and the preparation of the entrance and exit ramps for each crossing. Simultaneously, other engineer elements begin construction of rafts, bridges, and any other assets used to cross the river.

Outside of the actual crossing activities, engineers are required to maintain the road network leading to and away from the crossing sites. Also, survivability and countermobility operations may be required to protect the assault force from enemy counterattacks.

Initially, the air defense assets protect the force as it advances to the river line. Priority of protection most likely goes to the engineer equipment that is pre-positioned for the assault crossing. Once the assault force reaches the far side of the river line and adopts a hasty defensive posture, the ADA protection then extends across the entire crossing line.

As the brigade begins its advance to the river, the CSS pushes preloaded support packages forward to the force. Specifically, ammunition is the primary concern during the initial stages of the operation, due to the amount required for suppression in defense of the bridgehead area. UMCP and LP locations should be placed along the routes leading to each crossing site, and recovery assets should be positioned to maintain trafficability at the crossing sites.

Recovery of wounded personnel in the assault force must be tied into the return rafting. Likewise, ambulances should be located at the sites to quickly transport the casualties to the aid stations or FSB treatment section.

The hasty river crossing is one of the most complicated and dangerous operations to execute. It is dangerous because it is easy for either the attacker or defender to locate the positions of the enemy. Similarly, air assets are able to identify the target area easily as they navigate along the river line. Therefore, the commander must be prepared to execute this operation under fire. His leadership is crucial in moving the forces across the river and assaulting the bridgehead objectives.

Assault forces advance quickly, without extensive reorganization, from crossing areas to objectives within the bridgehead. The enemy, given time, attempts to halt the advance with strongpoint defenses, heavy artillery fires, and counterattacks. Therefore, comprehensive SOPs, detailed planning, and rapid execution enhance the probability of success.

Advance From the Exit Bank

The advance from the exit bank extends from the RP/line to the bridgehead objectives. At the RP/line, the crossing area commander relinquishes control of units to the assault force commander for continuation of the attack. The location of the RP/line is a function of terrain and expected battle and is mutually determined by the commanders.

RPs/lines may be located 2 to 3 kilometers from the exit bank. This distance allows the assault force commanders to assemble their forces for continuation of the attack. Further, the clearance of this distance by follow-on and support forces, supported by tank and artillery fire under control of the crossing area commander, precludes direct fire on assault forces while they are still in the water. RPs/lines are therefore located to facilitate the operation, control, and security of forces moving through the crossing area (see Figure 6-11).

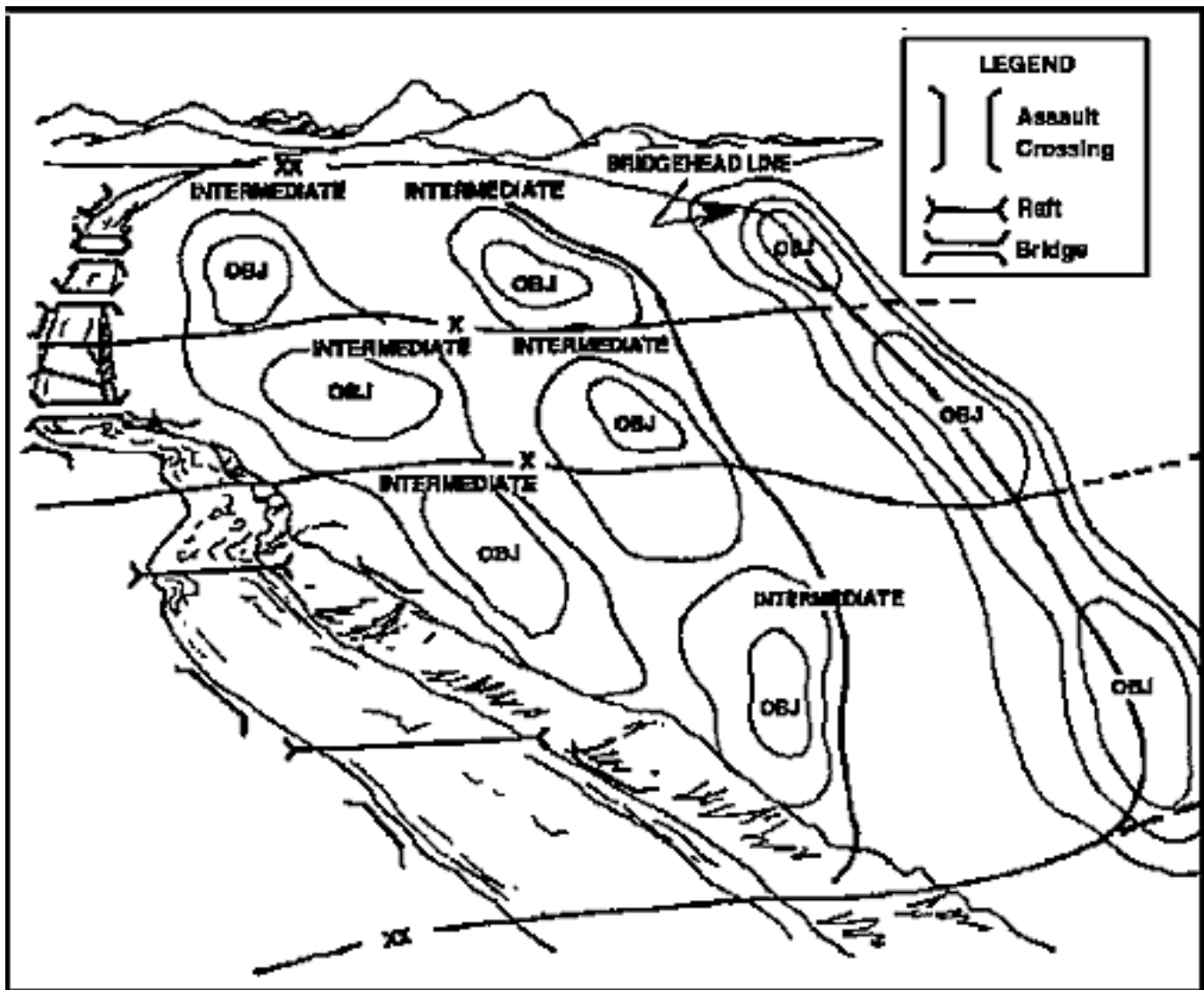


Figure 6-11. Crossing area boundaries.

Combat Service Support Sustains the Attack

Decentralized and prepackaged support accompanies the lead elements when possible. Rearming, refueling, and maintenance points are established along advance routes to speed up servicing. The remainder of the BSA positions itself beyond the range of enemy artillery, if possible, and crosses after the follow-on forces. Adequate Classes I, III, V, and IX supplies must initially accompany combat forces across the river to ensure sustainability of lead elements, even if crossing operations are temporarily suspended due to enemy activity.

SECTION VIII. APPROACH MARCH

Brigades normally conduct an approach march as part of a larger unit formation. The brigade may conduct an approach march when they are relatively certain of the enemy's location and are an extended distance from the enemy. An approach march requires continuous intelligence on the enemy and dominance over the effects of enemy indirect fire and air assets.

The brigade commander designates the march objective as well as the point the brigade disperses and assumes a formation that reduces the risk of initial contact and allows freedom of maneuver to subordinate units, thus avoiding a meeting engagement. The approach march allows the brigade to maneuver to attack

or defend, and ends when an objective or area is seized, or the enemy force defeated. The desired outcome of an approach march is a deliberate attack or deliberate defense.

The organization of forces for conducting an approach march is similar to the organization of forces for conducting a movement to contact. The brigade retains security to the front, flanks, and rear. The main body forces move as one organization. CS and CSS assets move internal to the brigade as necessary to support the planned operation after the point of deployment. The commander still plans for possible enemy attacks along his route of march.

Units with automated command and control systems, enhanced FS systems, global positioning navigation systems, and advanced target acquisition systems may conduct an approach march in a decentralized manner on separate routes.

CHAPTER 7

SUPPORT OF COMMAND OPERATIONS

CONTENTS
Section I. General
Section II. Fire Support
Section III. Combat Air Support
Section IV. Joint Air Attack Team Operations
Section V. Naval and Marine Fire Support
Section VI. Mobility and Survivability
Section VII. Nuclear, Biological, and Chemical Operations
Section VIII. Smoke Operations
Section IX. Air Defense Support
Section X. Intelligence and Electronic Warfare Support
Section XI. Military Police Support
Section XII. Signal Support

SECTION I. GENERAL

The application of superior combat power at the decisive time and place determines the outcome of the battle. The commander uses his CS assets to enhance the capabilities of his maneuver unit and to weight his main effort. Knowing CS capabilities, assigning them appropriate missions, and synchronizing their operations are essential to the application of superior combat power at the decisive time and place.

To be most effective, CS elements cannot be simply added into the commander's plan. They must be an integral part of it, not an afterthought made to adhere to a scheme of maneuver. Commanders frequently view CS as something added to the plan to make it better. This add-on nature reduces these critical elements from combat multipliers to merely combat additives. CS representatives must be involved at the outset in the staff planning sequence. The commander's intent must be clearly articulated as to what he wants to do to the enemy for the CS elements to prepare employment recommendations. The commander may then select a COA that synchronizes maneuver, fires, and CS into a cohesive battle plan.

SECTION II. FIRE SUPPORT

FIRE SUPPORT SYSTEM

General

FS is the collective and coordinated use of indirect-fire weapons, armed aircraft, and other lethal and nonlethal means in support of a battle plan. FS includes FA, NGF, and air-delivered weapons. Nonlethal means are EW capabilities of MI organizations, illumination, PSYOP, and smoke. FS encompasses careful integration of all available attack systems. Synchronization is the key to success. The brigade commander and his FSCOORD must know the capabilities and limitations of the systems available. The brigade commander employs these means to support his scheme of maneuver, to mass effects of fires, and to delay, disrupt, or destroy enemy forces in depth. FS planning and coordination exist at all echelons of maneuver.

FS enhances the maneuver commander's combat power by:

- Destroying, suppressing, and neutralizing targets. A discussion of these terms begins on page 7-3.
- Obscuring the vision of enemy forces.
- Isolating enemy formations and positions.
- Slowing and canalizing enemy movements.
- Killing or disabling the enemy at ranges greater than that of direct-fire weapons.
- Screening with smoke or isolating areas with scatterable mines.
- Reducing the effect of enemy artillery by active counterfire.
- Interdicting following threat echelons.
- Providing shock effect and confusion.

Components

The FS system supporting the armored forces is the collective body of target acquisition and battlefield surveillance; attack systems (lethal and nonlethal) and munitions; command and control and coordination systems and facilities; technical support (meteorological and survey); and the personnel required to provide and manage FS. ADA and engineer assets may also become important components of the FS system.

Target Acquisition Assets

The maneuver brigade or battalion FSO has several FA target acquisition assets available to call upon for use in detection of targets. The FA battalion supporting the brigade may have an attached AN/TPQ-36 (firefinder weapons-locating radar). The AN/TPQ-37 is found at division or corps. If this radar is covering the brigades sector, useful information may be available to S2s. OH-58A/C and OH-58D helicopters may be operationally controlled by the division or DIVARTY. Also, a UAV may be available to the brigade for target acquisition and attack. The brigade FSO and targeting officer request, plan, and coordinate these systems to achieve the commander's intent and scheme of fires. The commander ensures the planning, coordination, and synchronization of these assets occur and that this information is exchanged among his staff. HUMINT from FOs and COLTs should also be considered a valuable source.

Attack Systems

The attack could be lethal or nonlethal (such as smoke, illumination, PSYOP, and offensive EW). Assets normally available at brigade level and below are FA, combat air support, communications jammers (see Section X of this chapter for a discussion of communications jammers), NGF, and attack helicopters.

● *Field Artillery*

Normally, one FA battalion is in DS of a committed maneuver brigade. However, more artillery battalions can be assigned the mission to reinforce the DS battalion.

The division commander and his FSCoord (usually the DIVARTY commander) normally place at least one FA battalion in DS of a committed maneuver brigade. Additional FA units may reinforce DS battalions and/or provide GS reinforcing fires to the brigade based on availability and priorities of the division battle.

The advantages of FA are that it:

- Adds depth to the battlefield. The FA can strike and destroy the enemy deep before he can influence the battle.
- Provides first round fire for effect capability.
- Provides a variety of ammunition and fuze combinations.
- Provides continuous fire under all weather conditions, day or night, and from all types of terrain.
- Provides responsive shifting and massing of fires.
- Provides cross-country mobility compatible with the task force.

The disadvantages of FA are that it:

- Is an area fire weapon. However, point targets can be destroyed by using terminally guided munitions.
- Has a limited ability to survive enemy ground, air, and artillery attacks. Weapons can be detected because of their large signature from communications and firing. Therefore, artillery must displace frequently.
- Has limited ability to bring timely and accurate massed fires on moving targets without detailed coordination and planning.
- Must be observed fire to be effective.

The maneuver commander must decide what effect FA must have on a particular target. The three types of fires are

- **Destruction.** Destruction puts a target out of action permanently. Direct hits are required to destroy hard materiel targets. Usually, destruction requires large expenditures of ammunition and is not considered economical. Thirty percent or more casualties normally render a unit ineffective.
- **Neutralization.** Neutralization knocks a target out of action temporarily. It does not require an extensive expenditure of ammunition and is the most practical type of mission. Most missions are neutralization fire. Ten percent or more casualties may neutralize a unit.
- **Suppression.** Suppression of a target limits the ability of the enemy personnel in the target area to perform their jobs. The effects of these fires usually last only as long as the fires are continued. Suppression requires a small amount of ammunition; however, since its effects are not lasting, it is unsuitable for most targets.

Indirect fires are divided into two categories:

- **Observed fire.** Observed fire is fire for which the points of impact can be controlled by an observer. The most economical use of indirect-fire weapons is attained by ensuring fire is observed when accuracy cannot be guaranteed.
- **Unobserved fire.** Unobserved fire is fire for which the points of impact are not observed. It involves predicting where targets are, or will be, and placing fire on them. Use of unobserved fire requires follow-up activity to assess effectiveness. This is the least efficient means of employing fires.
- ***Combat Air Support***

Air support is provided by the Air Force, Navy, and Marine Aircraft Wing if available. The mission is to support Army operations by providing air interdiction and CAS operations. At the brigade, CAS is the primary support mission. CAS involves air actions against hostile targets that are in close proximity to friendly forces and require detailed integration of each air mission with the fire and movement of friendly forces. The missions are distributed to each corps by the land component commander. The corps commander then further distributes the CAS missions down the Army chain of command. Usually, CAS missions are distributed no lower than brigade. CAS targets are either preplanned or immediate. Preplanned and immediate air requests are discussed in greater detail in Section III, Combat Air Support.

- ***Naval Gunfire***

The mission of NGF is to assist the ground force by destroying, neutralizing, or suppressing targets that oppose that force. NGF provides limited volumes of FS close to coastal waters. Most cruisers, destroyers, and some frigates carry 5-inch guns with over 21 kilometers of range.

The advantages of NGF are that it:

- Fires a variety of munitions and fuzes, including HE, WP, and illumination.
- Has a flat trajectory. This makes naval guns particularly effective against vertical-face targets such as coastal fortifications.
- Can deliver a large volume of fire in a relatively short period.

The disadvantages of NGF are that it:

- Has limited calibers available.
- May have a large range error. Always try to ensure that the ship does not fire toward or directly over friendly troops.
- Is less accurate in rough seas.

- Can expend a limited quantity of ammunition. All ships must keep some ammunition to protect themselves from enemy air or surface attacks. Self-preservation and preservation of the fleet are their first priority.
- Has limited interoperability between the ship and ground force communications. The ship's radios are high frequency (HF) amplitude modulated (AM) and are not compatible with the standard Army frequency modulated (FM) radios.
- Has a flat trajectory so it is less effective than FA against targets on reverse slopes.

Attack Helicopters

Attack helicopter units are not generally attached lower than division level, but they may be placed OPCON to a brigade. Attack helicopters rarely do fire support missions, but are capable of this mission and limited CAS because they are both sensors and shooters. In fact, as a shooter, they possess direct and indirect fire weapons. However, aviation units should be addressed under the "maneuver" section of paragraph 3 in an OPORD and not under the "fires" section. On the basis of the commander's risk-versus-payoff assessment, AH-1 and AH-64 attack helicopter units and the OH-58D (Kiowa Warrior) observation helicopter unit may be tasked to provide FS in certain situations (for example, in deep operations or while supporting ground maneuver forces in OOTW).

The advantages of attack helicopters are that they:

- Have a variety of munitions including wire guided and laser guided missiles.
- Are capable of attacking targets within 500 meters of friendly troops.
- Can fire aerial rockets indirectly at extended ranges.
- Possess rapid mobility throughout the battlefield.
- Can destroy point targets and moving targets.
- Deliver, guide, and help guide smart laser munitions.

The disadvantages of attack helicopters are that they:

- Are vulnerable to enemy air defense and counterair.
- Have limited loiter times.
- Require SEAD and may interrupt FA fires due to the risk to the aircraft.
- Require large amounts of rocket ammunition for effective attacks if the rockets are fired indirectly.
- Sacrifice antiarmor systems to permit aerial rocket fire.

Fire Support Key Personnel

- ***Brigade Commander***

The brigade commander sets the guidance for FS and ensures the DS FA battalion commander (FSCOORD) understands what he wants and when he wants it. He ensures his FS plan is synchronized with the maneuver plan and details the mission he wants his FS systems to accomplish. The brigade commander is charged with the following:

- Ensures his staff comes together to integrate obstacles, R&S, fires, and maneuver.
- Approves the fires paragraph, high-payoff target list, and attack guidance matrix.
- Trains commanders to know, understand, and execute targets in their zones.

- ***Maneuver Brigade S2***

The S2 is charged with identifying, templating, and predicting enemy actions. This allows the FSO to help determine possible artillery COAs as well as preliminary position requirements. The brigade S2 is an

integral part of the brigade targeting team. He nominates HVTs, evaluates known and suspected enemy target data, and coordinates attack of targets with EW assets. His R&S plan synchronizes targeting requirements with available collection assets.

- ***Maneuver Brigade S3***

The S3 ensures the FSE is integrated into the planning process and requests input from the FSCoord about FS assets. He must fully integrate the FS systems into the plan using the synchronization matrix, DST, and combined arms rehearsals. He is the driving force behind positioning coordination for the FA, and conducts the brigade targeting meeting.

- ***Direct Support Field Artillery Battalion Commander***

The DS FA battalion commander is FSCoord for the brigade. He is specifically responsible for all FS planning and coordination for the maneuver brigade. The DS battalion commander provides an assessment of current and near-term capabilities of his unit and of other FS assets supporting the force. Duty location of the DS FA battalion commander at any given time is where he can best execute the maneuver commander's intent for FS. In addition to supporting the brigade, the DS FA battalion commander is responsible for:

- Training the FS system and his battalion to perform successfully all stated and implied missions and tasks associated with providing FS to a maneuver force.
- Continuously articulating his assessment of the current and future capabilities and status of all FS assets supporting the maneuver force. This assessment may be obtained from reports or by personal observation, at the FSCoord's discretion.
- Providing a knowledgeable, experienced officer as brigade FSO. The FSCoord must establish a special mentor relationship with this officer since the FSO, in the absence of the FSCoord, personally represents him to the brigade commander. More than any other officer, the FSO must understand the FSCoord's intent in supporting the maneuver plan. In addition, the FSCoord must ensure that his brigade FSO is equally conversant on the FSCoord's assessment of FS assets supporting the maneuver force.
- Approving the DS battalion FA support plan.

BRIGADE FIRE SUPPORT ELEMENT ORGANIZATION

The brigade FSE is organized with the following personnel:

- FSO (major).
- FS plans/targeting officer (WO2).
- FS sergeant (sergeant first class).
- Two FS specialists.

When added to the FSE to perform their FS functions, other representatives serve to enhance and speed FS coordination. These representatives may include

- The ALO, for coordination and employment of Air Force assets in support of the brigade.
- The NGLO, for coordination and employment of NGF and naval air in support of the brigade.
- The brigade chemical officer, for deployment of NBC defense and use of chemical, riot control, obscurant, and aerosol agents.
- The S3-Air, to serve as maneuver assistant S3 and to coordinate employment of combat air with Army aviation and the FSO, ALO, and air defense platoon leader.
- Other representatives as required, such as LOs of allied forces supporting the operation or Army aviation LO when Army aviation is used as an FS asset.

- The FSO should have a working knowledge of the duties of the following staff members who may be in the brigade TAC CP.

The brigade ADA battery commander manages the air defense assets in support of the brigade. He may have valuable information on the location of enemy air defense targets, airspace coordination, and the enemy air situation.

The brigade engineer manages engineer assets in support of the brigade operation. He assists in the coordination of the integration of obstacles and fires, the use of all FASCAM, and general mobility and survivability requirements.

The IEW representative from the divisional combat EW and intelligence battalion controls and supervises the IEW assets in support of the brigade. He can provide some targets and information and is the tie-in for the offensive use of jamming. The FSO needs a working knowledge of the IEW assets available from this source to effectively coordinate their use in the attack of targets.

SECTION III. COMBAT AIR SUPPORT

TYPES OF AIR SUPPORT

The Air Force provides the Army with five types of air support: CAS, combat air reconnaissance, tactical airlift, electronic combat (EC), and battlefield air interdiction. Brigades allocate CAS and combat air reconnaissance. Airlift, air interdiction, and EC are normally allocated at division and higher.

Close Air Support

CAS is defined as air attacks on hostile surface forces that are in close proximity of friendly troops. CAS can be employed to blunt an enemy attack, support the momentum of the ground attack, or provide cover for friendly movements. For best results while avoiding mutual interference or fratricide, aircraft are kept under "detailed integration" (part of the Air Force's combat air system). The effectiveness of CAS is directly related to the degree of local air superiority attained. Until air superiority is achieved, competing demands for CAS and counterair operations for available aircraft may limit sorties apportioned for the CAS role. CAS is the primary support given to committed brigades and battalions. Nomination of CAS targets is the responsibility of the commander, ALO, and S3 at each level.

Combat Air Reconnaissance

Combat air reconnaissance is designed to furnish timely and accurate information on the location, composition, activity, and movement of enemy forces. The mission is flown by high-performance aircraft at high or low altitude, day or night, and in all weather conditions. The inherent nature of air reconnaissance means that it is best used in support of operations 12 to 24 hours ahead and, for that reason, is usually tasked to division level and higher. The brigade S2 requests combat air reconnaissance in support of his intelligence collection process.

COMBAT AIR CONTROL SYSTEM

To ensure the proper integration and planning of both ground- and air-delivered FS, the battalion commander collocates his Army and Air Force FS personnel. The FSE from the DS FA battalion and the TACP from the Air Force work closely together to ensure the battalion receives the FS it requires. The duties of the FAC are carried out by the ALO or controller-qualified enlisted personnel assigned to the TACP.

The TACP at battalion level and above advises the Army unit commander on the capabilities, limitations, and employment of combat air. It also calls in requests for CAS and controls it once it comes on station. At battalion level, the TACP consists of an ALO and two enlisted terminal attack controllers. These personnel can operate on foot, from ground vehicles, or from fixed- or rotary-wing aircraft. Although not a part of

the TACP, there is one other player in this system. The TAC-A normally operates from a fixed-wing aircraft clear of enemy surface-to-air weapons. He coordinates the aircraft that are engaged in CAS but normally does not provide terminal attack control. In the absence of a TACP, Army unit FSEs can provide emergency requests and control of CAS aircraft.

CLOSE AIR SUPPORT PLANNING CONSIDERATIONS

CAS mission success is directly related to thorough mission planning based on the following factors and considerations.

Weather

Does the weather favor the use of aircraft? What is the forecast for the immediate future? Weather is one of the most important considerations when visually employing weapons; it can hinder target identification and degrade weapon accuracy.

Target Acquisition

Targets that are well camouflaged, small and stationary, or masked by hills or other natural terrain are difficult to identify from fast-moving aircraft. The use of marking rounds can enhance target identification and help ensure first-pass success.

Target Identification

This is critical if CAS aircraft are to avoid attacking friendly forces by mistake. It can be accomplished by providing a precise description of the target in relation to terrain features easily visible from the air. Smoke, laser target marking, or other means can also be used.

Identification of Friendly Forces

Safe means of friendly position identification include mirror flash, marker panels, and direction and distance from prominent land features or target marks.

General Ordnance Characteristics

What types of targets are to be engaged, and what are the desired weapon effects?

Final Attack Heading

Choice of the final attack heading depends upon considerations of troop safety, aircraft survivability, and optimum weapon effects. Missiles or bombs are effective from any angle. Cannons, however, are more effective against the sides and rears of armored vehicles.

Troop Safety

This is a key consideration in using CAS. The primary cause of friendly fire on friendly troops is misidentification of those troops as enemy forces.

Suppression of Enemy Air Defense

SEAD is required based on the capabilities of the aircraft and presence of enemy air defense systems in the target area.

Close Air Support and Artillery Integration

Army artillery and combat air power are complementary. Because artillery support is more continuous and faster to respond than CAS, CAS missions must be integrated with artillery so that limited firing

restrictions are imposed. The airspace coordination area (ACA) is the FSCM used to accomplish this integration. There are four standard ACAs: lateral, altitude, timed, and altitude and lateral separation. Other planning factors that must be considered are time available for planning; command, control, and communications; and terrain.

Night Planning and Operation Considerations

In a high-intensity, high-threat environment, the capabilities of CAS aircraft employed at night are very limited. To improve the capabilities of night CAS, the Air Force is acquiring additional night-capable systems such as the low-altitude navigation and targeting infrared for night (LANTIRN) system. Despite the limitations, CAS aircraft still have a few advantages while attacking at night. The most important advantage is the limitation darkness imposes on enemy optically sighted and infrared anti-aircraft systems. This is true if they do not have NVDs. Airborne or ground-based illumination can also degrade enemy night vision capabilities.

The two most important requirements of a night CAS operation are identification of the enemy or target and positive marking of friendly unit locations. The ground maneuver commander should rely on his own Army assets to accomplish the marking and illumination requirement. Although flares released from airborne FACs, other CAS aircraft, or "flare ships" can effectively illuminate target areas, ground artillery and heavy mortar-fired illumination are normally preferred due to the continuous capabilities of sustained indirect fire.

Marking friendly unit locations improves joint air attack team (JAAT) and CAS safety and can also provide target area references. Tracers and radar beacons can serve both purposes. If safe separation is a factor, friendly unit marking is critical. Fired into the air, 40-mm illumination grenades and flares are effective, but they may be useful to the enemy as well. Flares used during limited visibility operations can create the "milk-bowl" effect, making it more difficult for a CAS aircraft to find its target. When used under a low cloud ceiling, flares can also highlight the aircraft against the cloud cover. Strobe lights are very good night markers. They are commonly used with blue or infrared filters and can be made directional by the use of any opaque tube. In overcast conditions, strobe lights can be especially useful. Aside from the obvious security considerations, almost any light that can be filtered or covered and uncovered can be used for signaling aircraft.

SECTION IV. JOINT AIR ATTACK TEAM OPERATIONS

A JAAT operation is an aviation operation capable of adding to the lethality of combined arms operations. The JAAT may operate either integrated into close operations or it may operate independently to the front of ground units. A JAAT is a highly mobile and lethal tank-killing force that can engage the enemy beyond the range of ground AT weapons.

The JAAT can be employed during the conduct of offensive or defensive operations and is especially useful to counter enemy airmobile or Army operations insertions in friendly rear areas. A JAAT can be employed to accomplish specific tasks during the conduct of combined arms team operations. Offensively, the commander can best use the team against enemy counterattacks or in the exploitation or pursuit role.

The ground maneuver commander has overall responsibility for planning and employing the JAAT. When the brigade commander determines that his maneuver forces need increased combat assets to attack a lucrative target array, he requests attack helicopters and CAS aircraft. When attack helicopters are OPCON to a brigade, the commander, on the advice of his FSCOORD, ALO, and attack helicopter battalion commander, requests CAS aircraft through preplanned or immediate air channels.

Planning a JAAT operation is complex and requires detailed coordination between the brigade commander/S3, FSO, ALO, and attack helicopter battalion commander. See FM 90-21 for further details on JAAT operations. The scheme of maneuver, CAS, and FS must be integrated to the maximum extent possible. Planning considerations include

- Nature of target.
- Enemy avenues of approach.
- FS coordination.
- Airspace control.
- Provisions for SEAD.
- Communications.
- Current ground tactical plan.
- Contact points/initial points.
- Weather.

Although JAAT assets may be requested and planned for, the brigade commander must be prepared to execute his maneuver plan without some or all of the JAAT components.

SECTION V. NAVAL AND MARINE FIRE SUPPORT

GENERAL

NGF provides large volumes of immediate FS close to coastal waters. Normally, naval fires are controlled by a NGLO attached to the FSE for a specific operation.

ORGANIZATION

NGF in a US Army unit is coordinated through the air and NGF liaison company. The air and NGLO is a Marine organization which consists of three brigade air/NGF platoons organized and equipped to plan, request, coordinate, and control NGF and naval air. Figure 7-1 shows the organization of the air and NGLO. Each platoon has supporting arms liaison teams (SALT) that are normally provided to maneuver battalions. The SALT consists of two officers and six personnel, who become part of the unit's FSE. The SALT has two firepower control teams (FCT) that may be provided to maneuver companies to request, observe, and adjust naval FS. The SALT officers coordinate all NGF and supervise the activities of the FCTs. In addition, they advise the FSCOORD on all matters pertaining to NGF employment

COORDINATION AND PLANNING

The NGF liaison team of the brigade operates on the division NGF support net (HF). This net provides communication between the division naval gunfire officer (NGO), the brigade NGLO and the ship(s) in support of these units. This net is used for the day-to-day planning between units. No direct naval communications exist between the FCTs and SALTs. FS or maneuver nets must be used to communicate between these two teams. Requests for FS are transmitted to the air and NGF team (at brigade or division), which forwards it to the ship. The NGO at division monitors and/or coordinates as necessary. This coordination is much the same as for FA engagement.

When NGF is available and air and NGLO personnel are not available, units may request NGF through the FS net to the division where the NGO is located with the division FSE. To increase response time for adjustments, Army personnel may interface with the NGF unit if the following equipment is available:

- NGF ground spotter net (frequency 2-30 MHz HF).
- Compatible equipment:
 - Army: GRC-106, GRC-193.
 - USMC: PRC-104, GRC-193, MRC-138.
 - Air Force: PRC-104, MRC-107/108, GRC-206.

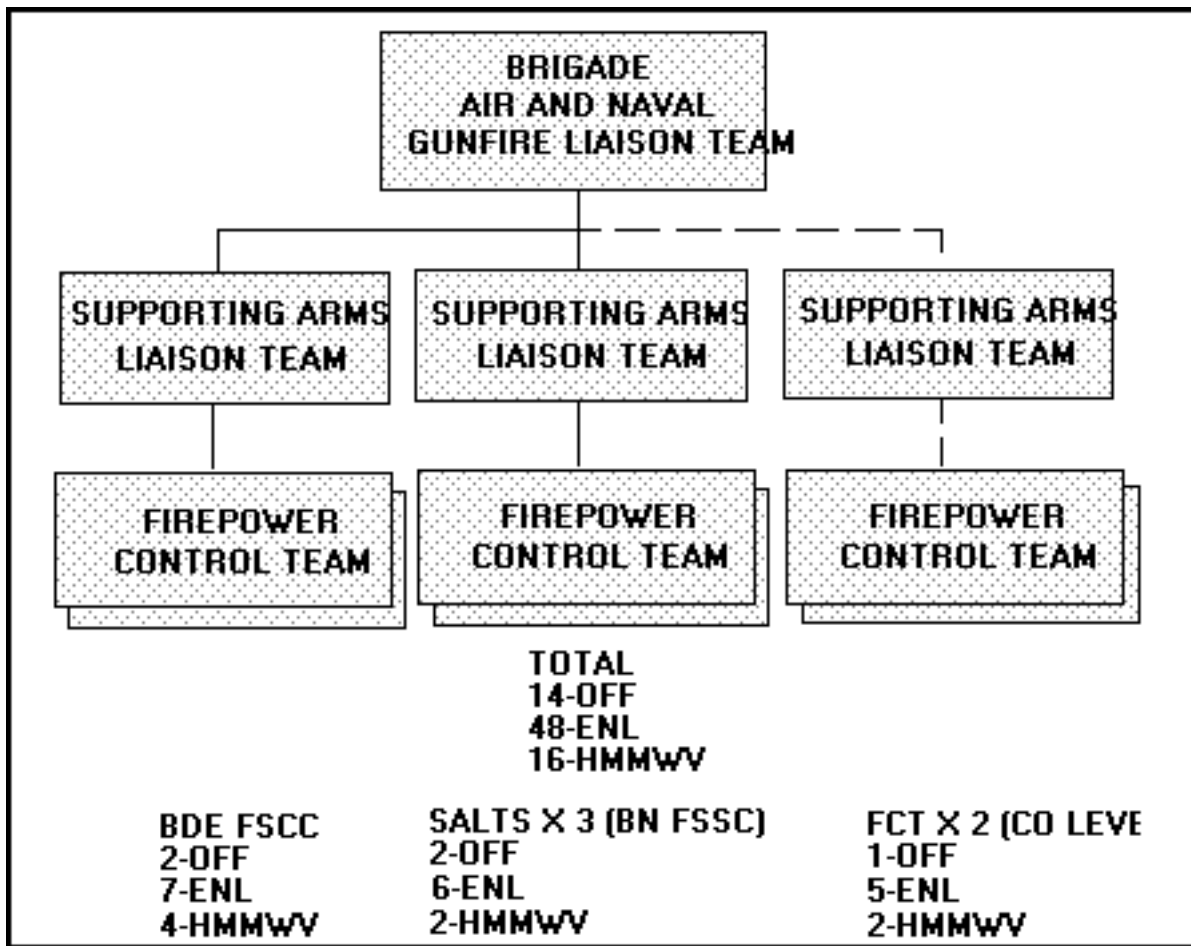


Figure 7-1. Air and naval gunfire liaison company organization.

A complete understanding of the characteristics of NGF is essential to its successful use in ground support.

EMPLOYMENT

NGF ships are assigned the missions of DS or GS in the same way as artillery is organized for combat.

Direct Support

A ship in DS usually supports a battalion. This ship can deliver both planned and on-call fires. On-call fires are normally requested and adjusted by the FCT of the supported unit or by an air spotter.

General Support

A ship is usually placed in GS of a brigade or division. The fires for the GS ship are conducted as directed by the NGO of the supported unit.

The primary purpose of a DS ship is to allow the supported commander to add depth to the fires of his artillery without the necessity for requests to higher echelons.

SECTION VI. MOBILITY AND SURVIVABILITY

GENERAL

Combat engineers are an integral part of the combined arms team. Engineers adapt terrain to enhance the battle effectiveness of fire and maneuver. The orientation of engineers in support of a brigade is forward; their efforts are designed to support forward fights.

ENGINEER FUNCTIONS

Combat engineers provide five primary engineer functions:

- Mobility. They enable the commander to maneuver tactical units into positions of advantage over the enemy.
- Countermobility. They reinforce terrain with obstacles to hinder enemy operations and maximize the effectiveness of direct and indirect fire.
- Survivability. They reduce the effectiveness of enemy weapon systems by developing protective positions in favorable locations.
- General engineering. They provide the force construction, LOCs maintenance and repair, airfield damage repair, battle damage restoration, and minefield clearing needed to sustain operations.
- Topographic engineering. They provide the commander with terrain analysis to aid in the planning and conduct of combat operations.

TASK ORGANIZATION OF COMBAT ENGINEERS

The heavy division has one organic divisional combat engineer brigade. Each committed maneuver brigade normally has an engineer battalion in DS and habitually associated. The actual level of engineer support is adjusted based on METT-T analysis.

Combat Engineer Battalions

Divisional Combat Engineer Battalion

This unit is organic to the engineer brigade with one engineer battalion per maneuver brigade. The engineer battalion performs engineer battlefield functions for their supported maneuver brigade in the heavy division in the AO, focusing on mobility, countermobility, and survivability. Each divisional engineer battalion has three combat engineer line companies, a headquarters company, and a support platoon (see Figure 7-2).

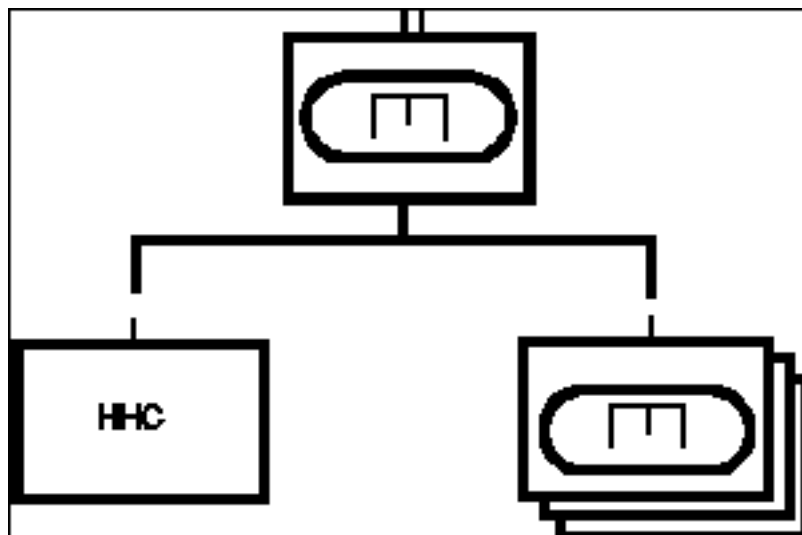


Figure 7-2. Divisional combat engineer battalion.

Corps Combat Engineer Battalions

These corps units may work within the brigade's AO. Units, if assigned to the brigade, work under the control of the brigade engineer.

Combat Engineer Companies

Divisional Combat Engineer Company

The divisional company has two line platoons and an assault and obstacle platoon. The assault and obstacle platoon has two assault sections and one obstacle section used to augment the line platoons (see Figure 7-3).

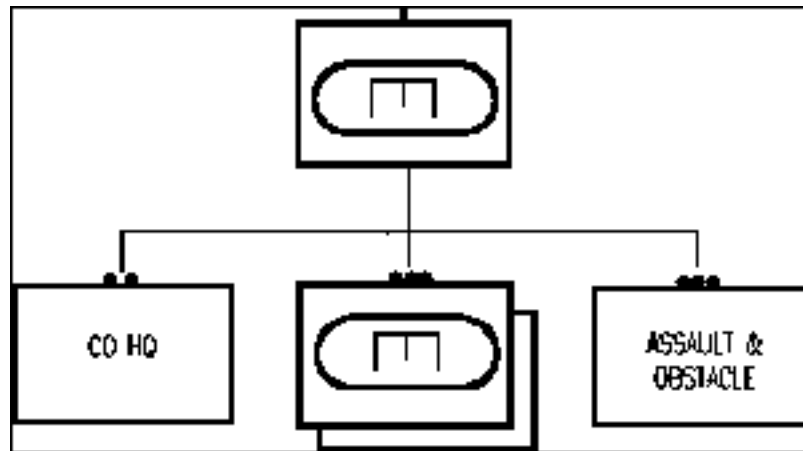


Figure 7-3. Divisional combat engineer company.

Corps Combat Engineer Company (Mechanized)

This corps unit has two line platoons and an assault and obstacle platoon. The squad vehicle is an M113 APC. The corps combat engineer company (mechanized) only has six armored combat earthmovers (ACE), whereas the divisional company has seven ACEs.

Separate Brigade/Armored Cavalry Regiment Engineer Battalion

The separate maneuver brigade has an organic engineer battalion. The separate brigades engineer battalion organization is the same as the divisional combat engineer battalion.

DIRECT SUPPORT ENGINEER BATTALION COMMANDER

The DS engineer battalion commander is responsible for all engineer planning and coordination for the maneuver brigade. The engineer battalion commander provides an assessment of current and future capabilities of his unit and other mobility/survivability assets supporting the brigade. The brigade engineer positions himself where he can best accomplish the intent of the brigade commander. In addition to supporting the brigade, he is responsible for:

- Training his battalion to accomplish all assigned and implied tasks associated with supporting the brigade.
- Updating and articulating his assessment of the current and future capabilities and status of all mobility/survivability assets.
- Approving the mobility/survivability support plan.

ENGINEER OPERATIONS

Command and Support Relationships

Engineer platoons work most efficiently under the control of an engineer company, and engineer companies work most efficiently under the control of an engineer battalion. This permits close control and the most productive use of all engineer assets. The engineer commander continuously monitors the progress of assigned tasks and shifts elements where the need is greatest throughout his AO. On the other hand, the maneuver commander at the lowest level gets greater responsiveness when the engineer company is under his control. He determines the task organization and gives missions directly to the engineer elements under him. The decision whether to provide engineers in a command or support relationship to a subordinate maneuver headquarters is an important one. The higher maneuver commander must weigh his need for flexibility and responsiveness and his option to task organize engineer forces against the most efficient use of scarce engineer assets.

Organizational Principles

The following principles apply when employing combat engineers:

- Task organize the engineer force to the requirements of the mission.
- Give priority to the main effort (mass the engineer effort). Avoid piecemealing engineers to provide every unit a "slice." Provide the main effort with enough engineer support to succeed.
- Integrate engineers with maneuver and fires.
- Do not hold engineers in reserve (that does not mean that the reserve maneuver force should not have engineers).
- Augment engineers logistically to support the plan. Engineers may need additional time, materiel, and transportation assets to execute the maneuver plan.
- Plan to exploit local resources. Commercial equipment and materiel may be used to support military mobility, countermobility, and survivability operations.

Engineers Fighting as Infantry

Any commander who controls engineers in a command relationship, unless otherwise prohibited, has the authority to employ them as infantry. Because of the long-term impacts, the commander employing an engineer unit as infantry has the responsibility to notify the next higher headquarters of his action. In his decision to do so, he must carefully weigh the gain in infantry strength against the loss of engineer support. Because of the long-term impact, the commander employing an engineer unit as infantry has the responsibility to notify the next higher headquarters of his action.

SECTION VII. NUCLEAR, BIOLOGICAL, AND CHEMICAL OPERATIONS

SECTION ORGANIZATION

The brigade chemical section consists of the brigade chemical officer (captain) and a chemical operations NCO (sergeant first class; MOS 54B40). Equipment in the NBC section includes appropriate doctrinal manuals, map boards, overlays, a work station, hazard templates, and status charts.

OPERATIONAL CAPABILITIES

Organization of deployed brigades may be somewhat different. However, their functions and duties are similar to those of a divisional brigade. The brigade chemical officer works as an assistant operations officer in the operations section of the brigade. Both the officer and NCO are assigned by modified table of organizations and equipment (MTOE) to the headquarters company or troop. Through staff visits, coordination, and inspection of subordinate units, the brigade chemical section is the focal point for NBC operations. This is accomplished in garrison as well as in the field.

FACILITIES, ORGANIZATION, AND DUTIES

During field operations, the brigade chemical personnel provide 24-hour NBC operations capability. A work station is designated in the TSOP for the main CP where chemical information is to be processed and disseminated. The chemical officer is available to cover shift changes within the main CP and provide chemical continuity for tactical operations. However, the section is organized into two distinct yet flexible shifts. In addition, upon movement of the main CP, one person can move to the TAC CP to continue the battle or move with the TAC CP in anticipation of a main CP jump, allowing for one person at each site. It is not recommended to leave these shifts split due to the possibility of overburdening.

Brigade chemical personnel are instrumental in the planning cycle of all tactical operations. They assist the S2 in the IPB process and integrate and synchronize NBC defense and smoke operations to support courses of action. Once the plan is developed, they ensure execution.

Duties and responsibilities of chemical personnel in the brigade main CP are listed in the following paragraphs. These are not all-inclusive and are manipulated to meet changing situations. In addition to these specific chemical duties, chemical officers and NCOs also perform a myriad of operational duties according to their abilities and unit needs.

Training

Monitor, evaluate, and determine training needs and provide technical training; plan and coordinate training; conduct NBC battle focus; evaluate status of training. Aid in professional development of subordinate chemical personnel.

Evaluation

Provide NBC expertise as evaluator; analyze results and present facts; develop solutions to correct deficiencies.

Readiness

Consolidate and provide data to command group; assist S4 with NBC stocks and resupply; monitor contingency stocks.

Logistics

Account for NBC expenditures; follow up requisitions and maintenance; balance equipment on hand and requisitions.

Administration

Write and update NBC annex to SOP; maintain current publications; remain proficient in current doctrine; maintain liaison with subordinate units and higher headquarters.

Field Operations

Execute NBC warning and reporting system; maintain current operations overlay; post NBC attack overlay; with S4, develop contaminated MSR overlay; maintain decontamination overlay and post NBC unit symbols; conduct NBC vulnerability analyses; maintain radiation status charts; recommend MOPP levels and employment of chemical assets.

OPERATIONS

When planning offensive or defensive operations, the commander must recognize that NBC weapons can significantly affect his scheme of operations. All threat forces train extensively for operations on a battlefield where NBC weapons are used. They carry a complete array of individual and vehicle NBC

protective gear. Some threat forces have armored vehicles that provide pressurized protection for crews. Most threat forces integrate smoke into their scheme of maneuver.

During movement to contact operations, the primary emphasis is on the most trafficable terrain. Aggressive reconnaissance to identify enemy locations and areas of possible NBC contamination must be conducted. Through the use of chemical personnel at brigade level, provisions are made to overcome these obstacles and facilitate movement.

In nuclear warfare, a formation with two or more task forces abreast and a reserve may be adopted in the attack when a successful penetration has been created by other forces. This allows the brigade to attack on a broader front, presenting a less lucrative target. Offensive forces also face a variety of obstacles in defeating the enemy. Actual obstacles constructed forward of, between, and within strongpoints are designed to canalize friendly forces into areas favorable to the defending force or to cause forces to mass and create a profitable target for conventional and/or nuclear fires. When heavy OPFOR are in the defense, the use of chemical agents and smoke can be expected to complement their barrier plan.

Plans must be developed for delaying the concentration of forces and rapid dispersal after mission accomplishment. Reducing vulnerability and the period of risk are major considerations while forces are concentrated. Planning for the use of routes to, on, and through objectives must be complete, and movement must be controlled.

Before and during either the offensive or defensive phase of combat operations, the chemical officer continuously monitors the biological and chemical situation and event development. His IPB analysis factors the weather, terrain, enemy biological/chemical employment doctrine, biological/chemical sensor capabilities and limitations, and field behavior of biological/chemical agents. He uses the information reported by the corps biodetection company and/or other battlefield sensors to initiate the analysis process. The chemical officer analyzes and evaluates biological/chemical surveillance information and, based on this development of the situation, works with the S2 and S3 to assist in the preparation of recommended COAs and the commanders decision-support graphics.

SECTION VIII. SMOKE OPERATIONS

Properly planned and executed smoke operations become a combat multiplier when they increase survivability of friendly forces and degrade enemy command, control, communications, and intelligence capabilities. Specifically, smoke can be used to:

- Deny the enemy information.
- Reduce effectiveness of enemy target acquisition means.
- Restrict nap-of-the-earth and contour approaches for aircraft.
- Disrupt enemy movement, operations, and command and control.
- Create conditions to surprise the enemy.
- Deceive the enemy.
- Weaken the thermal effects of nuclear weapons.

The brigade employs two categories of smoke - hasty and deliberate. Hasty smoke is employed for short-term requirements with a minimum of planning. It may be delivered by all smoke assets, but is normally delivered by artillery, mortars, and smoke pots. Deliberate smoke is characterized by integrated planning. It is used over extended periods to cover friendly activities throughout an entire operation. Although it is normally employed to conceal friendly units, it may also be used to blind enemy units. Deliberate smoke is normally produced by mechanical generators and smoke pots. Either type of smoke can be used to deceive the enemy.

Smoke has four general applications on the battlefield:

- Obscuration smoke. Obscuration smoke is employed on or against the enemy to degrade its vision both within and beyond its location.
- Screening smoke. Screening smoke is employed in friendly AOs or in areas between friendly and enemy forces to degrade enemy ground and aerial observation and defeat or degrade enemy electro-optical systems. Screening smoke is employed to conceal ground maneuver, breaching and recovery operations, key assembly areas, and supply routes.
- Protecting smoke. Protecting smoke is used to defeat enemy guidance systems or to attenuate energy weapons on the battlefield. For example, smoke can be used to degrade the effects of lasers, high-power microwaves, particle beams, and non-nuclear, directed electromagnetic pulse.
- Identification or marking smoke. Marking smoke is employed to identify targets, supply and evacuation points, and friendly unit positions. It also provides for prearranged battlefield communications.

Smoke planning is a part of the overall tactical plan. Each echelon of command plans for employment of smoke to support its operations. The brigade S3 has primary staff responsibility for planning smoke operations with the advice and support of the FSO, S2, S4, chemical officer, and staff weather personnel.

In the offense, smoke can be used to deny the enemy information about the size and composition of friendly forces and location of the main attack. A smoke screen can be placed either to the front or to the flanks. When the enemy cannot be screened effectively, obscuring smoke may be required. To support offensive operations, smoke generators remain mounted on vehicles.

Smoke use will support any type of defensive operation. In the defense, use smoke to support maneuver by concealing, disengaging, and moving forces; by isolating and attacking echelons; and by concealing engineer operations. Use smoke to provide additional firepower by disrupting enemy command and control and forcing the enemy to mass, thereby creating the lucrative target. As in offensive operations, the main focus of smoke operations is to defeat enemy target acquisition and reconnaissance and to conceal maneuver forces.

Use smoke to deceive the enemy regarding intentions of friendly forces. Deception operations can make valuable use of smoke assets by making the enemy commit forces to the deception and not to the main attack. The key to a successful smoke deception is to make the enemy believe the smoke support is for the main effort.

SECTION IX. AIR DEFENSE SUPPORT

ORGANIZATION

The air defense CS for a brigade is provided using a combination of BSFVs, Avengers, and HMMWV-mounted Stinger crews. The brigades mission and the division commanders air defense priorities are used by air defense battalion commanders to determine the air defense allocation for a brigade. Early warning is provided by the air defense sensors and the division early warning net.

Allocation of ADA assets within the brigade depends on the brigades mission. Based on the brigade commanders intent, scheme of maneuver, air IPB, and air defense priorities, the ADA commander may recommend retaining all assets under brigade control or allocating assets to subordinate units.

The air defense battalion organic to an armored division consists of a headquarters and HHB, three BSFV batteries, and one Avenger battery. Total equipment in the battalion consists of 24 BSFVs, 6 BFVs, 40 HMMWV-mounted MANPAD teams, 24 Avenger fire units, and 6 ground-based sensors.

A BSFV battery's organic equipment is 2 platoon leader BFVs, 8 BSFVs, and 10 HMMWV-mounted Stinger crews (see Figure 7-4).

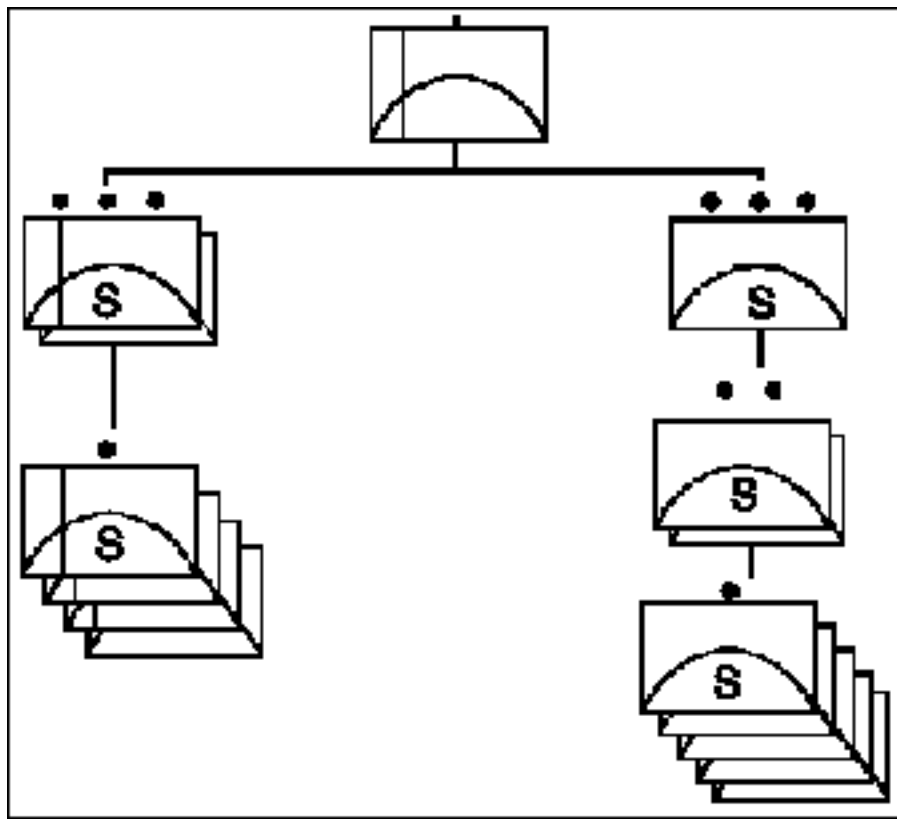


Figure 7-4. Bradley Stinger fighting vehicle battery.

An Avenger battery consists of 6 platoons of 4 fire units for a total of 24 fire units.

DUTIES OF KEY AIR DEFENSE PERSONNEL

Senior Air Defense Officer

The units senior ADO is a special staff officer during the planning process. Based on the maneuver commanders intent, scheme of maneuver, and air IPB, he develops air defense priorities. The maneuver commander must then approve these priorities before task organizing air defense assets. The brigade must provide the ADO with the following information.

The S2 provides information on the ground and air threat and the units PIR. The S3 provides the unit OPORD or OPLAN and TSOP. This includes overlays; preplanned locations; commanders intent and concept of operation and follow-on operations; commanders priorities; what units expect heavy ground and air action; what assets are most critical, most vulnerable, and easiest to recover or replace; special or modified brevity or operations codes, key words, or emergency procedures; points the supported unit commander wants covered in daily briefs; SOI; resupply; the supported units MOPP level; and how changes are disseminated.

The S4 provides the following resupply information: Class I pickup points, times, and feeding cycles; Class II resupply of NBC suits, gear, and batteries; Class III refueling locations and times; Class V arrangements for supply of specialized ammunition; Class IX procedures for ordering and receiving parts and locations and times for pickup. He also determines how resupply is handled and if the air defense unit has been considered in the planning; who maintains air defense unit's non-system-peculiar equipment; and where they are located.

Air Defense Artillery Battery Commander

The ADA commander has two roles: commander of ADA forces and brigade air defense coordinator. He recommends active, passive, and other combined arms air defense measures in the air defense estimate. After approval and staff coordination, he develops the air defense annex to the maneuver plan. He coordinates with ADA elements at higher and lower echelons and with adjacent units. He recommends to the ground commander use of other combat arms for air defense based on careful target value analysis (TVA) and estimate of the air threat. He is also the early warning link to brigade. He can thus monitor the early warning net and relay information to the brigade main CP officer. This information can be passed to maneuver forces over the command or operations and intelligence net (see Figure 7-5).

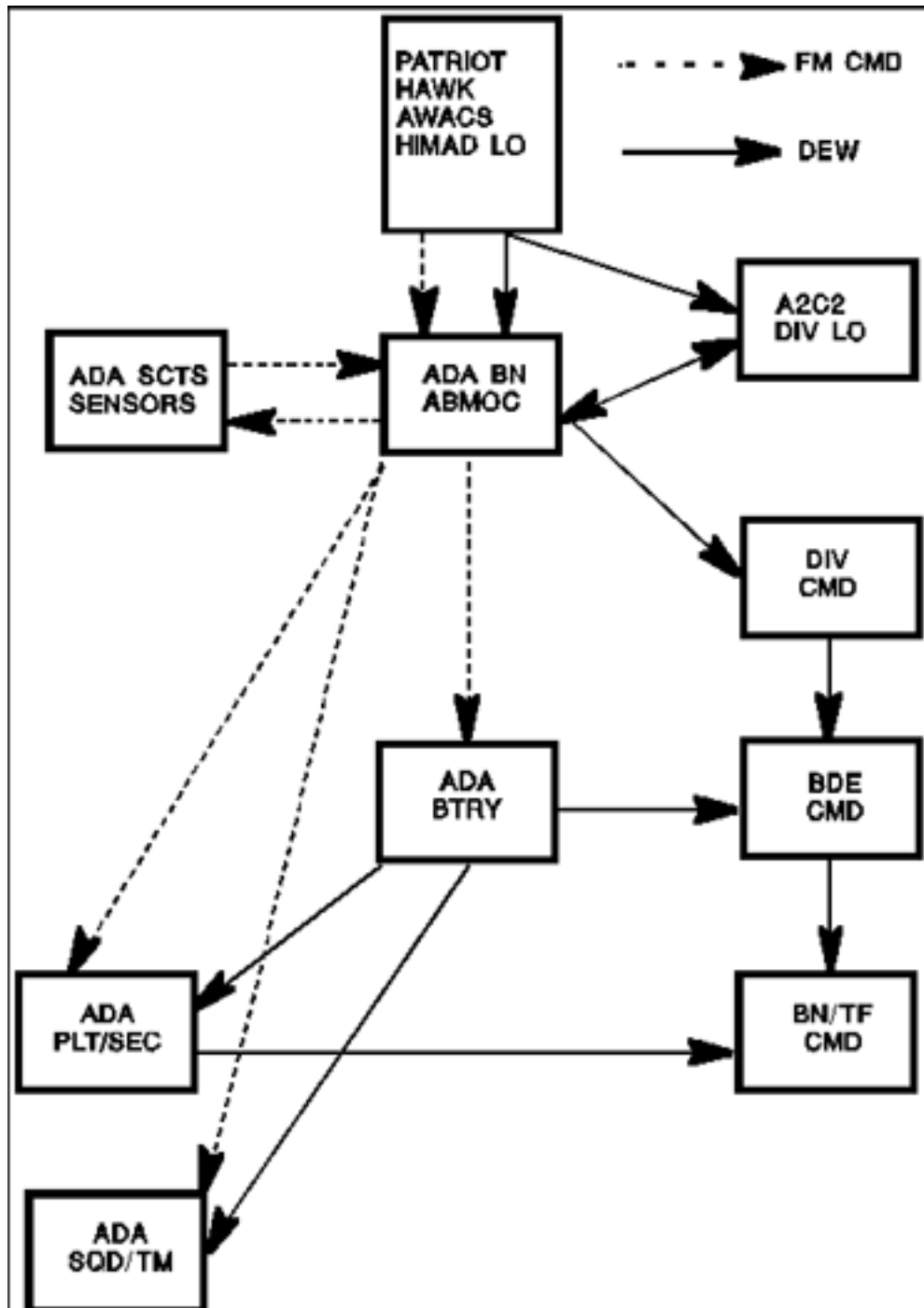


Figure 7-5. Air defense early warning network.

Air Defense Fire Coordination Team

Each brigade has an air defense fire coordination team consisting of a staff sergeant, sergeant, and driver in an M577 vehicle. Their job is to provide the staff with planning input for air defense employment and tactics, advice on passive air defense measures, and guidance on use of combined arms for air defense. In addition, they provide ADA unit dispositions and missions, changes in established rules of engagement, and near real-time information on air battle intelligence.

EMPLOYMENT OF AIR DEFENSE

When determining the allocation of air defense assets, the air defense commander considers the factors of METT-T, criticality, vulnerability, recuperability, and threats and weighs them against the list of air defense priorities. He then develops an initial allocation to protect these priorities. The advice the air defense commander gives to the maneuver commander can make the difference between adequate and inadequate air defense protection.

If early warning sensors are attached to the battery, the battery commander coordinates with the brigade S3 and emplaces them along high-speed air avenues of approach in the brigade. This is done IAW the air defenses battalion sensor plan. During offensive operations, the battery commander will possibly receive up to two sensors to be employed in the brigade zone. Early warning sensors in defensive operations are not normally assigned a DS mission in a brigade, but are assigned a GS role to support the divisions defense operation.

Active Air Defense

Active air defense is direct action taken to destroy enemy air platforms or reduce their effectiveness. A large volume of fire from small arms (M16, M60, and caliber .50) can destroy attacking aircraft or disrupt their attack. Tank main guns and Bradley 25-mm guns may also be used to engage attacking aircraft effectively. The M830A1 multipurpose AT round is the most effective round to use when engaging enemy aircraft with a tank. This round has a switch to change it from a ground role to an air role. A proximity switch senses an air target and detonates near the target. General rules for engaging aircraft are found in FM 44-64. Units must also train to take advantage of the terrain to reduce their likelihood of being attacked by air.

Passive Air Defense

Passive air defense measures include all measures other than active taken to reduce the effectiveness of air attack. There are two types of passive air defense measures: cover and concealment and damage limiting measures. Use cover and concealment to avoid being detected by the enemy. Damage limiting measures are those actions you take to avoid damage from air attack such as dispersion and protective construction.

To successfully counter the air assault, you need a well-synchronized combined arms plan that is based on understanding the threat's air assault doctrine. There are four steps in counterair assault planning. First, understand the threat's air assault doctrine. Determining the threat's capabilities, objectives, time, size, and depth provides a framework for understanding air assault doctrine. Second, identify the likely air assault objectives. An objective may be outside your sector, but the air route and landing zone (LZ) could be within it, or vice versa. Third, identify air avenues of approach and potential LZs. Work backwards from the objective to determine the most likely air avenues of approach, and several potential LZs. Fourth, have a combined arms plan that addresses battle command, observation, and fires. The plan should include actions to destroy the air assault during air movement, during the assembly movement at the LZ, and during actions on the objective.

SECTION X. INTELLIGENCE AND ELECTRONIC WARFARE SUPPORT

EW is an essential component in winning the information battle. EW helps the commander seize and maintain the initiative by providing real time knowledge of the enemy's intent, disposition, and readiness. EW defends friendly information systems by degrading or neutralizing the effects of enemy EW activity.

EW denies the enemy effective use of his information systems by degrading or destroying his communication and targeting systems.

EW includes three major components: EW support, electronic attack, and electronic protection. EW is integrated into unit operations regardless of the type of unit, level of war, or the scope of the mission. It complements other destructive systems in the context of overall strategy. When EW is synchronized into lethal fires, the friendly commander gains agility by slowing the reaction time of his adversary.

The division MI battalion directly supports the commander and G2 by providing dedicated multidiscipline battlefield intelligence and EW support to the division and its subordinate maneuver brigades. At this echelon the focus is on the intelligence products and services needed by commanders to plan, fight, and win battles at the tactical level. In addition to the organic intelligence support provided by the MI battalion, the brigade will receive a DS company from the MI battalion.

The brigade S2 is the commander's focal point for intelligence. He assists the brigade commander in identifying intelligence requirements that support the brigade mission. He also provides information to the commander for making tactical decisions by fully employing brigade IEW assets as part of the intelligence BOS. Through the S3, he directs the activity of the DS company. The DS company provides multidiscipline intelligence support to the brigade commander.

The MI battalion commander attempts to establish and maintain a habitual relationship between the brigade and designated DS company. DS MI company capabilities include:

- Automated multidiscipline intelligence and combat information processing.
- Analytical control team (ACT).
- UAV control.
- Interrogation of prisoners of war (IPW) and limited document exploitation.
- Counterintelligence support.
- Command and control of organic and reinforcing IEW assets.
- JSTARS coverage and product dissemination.

The separate brigade S2s responsibilities are broader than those of the divisional brigade S2 and can be more reasonably compared to the responsibilities of the division G2. Although the unit is smaller and the mission more limited, the separate brigade S2 performs all functions performed at the division level.

The separate MI company mission focuses on developing, assessing, and disseminating the combat information and intelligence required by the combat commander to accomplish his mission. GS MI company capabilities include:

- Integrated collection management, technical control, ASAS and reporting.
- Automated multidiscipline intelligence and combat information processing, display, and dissemination.
- IPW and limited counter-intelligence support.
- Ground-based signals IEW.
- UAV close-range launch, collection, recovery, maintenance and control.
- Intelligence special purpose communications.
- JSTARS coverage and product dissemination.

The separate MI company's structure includes the following:

- Company headquarters.
- Three collecting and jamming (C&J) platoons.
- Commo section.
- IEW platoon.

The separate brigade may receive reinforcing IEW assets from within the corps or from echelons above corps.

ANALYTICAL CONTROL TEAM

The analytical control team (ACT) expands the mission, functions, and resources formerly found in the IEW support element (IEWSE) and MI company team. The ACT is organic to the direct support MI company and normally collocates with the company command post. Unlike the ACE at higher echelons, the ACT is not under OPCON of the brigade S2. Under the direction of the DS MI company commander, the team provides the brigade S2 with automated intelligence processing, analysis, and dissemination capabilities. In addition, the MI commander uses the ACT to support intelligence collection and reporting of subordinate elements. The ACT uses its all source analysis system (ASAS) work station to access databases, reports, graphics, and other products at higher echelon organizations, primarily the divisions ACE.

COUNTERINTELLIGENCE SUPPORT

The counterintelligence team provides counterintelligence support to the division to protect its operations from the intelligence threat, and from subversion, sabotage, and terrorism. The counterintelligence teams of the MI battalion are normally deployed in the brigade and division rear areas. With corps augmentation, the counter-intelligence team or teams may be placed in DS or even attached to the brigade to perform specific counterintelligence missions for a specific period of time.

Interrogation teams usually operate from the divisions EPW collection point. As with the counterintelligence teams, given corps augmentation, interrogation teams can be in DS or attached to the brigade for specific missions. Although not usually a timely source of information, interrogation reports can provide the brigade commander with answers to PIR that may not otherwise be collected through electronic or visual means.

GROUND SURVEILLANCE RADAR

GSR teams normally are attached to the maneuver brigade to provide a 24-hour battlefield surveillance capability. They may be employed on patrols or at OPs and are equipped with NODs. They can also be used with thermal sights on various weapon systems to give gunners assistance in target acquisition. They can be employed near the FLOT, forward of the FLOT, or be used on the flanks in a screening role. They can be used to surveil gaps between units or to observe rear areas at possible drop zones (DZ) or LZs.

Normally, the teams provided to the brigade are attached to subordinate battalions. The brigade may retain control of some of the GSR assets to give the S2 more direct access to the collected information in the rear areas.

Detailed information on all MI assets operating in the brigade area may be found in FM 34-80.

SECTION XI. MILITARY POLICE SUPPORT

MILITARY POLICE BATTLEFIELD MISSIONS

MP operations play a significant role in assisting the brigade commander to meet the challenges associated with combat. MPs provide support through their four primary battlefield missions.

Battlefield Circulation Control

MPs support the maneuver and mobility functions by expediting forward and lateral movement of combat resources. The use of MPs in the battlefield circulation control (BCC) role might include:

- Route R&S. This would include continually monitoring the condition of MSRs; identifying restricting terrain, effects of weather on routes, damage to routes, NBC contamination, and the presence of the enemy; and identifying alternate MSRs, when required. MPs should report all observations, maintain surveillance, and develop the enemy situation.
- MSR regulation enforcement and security. This would include enforcing the commands highway regulation and traffic circulation plans to keep MSRs free for resupply operations. To expedite traffic on MSRs, use the following measures: traffic control points (TCP), roadblocks, checkpoints, holding areas, defiles at critical points, and temporary route signs. MPs should also gather information on friendly and enemy activity by use of mobile teams.
- Refugee and straggler control. Refugee control operations are the responsibility of G5/S5 and/or host nation authorities. MPs should assist, direct, or deny the movement of civilians whose location, direction of movement, or actions may hinder operations. In the area of straggler control, MPs performing their BCC mission would return stragglers to military control. Mobile patrols, TCP, and checkpoint teams do this as part of their day-to-day operation, and traffic control.
- Police intelligence collecting and reporting. In carrying out their support of the brigades maneuver and mobility, MPs collect police intelligence (both tactical and criminal) on a continual basis. While conducting area reconnaissance, MSR regulation enforcement, and security operations, MPs routinely interface with soldiers, local police, and the indigenous population as well as gather information on the terrain, weather, and activities in the brigade AO. MPs represent a HUMINT source that should be integrated into the brigades overall intelligence collection effort.
- Information dissemination. MPs provide information to soldiers, units, and other road users in the course of all MP missions. MPs inform personnel moving through their AO of recent enemy activity there. They provide directions. They also give locations of supply points and medical facilities. MPs also provide information about MSRs, critical points, contaminated areas, and holding areas, as well as the general location of major units.

Security

MPs assist the commander in addressing security and force protection in the rear area by conducting security operations that may include:

- Area security. This mission would assist in gaining information to guard against unexpected enemy attacks in the rear area. MPs monitor likely avenues of approach and LZs or DZs to give early warning of rear area enemy activity. They provide coverage of NAIs within the brigades rear area. MPs also have the capability to recon routes and bridges and provide detailed overlays.
- Security of designated critical assets. This might include security of key personnel and facilities. This could be done by operating a mobile screen. This standoff protection detects and defends against the threat before it can move within direct fire range of facilities. MPs may provide protective services to key personnel visiting the brigade area. This may be accomplished by using access control measures in the CP, by providing close-in personal security, or by using around the clock static and in-transit security measures. MPs may provide convoy security for units transporting critical supplies to tactical forces.
- Base response force operations. MPs help apprise the commander of enemy activity in the rear. MPs are trained to defeat threat levels I and II as well as to delay a level III threat and hand over that battle to a tactical combat force (TCF).
- Area damage control. MP units take measures to support area damage control before, during, and after hostile actions or natural and man-made disasters. MPs provide support that includes, but is not limited to, BCC, refugee control, straggler control, NBC detecting and reporting, and some local physical security when required.
- NBC detecting and reporting. MPs have the capability to detect, monitor, and report the presence of NBC hazards. They do this in the course of performing any of their MP missions.

Enemy Prisoners of War Operations

MPs support tactical commanders by undertaking EPW operations. They relieve the tactical commander of the need to use his combat forces to do this. MPs in DS of brigade units and those assigned to separate brigades establish an EPW collection point (normally in the BSA). EPW operations include

- EPW collection operations. MPs collect EPWs and civilian internees from combat units and from other MP units in an AO. MPs make these collections as far forward as possible.
- EPW evacuation operations. MPs ensure that EPWs are evacuated from collecting points and holding areas as soon as possible.

Law and Order Operations

MPs conduct these operations when necessary to extend the combat commanders discipline and control. This would include law enforcement and criminal investigations. Close coordination with host-nation civilian police can enhance combating terrorism (anti-terrorism and counterterrorism measures), law and order, and control of civilian populations. Any one of the above missions can easily require an entire MP platoon and more; therefore, it is important that the factors of METT-T be considered when using the provided MP support. It is best to keep MPs mobile, acting as the eyes and ears of the commander. During offensive operations, MPs best support the brigades maneuver and mobility by facilitating route movement and refugee/straggler/EPW evacuation and control, and by controlling road traffic. In the defense, MPs are best employed in the area security role to enhance the brigades maneuver and mobility. It is important that MP resources be synchronized and weighted in support of the brigades main effort just as any other asset. This will help maximize MP resources allocated to the brigade.

The corps MP brigade normally provides an additional MP company to augment each division. Dependent upon METT-T, this support may not be provided down to brigade level. Likewise, dependent upon METT-T, the brigade could receive support ranging from squad size up to platoon or company size (from the corps MP company). Regardless of the size of MP support provided, their employment should maximize their capabilities to operate as dispersed, but connected (by communications), teams and/or massed elements as dictated by METT-T or OCOKA.

Figure 7-6 shows the structure of an armored division MP platoon from which the divisional brigade receives support.

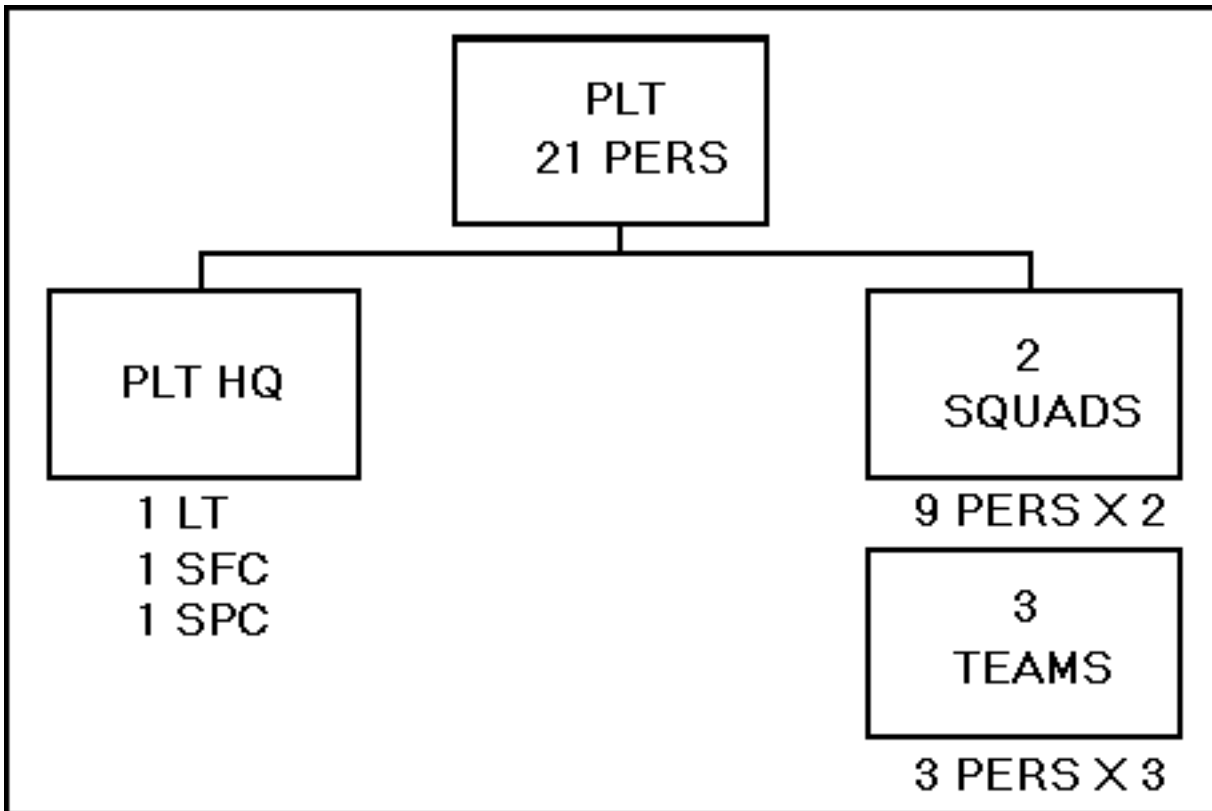


Figure 7-6. Armored division military police platoon structure.

Commanders must realize that MP support may not be available or adequate to perform all necessary MP battlefield missions simultaneously. Commanders must therefore prioritize those missions and designate other soldiers within the brigade to assist in their execution. These MP missions may include:

- Route reconnaissance, selection of routes/alternate routes, convoy escort, and security of LOCs.
- Control of roads, waterways, railroad terminals, or other critical choke points in MSRs.
- Security of critical sites within the brigade AO.
- Refugee control in close cooperation with host-nation civil authorities.
- Collection and escort of EPW.

UTILIZATION OF THE MILITARY POLICE PLATOON WITHIN THE BRIGADE

The MP platoon providing DS to the maneuver brigade has an AO coinciding with the brigades boundaries. The platoon headquarters locates within the BSA. To accomplish its missions, a DS platoon must have at least three squads. One squad operates the EPW collecting point. The two remaining squads provide BCC and area security within the brigade rear.

Platoon assets performing EPW operations locate in the BSA. The remainder of the platoon is dispersed throughout the brigade rear. The DS platoon conducts BCC and area security within its resources. They also receive and hold EPWs for evacuation to the division rear.

The MP platoon might also be utilized to support river crossings or passages of lines. Detailed information on MP supporting these missions can be found in FM 19-4.

EMPLOYMENT OF THE MILITARY POLICE PLATOON IN A SEPARATE BRIGADE

The MP platoon supporting a separate brigade can perform any of the four MP battlefield missions. However, its resources are quite limited.

Support to the platoon and to the provost marshal section is provided by the brigade HHC. The platoon must compete with other brigade HHC assets for priority of repair for weapons, vehicles, and communications equipment.

Organization

The provost marshal has a small section that operates out of the brigade main CP. The section is not organized for split-cell operation. Corps augmentation is not provided on a routine basis and must be requested.

A separate provost marshal cell within the brigade HHC serves as the command and control element for the platoon.

The MP platoon supporting a separate brigade has four squads instead of the three found in the division platoon. One squad operates the EPW collecting point while another provides security at the brigades main CP. The remaining two squads conduct BCC and control and area security operations throughout the brigades rear area. Figure 7-7 shows the structure of an MP platoon for a separate brigade.

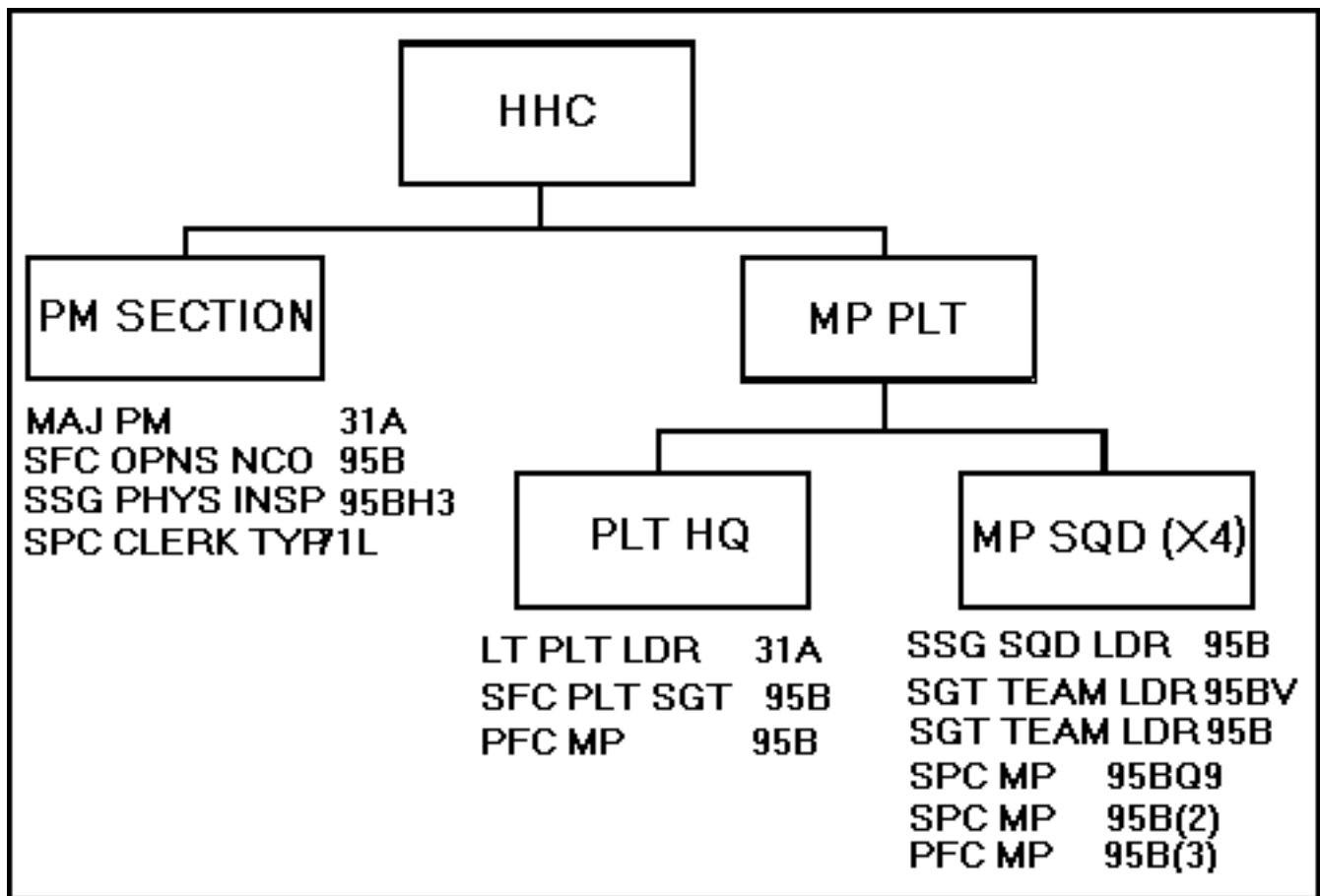


Figure 7-7. Military police platoon structure within a separate brigade.

Command and Control

The command and control of MP units supporting separate brigades extends downward from the tactical commander. The separate brigade provost marshal has OPCON of separate brigade MP assets the way the division provost marshal has OPCON of division MP assets. The brigade provost marshal also has OPCON of any MP assets that are provided from corps. The platoon leader directs the execution of his platoon's missions.

Staff Relationships

The provost marshal advises the commander of a separate brigade on matters pertaining to MP operations.

Support Relationships

The support relationships of MP units supporting separate brigades differ with the type of brigade to which the platoon is assigned. In an armored separate brigade, the MP platoon employs all of its squads to provide GS to the entire brigade AO. Thus the support relationship of an MP platoon supporting an armored separate brigade and that of an MP company supporting a light infantry division are the same. The number of squads employed vary with the brigade's size and the needs of the brigade's missions. However, establishing the support relationship (DS or GS) of MP assets assigned in support of the brigade remains within the purview of the brigade commander.

SECTION XII. SIGNAL SUPPORT

Signal support to the divisional brigade is provided by a communications team from the division signal battalion. The small extension node (SEN) team provides MSE service for telephone and packet switch access. Telephones, terminals (DNVT/DSVT), facsimiles, and automated terminals/systems are brought and hooked up by the unit. The unit SO has supervisory responsibility over the team and incorporates them into the units planning process. Normal signal relationships are in effect per FM 24-1. Restoration of lost or down communications is everyone's responsibility until communications are restored.

The division signal battalion is tasked with providing a communications grid to ensure area coverage for MSE communications. The brigade S3, BSO, and divisional signal unit must work together during the planning phase of the operation to ensure communications are effective. As the digitized battlefield evolves and digital information transfer becomes more prevalent, the planning of communications becomes even more critical.

The packet switch capability that the signal battalion and the supporting SEN team provides is critical to hooking the brigades automated systems into the packet switching network. The network is a large mobile local area network (LAN). When hooked to the network via coaxial cable, the unit is capable of conducting large data transfer actions in seconds that a few years ago took hours in the tactical environment. Packet switch is also referred to as the tactical packet network (TPN) that overrides MSE.

Brigade external communications may consist of the following:

- Area common user (ACU) network. ACU is composed of MSE and possibly some multichannel tactical satellite (TACSAT) assets. The network carries both voice and packet (TPN) data. The network may span several continents or be very small.
- TACSAT. TACSAT communications network has both single channel and multichannel and may be employed separate from the MSE network.
- Divisional or task force FM and AM voice nets.
- Commercial telephones, leased lines, host-nation communications, portable phones, car phones, pagers, beepers, and commercial hand-held radios may possibly be used depending on the threat during an operation.

Brigade internal communications consist of the following:

- ACUs, MSEs, and TPNs.
- Circuit switched.
- Packet switched-
- ATCCS devices on TPN.
- User owned automation devices.
- Combat net radio (CNR).
- FM radio (single channel ground and airborne subsystem [SINCGARS]).
- Single channel TACSAT.
- AM radio, IHFR.
- Automated systems in brigade hooked to MSE/TPN network.

BRIGADE SIGNAL SECTION

The organic signal section of the brigade HHC provides the following communications services to the brigade CPs (see FM 11-43):

- Network management for all systems in the brigade exchanging digital information.
- Frequency and spectrum management for all systems in the brigade AO.
- Limited FM radio maintenance.
- FM radio range extension capability.
- Evacuation of COMSEC material.
- Communications training and training facilitators.

SIGNAL PLANNING

The BSO is responsible for many aspects of communications planning to support the brigades operations. The two most important areas of communications planning for the brigade are ACU and CNR.

The key to successful ACU support is keeping the supporting signal battalion in the planning loop on what the brigade communications requirements (include slice) are for each mission and include any special requirements during each phase of an operation. When and where service is required must be planned, coordinated, and then synchronized with all of the other BOSs in the brigade AO.

CNR is just as important as ACU in planning. With a new generation of radios (SINCGARS) and the capability to conduct frequency hopping operations, a number of variables must be met for successful operations. Frequency hopping communications must be planned and practiced/rehearsed prior to execution to ensure success.

CHAPTER 8 COMBAT SERVICE SUPPORT

CONTENTS
Section I. Command and Support Relationships
Section II. Combat Service Support Overview
Section III. Brigade Combat Service Support System
Section IV. Forward Support Battalion
Section V. Personnel Service Support
Section VI. Brigade Combat Service Support Planning
Section VII. Reconstitution
Section VIII. Weapon Systems Replacement Operations

The application of superior combat power at the decisive time and place determines the outcome of the battle. The brigade commander uses his CSS assets to enhance the abilities of his maneuver battalions and to weight the main effort within the brigade. The effects of CSS assets in support of the maneuver plan are increased by integrating CSS in the maneuver plan from the beginning of the planning process or COA

development. This prevents CSS assets from becoming additives attached to a completed plan. This allows the CSS to act as true combat multipliers. Based on guidance and changing priorities, the brigade requests additional assets from division when necessary, and coordinates and integrates CSS assets. The CSS assets provide support to the brigade according to standard command and support relationships.

SECTION I. COMMAND AND SUPPORT RELATIONSHIPS

Specific applications of the command and support relationships are in the discussion of CSS elements throughout this chapter. Table 8-1 illustrates the relationship between the brigade and CSS elements.

The leader of a CSS element that is attached, OPCON, or DS to the brigade also serves as a special staff officer to the brigade commander.

During planning, preparation, and execution of the brigade mission, the CSS element leader provides assistance, advice, and recommendations on employment of his unit to the brigade commander and staff. He employs his unit as directed by the brigade commander.

UNIT	ATTACHED	OPCON	DS	GS
Under Command/Control of...	Brigade Cdr	Brigade Cdr	Parent Unit	Parent Unit
Task Organized by...	Brigade Unit	Brigade Cdr****	Parent Unit	Parent Unit
Receives Mission, Tasks, and Priorities from...	Brigade Unit	Brigade Unit	Brigade Unit	Parent Unit
Positioned by...	Brigade Unit	Brigade Unit*	Parent Unit*	Parent Unit
Maintains Communications and Liaison with...	Brigade Unit	Brigade and Parent Unit	Brigade and Parent Unit	Parent Unit
Receives CSS from...	Brigade Unit***	Parent Unit**	Parent Unit**	Parent Unit

*With specific approval of the brigade commander if within the brigade AOs. (Any unit in the brigade area requires positioning approval.)

**The CSS requirements beyond the ability of the parent unit area provided by the brigade after a specific request for coordination between the parent unit and brigade headquarters has been made.

***Attached element brings an appropriate slice of CSS equipment and personnel to supplement the brigades assets.

****In NATO, OPCON does not include authority to assign separate employment of components of the units concerned.

Table 8-1. Brigade command and support relationships.

SECTION II. COMBAT SERVICE SUPPORT OVERVIEW

TACTICAL LOGISTICAL FUNCTIONS

The functional areas of CSS cover six major areas: manning, arming, fueling, fixing, moving, and sustaining soldiers and their systems (PSS, HSS, field service support, and quality of life).

LOGISTICS CHARACTERISTICS

The brigade must be armed, fixed, fueled, manned, moved and its soldiers sustained to allow the brigade commander to take advantage of opportunities to achieve tactical advantage. This requires the S4/S1 and the FSB commander to incorporate the logistical characteristics in every action taken. The five logistical characteristics of anticipation, integration, continuity, responsiveness, and improvisation enable tactical success.

Anticipation

CSS leaders and staffs must anticipate CSS requirements. They do this by understanding the commanders intent and translating current developments into future requirements. The main purpose of anticipation is to help the brigade commander form a supportable plan. The FSB commander, brigade S1, and brigade S4 develop a close relationship between staffs. The FSB commander or his designated representative attends brigade staff meetings. He monitors the brigade command net to anticipate required changes to the FSB organization, employment, and operations.

Integration

A close relationship between the brigade staff and FSB support operations is required to ensure sustainment operations are integrated with operations of the maneuver force. The brigade commander and staff plan tactical and CSS operations concurrently. The FSB commander and staff provide the required input to the brigade planning process to ensure the scheme of maneuver and FS plan are supported logistically.

Continuity

The brigade commander requires continuous support to retain the initiative and to ensure that the depth of the operations is not inhibited by breaks in support. This represents a considerable challenge for the FSB and other CSS elements in the brigade area. It requires CSS assets to provide continuous support while frequently relocating.

Responsiveness

The CSS system must also be responsive. It must meet needs that change with little notice in environments of war and OOTW (conflicts). The brigade staff and FSB support operations must assume changes in priorities, support operations, and brigade task organizations. CSS assets must respond quickly and provide continuous support in joint and combined operations.

Improvisation

Sustainers must be prepared to improvise. The fluid nature of Army operations may quickly render routine support methods obsolete. Leaders and staffs must not interpret a guideline or technique as an absolute requirement. If it is not effective in maintaining maximum combat power and momentum, the brigade staff and FSB support operations personnel must not be afraid to discard it. Sustainers must be innovative.

SECTION III. BRIGADE COMBAT SERVICE SUPPORT SYSTEM

GENERAL

A divisional brigade does not have any organic CSS units. Subordinate maneuver units have limited CSS elements within their headquarters companies. CSS is provided to the divisional brigade by the DISCOM and the corps support command (COSCOM). Normally, the majority of the brigade's logistical support is provided by the FSB. Separate brigades have an organic support battalion to provide most of their required CSS. A separate brigade support battalion is similar in organization and function to a divisional FSB.

BRIGADE COMBAT SERVICE SUPPORT

The brigade commander plans his tactical and CSS operations concurrently. He ensures that his scheme of maneuver and FS plan are logistically supportable. If CSS planners identify constraints, the commander evaluates the risks and, if necessary, establishes new priorities or modifies his tactical plan to eliminate or reduce their effect. The personal involvement and on-the-scene appraisal of the situation by CSS personnel is as important to mission accomplishment as is personal involvement by combat leaders. CSS planners must

- Understand the commander's intent and priorities.
- Track/monitor the battle.
- Anticipate requirements and use initiative to meet them.
- Pre-position supplies and equipment.
- Push support forward.
- Seek windows of logistics opportunity.
- Use established routines during lulls in battle to rearm, refuel, and repair.
- Detect, fix, and destroy rear area threats within capabilities.

The key CSS personnel organic to the brigade staff are the brigade XO, S1, and S4. The FSB commander is in a DS relationship to the brigade commander. The FSB commander marshals and synchronizes the CSS assets required to support the brigade's tactical plan. While the FSB supports the ground maneuver brigade, they remain under the command of the DISCOM commander. The FSB normally positions the battalion units within the BSA in accordance with the brigade's tactical plan. The displacement of the BSA must be carefully coordinated with the tactical scheme of maneuver, location of the division support area (DSA) and MSR, priorities of support, and time available for displacement.

Key duties and responsibilities of brigade logisticians are as follows:

- Brigade XO coordinates the CSS effort of the brigade. He ensures that the brigade S1 and S4 have the CSS plan fully developed. He also coordinates with the FSB commander to ensure that the FSB can support the brigade during the operation. The brigade XO-
- Directs the staff from the brigade main CP.
- Ensures continuous CSS in the brigade.
- Keeps the brigade commander informed on logistical issues.
- -Is assisted by-
 - S4.
 - S1.
- HHC commander.
- Brigade surgeon.
- FSB support operations element.
- The brigade S4 is responsible for -
- Operating the brigade rear CP (if tasked).
- Coordinating support with the FSB commander.

- Coordinating with the battalion task force S4s.
- Coordinating support for attachments.
- Keeping the brigade commander informed of logistics situation.
- Maintaining supply status.
- Planning and coordinating -
- Maintenance.
- Transportation.
- Administrative moves.
- Services.
- Supplies.
- Determining requirements for civilian labor.
- Recommending MSR.
- Preparing logistical plans, orders, overlays and estimates.
- The brigade S1 is responsible for -
- Preparing personnel estimates.
- Coordinating PSS.
- Monitoring unit strength, estimating losses, and reporting casualties.
- Determining individual replacement requirements.
- Evaluating and enhancing morale.
- Coordinating -
- Health services plan.
- Religious services.
- Legal services.
- Postal services.
- Finance services.
- Public affairs services.
- Law, order, and discipline.
- Morale support activities.
- Planning and supervising use of civilian labor.
- Planning and supervising A/L support and guarding and evacuating EPWs.
- Operating the brigade rear CP.
- The FSB commander is responsible for -
- Providing security and terrain management in the BSA.
- Providing support to corps units operating in the brigade area (requires prior coordination between the parent corps units, the brigade HQ, and the DISCOM).
- Advising the brigade commander on FSB support capabilities as required.

- Convenient to units served.
- Situated away from the main enemy avenue of approach.
- Beyond the range of threat cannon artillery (20 to 25 km for offense, 25 to 30 km for defense).
- Sufficient space to allow dispersion of facilities.
- Concealment from hostile ground and air observation.
- Firm ground for support of all vehicular traffic.
- Situated to avoid major obstacles or canalizing terrain.
- Located near a water source.
- Suitable helicopter landing site.
- Access to a good road network to support extensive vehicle traffic.
- Situated in built-up areas to harden CPs, improve work areas, and lessen visual and infrared signature.
- Located to enhance defensive capabilities.

The lifelines that connect the BSA and the supported units within the brigade are the brigade supply routes. Supply routes are selected by the S4 in coordination with the S3 based upon the tactical plan. MPs regulate traffic using the supply route, and engineer units, if available, ensure it is in a high state of repair to speed delivery of needed supplies and personnel to forward units.

MAIN SUPPLY ROUTE

The brigade MSR is selected based primarily on the tactical situation and the brigade commanders scheme of maneuver.

The MSR must be well marked. It must also be included on the CSS overlay and have a sufficient number of traffic control points. Some route considerations are:

- Is the route capable of handling the heaviest vehicle in the brigade?
- What is the estimated number of refugees using the route?
- Is it capable of sustained bidirectional traffic?
- What are its vulnerabilities, such as bridges that can be destroyed?
- Are there any choke/congestion points, such as towns and confusing intersections?
- How many cross-over routes are possible from the MSR to the alternate supply route?
- What is the primary threat to the MSR?
- What is the enemy air threat?
- Are there partisan activity or refugee movement conflicts?
- Where does brigade responsibility end and battalion task force begin?
- Who is responsible to defend the brigade portion?
- Are there vulnerable places that must be continuously guarded?
- Will the enemy use persistent chemical agents on the route?

The alternate supply route must meet the same considerations as the MSR. It may be identified as the "dirty" route for contaminated casualties.

SECTION IV. FORWARD SUPPORT BATTALION

GENERAL

The FSB commander is the brigade commander's chief logistician in the brigade area. Each FSB provides DS level logistical support for a specific maneuver brigade, units that are DS to the brigade, and selected corps units on an area support basis. It is organized with a headquarters and headquarters detachment (HHD), a supply company, a maintenance company with designated system support teams (which can be

task organized into maintenance support teams [MST]), and a medical company (see Figure 8-2). FM 63-20 has a detailed layout of the FSB and its capabilities.

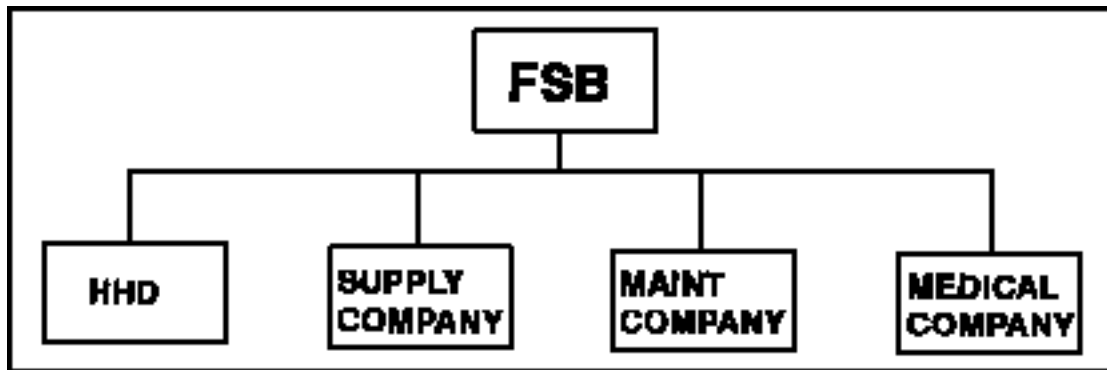


Figure 8-2. Forward Support battalion organizational structure.

The FSB provides dedicated support to the same brigade on a habitual basis both in garrison and in tactical operations. The FSB's primary role is to provide DS to the brigade and division units operating in the brigade area. This role entails a dual requirement. First, the FSB must plan to support future operations. It must anticipate requirements and incorporate planning guidance. In addition, the FSB must support current operations and monitor the implementation of the support plan. The FSB is also responsible for base cluster defense of the BSA and operates under the brigade command for this mission. See FM 63-20, Chapter 5, for a detailed discussion of BSA security and terrain management operations.

The two most important concepts in supporting the armored brigade are forward support and area support.

Forward Support

As the name of the FSB implies, the focus of the CSS structure is on providing support as far forward as practical. Supplies, weapon systems, and repair assets for easily repairable equipment should be provided by the corps, main support battalion, and FSB to the field trains or beyond whenever practical. Also, the FSB ensures damaged equipment not easily repairable is evacuated from as far forward as practical. Health service support (HSS) should also be focused on forward support.

Area Support

Because of the ever changing combination of division units operating in the brigade area, it would be almost impossible and certainly inefficient to dedicate CSS units to support strictly structured units. The DISCOM commander has to cross-level assets when substantial changes are made in the size and types of units supported by an FSB. However, sufficient flexibility has been put in the FSB to accommodate minor variations in supported units and still provide DS level logistics to all division and (with required augmentation) supporting corps units operating in the brigade area.

MAINTENANCE OPERATIONS

The overriding goal in FSB maintenance operations is to provide forward support to return combat systems to the battle as soon as possible. Repairing systems forward reduces transportation requirements and time. It maximizes the availability of equipment to the user. The FSB maintenance company has been given the capability to perform the mission operations well forward (see Figure 8-3 for maintenance company organization). Whenever possible, equipment is repaired on site. However, this is not always possible and practical. The tactical situation, extent of damage, or availability of people, parts, or tools may make recovery or evacuation more desirable.

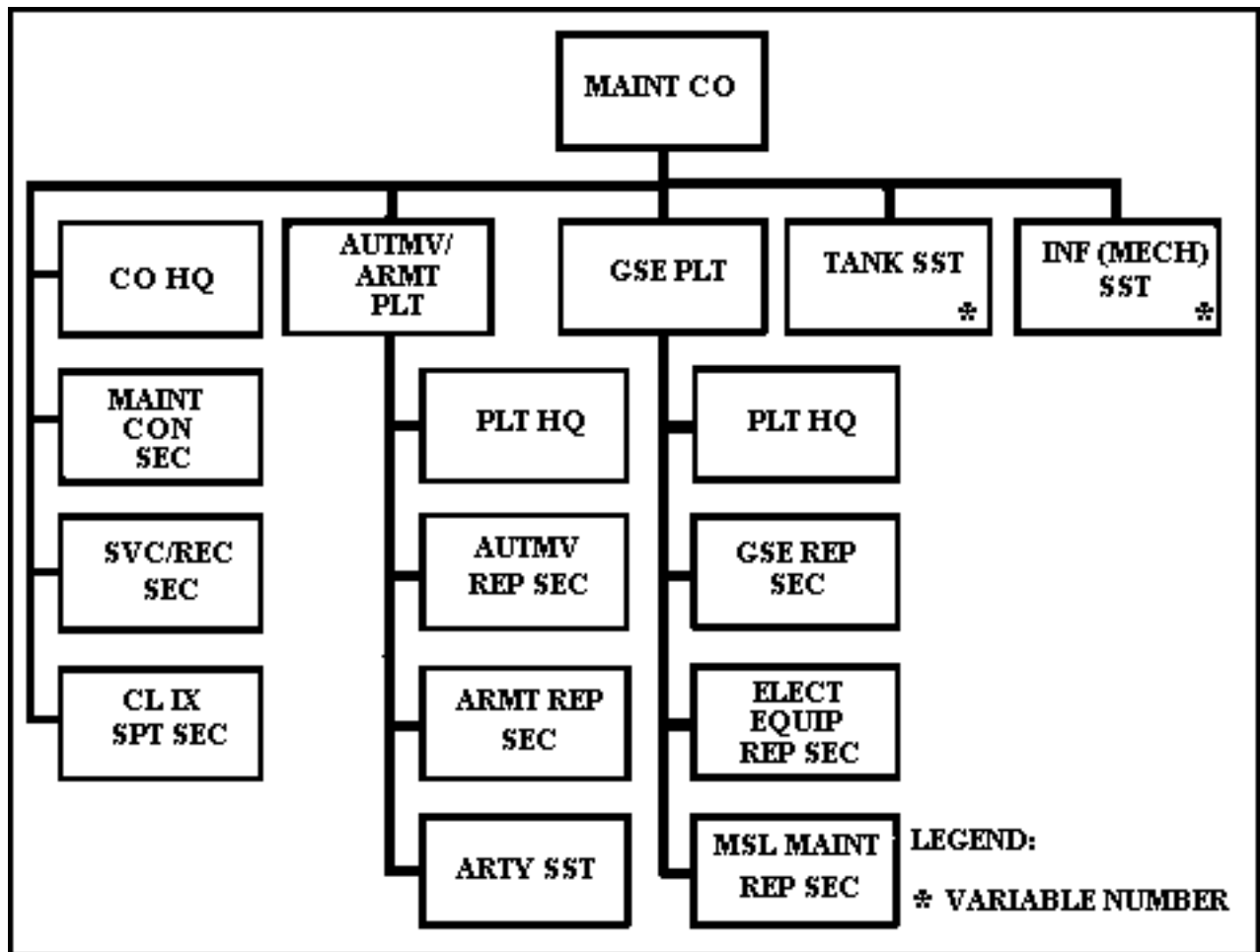


Figure 8-3. Forward support battalion maintenance company.

Tailored tank or infantry MSTs normally operate forward to support subordinate armored or mechanized infantry battalion task forces. They provide on-site expertise on combat vehicles and are usually located at the battalion UMCP. The MST performs DS maintenance for automotive, turret, fire control, small arms, power generation, and communication equipment. Reinforcing support for these teams is provided by base shop maintenance sections of the maintenance company.

DS maintenance for CSS units supporting the brigade is provided by the maintenance company from the BSA. Augmentation from the main support battalion enables the FSB to service all brigade "divisional slice" assets to include missile and EW assets.

MEDICAL OPERATIONS

The forward support medical company plays a vital role in the manning task by providing division- and unit-level health service support to all units operating in the supported brigades area on an area support basis. As shown in Figure 8-4, the company consists of a company headquarters, treatment platoon, and an ambulance platoon.

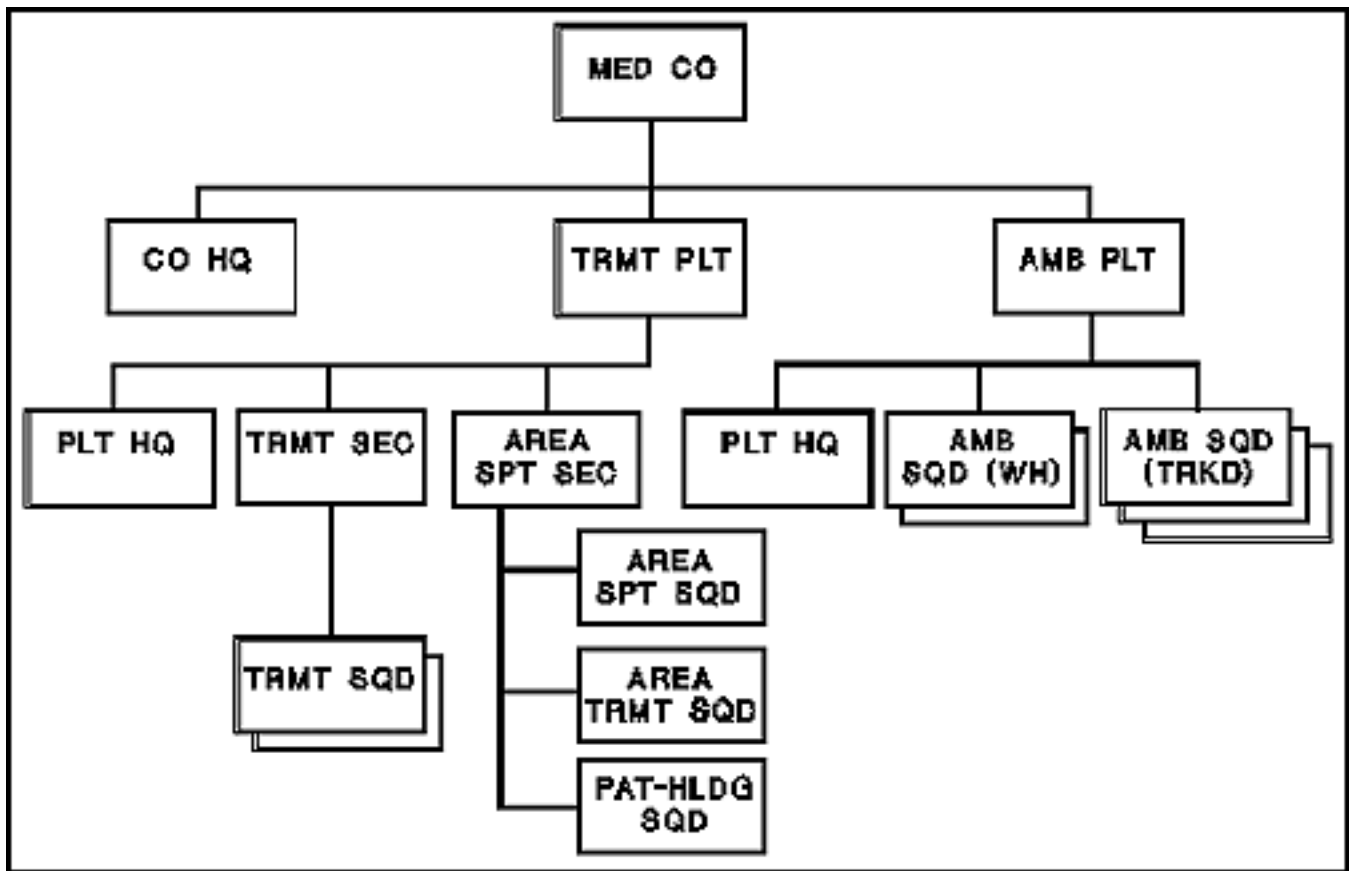


Figure 8-4. Forward support medical company.

The company performs the following functions:

- Treatment of patients with minor diseases and illnesses, triage of mass casualties, initial resuscitation and stabilization, advanced trauma management, and preparation for further evacuation of patients incapable of returning to duty.
- Ground evacuation of patients from battalion aid stations and designated collection points.
- Emergency dental care.
- Emergency medical resupply to units in the brigade area.
- Medical laboratory and radiology services commensurate with division level treatment.
- Outpatient consultation services for patients from unit level medical treatment facilities.
- Patient holding for up to 40 patients able to return to duty within 72 hours.
- Coordination with the UMT for required religious support.

The treatment element of the medical company operates from mobile medical treatment facilities. These mobile medical treatment facilities feature built-in equipment. They require minimum time, therefore, to become operational. This allows the treatment element to closely follow the maneuver brigades and to provide more responsive support.

The occurrence of mass casualties must be anticipated. Managing these situations will severely tax the entire HSS system. Internal brigade treatment/evacuation plans are reviewed by the brigade surgeon who submits recommendations for action. In such situations, the division, when possible, shifts its treatment and evacuation resources to meet the requirements. When required, additional evacuation resources and treatment elements may be requested from the corps medical brigade/group. The key to managing mass casualties is the use of on-site triage and emergency medical treatment teams. Other important areas include effective communications and skillful employment of evacuation vehicles (air and ground). The rapid buildup of evacuation assets at the mass casualty location eases the problem. Also, the prompt movement

of patients to all available medical treatment facilities helps. This movement dissipates the medical workload by distributing casualties equitably among the medical treatment facilities. This is done based on the patient's condition and on the medical treatment facility's capabilities.

SUPPLY OPERATIONS

The supply company supports the arming system through its Class V operations, the fueling system through Class III operations, and the manning task through provision of rations, clothing, and individual equipment. Specifically, the company provides receipt, storage, and issue of Classes I, II, III, IV, and VII items. It also conducts Class V transloading operations at its ATP and operates a salvage point. The company consists of a company headquarters and a supply platoon and is organized as shown in Figure 8-5.

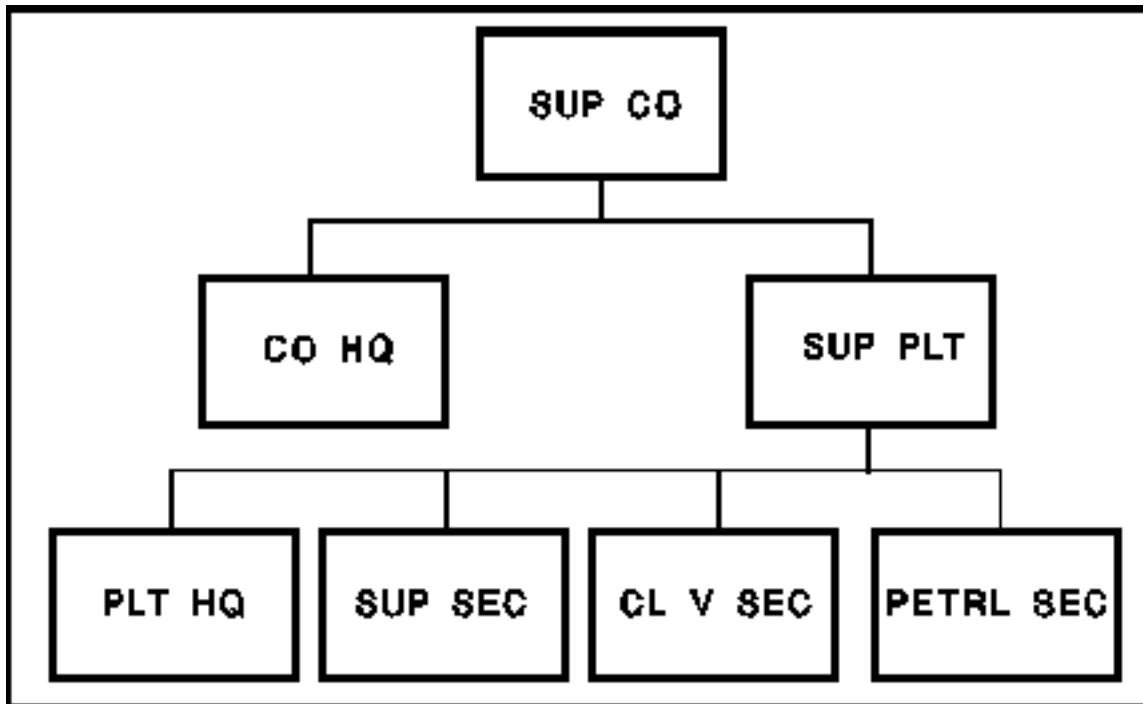


Figure 8-5. Supply company.

The company performs the following functions:

- Receive and issue Classes I, II, packaged III, IV (limited), and VII supplies as well as unclassified maps. It also provides limited storage for these items. Authorized stockage list stocks are stored by the main support battalion supply and service company. The company does not receive, store, or issue classified maps, aircraft, airdrop equipment, communications security, or construction materiel.
- Receive, store, and issue bulk petroleum using organic fuel transporters.
- Transload Class V supplies from corps transportation assets to unit vehicles.
- Operate a salvage point for all supplies except COSCOM supplies, toxic agents, aircraft, ammunition, explosives, and medical items.
- Provide unit maintenance for organic vehicles and equipment as well as those of the HHD.

The FSB must be 100 percent mobile with organic equipment. To enhance mobility, the quantity and variety of supplies the supply company can have on hand at any given time are limited. As a result, the supply company has several supply principles available to cut down on the response time between initial request and subsequent issue to the brigade.

Push System

A push system is the initial go-to-war supply system in an undeveloped theater. Preplanned packages of selected supplies are sent forward to replenish expended supplies in anticipation of requirements of supported units. Initial quantities are based on strength data and historical demand. When the theater stabilizes, the supply system becomes a push system to the BSA for critical supplies based on personnel strengths and forecasted requirements. Other supplies are provided through a pull system based on actual demand. Supplies may still be pushed at the battalion and brigade level, especially during high intensity combat operations to heavily engaged units. Such units may be unable to ask for supplies because of gaps in the chain of command or intensive jamming on a fluid battlefield. Supplies may also be pushed to support a deep operation.

Throughput Distribution

Throughput distribution bypasses one or more echelons in the supply system to minimize handling and speed delivery forward. Supplies are often throughput to the FSB from the corps and, in the case of Class IV barrier materials and some Class VII major end items, may be throughput directly to the user in the forward area. When most of the load is for a specific unit, the transporter may deliver directly to the requesting unit .

Supply Point and Unit Distribution

In an effort to tailor supply distribution, the supply company uses a combination of supply point distribution and unit distribution to support the brigade. When supply point distribution is used, unit representatives come to the supply points in the BSA to pick up their supplies. Maneuver battalion task forces with field trains in the BSA have their own organic unit supply, fuel, and ammunition trucks assembled in the field trains along with repaired equipment, personnel replacements, and other assets. There they form a LOGPAC that goes forward to provide support to forward deployed elements. (LOGPAC operations are detailed in FM 71-2.) The supply company tries to cut down on the distances the forward units must travel by positioning supplies as far forward as possible. To provide a quick turnaround for forward units, the supply company also staggers the unit pickup times and sets up to provide a smooth traffic flow through the supply areas.

Due to limited transportation assets in the FSB, supply point distribution is normal for most classes of supply. Unit distribution by corps assets is used to deliver barrier materials to emplacement sites. Other classes of supply may be delivered using unit distribution when the tactical situation permits and transportation assets are available. Emergency resupply using unit distribution may be accomplished via motor or air transport.

SECTION V. PERSONNEL SERVICE SUPPORT

GENERAL

PSS is an important component of CSS. At the brigade level, it encompasses many CSS functions that sustain the combat potential of the force and the morale and welfare of the soldier. PSS activities are divided into two general categories - combat critical and sustainment. Other functions such as chaplain activities are considered essential and have a significant impact on the welfare of the force. The former category focuses on the function that must be performed regardless of the intensity of combat. The latter category deals with the functions that are temporarily controlled or suspended as combat intensity increases.

Initial PSS planning should focus on the combat critical tasks of personal services and health services. Once the planning for the critical functions is complete, attention is then focused on the other functions of PSS. The sustainment functions are not fixed and will vary depending upon the situation.

PERSONNEL SERVICES

The brigade S1 section serves as a conduit between subordinate units and the G1/AG. Because of distances and communications capabilities, all reports are submitted through the brigade S1 for forwarding to the appropriate agency. Initial personnel data is submitted by subordinate and attached units of the brigade through the Tactical Army Combat Service Support Computer System (TACCS) device using battle rosters and by-name reports. The brigade S1 also provides information to subordinate units on status of evacuated/hospitalized personnel and adjusts personnel requirements accordingly.

Strength Accounting

Strength accounting is the process by which combat readiness (personnel status) is measured. It keeps track of the troops on hand, identifies those that have been lost, and identifies those that are needed.

Personnel Losses

A personnel loss is any reduction in the assigned strength of a unit. Losses are categorized as follows:

- **Battle Losses.** Battle losses are losses incurred in action to include killed in action (KIA), wounded in action (WIA) or injured in action and evacuated from the unit, missing in action (MIA), and captured by the enemy.
- **Nonbattle Losses.** Nonbattle losses are those not directly attributed to being in action, to include nonbattle dead, accident/injury, missing, sickness/disease, and stress.

Administrative Losses

Administrative losses are those due to transfers from the unit, absent without leave (AWOL), desertion, confinement, rotation, and discharges.

Casualty Reporting

The primary personnel accounting function on the battlefield is casualty reporting. On the battlefield, high-volume individual and mass casualties should be expected. Casualty information must be collected, recorded, and reported with 100 percent accuracy as rapidly as the situation permits. The casualty reporting system is a by-name personnel accounting system that begins at unit level with the person who knows that a casualty has occurred. Support casualty feeder and witness statements are forwarded as soon as possible. Reports are forwarded through the brigade S1 section to the division AG personnel accounting section. Patient evacuation and mortality reports and treatment and disposition logs are provided daily to the brigade S1 from the FSB medical company. Information is then provided to subordinate units to update personnel daily summary reports.

Replacement Operations

The brigade S1 is the brigade commander's principal staff officer for individual personnel replacement operations. FM 101-10-1/2 provides estimates for conventional battle and administrative losses. The rate of loss varies with a number of factors such as the theater or operations, climate, terrain, training and conditioning of troops, type of activity, and the enemy. The division AG provides replacement projections to the brigade S1. The S1 can then adjust projected assignments based upon impending tactical operations, brigade commander's priorities, and return to duty status of stragglers and treated casualties.

Health Services

Brigade health services were discussed earlier in this chapter.

Sustainment Personnel Services

The following personnel services are centralized and performed by division AG or corps personnel service company personnel. Whenever possible, procedures are kept informal to ensure responsiveness and to reduce the number of people required to process a given action. All documents must flow quickly to and through given units. Normally, the following services are initiated through subordinate battalion/separate company Personnel and Administrative Centers (PAC) and appropriate forms forwarded through the brigade S1 to G1/AG actions:

- Personnel records maintenance.
- Personnel action.
- Awards.
- Promotions/reductions.
- Classifications/reclassification actions.

ADMINISTRATIVE SERVICES

Technical assistance to the brigade staff elements and commander, and support to assigned and attached units for the following subfunctions of administrative services are normally provided by the corps personnel service company:

- Classified document control.
- Reports and forms control.
- Publications supply.
- Printing and reproduction.
- Files and records management.

Internal correspondence management and distribution are administrative services that must be closely monitored and managed by the brigade S1 section. SOPs for distribution procedures and specific responsibilities must be developed to ensure the responsive flow of correspondence occurs.

Chaplain Activities

The brigade chaplain is the staff officer responsible for implementation of the unit religious program. Included in this program are worship opportunities, administration of sacraments, rites and ordinances, pastoral care and counseling, development and management of the UMT, advice to the commander and staff on matters of morals, morale as affected by religion, and ministry in support of combat shock casualty treatment. All elements enhance the total well being of the soldier and increase the cohesion of the brigade.

Postal Services

Mail is the soldier's link to family and friends. Inefficient distribution of mail can quickly undermine morale. In the early stages of conflict at the brigade level, postal services to individuals are usually restricted to personal mail that conforms to the free mailing privilege (first class letter mail, postal/post cards, and sound recordings). The brigade S1 establishes a daily mail schedule. Outgoing mail is consolidated at the brigade S1 section prior to being forwarded to the divisional postal element. Incoming mail is dropped at the brigade S1 section for pickup by battalion personnel.

Finance Services

The mission of finance support organizations during conflict is to provide high-priority support to the soldier on an area basis. This means the same finance unit supports all soldiers within a geographical locale, regardless of unit affiliation. During deployments, mobile pay teams from corps-level finance organizations provide support to the brigade. Individual soldiers are given the choice of receiving a

specified amount of combat pay or cashing of personal check or other negotiable instruments for the same specified amount or less. The brigade S1 coordinates for support of the mobile pay team.

Legal Services

Legal service support is provided to the commander and soldier by personnel of the division staff judge advocate (SJA) section. This support is on an as-required basis coordinated by the brigade S1.

SECTION VI. BRIGADE COMBAT SERVICE SUPPORT PLANNING

CSS planning is conducted to accommodate the requirements of the supported force during all phases of an operation. The brigade plan or concept of the operation is not finalized until CSS planners have determined the supportability of the proposed COAs. Once the supported force concept of operation is determined, detailed CSS planning can continue. Battlefield support must be planned to satisfy requirements during the following operational phases:

- Prior to commitment (before).
- Commitment to battle (during).
- Future mission (after).

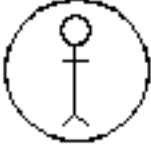



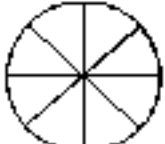
	BEFORE	DURING	AFTER
MAN AND SUSTAIN THE SOLDIER 	PFI: TF 4-5 TF 3-32, TF 2-32 2d Bde	Medical for CF C-C-C PFI: 2-32	Recon PFI: TF 4-5, 106590, TF 2-32, TF 3-32, Medical for RTD Soldiers
ARM 	PFI: 25 mm, 120 mm, ATGM 155 mm, DPICM		PFI: TF 4-5
FUEL 	PFI: TF 4-5, TF 3-32 TF 2-32	Fuel for CF	PFI: TF 4-5
FIX 	PFI: Tanks, Bradleys, Howitzers Recovery Vehicles, 5,000 Gal. Tankers		PFI: Tanks, Howitzers, Bradleys, Fuel and Cargo Vehicles EDAR TF 4-5 Recon
MOVE 	PFI: Maneuver Units, CI IV CI V	PFI: North Bound, CI III and CI V Vehs, South Bound Medical and Maintenance Vehs	PFI: Class III, V, Veh Evac

Figure 8-6. Concept of support matrix.

All areas of CSS (man, arm, fuel, fix, move, and sustain) must be considered during each operational phase to ensure an integrated responsive plan of support (see Figure 8-6). Support requirements must be projected and plans developed to satisfy these projected requirements. Supporting CSS plans should be as detailed as planning time permits.

The S4, S1, and FSB commander and his staff are the principal CSS planners in the brigade. The brigade XO, operating from the main CP, monitors CSS status and ensures appropriate brigade staff CSS interface. CSS commanders and planners must thoroughly know and understand the tactical mission and plans and the brigade commander's intent. They must know

- What each of the supported elements is doing.
- When, how, and where they will do it.
- What the priority of support is.
- What density of personnel/equipment is being supported.

After analyzing the concept of the operation, CSS commanders and planners must accurately predict support requirement. They must determine:

- What type of support is required.
- What quantities of support are required.
- What are the operational commander's priorities by type and unit.

Using the support requirement of the tactical plan as a base, the support capabilities of the CSS structure are assessed. The FSB commander must determine:

- What CSS resources are available (organic, lateral, and higher headquarters).
- Where the CSS resources are.
- When CSS resources are made available to the maneuver units.
- How the FSB makes these resources available.

Based on this information, the S4 and the FSB commander must then develop support plans that apply resources against requirement in a manner that results in the most responsive support possible. Communication links must be established and maintained. The formation of the brigade rear CP, consisting of the collocated FSB CP and assets from the divisional brigade S1 and S4 sections, answers the requirement for continuous coordination and communications required for responsive, effective CSS. Orders that clearly describe tasks to be accomplished must be issued. Continuous follow-up must ensure tasks are being accomplished as planned.

CSS functions should be performed as far forward as the tactical situation and available resources permit. They should be performed at or close to the site where the weapon system is located in order to lessen evacuation requirements. Support must be continuous, using immediately available assets. This may involve bringing ammunition, fuels, parts, end items, maintenance personnel, and occasionally replacement crews or individuals to the forward elements such as battalion field trains, combat trains, and down-equipment sites. Planning and execution emphasize the concept of providing support to forces in the forward areas.

The FSB commander, in consonance with both the DISCOM and maneuver brigade commanders, may support the tactical plan using any of four operational techniques of the FSB.

- Movement of FSB within the brigade formation.
- Attachment of critical CSS assets to maneuver.
- Support from BSA /displace as an entity.
- BSA echelonment/displacement by bounds.

MOVEMENT OF FORWARD SUPPORT BATTALION WITHIN THE BRIGADE FORMATION

This technique is used when likelihood of enemy contact is minimal. Logistical demands on the FSB are expected to be light; subordinate battalions will use basic loads and organic recovery assets to satisfy initial demand. Sufficient time is anticipated to allow set-up of FSB supplies and services and resupply of battalion assets prior to mission execution. FSB elements are dispersed within brigade march columns and are provided security by other elements of the brigade. This technique provides timely movement and march security of the FSB, but precludes any meaningful support until movement ceases.

ATTACHMENT OF CRITICAL COMBAT SERVICE SUPPORT ASSETS TO MANEUVER

If operational distances are significant and secure ground lines of communication cannot be assured, as in cross-FLOT operations, selected CSS assets may be attached to combat elements of the brigade. Normally only critical classes of supply (Class III and Class V) and medical support augmentation would accompany the maneuver elements. The reserve battalion of the brigade may receive attachment of these elements and provide for their security during operations, or tailored packages may be attached directly to specific maneuver battalions as priorities dictate. While this method increases the maneuver unit's CSS capabilities, it also increases their vulnerability to enemy activity and reduces the maneuver force's mobility because of the absence of tracked CSS assets.

SUPPORT FROM BRIGADE SUPPORT AREA/DISPLACE AS AN ENTITY

When brigade operations are conducted in clearly defined phases with identifiable windows between operations such as in river crossings, the FSB may support the brigade from a fully deployed BSA and then displace as an entity to the subsequent BSA location. This allows the FSB to maximize support from a mature logistical base that facilitates resupply and maintenance activities. This concept also enhances command and control of the FSB and simplifies actions for the supported force since a single point of contact is established for each service/facility of the BSA. It does, however, create a support "blackout" of up to 12 hours during BSA displacement and establishment of the new location.

BRIGADE SUPPORT AREA ECHELONMENT/DISPLACEMENT BY BOUNDS

When operations require continuous logistical support operating within a secure rear area, this operational technique is recommended. Critical CSS assets are divided and displace by successive bounds. Normally, the FSB commander moves with the forward element to ensure rapid set-up of the displacing echelon. This technique provides more responsive support by minimizing the distance subordinate battalions of the brigade must travel to obtain required support. It also enhances the survivability of logistical assets by positioning them in different areas. Because of echelonment, command and control of FSB operations is degraded. This problem is exacerbated by the lack of radios within the FSB TOE. Greater reliance on unit SOPs is required to ensure smooth displacement.

CSS planners must know priorities for support. This is necessary to ensure that units with the highest tactical priority receive required support first. The brigade commander and his staff provide mission directives, determine requirements, and establish priorities within the brigade for CSS.

SUPPORTING THE OFFENSE

The availability of adequate supplies and transportation to sustain the operation becomes more critical as the operation progresses. Supply lines and communications are strained, and requirements for repair and replacement of weapon systems mount. NBC contamination on the battlefield compounds these problems and degrades the performance of CSS units. CSS commanders and planners must anticipate these problems and ensure these considerations are included in their planning. During offensive planning, CSS considerations include:

- Forward, coordinated positioning of essential CSS such as ammunition, POL, and maintenance, preferably at night.
- Increased consumption of POL (terrain is a major factor).
- Using preplanned and preconfigured push packages of essential items including water, Class III and Class V supplies, and decontamination and MOPP gear.
- Using throughput distribution whenever feasible.
- Attaching CSS elements to supported maneuver units; however, CSS elements should be as mobile as the units they support.
- Echeloning support forward and initiating operations at the new site before ceasing operations at the old site.
- Using captured enemy supplies and equipment, particularly vehicles and POL.
- Planning communication support to cover the extended distances between combat and CSS units.
- Preparing for increased casualties and requirements.
- Uploading as much materiel as possible.
- Ensuring CSS preparations for the attack do not give away tactical plans.
- Coordinating real estate management to preclude attempted occupation by more than one unit.
- Planning for transition to the defense.
- Planning for EPW operations.

SUPPORTING THE DEFENSE

The aims of CSS activities in the defense are to support defensive battles and to facilitate rapid transition to the offense. Defensive operations take many forms. They range from absolutely static to disrupt and destroy the attacking force. CSS commanders must be involved early in defensive planning. This allows them to plan support for the defense and to anticipate changing priorities. To support the defense, the FSB should:

- Consider stockpiling limited amounts of ammunition and POL in centrally located BPs that are likely to be occupied in the forward MBA.
- Have the FSB TOC monitor and track the ongoing battle to anticipate CSS requirements.
- Institute a command and control plan for CSS vehicles in the brigade area.
- Send forward push packages of critically needed supplies on a scheduled basis. These regular shipments of ammunition, POL, and repair parts to the combat trains help eliminate the need to call for supplies repeatedly, and they reduce the chance that a lapse in communications will interrupt supply. Resupply continues until the receiving unit issues instructions to the contrary.
- Resupply during periods of limited visibility to reduce the chances of enemy interference.
- Dispatch MSTs far forward to reduce the need to evacuate equipment.
- Consolidate different types of MSTs to maximize the use of available personnel and vehicles.
- Consider providing the security force with pre-positioned stocks of critical supplies in subsequent defensive positions throughout the security force area. Air delivery of supplies should be routine to take advantage of the helicopter's lift capabilities and flexibility.
- Push forward prepackaged Class IV and Class V in support of countermobility effort.
- Plan for increased demand of decontaminants and MOPP gear.
- Plan for high expenditures of ammunition.
- Plan for decreased vehicle maintenance.
- Plan for increased demand for obstacle and fortification materials. These materials should be pushed forward early based on preliminary estimates.
- Establish AXPs for efficient use of ambulances.
- Plan for ADA coverage consistent with air defense priorities, with emphasis on passive air defense measures.
- Coordinate with CA personnel concerning refugee control and CSS requirements.

SUPPORT FOR RETROGRADE OPERATIONS

CSS for retrograde operations is particularly complex because many activities may be taking place concurrently. Maneuver units at any given time may be defending, delaying, attacking, or withdrawing. All must be supported under the overall retrograde operation. Since the retrograde is a movement away from the enemy, CSS personnel must:

- Echelon in depth and rearward.
- Limit the flow of supplies forward to only the most essential positions. All other supplies and equipment are evacuated early.
- Evacuate supplies and equipment to planned fallback points along the withdrawal routes.
- Keep supply and evacuation routes open and decontaminated.
- Withdraw forward medical treatment units as early as possible.
- Evacuate patients early, develop alternate means of evacuation, and augment field ambulance capabilities whenever possible.
- Recover, evacuate, or destroy equipment rather than risk being overrun while repairing at forward sites. Recovery personnel can use tanks and other fighting vehicles in which weapon systems are inoperable to tow other vehicles with inoperable motor systems.
- Move all nonessential CSS units and facilities to the rear as early as possible.
- Supply and evacuate at night and during other periods of limited visibility.
- Implement the division commander's policy on controlled exchange.
- Maintain full knowledge of the current tactical situation.

SECTION VII. RECONSTITUTION

GENERAL

Reconstitution is extraordinary action that commanders plan and implement to restore units to a desired level of combat readiness. It transcends normal daily force sustainment actions. However, it uses existing systems and units to do so. No resources exist solely to perform reconstitution. Reconstitution is a total process. Its major elements are reorganization, assessment, and regeneration.

THE ROLE OF THE COMMANDER

Reconstitution decisions belong to the commander. The commander controlling assets to conduct a regeneration decides whether to use scarce resources to regenerate a unit or not. The commander of the attrited unit decides to reorganize when required. The unit commander begins the reconstitution process. He alone is in the best position, with staff support, to assess unit effectiveness. His unique perspective validates an assessment; he does not base his conclusions solely on facts, figures, and status reports from subordinate units and staff. His assessment relies also and probably more importantly on other factors. These include:

- Knowledge of his soldiers.
- Condition and effectiveness of subordinate commanders and leaders.
- Previous, current, and anticipated situations and missions.

He considers all these factors in his continuing assessment. They form the basis of his reconstitution decisions and recommendations. Chapter 4 of FM 100-9 discusses assessment factors in more detail.

REORGANIZATION

Reorganization is an action to shift internal resources within a degraded unit to increase its combat effectiveness. Commanders reorganize before considering regeneration. Reorganization may be immediate or deliberate.

Immediate Reorganization

Immediate reorganization is the quick and usually temporary restoring of degraded units to minimum levels of effectiveness. Normally the commander implements it in the combat position or as close to that position as possible to meet near term needs.

Deliberate Reorganization

Deliberate reorganization is conducted when more time and resources are available. It usually occurs farther to the rear than immediate reorganization. Procedures are similar to those of immediate reorganization. However, some replacement resources may be available. Also, equipment repair is more intensive, and more extensive cross-leveling is possible.

ASSESSMENT

Assessment measures the unit's capability to perform a mission. It occurs in two phases. The unit commander conducts the first phase, an assessment of his unit before, during, and after operations. If he determines it is no longer mission capable even after reorganization, he notifies his commander. Higher headquarters either changes the mission of the unit to match its degraded capability, or removes it from combat. The second phase is to have external elements assess the unit after it disengages. These elements do a more thorough evaluation to determine regeneration needs. They also consider the resources available.

REGENERATION

Regeneration involves the rebuilding of a unit through the large-scale replacement of personnel, equipment, and supplies; reestablishment of command and control; and mission essential training for the rebuilt unit. Because of the intensive nature of regeneration, it occurs at a regeneration site after the unit disengages. It also requires help from higher echelons.

A regeneration task force is a task organization formed by the commander directing a regeneration. The regeneration task force conducts the external assessment and executes the regeneration order (see FM 100-9 for more information).

SECTION VIII. WEAPON SYSTEMS REPLACEMENT OPERATIONS

GENERAL

The intensity of future battles will produce heavy losses of both men and materiel. It is imperative that weapon systems, complete with crews, be replaced quickly and efficiently. Weapon systems replacement operations (WSRO) set forth a method of supplying the commander with fully operational replacement weapon systems. The tasks associated with WSRO are no different than those presently used to get weapon systems to the combat commander. What is different is the method used in performing these tasks. WSRO require that the weapon system manager know the commander's priorities for issue of weapon systems assets, unit weapon system shortages, and the personnel and equipment assets available to fill unit shortages. The key to WSRO is the joint personnel and logistical managing, reporting, and monitoring of complete weapon systems at battalion, brigade, division, and corps. Three terms often used in describing WSRO are:

- **Ready-for-Issue Weapon.** This weapon system has been removed from its previous condition of preservation for shipment or storage and made mechanically operable. All ancillary equipment (such as fire control, machine guns, radio mounts, and radios) are installed. The vehicle has been fully fueled and basic issue items are on board in boxes. There is no ammunition on board.

- Ready-to-Fight Weapon. This is a crewed, ready-for-issue weapon with basic issue items and ammunition stored on board. The weapon system has been boresighted and verified.
- Linkup. This is the process of joining a ready-for-issue weapon with a trained crew.

WEAPON SYSTEM MANAGEMENT

WSRO must be managed at each level of command to ensure maximum utilization of the major weapon systems. Management procedures for all critical weapon systems and their crews must be developed on an individual basis applicable to the division concerned. To manage weapon systems, a common weapon system manager is required. A weapon system manager is designated at each level of command and is charged with weapon system management. The weapon system managers mission is to maximize the number of operational weapon systems required in the battalions in accordance with the commander's or G3's/S3's fill priorities. Weapon system management at all levels is charged with quick-fix responsibility, matching serviceable vehicles, and surviving crews. At the brigade level, the XO normally coordinates the activities of the S1 and S4 to maximize the number of ready-to-fight weapon systems.

Brigade Management

Battalion weapon systems status reports are submitted to the brigade rear CP. The S1 and S4 personnel ensure that information submitted on recurring SOP personnel and logistical reports compare with the information submitted on the "weapons effect signature simulator report." The "weapons effect signature simulator" report provides the weapon system suppliers the necessary information to assemble the appropriate weapon system. The report is then submitted to the division materiel management center (DMMC) with an information copy provided the support operations section of the FSB. The brigade XO is kept informed of WSRO managed systems and ensures reports are processed and coordinated as required. The brigade S1 and S4 must closely coordinate the needs identified on battalion reports with up-to-date equipment repairs from the FSB, and personnel returned to duty from the brigade treatment station. At the brigade level, weapon systems normally managed by WSRO are:

- Tanks with a four-man crew.
- Mortars with a four-man crew.
- BFVs with a three-man crew.
- M113-series infantry carrier with a two-man crew.
- ITV with a three-man crew.
- CFV with a five-man crew.

Other replacements to man or support these systems are managed by individual replacement procedures. CSS WSRO are coordinated through the division major subordinate command or separate battalion that is equipped with the individual system.

Division Management

The division provides replacement weapon systems to battalions based on brigade priorities. Efficient allocation of limited resources is accomplished by managing weapon systems rather than focusing on personnel and equipment components separately. The DMMC and division AG coordinates the replacement of both vehicles and crews to maximize weapon systems on the battlefield.

Issuing Weapon Systems

For purpose of this discussion, tanks are used as the example WSRO in the following paragraphs. Transportation of equipment from theater Army or corps to division is normally by rail or heavy equipment transport (HET). Personnel arrive in theater and are transported forward to the division by rail, air, or truck. Incoming tanks from CONUS are processed by the heavy materiel supply company (or its equivalent) in the theater Army area command or COSCOM. This processing includes the installation of fire control equipment, radios, machine guns and the filling of fuel tanks to capacity. Pre-positioned war

reserve stock at corps must be at a low level of preservation so that it is made ready for issue within a matter of a few hours.

The primary division linkup point for weapon systems is at the main support battalion supply and service company in the DSA. As the tank arrives in a ready-for-issue state, the crew need only perform those tasks to make the tank ready to fight. Based on the number of weapon systems allocated to the division, the division commander determines the allocation to each brigade. The weapon system management officer contacts each brigade to determine the internal brigade allocation and assigns crews and weapon systems to specific battalions. Concurrently, the brigade S1 notifies subordinate battalions of projected gains and estimated time of arrival at the BSA for linkup.

The COSCOM or DISCOM must have facilities prepared to boresight and calibrate weapons. Complete weapon systems are transported from the DSA to the BSA by HET. If HETs are not available, the brigade dispatches an escort vehicle to the DSA to guide crews to the BSA. Upon arrival in the BSA, battalion guides meet assigned crews and weapon systems where they are led to the battalion field trains for fuel top-off and PAC in-processing. Weapons effect signature simulator reports are updated and the process begins again.

APPENDIX A OPERATIONS OTHER THAN WAR

CONTENTS
Section I. Overview
Section II. Planning
Section III. Peacekeeping
Section IV. Peace Enforcement
Section V. Training
Section VI. Conduct of Operations
Section VII. Armor/Light Considerations

The Army's primary focus is to fight and win the nation's wars. However, Army forces and soldiers are versatile. They operate around the world in an environment that may not involve combat.

SECTION I. OVERVIEW

Army forces have participated in OOTW in support of national interests throughout its history. They have protected citizens at the edge of the frontiers of an expanding America; built roads, bridges, and canals, and assisted nations abroad. On occasion the Army will be called upon to provide domestic support such as firefighting, support to anti-drug operations, and disaster relief.

OOTW are not new. Their pace, frequency, and variety, however, have quickened in the last three decades. Today, the Army is often required, in its role as a strategic force, to protect and further the interests of the US at home and abroad in a variety of ways other than war.

In OOTW the brigade is called upon to perform numerous activities. Essentially, the brigade accomplishes these activities through execution of tactical missions and tasks. Brigade missions and tasks are shown in Figure A-1. This appendix focuses on peacekeeping and peace enforcement.

For a detailed discussion on OOTW, see FMs 100-5, 100-19, 100-20, and 100-23.

ACTIVITY	MISSION/TASK
PEACEKEEPING	Patrol; Establish Checkpoints, Roadblocks, Buffer Zone; Supervise Cease-fire, EPW Exchange
PEACE ENFORCEMENT	Attack, Defend, Screen, Guard, Delay, Cordon and Search
SHOW OF FORCE	Perform Tactical Movement, Attack, Defend, Demonstration
NONCOMBATANT EVACUATION OPERATIONS	Attack to Seize Terrain that Secures Evacuees or Departure Area; Guard; Convoy Security; Delay/Defend
SECURITY ASSISTANCE	Attack, Defend, Delay, Guard, Screen
HUMANITARIAN ASSISTANCE-- (NO THREAT)	Provide Command and Control, CSS and Disaster Relief and Manpower for Relief Effort
(CONFLICT)	Screen, Patrol, Quick Reaction Force, Convoy Escort
ARMS CONTROL	Assist and Monitor Inspection of Arms, Conduct Surveillance
SUPPORT TO DOMESTIC CIVIL AUTHORITIES	Provide Command and Control, CSS and Disaster Relief, Patrol, Cordon and Search
NATION ASSISTANCE	Provide Security
SUPPORT TO COUNTERDRUG OPERATIONS	Interdict, Cordon and Search, Surveillance
COMBATING TERRORISM	Conduct Antiterrorism Activities through Force Protection
SUPPORT FOR INSURGENCIES AND COUNTER INSURGENCIES	Patrol, CSS, Show of Force, Medical Support
ATTACK AND RAIDS	Conduct R&S, Attack, Raid, Withdraw

Figure A-1. Examples of armored brigade operations other than war missions/tasks profile.

SECTION II. PLANNING

The difficulties of joining a multi-national force in unfamiliar territory with restrictions on one's freedom of action, may be overcome if commanders study the history and lessons of previous peacekeeping operations. This allows commanders to anticipate the kinds of problems they may have to face in a peacekeeping operation. The UN issues "force mandates" that provide the principles which govern the conduct of operations.

The principles may be supplemented by the following guidelines that apply to the conduct of a peacekeeping force in all situations:

- All ranks must understand what the peacekeeping force is trying to do.
- All ranks must be fully briefed on the political and military situation, the customs and religions of the people, and kept up-to-date as the situation changes.
- They must make every effort to get to know the people, to understand their problems with the aim of achieving a reputation for sympathy and impartiality.
- Peacekeeping soldiers must maintain a high profile; consequently, their lives are continually at risk. Commanders must balance the need to maintain a confident presence with provisions for the safety of their troops.
- No detachment likely to face a difficult situation should be without a knowledgeable individual in charge because of the crucial decisions that may affect the reputation of the force, the success of the mission, and the safety of peacekeeping troops. These decisions have to be made without delay. However, emergencies may arise when no officer is available. Units should make sure that NCOs are well trained, briefed, and prepared for contingencies they are likely to face during peacekeeping operations.
- The policy on ROE and the action to take with regard to infringements and violations of agreements must be enforced uniformly by all units. In operations where units have used noticeably different standards in executing the rules, there has been trouble with the belligerents and constant friction between the national contingents.
- Peacekeepers cannot be too concerned about the risk of appearing to "lose face." On many occasions, explosive situations have been defused because the peacekeeper was willing to be accommodating, allowing a party to preserve its dignity. This is especially important when dealing with societies in which self-esteem and group honor are of great importance. It is sometimes difficult to explain the need for tact, without compromising principles, to soldiers who are trained to be forceful and aggressive. A unit naturally wishes to take credit for a successful performance, but undue concern for unit pride may prejudice the peacekeepers' need to make concessions. Each situation calls for its own blend of calm, mature judgment, tact, a willingness to compromise, firmness, and moral courage.

Commanders must find the "center of gravity" for the operation. What is the single most important event or condition that will stabilize the situation and reverse the destruction and strife? The problem with OOTW is that the commander may not be able to identify the "center of gravity" and its connection to the end state until the operation is well underway.

Commanders and planning staffs must determine the center of gravity for all OOTW. The center of gravity for peace enforcement operations may be: controlling and maintaining MSR, denying key terrain from the belligerents, and keeping track of key belligerent forces. If legitimacy is lost, the result may be war or failure of both the diplomatic and military mission.

The conditions required to achieve end state during OOTW are difficult to define and require continued refinement during the operation.

FM 100-5 defines end state as "A military end state includes the required conditions that, when achieved, attain the strategic objectives or pass the main effort to other instruments of national power to achieve the final strategic end state." The commander's intent defines military conditions that must be achieved to

support the end state. In the last comment of the commanders intent, the commander defines victory or success for the operation.

Planning for OOTW requires a thorough understanding of the end state and the military conditions required to achieve it.

The importance of end state in defining the requisite conditions for a missions success cannot be overstated. A continuing challenge for commanders is to focus their vision on and beyond the objective to clearly articulate the conditions of success. This is difficult enough in warfighting and is even tougher for OOTW.

A large contribution to success during peace operations is for the force not to become a part of the problem.

In OOTW, the end state is commonly expressed in political terms and is beyond the competence of military forces acting alone. Military forces in OOTW facilitate the political process.

SECTION III. PEACEKEEPING

Peacekeeping operations are military operations conducted with the consent of the belligerent parties to maintain a negotiated truce and to facilitate a diplomatic resolution. The US may participate in peacekeeping operations under the auspices of an international organization such as the UN, in cooperation with other countries, or unilaterally. Peacekeeping operations may take many forms of supervision and monitoring:

- Withdrawals and disengagements.
- Cease fires.
- EPW exchanges.
- Arms control.
- Demilitarization and demobilization.

Peacekeeping operations support diplomatic efforts to achieve, restore, or maintain the peace in areas of potential or actual conflict. The greatest military consideration in peacekeeping is the political objective of the operation. Military forces operate within clearly and carefully prescribed limits established by agreement between the belligerents and the UN or other parties.

Peacekeeping forces assume that use of force will not be required to carry out their tasks, except in self-defense. They are structured, trained, and equipped under this assumption. Extreme restraint in both appearance and application of force is crucial to maintain a posture of impartiality and neutrality toward the former belligerents.

SECTION IV. PEACE ENFORCEMENT

Peace enforcement entails the use of armed forces to separate combatants and to create a cease-fire that does not exist. Force may also be used to create other peaceful ends such as safe havens for victims of the hostilities. The UN Secretary General also uses the term to refer to forceful actions to keep a cease-fire from being violated or to reinstate a failed cease-fire.

By the American definition, in a situation for which peace enforcement operations are required, *armed conflict* and *not peace* describe the situation. Also, one or more of the belligerents usually prefer it that way. This means that, unlike peacekeepers, peace enforcers are not welcomed by one of the belligerents. Rather, the peace enforcers are active fighters who must force a cease-fire that is opposed by one or both combatants; in the process, they lose their neutrality.

Because the enforcement force may resort to the use of arms against the belligerents, it must deploy with sufficient military strength to achieve those objectives established by political authorities. Unlike

peacekeeping, enforcement will require a full range of military capabilities that has the potential to meet or exceed that of the belligerents.

Although the preferred objective is commitment of superior military force to dissuade belligerents from further conflict, forces deployed for these operations should assume for planning purposes that use of force will be necessary to restore peace. But unlike war, enforcement operations are more constrained by political factors designed to bring warring parties to the negotiating table. Settlement, not victory, is the goal.

SECTION V. TRAINING

Units selected for peacekeeping duty normally require 4-6 weeks of specialized training. The unit has to tailor its entire training methodology toward the tasks required to be effective peacekeepers. Training for peacekeeping includes the following considerations:

- Peacekeeping requires specific training.
- The entire chain of command must develop a different mind set for warfighting.
- A peacekeeping force may quickly lose its fighting edge and may not be suited for transition to peace enforcement operations.
- The unit training program should include:
 - Nature of peacekeeping.
 - Regional orientation/culture of belligerents.
 - Negotiating skills.
 - Mine/booby trap/unexploded ordnance training.
 - Checkpoint operations.
 - Investigation and reporting.
 - Information collection.
 - Patrolling.
 - Media interrelationships.
 - Staff training.
 - Perform relief in place (FM 7-20).
 - Establish lodgment.
 - Establish a buffer zone.
 - Supervise a truce or cease-fire.
 - Contribute to maintenance of law and order.
 - Assist in rebuilding of infrastructure.
 - Demilitarize cities or geographical areas.
 - Monitor boundaries.
 - Political mandate(s).
 - ROE.
- Continue training on warfighting skills. The unit can be better prepared to transition from peacekeeping to peace enforcement operations.

Peace enforcement forces will have to be equipped and trained differently than for peacekeeping operations. They will have to be considerably larger in numbers and more capable than conventional peacekeepers. To be competent peace enforcers, units will require special skills for their soldiers (negotiating and foreign language competence), and the provision for adequate firepower and defensive capability to protect themselves from hostile actions by those they seek to help.

A force entering into a peace enforcement operation must have sufficient combat power to fight and win a war, should that become necessary. It must execute that combat power with great restraint in support of

diplomatic efforts, in which the military may actively participate. The demonstration of combat power should be sufficient to preclude the necessity for its employment, except in certain circumstances.

It is the Army's warfighting ability that makes it capable of peace enforcement. The best training is based on the unit METL, with the modifications and additions that are necessary for special circumstances.

The following are some considerations for peace enforcement training:

- Expect peace enforcement missions to be similar to actual combat missions but with tighter ROEs. Consider the political aspects of the conflict.
- Concentrate unit training on platoon- and company-level tasks. Peace enforcement operations usually involve more small unit operations than battalion- or brigade-level operations.
- Some recommended battalion-level missions to train for are
- Fight a meeting engagement.
- Conduct movement to contact/search and attack.
- Perform air assault (ARTEP 7-20-MTP) (FM 90-4).
- Enforce UN sanctions.
- Protect human rights of minorities.
- Protect humanitarian relief efforts.
- Separate warring factions.
- Disarm belligerents.
- Restore territorial integrity.
- Restore law and order.
- Open secure routes.
- Cordon and search.

During peacekeeping operations, the two principal ROE tenets are the use of force for self-defense only, and total impartiality when applying force. The ROE for peacekeeping operations will be more restrictive than the ROE for peace enforcement operations.

Some ROE considerations are:

- Soldiers must know and understand the ROE.
- The degree of force used must *only* be sufficient to achieve that task at hand and prevent, as far as possible, loss of human life and/or serious injury.
- Leaders must ensure that soldiers are not limited by the ROE in their ability to defend themselves.
- Develop and issue to all soldiers a single card that clearly outlines the ROE for reference, keeping in mind that the card in itself is not the answer. Soldiers must know the ROE.
- The ROE must be realistic, simple, and easy to understand.
- Do not chamber a round unless you are prepared to fire IAW the ROE or ordered to do so.
- Do not tape over magazines to keep soldiers from chambering rounds.
- Peacekeeping forces have no mandate to prevent violations of peace agreements by the active use of force. (Observe and report only.) To maintain the peace, units may need to be positioned between belligerents. Commanders must realize that soldiers are being placed at risk. Force protection must be emphasized.
- Peace enforcement missions allow the active use of force. These ROE resemble the ROE for hostilities (wartime).
- The formulation of ROE should consider the cultural differences of multinational forces.
- Train soldiers in the ROE, using tactical vignettes or simulated events.
- Train soldiers to avoid unnecessary collateral damage to property.
- Training of US Army soldiers participating in these missions includes instruction to prepare and sustain the force in the performance of its mission. Pre-deployment training covers subjects that pertain to mission accomplishment. It is given at home station and includes training in both

individual and collective tasks tailored to meet the needs of the units identified to support the mission. During this period of training, it is essential that all personnel who will participate in the mission are available for the training.

Suggested training requirements include the following individual, collective, and specialty tasks:

- Individual tasks.
- Marksmanship.
- UN organization, mission, and background.
- Customs and basic language phrases.
- Survival skills (including actions if kidnapped).
- Observation and reporting procedures.
- Field sanitation.
- ROE.
- Safety (integrated training).
- Stress management.
- Identification of mines and handling procedures.
- First aid and evacuation procedures.
- Terrorism prevention skills.
- Reaction to hostage situations.
- Physical security (prevention of pilferage and theft).
- Peacekeeping skills (negotiation and mediation).
- Land navigation/range estimation.
- Handling of detainees.
- RTO procedures.
- Collective tasks.
- OP/CP operations (observe and report).
- UN reporting formats.
- Slingload operations.
- Mounted and dismounted patrolling.
- TOC operations.
- Patrolling in urban terrain.
- Specialty tasks.
- Combat lifesaver.
- Field sanitation specialist.
- Generator operator.
- Vehicle operator.
- Mail handler.

SECTION VI. CONDUCT OF OPERATIONS

Subordinate elements of the brigade usually conduct the following operations:

- Patrols.
- Checkpoints.
- Convoy security.

PEACEKEEPING PATROLS

Units will have to conduct patrols during peacekeeping operations. Peacekeeping patrols perform a dual mission of showing the UN flag and monitoring the cease-fire agreements. The patrols may move on foot,

be mounted in vehicles or in light aircraft or utility helicopters. Peacekeeping patrols are normally only overt and conducted during the day.

The following are considerations of peacekeeping patrols:

- Peacekeeping patrols are totally different from normal combat patrols.
- The mere presence of a peacekeeping patrol, or the likelihood that one may appear at any moment, deters potential violations of peace agreements.
- The presence of peacekeeping troops in a tense situation may have a reassuring and calming effect in troubled areas.
- If it is necessary to operate at night, the patrol uses lights, carries an illuminated peacekeeping flag and moves in as open a manner as possible.
- Major considerations for peacekeeping patrols are:
- All patrols must be easily recognizable by all belligerents.
- Its members must wear the UN forces distinctive blue headgear and its vehicles must be painted white with the UN forces insignia prominently displayed.
- The peacekeeping flag must be carried by all dismounted patrols and displayed on all vehicles used during mounted patrols.
- Patrols should not deviate from the planned route without contacting higher headquarters.
- Expect to be challenged by belligerent forces while on patrol.
- Rehearse proper responses to challenges.
- Ensure that maps carried on patrol are unmarked.
- Memorize positions. Each patrol should always include a member who knows the area well.
- Log all observations and events while on patrol. Memorize details for sketch maps. Do not mark on maps if there is the smallest chance of being stopped by one of the belligerents.
- Do not surrender weapons, maps, logs, or radios without the permission of higher headquarters.
- Upon return from patrol, immediately report any significant observations to the debriefing officer. Mark maps and draw sketches while the memory is fresh. These maps and logs provide the basis for the investigation of incidents and the lodgment of protest.
- The unit intelligence officer must be intimately assimilated into the peacekeeping patrol process.

PEACE ENFORCEMENT PATROLS

Peace enforcement patrols can be either overt or covert. All the normal principles of combat patrolling apply to peace enforcement patrols. They can also serve the same purpose as peacekeeping patrols, but the soldiers are not hindered by the administrative restrictions on vehicle marking and weapons restrictions.

Peace enforcement patrols should be aware of the following factors:

- Use the normal combat patrolling techniques and procedures during peace enforcement operations.
- Apply aggressive patrolling tactics to deter hostile acts by the belligerent forces.
- Do not give food or supplies to belligerents as payment of tolls. This sets a precedent that the UN forces can be manipulated and will not force their way through checkpoints.
- The convoy commander should travel with the main body. The convoy commander must be able to move up with the advance guard if required to negotiate with belligerents.
- The commander must be firm but cautious when dealing with belligerents. Insist on the right of passage.
- The commander must ensure he has adequate firepower available should it be necessary to force his way through a checkpoint. Remember, the lead vehicles at the checkpoint location will most likely be inside a kill zone.
- Commanders must properly assess the situation and stop or withdraw when the checkpoint strength exceeds his capability to overcome it. Also, the commander must stop or withdraw his unit when persistence would lead to a fight that exceeds the capability of the force.

CHECKPOINT TACTICS

A high volume of pedestrian and vehicle traffic can be expected to pass through a checkpoint. Leaders must take this into consideration when preparing checkpoints. The ROE must be clear, but flexible, to accommodate rapid changes in any situation that may develop.

Considerations for checkpoint tactics include:

- Be imaginative while operating in OOTW; develop TTP that can be applied to anticipated situations.
- Ensure checkpoints are designed so that only the minimum number of soldiers are exposed at any given time and that they are overwatched by automatic weapons when they are exposed.
- Make reinforcement and counter-attack plans and rehearse them.
- Expect the unexpected at check-points.
- Develop and rehearse drills to prepare soldiers for all possible situations at checkpoints.

Soldiers may be required to conduct vehicle searches during peacekeeping and peace enforcement operations. The degree of search will be determined by the ROE and the potential threat. Figure A-2 shows the vehicle search processing rate.

SEARCH PATTERN	RATE (veh/hr/lane)	TIME (min/vehicle)
None	600-800	---
Check Vehicle Decal ID	400-600	10 seconds
Check Driver I D	200-400	20 seconds
Visual Observation of		
Passenger and Cargo Area	150-300	25 seconds
Basic Physical and Visual Search of Passenger and Cargo Area	50-150	1.2 minutes
Comprehensive Vehicle Search	12-24	5 minutes

Figure A-2. Vehicle search processing rate.

CONVOY SECURITY

Convoys may be attacked by belligerents. Convoys are vulnerable to long-range fire from manpacked ATGMs and light, mobile, direct fire artillery. The main threat for convoys is likely to be an ambush. Clearing routes, even by ground reconnaissance, is likely to be of limited value, given the use of remotely controlled mines, demolitions, and perhaps mines remotely delivered by multiple rocket launchers. In steep terrain with heavily wooded slopes, surprise ambushes are possible. The traditional answer of placing troops on the high ground will not protect the convoys. Convoys will have to be task-organized to provide their own resources for protection and immediate counterattack. Large numbers of dismounted AT weapons and automatic small arms can do considerable damage in a short-range ambush. Suppressive fire and infantry counterattack by the convoy escort and supporting helicopters are likely to be countered by the use of pre-positioned smoke pots and AP mines to enable the ambushers to slip away.

Consider the following factors when conducting convoys:

- All convoys should be escorted by an armored mechanized advance guard force to detect ambushes, breach obstacles, detect mines, and to possibly deter attacks by belligerents.
- Position the advance guard three to five kilometers ahead of the main body.
- Consider using remotely piloted vehicles and helicopters to over-fly the route in advance of the convoy.

- The main body should also be led by armored vehicles and every third or fourth vehicle should be a fighting vehicle.
- Minimize the use of trailers in the convoy. Trailers hinder the mobility of the convoy and its ability to react to ambushes.
- A strong reserve force or rear guard should trail the convoy to respond if the convoy is attacked.
- The rear guard should also be armor heavy to discourage attacks.
- Convoys should be totally self-contained. Convoys must have additional fuel, food, maintenance, recovery, medical, and their own indirect fire support assets.
- Attack helicopters should be used to overwatch convoy routes and to assist the advance guard in forcing their way through belligerent checkpoints.
- The convoy commander should be in the second or third vehicle in the main body.
- Maintain convoy integrity and dispersion at all times.
- Conduct a thorough IPB and route reconnaissance to determine the location of belligerent checkpoints.
- Do not bring the main body of the convoy into the gauntlet of obstacles at belligerent checkpoints until the belligerents have permitted the advance guard of the convoy to move through the checkpoint. This gives the main body the flexibility to maneuver if attacked.
- Have communications between all vehicles and have redundant communications between the advance guard and the main body.
- Be aware that the belligerents may track the convoys along their routes and will want to verify the number of vehicles in the convoy at each checkpoint.

SECTION VII. ARMOR/LIGHT CONSIDERATIONS

While infantry forces are best suited for peace enforcement operations, armor forces can make significant contributions to the operations. Tanks are potent weapon systems when performing traditional functions, but they also make excellent infantry support weapons. Some of their capabilities are:

- AT and antiarmor.
- Intimidation of belligerent forces.
- Heavy weapons support to infantry fighting vehicles (IFV).
- Target acquisition, especially at night using thermal sights.
- Survivable to mines and light AT weapons.
- Provide security to convoys.
- Provide support during search and attack operations.
- Protect infantry against automatic weapons fire.

Some advantages of using tanks during peace enforcement operations are:

- Armor/mechanized forces can be rapidly emplaced at decisive points throughout sector to support threatened UN forces.
- Armor forces have extremely high visibility and can deter aggression by belligerent forces (consider firepower demonstrations as a show of force).

Some disadvantages of using armor during peace enforcement operations are

- The enemy can focus on, isolate, and destroy armor forces in a piecemeal fashion.
- Tanks have limited bunker and building destruction capability.
- Tanks and other armored vehicles destroy secondary roads and MSRs.
- The size of armored vehicles often blocks narrow country roads and can destroy private country roads and private property during movement (may offset attempts to gain support of local civilians).

Consider the following factors when using tanks in peace enforcement operations:

- There is no pure "armor/ mechanized" or "light" scenario in peace enforcement operations. The best way to achieve success is to balance the array of tactical capabilities IAW METT-T.
- The combined arms concept requires teamwork, mutual understanding, and the recognition by everyone involved of the critical roles performed by other arms.
- There is no place for parochialism or ignorance; the success of the mission and the lives of soldiers depend on the ability to understand and synchronize the complexities of a diverse force.

APPENDIX B JOINT AND MULTINATIONAL OPERATIONS

CONTENTS
Section I. The Joint Environment
Section II. Marine/Army Integration
Section III. Multinational Operations

In future operations the brigade may not always fight under conventional Army control. The brigade may operate as part of a Marine Expeditionary Force under joint command. It may also participate in multinational operations with a combined staff.

SECTION I. THE JOINT ENVIRONMENT

GENERAL

Joint operations are the integrated military activities of two or more service components of the US military. These service components include the Army, Navy, Air Force, and Marines. The Army must continue to expand its operations within a joint environment due to the force projection nature of its doctrine. Future Army employment is difficult to predict and could result in a multitude of combinations of joint forces being employed. The armored brigade plays an increasingly important role in joint operations.

COMMAND RELATIONSHIPS

Armored brigades normally operate as part of an Army or Marine functional component command. Marine Corps combat forces are assigned to the Fleet Marine Forces of the Atlantic and Pacific Commands. These Fleet Marine Forces are provided to support unified commands as directed by the national command authorities. The Marine Corps focus is on furnishing readily deployable, tailored combined arms Marine air-ground task forces. A Marine air-ground task force is composed of a command element, a ground combat element, an air combat element, and a CSS element. A Marine air-ground task force may vary in size from a Marine Expeditionary Force down to a Marine Expeditionary Unit (see Figure B-1). When the armored brigade is employed by the Marine Corps, they will normally operate as part of a joint force. The joint force commander will determine the command relationship between Army forces and Marine forces based on METT-T.

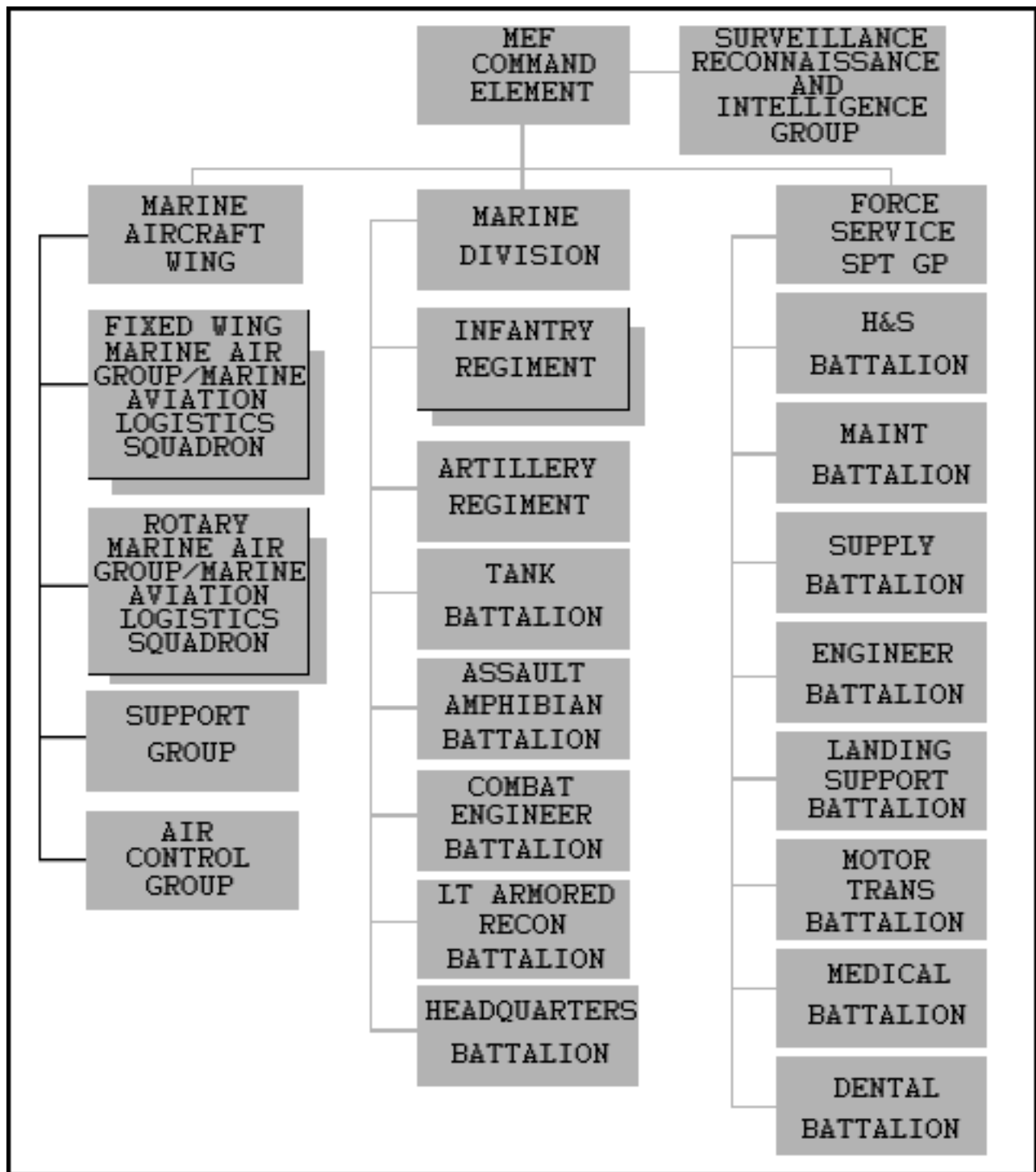


Figure B-1. Notional Marine Expeditionary Force.

If the brigade is organized under the control of a Marine Expeditionary Force, it generally operates directly under the Marine Expeditionary Force commander as an independent unit. See Section II for details on Marine/Army integration.

In some circumstances, it is possible for all the Army forces involved in an operation to organize under a brigade headquarters. In this case, the brigade may function as the Army forces headquarters. If the brigade is organized under Army forces headquarters, it either operates directly under the Army forces headquarters, or operates under an Army division or corps headquarters. If the brigade is the Army forces headquarters, it is normally OPCON to the joint forces command.

IAW FMs 100-7 and 100-10, the roles of the Army service component commander (ASCC) are

- Provide Army force packages to the CINC and advise on their employment.
- Provide all Title X support to the Army forces in theater.
- If designated by the CINC, the ASCC may exercise OPCON of the war fight.

The brigade exercises tactical control over its subordinate units. This command relationship is the detailed and usually local direction and control of movement and maneuver necessary to accomplish missions and tasks. It allows the commander to apply force and direct the tactical use of logistical assets.

The ASCC operates as a component commander under one of the three following types of joint commands:

- Unified and specified commands.
- Subordinate unified commands.
- Joint task forces.

Unified and Specified Commands

The President establishes unified commands through the Secretary of Defense, with the advice and assistance of the Joint Chiefs of Staff, to perform a broad, continuing mission. Unified commands are also known as combatant commands. A unified command is composed of two or more services under a single commander. The unified commander normally exercises combatant command through service component commanders.

Examples of unified commands include US European Command and US Pacific Command. Unified commands provide the CINC with areas of responsibility that include all associated land, sea, and airspace. Other unified commands are given functional responsibilities such as transportation or special operations. An example of a functional unified command is the US Special Operations Command.

A specified command is also established to perform a broad, continuing mission. A specified command differs from a unified command in that the specified command is primarily a single service command. The specified command may, however, have some elements of other services assigned.

Subordinate Unified Commands

The unified commander may establish a subordinate unified command to carry out broad, continuing missions under his command.

Joint Task Forces

The Secretary of Defense and the commanders of unified, specified, and subordinate unified commands along with existing joint task forces may establish a joint task force. Elements of two or more services under a single joint task force commander comprise the task force. The joint task force performs missions of specific, limited objectives or missions of short duration. It normally dissolves when its purpose is achieved.

RESPONSIBILITIES AND ROLES OF THE ARMY SERVICE COMPONENT COMMANDER

As previously stated, the Army service component commander or his equivalent will be the next higher headquarters for the armored brigade assigned the role of an Army forces headquarters. The responsibilities and roles of the Army service component commander include

- Assuming responsibility for properly employing subordinate forces and accomplishing operational tasks assigned by the joint task force commander.
- Establishing the link between Army forces and the joint command.
- Planning and executing operations in support of the joint campaign plan.
- Planning and executing support operations to sustain subordinate Army forces
- Assuming responsibility for overseeing internal administration and discipline, training Army doctrine, and TTPs.
- Designating specific units to meet joint force requirements.
- Providing logistics functions normal to the component.
- Ensuring tactical employment of service components.
- Providing service component intelligence operations.

A combatant commander can establish an Army command that reports directly to him instead of the Army service component commander. The Army service component commander would then plan and execute operations to sustain this command and other Army units.

SECTION II. MARINE/ARMY INTEGRATION

TASK ORGANIZATION

The armored brigade provided to the Marine Corps may be an active or reserve component divisional brigade or a separate armored brigade. The brigade normally operates with a proportional share of division assets. The brigade uses these assets to provide armor support to the Marine Corps mission. The divisional brigade deploys with its assigned maneuver units plus habitual support slice. This includes two tank battalions, one mechanized infantry battalion, one engineer battalion, one DS FA battalion, an ADA battery, a forward area signal platoon, an MP platoon, combat IEW elements, a TACP, and an FSB. The USMC will provide air and NGLO assets and one SALT per maneuver battalion when working in support of Marines.

BATTLEFIELD OPERATING SYSTEMS

Intelligence

The armored brigade has its habitually associated GSR teams. Successful combat operations depend on the ability of the combined arms team to find, fix, fight, and finish enemy forces through a combination of offensive and defensive operations. The Marine air-ground task force intelligence functions are coordinated by the surveillance, reconnaissance, and intelligence group (SRIG). The SRIG has signals intelligence (SIGINT), HUMINT, and reconnaissance assets that provide intelligence to the Marine air-ground task force. A key to successful joint operations is the ability to gather, analyze, evaluate, and disseminate combat intelligence. Minor differences in intelligence doctrine exist between the Army and the Marine Corps. Leader and liaison training must focus on the differences in intelligence reporting procedures and techniques. Training must also address the different intelligence requirements of armored forces as compared to light forces.

Maneuver

There are no major doctrinal changes required to permit effective integration of an armored brigade in support of Marine Corps operations. However, there are areas in doctrine that contain inconsistencies or differences in interpretation. The armored brigade executes the same missions and roles as prescribed throughout this manual. The armored brigade's potential as a combat multiplier is the basis for cross attachment with the Marine Division. The capabilities of the armored brigade provide a new dimension to the Marine Division by closing the armor vulnerability window and providing an increased level of overall security and flexibility.

During maneuver operations, some of the following planning considerations should apply:

- Marine air-ground task force vehicles are designed for amphibious operations.
- Marine Corps armor is primarily used to support infantry.
- A preferred Marine Corps maneuver is the "recon pull" in which reconnaissance forces find gaps and pull the bulk of attacking forces through those gaps to exploit the situation.
- The defense is not part of a Marine air-ground task force's essential training and little training is done for complex defenses.

Fire Support

The Marine Corps relies on NGF and the aviation combat element for CAS. The brigade receives representatives and equipment to effectively integrate NGF and air support operations. The armored brigade receives two SALTs to control the Marine Corps CAS. The SALTs are normally assigned to any two of the maneuver battalions in the armored brigade. Army and Marine Corps FS doctrine, TTP, and employment principles are very similar. There are, however, some areas that could allow for some inconsistencies or differences in interpretations in the areas of FS control measures, CAS, and establishing liaison.

Air Defense

The armored brigade has its habitual BSFV battery. Successful air defense during joint operations requires strong airspace control procedures and an integrated system of mutual and complementary defenses. Strong liaison teams, excellent communications, and standardized procedures as a minimum are essential when conducting joint operations.

The primary differences between Marine and Army air defense are weapon systems and communications. Both the Marines and the Army use the Stinger, Avenger, and Hawk weapon systems, but only the Army uses the Patriot system. However, the Marines do not have a tracked ADA system, such as the BSFV. The light armor vehicle air defense (LAVAD) is the Marine armored ADA system. The BSFV battery can provide air defense protection to the brigade with some modifications. The BSFV battery must have its ADA sensor/scout section and maintenance contact team from the main support battalion. The Army and the Marines use the same employment guidelines and principles. Both services use the same IFF system and have similar doctrine terminology, air defense control measures, and the same air defense mission: protect the force from the air threat; integrate into the supported unit's scheme of maneuver.

The brigade staff should consider integrating AM communications within the battery to allow interface with the Marine Corps early warning net. Currently, Army BSFV batteries use FM communications to interface on the Army early warning net. The brigade should position an LO team at the Marine Division replicating the functions of the Army division LO (assistant division air defense officer [ADADO], division A2C2 cell).

Mobility and Survivability

The armored brigade should include its normal slice of a combat engineer battalion and chemical and decontamination assets. Both Army and Marine Corps maneuver units are supported by engineer forces to enhance their mobility and survivability. Much of the terminology and procedures are similar. However, the major difference between the two services is the employment philosophies for engineer forces. Army forces go to great lengths to enhance their defensive situations through engineer operations. Marine Corps units do not normally pay a great deal of attention to defensive enhancements. As a result, liaison between engineer headquarters should be established if integrated defensive operations are required. Construction, countering, and reporting barriers, obstacles, and minefields can be facilitated by using joint reporting formats and procedures during joint operations. There are no conflicts between Army and Marine Corps engineer doctrine and TTP. The Marine Corps uses Army engineer field manuals. The Marine Corps also uses the same NBC warning and reporting system as the Army.

Combat Service Support

The Army sustains the armored brigade. Normally, an armored brigade integrates with the Army support structure by receiving support from the DISCOM and corps assets. However, these units may not be in theater and the Marine Expeditionary Force is incapable of supporting the brigade. In this case, a logistics structure is provided to augment the FSB as well as to provide operations normally conducted by division and corps assets at the port.

Corps support group (CSG)(-) under the control of the Army forces headquarters arrives in theater to provide support as a function of Army executive agency support to all ground forces. The CSG(-) provides the Materiel Management Center (MMC) POL, transportation, maintenance, ordnance, supply and medical support to the brigade above the support provided by the brigade FSB. The Marine Corps Expeditionary Force provides limited Class I, Class III, common Class V, Class VIII, and Class IX to the Army armor unit. The brigade staff needs to conduct detailed planning and execution of the logistics operation.

CSS doctrine requires expansion to encompass joint operations. The Army and Marine Corps must resolve CSS terminology differences to effectively work together. The Army provides dedicated and habitual support to its combat units as well as area support. The Marine Corps task organizes its CSS elements at each level depending on the mission. The Marines have a force service support group that has eight battalions assigned. These battalions are task organized, based on the mission, into CSS detachments that provide the required logistical support to the combat units. The Marines normally conduct CSS operations within 50 miles of the beach or ship support. Deeper inland operations may mean potential CSS problems for the Marines.

Because the Marines cannot sustain the armored brigade, the US Army must be prepared to provide all necessary logistical support (see Figures B-2 and B-3).

PORT	CORPS SPT GP(-)	FSB AUGMENTATION
	TRANS GROUP - 2226	ORD SECTION - 25
	HHD, AMMO ACTG - 17	POL PLATOON - 40
	HQ AMMO CO - 13	MLRS MAINT TM - 6
	ORD PLATOON - 87	COMMEL PLATOON - 10
	ORD PLATOON - 68	AVIM - 12
	TAC PETROLEUM ELEMENT - 150	HET ELEMENT - 8
	NONDIV MAINT CO - 250	MED TRUCK ELEMENT - 20
	DIV PERS MGT CNTR - 15	MCC ELEMENT - 3
	PERSONNEL DET - 23	FWD SURGICAL TM - 20
	POSTAL PLT - 10	AIR AMB SECTION - 26
	JAG - 1	MED OPS CELL - 10
	FINANCE DET - 19	MORTUARY AFFAIRS TM - 8
	MED TRUCK - 80	AVIM - 7
	MMC ELEMENT - 3	
	FWD SPT PLT - 18	
	WATER PLATOON - 15	
	BATH TEAM - 15	
	LAUNDRY TEAM - 19	
	SPLIT OPS - 25	
	828 TOTAL	195 TOTAL

Figure B-2. Recommended logistical support for divisional brigade with approximate personnel strengths.

PORT	CORPS SPT GP (-)	SPT BN AUGMENTATION
TRANS GROUP - 2226	HHD, AMMO ACTG - 17 HQ AMMO CO - 13 ORD PLATOON - 87 ORD PLATOON - 68 TAC PETROLEUM ELEMENT - 150 NONDIV MAINT CO - 250 DIV PERS MGT CENTER - 15 PERSONNEL DET - 23 POSTAL PLT - 10 FINANCE DET - 19 MED TRUCK - 80 MMC ELEMENT - 3 WATER PLATOON - 15 BATH TEAM - 15 LAUNDRY TEAM - 19 SPLIT OPS - 25	ORD SECTION - 25 POL PLATOON - 40 MLRS MAINT TM - 9 COMMEL PLATOON - 10 AVIM - 12 MCC ELEMENT - 3 MEDICAL OPS CELL - 6 AIR AMB SECTION - 26 AVUM SPT PACKAGE - 7 MORTUARY AFFAIRS TM - 8
	809 TOTAL	146 TOTAL

Figure B-3. Recommended logistical support for separate brigade with approximate personnel strengths.

Command and Control

The brigade works best as a unified entity. Changing its task organization could reduce its effectiveness. However, when the armored brigade is in reserve, the ground combat element commander can request artillery or engineer assets through the Marine Expeditionary Force commander to support division operations.

Tactical telephone connectivity into the Marine Corps system is provided by the Marine Corps. The Marine Corps establishes the multichannel link to the Army armor unit and provides encryption devices to link single channel radio (FM) from the Marine headquarters to the Army armor force headquarters.

To facilitate planning and execution with the command and control process as well as the logistics process, the Army will send LOs (based on TOE) to higher Marine Corps headquarters and adjacent headquarters. IAW Joint Publication 3-0, liaison from the Marine headquarters to the Army armor force headquarters will be established to enhance the understanding of the roles, missions, and commanders intent at both the sending and receiving unit. All liaison teams must exchange procedures, guidelines, and SOPs when providing critical information such as missions, tactics, organizational structure, doctrine, and weapons capabilities.

Joint Publication 1 reads, "Experience shows liaison is a particularly important part of command, control, and communications in a joint force." Liaison team members need appropriate rank and experience and must have adequate mobility and communications equipment. All liaison teams should bring supplies and life support equipment to assist in operations. Liaison teams should arrive at the designated locations with three days worth of supplies. The receiving unit is then responsible for providing logistical support to the liaison team. When liaison support is complete, the liaison team returns with three days worth of supplies.

SECTION III. MULTINATIONAL OPERATIONS

GENERAL

Combined operations involve the military forces of two or more nations acting together in common purpose. If the relationship is long standing and formalized by mutual political, diplomatic, and military agreements, it is referred to as an alliance. If the relationship is short term, ad hoc, and less formal, it is referred to as a coalition. This type of structure calls for each contributing nation to have forces that the

allied commanders can assign to specific geographic areas. This is similar to a commander in a coalition operation. Three types of combined command organizations are:

- By nationalities.
- By function.
- By nationalities and function.

Organization by Nationalities

This type of structure calls for each contributing nation to have forces that the allied or coalition commander can assign to specific geographic areas. This structure requires a combined staff only at supreme coalition or allied headquarters. However, the armored brigade may need to perform various liaison functions with combined forces.

Organization by Function

This type of structure organizes forces by function regardless of nationality. It requires a combined staff at the lowest level of command where two nationalities participate. If the armored brigade is acting as the Army forces headquarters, it is possible that the armored brigade requires a combined staff within this structure. A combined staff at brigade level could also occur during some types of OOTW that large armored forces (above brigade) are not employed.

Organization by Nationalities and Function

This is a combination of the above two structures. Units are organized by nationalities as well as by function. See FM 101-5 and FM 100-8 for further explanations of combined staffs.

PLANNING CONSIDERATIONS

Intelligence

During tactical operations, the brigade commander and staff must arrange for rapid dissemination of intelligence information. This presents a challenge when operating with combined forces. The brigade needs to provide intelligence LOs and dedicated communications networks with allied or coalition forces. Since the brigade is not currently organized with these additional assets, the Army service component commander or next higher headquarters may need to augment the brigade staff.

Maneuver

Tactical cooperation requires a great deal of precision, since it deals with immediate combat actions. Adjacent and supporting units must coordinate differences in tactical methods and operating procedures; differences in using other service capabilities such as CAS, varying organizations, and their capabilities; and differences in equipment. Vehicle recognition is critical. In addition, tactical plans at the brigade level should address people and equipment, fire control measures, air support arrangements, communications, signals, liaison operations, and movement control. The commander's intent and the concept of the operation should also receive special attention to avoid confusion that might occur because of differences in doctrine and terminology.

Fire Support

The focus of FS at the tactical level is the effective synchronization of the full range of fires provided by all friendly forces. This involves the integration of FA, CAS, NGF, and electronic countermeasures. The brigade must fully integrate into a rigid adherence to a common set of FS control measures established at higher levels. The brigade commander must give early and continuous emphasis to this process.

Mobility and Survivability

The armored brigade must focus on differences in engineer equipment, differences in types of mines and employment techniques of obstacles, and the exchange of all friendly information concerning obstacle employment with special emphasis on the reporting systems.

Air Defense

As with maneuver, aircraft recognition is of extreme importance. The brigade needs to consider synchronization of aircraft control measures such as ACAs, differences in the warning and reporting systems, and the integration of all friendly forces into an early warning communications net.

Combat Service Support

The armored brigade should consider the differences in logistics doctrine, stockage levels, logistics mobility, interoperability, and infrastructure. Often, US forces supply allied and coalition forces with materiel and receive CSS in exchange. The armored brigade needs to effectively operate with various host-nation support (HETs are a good example) and coordinate movement plans, road usage, and port activities.

Command and Control

The focus of successful combined operations centers on achieving unity of effort. All the considerations of combined operations must be involved, to include:

- Differences in military doctrine, training, and equipment.
- Differences in culture and language.
- Teamwork.
- Trust.

Effective coordination, liaison, and communications must be established with combined units on the brigade's flanks, front, and rear.

APPENDIX C ARMORED OPERATIONS WITH LIGHT INFANTRY AND SPECIAL OPERATIONS FORCES

CONTENTS
Section I. Introduction
Section II. Armored Brigade and Light Infantry Battalion Operations
Section III. Light and Armored Operations
Section IV. Special Operations Forces

SECTION I. INTRODUCTION

Across the spectrum of operations, there is an overlap in which both armored and light forces can operate. The use of a mixed force in this overlap takes advantage of the strengths of both forces and offsets their respective weaknesses. The integration of

armored and light forces can take advantage of the enemy forces structure to attack its weaknesses and seize the initiative (see Figure C-1).

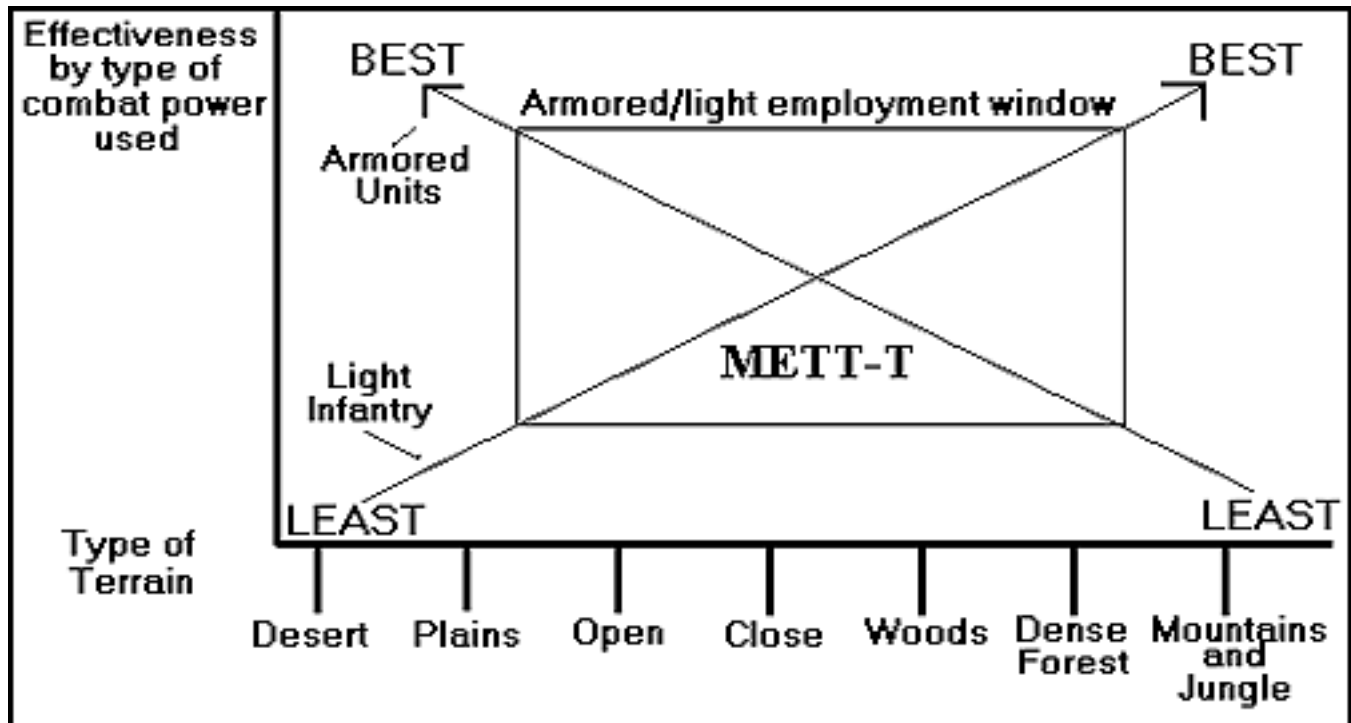


Figure C-1. Strengths and weaknesses of armored and light forces.

The Army recognizes three general types of combat forces - armored, light, and SOF.

- Armored forces are armor and mechanized/motorized infantry units.
- Light infantry forces have no organic carriers, including airborne and air assault infantry.
- SOF support conventional military operations at all levels of war and influence deep, close, and rear operations. SOF are used optimally in deep operations at the strategic and operational level. SOF include Army Special Forces, Rangers, PSYOP, CA, and Army special operations aviation.

Armored and light operations occur when light forces are attached to an armored force. Light and armored operations occur when an armored force is OPCON to a light infantry force in close terrain occupied or controlled by the light infantry force.

This appendix outlines planning, preparing, and executing operations with the mix of armored and light infantry forces at the brigade level and above.

SECTION II. ARMORED BRIGADE AND LIGHT INFANTRY BATTALION OPERATIONS

The potential to use both forces together to capitalize on each others strengths, offset their weaknesses, and attack the perceived weaknesses of any regional threat in war and conflict is unlimited. The interjection of light forces in an armored theater allows a flexible response to increasing tensions and a rapid response in the face of a sudden all-out attack.

Armored and light infantry forces are not routinely mixed but can be effective given the proper situation. The decision to cross-attach light infantry is based on corps-level war planning or on the initiation of a subordinate commanders request for light infantry augmentation. In all cases, the decision to use an armored and light force together is driven by the factors of METT-T.

One advantage of mixing armored and light infantry forces is that the maneuver commander has more flexibility in synchronizing his operation. Light infantry can infiltrate to attack key command and control nodes, for example, while mechanized infantry creates a penetration for an armored task force to exploit. The mechanized infantry can then follow and support the armored task force, while light infantry air assaults or parachutes to continue to seize key terrain or to cut off enemy forces.

The challenge of armored, light, and SOF operations is to understand the capabilities and limitations of each type of armored and light force structure. (For a detailed explanation of the different types and tables of organization and equipment of infantry units, see SH 7-176.) This appendix uses the Infantry Division (Light) Battalion TOE 07015L000 as an example to highlight discussion.

The brigade echelon of command is the most likely armored echelon to have a light unit attached.

CHARACTERISTICS OF THE LIGHT INFANTRY BATTALION

The light infantry battalion is an austere combat unit whose primary strengths are its abilities to operate under conditions of limited visibility and in close combat. When attached, the light infantry battalion may come with a 105-mm howitzer battery from the infantry brigades direct support FA battalion. Employment considerations for the 105-mm battery are discussed in the FS operating system portion of this section.

Organization

The light infantry battalion is organized as depicted in Figure C-2.

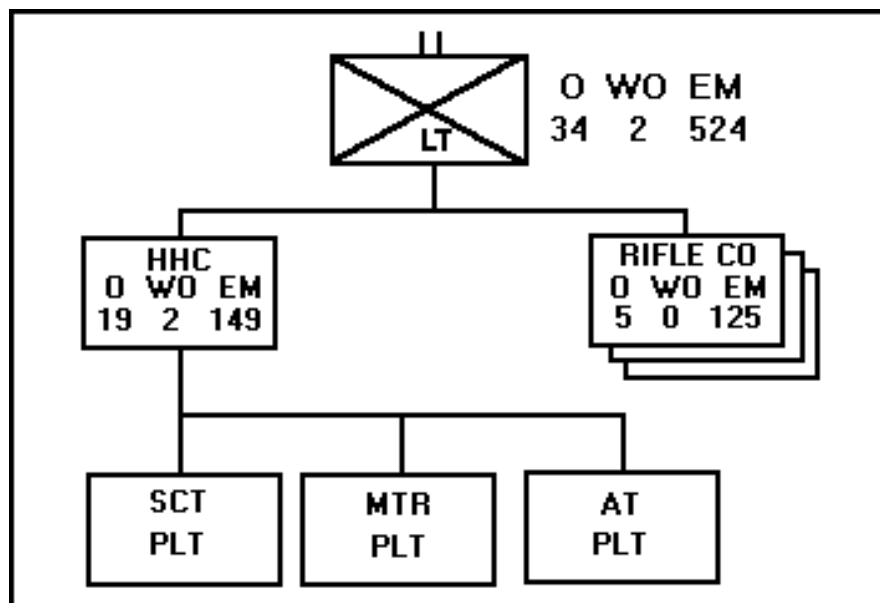


Figure C-2. Light infantry battalion.

Summary of Equipment

The primary weapon of the light infantry battalion is the M16. There are 65 M203 grenade launchers, 18 M60 machine guns, and 18 Dragons in the battalion. There are four TOWs, four 81-mm mortars, and six 60-mm mortars. The battalion has 27 HMMWVs and 15 motorcycles. There are no 2-1/2 ton or larger trucks in the battalion. There are 42 AN/PRC-77 radios, which are the primary means of communication within the battalion. There are no redundant radios.

Augmentation

It is important to understand exactly what resources a light battalion actually has, regardless of TOE. In most cases, a light battalion requires augmentation to fight in an environment of war. Table C-1 shows an example augmentation of a light battalion.

Possible Augmentation	Provided By
One GSR section	Armored brigade GSR slice, or light division MI battalion
One Stinger platoon (BSFV)	Armored brigade CS slice
One initial fire support automation system (IFSAS) w/FSO	
Three forward entry devices (FED)	
One light engineer platoon	Light division engineer battalion
One light truck company (-)	Corps
One unit level maintenance team	Light brigade
One maintenance team (DS)	Light division
One mess team	Light brigade
One smoke/decon platoon LO	Corps, armored brigade/light battalion
One REMS team Light division	MI battalion

Table C-1. Example of light battalion augmentation.

LOs should be exchanged at the time of task organization. LOs must know their units capabilities and strengths and should be exchanged for both maneuver and logistics cells.

Missions

The missions given to a light infantry battalion in armored brigade and light infantry battalion operations must take into account the armored enemy's superiority in mobility and firepower. The light infantry battalion must offset its vulnerabilities with dispersion, cover and concealment, and use of close and hindering terrain to slow the enemy. Table C-2 shows possible light infantry tasks.

Armored Brigade Mission	Light Battalion Task
Movement to Contact	Clear and secure restricted areas; follow and support
Hasty and Deliberate Attack	Use air assault to fix enemy reconnaissance, infiltration air assault To seize objectives, breach obstacles; create a penetration
Exploitation	Secure LOC; use air assault to seize terrain or attack enemy forces
Pursuit	Clear bypassed forces; use air assault to block enemy escape
Follow and Support	Secure key terrain and LOC; provide rear security
Cover	Provide reconnaissance, deception, stay-behind operations
Defend in Sector	Block dismounted avenues; counterreconnaissance; occupy strongpoint; ambush; provide rear area security; conduct military operations on urbanized terrain
Breakout from Encirclement	Create penetration
Linkup	Serve as follow-up echelon
Demonstration	Conduct display operations
Retrograde Operations	Rear security, route clearance, occupy positions in depth

Table C-2. Example of possible light infantry tasks.

Operational Planning Considerations

When employing armored or light infantry forces together, both forces' BOS must be integrated.

Intelligence

If information determined by the IPB process is imprecise, light infantry casualty rates are heavier due to the light battalion's relative lack of mobility and differences in weapons ranges between the light force and opposing armored units. Enemy locations must be pinpointed to eight-digit grid coordinates. Avenues of approach and mobility corridors must be evaluated for both armored and light forces. Armored enemy weaknesses must be well defined by the armored brigade S2 and provided to the light infantry unit in a timely manner.

The light infantry battalion is another source for conducting reconnaissance patrols, establishing LPs/OPs, and forming stay-behind teams. The brigade S2 and brigade S3 must consider and incorporate the light infantry battalion into the brigades R&S plan.

Given appropriate terrain, light infantry battalions can perform a screen mission and effectively defeat enemy reconnaissance (counterreconnaissance).

Maneuver

Light infantry is used in close or restrictive terrain to deny the enemy avenues of approach. Enemy mobility is reduced, and the advantage of long-range weapons is nullified. To help protect the light infantry force, plan to move light infantry during conditions of limited visibility, such as in darkness, severe weather, or fog.

Linkup operations of light infantry with armored forces must be planned and executed in a timely manner. If the light infantry battalion is to attack in advance of the armored brigade, the armored brigade must relieve the pressure from an enemy armored attack. Light units left in contact with an enemy armored force in other than close terrain may be overrun or decimated by artillery if not reinforced with armored forces rapidly.

The brigade S3 must ensure required flank coordination between the light infantry battalion and adjacent armored units is conducted when planning defensive or offensive operations. Flank coordination must emphasize:

- Deconflicting the effects of projectiles from direct-fire weapons on light infantry operating in the area.
- Identifying minimum safe trigger lines for use.
- Shifting of indirect fires.

Recognition signals must be clearly understood by both forces when conducting or completing operations where both forces link up or merge.

ACAs and SEADs must be planned early any time the light infantry battalion uses aviation for movement or attack support. These measures must be planned in and out of the objective/target area.

Fire Support

Since light forces are extremely vulnerable to indirect fire, the armored brigade works through its supporting headquarters to ensure designated counterbattery support is available. The brigade FSO should recommend critical friendly zones to the brigade S3 or light battalion commander. Critical friendly zones may be established in locations that the enemy may consider the employment of indirect fires such as at friendly breach sites, attack positions, support by fire positions, or choke points.

The lack of digital message devices (DMD) and variable format message entry devices forces the light battalion to send its calls for fire over a voice net. If the armored brigade cannot operate with both voice and digital traffic on the fire control nets, it must supply the light infantry battalion with DMDs.

The light infantry battalion's mortars must be integrated into the brigade's indirect fire plan. The improved 81-mm mortar has nearly the same range and lethality as an armored battalion's 4.2-inch mortar.

If the light infantry battalion brings a 105-mm FA battery with it, the brigade FSCOORD should recommend to the brigade commander what mission it should be given. A good procedure is to attach the battery to the brigades DS FA battalion for command and control and logistics, and to ensure it is fully synchronized into the brigades plan. Do not have just the 105-mm FA battalion support the light task force since it can provide the brigade additional firepower. With this FA battery comes the additional requirements of rearming and refueling it. The brigade must ensure the battery receives ammunition and rations like any other unit under its command. During planning, particular attention must be given to ensuring the 105-mm artillery battalion and 60/81-mm mortars are rearmed. The brigade S3 must ensure that the brigade S4 provides the division with the forecast for 105-mm artillery or 60/81-mm mortar ammunition immediately on attachment.

The FS products for the entire brigade must be the same. Having special target lists and overlays for the light task force does not fully synchronize them into the brigades plan. There should be one brigade target list, one brigade FS execution matrix (with the light task force included in the left margin) and one overall scheme of fires. The same holds true if the 105-mm battery is added to the brigades DS FA battalion. There should be no separate products provided to them. They must be given brigade targets to execute and be part of the brigade fire plan. They should be included in the brigades DS FA battalion FA support plan. This ensures they are synchronized, and also resupplied.

Air Defense

Light infantry's primary means of air defense are passive - do not fire first, move at night, and camouflage troop concentrations.

The positioning of the light infantry battalion and its Stinger teams can secure a friendly air corridor and also deny that same air avenue to enemy aviation. The brigade staff must integrate the light infantry's ADA assets into the brigade overall ADA plan.

Resupply of Stinger missiles may hamper continuous air defense coverage if not planned for method and place of delivery.

Stinger teams must either dig in or move immediately upon firing. Missile contrails point to firing positions.

Mobility and Survivability

Within the light battalion, engineer priority is usually survivability, countermobility, and then mobility. The light engineer platoon has no vehicular haul capacity. When pushing Class IV to light infantry, plan to drop small loads at specific sites along the obstacle belt. Build obstacles in such a way that flanking fires can be used to stop the enemy and force him to dismount to clear the obstacle. Light infantry has limited AT assets and relies on destroying enemy vehicles within small-arms range.

When breaching, lanes must be thoroughly reconnoitered. Use limited visibility to conduct covert breaching efforts.

Combat Service Support

Light infantry unit CSS system works on the basis of push, not pull. The light brigade ordinarily uses throughput distribution to its battalions. It is based on planning and status reporting, rather than requisitioning. This is the major reason for the need to exchange logistical LOs within the light infantry battalion and brigade logistical CPs.

Class I for the light infantry unit is normally handled at brigade level. The light battalion should have a mess team from its parent brigade. The team consists of eleven enlisted personnel, one 5-ton truck, and one M149A1 water trailer. The M149A1 trailer is the only dedicated water-haul asset in the light battalion. Water resupply is an item of command interest and must be given priority for resupply during the brigade's planning process.

Class III resupply is handled by centralized top-off in the trains and the exchange of 5-gallon cans. The light battalion support platoon has two 500-gallon collapsible fuel blivets. Class V differences lie mainly in mortar and 105-mm artillery ammunition. Light infantry uses both 60-mm and 81-mm mortars.

Light infantry relies on four HMMWV ambulances for MEDEVAC. The battalion should be augmented by M113s from the FSBs medical company. Ground and aerial AXP's must be planned to reduce casualty evacuation turnaround time.

Class IX for the light battalion focuses on replacement of assemblies at the brigade level. The light battalion has one assigned mechanic; the light brigade augments the battalion with a unit-level maintenance team and a DS maintenance team.

Transportation of the light battalion when not in contact and its supplies must be managed by the brigade S4 as requested by the light battalion or brigade S3. The light battalion support platoon allocates six HMMWVs to haul ammunition, one for POL, one for other classes of supply, one for the support platoon leader, and three for command vehicles for the rifle companies. Transportation assets provided to the light infantry battalion from the armored brigade should be placed in the BSA under control of the light battalion S4 NCOIC. The brigade staff must recognize the lack of organic transportation assets in the light battalion and that it may require augmentation to accomplish missions assigned.

Command and Control

Armored and light force commanders and staffs must understand the capabilities and limitations of each others units. Since this presents problems to both units, LOs should be exchanged and main CPs collocated if possible. Exchange of unit SOPs and SOI must occur immediately on attachment. In many tactical operations, the light battalion crosses the LD 24 to 48 hours prior to the armored force. This requires the armored brigade staff to develop a timeline that outlines the OPORD issuance time, resource drop-off times, rehearsal time, and other actions of the brigade centered around the infantry LD time. The

brigade XO must ensure all staff sections understand and monitor the actions of the light infantry until the brigade mission is accomplished.

Orders at the brigade level must be simple, timely, and easy to execute. In the light infantry battalion, it is difficult to make changes in either plans or execution and then verify those changes up and down the chain of command. The brigade commanders scheme of maneuver must ensure the mission assigned to the infantry battalion can be accomplished based on its capability and the inability of the enemy to counter the operation.

Communications become a major factor in light and armor operations. Planning must offset the limited number and range of the light units communication capability. The light infantry battalions main CP has high-powered FM radios, at least one MSRT, and often single-channel TACSAT radios.

The low power radios of moving light forces must be considered by the brigade staff. FS nets are also a problem due to dismounted observers operating low power radios. Brigade CPs must carefully position to improve communications, encourage MSRT use, and maximize brigade retrans as well as any available airborne communications.

Digital systems, which mechanized forces rely on, may not exist in light units; if present, they may not have the same distribution. FS and intelligence as well as command and control automation should be compared in advance; analyze the impact and create manual work-arounds.

OFFENSIVE TECHNIQUES

Movement to Contact/Hasty Attack

In a movement to contact, it is usually best for the light infantry battalion to follow behind the armored brigade. The light unit can be employed along the line of march as a rear OPSEC element. Depending on choke points or restrictive terrain along the route of advance, the light infantry battalion can be airlifted forward to secure these choke points to allow unimpeded mobility to the brigade. The light unit can also fix and destroy bypassed enemy pockets of resistance or perform any combination of these missions.

Deliberate Attack

A light infantry battalion has its greatest utility when the brigade is conducting a deliberate attack. The nature of the deliberate attack lends itself to the tempo of dismounted attacks and allows more planning time for infiltration and airmobile operations. Among the options available to the brigade commander are the following:

- Conduct an infiltration attack on the enemy's indirect fire assets and command and control centers.
- Conduct an airmobile attack to create a blocking position.
- Conduct an airmobile attack to attack the enemy's uncommitted forces from an unexpected direction.

Light infantry deliberate attacks are best accomplished at night or during periods of limited visibility. Attacks during periods of limited visibility are characterized by:

- Extensive use of thermal night sights, GPS and GSR to vector light infantry units toward an enemy position.
- The use of indirect fire assets whenever possible to destroy or disrupt the enemy. All available FS assets should support the light units attack until priority shifts to the armored force upon its commitment.

Commanders must take great care in synchronizing all these operations. The attack by the light infantry battalion must coincide or complement the armored forces attack and subsequent linkup. A light infantry battalion has the potential to be a tremendously disruptive and powerful combat multiplier.

Exploitation and Pursuit

Light infantry's utility in exploitation and pursuit comes solely from its capability to conduct airmobile operations. The capability of the light infantry unit to be airlifted forward of the lead elements of the armored brigade to conduct blocking operations can mean the difference between destruction of a retreating (but organized) enemy force and a complete route of the enemy.

DEFENSIVE TECHNIQUES

The armored brigade may give the light infantry battalion a sector, strongpoint, or BP to defend. METT-T dependent, it is usually best to give the infantry a sector. It is usually next best to assign it a strongpoint mission with augmentation by an armored unit to conduct counterattacks against enemy armor.

Defense in Sector

The objective of a defense in sector is to maneuver to place maximum combat power on the enemy. Because armored unit mobility is hampered when operating in restricted terrain, a light infantry battalion can be used to protect them from enemy infiltration. A light infantry battalion can also channel enemy forces into EAs for indirect fires, aviation, or armored force engagement.

In a sector defense, the light infantry battalion should fight no more than one enemy battalion at a time. The light battalion should have at least 48 hours to prepare the sector. The light battalion TOE does not include entrenching equipment beyond the individual entrenching tool. Experience shows that to achieve the 48-hour standard, the battalion needs two picks and shovels per squad and at least two small emplacement excavators or backhoes. It also needs chain saws to cut trees for overhead cover, if trees are available.

Defending a Strongpoint

To create a strongpoint, the light infantry battalion requires either a lot of time or a lot of engineer assets. The ideal solution is both. A commander should position his strongpoints to give the enemy only two choices: bypass the strongpoint in the direction the commander wishes him to go, or attack the strongpoint. The unit defending the strongpoint must be prepared to fight on a 360-degree front.

If time and resources permit, alternate or supplementary positions for all units should be dug to standard with connecting trenches between them. With trenches, even "crawling ones," the light infantry commander has some capability to reposition forces within the strongpoint. All AT assets should rehearse moving from one side of the strongpoint to the other to shoot the enemy if he attempts to bypass it.

Retrograde Operations

During retrograde operations, the role of light infantry is similar to that of a rear operations tactical combat force. It ensures that enemy, partisan, or airmobile assaults cannot close choke points along the brigades avenue of retrograde. As the enemy advances, the light unit seeks to ensure that the delaying armored forces route of movement remains clear.

SECTION III. LIGHT AND ARMORED OPERATIONS

Employing an armored brigade with a light division can be a combat power multiplier. Light division and armored brigade operations effectively use the infantry divisions ability to operate in restrictive terrain, such as urban areas, forests, and mountains. The light and armored force should be mutually supporting, based on the commanders concept of employment, to ensure assets of both forces are integrated and synchronized. This section discusses the considerations in planning and executing tactical operations of a light division with an armored brigade under OPCON relationship.

TASK ORGANIZATION CONSIDERATIONS

Cross attachment of an armored brigade to an infantry division must be thoroughly considered. Corps planners must consider the capabilities and limitations of the combined force with respect to the:

- Size and mission of the force.
- Location of the deploying unit in relation to its parent unit.
- Support capabilities of the deploying force.
- Source of support for the deploying force.
- Self-sustaining capability of the armored force.

Options for task organizing an armored brigade to support an infantry division are, in priority:

- Separate armored brigade OPCON to an infantry division.
- Armored divisional brigade OPCON to an infantry division.

The recommended command relationship for an armored brigade supporting a light division is OPCON. Under this relationship, the division is not burdened with the armored and mechanized brigades logistics support. The division staff must plan for the increased requirements for terrain, movements in the rear area, and for the increased logistics support structure.

When requesting the support of an armored brigade, the division should routinely expect to receive a brigade task-organized. The armored division provides additional assets to the armored brigade within its capability. Additional division assets are three heavy expanded mobile tactical trucks (2,500-gallon tankers), two MSEs nodes, and one MP platoon. This is the minimum essential organization required to support the infantry division. This is what the parent armored division should provide the armored brigade and still remain capable of conducting and supporting armored division operations. Normally, additional augmentation for the armored brigade comes from corps if the parent armored division is committed.

EMPLOYMENT CONSIDERATIONS

The purpose of employing light and armored forces together is to capitalize on the unique strengths of each type of force while minimizing its limitations. To accomplish this, both light division and armored brigade commanders must understand the capabilities and limitations of each force and synchronize all CS and CSS assets to accomplish the desired effects on the enemy.

Placing an armored brigade OPCON to an infantry division is a combat multiplier for the division only if three conditions are met. First, use of the armored brigade must support the division mission. Division commanders must ensure the TTPs used by their forces and the armored brigade are compatible. Artillery, engineer, air defense, intelligence, attack helicopters, signal, and divisional CSS assets must be properly coordinated with the armored brigade to support light and armored operations.

Second, the armored brigade must bring its own logistics support. The armored brigade should be under an OPCON relationship to the light division. This relieves the light division of supporting the brigade. The infantry divisions FSBs are not able to support the armored brigade with fuel, ammunition, and repairs.

Third, the light infantry commander must remember the differences in tempo between light and armored forces and use these differences to his advantage. Differences in mobility change the way the infantry division fights. The armored brigades mobility allows it to move quickly. It depends on mobility and firepower to survive. Integration of speed and mobility is vital when conducting operations as a combined light and armored force.

CAPABILITIES AND LIMITATIONS

The employment of a mixed force must be based on sound METT-T analysis. By maximizing capabilities and minimizing limitations, commanders can effectively integrate armored and light forces. A discussion of capabilities for armored forces and considerations for minimizing limitations when OPCON to a light infantry division follows.

Armored Force Capabilities

Specifically, armored forces can operate as attack or counterattack forces and accomplish rapid movement in exploitations and pursuits. The armored force provides the infantry division the following capabilities:

- Seize terrain and penetrate or envelop enemy defenses or strongpoints.
- Conduct defensive operations by dispersing over great distances and by concentrating rapidly. They can also defend from strongpoints.
- Rapidly exploit success in the offense or defense, including the effects of nuclear, chemical, and conventional fires.
- Conduct delaying actions against larger enemy armored forces.
- Conduct security missions.
- Provide organic air defense against low-altitude hostile aircraft.

Considerations to Offset Armored Force Limitations

Armored forces depend mainly on radio communications. This makes them vulnerable to radio electronic combat. Because of this, the armored brigade commander must ensure all subordinate commanders understand the higher commanders intent, doctrine, drills, and control measures for an operation. This ensures execution of plans when radio communications are disrupted from jamming or inoperable systems.

Armored forces have a high consumption rate of supply items, especially Classes III, V, and IX. Anticipation of these supply needs, integration of supply assets into the BSA at optimum times, and extensive use of logistics packages can reduce this burden on the light division. The brigade LO must ensure logistical support issues are addressed by the light division during planning.

Armored forces are vulnerable to antiarmor weapons and mines. Proper integration of dismounted infantry, use of FS assets, terrain driving, and extensive reconnaissance to locate and target enemy antiarmor positions and minefields reduce this vulnerability. Armored brigade mobility considerations must be integrated into the R&S plan of the light infantry division. The brigade S2 and S3 must review the divisions R&S plan to ensure integration of assets support armored force maneuver.

Because of the limited number of dismounts available in armored units, these units have difficulty defending positions against enemy infantry. When armored forces are positioned to defend on mechanized avenues of approach, the brigade should request augmentation with light infantry to reduce this vulnerability.

The armored brigade brings extra capabilities to the infantry division - armored protection, mobility, and firepower. The light division can use these capabilities to exploit success or reinforce the defense. The integration and synchronization of these capabilities can overwhelm a numerically superior force. When the light division is planning, the brigade commander and staff must ensure that the armored brigade and subordinate units are employed to exploit their capabilities.

TACTICAL EMPLOYMENT

Assigning complementary missions to each force is the guiding principle for employing armored and light forces. The infantry division can expect to conduct tactical operations with armored units in all combat environments. The most common employment of armored forces by infantry divisions occurs when terrain

and vegetation favor use of infantry, but an enemy may have small numbers of motorized, mechanized, or armored units.

Under proper circumstances, the infantry division receives one armored brigade from the corps. The brigade normally comes with additional task-organized maintenance, Class III, and Class IV. The armored and light force can conduct a multitude of missions and tasks (see FM 71-100). Examples of offensive and defensive missions and tasks are as follows:

- Light and armored operations in the offense include light missions of movement to contact, attack, and raid that are supported by armored tasks such as reserve, overwatch, counterattack, attack by fire, covering force, and deception. When the infantry division is conducting an attack, the armored force can support it as a mobile reserve to conduct counterattacks.
- Light and armored operations in the defense include light missions of defend, delay, and withdrawal. Armored tasks to support these missions include counterattack, reserve, covering force, overwatch, reinforce, and DLIC.

PLANNING CONSIDERATIONS

The effective employment of a force with both armored and light elements requires detailed planning. Mutual planning, development of orders, rehearsals, and coordination between respective commanders and staffs must take place. Critical areas in the planning process include the command and support relationship, composition of CS and CSS, and effective use of terrain. A common SOP or an understanding of each units SOP is essential to synchronizing all combat, CS, and CSS units. A discussion of specific planning considerations follows.

Intelligence

Detailed intelligence is critical to the success of light and armored force integration. Intelligence requirements for each force must be understood and integrated into the IPB process. The brigade S2 coordinates with the light division G2 to ensure the IPB products developed by the light division include an armored force orientation. Armored forces orient on unit concentrations, tank and AT locations, counterattack routes, armor obstacles, EAs, and artillery and air defense locations. Both forces PIR and DSTs must be combined, compared, and explained to both staffs in detail. The R&S plans of both units should be jointly developed and coordinated. The use of the armored brigades long-range observation and direct-fire systems must be integrated into the light divisions R&S plan.

Maneuver

When defending or attacking, elements of an armored or light force can fix the enemy while the armored force attacks. In either case, the armored brigade requires adequate terrain and space to maneuver. The brigade S3, XO, or commander must ensure the following considerations are observed by the light division G3 cell during planning:

- Armored forces are best suited to operate in open and mixed terrain. Mobility and organic firepower make it easier for mechanized and armored forces to disperse and rapidly concentrate at the decisive point on the battlefield.
- The difference in operational tempo between light and armored units must always be a consideration, including the scheduling of rehearsals. It may dictate an early rehearsal time to allow both forces to take part.
- Both units' direct and indirect fires should mutually support each other. The armored brigade can use its long-range direct fires to provide suppression and overwatch fires for the light division. The light division should plan to use the armored forces long-range antiarmor fires. In light and armored operations, differences in equipment may dictate different techniques in marking TRPs.

Fire Support

The armored force must recognize that dismounted infantry operations focus on stealth, which could preclude preparation and other preliminary fires. Planners must integrate available FS for each force into the fire plan.

Division planners must be familiar with the organization, capabilities, and limitations of all forces involved. It is likely that the armored brigade's DS FA battalion will support the light division elements if they are sent out early. The decision by the light division to use the armored brigade's DS FA battalion occurs from initial IPB, intelligence gathered from higher collection assets, or a quick FS mission analysis. Normally this results in a preliminary division target list and scheme of fires, and a WO issued to the DS FA battalion until the formal field artillery support plan (FASP) can be developed. This allocation of FS assets may require moving a single 155-mm battery forward enough to reach on and beyond the objective of an element of the light division. Radar critical friendly zones should be planned in depth along the light force elements route, on all LZs, points of penetration, and attack positions to protect the light force as it moves to its objective. A 155-mm indirect fire system may be assigned to fire any targets generated by the radar zones.

During planning and preparation phases, a liaison team, normally the brigade FSO, facilitates the synchronization of FS. Restrictive fire control measures must be jointly developed and understood by everyone. Take special care when planning potentially lethal dud-producing munitions. Dual-purpose improved conventional munitions (DPICM) and FASCAM restrict the light units ability to maneuver. When these munitions are planned, the brigade FSO must coordinate with the light division to ensure no future actions by the light division are hindered.

During the planning phase of an operation, it is important to have the DIVARTY commander make face-to-face coordination and rehearse the plan with the DS FA battalion commander. This ensures the shooters and executors understand what the other expects and better integrates the light forces fire plan. The brigade commander and staff must be knowledgeable of the light division FS plan to ensure FS is available to the armored brigade when maneuvering.

Air Defense

Commanders should direct their attention to ADA resupply requirements. Centralized planning is required to orchestrate ADA support for light and armored operations. The division can consolidate ADA units to provide denser coverage around critical targets. Armored forces provide the light division excellent coverage with their enhanced ADA capability and can carry the resupply of Stinger missiles for light Stinger units.

Mobility and Survivability

The division G3 and engineer must develop a common obstacle plan, and consider using light infantry to clear choke points and obstacles for the armored force. Division planners must also consider weapon disparities in range, their impact on prepared obstacles, and use of terrain during battle handoff to an armored force. The priorities of mobility and survivability may be different for each force. The light force must be prepared to take full advantage of armored force engineer assets. When light forces breach obstacles for armored forces, planners must ensure the breach is large enough for the widest vehicle in the operation. The armored brigades engineer battalion commander must plan to augment the light division to conduct survivability and countermobility operations.

Nuclear, Biological, and Chemical

The light division is more limited in its decontamination capabilities than the armored force. The mobility of the light division is affected by the need for soldiers to carry protective clothing in addition to their standard load. The use of armored unit vehicles may be planned to assist in transporting NBC equipment. An armored brigade has expedient devices and water-haul capabilities that can offset the light divisions shortfalls. The brigade staff must ensure this support task is understood early in the planning process. The

brigade chemical officer must analyze this requirement and ensure the brigade remains capable of protecting its units.

Combat Service Support

CSS requires an understanding of the current, ongoing, and forecasted needs of both forces. Commanders must be able to cross-level CSS to support overall support requirements and be prepared to receive CSS augmentation from the corps support group. The division can coordinate use of transportation assets of the armored force to facilitate this cross leveling. The light division emphasizes replacing parts; the armored unit emphasizes repair. This requires continuous attention throughout the operation. The armored force performs maintenance continuously. The light commander must understand this requirement and provide an opportunity for such maintenance. The armored brigade may be required to provide light division elements with limited water, resupply, and casualty evacuation assistance.

Command and Control

The corps headquarters defines the authority and responsibility within the light and armored force by designating command relationships. The armored and light force must exchange LOs. The planning process is jointly conducted and the development of orders and overlays is coordinated. Confirmation briefs are required at brigade level of combat, CS, and CSS units to ensure timing, synchronization, and understanding of the commanders intent.

Standard operational terms and symbols must be used and codes, recognition signals, and SOIs exchanged. The directing headquarters may need to set up a retrans site to compensate for the shorter range of the light units communications equipment. The brigade staff must ensure communications nodes are established to provide continuous communications among all command and staff elements within the brigade and higher headquarters.

SECTION IV. SPECIAL OPERATIONS FORCES

GENERAL

Brigades and battalions may operate near or with SOF. The command relationship is determined by the higher headquarters. SOF personnel normally provide a liaison team (a special operations command and control element) to coordinate with other units, usually at brigade level, and to control SOF within the AO. Most often, SOF personnel precede conventional forces into the AO.

Capabilities

SOF can:

- Infiltrate and exfiltrate specified operational areas by air, land, or sea.
- Operate in remote areas and nonpermissive environments for extended periods with little external direction and support.
- Organize, equip, train, advise, and direct indigenous military and paramilitary units and personnel.
- Train, advise, and assist US and allied forces.
- Conduct R&S and target acquisition.
- Conduct direct-action operations, including raids, ambushes, sniping, emplacement of mines and other munitions, and terminal guidance for precision-guided missions.
- Conduct rescue and recovery operations.

Limitations

SOF:

- Depend on the resources of the theater Army to support and sustain operations.
- Cannot conduct conventional combined arms operations on a unilateral basis. Their capabilities are limited to advising or directing indigenous military forces conducting this type of operation.
- Do not have organic combined arms capability. They habitually require support or attachment of other combat, CS, and CSS assets.
- Cannot provide security for operational bases without severely degrading operational and support capabilities.

EMPLOYMENT CONSIDERATIONS

The following are pertinent considerations, by BOS, for the employment of SOF during the combat operations phase of CONOPS.

Intelligence

Special reconnaissance gives the CINC, joint task force, or Army force commander the ability to conduct HUMINT collection in denied areas at the operational and strategic level. For example, the special forces MI team can provide information on critical enemy command, control, and communications nodes.

CA assets can provide timely intelligence to the commander through interviews with refugees.

Maneuver

Special forces and Ranger units, under the command and control of SOF headquarters, can conduct direct-action missions against HVTs, such as critical enemy command, control, and communication nodes.

Audiovisual PSYOP teams can aid the tactical commanders deception plan.
SOF can improve host-nation military forces through training and advisory programs.

Fire Support

Special reconnaissance or direct-action teams can conduct terminal guidance operations for high-performance aircraft against HVTs using laser target designators or beacons.

Special reconnaissance or direct-action teams can provide nonattributable target acquisition and adjustment of deep fires in deep operations.

Special operation or direct-action teams can provide up-to-date target intelligence and confirmation needed to validate HVT matrices. It is important to integrate them into the R&S plan.

Special operations command and control element coordinates with fire control elements to prevent fratricide of SOF elements in the conventional units area of influence.

SOF can conduct training to improve host-nation FS assets.

Air Defense

SOF participate in JSEAD operations by reporting neutralized enemy ADA sites.

Combat Service Support

SOF assist in the identification of and coordination for host-nation assets.

CA elements assist in the implementation of population resource control measures.

SOF assist in refugee control measures.

Command and Control

SOF direct-action units remain under the control of an SOF headquarters and establish a liaison element with the conventional headquarters to provide time-sensitive information.

Direct-action units can be placed in GS or DS of a conventional unit. In that case, the SOF unit headquarters would be collocated with the conventional units headquarters. This allows the flow of timely information and facilitates planning for and integration of the SOF unit into the conventional units operations.

APPENDIX D MOVEMENT AND ASSEMBLY AREAS

CONTENTS

Section I. Tactical Road March
Section II. Assembly Areas

Most brigade operations will commence or terminate in an assembly area. Consequently, the brigade can plan on conducting frequent tactical movement into and out of assembly areas on a routine basis.

SECTION I. TACTICAL ROAD MARCH

GENERAL

The tactical road march is a unit move in a combat-ready posture normally conducted in the combat zone. Enemy contact is possible either during the march or soon after arrival at the unit's destination. Units normally move by tactical road marches to assembly areas to prepare for combat operations. The S3 is responsible for planning tactical road marches.

DEFINITIONS

The following paragraphs are definitions used in movement and tactical road marches.

Close Column

Vehicles are spaced approximately 25 meters apart.

Open Column

Vehicles are spaced 50 to 100 meters apart. Normally used during daylight, open column can be used at night with proper night-vision equipment.

Infiltration

Vehicles are dispatched individually, in small groups, or at irregular intervals at a rate that keeps the traffic density down and prevents undue massing of vehicles.

March Column

A march column consists of all elements using the same route for a single movement under control of a single commander. The column is normally brigade-size and is composed of three elements. The head is the first vehicle of t

Serial

A serial is a major subdivision of a march column and is normally battalion-size.

March Unit

A march unit is a major subdivision of a serial and is normally company-size.

Reconnaissance Party

The reconnaissance party conducts route reconnaissance of movement routes to determine travel times, bridge and underpass capacities, and trafficability. It identifies critical points, obstacles, and (if there is enough time) alternate routes.

Quartering Party (Advance Party)

The quartering party reconnoiters the new assembly area and guides march elements to and into the new area.

SECTION II. ASSEMBLY AREAS

GENERAL

An assembly area is a position in which a force prepares or regroups for further action. Units in assembly areas execute maintenance, resupply, and personnel actions to maintain the combat power of the force. Task organization and reorganization of the force, the development and issuance of tactical orders and plans, coordination with other units or higher headquarters, reconnais-sance, training, and rehearsals may also be conducted. Units occupying assembly areas employ passive and/or active OPSEC measures to deny enemy intelligence any indicators of friendly plans and intentions, force composition, or unit identity and locations consistent with the higher commander's deception plan. Designation and occupation of an assembly area may be directed by a higher headquarters or by the unit commander such as during relief or withdrawal operations or during unit movements. Assembly area planning, occupation, and departure are difficult and time consuming. Performed correctly, they can aid in structuring the unit for timely execution of combat operations. Done incorrectly, they confuse and disorganize a unit before it ever makes contact with the enemy.

PLANNING CONSIDERATIONS

Assembly areas are typically outside the range of enemy medium artillery fires, generally no closer than 15 kilometers from the LC. Examples of assembly areas include locations occupied by units designated as reserves, by units after completing a rearward passage of lines, temporarily by units during movement, and by units during reconstitution. Brigades typically occupy assembly areas alone, although their parent divisions may be in the same general geographic area, as when the division is in the corps rear area as the corps reserve. Assembly areas ideally provide

- Concealment from air and ground observation.
- Cover from direct fire.
- Terrain masking of electromagnetic signal signature.
- Sufficient area for the dispersion of subunits and their vehicles consistent with the tactical situation, both enemy and friendly.
- Buildings for unit trains, maintenance operations, and command and control facilities (TOC/TAC CP/rear CP).
- Suitable entrances, exits, and internal routes. Optimally, at least one all-weather paved surface road transits the assembly area and connects to the MSR in use by the next higher headquarters.
- Terrain that allows the observation of ground and air avenues of approach into the assembly area.
- Good drainage and soil conditions that support unit vehicle movement.

Units in tactical assembly areas are typically preparing to move forward to execute a forward passage of lines followed by offensive operations or have been assigned a reserve mission by their higher commander.

ORGANIZATION OF THE BRIGADE ASSEMBLY AREA

Methods

Brigade assembly areas may be organized using one of two methods.

Method One

The brigade may assign sectors to subordinate maneuver battalions and require them to tie-in their fires with adjacent battalions. In this method the brigade command and control facilities, brigade HHC, and most CS assets are located near the center of the assembly area. This technique essentially configures the brigade in a perimeter defense, with maneuver battalions deployed along the entire perimeter and oriented outwards (see Figure D-1).

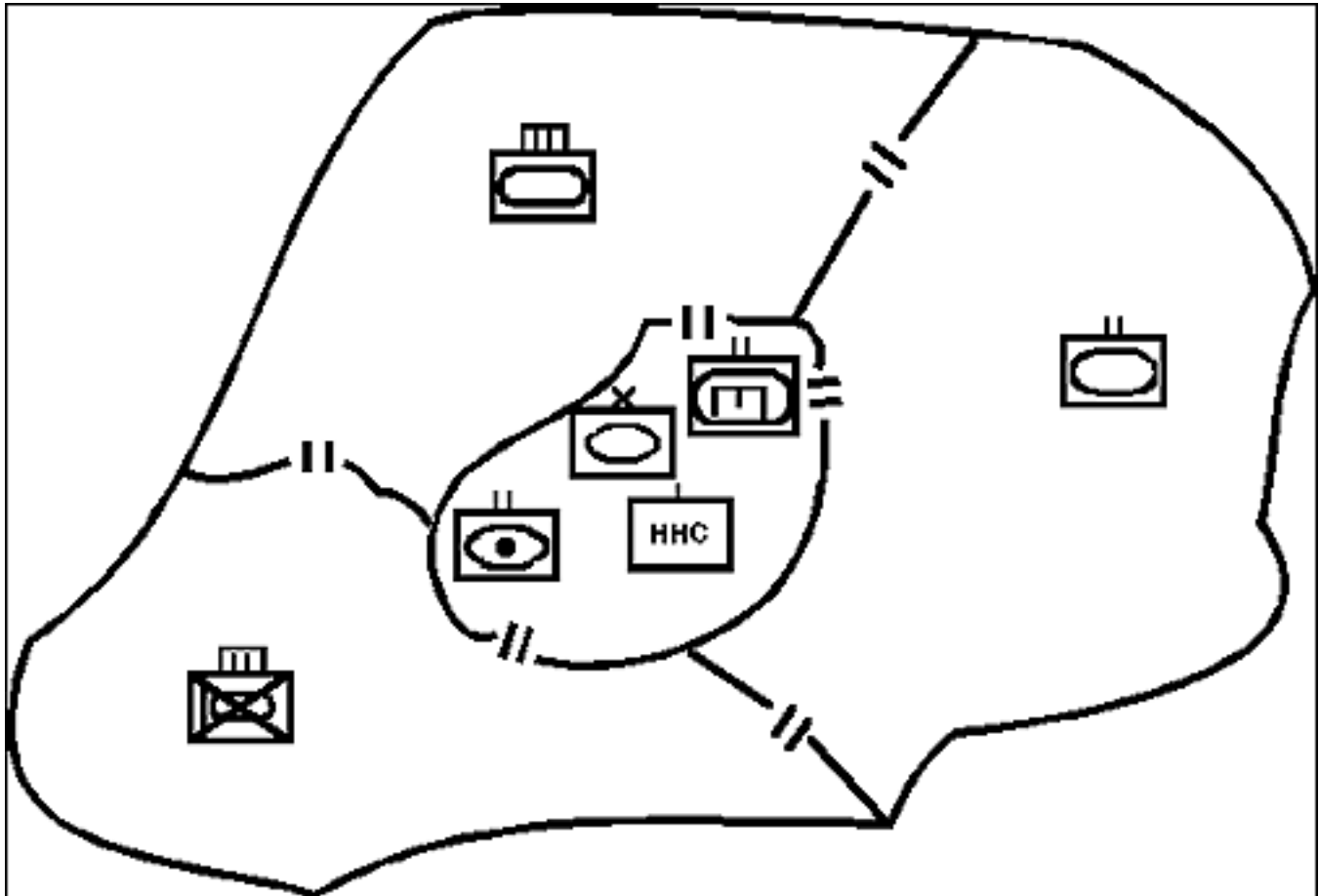


Figure D-1. Brigade assembly area organization (method one).

Method Two

The brigade may assign separate individual assembly areas to subordinate elements. In this method, subordinate units maintain their own 360-degree security. Areas between subunits should be secured through visual and electronic surveillance or patrols. Brigade command and control facilities, the HHC, and the bulk of CS assets occupy positions central to the outlying maneuver battalions. FAAD units may need to collocate with outlying maneuver units or establish separate firing positions around the brigade to provide adequate air defense. This is the most typical organization for the brigade assembly areas (see Figure D-2).

When the brigade is in the corps rear or division rear and is not designated as a reserve, field trains of the brigade's subordinate battalions are collocated with their parent unit and the BSA is not established. In that case, the FSB moves and establishes a separate assembly area like other battalions of the brigade. When the brigade moves forward of the division rear or is in the division rear as a reserve, the BSA is formed by combining the battalion field trains with the FSB. In either case, the FSB/BSA is positioned to the rear of the supported battalions. This positioning prevents the extensive traffic in and out of the FSB/BSA from interfering with battalion assembly area activities. It also allows the battalions to move forward and deploy without having to maneuver through or around the BSA/FSB. The location of the

FSB/BSA in relation to supported battalions depends on the rear area threat, mission of the brigade, proximity to division/corps MSR, and the ability of the BSA/FSB to support the battalions, given the distance between them. Other information concerning the positioning of the BSA/FSB is in Chapter 8.

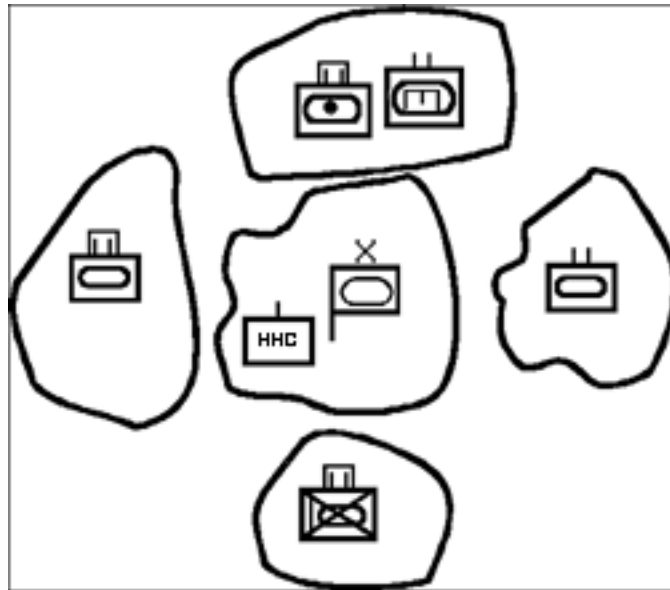


Figure D-2. Brigade assembly area organization (method two).

QUARTERING PARTY

A quartering party is a group of unit representatives dispatched to a probable new site of operations in advance of the main body to secure, reconnoiter, and organize an area prior to the main body's arrival and occupation. Unit SOPs establish the exact composition of the quartering party and its transportation, security, communications equipment, and specific duties. Quartering parties typically reconnoiter and confirm the route and tentative locations for their parent elements selected from map reconnaissance. Quartering parties also usually act as a liaison between their parent headquarters and the quartering party of their higher headquarters to change unit locations within the assembly area based on the results of their reconnaissance.

In organizing for the movement to and occupation of a tactical assembly area, the brigade headquarters does not employ a quartering party that includes subunit representatives. The brigade HHC and TOC organize and dispatch a single quartering party to confirm the tentative locations for the HHC support elements and the new brigade TOC location. If the brigade moves to the assembly area at a later time, the brigade HHC/TOC quartering party returns to the brigade's current location after completion of a reconnaissance of the area. In this case, the quartering party may not act in a liaison capacity, and subunit requests for changes to the assembly area plan are resolved after returning to the brigade's present position.

OCCUPATION OF THE ASSEMBLY AREA

Units position themselves in assembly areas IAW their parent unit's plan. Units are typically guided into position by their quartering parties. Occupation is accomplished smoothly from the march without halting or bunching of units at the RP.

Units normally establish routes and separate SPs/RPs for march elements that proceed from the march column's route or RP toward the march units' assembly area positions. This technique clears the route quickly, maintains march unit command and control, and prevents bunching of units at the march column RP. March units may follow a similar procedure.

BRIGADE ACTIONS IN THE ASSEMBLY AREA

All actions in the assembly area are focused on preparing the unit for future operations. Actions most commonly associated with assembly area activities include resupply, personnel replacement, maintenance, reorganization, rest, and planning future operations.

The brigade commander prioritizes the actions to be taken by subordinate units in the assembly area and allocates resources to accomplish these tasks. Resources are prioritized by the commander. Priorities are assigned based on his estimate of the situation, which is summed up in the factors of METT-T. Since occupation of the assembly area is done in preparation for future combat, the commander's METT-T analysis considers not only the current and projected status of the unit but also anticipated combat missions the brigade may execute.

The brigade commander and staff execute staff planning and TLPs to prepare the brigade for its next mission and to produce and disseminate a feasible, coherent tactical plan that accomplishes the brigade's mission within the framework of the higher commander's intent. Communications and liaison with higher, lower, and adjacent units are maintained. Additional planning and coordination for contingency plans may be conducted. Brigade CP elements are afforded time and resources to prepare for the next mission.

APPENDIX E

DIGITIZATION OF THE COMBINED ARMS BRIGADE

CONTENTS
Section I. Introduction to Digitization
Section II. Digitized Doctrine and Training
Section III. Digitization of the Mounted Combined Arms Brigade
Section IV. Digitized Tactical Operations

This appendix provides the conceptual underpinnings of digital warfighting at the brigade level. It is forward reaching in a number of areas. This appendix describes the potential of enhanced tactics, systems, and organizations to increasing lethality, tempo, and survivability. This appendix also describes

characteristics of a flexible battlefield framework, where forces are arrayed in a noncontiguous and asymmetrical manner. The enabling means of this new style of warfighting is the enhancement of the flow of relevant combat information through digital networking.

The term "digitized" is used throughout this appendix to refer to fully-modernized units possessing digital command and control systems. Digitized units addressed in this appendix contain the full suite of Force XXI legacy systems, including:

- The M1A2 Abrams.
- The M2A3 BFV.
- The BSFV.
- The Avenger.
- The command and control vehicle (C2V).
- The Army battle command system (ABCS).
- ASAS.
- The UAV.
- Enhanced mortar systems.
- The Paladin/Crusader artillery system.
- MLRS and improved firefinder system.
- Intelligent minefield system (wide area munition [WAM]).

The digitized brigade described is composed of forces equipped with the most sophisticated automated command and control systems available. Significant enhancements in information sharing and management, among and within combat units, create conditions to improve TTPs. The digital flow of information on the battlefield results in an exponential increase in situation awareness or the ability to see the terrain, enemy, and friendly forces. Given this capability, tactical units may organize and employ themselves differently to optimize this advantage over potential adversaries. This same capability enables friendly commanders to possess an unprecedented level of control over battlefield activities both friendly and enemy.

SECTION I. INTRODUCTION TO DIGITIZATION

GENERAL

Digitization of the Army provides the combined arms commander and his staff the capability to effectively plan, coordinate, and direct the battle. This capability is derived from several digital systems that allow the entire organization to rapidly share information. These digital systems operate within the ABCS.

ARMY BATTLE COMMAND SYSTEM

The exact nature and scope of future operations cannot be predetermined. Therefore, the ABCS must be flexible to meet the full range of potential mission requirements. One aspect of this flexibility is that traditional allocations of functions to specific echelons are not static. As an example, commanders at

echelons as low as battalion may be in the role of a joint task force commander in a humanitarian aid or peacekeeping mission in an underdeveloped country. In this role, they need functionality and connectivity to systems as associated with the theater commander. Another aspect driving this flexibility is the need to functionally reconfigure individual ABCS workstations as operations transition from one phase to another or as the roles and responsibilities of individuals and organizations change.

The ABCS consists of the commander, staff, doctrine, procedures and tools used to command and control forces on the tactical battlefield. The system supports both the exercise of command and imposition of control of the combined arms team. The ABCS supports the command and control processes across the range of military operations. It allows the commander and staff to:

- Collect and organize large amounts of information.
- Combine information from multiple sources to create more complete and useful information.
- Process information to analyze trends, detect unusual activities, or predict a future situation.
- Develop COA based on situational factors.
- Exchange information efficiently among and within CPs on the battlefield.
- Present information as graphic displays and textual summaries.

The ABCS provides automation support to commanders and their staff at each cell based on the mission and phase of operations. ABCS provides seamless connectivity from the tactical level to the national command authority using Army, Joint, and Allied standard communications. ABCS will be used regularly within garrison, during redeployment, and in the field to maintain the soldiers' proficiency at the level required to respond to the broad range of potential missions. The ABCS is composed of the following components.

Army Global Command and Control System

The AGCCS is the Army component of the global command and control system (GCCS). It will be built from applications developed by the Army worldwide military command and control system (WWMCCS), Army worldwide information system (AWIS), the standard theater Army command and control system (STACCS), and the combat service support control system for echelons above corps (CSSCS-EAC). AGCCS will provide a suite of modular applications to support logistics, medical, personnel, theater Army special operations, mobilization and deployment, Army status of readiness and training, transportation asset management, and others.

Army Tactical Command and Control System

The Army tactical command and control system (ATCCS) is the integration of five battlefield functional area command and control systems (BFACS), providing situational information and decision support to commanders and staffs in the execution of the operational/tactical battle at corps and below. Within this integration of systems, the force level data base first takes form at the battalion to meet the tactical commanders requirements for common picture and situational awareness. The BFACSs are heavily oriented toward combat operations.

Force XXI Battle Command - Brigade and Below

The Force XXI battle command brigade and below (FBCB2) is both a system and a concept to be used by combat, CS, and CSS units across all BOSs while performing missions through the operational continuum at the tactical level. FBCB2 is a battlefield, battle command information support system supported by existing and emerging communications, sensors, and electrical power sources.

The FBCB2 is the implementation of information age technology providing increased battlefield operational capabilities. When combined with changes in doctrine and organizational design made possible by these technologies and placed in the hands of soldiers/leaders who are trained in their use, FBCB2 provides increased battlefield operational capability. Battle command in a digitized brigade requires developing new initiatives across doctrine, training, leader development, organizations, and materiel to

manage information resources achieving the maximum benefits for tactical operations. FBCB2 will provide horizontal and vertical integration of the data and information generation and processing capabilities of individual soldiers as well as weapons, sensors, and support platforms. As a component of ABCS, the FBCB2 will interoperate with battlefield automated systems (BAS) in compliance with GCCS and all appropriate BASs in common operating systems as specified by GCCS. FBCB2 must interoperate with and exchange information with all ABCS battlefield functional areas (BFA).

SECTION II. DIGITIZED DOCTRINE AND TRAINING

With the publication of FM 100-5 in June 1993, a new typology, or framework for expressing tactical doctrine, was born. This new framework is termed "capability-based" and differs from the threat-based doctrine of Air Land Battle. The significant characteristic of capabilities-based doctrine is that tactical procedures are not optimized against one specific threat. Instead, tactical procedures are where they can be applied to varying threats and differing battlefield circumstances. Capability-based doctrine provides TTP as a set of common decision factors to assist in thinking and deciding upon battle actions.

Another significant distinction of capability-based doctrine is its complementary relationship with the commanders intent. Capability-based TTP serve as *implementing* actions taken to execute the intent of the unit commander. As such, digital operations are distinguished from conventional operations in that they place a *greater* emphasis on the commanders intent. This distinction is matched by the digital communications capability of the brigade.

This appendix uses the capability-based typology. In an effort to improve the clarity of expressing new concepts and TTP, comparisons are often used between conventionally-equipped and digitally-equipped units. Remember that digital units equate to the full suite of capabilities, not solely its command and control enhancements. Additionally, the coexistence of embedded and applique (bolt-on) digital systems within the Army today requires TTP to focus on general functionality and capabilities, since procedures between the two differ.

The objective of the capability-based doctrine development process is to publish refined TTP *parallel* to system and software developments. Like the commander's intent, unit TSOPs also increase in importance among digitally-equipped units. Digitized units are required to use their TSOPs as instruments to integrate new systems into their organization. Furthermore, unit TSOPs serve as *bridges* between employing individual systems and fighting the unit as a whole.

SECTION III. DIGITIZATION OF THE MOUNTED COMBINED ARMS BRIGADE

The digitized brigade possesses an increased capability to achieve success across the entire range of military operations. From large-scale combat operations to national assistance and disaster relief, the digitized brigade will have an increased capability to deliver combat power in any environment.

The digitized brigade provides unique capabilities that are distinctly different from its conventional predecessor. Emerging capabilities provide a new warfighting facet to commanders at both the tactical and operational levels. This section addresses new capabilities and limitations in generic terms. Since the development and fielding of new and enhanced systems are ongoing and dynamic, the specific characteristics of emerging systems will not be discussed in depth.

CHARACTERISTICS

The digitized brigade conducts precision mounted engagements and battles during conflict and war, and various activities during OOTW. The digitized brigade achieves tactical, operational, and in some cases, strategic objectives as part of a larger force. The brigade is uniquely capable of conducting continuous mobile operations at a high tempo with great lethality and survivability that inflict decisive effects upon an adversary.

As the building block of modular combat power, the digitized brigade conducts operations that entail the application of combat power from mobile weapon and support system platforms in a way that destroys the enemy, simultaneously in depth and decisively (ground and aerial). Embedded in these systems is the

capability to plan and rehearse on the move and to more rapidly mass effects anywhere on the battlefield. They provide rapid, continuous operations (day or night) at a high tempo. These systems also provide a common, shared situational awareness that enables commanders and staffs to make more informed decisions faster. These operations rely on mechanization and technology during their employment to maximize mobility, firepower, protection, and control. Digitized mounted forces are characterized by the ability to project, deliver, and sustain combat power in a rapid, highly lethal, and survivable manner. These forces conduct reconnaissance while mounted and dismounted, and close with and defeat enemy forces. The digitized brigade possesses sufficient combat power and leadership to control large areas of terrain in order to dominate adversaries within hostile, land-based environments during war and OOTW.

The digitized brigade is more than a technologically advanced organization. Enhancements made to TTP, organizational design, and innovative training methods are equally important to the collective effectiveness of the brigade as the technological systems it possesses. Technology is but one factor in increasing the combat potential of the brigade as a tactical organization. Technological change serves as an *enabler* of both enduring and new capabilities which the leadership of the US Army desires its land combat force to possess for the twenty-first century.

CORE FUNCTIONS

The digitized brigades organization, equipment, and training enable it to perform the functions outlined in the following paragraphs for the tactical and operational commander.

Project, Deploy, and Redeploy Mounted Combat Power

The digitized brigade is a strategically mobile force that can swiftly deploy in response to national command authority (NCA) directives. The brigade deploys in a streamlined fashion as delineated in FM 100-17, the Army's keystone manual for doctrine on deployment, utilizing the joint operation planning and execution system (JOPES) and the time-phased force development process (time-phased force and deployment data [TPFDD] and time-phased force and deployment logistics [TPFDL]). Theater onward movement is a complex, transitional phase of the deployment process. Timely transition from theater arrival to establishing a tactical posture is critical in an environment where adversaries attempt to prevent massive troop buildup in their region. The digitized brigade rapidly merges its soldiers and equipment, reconfigures and tailors units, conducts marshaling and staging area activities, and moves to tactical assembly areas during this critical phase. The digitized brigade achieves this through links to CSS systems that allow it to prepare faster by sharing and updating information and data bases while in transit. The digitized brigade conducts rapid recovery and redeployment upon mission accomplishment.

Conduct Decisive Operations

The digitized brigade performs combat operations to achieve decisive outcomes for the tactical and operational commander. Digitized brigades operate as part of a larger force to fight engagements and battles that defeat the adversary's will and destroy his means of resistance. Decisive operations are conducted at an accelerated tempo, and orchestrated in a near-simultaneous manner to deny the adversary options to counter friendly actions against him. These operations value the rapid defeat of enemy formations by the effects of dominating maneuver and firepower to achieve objectives quickly and with minimal casualties and collateral damage. The digitized brigade attacks and defends during decisive operations.

Conduct Security Operations

Upon conflict termination, the digitized brigade conducts post-conflict operations. This period is characterized by residual combat activity still underway within the theater of operations. Various activities and missions are conducted during this period to restore order, reestablish host-nation infrastructure, organize and control buffer zones, and prepare for hand-over to peacekeeping forces. The digitized brigade possesses the versatility needed to accomplish critical tasks during this lethal transition period.

Conduct Information Operations

The digitized brigade performs tactical operations for the *purpose* of gaining or denying information for the combatant commander. The digitized brigade is uniquely capable of performing tactical missions that achieve tactical, operational, or strategic outcomes for the purpose of determining enemy information capabilities as well as degrading these capabilities to establish friendly information superiority. The digitized brigade performs information operations to support the combatant commander in setting the conditions for decisive operations. These operations and activities include tactical deception, EW, R&S, target acquisition, OPSEC and physical destruction of enemy information systems.

Conduct Operations Other Than War

The digitized brigade is capable of conducting various OOTW activities. The modular command and control and logistics systems of the brigade make it an attractive force package to plug into ad hoc task organizations commonly employed in these operations. The specific roles and missions of the mounted force in OOTW are still maturing.

CAPABILITIES

The digitized brigade possesses new and enhanced capabilities separate from its predecessor. In addition to those of the conventional brigade, the digitized force possesses the capabilities outlined in the following paragraphs.

Enhanced Command, Control, and Communications

The digitized brigade exploits its automated C3 system to maintain an increased level of situational awareness and to make more informed decisions regarding tactical employment. Automated information functions allow better staff integration and synchronization of combat multipliers with maneuver forces during the conduct of combined arms operations. C3 enhancements make the digitized force more adaptive to interface with differing higher headquarters, such as a parent division, other divisions, a corps headquarters, or a joint task force headquarters. The employment of ASAS provides a revolutionary new capability for tactical commanders to access and use national and theater intelligence products.

Space and aerial-based communication systems provide a significant communication enhancement to the digitized brigade. It greatly extends the effective ranges of vehicular communications systems, which facilitates tactical dispersion without loss of control. The use of local and wide area networks and combat net radio enhances the tactical organizations flow of information and expands the level of control of the commander.

Fights Tactical Engagements

The digitized brigade is capable of conducting decisive engagements at an increased operational tempo. The brigade transitions between missions at an accelerated rate, to create a momentum that enemy forces cannot contend with. The digitized brigade exploits its capability of continuous, rapid operations to gain and maintain control of battlefield activities, time, and physical space.

The digitized brigade uses all its enhanced capabilities to maximize the effectiveness of its combat power at the decisive points on the battlefield. Technological, organizational, and procedural enhancements facilitate efficient use of combat multipliers, in a synchronous fashion, to create an overwhelming effect on the adversary. The brigade uses its enhanced C3 capability to better integrate joint assets into tactical operations.

Technological Superiority

The digital brigade brings increased lethality to the modern battlefield. This recognition may serve as a viable deterrent in preventing escalation of future regional crises once a technological force is committed in theater. The presence of a technologically superior tactical force in a crisis theater may prevent a crisis from

escalating to the level of combat, or buy time for political solutions to take effect. If escalation occurs, the digitized force is poised to rapidly conduct tactical operations to meet military objectives.

Operational Maneuver

The digitized brigade can conduct deep, independent maneuver to achieve operational objectives for the combatant commander. Enhanced mobility, situational awareness, and protection capabilities enable the digitized brigade to maneuver to positions of operational or tactical advantage in depth. Once in position, the digitized brigade possesses sufficient protection and firepower to dominate the physical space for periods of time determined by its sustainment methods.

Influence Greater Volume Of Physical Space

The digitized brigade is capable of influencing a larger volume of physical space than conventional units. Greater situational awareness of the tactical situation and environment allows the digitized brigade to operate at greater distances without loss of command and control. Greater dispersion facilitates control of a larger area of the battlefield, as well as denying an adversary the ability to determine friendly intentions by templating. The empowerment of subordinates caused by digitization makes subordinate tactical units more capable of independent action. Two factors that relate to the expansion of physical or battle space are the ability to *see* or *know* the environment and the *lethal reach* or *strike* range of the unit. The elements of *know* and *strike* are not the sole determinants of a commander's physical battle space.

Force Modularity

The digitized brigade has the unique ability to tailor its organizational structure to meet mission demands without reduction in command and control and sustainment functions. The adaptive use of automated networks allows the digitized brigade to reconfigure itself in numerous variations without loss of situational awareness or force coherence. This pliability extends to the capability of operating under different headquarters. Commanders of the digitized brigade must consider human factors and the implications to leadership and cohesion when using this capability. The digitized brigade is more effective than conventional forces in integrating attached assets and systems into missions and operations which it is controlling.

Precision Movement and Maneuver

The digitized brigade possesses significant enhancements in the area of precision navigation. Automated terrain analysis systems and improved terrain imagery products increase the brigades knowledge of the geographic environment. Global positioning systems (GPS) and position navigation systems embedded in weapons platforms enable the force to move with unprecedented precision. The results of this capability are:

- Increased effectiveness in synchronizing the movement and maneuver of forces.
- Hazard avoidance such as contaminants, obstacles, and refugees.
- Accurate battle reporting (location).
- Enhanced planning and engaging of targets.

When this capability is integrated with information and combined arms tactics, the digitized brigade possesses a precision maneuver capability unmatched by conventional mounted forces.

Enhanced Force Protection

The digitized brigade is capable of employing multiple force protection measures to increase the survivability of the force. The digital battle command system provides the brigade with early warning of hostile activity and the means to respond. This enhanced command and control capability allows the brigade to maximize tactical dispersion for protection and to converge or mass when needed. This translates into a greater ability to achieve tactical deception and OPSEC. Additionally, the precision

movement capability mentioned earlier reaps significant benefits in avoiding hazardous areas common to the modern battlefield and enhances its potential to achieve surprise during combat operations.

Lethality

Preliminary simulation exercises and field trials demonstrate that digitized forces have greater means to turn *potential* combat power into *actual* combat power on the competitive battlefield. This capability is enabled primarily by situational awareness enhancements of seeing the enemy, friendly units, and the terrain. The FBCB2 system also gives the digitized force improved means to *execute* actions based on the enhanced situational awareness the unit shares. Because of these enhancements, digitized commanders can transfer a greater amount of potential combat power, particularly the *effects* of firepower, to actual decisive points (time and place) on the battlefield than non-digitized units.

Versatile Employment

Future combat operations will be conducted within various battlefield frameworks at the operational and tactical levels. These frameworks will range from linear or *symmetrical* patterns to the nonlinear or *fluid*. The fluid battlefield framework poses significant challenges to conventional units in the areas of force protection, fratricide, command and control and sustainment. The enhancements made in these areas by digitization enable the brigade to better adapt and operate within the fluid environment.

WEAPON SYSTEMS

Mounted Maneuver Platforms

The mounted direct-fire maneuver platform system provides significant improvements in lethality, survivability and fightability required to defeat advanced threats. Improvements include a commanders independent thermal viewer, an independent commanders weapon station, position navigation equipment, a distributed data and power architecture, and a radio interface unit that allows the user to rapidly transfer situational data and overlays to compatible systems on the digital battlefield.

The lightly armored direct-fire maneuver platform provides cross-country mobility, mounted firepower, and protection from artillery and small-arms fire to mounted and cavalry operations, and support to dismounted operations. It also possesses the capability to interface with the other maneuver platforms on the digital battlefield. It will possess the following capabilities:

- Command and control and navigation software.
- Digital communications.
- Commanders independent thermal viewer.
- Combat identification system.
- Digital logistics reporting.

Line-of-Sight Antitank

The line-of-sight antitank (LOSAT) system provides antitank fire to fix and destroy enemy armored formations. The LOSAT consists of a kinetic-energy missile (KEM) launcher mounted on an armored vehicle chassis. The key attraction of LOSAT is the tremendous overmatch lethality of the KEM that defeats all future predicted armored combat vehicles.

Indirect Fire Platform

The indirect fire platform system provides the primary indirect FS to the digitized brigade. This system includes

- An on-board ballistic computer and navigation system.
- Secure radio communications.
- An improved cannon and gun mount.
- Automatic gun positioning.
- Automotive improvements.
- Improved ballistics.
- NBC protection.
- Drivers night sight capability.
- Built-in test equipment.

The indirect fire platform has improved responsiveness, survivability, lethality, and reliability.

Advanced Field Artillery Systems and Future Armored Resupply Vehicle

The advanced field artillery systems (AFAS) and future armored resupply vehicle (FARV) are the Army's next generation indirect fire cannon and artillery systems for the mounted force. Together, these systems provide an overmatching firepower capability that will support the force commanders goal of dominating the maneuver battle. They incorporate advanced technologies to increase accuracy, rate of fire, survivability, and ammunition handling speed. These systems also decrease crew size.

Multiple Launch Rocket System

The multiple launch rocket system (MLRS) is a free flight, area free, artillery rocket system that supplements cannon artillery fires by delivering large volumes of firepower in a short time against critical, time-sensitive targets. The MLRS accommodates the launching of a new family of munitions, including the Army TACMS.

Air Defense Platforms

Avenger

The Avenger is a lightweight surface-to-air missile/gun weapon system mounted on a HMMWV. It is operated by a two-man crew for air defense in daylight or at night, and in clear or adverse weather conditions. The system incorporates an operators position with displays, fire control electronics, and the Stinger vehicle-mounted launcher.

Bradley Stinger Fighting Vehicle

The BSFV is a lethal weapons platform that enhances the firepower and survivability of air defense assets on the battlefield. The capabilities of BSFV mounted and dismounted weapons systems are designated to be used primarily in an air defense role. The Stinger is the primary air defense weapon in the BSFV. It is used during engagements against fixed-wing and rotary-wing targets. The 25-mm chain gun complements Stinger capabilities of the BSFV. When the Stinger team is dismounted, the 25-mm gun provides coverage for the Stinger teams dead space. The coaxial-mounted machine gun is used against air and ground targets.

Man-Portable Antitank System (Javelin)

The man-portable antitank system provides high lethality against conventional and reactive armor. It will replace the Dragon. The Javelin consists of two major components: a reusable command and launch unit (CLU) and a missile sealed in a disposable launch tube assembly. The command launch capability

incorporates an integrated day/night sight and provides target engagement capability in adverse weather and countermeasure environments. The CLU may be used in the stand-alone mode for battlefield surveillance and target detection. The system weighs less than 49 pounds and has a maximum range of 2,000 meters. The Javelin's key feature is its utilization of fire-and-forget technology.

The Dismounted Soldier

The dismounted soldier is equipped with a comprehensive protective ensemble that will provide the individual soldier, whether mounted or dismounted, the best protection available from enemy fires, battlefield hazards, and the environment. It will enhance the individual warrior and small-unit operational effectiveness through a modular system that integrates miniature electronic components for command, control, and communications; computers; and intelligence. The system will also include the following:

- Head-mounted displays.
- Wide field of vision mobility sensors.
- Thermal sight with integrated eye-safe laser rangefinder and compass.
- Combat identification.
- Personal status monitor.
- Chemical agent sensors.
- Medical monitoring.
- Lightweight power sources for microclimatic conditioning.
- Small arms ballistic protection.
- Integrated chemical-biological respiratory protection.

INFORMATION SYSTEMS

The Digital Battle Command System

Information is the single most important ingredient in support of the commanders intent and the integration of combat functions in terms of time, space, and purpose. This overarching automated software communications system supports the digitized brigade with a seamless, streamlined, and simple to use information system. This system enhances battle command down to the individual soldier and weapon systems. It is capable of obtaining information from data bases both vertically and horizontally, without formally requesting that information through command channels. The commander has the capability to pull information from other data bases to keep current with the rapid changes of a dynamic battlefield. The proliferation of battlefield automation systems coupled with the tempo of operations necessitates the holistic integration of the digital battle command system as an integrated, interoperable seamless system. This system enhances the commanders ability to see a detailed picture of the battlefield, to maximize force survivability, and to facilitate integration of combat functions within the brigade organization. It also permits the communication of the commanders vision of the battlefield and facilitates the dissemination and understanding of the commanders intent. Characteristics of this system include:

- On-the-move operations.
- Digital map capability.
- High throughput capability.
- Universal protocols.
- Modular capability.
- Still frame or video imagery capability.
- Redundancy.
- Universal platform integration capability.

Intelligence System

The intelligence system will provide combat leaders the all source intelligence needed to view the battlefield and more effectively conduct the land battle. It is designed to operate in a joint environment across the spectrum of conflict. This intelligence system provides a tactically deployable automation and data processing capability in order to:

- Receive and correlate data from strategic and tactical intelligence sources/sensors.
- Produce enemy situation displays.
- Disseminate intelligence information.
- Nominate targets.
- Manage collection requirements.
- Provide OPSEC support.

Indirect Fires Data System

The indirect fires data system is the multiservice automated FS command and control and communication system that satisfies the FS command and control operations requirements. This system provides integrated, automated support for the planning, coordination, and control of all FS assets (FA, mortars, CAS, NGF, attack helicopters, and offensive EW), execution of counterfire, interdiction, and suppression of enemy targets.

Forward Area Air Defense Command and Control System

The FAAD command and control system provides automated assistance in the performance of FAAD operations, such as planning, early warning, positioning, and engagement. In addition, this system enhances the management of Army airspace. This comprehensive system consists of subsystems that are equipped with computers, displays, and voice and data communications equipment to aid accumulation, processing, and distribution of a correlated air picture and command, control, communications, and intelligence (C3I) data. Early warning is accomplished by receipt of air tracks from external sources such as the AWACS and HIMAD.

Command and Control Vehicle

The C2V is a fully tracked, armored vehicle that ensures a mobile, responsive, and survivable command and control platform for the digitized brigade. The C2V provides command and control capabilities from battalion through corps level and will accommodate the overarching command and control software system.

Battle Command Vehicle

The BCV solves the tactical problem of how to access battlefield information data systems to obtain critical intelligence and operational information for decision making. The BCV will be tailored to satisfy commanders needs. Each BCV has four internal workstations and is staffed with a commander, an operations officer, an intelligence officer, and an FSO. Each workstation has software that is commensurate with workstation functions and desired redundancy.

Army Airborne Command and Control System (A2C2S)

The A2C2S provides the corps commander down through the battalion commander a highly mobile command and control system. The current configuration is mounted in the rear of a UH-60 Blackhawk helicopter. This system is a fully integrated digital platform that combines intelligence information from both national (including JSTARS) and battlefield assets along with long distance digital communications radios to provide the commander a better chance to make combat effective decisions. This system is capable of carrying a staff of five. Normal configuration includes a commander, an intelligence officer, an FSO, an operations officer, and an LO.

Unmanned Aerial Vehicle

This system provides R&S and target acquisition capabilities to the digitized brigade in excess of 150 kilometers beyond the FLOT, day or night, and in limited visibility and adverse weather conditions. This UAV is intended for employment in environments where real-time information feedback is needed, manned aircraft is unavailable, or excessive risk or other conditions make it less prudent to use manned aircraft.

Target Surveillance and Attack Radar System

This system provides TACAIR and ground commanders with near real-time wide area surveillance and deep targeting data on both moving and fixed targets during daylight and at night and in all weather conditions. It can detect, locate, track, classify, and assist in attacking targets beyond the FLOT. Operators aboard the aircraft downlink data in near real-time to multiple ground station modules and transfer the data to ground commanders.

Remote Sensor System

This remote sentry system provides low-cost lightweight, autonomous, remote, wide area, ground-based surveillance and target acquisition during daylight and in limited visibility conditions. This is accomplished through both imaging sensors (forward looking infrared) and nonimaging sensors (acoustics, magnetic, and seismic). These sensors provide compressed target image hand-off to reconnaissance elements.

SUPPORT SYSTEMS

Obstacle Breaching System (Grizzly)

This system is equipped with a full-width mine-clearing blade and a power-driven excavating arm. While buttoned-up, the two-man crew can operate the blade and the arm and drive the vehicle from either crew station. The mission of the Grizzly is to provide an in-stride breaching capability to overcome simple and complex obstacles. The system will breach a full-width lane and clear lanes to allow a maneuver force mobility through minefields, rubble, tank ditches, wire, and other obstacles.

Heavy Assault Bridge System (Wolverine)

The heavy assault bridge system is operated by a two-man crew. It will support a military load crossing 70 at 16 kilometers per hour and will support the mounted maneuver platforms. The bridge is launched from under armor in 5 minutes and retrieved in 10 minutes. The mission of the heavy assault bridge is to support crossing gaps. The heavy assault bridge increases force mobility by allowing units to transit gaps such as tank ditches, road craters and partially damaged bridge sections.

Wide Area Munitions (Hornet)

The Hornet has a stand-off detection and engagement capability. It attacks from the side or top at ranges up to 100 meters and provides a mobility kill to a designated target array. The Hornet can be used as a stand-alone tactical minefield or to reinforce a conventional obstacle. The Hornet can be rapidly employed along exposed flanks during movement as a situational obstacle to disrupt enemy counterattacks.

SERVICE SUPPORT SYSTEMS

Tactical Vehicles

The family of medium tactical vehicles consists of a common truck chassis. This tactical vehicle system will perform line haul, local haul, unit mobility, unit resupply and other missions in combat, CS, and CSS units. It is equipped with digital communications systems that enhance situational awareness and increase the capability to throughput supplies and equipment directly to the user.

Force Provider System

The force provider system provides the forward soldier a brief respite from the rigors of combat. Its primary function is to improve the quality of life for combat soldiers on extended operations in remote areas.

Palletized Load System

The palletized load system is a tactical vehicle consisting of a prime mover with an integral self-load/unload capability. It performs line and local haul, unit resupply, and other missions in support of modernized, highly mobile organizations. The palletized load system also greatly improves ammunition transport efficiency and productivity in the supply distribution role. It reduces dedicated personnel, materiel-handling equipment, line haul, and heavy cargo transport vehicle requirements in the current ammunition distribution system.

Nuclear, Biological, and Chemical Reconnaissance System (Fox)

NBC reconnaissance systems are armored vehicles equipped with a fully integrated NBC detection, warning, and communication capability. They detect, identify, and mark areas of NBC contamination. They also collect soil, water, and vegetation samples for later analysis. Hazards to the crew are minimized through the inclusion of vehicle NBC collective protection that provides overpressure with heating and cooling for crewmen.

SECTION IV. DIGITIZED TACTICAL OPERATIONS

MISSIONS

The nature of digital operations is the continuous transition between offensive and defensive activities aimed to overwhelm the enemy. The digitized brigade can employ both defensive and offensive characteristics associated with them. Leaders of the digitized brigade must fully understand doctrinal offensive and defensive fundamentals and recognize that in execution of tactical engagements they must be applied simultaneously. The digitized brigade performs the missions outlined in Table E-1 in support of information, decisive, and security operations.

INFORMATION OPERATIONS	DECISIVE OPERATIONS	SECURITY OPERATIONS
Screen	Attack	Cover
Movement and contact	Defend	Delay
Demonstration		Relief
Feint		OOTW activities
Raid		Post conflict operations

Table E-1. Digitized brigade missions.

OPERATIONS

Information Operations

The digitized brigade conducts specific missions to gain or destroy enemy information capabilities. These missions are conducted as part of larger operations to set conditions for decisive operations. The conceptualization, planning, and execution techniques are similar. Information missions are complicated, lethal, and difficult to control. These operations are conducted to obtain information and to test enemy dispositions, strengths, and reactions. Units conducting information operations must rapidly transition to decisive operations to exploit unexpected opportunities. The digitized brigade conducts movement and contact, screening force, feint, demonstration, and raid missions in support of information operations.

Decisive Operations

The digitized brigade conducts rapid, decisive operations to defeat the enemy with minimal casualties. The brigade attacks and defends to achieve this end. The real distinctions between attack and defense for the digitized force is the intent of the commander and the requirement to deny terrain to the enemy. The principle of simultaneity is paramount to the success of decisive operations. The brigade conceptualizes, plans, and executes decisive operations to attack the enemy at multiple critical points with the attacks occurring almost simultaneously. It conducts information activities to identify the critical points of the engagement, including a decisive point, and assigns specific tasks and purposes that its subordinate elements must achieve. The brigade commander and staff orchestrate and control the near-simultaneous actions of the subordinate elements, and they also employ assets of which they retain control to create the conditions and synergy required to bring the enemy to a rapid defeat.

The digitized brigade assigns the critical points of the engagement as missions to the subordinate elements. These missions have specific tasks and purposes and are linked together by a unified concept of the operations and commanders intent. The brigade commander may retain control of selected assets for employment against specific critical points when he determines that he and his staff will be better suited than the subordinate staffs to control tempo, achieve synchronization, or use these assets unique capabilities. An example of assets retained for brigade control are attack aviation, BAI, MLRS/Army tactical missile system (ATACMS), SOF direct action teams, PSYOP teams, and EW assets.

In addition to identifying and assigning critical points, the brigade commander determines what action will destroy the enemy. This action is identified as the decisive point. The brigade aggressively seeks to maintain the initiative, control time, and deny the enemy the ability to employ any options. By clearly identifying the decisive point, the commander has specified an end state which, in the absence of orders, allows any unit on the battlefield to achieve.

Security Operations

Security missions are conducted to enhance freedom of action by reducing vulnerability to hostile acts, influence, or surprise. The digitized brigade performs security missions as part of a larger force. A security mission may be assigned to the brigade from division to economize combat power by assigning smaller forces to provide security so larger forces can be freed for commitment to the main effort. The digitized brigade will be expected to employ its enhanced information and intelligence capabilities to secure a larger volume of physical space than its conventional predecessor. The brigade may conduct covering force, delay, and relief missions and OOTW activities to provide security during combat operations.

APPENDIX F

FRATRICIDE PREVENTION

CONTENTS

Section I. Magnitude of the Problem
Section II. Risk Identification and Preventive Measures
Section III. Risk Assessment
Section IV. Fratricide Reduction Measures
Section V. Fratricide Risk Considerations (OPORD Format)

Fratricide is as old as warfare itself, a complex problem that defies simple solutions. Fratricide can be broadly defined as the employment of friendly weapons and munitions, with the intent to kill the enemy or destroy his equipment or facilities, that results in unforeseen and unintentional death or injury to friendly personnel. This appendix focuses on actions leaders can take with current resources to reduce the risk of fratricide.

SECTION I. MAGNITUDE OF THE PROBLEM

The modern battlefield is more lethal than any in history. The tempo of operations is rapid, and the nonlinear nature of the battlefield creates command and control challenges for all unit leaders. The accuracy and lethality of modern weapons make it possible to engage and destroy targets at these extended acquisition ranges. At the same time, however, the ability of US forces to acquire targets using thermal imagery and other sophisticated sighting systems exceeds our ability to accurately identify these targets as friend or foe. As a result, friendly elements can be engaged unintentionally and destroyed in a matter of seconds.

Added to this is the problem of battlefield obscurity, 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. Situational awareness is the key; it must be maintained throughout an operation.

SECTION II. RISK IDENTIFICATION AND PREVENTIVE MEASURES

Reduction of fratricide risk begins during the planning phase of an operation and continues throughout preparation and execution. Risk identification must be conducted at all levels during each phase; the results then should be clearly communicated up and down the chain of command so that risk assessment can begin. This section covers considerations that influence risk identification; it also focuses on measures the platoon leader can implement to make the identification process more effective and to help prevent friendly fire incidents from occurring. Section III covers the risk assessment process. Section IV lists additional fratricide reduction measures and guidelines.

PLANNING PHASE

A plan that is thoroughly developed and understood helps to minimize fratricide risk. The following considerations help indicate the potential for fratricide in a given operation:

- Clarity of the enemy situation.
- Clarity of the friendly situation.
- Clarity of the commander's intent.
- Complexity of the operation.
- Planning time available at each level.

Graphics are a basic tool that commanders at all levels use to clarify their intent, add precision to their concept, and communicate their plan to subordinates. As such, graphics can be a very useful tool in reducing the risk of fratricide. Commanders at all levels must understand the definitions and purpose of

operational graphics and the techniques of their employment. See FM 101-5-1 for the definitions of each type of graphic control measure.

PREPARATION PHASE

The following factors may cause fratricide risks to become evident 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.

Confirmation briefs and rehearsals are primary tools in identifying and reducing fratricide risk during the preparation phase. The following are some considerations for their use:

- Use confirmation briefs or rehearsals to ensure subordinates know where fratricide risks exist and what to do to reduce or eliminate the risk.
- Backbriefs ensure subordinates understand the commander's intent. They often highlight areas of confusion, complexity, or planning errors.
- The type of rehearsal conducted determines what types of risks are identified.
- Rehearsals should extend to all levels of command and involve all key players.

EXECUTION PHASE

During execution, in-stride risk assessment and reaction are necessary to overcome unforeseen fratricide risk situations. The following are factors to consider when assessing fratricide risks:

- Intervisibility between adjacent units.
- Amount of battlefield obscuration.
- Ability or inability to positively identify targets.
- Similarities and differences in equipment, vehicles, and uniforms among friendly and enemy forces.
- Vehicle density on the battlefield.
- The tempo of the battle.

Maintaining situational awareness at all levels and at all times is another key to fratricide reduction as an operation progresses. Units must develop and employ effective techniques and SOPs to aid leaders and crewmen in this process. These techniques include:

- Monitoring on the next higher net.
- Radio cross-talk between units.
- Accurate position reporting and navigation.
- Training and use/exchange of LOs.

SECTION III. RISK ASSESSMENT

Risk assessment must be conducted whenever fratricide risks factors are identified. It must take place at all levels during each phase of operations. As with risk identification, the results of the assessment must be passed on to all levels of the chain of command so that fratricide reduction measures can be developed and implemented. Refer to Section IV for specific reduction measures.

Figure F-1 is a worksheet for evaluating fratricide risk in the context of mission requirements. The worksheet lists six mission-accomplishment factors that affect the risk of fratricide, along with related considerations for each factor. Assess the potential risk in each area as low, medium, or high, and assign a

point value to each (one point for low risk, two for medium risk, three for high risk). Add the point values for the overall fratricide assessment score. Use the resulting score only as a guide, however. Your final assessment must be based both on observable risk factors like those on the worksheet and on your "feel" for the intangible factors affecting the operation. Note that descriptive terms are listed only in the low and high-risk columns of the worksheet. Your assessment of each factor will determine whether the risk matches one of these extremes or lies somewhere between them as a medium risk.

	FACTORS	LOW (1)	MEDIUM (2)	HIGH (3)
1.	UNDERSTAND PLAN			
	- CDR'S INTENT	CLEAR	<---->	FOGGY
	- COMPLEXITY	SIMPLE	<---->	COMPLEX
	- ENEMY SITUATION	KNOWN	<---->	UNKNOWN
	- FRIENDLY SITUATION	CLEAR	<---->	UNCLEAR
	- ROE	CLEAR	<---->	UNCLEAR
2.	ENVIRONMENT			
	- INTERVISIBILITY	FAVORABLE	<---->	UNFAVORABLE
	- OBSCURATION	CLEAR	<---->	OBSCURED
	- BATTLE TEMPO	SNOW	<---->	FAST
	- POSITIVE TARGET ID	100%	<---->	0%
3.	CONTROL MEASURES			
	- CMD RELATIONSHIPS	ORGANIC	<---->	JOINT/ COMBINED
	- AUDIO	LOUD/CLEAR	<---->	JAMMED
	- VISUAL	WELL SEEN	<---->	OBSCURED
	- GRAPHIC	STANDARD	<---->	NOT UNDERSTOOD
	- SOPs	STANDARD	<---->	NOT USED
	- LOs	PROFICIENT	<---->	UNTRAINED
	- LOCATION/NAVIGATION	SURE	<---->	UNSURE
4.	EQUIPMENT (COMPARED TO US)			
	- FRIENDLY	SIMILAR	<---->	DIFFERENT
	- ENEMY	DIFFERENT	<---->	SIMILAR
5.	TRAINING			
	- INDIVIDUAL PROFICIENCY	MOS QUAL	<---->	UNTRAINED
	- UNIT PROFICIENCY	TRAINED	<---->	UNTRAINED
	- REHEARSAL	MULTIPLE	<---->	NONE
	- HABITUAL RELATIONSHIP	YES	<---->	NO
	- ENDURANCE	ALERT	<---->	FATIGUED
6.	PLANNING TIME (1/3 - 2/3 RULE)			
	- HIGHER HQ	ADEQUATE	<---->	INADEQUATE
	- OWN HQ	ADEQUATE	<---->	INADEQUATE
	- LOWER HQ	ADEQUATE	<---->	INADEQUATE
7.	OVERALL FRATRICIDE ASSESSMENT	LOW 26 - 46*	MED 42 - 62*	HIGH 58 - 78*

* COMMANDER MAY USE NUMBERS AS THE SITUATION DICTATES.
NUMBERS ALONE MAY NOT GIVE ACCURATE FRATRICIDE RISK.

Figure F-1. Fratricide risk assessment worksheet.

SECTION IV. FRATRICIDE REDUCTION MEASURES

The following measures are provided as a guide to actions that can reduce fratricide risk. They are not directive in nature, nor are they intended to restrict initiative. Apply them as appropriate based on the specific situation and METT-T factors.

- Identify and assess potential fratricide risks in the estimate of the situation. Express these risks in the OPORD or FRAGO.
- Maintain situational awareness, focusing on such areas as current intelligence; unit locations and dispositions; denial areas (minefields and FASCAM); contaminated areas, such as improved conventional munition (ICM) and NBC; situation reports (SITREP); and METT-T factors.
- Ensure positive target identification. Review vehicle and weapons 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, emphasize the use of doctrinally sound TTPs. Ensure constant supervision when executing orders and performing all tasks and missions to standard.
- Recognize the signs of battlefield stress. Maintain unit cohesion by taking quick, effective action to alleviate it.
- Conduct individual, leader, and collective (unit) training covering fratricide awareness, target identification and recognition, and fire discipline.
- Develop a simple, decisive plan.
- Give complete and concise mission orders.
- Use SOPs that are consistent with doctrine to simplify mission orders. Periodically review and change SOPs as needed.
- Strive for maximum planning time for you and your subordinates.
- Use common language/vocabulary and doctrinally correct standard terminology and control measures, such as FSCLs, zone of engagement, and RFLs.
- Ensure thorough coordination is conducted.
- Plan for and establish effective communications.
- Plan for collocation of CPs whenever it is appropriate to the mission, such as during a passage of lines.
- Designate and employ LOs as appropriate.
- Ensure ROE are clear.
- Include fratricide risk as a key factor in terrain analysis (observation and fields of fire, cover, concealment, obstacles, key terrain, avenues of approach [OCOKA]).
- 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); and synchronize tactical movement.
- Include discussion of fratricide incidents in after-action reviews (AAR).

SECTION V. FRATRICIDE RISK CONSIDERATIONS (OPORD FORMAT)

This section, which parallels the five-paragraph OPORD, contains key factors and considerations in fratricide reduction. This is not a change to the OPORD format; rather, it should be used during OPORD development to ensure fratricide reduction measures are included in the order. It is not a strict guide. The factors and considerations are listed where they would likely appear in the OPORD, but they may warrant evaluation during preparation of other paragraphs.

- a. Situation.**
 - a. Enemy forces.

- a. Are there similarities among enemy and friendly equipment and uniforms that could lead to fratricide?
- b. What languages do enemy forces speak? Could these contribute to fratricide risk?
- c. What are the enemy's deception capabilities and his past record of deception activities?
- d. Do you know the locations of enemy forces?
- b. Friendly forces.
 - a. 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?
 - b. Could differences in equipment and uniforms among US armed forces increase fratricide risk during joint operations?
 - c. What differences in equipment and uniforms can be stressed to help prevent fratricide?
 - d. What is the friendly deception plan?
 - e. What are the locations of your unit and adjacent units (left, right, leading, follow-on)?
 - f. What are the locations of neutrals and noncombatants?
- c. Own forces.
 - a. What is the status of training activities? What are the levels of individual, crew, and unit proficiency?
 - b. Will fatigue be a factor for friendly forces during the operation? Has an effective sleep plan been developed?
 - c. Are friendly forces acclimatized to the AO?
 - d. What is the age (new, old, or mix) and condition of equipment in friendly units? What is the status of new equipment training?
 - e. What are the expected MOPP requirements for the operation?
- d. Attachments and detachments.
 - a. Do attached elements understand pertinent information regarding enemy and friendly forces?
 - b. Are detached elements supplied this pertinent information by their gaining units?
- e. Weather
 - a. What are the expected visibility conditions (light data and precipitation) for the operation?
 - b. What effect will heat and cold have on soldiers, weapons, and equipment?
- f. Terrain.
 - a. Do you know the topography and vegetation (such as urban, mountainous, hilly, rolling, flat, desert, swamp/marsh, prairie/steppe, jungle, dense forest, open woods) of the expected AO?
 - b. Have you evaluated the terrain using the factors of OCOKA?
- b. Mission.** Is the mission, as well as all associated tasks and purposes, clearly understood?
- c. Execution.**
 - a. Task organization.
 - a. Has the unit worked under this task organization before?
 - b. Are SOPs compatible with the task organization (especially with attached units)?
 - c. Are special markings or signals (for example, cats' eyes, chemlights, or panels) needed for positive identification of uniforms and equipment?
 - d. What special weapons and/or equipment are to be used? Do they look or sound like enemy weapons and/or equipment?
 - b. Concept of the operation.
 - a. Maneuver. Are main and supporting efforts identified to ensure awareness of fratricide risks and prevention measures?
 - b. Fires (direct and indirect).
 - a. Are priorities of fires identified?
 - b. Have target lists been developed?
 - c. Has the fire execution matrix/overlay been developed?
 - d. Have locations of denial areas (minefields, FASCAM) and contaminated areas (ICM, NBC) been identified?
 - e. Are the locations of all supporting fire targets identified in the OPORD/OPLAN overlays?

- f. Are aviation and CAS targets clearly identified? Have signals been established to positively identify these targets for the aircraft? Have ACAs and SEAD plans been developed?
 - g. Has the direct-fire plan been developed and synchronized with the FS plan?
 - h. Have FPFs been designated?
 - i. Have you identified and verified sector limits?
 - j. Have executors for each target been assigned and do they understand when and where to shoot? Can they observe the target?
 - k. Are the observers surveyed in or are they using a map spot? Target location errors can cause big problems.
 - l. Do all leaders and executors understand where the FSCMs are and when they go into effect? Rehearsal is the key.
 - m. Can the FSO hear what targets are being called on the maneuver nets?
 - n. Have all targets been rehearsed with the executors and the FA battalion?
 - o. Does the reinforcing or GS reinforcing FA have all the proper graphics and understand where they fit in? Did they attend the rehearsal?
 - p. Have restrictions on specific munitions been established and does everyone know where they are planned and emplaced?
 - q. What is the minimum safe distance for the shell/fuze/delivery system? Are the fire requirements for accurate predicted fire met or do we have to adjust fire?
- c. Engineer tasks.
- a. Are friendly minefields, including FASCAM and ICM dud-contaminated areas, known?
 - b. Are obstacles identified, along with the approximate time needed for reduction/breaching of each?
- d. Tasks to each subordinate unit. Are friendly forces identified, as appropriate, for each subordinate maneuver element?
- e. Tasks to CS/CSS units. Have locations of friendly forces been reported to CS/CSS units?
- f. Coordinating instructions.
- a. Will rehearsals be conducted? Are they necessary? Are direct and indirect fires included?
 - b. Is a confirmation brief necessary?
 - c. Are appropriate control measures clearly explained and illustrated in the OPORD and overlays? Have they been disseminated to everyone who has a need to know? What is the plan for using these control measures to synchronize the battle and prevent fratricide?
 - d. Are the locations for division and corps slice elements within the brigade battle space posted and disseminated?
 - e. Have target/vehicle identification drills been practiced?
 - f. Do subordinate units know the immediate action, drill, or signal for "CEASE FIRE" or "I AM FRIENDLY" if they come under unknown or friendly fire? Is there a backup action?
 - g. Is guidance in handling dud munitions, such as ICM and cluster bomb units (CBU), included?
- d. Service Support.**
- a. Are train locations and identification markings known by everyone?
 - b. Do medical and maintenance personnel know the routes between train units?
- e. Command and Signal.**
- a. Command.
 - a. What are the locations of the commander and key staff members?
 - b. What is the chain of command and the succession of command?
 - b. Signal.
 - a. Do instructions include backup code words and visual signals for all special and emergency events?
 - b. Do instructions cover how to identify friendly forces to aircraft?
 - c. Are SOI distributed to all units with a need to know, such as higher, lower, adjacent, leading, and follow-on elements?

APPENDIX G

BRIGADE PREPO AFLOAT OPERATIONS

CONTENTS

Section I. Fundamentals
Section II. Deployment
Section III. Theater Reception and Onward Movement
Section IV. Redeployment
Section V. Commander's Guide to Deployment Operations
Section VI. N-Hour Sequence

SECTION I. FUNDAMENTALS

GENERAL

The PREPO AFLOAT armored brigade is organized to fight successful engagements on any battlefield. It combines the efforts of subordinate

battalions to perform tactical tasks as part of a joint task force or combined force. The key to successful operations is the brigades ability to synchronize maneuver battalions and integrate CS and CSS combat multipliers in support of the overall brigade effort.

The primary mission of the armored brigade is to close with and destroy forces using its mobility, firepower, and shock effect. It defeats enemy assaults by defensive fires, obstacles, mines, and counterattacks. The armored brigade is also capable of conducting operations across the range of military operations (peacetime, conflict, and war).

CAPABILITIES

Capabilities of the PREPO AFLOAT armored brigade are:

- Conduct sustained operations in all environments.
- Accomplish rapid movement.
- Exploit success and pursue a defeated enemy as part of a larger formation.
- Conduct limited security operations (screens and guards).
- Conduct defensive operations or delays in sector over large areas.
- Conduct offensive operations.

LIMITATIONS

Due to the density of organic tracked vehicles, the armored brigade has the following limitations:

- Dense jungle and forests, steep and rugged terrain, and significant water obstacles restrict mobility.
- Urbanized terrain impedes maneuver.
- Substantial numbers of heavy equipment limit strategic mobility.
- Consumes significant amounts of supplies, especially Classes III, V, and IX.

The PREPO AFLOAT armored brigade may be deployed independently; however, it is normally deployed incrementally as part of a larger force. The brigade is assisted by the installation, its higher headquarters, other armed services, the host nation, and units already in the AO. The PREPO AFLOAT brigade must

- Reassemble rapidly into a division-size force.
- Establish the basic battle command and liaison functions with the responsible headquarters established in theater.

ROLE

The PREPO AFLOAT armored brigade uses its unique capabilities to conduct combat operations across the range of military operations. It is required to operate in a wide range of political, military, and

geographical environments. Some examples of this wide range of environments armored forces have historically operated in include:

- A jungle environment during the Vietnam War.
- The South Pacific in support of amphibious operations during World War II.
- An urban environment during World War II, Panama in 1989-90, and Somalia in 1993.
- The desert during World War II and the Gulf War.

Tactical missions of the armored brigade involved in a PREPO AFLOAT operation, both in war and OOTW, include the following:

- Engage and destroy enemy forces using mobility, firepower, and shock effect in coordination with other arms.
- Conduct offensive and defensive missions.
- Provide security, reconnaissance, and antiarmor firepower to a light infantry, airmobile, airborne division, or the USMC, during a CONOP.
- Expand and sustain a lodgment for follow-on forces in coordination with other arms and services.
- Reinforce a lodgment established by the Army early entry forces or by USMC amphibious assault units.
- Augment an amphibious deployment or operation.
- Provide an armored force capability to a Marine Expeditionary Force during a CONOP.
- Establish a sizable combat force to enable closure of additional forces and support a higher commanders operation or campaign plan.
- Reinforce an ally with a credible force prior to hostilities, and sustain relations with allies and coalition partners through routine exercises and operations.
- Conduct a show of force.

SECTION II. DEPLOYMENT

GENERAL

During the predeployment (alert) planning phase, unit commanders ensure unit personnel, supplies, and selected equipment are prepared for deployment. They update their automated unit equipment list to reflect actual personnel and equipment deployment posture. They coordinate the disposition of their units remain-behind equipment, and coordinate with the installation commander for support required for deployment that is not within the units organic capability.

During movement to the point of embarkation (POE) phase, units move to the POE IAW port call messages. During the strategic lift phase, units move to the theater of operations in a flow sequenced to facilitate and support the efficient offload of the PREPO AFLOAT ships.

ORGANIZATION FOR CONTROL OF DEPLOYMENT

US Transportation Command (USTRANSCOM), as the strategic deployment manager, is responsible to coordinate the air and sea deployment. Army forces coordinate with the unified command and US Commander-in-Chief Transportation Command (USCINC-TRANS) and other supporting agencies. The Air Mobility Command pre-positions an air terminal movement control team at the aerial port of debarkation (APOD) with the port support activity. This provides unity of effort and accomplishes the required interface with the port operator to clear Army personnel and cargo from the port. The Military Sealift Command (MSC) plans and executes sea deployments. Reports of the movement are made through normal chains of command in accordance with joint operation planning and execution system procedures.

Conduct of Air Deployment

Air deployment is used to transport personnel and selected supplies and equipment from an aerial port of embarkation (APOE) to an APOD in the AO. The time required to transport the force depends on the size of the force, aircraft availability, distance, and throughput considerations. The airlift is accomplished by the Air Mobility Command aboard strategic aircraft and civil contract carriers. The Air Mobility Command determines airflow routing and airflow based on the approved time-phased force deployment data.

Conduct of Sea Deployment

PREPO AFLOAT ships move as directed by the MSC. Ship deployment should accommodate the earliest possible embarkation of the offload preparation party (OPP). The Army service component commander coordinates with USTRANSCOM (MSC) for authorization for OPP to embark PREPO AFLOAT ships. PREPO AFLOAT ships rendezvous with escorts, if assigned, and conduct transit to the marshaling area.

DEPLOYMENT SUPPORT ORGANIZATIONS

Organizations that assist PREPO AFLOAT armored brigade commanders during deployment are discussed in the following paragraphs.

Movement Control Center

The movement control center (MCC) coordinates transportation support to assist the deploying unit in moving to the POE.

Installations

Military installations play a key role in the alert and deployment process. CONUS replacement centers are installations assigned a mobilization mission. The installation commanders at or in the vicinity of POEs provide materiel handling equipment, transportation, security, and other support as requested by the deploying unit. The installation also coordinates updating of the automated unit equipment list.

Aerial Port of Embarkation Operations

The Air Mobility Command exercises overall control of airlift operations at APOEs. The Air Mobility Command tanker airlift control element establishes an airlift operations center at the airfield, with all information related to onload operations coordinated through the airlift operations center.

The departure airfield control group (DACG) is the primary interface with the Air Force at APOEs. A DACG is responsible for coordinating and controlling the outloading of units for deployment or redeployment. A DACG should be pre-positioned as early as possible at the arrival/departure airfield. The DACG is responsible for receiving deploying equipment from the units at the APOE; coordinating with the tanker airlift control element to ensure that cargo and personnel are properly prepared for air shipment; and for delivering cargo to the ready line. Further responsibilities are outlined in FM 55-12.

Coordination between the moving unit, arrival/departure airfield control group (A/DACG), and tanker airlift control element (TALCE) is critical to an orderly deployment of airlift aircraft through the APOE/APOD. The arrival of unit equipment and personnel for onload must be sequenced to avoid bottlenecks at the APOE. Army forces/armored brigade commanders provide an officer at the APOE to coordinate with A/DACG and TALCE the arrival of unit equipment and personnel.

If required, an ammunition accountability element may be deployed to the APOE to provide technical assistance, quality assurance, and safety support during the uploading of ammunition. These elements also serve to provide asset visibility and accountability to the national inventory control point and the CINC.

Seaport of Embarkation Operations

The Military Traffic Management Command (MTMC) exercises overall responsibility for CONUS and selected outside CONUS (OCONUS) sea ports. MTMC operates the port and supervises the operation of post support activity (PSA) assigned to the various ports.

MTMC provides the following at other than civil ports:

- Deployment control units are non-deployable Forces Command (FORSCOM) or MTMC organizations that assist deploying units with deployment requirements.
- MTMC Tiger Team is designed to temporarily operate a seaport of embarkation (SPOE) until the transportation terminal unit (TTU) is fully operational. When alerted, the Tiger Team immediately deploys to the SPOE to coordinate contracts, set up operations, and begin receiving cargo. The team's composition is determined by MTMC based on mission requirements. On activation, the team is responsible for opening the port and conducting operations to support the deployment of military forces. Command authority remains with the team until the TTU commander arrives and assumes responsibility.
- TTUs are the MTMC's traffic management representative at the seaport with the specific responsibility of monitoring DOD commercial contract cargo movements to include unit equipment, resupply, and retrograde shipments. The TTUs provide MTMC with the capability to expand the number of ports available for sustained seaport operations. The TTU conducts water terminal operations at established commercial ports in which existing equipment and manpower are available to perform actual terminal operations.

Port Support Activity

The port support activity (PSA) is a temporary military augmentation organization comprised of personnel with specific skills that aid the port commander in receiving, processing, and clearing cargo at both the SPOE and the seaport of debarkation (SPOD). Stateside installations are delegated specific ports to which they must provide the PSA and other logistic support for deploying personnel. Installation commanders responsible for deployments should not, where practical, task deploying units to support the PSA organization. The PSA is under OPCON of the port commander.

The PSA ensures that the equipment of deploying units is ready to be loaded onto vessels. PSA functions may include performing maintenance, correcting configured equipment loads, providing security for sensitive cargo, and driving requirements within the marshaling area.

The PSA establishes the necessary communications to ensure the proper flow of cargo and provides daily operational reports of cargo received, maintenance performed, and operational problems to the port commander.

FORCE PROJECTION OPERATIONS

PREPO AFLOAT force projection operations follow a general sequence, although the stages often overlap in space and time. These operations seldom begin with a clear idea of the entire package or purpose. Often, deployment requirements develop over time and with adjustments. Enemy actions further change the equation. PREPO AFLOAT force projection operations do not end when the brigade arrives in theater. They end when the mission is completed and the last soldier returns to home station.

Predeployment Activities

Predeployment activities include the planning and preparation for an eventual PREPO AFLOAT operation prior to notification, and those actions undertaken upon notification that lead to the actual deployment. Successful PREPO AFLOAT operations rely on trained, equipped, and sustained units and soldiers. The brigade METL should reflect tasks associated with conducting any CONOP. Training should emphasize critical tasks associated with CONOP and PREPO AFLOAT operations. Brigades assigned missions that

use PREPO AFLOAT operations should consider the following activities as part of their planning and preparation:

- Establish, develop, train, and refine alert notification procedures.
- Conduct periodic operational readiness inspections.
- Inspect and maintain overseas movement packers per division and Army regulations.
- Maintain and refine packing lists and load plans.
- Prepare hand receipts and turnover of PREPO AFLOAT equipment.
- Maintain effective family support group structures.
- Coordinate required PAO/media interface.
- Establish a rear-detachment structure and identify procedures for rear-detachment operations.

The critical stage of predeployment activities begins when the brigade is alerted for a PREPO AFLOAT CONOP. The objective for the brigade commander and staff is to task organize the brigade and quickly develop and refine operational concepts. The need to plan and prepare for a strategic deployment is a particularly demanding aspect of this stage.

The PREPO AFLOAT CONOP actually begins when the unit is notified to deploy. The division or other higher headquarters of the brigade initiates execution. This execution sequence is called the N-hour sequence and is discussed in Section VI of this appendix.

Echelonment of Forces

Echeloning is organizing the units for movement. Generally, the brigade organizes into the four echelons described below.

Offload Preparation Party

The offload preparation party (OPP) is a temporary task organization that consists of maintenance, embarkation personnel, and equipment operators from the PREPO AFLOAT armored brigade and support elements. The OPP's task is to prepare the equipment onboard the PREPO AFLOAT ships for debarkation at the SPOD. Once alerted, the OPP deploys to join the PREPO AFLOAT ships prior to their sailing, during transit, or when the ships arrive at the SPOD. Ideally, the OPP should deploy to join the PREPO AFLOAT ships at least 96 hours (four days) prior to SPOD closure. If this is not feasible, the OPP should be positioned in the marshaling area and aboard the PREPO AFLOAT ships as soon as possible.

On arrival aboard a PREPO AFLOAT ship, the OPP OIC reports to the PREPO AFLOAT ship master to obtain specific directions concerning shipboard activities. The OPP's responsibilities and priorities are established by the supported CINC/Army forces and must be in concert with the requirements established by the ship's master. The relationship between the OPP and the ship's master parallels that of an embarked unit commander and the commanding officer of amphibious ships. The OIC of the OPP conveys the offload priorities, established by the CINC/Army forces commander, to the PREPO AFLOAT ship's master and contracting officer technical representative. These priorities define the objectives for offload preparation by the OPP.

The OPP is responsible for preparing the ship's offload systems, lighting, and embarked supplies and equipment for offload. OPP responsibilities include initial depreservation and preparation of supplies and equipment. The OPP must be thoroughly familiar with the configuration of the ship and the ship's load plans.

The OPP consists of representatives from all units of the deploying force. Personnel within an OPP are organized into teams capable of operating independently aboard each ship. Each team is functionally organized and has a team captain who is responsible for OPP functions aboard that ship.

Advance Party

An advance party is formed from the brigade, division, and echelon above division support elements. The advance party also includes the US Army Armament, Munitions, and Chemical Command (USAMCCOM) ammunition support team. The ammunition support team provides accountability and visibility of ammunition arriving in theater. The primary tasks of the advance party are to arrange for the reception of the main body and airlifted elements, rendezvous with the PREPO AFLOAT ships to continue depreservation procedures, and assist in port support and discharge operations. The advance party deploys before the main body, and should include (as a minimum) battery teams, fuel handlers, drivers (wheeled and tracked), and property book and supply personnel. Upon arrival, the commanders advance party assumes command of the OPP.

Main Body

The main body is the balance of forces that remain after the advance party has deployed. The deployment of the main body is sequenced to receive equipment and supplies, move to the tactical assembly area, and prepare for continued operations. The main body's flow must be uninterrupted to permit expeditious closure, reception, and onward movement. The logistical support must be consistent with the size of the force as it builds in theater. Forces should arrive in theater no more than 24 hours prior to arrival of the first PREPO AFLOAT ship.

Rear Echelon Force

This is the remainder of the brigade that does not deploy. The rear echelon force assists the advance party and main body with their deployment from home station, establishes the rear echelon detachment, and ensures the accountability of nondeploying assets and equipment.

SECTION III. THEATER RECEPTION AND ONWARD MOVEMENT

GENERAL

Theater reception and onward movement is a crucial phase of a PREPO AFLOAT operation. The Army forces commander is responsible for theater reception and onward movement operations that include

- Preparing the reception and onward movement plan.
- Synchronizing air movement and PREPO AFLOAT ship arrival.
- Establishing operating locations and facilities in the marshaling area.
- Coordinating arrival and discharge of equipment and supplies from the PREPO AFLOAT ships (in port, across a beach, or a combination of both).
- Coordinating arrival and offload of airlifted elements.
- Providing personnel, equipment, and transportation to clear the ports, move forces to final destination, document actions, and provide reports.
- Providing communications and security.
- Providing initial life support.
- Assisting the PREPO AFLOAT armored brigade in preparing for its operational mission.

The marshaling area is an area of sufficient size and facilities (airfields, ports, beaches, staging and assembly areas) to perform the complex tasks of arrival, offload, equipment and personnel linkup and staging, supply distribution, assembly, and preparation of forces for employment.

LOGISTICS SUPPORT ELEMENT

The US Army Materiel Command (USAMC) provides the logistics support elements (LSE) to deploy to the marshaling area. Early LSE deployment is necessary to provide maintenance technical assistance, equipment accountability and transfer, as well as other logistics support as needed. The LSE provides a

current tactical standard Army management information system (STAMIS) baseline and a printed hand receipt by unique unit identification code. The LSE is normally task organized after issuance of the WO and deployment of the concept for deployment. LSE (minus) should be programmed early within the time-phased force deployment data and will accompany and receive initial life support from the Army Transportation Composite Group. The PREPO AFLOAT contingency force provides an LO to the LSE. As the theater matures, the LSE must continue to receive life support from the theater base.

The United States Army Medical Materiel Agency (USAMMA) is provided an LSE for coordination and control of Class VIII supplies. The USAMMA LSE depends on Army forces for life support until the deployment of the Theater Medical Materiel Management Center and/or a medical logistics battalion. Upon completion of the mission, the USAMMA LSE receives assignment instructions from USAMMA with the senior medical command and control organization in the theater.

COMMENCEMENT AND DISESTABLISHMENT

The theater reception and onward movement phase begins on arrival of the first PREPO AFLOAT ship or the first aircraft of the main body at the designated APOD/SPOD. This phase ends when:

- Adequate equipment and supplies are offloaded and issued to awaiting units.
- Command and control communications are established.
- Units have moved to the tactical assembly area.
- The Army forces commander reports that all essential elements of the armored brigade have attained combat readiness.

Simultaneous or subsequent tactical operations by the brigade and movements to those operations are not considered part of the PREPO AFLOAT operation.

OFFLOAD PREPARATION PARTY TRANSITION FROM DISCHARGE MISSION

The OPP remains with the ship until discharge operations are complete. During offloading, team members remain aboard to form the nucleus of the debarkation team, augmented as required by contingency force personnel who arrive in the airlifted element. After the ship is offloaded, OPP personnel return to their parent unit.

PREPO AFLOAT ACCOUNTABILITY PROCEDURES

Each national inventory control point and the service item control center at the Army Petroleum Center accounts for and manages PREPO AFLOAT stocks. The standard depot system and the tactical STAMIS maintain the custodial records of cargo aboard each of the PREPO AFLOAT ships.

To facilitate rapid temporary transfer less Class V during deployment (such as within 48 hours), tactical STAMIS will be on board each ship. When a ship arrives at a port, stocks are discharged in quantities as determined by the theater commander. Temporary accountability of these stocks transfers from USAMC and USAMMA to the deploying unit.

During the redeployment phase, prior to returning to home station, equipment and supplies on the tactical STAMIS hardware are turned in to a designated site within the theater of operations. Detailed hand-off and accountability procedures are developed to ensure the most effective and efficient property transfer occurs to support the warfighter at deployment and the reconstitution of PREPO AFLOAT capability at redeployment.

TRANSPORTATION OPERATIONS

During PREPO AFLOAT operations, the Army Transportation Composite Group is responsible for planning and executing transportation operations in the marshaling area. This includes operation of the APOD/SPOD and all onward movements of personnel, supplies, and equipment from the APOD and

SPOD. Army terminal operations at the SPOD include loading, unloading, and handling in-transit supplies, equipment, and personnel between any of the various modes of transportation. Terminals are established for cargo being transferred at beginning, destination, and in-transit points.

Movement Control

A movement control element deploys with the Army Transportation Composite Group to coordinate the onward movement of supplies, personnel, and equipment.

Aerial Ports of Debarkation

Once the aircraft are offloaded, personnel and cargo come under Army forces control for reception and onward movement. The transportation composite group and movement control element coordinate this phase.

The APOD is located within the marshaling area and, ideally, in proximity to the SPOD. APOD operations must meet requirements of the TALCE and the arrival airfield control group (AACG). Designation of offload ramps and holding areas is accomplished jointly by the TALCE and AACG. Holding areas are established sufficiently clear of the offload ramps to avoid congestion and to facilitate loading passengers and equipment from the arriving units. Facilities are also established for AACG and TALCE (command and control, communications, and life support).

Other Air Operations

Air cargo transfer operations within the theater also take place at other Air Force and Army air terminals. The Army forces may be responsible for loading and unloading Air Force and Army aircraft at forward or small austere landing fields that are not a regularly scheduled stop for theater airlift. An Army cargo transfer company or AACG can provide this capability.

Arrival Airfield Control Group

The AACG is responsible for the reception and, in conjunction with the movement control team, for the coordination of onward movement. The AACG provides an interim capability until the arrival of the air traffic movement control team.

Sea Ports of Debarkation

PREPO AFLOAT deployment to a port with sufficient pier space and staging areas to accommodate the simultaneous pierside offload of two or more PREPO AFLOAT ships is the preferred method of discharge. Where possible, the best unconstrained port in the AO should be selected. Unconstrained ports have multiple deep draft shipping pier space, clear shipping channels, land-based cranes, and sufficient staging area. If sufficient unconstrained ports are not available, then conduct discharge operations using a combination of unimproved ports (logistics-over-the-shore [LOTS] and/or over a bare beach).

Port Operations

Ocean water terminals are classified as fixed-port facilities, unimproved port facilities, or bare-beach facilities. Offloading PREPO AFLOAT ships pierside in port accelerates throughput, requires less personnel than a beach operation, and reduces the potential for damage or loss to supplies and equipment. Ports are far less susceptible to the effects of sea and weather conditions. On the other hand, port operations require more interface with the host nation and increase the likelihood of encountering restrictions on handling and transporting ammunition, POL, and hazardous cargo. Civilian ship traffic, labor unions, and general port congestion must also be considered.

Fixed-Port Facilities

Fixed-port terminals are an improved network of cargo-handling facilities specifically designed for transfer of ocean going freight, vessel discharge operations, and port clearance. Deep-draft ocean-going vessels come alongside a pier, ship, or quay and discharge cargo directly onto the apron. Most cargo is moved into open or covered in-transit storage to await terminal clearance. Selected cargo may be discharged directly to land transport. Fixed-port facilities may also have state-of-the-art facilities and equipment to support cargo discharge and port clearance operations.

Unimproved Port Facilities

Unimproved port facilities are those that are less productive than a fixed-port facility. Any one or a combination of the following conditions qualifies a port as an unimproved port facility and may require augmentation from a terminal service company and shallow-draft lighting to discharge vessels. The conditions include:

- Port not designed for the type cargo carried (such as containers).
- Lack of permanent fixed equipment or the wrong type of equipment in working areas.
- Berth length and/or water depth alongside the berth if insufficient for the type vessel used.
- Exposure to the elements and passing traffic that hinders vessel operations.
- Damaged fixed port.

Bare-Beach Operations

In bare-beach operations, Army lighting is used to transport equipment and cargo from ship to shore for discharge across the beach. No facilities, equipment, or infrastructure may exist at the site to discharge cargo or conduct port clearance operations. Beach terminals require specifically selected sites where cargo is delivered by lighting to or across the beach and into marshaling yards or onto waiting clearance transportation.

Logistics-Over-the-Shore

LOTS loading and unloading operations are conducted:

- Over unimproved shorelines; through fixed ports partially destroyed.
- Through shallow-draft ports not accessible to deep-draft shipping.
- Through fixed ports that are inadequate without using LOTS capabilities.

For more information on LOTS, see Joint Pub 4-06.1.

Port Support Activity

The PSA is provided by the PREPO AFLOAT contingency force and is OPCON to the Army Transportation Composite Group. The PSA includes the OPP and additional personnel, such as drivers and mechanics. The PSA assists in the throughput of the PREPO AFLOAT equipment.

Inland Terminal Operations

Inland terminals are established for transshipment of supplies, equipment, and personnel along theater air, inland waterways, rail, and motor transport routes.

The senior movement control element recommends terminals serving rail and inland waterways along existing routes whenever sufficient lift capability cannot be provided by motor and air.

POL and Ammunition

POL and ammunition should not be held in the port or port overflow areas, but should be transported directly to the storage sites.

Port Authority

If the host-nation port authority is not functioning, the MTMC or Army Transportation Composite Group assumes this responsibility. The Army forces designate a port LO to provide coordination between the contingency force and the host nation. The port LO advises the port authority regarding cargo characteristics (including hazardous cargo) and offload requirements that may impact on port activities. Additionally, the port LO coordinates with the host-nation support representatives regarding

- Environmental data (tides, winds, obstructions), navigational aids, and harbor information required for safe operations.
- Berths and/or anchorages.
- Tug/pilot services.
- Fire fighting services.
- Pierside services.
- Materiel handling equipment services.

Motor Transport

The Army Transportation Composite Group provides motor transport assets to move unit equipment, supplies, and personnel to the tactical assembly area until the corps support group (if any) is established. Motor transport terminals are located at both ends and at intermediate points along line-haul routes serving as the connecting link between local-haul and line-haul service or where terrain necessitates a change in the carrier or mode. Cargo transfer companies and TTPs can also provide limited local-hauling service only in and around motor terminals.

SECTION IV. REDEPLOYMENT

GENERAL

For PREPO AFLOAT operations, redeployment is the movement of the PREPO AFLOAT forces from a theater of operations to follow-on designated CONUS or OCONUS locations. Prior to redeployment, the PREPO AFLOAT forces turn in all issued PREPO

AFLOAT equipment and supplies to USAMC/USAMMA or designated agencies. They retain to accompany troops (TAT) and not authorized pre-positioning (NAP) equipment and supplies. This section does not discuss the total process of redeployment. The scope is limited to a discussion of those areas that affect the PREPO AFLOAT force. For additional information on redeployment refer to FM 100-17.

REDEPLOYMENT PHASES

The redeployment process begins after combat operations and reconstitution begins when the force closes upon the redeployment assembly area. During redeployment, contracts for transportation of materiel and maintenance may be used extensively to regenerate the force. The force requests the supporting movement control agency to provide movement authorization to move from the tactical assembly area to the redeployment assembly area. Redeployment for the PREPO AFLOAT forces is conducted in seven phases:

- Reconstitution for strategic movement.
- Movement to redeployment assembly area.
- Turn-in of PREPO AFLOAT equipment and supplies to USAMC/USAMMA.

- Movement to POE.
- Strategic lift.
- POD reception.
- POD onward movement.

SECTION V. COMMANDER'S GUIDE TO DEPLOYMENT OPERATIONS

GENERAL

The OPP is a temporary task organization of support personnel boarded on each ship prior to departure from its home port (siting) location to prepare the afloat equipment and supplies for off-load at the contingency port. The task organization for the OPP differs for each vessel due to ship characteristics and equipment loads. Normally, the brigade commander provides one officer to serve over all as the OIC of the OPP, and a subordinate OIC for each OPP detachment per ship involved in the operation.

Each roll-on/roll-off ship has its own separate OPP element with approximately 20-25 mechanics, 20-25 equipment operators, 5 biomedical maintenance medical logistic personnel, and 25 representatives from the transportation composite group responsible for the discharge operation. The mechanics and vehicle operators must be qualified to operate the equipment loaded on their assigned ships.

The assigned deploying brigade briefs the OPP OIC and detachment OIC on their responsibilities and priority of tasks prior to departure. Tasks are accomplished in coordination with the ships master. Necessary tools, parts, and equipment deploy with the OPP to accomplish the required tasks.

CONCEPT OF OPERATIONS

Upon activation, the OIC of the OPP makes arrangements for deployment of the OPP to meet the PREPO AFLOAT ships at their home port or at a point during their transit to the SPOD. Ideally, the OPP should embark on the ship at least 24 hours prior to departure. Coordination must be made for the OPP to be loaded onboard during transit or at a port along the route to the SPOD. If the OPP cannot be onboard during vessel movement, it becomes part of the brigade lead element and embarks as soon as the ships arrive in the SPOD. If the latter occurs, the time required to prepare the ships for off-load may be extended.

Upon arrival at the embarkation point (ship siting location), the OIC of each ship OPP detachment reports to the ships master and coordinates required life support and priority of tasks assigned to the OPP detachment.

The applicable Army service component coordinates through USTRANSCOM with the MSC concerning the deployment of the OPP and required support at embarkation, transit, and arrival at the SPOD. Helicopter support may be needed from the home station embarkation port to fly the OPP element to the ship location if under sail.

Each OPP detachment at the earliest opportunity, under the control of the ships master, should become familiar with the vessels load plan and location of all equipment. The ships master provides guidance as to maintenance limitations due to safety. Unlashing of cargo and equipment during movement is not allowed. If civilian maintenance contractors are on board, the OPP detachment augments the civilian contractor to accomplish their assigned OPP tasks.

OPP tasks include the following:

- Inspect tires (visually) for underinflation; add air if required. Visually inspect tracks for excessive slack. If required, perform adjustments.
- Check for leaks in and around the vehicle/equipment. Check fluid levels in engines, gear boxes, transmission, transfers, and differentials. Add fluids, if required.

- Remove waterproofing and preservation material from exhaust and intake openings. Remove all packing material that impedes proper equipment/vehicle operation.
- Check the fuel filter; ensure the element is installed and serviceable. Add fuel additive to fuel tanks as required. Check belt tension; adjust if necessary.
- Install or activate batteries. Correct starting procedures must be used to avoid damage to the electrical system. Established safety procedures and precautions must be followed when activating dry batteries. Electrolyte causes serious injury if it comes in contact with the body. Use protective clothing and equipment when handling acid or batteries. Flush overflows or spilled acid from vehicle surfaces. These instructions also apply to batteries supplying power to auxiliary equipment on vehicles. The ship masters approval is required before batteries are installed or activated.
- After the "before operational checks" have been completed, and with the approval of the ships master, start the engine, and after a warm-up period, accelerate gradually to approximately one-half full power (one-half maximum allowable rpm). Observe/listen to the engines response relative to noise and/or vibration. If satisfactory, the vehicle or equipment is ready to operate.
- Perform limited technical inspection of equipment to include medical. Tag any equipment that requires maintenance. Equipment that requires maintenance is identified with a tag attached to the left front and rear of the piece of equipment. The following color code system is used:
 - - RED TAG. Needs major repairs.
 - - YELLOW TAG. Needs minor repairs or adjustment
 - - NO TAG. Generally satisfactory condition.

Secondary loads in trailers or cargo beds are not tagged or inspected due to time constraints.

- Conduct a walk-around inspection (if possible) to ensure all safety requirements have been met prior to placing the item in service.
- Ensure equipment logbooks/ record jackets are present.

The onboard USAMC contractor personnel assists the OPP as set forth in their contract. In addition to the pre-offload preparation, the OPP is responsible for marking vehicles for distribution to the proper element within the brigade and corps support group (CSG) units per guidance issued by the assigned brigade commander.

The OPP OIC provides a distribution plan and appropriate distribution tags to each ships OPP detachment OIC.

The OPP detachment OIC affixes the distribution tag to the lower right corner of the passenger side front windshield/ corner of the vehicle. The tags are color coded:

- WHITE - Combat brigade (with support base) units.
- GREEN - CSG units.

Based on the color of the distribution tag, separation of the onboard equipment can be made during discharge and movement into the marshaling area. In the marshaling area, further equipment sorting into unit configuration is accomplished.

The priority for equipment preparation is:

- Materiel handling equipment (forklifts, cranes).
- Transportation equipment that supports the throughput of equipment and supplies (line haul tractors/trailers, wreckers, re-fuelers).
- Class VIII (medical).
- Remainder of onboard equipment.

OPP transition at the SPOD:

- The OPP force is incorporated into the advance party upon its arrival at the SPOD. They assist in the discharge of onboard equipment and supplies.
- The port commander has OPCON of the PSA. The PSA includes the OPP and additional personnel, such as drivers and mechanics. It assists in the throughput of PREPO AFLOAT equipment and supplies.

ACCOUNTABILITY TRANSFER PROCEDURES

All PREPO AFLOAT materiel is issued to and managed by the brigade and other support elements as deemed appropriate by the Army forces commander. To facilitate a rapid transition, equipment and supplies are issued to the brigade and other support elements on the tactical STAMIS hardware. The STAMIS hardware is uploaded with the current base line. Equipment and supplies are accounted for and managed during conflict IAW AR 710-2.

Class I

Procedures to be determined by the Defense Logistics Agency, USAMC, and Information Software Systems Development Center at Fort Lee.

Class V

Each ship carrying ammunition will have updated data files in Standard Army Ammunition System (SAAS) format containing all necessary accountability data for those Class V stocks loaded on the ship. Additionally, the ammunition support team that deploys to the theater prior to the arrival of the PREPO AFLOAT or follow-on ammunition ships will have a SAAS computer loaded with the specific Class V data of each ship carrying Class V. Upon arrival, the ship SAAS disk is provided to the ammunition support team to ensure exact data match. The ammunition support team then establishes and reports asset visibility and begins in-theater Class V management from this data base. Ammunition stocks are issued to the brigade, CSG, and managed by the Corps Materiel Management Center (CMMC) IAW Army forces logistics plan. If the CMMC is not established, the ammunition support team provides Class V management for the theater. For Class V assets airlifted into theater, an element of the ammunition support team has a team at the APOD to identify in-coming stocks and report accountability data to the primary ammunition support team element located at the SPOD.

Class VII and Other Items Requiring Property Book Accountability

These stocks are temporarily transferred from USAMC to the deploying unit via the Standard Property Book System-Redesign (SPBS-R). Temporary transfer occurs using STAMIS files in SPBS-R. The deploying unit commander and USAMC representative revise the accountability transfer to reflect the property book items actually issued.

Class VIII

PREPO AFLOAT ships carry the following types of Class VIII materiel:

- Medical equipment and materiel sets.
- Recommended stockage lists.
- Other individual items of medical equipment.

Each ship loaded with medical materiel will have a data file in the battle book with complete inventory data for the materiel loaded on that ship. The data files will be in a format that is compatible with the Theater Army Medical Management Information System Medical Supply and Medical Assembly modules. The files also provide the gaining unit visibility of component shortages and exclusionary items (items not packed due to special storage requirements) within all medical equipment sets, medical materiel sets, and recommended stockage lists.

The USAMMA LSE deploys to the theater prior to the arrival of the PREPO AFLOAT ships. The USAMMA LSE updates the data file for each ship as required prior to the transfer of accountability to the gaining units property accountability element. The USAMMA LSE directs the flow of inbound exclusionary item packages from the APOD to the gaining unit. Additionally, the USAMMA LSE provides the gaining unit(s) with quality control information, such as shelf-life extensions. The Food and Drug Administration recalls and suspends medical supplies. Limited technical guidance for medical supplies is provided by the USAMMA LSE. Medical maintenance and logistics personnel from the supporting division or corps should deploy as members of the OPP with the necessary tools and test equipment to place all medical equipment into operation.

All Other Classes of Supplies

These stocks are issued by USAMC on the tactical STAMIS. Issue occurs using STAMIS files for Unit Level Logistics System, Standard Army Maintenance Systems, Standard Army Retail Supply System-1 Interim (SARSS-1[I]), Standard Army Retail Supply System-Objective, and Direct Support Unit Standard Supply System-Desktop III. The deploying unit commander and USAMC representative revise the accountability transfer to reflect the equipment and supplies actually issued.

Note. The unit commander, at his option, may elect to take less than the total quantity of equipment and supplies loaded on or discharged from the ships. USAMC retains accountability for all equipment and supplies not issued.

SECTION VI. N-HOUR SEQUENCE

CONOPS begin when the unit is notified to deploy. The division or other higher headquarters of the brigade initiates planning. This planning sequence is called the N-hour sequence.

Note. The following example is for a brigade that is directed to deploy as part of a division alert force. This sequence is developed around the deployment of an initial ready company (IRC) in 18 hours, a division ready force (DRF) in 48 hours, and a division ready brigade (DRB) in 72 hours.

ITEM	N-HOUR	EVENT	IRC	DRF	DRB	DIV
001	N+0	Division receives notification and notifies the appropriate units per SOP.	X	X	X	X
002		Division begins to recall and assemble personnel.	X	X	X	X
003		Division transportation officer (DTO) establishes liaison with supporting transportation operations agencies.			X	
004		Provost marshal office is notified to open any needed installation gates.				
101	N+1	DRB representative is briefed on available information at the EOC.			X	X
102	N+1.5	OPSEC and physical security measures are initiated. MI assets conduct an OPSEC and classified information sweep of the EOC and other sensitive areas.	X	X	X	X
103		MPs report to brigade EOC.			X	
201	N+2	Separate battalions activate EOCs and enter the division command net.				X
202		Separate battalions activate local security measures for headquarters buildings and motor pools per unit SOP.				X
203		DRB S2 identifies required map sheets (scale) and quantities and provides requirements to G2.			X	X
204		DRB and separate battalions dispatch LO to division EOC.			X	X
205		DTO/ITO begins coordination for air transportation.			X	X
206		DTO/ITO coordinates with G3 Ops to evaluate transportation requests and give priority to IRC, DRF, and DRB respectively.			X	X
207		DTO/ITO initiates preplanned IRC, DRF, and DRB ground transportation requests. Dispatches as required.			X	X
208		ITO with DTO coordination, commences preplanned pallet distribution to IRC, DRF, and DRB.			X	X
209		Battalions conduct SAEDA, OPSEC, and safety briefings. Report completion of all subelements to next higher headquarters.	X	X	X	X
210		SO designates SOI edition, key materiel, and operations codes.			X	X

ITEM	N-HOUR	EVENT	IRC	DRF	DRB	DIV
211		IRC personnel draw sensitive items from arms rooms.	X			
212		IRC personnel install combat filters in protective masks.	X			
213		IRC barracks personnel wall lockers are banded and signed over to designated personnel.	X			
214		IRC personnel park their POVs in a POV storage area.	X			
215	N+2.5	Battalions submit personnel STATREPs to brigade EOC current as of N+2.		X	X	
301	N+3	DISCOM provides two 88M (MOS) and one forklift operator to the IRC commander.	X			X
302		Units report number of personnel assigned and number signed in. Provide a shortage list, by name.	X	X	X	X
401	N+4	N+4 briefing to command group, unit commanders, and principal staff.	X	X	X	X
402		<p>Make the following decisions NLT the conclusion of the N+4 briefing with the command group:</p> <ul style="list-style-type: none"> ● Are the IRC, DRF and DRB to deploy? ● Is the div(-) to deploy? ● What is the CG approved task org? ● What modes of travel will the DRF, DRB, and div(-) use? ● Are climate clothing, equipment, or immunizations required? ● Which division CP package will deploy? ● Is linguistic support required? ● Recall TDY, leave, and special duty (SD) personnel? ● Control local telephone access? ● What are the LO requirements to higher headquarters? 		X	X	X
403		Issue FRAGOs to IRC, DRF, and DRB based on N+4 decisions.	X	X	X	
404		Battalions notify brigade EOC of nonessential phone lines to be disconnected. EOC informs DOIM.		X	X	X
405		DOL opens ASPs for issue of Class V and coordinates required support.				
406		G3 provides guidance on packing list for contingency area.				X
407	N+4.5	Battalions provide SITREP.		X	X	X
408		DRB reviews current unit family assistance plan.			X	

ITEM	N-HOUR	EVENT	IRC	DRF	DRB	DIV
501	N+5	Transportation reports to DRB for movement of IRC personnel to APOE.			X	
502		Units pick up SOI packages from respective SOs.	X	X	X	X
503		Battalions begin preparation for overseas movement (POM) by exception. Screen 100% of personnel. DRB S1 reports the number of exceptions that need G1/AG, JAG, medical, and finance support.		X	X	X
504		G3/G4 identify vehicles not painted with paint scheme and establishes a priority for painting.			X	X
505		Battalions identify and forward any supplemental support requirements.	X	X	X	
506		DTO/ITO verifies USAF aircraft flow schedule and coordinates any critical times.			X	X
507		Battalions scheduled to deploy provide brigade EOC with lists of mission essential equipment shortfalls.			X	X
508		Draw IRC ammunition package and transport to APOE.			X	X
509		Back-up secure communications for the EOC and the APOE are provided.			X	X
601	N+6	Review all actions. Complete all N+6 actions and, until ordered, conduct an operational halt, (except the IRC).	X	X	X	X
602		Initiate packing of TOE equipment IAW load plans. Report completion to EOC.		X	X	
603		Forward a list of nondeployables by category.			X	
604		DISCOM and DOL provide the EOC a material readiness report on all float assets.				
605		DRB unit movement officer provides DTO a copy of unit movement plans for passengers (PAX) and equipment to deploy by air.			X	
606		G3/DTO/ITO allocate transportation IAW N+4 decisions to DRF/DRB/DIV(-), to move personnel and equipment with respect to priority.			X	X
607		DTO/ITO in coordination with DRB, designates transportation to move Class V to staging areas.			X	X
608		DRB initiates internal cross-leveling of equipment.			X	
609		Inventory of TA-50 initiated. Units draw shortage items from CIF IAW established SOPs and priorities. Report completion to the EOC.	X	X	X	
610		Separate battalions validate movement plans with G3/DTO/ITO. Update unit equipment listing (UEL).				X
611		DRB begins coordination for logistic support requirements with DOL and DEH.		X		
612		D/AACG is operational at APOE.			X	

ITEM	N-HOUR	EVENT	IRC	DRF	DRB	DIV
613		Medics report to support D/AACG.			X	
614		PMO provides TCPs for movement of deploying units from the installation to the APOE.				
615	N+6.5	Coordinate for turn-in of secret and confidential documents with the DOIM Records Management Support Branch. Coordinate turn-in of top secret documents with the EOC.			X	
616		Report the number of POVs to store.		X		
617		Direct cross-leveling of equipment beyond the DRB's capability.				
618		Rear detachment requirements and nondeployables identified and assigned to a provisional battalion.			X	X
619		Draw medical items from division medical support office (DMSO) IAW established SOPs and priorities.			X	
701	N+7	S2 picks up maps from DMMC.	X			
702		Begin movement to APOE. Report arrival to EOC.	X			
801	N+8	IRC enters isolation upon arrival at APOE.	X			
802		Coordination meeting with DTO, MCO, and IRC commander at APOE.	X			
803		Conduct current situation update at APOE for the IRC.			X	
901	N+9	D/AACG liaison commences; inspection begins in the alert holding area as the IRC arrives.	X			
1001	N+10	Separate battalions provide name, rank, and phone number of rear detachment cdr to the EOC.				X
1002		IRC/DRF report all previous tasks completed.	X	X		
1003		MSB load teams and USAF conduct joint inspection and prepare to load IRC pallets and vehicles on aircraft. (Based on arrival times of aircraft.)	X			
1004		DTO/ITO begin staging rail equipment for movement to SPOE.			X	X
1005		DRB identifies on-board ship party (OSP).			X	
1006		DRB commence turn-in of POVs to storage area. Report completion to EOC.			X	
1007		EOC FWD established at the APOE.			X	
1201	N+12	G1/AG manifest teams report to EOC FWD at APOE.				X
1401	N+14	DRB draws chemical protective clothing and additional contingency items, such as special clothing and supplemental equipment.			X	
1402		Separate battalions continue packing and initial weighing of center of balance for possible air deployment. Report completion to EOC.				X

ITEM	N-HOUR	EVENT	IRC	DRF	DRB	DIV
1501	N+15	IRC organizes personnel in chalk order at the personnel holding area in the APOE.	X			
1601	N+16	IRC final manifesting of personnel.	X			
1602		Class VIII supplies and medical personnel for the OSP are identified.			X	
1701	N+17	IRC personnel and TAT equipment loaded onto aircraft.	X			
1801	N+18	Wheels up for first IRC deployment aircraft followed by remaining aircraft every 20 minutes. IRC follows outload sequence until completion.	X			
1802		MEDDAC assumes operational responsibility for troop medical clinics (TMC) upon notification.				
1803		Unit status reports (USR) are updated as units deploy.			X	X
1804		DRB submits departure report and personnel daily summary per division SOP.			X	
2401	N+24	Logistical coordination meeting with DRF/DRB, S4, G4, DISCOM, DTO, DOL, and DEH on deployment status.	X	X	X	
2402		DRF commences preparation of bulk cargo for movement.		X		
2403		Separate battalions draw basic load of MREs from troop installation support activities (TISA).				X
2801	N+28	Class V begins arriving at DRF staging area.				
2802		DRF/DRB unit personnel install combat filters in protective masks.			X	X
2803		Separate battalions submit critical vehicle and equipment shortages required for deployment.				X
2804		Manifests prepared.		X	X	X
3001	N+30	DRB requisitions and draws NBC medical items from MEDDAC (for OSP personnel).			X	
3002		DRB commences loading Class V ammunition and weighing and marking equipment.			X	
3003		DRF moves to staging area and prepares vehicles for rail movement.		X		
3201	N+32	NBC items issued to OSP personnel.			X	
3202		DRF loads Class V.		X		
3601	N+36	Medics identified to support staging areas and rail sites.				X
3602		DRF/DRB wheeled vehicles commence marshaling.		X	X	
3603		DRB reports nondeployables to GS/AG. Nondeployables are reassigned to the provisional battalion.			X	
4001	N+40	OSP personal items inventoried/receipted. OSP POV turn-in completed.		X	X	
4401	N+44	Separate battalion movement officers establish liaison with PSA and DOL.				X

ITEM	N-HOUR	EVENT	IRC	DRF	DRB	DIV
4701	N+47	DRF begins rail loading and roadmarching to the SPOE.		X		
4801	N+48	Begin DRF rail movement to the SPOE.		X		
4802		PSA operational at SPOE.				
4803		Inventories of personal property consolidated and provided to installation representative.			X	X
5001	N+50	Units report residual major end items remain under control of the garrison commander.			X	X
5301	N+53	DRF first rail load arrives at SPOE. (Depends on TDIS of SPOE.)		X		
5401	N+54	DRF/DRB vehicles commence movement to SPOE staging area. TTU begins receipting for equipment.		X	X	
5801	N+58	OSP personnel depart for SPOE on order.			X	
5802		DRF/DRB finalize ship and air manifests.		X	X	
6001	N+60	DRF reports personnel ready to move to APOE.		X		
6501	N+65	DRF stages combat vehicles for loading of first ship.		X		
7101	N+71	First DRB convoy movement to SPOE begins.			X	
7201	N+72	First DRB rail movement to SPOE.			X	

APPENDIX H TACTICAL STANDING OPERATING PROCEDURES

CONTENTS
Section I. General
Section II. Battle Command Procedures
Section III. Standing Operating Procedures
Section IV. Reports

(Classification)

HEADQUARTERS

____BDE____DIVISION ()
(Location)
(Date)

____BRIGADE (____) TACTICAL STANDING OPERATING PROCEDURES

SECTION I. GENERAL

H-1. Purpose. This TSOP prescribes guidance for conducting sustained tactical operations. Specifically, it standardizes recurring operational routines, procedures, and responsibilities executed by both organic and supporting organizational elements within the brigade.

H-2. Application/Scope. This TSOP covers only wartime operations after deployment. It does not repeat doctrine, tactics, or techniques provided in FMs, TMs, and MTPs. It applies to all organic, assigned, attached, and OPCON units. It also applies to all supporting units operating in or occupying areas within the brigade's area. All TSOP provisions apply except as modified by OPORDs and OPLANs.

H-3. Directed Supporting Documents.

- a. This TSOP and all subordinate TSOPs incorporate all current provisions of FMs, TMs, Army and division regulations, STANAGs, joint agreements, and status of forces agreements.
- b. Each brigade staff section develops and implements standard TSOPs to govern procedures for their own functional areas. Staff section TSOPs must conform to the procedures this SOP contains.
- c. Each subordinate unit publishes a TSOP that supports and conforms to the brigade TSOP. The brigade commander approves subordinate unit TSOPs.

H-4. Proponency. The brigade XO and battalion XOs are proponents for their respective TSOPs. Ensuring compliance of established TSOPs throughout the brigade is a command responsibility monitored by commanders and staffs at all levels.

H-5. Changes.

- a. Submit changes through the appropriate coordinating staff officers to the brigade XO.
- b. The brigade XO coordinates all changes.
- c. The brigade commander is the approval authority.

SECTION II. BATTLE COMMAND PROCEDURES

This section describes operating procedures for brigade command and control. This section is not all inclusive. It establishes the basic guidelines for procedures and operation of CPs. Subordinate units develop their own CP SOPs to conform to guidance in this TSOP.

H-6. Succession of Command.

- a. Brigade succession of command is brigade commander, maneuver commanders by seniority, brigade XO, and brigade S3. If the brigade has a deputy commanding officer versus an XO, the deputy commanding officer assumes command before the maneuver commanders.
- b. A new commander will notify the next higher headquarters and all subordinate headquarters of the change of the brigade commander.
- c. Succession will be automatic upon the commander's death, capture, or evacuation. The brigade XO should be notified as soon as possible to publish assumption of command orders.

H-7. Alternate Command Posts.

- a. The brigade alternate main CP when in contact is the TAC CP until the brigade rear CP assumes duties.
- b. The alternate main CP is activated when
 - The brigade's main CP's surviving elements inform the command net of attack, of destruction, or the inability to function.
 - A unit or element reports, and the report has been verified, that the main CP has been destroyed.
- c. If the main CP is destroyed or otherwise inoperable, the following units and/or organizations assume the functions listed in Table H-1 until the main CP is regenerated and operational.
- d. The TAC CP's alternate CP is the command group. Activation criteria are the same as for the alternate main CP.
- e. The rear CP alternate CP is the FSB CP.

MAIN COMMAND POST FUNCTION	DESIGNATED ALTERNATE
Command Center	Rear Command Post
Operations/Planning/A2C2	Tactical Command Post
S2 Operations	
Fire Support Element	Direct Support Artillery Battalion
Engineer	Engineer Battalion
Air Defense Artillery	Air Defense Artillery Battery
Nuclear, Biological, Chemical	Brigade Chemical Platoon
Signal Officer	Signal Platoon

Table H-1. Temporary units and organizations functions.

H-8. Command Post Shift Cycles. All brigade and battalion CPs conduct staggered shift changes. Shifts of duty are 12 hours long. Change-of-shift briefs must not disrupt continuous performance of CP functions.

H-9. Displacement Operations.

- a. CP displacement for all brigades and battalions is by echelon so command and control of subordinate forces is uninterrupted.
- b. Before movement, "A" and "B" echelons must have redundant capability to perform CP functions.

H-10. Security.

- a. Each CP is responsible for establishing its own security.
- b. Off-shift personnel sleep in or near fighting positions surrounding the CPs.
- c. Fighting positions are designated as being 360 degrees around the CP.
- d. CP security elements establish a security zone from 500 meters to 1 kilometer, dependent on METT-T, around the CP. They conduct the following operations to interdict enemy ground forces:

- Road checkpoints.
 - Patrols.
 - LPs and OPs.
 - Employment of sensors.
 - Employment of GSR; if available.
- e. The CP operations NCO coordinates the employment of the security force.
 - f. Access to a CP is controlled only when using classified material. Control is accomplished by limiting access to one entrance and by checking identification.
 - g. Additional security measures are implemented as the situation dictates.

H-11. Orders and Plans.

- a. Unless otherwise stated, the time used in all brigade OPORDs is ZULU.
- b. The brigade XO and S3 have the authority to issue WOs in the brigade commander's name.
- c. The brigade XO and S3 have the authority to approve and issue written FRAGOs in the brigade commander's name.
- d. The main CP S3 operations element provides sequential numbers preceded by the current fiscal year for all brigade written orders (Example: OPORD 98-1, 98-2, 98-3). The S3 operations element of all subordinate and supporting units is responsible for issuing orders numbers for their command.
- e. The following procedures apply when publishing orders:
 - a. The S3 has overall responsibility for orders and plans.
 - b. Staff sections review and sign annexes if they are submitted for separate distribution. If they are distributed with the order, annexes are not signed.
 - c. The brigade sends verbal FRAGOs by the most expeditious means available (followed by hard copy and overlay by couriers).
 - d. The brigade uses the following guide for annexes:

● Annex A. Task Organization	S3
● Annex B. Intelligence	S2/S3
● Annex C. Operations Overlay/Concept of Operations	S3
● Annex D. Engineer	ENGR
● Annex E. Army Aviation	S3/ALO
● Annex F. Air Defense	ADO
● Annex G. Fire Support	FSO
● Annex H. A2C2	S3/ALO/ADO
● Annex I. Electronic Warfare	S2/FSO/IEW
● Annex J. Signal Operations	SO
● Annex K. Deception	S3
● Annex L. Psychological Operations	S3
● Annex M. Nuclear, Biological, andNBCO Chemical Defense/Smoke Operations	NBCO
● Annex N. Military Police	MP
● Annex O. Rear Operations	S3/XO
● Annex P. Service Support	S4
● Annex Q. Movement	S3/S4
● Annex R. Civil Affairs	S3
- f. Subordinate units acknowledge receipt of OPORDs to the issuing CP. Subordinate units submit one copy of all orders and overlays to the S3 operations element. S3 operations element is responsible for reproducing copies for internal use and distribution.

- g. When the brigade is not committed to combat operations, the elements listed in Table H-2 receive copies of the OPLANs for the upcoming operations. This list is only used when there is sufficient time to reproduce and distribute a complete order.

COPY NUMBER	ADDRESSEE
1	Brigade Commander
2	File
3	Brigade Main Command Post
4	Brigade Tactical Command Post
5	Division Main Command Post
6	Division Tactical Command Post
7	Subordinate Battalion
8	Subordinate Battalion
9	Subordinate Battalion
10	Attached Battalion
11	Attached Battalion
12	Direct Support Artillery Battalion
13	Engineer Battalion
14	Aviation Battalion
15	Forward Support Battalion
16	S4/S1
17	Commander, HHC
18	Air Defense Artillery
19	Signal Platoon
20	Military Police Platoon
21-21	Adjacent Units
23-25	Spares

Table H-2. Elements receiving copies of the operation plan.

- h. The brigade uses FRAGOs and WOs when it is committed to combat operations. Written copies go only to commanders and staff officers who need to know.
- i. Keep the proliferation and copying of orders to the absolute minimum at all times.
- h. The brigade S3 maintains a historical file (one copy) of all orders the brigade headquarters issues and of those received from higher and adjacent headquarters. All other copies are destroyed within five days after the complete execution of the base order.
- i. After issuing the brigade order, the brigade S3 assumes control of any division, corps, or joint task force orders in the headquarters.
- j. PLs from higher headquarters will not be renamed.
- k. In brigade OPORDs and on operations maps, brigade objectives (for the battalions) will be used. The related division objective (to the brigade) is in parenthesis before or above the brigade's specified objective. Battalions must incorporate this procedure into their TSOPs.
- l. The brigade orders group assembles to receive or disseminate oral or written orders. Orders-group members assemble by organic transportation at a location and time the commander designates. The commander may call one of three orders-group compositions shown in Table H-3, depending on the situation.
- m. Orders group designees normally do not bring subordinate commanders and staff to orders-group locations. Vehicle drivers provide temporary local security.

ORDERS GROUP A	ORDERS GROUP B	ORDERS GROUP C
Brigade Commanders with Command Group. Battalion Commanders.	Brigade Commander. XO. S3. S2. Battalion Commanders/ S3s/FSOs. Aviation Battalion Commander. FSCoord. Reconnaissance Troop Commander (SAB).	Brigade Commander. All Battalion Commanders /S3s/FSOs. All Coordinating Staff. All Special Staff Group.

Table H-3. Orders-group compositions.

SECTION III. STANDING OPERATING PROCEDURES

H-12. Task Organization. Table H-4 shows the routine task organization of the organic brigade elements and represents the brigade's standard combined arms fighting organization for combat. This grouping applies until specifically changed by verbal or written OPORDs, FRAGOs, or WOs. This task organization is the basis for most brigade movement, and tactical employment planning.

1st BATTALION	2d BATTALION	3d BATTALION
___ Mech Co	___ Armor Co	___ Armor Co
___ Mech Co	___ Armor Co	___ Armor Co
___ Armor Co	___ Armor Co	___ Armor Co
___ Armor Co	___ Mech Co	___ Mech Co
		BRIGADE TROOPS
		___ Recon Element
		___ FA Bn (DS)
		___ Engr Bn
		___ IEW Tm (DS)
		___ ADA Btry
		___ Sig Plt
		___ MP Plt
		___ Cml Plt

Table H-4. Task organization.

H-13. Control Methods and Procedures.

- a. Liaison Officers and Noncommissioned Officers Procedures.
 - a. Under the XO's supervision, the brigade employs organic LO teams to provide reciprocal liaison functions from the brigade to the following units as needed:
 - Adjacent units.
 - Main effort brigade.
 - Follow and support effort brigade.
 - b. The receiving headquarters provide administrative support for LO teams.
 - c. The receiving headquarters administrative support provides for LO teams or individuals, including accommodations and rations; and maintenance, fuel, and lubricants.
 - d. Before leaving the parent headquarters, the LO teams
 - Obtain maps, call signs, overlays, and orders for upcoming operations.
 - Understand the commander's intent.
 - Obtain the current operations status from the operations center.
 - Check all staff sections for information to forward to higher or adjacent headquarters.
 - Note any task organization changes.

- Obtain written copies of FRAGOs, WOs, contingency plans, and OPLANs (when available).
 - Obtain phone numbers, secure fills, and radio frequencies.
 - Notify the XO of their departure.
- e. After arriving at the receiving unit, the LO teams:
- Report to the receiving unit Chief of Staff or XO with their parent unit's current situation, status, location, and plans.
 - Contact the parent unit, informing it of their arrival (receiving an update, if required).
 - Review the receiving unit's situation and identify problems.
 - Exchange information with each receiving unit staff section as required.
 - Inform the XO or Chief of Staff of their anticipated departure.
 - Obtain required or available copies of FRAGOs, WOs, contingency plans, and OPLANs for subordinate units of the receiving headquarters.
- f. After returning to the parent unit, LOs must brief the XO or S3 on the following information pertaining to the supporting headquarters status, including as a minimum:
- Upcoming operations and mission requirements for the supported unit (contingency plans, OPLANs, and FRAGOs).
 - The commander's intent for current and future operations.
 - Current and projected priorities for CS and CSS.
 - Changes in task organization and organization for combat.
 - Updated unit locations.
 - Any other specific information required by the parent unit's commander.
- b. Standard Operational Brevity Code Words. During all radio and wire communications, all units under brigade control will use the operational code words listed below to shorten transmission time.

BINGO	Switch to second alternate frequency.
BLITZ	Move; move to; move out.
BOG	An area that will not support the unit's heaviest vehicle. For example, "Route HAWK, klick 6 to klick 7, bog."
CANDLES	Artificial illumination. For example, "Request candles, B71."
CHATTER	Communications jamming. For example, "There is chatter on my internal."
CHECKPOINT	An easily identified point such as a bridge or intersection on a route of march.
COLD	Area clean of enemy.
DUMP TIRS	TIRS has been compromised; cease use until further notice.
DYNAMITE	Air defense warning that alerts the force to inbound or attacking aircraft NOW. It requires immediate response.
ESTABLISHED	The unit has consolidated a position at the designated control measure location. For example, "We have established A21."
FIRESTRIKE	An immediate FA mass fire mission that delivers about one module of ammunition.
FIX	Send your location to me. For example, "Fix, out." Send me the location of _____. For example, "Fix T3J22, out."
FLASH, FLASH	Clear the net immediately, critical traffic follows.
GAS	Chemical attack.
GEIGER CHASE	Radiological survey or monitor. For example, "Geiger chase N21 to W33."
GEIGER SOUR	Area monitored or surveyed is contaminated.
GEIGER SWEET	Area monitored or surveyed is not contaminated. For example, "From A21 to W33, Geiger Sour; D51, is Geiger Sweet."
GET	Put specific person designated by call sign on the radio. For example, "Get F11, out."

GUIDONS	Net call. Subordinates answer to branch and unit sequence (infantry, armored, artillery, engineer) by unit numeric designation. Companies use letter sequence; platoons use numeric sequence.
HOSTILE	A unit, vehicle, or aircraft positively identified as enemy.
HOT	An area occupied by enemy.
HOT STEEL	Immediate FA mass mission that delivers about 10 modules of ammunition.
HUSH	Levels of signal security. (HUSH one-free net; HUSH two - directed net; HUSH three - directed net with radio-listening silence imposed.)
IRON HAMMER	Replanned FA mission that delivers about one module of ammunition against a specific EA.
JAILBREAK	Radio-listening silence is lifted.
KLICK	One klick equals one kilometer (one grid square on a 1:50,000 or 1:100,000-scale tactical map).
LONG RUN	Movement by alternate bounds.
MIDDLEMAN	Radio relay.
MODULE	A FA 155-mm standard ammunition package consisting of a battalion six DPICM.
NOTHING HEARD	The station called does not (or did not) answer. For example, "X79, this is H22, nothing heard, out."
ORDERS	Oral orders to follow, prepare to copy, put the call sign principal on the radio (see also get).
PLOT	General enemy and friendly summary and commander's assessment; a quick, informal exchange of information between commanders and operations officers; not a formatted report.
PRESENT	A call sign principal report to a specified location. For example, "F37 present at N26, 30 minutes."
RUN-IN	A code word used by a moving unit during a rearward passage of lines to warn friendly units that it is "running" toward them and that enemy forces are pursuing it.
SET	Used during a maneuver to indicate that the sender (bounding unit) has completed its bound and is prepared to overwatch from its present position (see also established).
SILENCE	Absolute radio silence imposed on all net users (said three times).
STAND TO	A time at which a unit has achieved a readiness condition in which it is fully prepared to fight (readiness condition [REDCON] 1).
STAR BURST	A rapid dispersal of a unit to avoid enemy aircraft. Elements turn violently left or right as appropriate, and drive away from each other while jinking. All weapons are oriented to engage enemy aircraft.
SWITCH	Change to an alternate frequency. Specify which frequency by the frequency designation or the call sign of the commander of the frequency to be used. For example, "Switch ALPHA JULIET (Antijamming); Switch N5F32" (the unit frequency whose commander is N5F32).
THUNDER	Immediate FA mass mission that delivers about three modules of ammunition.
THUNDER RUN	A high-speed (50-kph or faster) road movement in march column formation. The commander normally leads.

c. Terrain Index Reference System.

- a. The brigade uses TIRS to provide a quick, accurate method of controlling the maneuver of units, passing out control measures, and "fragging" a change in mission. It is used with checkpoints, PLs, and other graphic control measures.
- b. The user pinpoints the location by shifting on a horizontal-vertical scale from the TIRS point to the locations.
- c. On secure radios, use TIRS in the clear. For example, "From Y17, Right 1.5, up .5." The listener finds point Y17, then measures 1.5 kilometers to the right (east) and .5 kilometers up (north) to find the desired location.
- d. On nonsecure methods, encode the numeric portion of the TIRS.

- e. TIRS is established from higher to lower. The brigade S3 designates TIRS for the brigades' battle space. Subordinate headquarters may establish supplemental TIRS. TIRS is always alphanumeric. The first character is the only letter and is allocated as shown in Table H-5.

Brigade Tactical Command Post/Brigade Main Command Post	A
Brigade Rear Command Post	B
1st Battalion	C,D,E,F
2d Battalion	G,H,I,J
3d Battalion	K,L,M,N
Aviation Battalion	O,P
Reconnaissance Element/Troop	R
Artillery Battalion (Direct Support)	S
Attached/Operational Control Units	T,U,V,W
Brigade Spares	X,Y,Z

Table H-5. Supplemental terrain index reference system.

- a. Do not use TIRS when requesting fires or denoting enemy locations. Use only target numbers or grids.
- b. Subordinate brigade units use only those TIRS designated by the brigade.
- f. If a TIRS map or overlay is lost, captured, or compromised, the responsible headquarters will report the code words, "Dump TIRS--(echelon code)" to higher headquarters. Full notification and reestablishment of a new TIRS is a command action. The echelon code indicates the highest level of compromised TIRS: DISTANT = Division, BELOW = Brigade, BASE = Battalion, CELLAR = Company.
- d. Division Recognition Techniques.
- a. Combat Vehicle Marking System. The division's combat, CS, and CSS vehicles are marked for rapid identification from the rear and sides (see Figure H-1). This enhances control during battle by providing quick and easy visual identification of units on the battlefield. It also helps when reconstituting forces and in the prevention of fratricide. This section prescribes standard symbols for marking division vehicles. The following restrictions apply when marking vehicles:
- Use only standard chemical-agent-resistant coating paint (black and sand).
 - Markings apply to all specified vehicles within the organization.
 - Markings consist of numbers and chevrons of the style and size this section describes; locations are standardized.
- b. Major Subordinate Command Vehicle Markings. Vehicles of the divisions MSCs are identified by a combination of a single half-chevron and a two-digit numeric identifier. They always begin with a zero and have a single half-chevron placed immediately adjacent and to the right of the numeric identifier. Assigned division MSC numeric identifiers are:
- 00\ Division headquarters and headquarters company.
 - 01\ 1st brigade.
 - 02\ 2d brigade.
 - 03\ 3d brigade.
 - 04\ Aviation brigade.
 - 05\ DIVARTY.
 - 06\ DISCOM.
 - 07\ DIVENG.
- c. Unit Identifiers. Table H-6 shows the digits and symbols that are assigned to division units.
- d. Marking Size. The space between the numbers and the half-chevron on vehicle markings is 2 inches. Side and rear markings are placed on doors or other flat surfaces and must not be obstructed by equipment, camouflage nets, or other miscellaneous items. Marking location and size may be adjusted to accommodate the type of vehicle.

ID	UNIT	ID	UNIT	ID	UNIT
00\	Div HHC	03\	3d Bde	05\	DIVARTY
01\	1st Bde	7	___Mech	1	___FA
1	___Mech	8	___Mech	2	___FA
2	___AR	9	___AR	3	___FA
3	___AR	0	___AR	4	___/_MLRS
02\	2d bde	04\	Avn Bde	5	___/_TAB
4	___Mech	3	___AHB	/3	___ADA Bn
5	___Mech	4	___AHB	/1	___Engr Bde
6	___AR	5	___CAC	06\	DISCOM
		6	___AHC	/6	MSB/FSBs
ID	UNIT				
/2	___Cav Sqdn				
/4	___MI Bn				
/5	___Sig Bn				
/7	___MP Co				
/8	___Cml Co				

Table H-6. Unit identifiers.

- e. Separate Battalions, Squadrons, and Companies. Vehicles assigned to division units are identified by a half-chevron and a two-digit numeric identifier combination. The first digit of the two-digit identifier designates the battalion or squadron and the second digit identifies subordinate company, troop, or battery-size units. The accompanying half-chevron identifies the vehicle as a division separate battalion, squadron, or company. These half-chevron identifiers are placed immediately adjacent and to the left of the numeric identifiers. Division unit identification markings are:
- /1 Engineer brigade.
 - /2 Cavalry squadron.
 - /3 ADA battalion.
 - /4 MI battalion.
 - /5 Signal battalion.
 - /6 Division main and FSBs. (Note. /60 = MSB; /61 = 1st FSB; /62 = 2d FSB; /63 = 3d FSB).
 - /7 MP company.
 - /8 Chemical company.
- f. Company, Troop, and Battery Markings. Company, troop, and battery-level units are assigned the following numbers:
- 0 Headquarters and headquarters company/troop/battery.
 - 1 A company/troop/battery.
 - 2 B company/troop/battery.
 - 3 C company/troop/battery.
 - 4 D company/troop/battery.
 - 5 E company.
- g. Platoon Markings. Platoons (or sections) are identified by the application of a single or double directional chevron. They are applied along with battalion- and company-equivalent identifiers. Figure H-2 shows platoon identifiers.
- h. Vehicle Top Markings. When directed, combat vehicles near or used in CAS missions will display one US17 panel on top of the vehicle. Panels must be removed after CAS missions if air superiority is not maintained. Chemical lights are placed on top of all vehicles for night

recognition by friendly aircraft. Three lights are placed horizontally on any flat, open surface, protected from observation by enemy forces (see Figure H-3).

- e. Signals.
 - a. Standard NATO signals are used throughout the brigade to direct tactical formations and tactical actions.
 - b. Flag Signals.
 - a. Flags are issued to armored and mechanized units for control purposes and as alternate means of communications within these units. Flag signals, once understood, are repeated and executed at once.
 - b. When used alone, flag colors have the following meanings:
 - a. **Red** danger, or enemy in sight.
 - b. **Green** all clear, ready, or understood.
 - c. **Yellow** disregard, or vehicle out of action.
 - c. During periods of limited visibility, flashlights with colored filters or colored chemical lights may be substituted for flags.
 - f. Alarms and Warning Procedures.
 - a. Enemy Attack. Warning color codes indicate the probability or likelihood of enemy attack or contact. These color codes apply to all combat action operations:
 - a. **White** attack or contact is not likely.
 - b. **Yellow** attack or contact is likely.
 - c. **Red** attack or contact is in progress or is imminent.
 - b. Chemical Attack. The warning for a chemical attack is given by a continuous series of three short vehicle horn sounds, metal-on-metal, or electronic chemical alarms, and the words "Gas, Gas, Gas."
 - c. Air Attack. The warning for an air attack is given by the words "Dynamite, Dynamite, Dynamite" along with the general direction from which the attack is coming. Continuously sounding a vehicle horn augments voice warnings.
 - d. Indirect Fires. The words "Incoming, Incoming, Incoming" warn of indirect fires.
 - g. Threat Condition (THREATCON). The S2 develops THREATCON based on enemy capabilities, actions, sightings, and assessments of terrorist factors. THREATCONs dictate appropriate adjustments to security plans and manning levels of CPs or base defenses. Subordinate commanders may designate higher THREATCONs based on the local situation.
 - a. The THREATCON is a two-digit warning which is passed throughout the entire division's rear area to ensure receipt. The first digit is numeric (1-5) and is based on the overall threat. The second digit is alphabetic (A-D) and is based on terrorist assessments.
 - b. The THREATCON is based on the enemy's capabilities as shown by the IPB, past and present actions of enemy forces in the rear area, and any sightings of enemy forces in the rear area. A level of 1 indicates the lowest assessment of threat; 5 indicates the highest threat assessment; for example:
 - a. Enemy capability.
 - b. Enemy sightings in area.
 - c. Enemy activity in area.
 - d. Attack probable.
 - e. Attack imminent.
 - c. In determining the THREATCON, the assessment factors of existence, capability, history, trends, and targeting are considered.
 - a. **Alpha** indicates a low assessment.
 - b. **Bravo** indicates a medium assessment.
 - c. **Charlie** indicates a high assessment.
 - d. **Delta** indicates an imminent assessment.
 - h. Readiness Condition. All brigade elements use the readiness criteria in terms of time to state current readiness status or to direct the attainment of a specific readiness status in anticipation of combat operations.

REDCON ONE:	I am fully ready to execute the assigned mission and will initiate execution on receipt of orders.
REDCON TWO:	I can be ready to execute an assigned mission in 15 minutes.
REDCON THREE:	I can be ready to execute an assigned mission in 30 minutes.
REDCON FOUR:	I can be ready to execute an assigned mission in 1 hour.
REDCON FIVE:	I can be ready to execute an assigned mission in hours. (Specify number if more than one hour.)

- i. Fixed Call Signs. On enemy contact, the brigade uses the fixed call signs shown in Table H-7 when using secure communications.

ELEMENT	CALL SIGN
Brigade	TANK
Brigade Main Command Post	TANK X-RAY
Brigade Tactical Command Post	TANK OSCAR
Brigade Rear Command Post	TANK ZULU
1st Battalion	STEEL
2d Battalion	BULLDOG
3d Battalion	BAYONET
Aviation Battalion	HAWK
Artillery Battalion (Direct Support)	WARLORD
Forward Support Battalion	PACK MULE
Engineer Battalion	SAPPER
Intelligence Electronic Warfare Team	SKYHAWK
Air Defense Artillery Battery	THUNDERBOLT
Signal Platoon	WAVES
Military Police Platoon	DILLION
Chemical Platoon	BLACK FLAG
	SUFFIX
Commander	6
Executive Officer	5
Deputy	Suffix + Bravo (that is 3B)
Command Sergeant Major	7
S1	1
S2	2
S3	3
S4	4
S5	8
Scout	29
Battalion Maintenance Officer	10
Fire Support Element/Coordinator	30
Chemical/NBC	31
Air Liaison Officer	32
Army Airspace Command and Control	33
Engineer	34
Signal Officer	9
Provost Marshal Officer	35
Inspector General	36
Public Affairs Officer	37

Table H-7. Fixed call signs

ELEMENT	SUFFIX
Staff Judge Advocate	38
Chaplain	39
Note. The brigade uses nickname, historical phone directory, or call-sign listings (names listed here are examples only).	
Surgeon	40
S3/Air 3	ALPHA
Liaison Officer	LIMA
Main Command Post Operations	MIKE
Tactical Command Post Operations	TANGO
Rear Command Post Operations	ROMEO
Net Call Station	NOVEMBER
Driver	DELTA
Pilot	PAPA
Radiotelephone Operators	YANKEE
PLATOON NET DESIGNATIONS	
1st Platoon/Scouts	Red
2d Platoon/Mortar	White
3d Platoon/Support	Blue
4th Platoon/Maintenance	Green
Communications Platoon	Orange
Medical	Black
Chemical/NBC Reconnaissance Platoon	Yellow
PLATOON MEMBER DESIGNATIONS	
Platoon Leader	6
Platoon Leader Wingman/1st Squad	1
Platoon Sergeant	7
Platoon Sergeant Wingman/2d Squad	2
3d Squad	3
4th Squad	4
Table H-7. Fixed call signs (continued).	

Table H-7. Fixed call signs (continued).

ELEMENT	PREFIXES
COMPANY/TROOP/BATTERY PREFIXES	
A Company/Troop/Battery	APACHE
B Company/Troop/Battery	BANSHEE
C Company/Troop/Battery	COMMANCHE
D Company/Troop/Battery	DRAGONS
AT Company/SVC Battery	EAGLE
Headquarters and Headquarters Company/Troop/Battery	FOXTROT
COMPANY SUFFIXES	
Commanding Officer	6
Executive Officer	5
First Sergeant	7
1st Platoon Leader	16
2d Platoon Leader	26
3d Platoon Leader	36
Weapons Platoon Leader	46
ATTACHED/CROSS-ATTACHED SUFFIXES	
Armor	T
Mechanized	M
Engineer	E
Ground Surveillance Radar	R
Air Defense Artillery	A
Attack Helicopter	H
Note. If you are a mechanized infantry company commander (C Company) cross-attached to a tank battalion, your call sign would be CM6. This avoids the confusion of having two C Companies in the net.	

Table H-7. Fixed call signs (continued).

H-14. Tactical Road Movement.

- a. Responsibility. The S3 operations, located at the brigade's main CP, is responsible for all tactical road movement planning. The TAC CP controls tactical movements.
- b. Planning Factors. (Planned for standard task organization.)
 - a. Rate of March.
 - a. On all-weather, hard-surfaced, four-lane, limited-access roads, the rate of march will be 29 mph or 48 kph.
 - b. On all other roads, 20 mph or 32 kph.
 - c. In congested urban areas, 12 mph or 20 kph.
 - d. During blackout, 10 mph or 16 kph.
 - e. During Blitz or Thunder Run, at the fastest speed possible.
 - b. Intervals
 - a. Between vehicles: daylight, 50 meters. At night and within city or village limits, 25 meters.
 - b. Between march units: 2 minutes.
 - c. Between serials: 5 minutes.
 - c. Convoy Composition.
 - a. Ten to 24 vehicles per march unit (maintain tactical integrity).
 - b. Two to 5 march units per serial (maintain tactical integrity).
 - c. Maximum 5 serials per convoy (maintain tactical integrity).
 - d. Halts. Periodic rest and maintenance halts planned and conducted for 20 minutes after the first 2 hours; 10 minutes every 2 hours thereafter.
 - e. Illumination. Vehicles in a convoy will have their lights on low beam. Blackout driving will be in effect forward of the light line if required by light conditions.
 - f. Convoys moving in the same direction will not pass one another without permission from the TAC CP.

- g. Reports. The MPs will call over secure nets, in all convoy reports (lead vehicles crossing point) at SPs, TCPs, RPs, and any other critical points when the unit is crossing.
- h. Convoy Control.
 - a. Each battalion is provided a block of time for movement.
 - b. Subordinate battalions commanders will appoint serial and march unit commanders.
 - c. Disabled vehicles will be left to the side of the route of march for pick-up by trailing maintenance and recovery elements.
- i. Security. At least one alert air guard or observer will be posted per vehicle during movement; weapons are to be oriented for 360-degree engagements.
- c. Standard Orders of March for Tactical Movements. The brigade will conduct tactical movements on one or two routes.
 - a. One route of march:
 - a. Brigade Unit
 - b. Armor Battalion
 - c. Brigade TAC CP
 - d. Military Police Platoon
 - e. Artillery Battery
 - f. Mechanized Battalion
 - g. Artillery Battalion(-)
 - h. Main CP
 - i. Armor Battalion(-)
 - j. FSB Platoon
 - k. Brigade Troops
 - l. Mechanized Company
 - b. Two routes of march:

ROUTE A	ROUTE B
Battalion Scouts	Battalion Scouts
Quarterming Parties	Quarterming Parties
Combat Unit	Combat Unit
Mechanized Battalion	Armor Battalion
Artillery Battalion(-)	Artillery Battalion(-)
Armor Battalion	Brigade Troops
FSB Platoon	
 - c. Standard orders of march are subject to redesign based on the nature of future operations and METT-T.
- d. Units task-organized to support an organic brigade unit (DS, attached, OPCON, assigned) move with the supported unit. All others are inserted into the march order as the situation dictates.
- e. Route Priorities.
 - a. Movement of tactical units and unit displacement have priority over other moves. Other priorities are as follows:
 - a. MEDEVAC.
 - b. Combat unit.
 - c. CS.
 - d. CSS.
 - e. CSS resupply moves in order of transportation priority.
 - f. Combat unit moves to rear to assembly areas.
 - g. CS units move rearward.
 - h. CSS moves to rear.
 - i. Infiltration moves (moves without clearance).
 - b. The brigade S4 denotes routes in the brigade's sector (except MSRs), and reports their status through the FSB to the DISCOM MCO.
 - c. The S3 IAW the division highway regulation plan develops the traffic circulation plan.
- f. Refugee and Host-Nation Traffic Movements.
 - a. Refugee and host-nation traffic is routed on secondary roads (other than MSRs) when possible.
 - b. Movements of host-nation traffic (10 or more vehicles, or 100 or more people) must be coordinated with the S3 through the division transportation officer before movement.

- c. With host-nation law-enforcement personnel, brigade MPs will assist, direct, and/or deny movement of host-nation traffic and refugees.

H-15. Assembly Area Occupation. (This also applies to occupation of attack positions.)

- a. Composition of Assembly Areas.
 - a. The brigade establishes two separate and distinct assembly areas within the division assigned brigade assembly area, a tactical assembly area, and the BSA. They are normally from 17 to 25 kilometers apart.
 - b. During the occupation of all assembly areas, 12 o'clock is always North.
 - c. Units occupying the BSA report to the rear CP. Other elements report to the S3 operations at the main CP.
 - d. The brigade tactical assembly area is occupied by the following elements:

TAC CP and Main CP (collocated)	Center Sector
Artillery Battalion, Engineer Battalion, and Brigade Troops	Center Sector
1st Battalion	12-4
2d Battalion	4-8
3d Battalion	8-12
 - e. The BSA is occupied by the following elements:

Rear CP	Center Sector
1st Battalion Field Trains	10-12
2d Battalion Field Trains	12-2
3d Battalion Field Trains	2-4
Artillery Battalion Field Trains	4-6
FSB	6-8
Engineer Field Trains	8-10
- b. Quartering Party Procedures. The brigade's quartering parties move to and occupy its assembly area in two phases. After receiving the brigade's movement WO, all phase I elements move to a location designated by the brigade S3, near the vicinity of the TAC CP, four hours before the phase II start time. Phase I elements have priority on all routes during this movement.
 - a. Phase I (Battalion Scouts). Battalion scout platoons augmented with ADA and engineer sections conduct route reconnaissance and area reconnaissance of assembly areas. Designated mechanized infantry units follow the scouts and emplace TCPs as necessary.
 - b. Phase II (Battalion Quartering Party). Battalion quartering parties consist of battalion CP elements and one vehicle per company-size element. Company quartering parties consist of one vehicle per platoon.
 - c. Unit Quartering Party Procedures. The unit quartering party prepares the assembly area for occupation by the main body by :
 - a. Reconnoitering and marking the route from the RP to the designated assembly area and posting guides as required at points of possible confusion.
 - b. Surveying assembly area for NBC contamination and reporting and marking contamination as directed.
 - c. Securing the assembly area from refugees and local residents.
 - d. Locating and marking positions for each CP.
 - e. Placing guides at the RP.
 - f. Placing one guide per platoon at each company team RP.
 - g. Monitoring the progress of the main body and reporting any conditions that might significantly alter the planned march to and occupation of the assembly area.
 - d. Unit Occupation Procedures.
 - a. The main body moves without stopping through the RP to the designated location to pick up its guides.
 - b. Each subordinate element flashes a standard unit-recognition signal at the RP, and pick up their guide without stopping.
 - c. Vehicles do not stop or halt until reaching the platoon RP. The quartering party then guides the lead vehicles to their locations.
 - d. Units verify final vehicle and weapons positioning. They also clarify fire planning and obstacle plans, if necessary.

- e. All units refuel (rearm if necessary) from organic assets on arrival.
- f. Units must report if they have lost 10 percent or more of their strength (vehicles or weapons systems) during the movement.
- e. Communications.
 - a. Wire communications are used within each assembly area.
 - b. All quartering parties report SPs, checkpoints, RPs, and mission-completes to the parent headquarters' CP via FM or MSE communications.
 - c. Mission-complete indicates that all quartering party tasks have been performed, unit areas have been designated and marked, and guides are in position to guide main body elements to their positions.
 - d. The subordinate unit SOPs must establish recognition signals to aid in recognition and identification of parent units during times of limited visibility.

H-16. Other Tactical Operating Procedures.

- a. Linkup Operations.
 - a. Coordination Checklist (not in priority):
 - a. Command relationship of units and the effective time.
 - b. Enemy situation and obstacle plans.
 - c. Mutual recognition signals.
 - d. Communications plan.
 - e. Schemes of maneuver and graphic control measures.
 - f. FS and FSCMs.
 - g. Primary and alternate linkup points.
 - h. Requirements for liaison exchange.
 - i. Assistance required.
 - j. Alternate plans if initial linkup fails.
 - b. Stationary Unit. Assistance the stationary unit can normally provide:
 - a. Guides.
 - b. Lanes through obstacles of airhead.
 - c. Traffic control.
 - d. Limited logistic, medical, and maintenance support.
 - e. Information on recent enemy activity.
 - c. Moving Unit. Assistance the moving unit can normally provide:
 - a. Limited logistic, medical, and maintenance support.
 - b. FS.
- b. Relief-in-Place Operation.
 - a. Coordination Checklist (not in priority):
 - a. Time for the relief.
 - b. Routes, guides, and linkup points.
 - c. Assembly areas and positions to be occupied.
 - d. Liaison, reconnaissance, and advance parties.
 - e. FSCM.
 - f. Obstacle plans.
 - g. Passage of command.
 - h. Call signs.
 - i. Frequencies.
 - j. Recognition signals.
 - k. The disposition of relieved unit supplies (POL, ammunition, rations) that the relieved unit will not take with it.
 - l. R&S plan.
 - m. Direct fire plans.
 - n. Enemy situation.
 - o. Friendly situation.
 - b. Sequence of Events (for relief in contact and not in contact).
 - a. After receiving the division WO, procedures for tactical road movement go into effect. The brigade reconnaissance troop conducts route reconnaissance from the brigade's present

- location to the AO of the unit to be relieved and makes initial linkup with the unit being relieved.
- b. The brigade's TAC CP follows to collocate with the TAC CP of the unit being relieved. It establishes linkup points for battalion coordination parties.
- c. Passage of Command. The incoming unit brigade commander assumes command of the sector and OPCON of all units within the sector at the established SP time for the relieving unit to begin moving from an assembly area to conduct the relief.
- c. Forward Passage of Lines. (Applies only when enemy forces are not within direct or indirect-fire range of the in-place unit.)
 - a. Coordination Checklist (not listed in priority):
 - a. Time for the passage.
 - b. Routes, guides, and linkup points.
 - c. Assembly areas.
 - d. Liaison, reconnaissance, and advance parties.
 - e. Passage corridor SP and RPs through the in-place unit.
 - f. FS (direct and indirect).
 - g. Obstacle locations and lanes.
 - h. Passage of command.
 - i. Call signs.
 - j. Frequencies.
 - k. Recognition signals.
 - l. ADA coverage and weapons control status.
 - m. Enemy and friendly situation.
 - b. Sequence of Events. The TAC CP moves to collocate with the TAC CP of the unit being passed through as well as establishes linkup points for battalion coordination parties and begins coordination.
 - c. Passage of Command. The passing brigade assumes control of the unit it passes at the established SP for movement out of an assembly area to begin the passage.
- d. Rearward Passage of Lines.
 - a. Sequence of Events. The TAC CP coordinates the following:
 - a. The location of in-place units and obstacles throughout the in-place unit's area.
 - b. The passing unit's tactical disposition.
 - c. The location of the BHL.
 - d. The tactical assembly area and routes out of the tactical assembly area (if not provided by division).
 - e. The passage lanes and PPs to support the scheme of maneuver.
 - f. The contact point for each passage lane and the guide requirements.
 - g. The routes to each contact point.
 - h. The route from each passage lane to the tactical assembly area.
 - i. Detailed locations of units and obstacles.
 - j. The locations of rally points.
 - k. The CSS responsibilities.
 - l. Arrangements for additional reconnaissance.
 - b. Passage of Command. Tactical control of the passing unit passes to the stationary unit at a designated time established by higher headquarters or at a time coordinated between the two units.
 - c. Sequence of Passage:
 - a. Rear CP with MP platoon.
 - b. FSB.
 - c. Chemical platoon.
 - d. Main CP.
 - e. Engineer battalion.
 - f. Aviation battalion.
 - g. Reserve (if not committed).
 - h. Supporting effort battalion with attachments.
 - i. TAC CP.
 - j. Command group.

- k. Main effort battalion.
- d. Isolated or Cut-Off Units or Individuals. Units or individuals isolated, cut off, or forced to conduct passage of lines through an area or unit other than as previously coordinated will use the following procedures:
 - a. Attempt radio contact.
 - b. Establish contact with the stationary unit using challenge, password, and recognition signals in SOIs.
 - c. Execute passage.
- e. Hasty Passage (Run-in). Run-in is used when enemy actions prevent the execution of a previously coordinated passage.
 - a. The run-in unit disengages and moves into formation for passage.
 - b. On the radio, the run-in unit provides:
 - a. The complete call sign.
 - b. Prowords. (For example, "Run-in, Run-in.")
 - c. Number of vehicles in the passing element (in the clear).
 - d. Transmission authentication. (For example, "This is W7N36, run-in, run-in, three. I authenticate DELTA, FOXTROT.")
 - c. Retransmit the above data until receiving a reply or completing passage.
 - d. The moving unit stays on clearly defined routes; it conducts run-ins with vehicle headlights on, weapons oriented toward the enemy, and armored vehicle recognition signs facing friendly units.
- e. River Crossing Operations.
 - a. Crossing Force Headquarters.
 - a. Location: brigade TAC CP. When available a division engineer group CP collocates with the brigade TAC CP.
 - b. Crossing force commander: appointed by division commander.
 - c. Crossing force engineer: senior engineer element commander.
 - b. Crossing Area Headquarters.
 - a. Crossing area commander: brigade XO.
 - b. Crossing area engineer: senior engineer supporting the brigade.

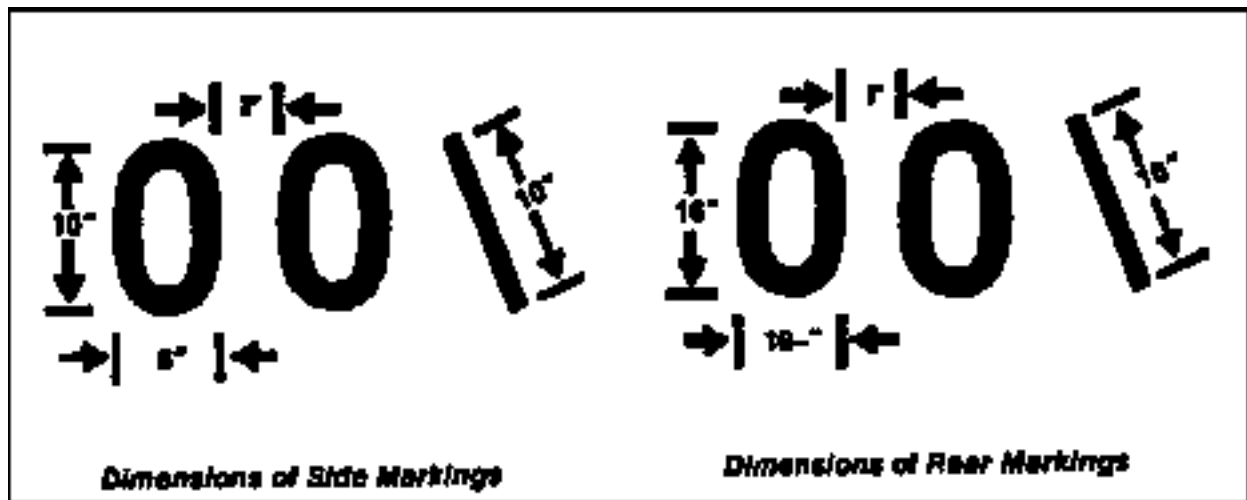


Figure H-1. Vehicle marking dimensions.

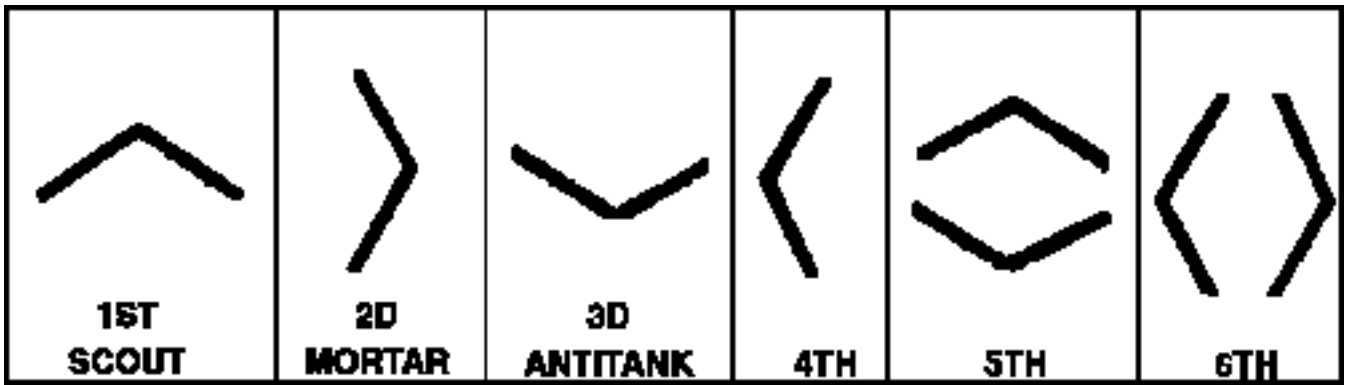


Figure H-2. Platoon markings.

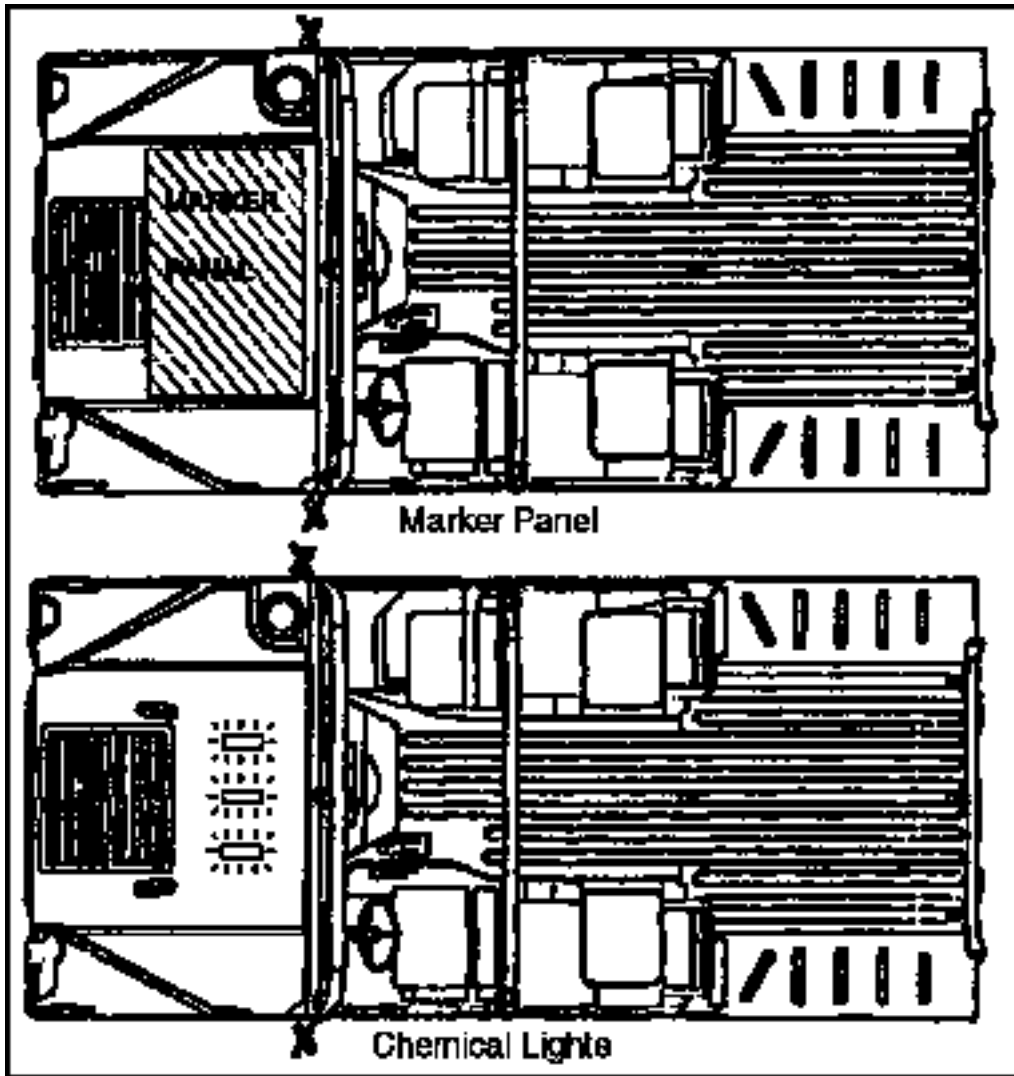


Figure H-3. Vehicle top markings.

H-17. Air Defense Artillery Procedures.

- a. Air Defense Warnings (ADW). The regional air defense commander establishes the ADW for the entire region, which can encompass an area larger than that of the corps. Consequently, the entire division could be at ADW Red with no air attack imminent. Because the region can be large, the ADW seldom changes during daylight. Consequently, the ADW may not reflect a true evaluation of the local air threat to air defense and maneuver units.

1 . ADW Red - air attack is imminent or in progress.

2 . ADW Yellow - air attack is probable.

3 . ADW White - air attack not probable.

- b. Local Air Defense Warnings (LADW). LADWs are broadcast over communications nets. They reflect an evaluation of the air threat to the brigade and require a specific response by air defense and other units in the brigade.

1. LADW Dynamite - Air attack is imminent or in progress.

a. Actions taken by ADA units:

- Air defense weapons occupy firing positions.
- Observers intensify their search for aircraft.
- Platoon leader actively monitor the directed early warning net.

b. Actions taken by other units:

- Cease movement and seek overhead cover if possible.
- Except for those in direct contact with the enemy, have personnel and weapons directed toward the sky.
- Intensify efforts to monitor the directed early warning net.

2. LADW lookout - air attack is probable.

a. Actions taken by ADA units:

- Air defense weapons are kept in a ready state.
- Observers intensify their search for the air threat.
- Platoon leaders actively monitor the directed early warning net.

b. Actions taken by other units:

- Deploy observers to search for the air threat.
- Continue mission, but minimize movement.
- Improve passive air defense measures (camouflage from aerial observation).
- Intensify monitoring of the directed early warning net.

3. LADW Snowman - No hostile air threat in the division area.

a. Actions taken: none.

- b. ADA and other units can conduct all normal field operations.
- c. Weapons Control Status (WCS). The WCS is used to control fires in regard to aerial engagements. They are established by the regional air defense commander. Maneuver commanders may establish a more restrictive measure based on his mission, intent, and air traffic. He can not, however, ease the control status (from weapons tight to weapons free) without approval from the regional air defense commander.
 1. Weapons Free: Fire at any aircraft not positively identified as friendly.
 2. Weapons Tight: Only fire at aircraft positively identified as hostile. (ADA units losing communications with higher ADA headquarters will assume weapons hold status.)
 3. Weapons Hold: Do not engage except in self defense or in response to a formal order.
- d. Hostile Criteria. An aircraft is considered hostile when:
 - It is visually identified as an enemy.
 - It attacks friendly forces or facilities by
 - Discharging smoke or spray.
 - Airdropping soldiers without prior coordination.
 - Dropping bombs or ordnance.
 - It maneuvers to attack friendly forces or facilities.
 - It meets any additional hostile criteria published in OPLANs or OPORDs.
- e. Rules of Engagement.
 1. Brigade is Not Committed. Air defense weapons are restricted to self-defense engagements only.
 2. Brigade is Committed. ROEs will be established. Commanders may establish a more restrictive weapons control status for engaging in their sector. However, they may not impose a less-restrictive status. Combined arms for air defense will be controlled and operated under weapons tight criteria.
- f. Early Warning System. The early warning system is quick, simple, and redundant in nature. The three types of early warning are digital, voice, and directed.
 1. Digital early warning track data is the primary means of early warning communication to ADA units. Voice early warning is the alternate method. The division ABMOC receives track data simultaneously from AWACS and other radar. This track data along with the WCS and ADW are transmitted using EPLRS or SINCGARS to tactically employed sensors. The sensors correlate that information with their own local track data and send it to ADA unit headquarters. The ADA units then broadcast this data over the directed early warning net to maneuver units.
 2. Voice early warning is the method of disseminating directed early warning. It is the alternative to digital early warning.
 3. Directed early warning is designed to alert a specific unit or area of the battlefield of an immediate aerial threat. ADOs will pass this early warning over their supported unit command net. Directed early warning defines:
 - LADW.

- Hostile/friendly/unknown air threat.
- Location.
- Cardinal direction.
- The element most likely affected within the force.

An example is "DYNAMITE, DYNAMITE, TWO HOSTILE JETS, AT PL BLUE, HEADING EAST TOWARDS ASSEMBLY AREA BUDWEISER."

H-18. Army Airspace Command and Control Operating Procedures.

- a. A2C2 is the responsibility of the brigade commander for operations within brigade boundaries. While there is no formal A2C2 special staff element at brigade level, primary staff responsibility resides with the brigade S3-Air in the main CP. Other members of the brigade A2C2 element include the S2, FSO, ADA, and aviation LO, and the ALO. The element may be augmented by an air traffic services LO.
 1. Responsibilities. The primary tasks of the A2C2 staff element include:
 - Developing and coordinating airspace control SOPs, plans, and annexes.
 - Coordinating the integrating airspace user requirements within the AOs to include other services and adjacent units.
 - Identifying and resolving airspace user conflicts.
 - Approving, staffing, and forwarding requests for special use airspace to the next higher headquarters.
 - Maintaining A2C2 information displays and maps.
 2. Procedures. The brigade coordinates airspace and air control measures through the operations channels. Since it is not a formalized staff element, the brigade A2C2 staff is not equipped with assets (communications, ADP equipment) dedicated to the A2C2 mission. Coordination is accomplished via MSE, FAX , radio, or FAADC3I.
- b. A2C2 Control Measures. Methods to accomplish A2C2 vary throughout the range of military operations from war to OOTW. These methods range from positive control of all air assets in the brigade area to procedural control of such assets with any effective combination of positive and procedural control between the two extremes.
 1. Positive Control. Positively identifies, tracks, and directs air assets using radars, other sensors, IFF/SIF, digital data links, and other elements of the digital data system.
 2. Procedural Control. Relies on previously agreed to and promulgated airspace control measures such as comprehensive air defense ID procedures and ROE, graphic control measures, and coordinating altitude. Effective DTGs will be annotated with each plotted control measure. The following paragraphs are examples and definitions of graphic control measures (see FM 100-103).
 - a. Standard Army Aviation Flight Route. Routes that are established below the coordinating altitude to facilitate the movement of Army aviation assets. Normally, these routes are located in the corps through the brigade rear area. Although standard Army aviation flight routes are established by corps and division, the brigade is responsible for specifying the termination points (vicinity BSA/FSB) for their respective brigade.
 - b. Air Corridors. An air corridor is a restricted air route of travel specified for use by

friendly Army aircraft and established to prevent friendly forces from firing on friendly aircraft. They are temporary in nature, established as required to route combat elements of the corps or division aviation brigade (or UAV) between assembly areas, holding areas, BPs, FARPs, and target EAs.

- c. Air Control Points. An easily identifiable point on the terrain or an electronic navigational aid used to provide necessary control during air movement.
- d. High Density Airspace Control Zone. A high density airspace control zone is a defined area of airspace that is requested by the maneuver force commander, normally division and above. A high density airspace control zone reserves airspace and controls which airspace users have access to the zone. The maneuver commander can also direct a more restrictive weapons status within the high density airspace control zone. The activation of the high density airspace control zone at the request of a maneuver brigade commander (and approved by the division commander and the airspace control authority) within a brigade sector requires that the brigade control all airspace use within the high density airspace control zone. The brigade A2C2 staff within the CP may serve as the controlling element, or the brigade commander may request that the division attach an air traffic services element to the brigade headquarters to assist the brigade S3 with airspace control responsibilities.
- e. Restricted Operations Zone. A volume of airspace of defined dimensions designated for a specific operational mission. Entry into the zone is authorized only the originating headquarters. This airspace control measure requires airspace control and authority approval.
- f. Airspace Coordination Area. In FS operations a restrictive FSCM that establishes a three-dimensional block of airspace in the battle in which friendly aircraft are reasonably safe from friendly surface fires. Aircraft and indirect fire are separated by time, space, and/or altitude. The purpose of the ACA is to allow the simultaneous attack of targets near each other by multiple FS means, one of which normally is air.
- g. Low Level Transit Route/Minimum Risk Route. A minimum risk route (low level transit route in NATO) is a temporary flight route recommended for Air Force use. It presents the minimum known hazards to low-flying aircraft in the control zone. The minimum risk route must be approved by the airspace control authority and avoids FS systems, air defense weapons, LZs, PZs, FARPs, and Army airfields.

H-19. Signal Procedures.

a. Operations.

1. Call signs and frequencies will change daily at 2400 hours (local time) unless in contact with enemy forces. Call signs and frequencies will not change when any battalion-size element is engaged with enemy forces.
2. The CPs priorities for signal support and installation are:
 - Combat net radio.
 - MSRTs.
 - Mobile subscriber route phones, FAX, and CT.

b. Brigade Responsibility.

1. Coordinate with the signal battalion on procedures to pick up their signal support teams.

2. Provide logistics to signal support team.
 3. Include the signal team chief on all new site reconnaissance and planning meetings. Provide the signal team advance notice before relocation to accomplish coordination with the signal battalion.
- c. Signal Support Team Responsibility.
1. Install, operate, and maintain multichannel and TACSAT.
 2. Coordinate signal support requirement with the units SO.
- d. Mobile Subscriber Equipment.
1. The brigade COMSEC office of record will distribute U-and M-key MSRT and U-key. Maneuver control system to unit battalion SOs.
 2. Keys will be tagged as follows:
 - U110X (on the KYK-13 or KYX-15).
 - U = key tape.
 - 110 = HUS location.
 - X = edition.
 3. Keys will change over at 1200 hours on the last day of each month.
 4. The frequency plan for MSRTs will be downloaded from a radio access unit at a location and time directed by the signal battalion.
 5. Each CP and staff section is responsible for the installation of their section's MSE. Sections are responsible for laying their own wire or cable and tagging the wire at both ends with subscriber information (section number, subscriber listing, J-Box number, pair number).
 6. Mobile Subscriber Equipment Support Allocation (see Table H-8).

Table H-8. Mobile subscriber equipment support allocation.

UNIT/COMMAND POST	SEN
Main Command Post	1
Rear Command Post	1
Direct Support Artillery	1
Aviation Battalion	1
Engineer Battalion	1

- e. Combat Net Radios. All radios will be operated in the secure mode. While in the secure mode, fixed call signs may be used. If it is necessary to operate in a nonsecure mode, only call signs or suffixes contained in SOI will be used.
- f. FM Communications.
1. Primary FM nets:
 - Command. For commanders, XOs, S3s, and authorized CPs to relate commander information.
 - Intelligence Net. S2/intelligence gathering and dissemination. The S2 for operations

at the main CP is the NCS.

- A/L Net. For logistical operations. The CSS cell at the brigade rear CP is the NCS.

2. VINSON Guidance.

- a. VINSON is used by the NCS to distribute variables over the FM radio.
- b. Units/staffs will coordinate with their signal support element to ensure their MX-10579 or other electronic counter-countermeasures fill devices are marked and loaded with the correct variables before operation. Information concerning net descriptions, call signs/suffix, frequencies, signs and countersigns, smoke and pyrotechnics, frequency hopping, variables and supersession information is contained in the basic generator unit or the electronic notebook.
- c. Subordinate units use unique VINSONTEK fills. All FM nets internal to that respective unit use the TEK in VINSON-fill position 2.
- d. Organic brigade units cross-attached within the brigade receive new parent units TEK via manual remote keying. Subordinate elements receive these variables via manual remote keying or automatic remote keying operations.

3. Generation of Cryptovariables. The brigade SOs must ensure cyptovariables generated are distributed to all subordinate battalions.

4. Variable Changeover.

- Changeover to be determined based on the tactical situation; however, if possible, occurs every Friday at 1200 local time. When possible, all combat net variables are changed physically using a KYK-13 or KYX-15. Manual keying operations are performed only when absolutely necessary.
- The brigade TEK/RKV is to be changed manually.
- Units are to use their specific variable on their internal nets.

5. All non-SINCGARS radios operate "new squelch on."

6. Retransmission or relay priority is to the:

- Unit command/operations net.
- Unit intelligence net.
- Unit A/L net.

g. AM-Voice Operation (Long-Range Command Net). The AM-voice operation should be activated only on order of the division's main CP TOC or the division's TAC CP.

h. Courier.

1. The brigade S3 will coordinate with the division G3 operations for daily courier operations.
2. The tactical situation determines the courier schedules.

i. Wire. Priority of wire installation to the main CP:

- S3 operations cell.
- S2 section.

- FSE.
- Others.

j. Tactical CP Radio Nets (see Table H-9).

Table H-9. Tactical command post radio nets.

ELEMENT	PRIORITY NETS
Brigade Commander	Division Command/OI Net Brigade Command OI Net
S3	Brigade Command Division Command
S2	Brigade OI Division OI
Fire Support Element (If available)	Fire Support Coordination Net Fire Direction 1
Engineer/Chemical/Air Defense Artillery	Brigade Command Division Command

k. Command group radio nets are established based on the personnel organized within the command group.

1. Main CP Radio Nets (see Table H-10).

Table H-10. Main command post radio nets.

ELEMENT	PRIORITY NETS
S3 Element	Division Command Brigade Command (NCS) Division Command (AM)
S2 Element	Division Intelligence Brigade Intelligence (NCS)
Fire Support Element	Brigade FSC Fire Direction 1 Division FSC
A2C2 Aviation	Battalion Command Air Defense Coordinator AM Air Force
Engineer Element	Brigade Command Engineer Battalion Command

1. Rear Command Post Radio Nets (see Table H-11).

Table H-11. Rear command post radio nets.

ELEMENT	PRIORITY NETS
S1/S4	Brigade Administrative/Logistics (NCS) Brigade Administrative/Logistics AM
Military Police	Brigade Administrative/Logistics
S5	Rear Operations

H-20. Intelligence and Security Procedures.

- a. General Security Procedures.
 1. Units must sweep evacuated CPs, buildings, bivouac areas, and assembly areas to ensure no classified or sensitive material is left behind.
 2. All classified material will be secured.
- b. Named Area of Interest/Target Area of Interest Designation Procedures. The S2 controls and maintains the brigade NAIs designations as shown in Table H-12.

Table H-12. Named areas of interest/target areas of interest designation procedures.

ORIGIN	DESCRIPTION
Brigade (Tactical, Main, or Rear Command Posts)	Numeric only (31-60)
1st Battalion	Begin with J (J1, J2)
2d Battalion	Begin with K (K1, K2)
3d Battalion	Begin with N (N1, N2)
Aviation Battalion	Begin with O (O1, O2)
Light Infantry Battalion	Begin with X (X1, X2)

- c. Document Security.
 1. Do not carry or distribute written classified tactical orders forward of a battalion CP. Top-secret material must always be under armed guard and in the possession of an individual with a top-secret clearance.
 2. Remove classified material immediately from personnel wounded or KIA to prevent its capture or compromise.
 3. Do not permit classified material, except SOIs, to be carried in aircraft flying over enemy lines.
 4. Emergency Destruction of Classified Material.
 - a. Personnel carrying classified material must be prepared to destroy that material in the event of imminent capture. The senior leader present makes the decision to destroy it.
 - b. Each CP vehicle will have thermite grenades in a readily available and marked location. Every member of the CP will be familiar with destruction plans and how to use thermite grenades.
 5. Actions on Loss or Compromise of a Classified Document.
 - a. Inform higher headquarters by fastest secure means if information has been or may have been compromised which impacts tactical operations.

- b. Conduct an immediate, thorough search in the event a document is missing.
- d. Personnel Security. Commanders report AWOL personnel who have access to classified information to the S2 at the brigade main CP.
- e. Counterespionage, Countersabotage, Countersubversion, Disaffection, or Compromise.
 1. Report all known or suspected activities of sabotage, subversion, espionage, disaffection, or compromise of friendly information to the unit intelligence officer.
 2. Segregate from other EPWs persons apprehended in the act of espionage, sabotage, subversion, disaffection, or compromise, or those found in circumstances that indicate they were employed covertly by the enemy.
- f. Enemy Prisoners of War.
 1. Use the five "Ss" (search, silence, segregate, safeguard, and speed to the rear) when processing EPWs.
 2. Tag EPWs and documents and material of possible intelligence value with the minimum following information: DTG, location of capture, capturing unit, and the circumstances of capture.
 3. Escort EPWs to the unit EPW collection point. Do not take EPWs near CPs, TOCs, FDCs, or radios.
 - a. Committed battalions establish an active EPW collection point and designate one future EPW collection point near the MSR or supply route. The brigade S4 recommends the location of the brigade EPW collection point (and future location) to the brigade S3 for approval.
 - b. Battalions must guard and evacuate captured EPWs to brigade collection points. The brigade S4 will coordinate with the division PM for transporting EPWs to the division collection point.
 - c. Battalions evacuate wounded EPWs to battalion-level aid stations. The battalions will evacuate treated and released EPWs to the EPW collection point at brigade.
 - d. Conduct tactical interrogation at the unit level only for information of immediate tactical value. Personnel must not unnecessarily delay evacuation of EPWs.
 - e. To aid follow-on interrogation of EPWs:
 - Screen for NBC contamination and decontaminate as required.
 - Give medical aid as necessary.
 - Give food and water only to sustain life. Do not give EPWs comfort items such as candy or cigarettes.
 - Report EPW capture.
 - Guards and escorts should be firm but fair when dealing with EPWs. They must not allow other friendly personnel to conduct unnecessary conversations with the EPW.
 - Evacuate EPW in the following order:
 - Field grade or higher ranking officers.

- Intelligence officers.
- Security and chemical personnel.
- Others.

4. After interrogation, EPWs are placed in the following categories for evacuation:

- Category A: EPWs of most interest, including general officers and persons with knowledge of intelligence, NBC, PSYOP, logistics, communications, and cryptographic operations.
- Category B: EPWs of some limited intelligence value.
- Category C: EPWs of no immediate tactical value.
- Category D: EPWs of no intelligence value.

g. Captured Documents and Equipment.

1. As with EPWs, captured documents and equipment fall into these established categories. They are:

- Category A: documents and equipment of immediate tactical or strategic value.
- Category B: cryptographic items.
- Category C: items of lesser value to intelligence.
- Category D: items with no apparent value.

2. Report enemy equipment that is new, unusual or NBC-related, or documents that appear to be of immediate tactical value.
3. Tag captured documents and evacuate them by the fastest means. Do not mark or deface documents. Do not destroy documents unless recovery by the enemy is imminent. Never destroy captured medical supplies. Report any destruction of captured material.
4. Contact the S4 for explosive ordnance disposal for assistance in the recovery and evacuation of captured munitions and explosives. Report with other captured materiel.

h. Use of Challenge and Password.

1. All assigned or attached units will use challenges and passwords found in current division SOIs.
2. Change the challenge and password at 1200 hours each day.

i. Reconnaissance and Surveillance.

1. All units will conduct reconnaissance patrols unless otherwise directed.
2. Battalions in contact must report information or intelligence derived from patrols to the S2 at the TAC CP.
3. Battalion-level plans are submitted to the S2 at the main CP not later than one hour after the MSC occupies a static position. Units in the BSA submit plans directly to the FSB CP.

H-21. Nuclear, Biological, and Chemical Procedures.

a. Mission-Oriented Protective Posture.

1. The division will designate the minimum MOPP level. The brigade commander and battalion commanders may increase or decrease the MOPP level as needed, but they may not decrease the MOPP level below the established minimum level without prior approval by the next higher commander.
2. MOPP Uniform. At the various levels of MOPP, soldiers must comply with Table H-13.

Table H-13. Standardized mission-oriented protection posture levels.

MOPP LEVELS							
MOPP Equipment	MOPP READY ³	MASK ONLY	MOPP ZERO	MOPP 1	MOPP 2	MOPP 3	MOPP 4
Mask	Carried	Worn	Carried	Carried	Carried	Worn ¹	Worn
Overgarment	Ready ³	NOTE	Available ⁴	Worn ¹	Worn ¹	Worn ¹	Worn
Vinyl Overboot	Ready ³	NOTE	Available ⁴	Available ⁴	Worn	Worn	Worn
Gloves	Ready ³	NOTE	Available ⁴	Available ⁴	Available ⁴	Available ⁴	Worn
Helmet Protective Cover	Ready ³	NOTE	Available ⁴	Available ⁴	Worn	Worn	Worn
Chemical Protective Undergarment (CPU)	Ready ³	NOTE	Available ⁴	Worn ¹	Worn ¹	Worn ¹	Worn ¹
1. In hot weather, coat or hood can be left open for ventilation. 2. The CPU is worn under the BDU (primarily applies to SOF) or CVC coveralls. 3. Must be available to the soldier within two hours. Second set available in six hours. 4. Within arms reach of soldier. NOTE: Items can be ready or available at the commander's discretion.							

3. Mask Only. Mask only is a "by exception" level. This condition applies to soldiers in vans, tanks, and similar shelters not penetrable by any means. Soldiers do not need to wear protective overgarments or rubber gloves if they are protected from direct skin exposure to liquid or solid contamination.

b. Required NBC Teams. Each battalion will establish the following NBC teams to support tactical operations:

- NBC control party.
- Radiological monitoring and survey teams.
- Chemical survey team.
- Chemical monitoring team.
- Decontamination team.

c. NBC Alarms and Warnings.

1. Standard alarms within the brigade for NBC attack are:

- Vocal: "GAS, GAS, GAS" for suspected chemical or biological attack; "FALLOUT" for arrival of radioactive fallout.
 - Sound: metal on metal.
 - Visual: hand-and-arm signals.
2. Chemical Threat Warning. The chemical threat warning system reflects the latest intelligence estimate regarding the enemy's NBC activity. The brigade chemical officer, S2, and the S3 recommend the chemical THREATCON based on intelligence estimates and reports. The NBC Cell is responsible for disseminating the chemical threat serial.
 3. Chemical Threat Serial (see Table H-14).

Table H-14. Chemical threat serial.

SERIAL	PROBABILITY OF ATTACK	RECOMMENDED MINIMUM MOPP LEVEL
0	None	0
1	Low	0
2	Medium	1
3	High	2

- d. Nuclear, Biological, Chemical Reporting Procedures. Immediately notify the brigade main CP of the enemy's first use of NBC weapons. Use and transmit the prescribed NBC-1 message format to the NBC section. (Two positive M256 detector tests constitute positive identification of chemical agents.)
- e. Marking Contaminated Areas.
 1. The unit detecting the contamination will mark NBC-contaminated areas, using the standard markings prescribed in FM 3-3. Request assistance in NBC reconnaissance through the NBC section.
 2. Commanders may only elect not to mark contaminated areas to obtain a tactical advantage; they must advise any unit assuming responsibility for the area of contamination of its location.
 3. Changes in the status of contaminated areas are to be reported to the NBC section.

H-22. Engineer Procedures.

- a. The engineer battalion commander directs the missions of all engineers in the brigade AOs.
- b. Priority of transport of Class IV and V materiel to obstacle site is as follows:
 - Organic engineer units.
 - Supported unit.
 - Other units as directed.
- c. Countermobility Procedures.
 1. Temporary Obstacle Marking. As the engineer (or other) forces breach a lane, it must be marked in the following manner (use GPS to locate lane entrances).
 - Mark the right and left limit of the entrance with VS17 aircraft marking panels with the orange side facing friendly traffic. Use pickets, from 5 to 6 feet long, to form a tripod on which to attach the panel.

- Use backup entrance markers (sections of empty T-rations containers) with the shiny side toward friendly traffic.
 - During reduced visibility, mark entrances with green and IR chemlights or both. Place chemlights in holders or otherwise modify them so they will be visible only to friendly traffic.
 - The day signal for traffic to proceed is purple smoke on the downwind edge of the open lane. Backup is a gray smoke grenade. There will be picket tripods every 25 meters or closer, as required, with engineer tape to define the limits of the lane.
 - The exit will be marked approximately 10 meters beyond the edge with picket tripods and panels with the red side facing traffic. Night signals will be red chemlights or IR and red chemlights in holders or otherwise modified to shine away from the enemy.
2. STANAGs and minefield and/or obstacle marking methods must be observed as time and resources allow.
- d. Scatterable Mine Procedures.
1. Long-duration scatterable minefields are emplaced only on approval of the division commander, the Assistant Division Commander for Maneuver (ADC-M), Chief of Staff, or G3.
 2. Short duration (anything under 6 hours) scatterable minefields may be delegated to task force commanders.
- e. Battalion Responsibilities.
- Units guard all targets within their sectors of responsibility.
 - Units cover with fire all obstacles within their sectors of responsibility.
- f. Route Maintenance and Repair (Mobility). The brigade rear CP coordinates all requirements for route maintenance with the division rear CP.
- g. Standard Obstacle Packages (see Tables H-15 through H-21).

Table H-15. Triple standard concertina 100 meters.

DESCRIPTION	NUMBER	WEIGHT	CUBE
Pickets, Long (U-Shaped)	54	536	63.7
Wire, Barbed (Reel)	1	92	00.9
Pickets, Short (U-Shaped)	4	16	0.24
Concertina (Roll)	20	617	21.0
		1,261	85.84

Table H-16. Abatis (20 in dia trees) or bridge demolition (2-lane, class 60).

DESCRIPTION	NUMBER	WEIGHT	CUBE
Explosive, C4	173 lbs	173	3.6
Detonating Cord	1,000 ft	77	0.6
Time Fuze	20 ft	5.1	.
Nonelectric Caps	19	neg	neg
Electric Caps	1	neg	neg
Fuze Lighter	1	neg	neg
Mine, AT M15	8	398	9.5
Mine, AP M16	8	90	1.6
		743	15.3

Table H-17. Road crater M-180.

DESCRIPTION	NUMBER	WEIGHT	CUBE
Demo Kit M180	5	895	32.20
Mine, AT M15	6	294	7.00
Mine, AP M16	4	45	0.79
		1,234	39.99

Table H-18. Road crater standard (31 by 18 by 6 feet).

DESCRIPTION	NUMBER	WEIGHT	CUBE
40-lb Shape Charge	7	455	13.10
40-lb Crater Charge	7	364	9.66
1-lb TNT (Booster)	7	neg	neg
Detonating Cord	350 ft	7	.90
Time Fuze	20 ft	neg	neg
Electric Delay Caps	1	neg	neg
Electric Caps	1	neg	neg
Nonelectric Caps	1	neg	neg
Fuze Lighter	1	neg	neg
Mine, AT M15	6	294	7.08
Mine, AP M16	4	45	0.79
		1,185	31.53

Table H-19. Row minefield M-15 (100 by 10 meters); three-strip surface laid.

DESCRIPTION	NUMBER	WEIGHT	CUBE
Mine AT M-15	100	4,900	120.0

Table H-20. Survivability positions (15).

DESCRIPTION	NUMBER	WEIGHT	CUBE
Sheet 3/4-inch Plywood	15	960	30.0
Pickets, Short (U)	120	480	7.2
Sandbags, Unit	6,000	1,500	60.0
		2,940	97.2

Table H-21. Demolition pack.

DESCRIPTION	NUMBER	WEIGHT	CUBE
Explosive C4	173 lbs	173	3.6
Detonating Cord	1,000 ft	154	1.2
Time Fuze	20 ft	10	0.2
Nonelectric Caps	19	neg	neg
Electric Caps	1	neg	neg
Fuze Lighter	1	neg	neg
		327	5.0

H-23. Fire Support.

- a. Purpose. To direct procedures for the coordination and control of FS assets available to the brigade.
- b. Target Numbering System (see Figures H-22 through H-26). All the division's indirect-fire targets will be designated by a two-letter, four-digit number. The letters "I" and "O" are not used because they can be confused with numbers. The first letter is assigned to the corps. The second letter is assigned within the division according to Table H-22.

Table H-22. Second letter assignments.

Division	A
Division	B
Artillery	C
1st Brigade	D
2d Brigade	E
3d Brigade	F
Aviation Brigade	

Table H-23. Assignment of blocks of numbers for brigade echelons.

NUMBER	ASSIGNED TO
0001-1999	Fire Support Cell
2000-2999	Fire Support Officer, Lowest Number Maneuver Battalion or Squadron
3000-3999	Fire Support Officer, Second Lowest Numbered Maneuver Battalion or Squadron
4000-4999	Fire Support Officer, Third Lowest Numbered. Maneuver Battalion or Squadron
5000-6999	Additional Fire Support Officers
7000-7999	Fire Direction Center, Direct Support Artillery
8000-8999	Counterfire Targets

Table H-24. Subassignment of blocks of number for battalion echelons.

NUMBER	ASSIGNED TO
000-199	Fire Support Cell
200-299	FIST, Company A
300-399	FIST, Company B
400-499	FIST, Company C
500-599	FIST, Company D
600-699	FIST, Company E
700-799	Additional FISTs and COLTs
800-899	Battalion Mortar Platoon, Scouts, or Howitzer Battery
900-999	As Required

Table H-25. Target number assignments for division troops.

Cavalry Squadron	A 0001-0499
Rear Command Post	A 0500-0999
Fire Support Element	A 1000-1249
Tactical Command	A 1250-1499
Post Fire Support	A 1500-1749
Element	A 1750-1999
Engineer Brigade	A 2000-9999
Air Defense Artillery	
Battalion	
Military Intelligence	
Battalion	
Main Command Post	
Fire Support Element	

Table H-26. Current laser pulse repetition frequency code distribution.

1st Brigade Fire Support Officer	351-358, 361-368, 371-378, 381-388
2d Brigade Fire Support Officer	171-178, 181-188, 211-218, 221-226, 341-348
3d Brigade Fire Support Officer	231-238, 241-248, 251-258, 331-338
Aviation Brigade Fire Support Officer	261-268, 271-278, 281-288, 311-318, 321-328,
.	411-418
Cavalry Squadron Fire Support Officer	441-448, 451-458
Division Left Flank	111-118
Division Right Flank	121-128, (allocated in plans and orders)
Division Fire Support Element (Reserve)	421-428, 431-438

- c. Laser Pulse Codes. In the division, laser pulse codes will be managed by the division's FSE, including codes for attack helicopters.

H-24. Army Aviation Procedures.

a. Attack Helicopter Battalion.

1. The mission of the attack helicopter battalion is to destroy massed, moving, enemy armored and mechanized forces and other forces with aerial firepower, mobility, and shock effect. The attack helicopter is a combat maneuver unit. It is normally employed as a battalion and uses aerial firepower and maneuver to mass combat power alone or to complement other

maneuver forces as a member of the combined arms team. Attack helicopter units also perform reconnaissance and security missions.

2. The commander tactically employs the attack helicopter battalion through coordination of attack helicopter companies, CS, and CSS elements. The missions that an attack helicopter battalion can expect to be employed on are varied, but the three methods of employment are:

- Continuous Attack. This method of attack exerts constant pressure on the enemy throughout the battle. It is characterized by one company in the battle, a second company in a holding area ready to provide relief and the third company in the FARP. This method of attack provides the most flexible and efficient use of FARPs.
- Phased Attack. This method of attack increases the initial firepower of the battalion on the enemy. It is characterized by initially employing one company to start the attack with the second company quickly phased into the battle from a different BP. When either of the first two companies is low on fuel or ammo, the third company is phased into the attack to continue the battle. One FARP may support the attack, however, the use of two FARPs is more responsive.
- Maximum Destruction. This method enables the commander to deliver as much combat power as possible into the battle and overwhelm the enemy with massed fires. It is characterized by employing all three companies simultaneously from different BPs. Depending on the location and efficiency of the FARP, the entire battalion may be out of the battle for 20 to 90 minutes after expending fuel or ammunition.

3. The following are critical aspects of attack helicopter operations:

- The mission statement for attack missions should include the objective, objective location, and the expected results of the attack (destroy, attrit, disrupt, overwatch, or deny/delay avenues of approach).
- When used as a main or supporting attack, attack helicopter units should have their own axis of advance (separate from the ground maneuver force axis of advance).
- Firing positions for attack helicopters should be at least 1 kilometer apart from each other.
- Attack helicopters -
 - Are capable of attacking targets within 500 meters of friendly troops.
 - Have the capability to destroy moving-point targets.
 - Can deliver, guide, or help guide smart laser munitions.
 - Are vulnerable to enemy air defense and counterair.
 - Have limited loiter times before having to return for fuel.
 - May sometimes sacrifice destruction of armored systems to carry rockets to destroy "soft" targets.

b. Assault Helicopter Battalion.

1. Assault helicopters are used to accomplish a variety of missions. The versatility, agility, and speed of assault helicopters performing combat (air assault), CS, and CSS missions

can be a significant combat multiplier to any ground commander employing those assets.

2. The commander tactically employs the assault helicopter battalion in the following ways:

- Air Assault Operations. Air assaults are deliberately and precisely planned and executed combined arms operations. Assaults allow the air assault task force to strike over extended distances, terrain barriers, and man-made barriers to attack the enemy when and where he is most vulnerable, using speed and surprise as its main weapon.
- CS Missions. Assault helicopters performing air movement missions transport combat forces whose main mission is to engage and destroy enemy forces. These operations differ from air assaults in command and control relationships and in classification of the mission. Air movements do not usually result in the task organization of aviation assets as a member of the combined arms team (air assaults generally do). Aviation assets are not considered to be maneuver assets when performing air movements. Other CS missions performed include command and control missions where the aircraft will act as the commanders airborne command center or AIRTAC and combat search and rescue. While these missions will take the aircraft into a combat situation, they are not combat missions.
- CSS Missions. CSS air movements are those involving the use of Army airlift assets for other than air assault or CS operations. As with CS air movements, they do not generally result in task organization of aviation assets into the combined arms team. These air movements, conducted only in the close and rear battle areas, are commonly used to transport troops, equipment, ammunition, fuel, and supplies around the battlefield.

3. The following are critical aspects of assault helicopter operations:

- The maneuver unit must provide the ground tactical plan, commanders intent, and graphics to the unit supporting the mission.
- Take sun and lunar data into account when selecting PZs and especially LZs. Landing into a full moon close to the horizon on night-vision goggles is like flying unaided.
- Take into account the advantages of single versus multiple LZs listed in FM 90-4 when developing the landing plan. When fighting an armored or mechanized force, the LZ must be placed in armor/mechanized restrictive terrain to prevent the antiarmor task force from being trapped on the LZ.
- The ground commander must provide his "abort criteria." That is, how many aircraft loads he can afford to lose before the mission will probably fail and should be called off.
- The ground maneuver unit must provide the LO with a loading plan/airloading table, bump plan, and air movement table for the mission.
- Coordinate for Pathfinder support, if available. Pathfinders can provide PZ/LZ clearing, marking, and even set up a tactical nondirectional beacon at a RP, if coordinated.
- Select and secure the LZ or PZ.
- Provide LZ and PZ control, six-digit grid location of LZ and PZ, and frequencies and call signs to the aviation unit.
- Brief the aviation POC on the current enemy and friendly situations, FS measures,

and control measures.

- Provide slings, nets, and a qualified rigger for external loads.
- Provide ground guides and hook-up personnel for external-load operations.

c. Air Cavalry Squadron.

1. The divisional cavalry/air reconnaissance squadron performs the full range of reconnaissance (route, zone, area), limited security (screen), and other operations (passage of lines/battle handover, facilitate movement, restore command and control, area damage control, economy of force, and deception operations) for the division commander. In essence, it is the eyes and ears of the division. In the light division, it also gives the commander an additional resource that can deliver mobile, reactive firepower.
 - a. The commander tactically employs the air cavalry squadron through the full range of reconnaissance, security, and other operations with some limitations on specific missions.
 - a. An air cavalry squadron will require augmentation to conduct a guard mission. METT-T and the degree of protection required determines the amount of augmentation.
 - b. The only cavalry organization that can do a cover without considerable augmentation is the armored cavalry regiment.

d. Aviation Planning Factors (see Tables H-27 through H-31).

Table H-27. AH-64.

ARMAMENT	Hellfire Missile	8,000 m
	Rocket Hydra 70	9,000 m
	Gun 30 mm	4,000 m
OPTICS	TADS/DAY TV	Lowlight, Daytime
	TADS/FLIR	Day, Night, Weather
NAVIGATION	Heading attitude reference system (combination of inertial navigation and Doppler navigation). Also, GPS in most models.	
FLIGHT CHARACTERISTICS	Max Speed (Level)	164 knots
	Normal Cruise	100 knots
	Deep, X-FLOT	120 knots
	Endurance	2:30

Table H-28. AH-1.

ARMAMENT	TOW Missile	3,750 m
	Rocket Hydra 70	9,000 m
	Gun 20 mm	1,500 m
OPTICS	Telescopic Sight Unit	Day Only
	See-Night FLIR	Day, Night, FLIR
NAVIGATION	Doppler	
FLIGHT CHARACTERISTICS	Max Speed (Level)	140 knots
	Normal Cruise	100 knots
	X-FLOT	120 knots
	Endurance	1:45

Table H-29. OH-58D.

ARMAMENT	Hellfire Missile	8,000 m
	ATA Stinger	5,000 m
	Rocket Range Hydra 70	7,000 m
	Gun .50 cal	1,600 m
OPTICS	Mast Mounted Stinger	Day, Night, Weather
	Pilots use ANVIS-6 to fly the aircraft at night.	
NAVIGATION	Attitude heading reference system similar to AH-64, but considered better.	
FLIGHT CHARACTERISTICS	Max Speed (Level)	125 knots
	Normal Cruise	100 knots
	Endurance	2:30

Table H-30. UH-60.

ARMAMENT	Two M60D 7.62 MGs (self-protection only)		
OPTICS	Pilots use ANVIS-6 to fly the aircraft at night.		
NAVIGATION	Doppler Navigation or GPS		
FLIGHT CHARACTERISTICS	Max Speed (Level)	156 KNOTS	
	Normal Cruise	120-145 KNOTS	
	Endurance	2:15	
TRANSPORTATION CAPABILITIES			
	EMPTY GW INCL CREW/FUEL	MAX GW	MAX HOOK
UH-60A	14,000	20,250	8,000
UH-60L	14,250	22,000	10,000

Table H-31. CH-47D.

ARMAMENT	Two M60D 7.62 MGs (self-protection only)		
OPTICS	Pilots use ANVIS-6 to fly the aircraft at night.		
NAVIGATION	Doppler Navigation or GPS		
FLIGHT CHARACTERISTICS	Max Speed (Level)	170 KNOTS	
	Normal Cruise	120-145 KNOTS	
	Endurance	2:30	
TRANSPORTATION CAPABILITIES			
	EMPTY GW INCL CREW/FUEL	MAX GW	MAX HOOK
CH-47D	30,000	50,000	26,000

H-25. Attachment and Detachment Procedures.

a. The headquarters ordering the transfer specifies --

- The gaining and losing headquarters.
- Task organization of the unit to be transferred, including logistic and support requirements.
- When DTG transfer is effective.
- The route the transferred unit will use.

b. The losing headquarters --

1. Provides the transferred unit with CSS necessary to sustain itself for at least 12 hours (for a company or team) or 24 hours (for a battalion or task force), for example--

- POL tanker and packaged POL.
- Ammunition carriers.
- Mechanics, tools, and parts (with transportation).
- Medics and ambulances.
- Class I supplies.
- Class V supplies.

2. Provides to the transferred unit --

- SOI extracts of gaining headquarters command, logistics, and indirect-fire networks.
- Route, movement time, and recognition signal at linkup points.

3. Ensures that --

- The transferred unit leaves with full fuel and ammunition loads.

- The transferred unit continues to receive personnel and equipment replacements and repaired equipment that was earmarked for it before the transfer.
- c. The gaining headquarters --
1. Provides to the transferred unit at the linkup point a guide who knows or possesses the following information:
 - The mission and concept (including graphics) for the transferred unit.
 - The gaining unit's logistic units' locations.
 - Access to the gaining unit's indirect-fire nets.
 - The situation in the gaining command's sector or zone.
 2. Provides fuel top-off of transferred unit bulk carriers and armored fighting vehicles.
 3. Provides ammunition as required and available.
 4. Provides communications information, including --
 - Frequencies, call signs, and secure fills.
 - The gaining unit's SOI for the transferred unit commander.
 - Pyrotechnic and other visual signals, as required.
- d. The transferred unit --
1. Moves over assigned route to RP at times assigned.
 2. Contacts gaining headquarters on secure FM radio before reaching the linkup point, and provides the gaining command a unit status report and logistics requirements (fuel and ammunition).
 3. Dispatches a LO to the linkup point as soon as possible after receiving the transfer order.
 4. Prepares for commitment to combat directly from the linkup point.
- e. Staff Responsibilities. When the attachment or detachment involves a light infantry unit, coordinate for the attachment or detachment of FSB assets and any other logistic support.
1. S2.
 - a. Helps the S3 develop plans that control the execution of attachment and deny enemy knowledge of the activity.
 - b. Provides the gaining headquarters, for example a light infantry battalion, an assessment of the enemy situation along both flanks of the proposed employment.
 - c. Coordinates with the FSB for maps.
 2. Signal Officer.
 - a. Develops a signal support plan and requests additional support if necessary.
 - b. Determines SOI requirements for the attached unit and distributes sufficient copies as required.
 3. Losing Unit Commander.

- a. Tailors a complete support package from organic assets to sustain detached forces of company or team size or larger.
 - b. Ensures that the gaining command receives personnel and equipment status reports from the detached unit immediately on its arrival.
4. S3.
- a. Informs the staff and other subordinate or adjacent units of the following:
 - Units being attached or detached.
 - Period of attachment or detachment.
 - Changes to existing task organization.
 - Current and proposed locations of the headquarters that will exercise control.
 - b. Briefs the gaining headquarters on the current situation and planned actions.
 - c. Coordinates route, linkup point, and movement control of the attached or detached force.
 - d. Briefs the gaining headquarters of any pertinent information concerning the capabilities and limitations, unique weapons system, and employment of the attached or detached unit.
5. S4
- a. Arranges logistic support for the unit.
 - b. Coordinates with the S3, the movement of units through the brigade AOs.
 - c. Notifies the FSB of the unit involved and its effective DTG of attachment or detachment so resources may be reallocated as appropriate and the flow of supplies will continue uninterrupted to the detached unit. The standard armored or mechanized battalion consists of --
 - HHC.
 - Four mechanized or armored companies.
 - One antiarmored company (if mechanized and M113 equipped).
 - One scout platoon.
 - One mortar platoon.

H-26. Light Forces Integration Procedures and Responsibilities.

- a. A light infantry battalion may be attached to the brigade for a limited time period to conduct conventional and OOTW missions.
- b. The brigade XO ensures the light battalion provides an LO to the brigade main and rear CPs.
- c. The standard light infantry battalion task organization consists of --
 - HHC.
 - Three infantry companies.

- One reconnaissance platoon.
- One mortar platoon.
- One antiarmored platoon.

H-27. Logistic Procedures.

- a. The logistic SPOTREP (Yellow 1) is used by all units to report immediate combat losses of equipment and personnel. Unless otherwise indicated, all logistic reports (yellow and red) are report by exception.
- b. Assigned or attached battalions units receive logistic support from the FSB platoon.
- c. The S4 is the POC for interservice logistic requests and agreements. The S4 coordinates with the supporting division, corps, and joint task force to obtain funding support for local contracting and procurement efforts.
- d. Reconstitution Procedures.
 1. Reorganization. The brigade conducts reorganization of available assets to maintain effectiveness of designated units.
 - a. Reorganization is the standard method of regenerating combat power within the brigade. The massing of vehicles, personnel, and Classes III and V supplies of several different units into one unit is required during this process. Maintaining small-unit integrity is a primary consideration.
 - b. The authority to reorganize and consolidate units rests with the commander two levels above the unit to be reorganized.
 - c. Any reorganization conducted at any level within the brigade must be immediately reported through both operations and logistic channels on completion.
 - d. Minimum manning levels. Before initiating the process of reorganizing, units should attempt to fight weapon systems at minimum manning levels. Permission to go to minimum manning levels will be retained by battalion commanders. Table H-32 shows the minimum manning levels authorized within the brigade on specified equipment.
 2. Regeneration. The brigade may be part of a division regeneration operation when in a noncommitted status and when located in a corps or theater assembly area.

Table H-32. Brigade minimum manning levels.

System	Authorized Manning Level	Minimum Manning Level
Tank	4	3
Howitzer	9	5
ITV	3	2
Mortar	4	3
crew	5	3
CFV (M3)	3	2
MLRS	5	3
BSFV	2	1
Stinger		

3. Weapons Systems Replacement Operations. WSROs are conducted to provide fully operational, ready-to-fight replacement weapons systems, both vehicle and crew. The

brigade does not link up personnel and equipment when conducting WSROs when in a committed status. The normal size of WSROs replacement units coming to the brigade are at the platoon level. Larger-size units are received on an exception basis after coordination with division. The WSROs responsibilities are:

- The brigade S3 is responsible for determining priority for WSRO. The S4 initiates the request to the division. Final assignment decisions for replacement weapons systems are made by the S3.
- The DMMC is responsible for coordinating the movement, reception, and processing of all incoming WSROs units from corps and for delivery to the brigade.
- Replacement weapons systems or units are moved into an assembly area near the division rear CP. The S4 coordinates with the rear CP G3 operations element for the designated assembly area.
- Once located in the assembly area, the S4 coordinates the following functions before releasing the unit:
 - Shelter and sleeping area for new crews.
 - Personnel actions to process crew into the division.
 - Resupply of Classes III and V supplies to vehicles.
 - Maintenance check for vehicles.
 - Vehicle and personnel precombat inspections as per TSOP.
 - Individual weapons authorized to crew members.
 - Map or physical reconnaissance of the local area to vehicle commanders and key leaders.
 - Task the unit with local security missions to begin team training and equipment familiarity while in the assembly area.
 - Assess the unit's training status for input to receiving unit. If time permits, conduct crew drills and small-unit training in rear area.
- On order, WSROs units are sent to the BSA with LOGPAC operations.
- Receiving unit links up with the WSROs unit at BSA and leads to the final location.

e. Supply.

1. General.

- a. Controlled supply rate is the required supply rate.
- b. Throughput distribution from corps to the DSA and BSA is the normal method of operations.
- c. Unless otherwise requested, LOGPACs deliver standard supply packages to forward units. Preconfigured unit loads consolidated by corps are prepared to provide shipment to the user whenever possible, thus eliminating double handling within the division.
- d. No supply vehicle ever sits empty except for maintenance.

2. Supply Specifics.

a. Class I:

- The units' basic load is a three-day supply of MRE.
- The brigade's authorized stockage level is three-day supply. This does not include unit basic load.
- Ration cycle is T-MRE-T.
- Class I standard resupply packages are shown in Table H-33.

Table H-33. Class I standard resupply packages.

UNIT	MEALS	CASES	PALLETS
Tank Battalion	1,728	144	3
Mechanized Battalion	2,304	192	4
Artillery Battery	1,152	96	2
Air Defense Artillery	1,152	96	2
Cavalry Troop	1,221	102	2
Engineer Battalion			

b. Water.

- The unit basic load is two-day supply.
- FSB uses unit strength data for water requirements.

c. Classes II and IV (Less Obstacle): Unit basic load is 15-day supply.

d. Class III and IIIA Package:

- Unit basic load Class IIIA (package) is 30-day supply.
- Class III standard resupply packages are shown in Table H-34.

Table H-32. Brigade minimum manning levels.

UNIT	GALLONS	500 GALLON BLADDERS
Tank Battalion	13,000	26
Mechanized Battalion	4,000	8
Artillery Battalion	2,000	4
Air Defense Artillery Battery	2,000	4
Cavalry Troop	5,000	10
Engineer Battalion	10,000	20

e. Class V. Standard ATP unit package items are:

- A 105-millimeter tank (120 rounds HEAT, 480 rounds APFSDS).
- A 120-millimeter tank (120 rounds HEAT, 480 rounds APFSDS).

- A 155-millimeter artillery standard (48 rounds HE, 288 rounds DPICM).
 - A 155-millimeter artillery FASCAM (mix not available).
 - An 8-inch artillery standard (240 rounds HE).
 - An MLRS (eight pods - 48 rockets).
 - TOW missiles (8 pallets).
- f. Combat Configured Loads for Class V Packages. The division and brigade uses combat configured loads to simplify planning and coordination for ammunition resupply. The combat configured loads Class V packages are delivered by LOGPACs to user units in the amounts and types of munitions prescribed here unless requested differently in a Yellow-3 Report. Table H-35 shows the combat configured loads packages that are designated as combat configured loads-A.

Table H-35. Combat configured loads-A.

TYPE UNIT	DESCRIPTION	ROUNDS PROVIDED	DEPOT PACK QUANTITY	DEPOT PACK
M1/M1A1 ARMOR BATTALION	105/120 HEAT	1,260	42	Pallet
	5/120 APFSDS-T	1,890	63	Pallet
	.50 cal	55,440	11	Pallet
	7.62 mm	633,600	22	Pallet
	Smoke Grenade	1,152	2	Pallet
BRADLEY MECHANIZED BATTALION	TOW	372	31	Pallet
	25 mm (AP)	33,000	37	Pallet
	25 mm (HE)	16,800	28	Pallet
	7.62 mm	230,400	8	Pallet
	5.56 mm Ball	161,280	2	Pallet
	40 mm HEDP	1,944	1	Pallet
	Dragon Missile	24	3	Pallet
	Smoke Grenade	1,152	2	Pallet
MORTAR PLATOON	5.56-mm Tracer	1,640	1	Box
	5.56-mm Ball	5,040	3	Box
	7.62-mm 4+1	4,800	6	Box
	.50-cal M2	2,400	12	Box
	4.2-in HE	360	9	Pallet
	4.2-in Illum	40	1	Pallet
	4.2-in WP	120	3	Pallet
	HE Fuze	368	23	Box
	III Fuze	48	3	Box
	Smoke Fuze	128	8	Box
ANTITANK COMPANY	TOW	120	10	Pallet
	5.56-mm Tracer	1,640	1	Box
	5.56-mm Ball	13,440	8	Box
	7.62-mm 4+1	28,800	1	Pallet
	.50-cal M2	3,600	18	Box
	40-mm HEDP	432	6	Box
	TOW	60	5	Pallet
	LAW	18		

TYPE UNIT	DESCRIPTION	ROUNDS PROVIDED	DEPOT PACK QUANTITY	DEPOT PACK
M3 BRADLEY SCOUT PLATOON	25-mm (AP)	5,400	6	Pallet
	25-mm (HE)	3,000	5	Pallet
	7.62-mm	28,800	1	Pallet
	5.56-mm (Ball)	10,080	6	Box
	Smoke Grenade	96	24	Box
DIVISION CAVALRY SQUADRON	TOW	540	45	Pallet
	LAW	120	2	Pallet
	25 mm (AP)	39,600	44	Pallet
	25 mm (HE)	19,800	33	Pallet
	7.62 mm	86,400	3	Pallet
	5.56 mm Ball	80,640	1	Pallet
	Smoke Grenade	576	1	Pallet
	2.75 in. Rocket	300	5	Pallet
	20-mm (incl Air Trp CL V)	7,200	3	Pallet
155-SP FIELD ARTILLERY BATTALION	HE	408	51	Pallet
	RAP	288	36	Pallet
	APICM	168	21	Pallet
	DPICM	1,752	207	Pallet
	Copperhead	108	18	Pallet
	WP	24	3	Pallet
	Illumination	24	3	Pallet
	ADAM	24	3	Pallet
	RAAMS	144	18	Pallet
	M577 Fuze	2,112	132	Box
	M582 Fuze	336	21	Box
	M739 Fuze	240	15	Box
	M728	144	9	Box
	M119A1/A2	360	12	Pallet
	Powder	864	12	Pallet
	M-3 Series	1,752	69	Pallet
	Powder	3,200		
	M-4 Series			
	Powder			
Primers				
AVIATION BATTALION (FARP)	HELLFIRE	158	21	Pallet
	30-mm	14,400	8	Pallet
	2.75 in. Rocket	452	7	Pallet

3. Maintenance Specifics.

- a. Priority of repair is to weapons systems, command and control, and transportation assets. During tactical operations emphasis is on battle damage repair.
- b. Responsibilities:
 - FSB - ground, missile, COMSEC items, Class IX and DX.
 - Aviation - battalion aviation.

4. Repair Time Guidelines:

- UMCPs - from 4 to 8 hours.

- BSA - from 8 to 24 hours.
- DSA - from 24 to 36 hours.

5. Evacuation Responsibilities:

- Unit - from UMCP to BSA.
- DISCOM - from BSA to DSA.

f. Services.

1. Clothing Exchange and Bath:

- Laundry service is direct exchange only.
- Support battalion schedules and positions.
- Service is on an area basis.

2. Bath. Priority of support:

- Committed troop units.
- Medical treatment facility patients.
- Troop units in rest area and/or unit assembly areas.

3. Mortuary Affairs.

a. Noncontaminated remains:

- Initial search, recovery, identification, and evacuation of remains to the battalion combat trains is a unit responsibility. Personal effects are kept with the remains.
- Remains are transported from unit combat trains to the BSA mortuary affairs point and ultimately to the DSA on returning LOGPAC vehicles.
- No combat power is used to carry personnel KIA to the rear.
- Units maintain two-day supply, unit basic load mortuary affairs supplies. FSB maintains 30-day supply, authorized stockage list.
- Formula for determination of unit basic load: Troop strength times, $.0025 \times 2$ days.

b. Contaminated remains:

- Treat all remains found in a contaminated area as contaminated.
- Remains collected by unit are placed in body bags (if available).
- Remains placed in mass graves are to be expedited. Unit personnel will not evacuate contaminated remains to the mortuary affairs collection point.
- Grave marked as contaminated area.
- Grave reported to S1 for mortuary affairs and coordination for removal. Mortuary affairs personnel will process and evacuate contaminated remains.

g. Transportation.

1. General.

- a. Requests for additional transportation support (except emergency aerial resupply) are submitted to the S4 through the FSB.
- b. Linkup points must be provided by all units that submit transportation requests.
- c. The supported unit provides personnel and equipment to load, secure, and unload cargo.
- d. If transportation assets have not arrived 30 minutes after the scheduled time, the supported unit will -
 - Contact the FSB.
 - Search for the equipment in the area surrounding the pickup point.
- e. Transportation operators remain on site for one hour after the scheduled load-or-unload time; they then -
 - Contact the FSB for instructions.
 - Look for the unit's representative in the area.
- f. Supported units report to the FSB not later than 30 minutes after -
 - The arrival of trucks by quantity and type (including cargo if loaded).
 - The departure of trucks by quantity and type (including cargo if loaded).

2. Aviation Transport Operations.

- a. Mission request processing :
 - The requesting unit's G4 (S4) submits an aerial resupply or transportation request through the FSB or main support battalion to the MCO.
 - The MCO determines if air transport is the appropriate mode and coordinates with the division's aviation brigade operations.
 - Noncritical air movement requests are processed according to current tactical priorities.
 - Cargo security, except in flight, is the responsibility of both the shipper and the receiving unit commander.
- b. Units requesting air transportation:
 - Prepare supplies or personnel for delivery (by helicopter or fixed-wing aircraft).
 - Supervise and load aircraft. The aircraft crew chief ensures that material is properly loaded within the prescribed weight and balance requirements.
- c. Units receiving air transportation:
 - Establish and mark LZ.
 - Coordinate for sling-load equipment, rig loads, and recover the slings. They

also recover and evacuate DISCOM slings after use.

h. Refuel-on-the-Move.

1. The brigade conducts refuel-on-the-move (ROM) operations along routes of march short of the RP or LD to extend operating range and to conserve units' uploaded unit basic load of Class III supplies.
2. Brigade tactical priorities and FSB tanker limitations necessitate detailed prior coordination among the S3 or S4, FSB, and the refueling unit.
3. The brigade ROM guideline is that the FSB establishes 24 refuel points.
4. Unit requirements for ROM sites include -
 - The site is out of direct fire.
 - Local air parity exists.
 - The site is in a non-NBC contaminated area.
 - The site is near or on a hard-surfaced road.
 - Easy ingress and egress routes exist.
5. Responsibilities.
 - a. The brigade S4 -
 - Designates the refuel site in coordination with division, DISCOM, and the FSB.
 - Establishes linkup time at the refuel site for each task force.
 - Determines the approximate fuel required and establishes the refuel time at the ROM site for each vehicle (for example, four minutes per vehicle).
 - Transmits fuel requirements to DISCOM through the support battalion.
 - Maintains continuous coordination with DISCOM and attached or OPCON battalions.
 - Coordinates for security at the refuel site.
 - b. The refueling battalion -
 - Performs detailed march planning and organizes march units for combat to speed movement and refuel operations.
 - Provides unit security (usually a scout platoon) that
 - Reconnoiters the route and secures the refuel site.
 - Assists the DISCOM with site and equipment preparation.
 - Mans the refuel coordination point.
 - Determines fuel requirements and transmits these to the brigade during the ROM planning and coordination process.
 - Controls the unit and manages its flow through the ROM site.

- c. The support battalion -
 - Executes the ROM and controls the ROM site in coordination with brigade or battalion S4s.
 - Reconnoiters refuel sites and establishes traffic control patterns.
 - Forwards fuel, tanker, and equipment requirements for ROM operations to DISCOM.

H-28. Personnel Support Procedures.

a. Personnel.

1. General. The S1 element is located in the rear CP S1's control.
2. Personnel Accounting and Strength Reporting System.
 - a. The Log SPOTREP and Red 1 and Red 2 reports are the primary means of reporting personnel strengths.
 - b. Units deploying with different elements as part of a task organization will provide the gaining headquarters a battle roster on a floppy disk.
 - c. The losing unit will not provide strength reports for units that are no longer part of their task organization.
 - d. Brigade headquarters provides all strength-related reports for all elements task organized under them.
3. Personnel Replacement Operations.
 - a. Assignment of enlisted soldiers is made to battalion, separate company, or separate detachment levels.
 - b. The brigade will manage officer and warrant officer assignments within the brigade.
 - c. The battalions will manage officer and warrant officer assignments within the battalion.
4. Casualty Reporting.
 - a. Witnesses report casualties on a DA Form 1155 (Witness Statement on Individual) and/or a DA Form 1156 (Casualty Feeder Report) or use any other means available to report as much information as possible. This information is forwarded to unit PACs.
 - b. Reports are not delayed because of missing or unknown data.
 - c. Forward one copy of any DA Form 1155 and/or 1156 pertaining to a casualty with the diskette.
 - d. The FSB medical company ensures that casualty data is submitted in an accurate and timely manner.
5. Recovered US and Allied Personnel.
 - a. US and allied personnel recovered from enemy-controlled territory are transported to the supporting replacement detachment for processing and reassignment. Returnees requiring medical treatment process through the division's medical

channels.

b. Units recovering US and allied personnel report the following information to the S1 support element at the rear CP:

- Name.
- Nationality.
- Parent service (if US military).
- Rank/grade.
- Service number/social security number.
- Disposition (for example, transported to a field hospital).

b. Postal. Wartime postal support.

1. The S1 notifies units of any mail restrictions.
2. The S1 section will receive, process, and tie-out mail by battalion and separate company.
3. The S1 establishes the postal process location.
4. Mobile postal finance teams set up operations at the BSA where unit mail orderlies purchase stamps and money orders for unit personnel.
5. Mail received by a unit after an individual is placed in a casualty status is returned to the brigade S1 section for redirecting.
6. The unit is to burn or shred all mail and postal effects threatened with capture by the enemy or NBC contamination. Unit S1 postal representatives coordinates the destruction of mail and postal effects with the brigade S1, unless the tactical situation dictates immediate action. Destruction priorities for mail and postal effects are -
 - Priority one - official registered mail.
 - Priority two - USPS funds and stamp stock.
 - Priority three - official nonregistered mail.
 - Priority four - personal mail.
 - Priority five - remaining postal equipment and supplies.

c. Finance.

1. Upon declaration of war, the payment of travel and per diem for travel performed entirely in the theater of operations is not authorized.
2. Unit S1 is responsible for coordinating the local servicing finance unit for local purchase funding and pay support.
3. The PAC is the central point of contact between soldiers and the supporting finance unit. The PAC resolves less complicated pay inquiries and coordinates with the finance unit to solve all others.

d. Health Service Support. The medical support operations are -

1. The Brigade Surgeon. The brigade surgeon establishes all medical procedures and policy.

2. The Brigade Surgeon and Brigade Medical Operations Center. The brigade surgeon and brigade medical operations center is normally located in the S1 support element.
3. Health Services. FSB medical company provides HSS on an area basis.
4. Dental Services. Emergency dental care is available at the forward medical company.
5. Psychiatric Services. Combat stress casualty management is provided forward by the medical company of the main support battalion.
6. Optometry Services. Limited optometry care is available at the main support battalion medical company.
7. Medical Supply (Class VIII):
 - Each medical platoon deploys with complete Class VIII combat authorized stockage list (two-day supply).
 - Each medical company maintains a minimum five-day supply of Class VIII.
 - The division maintains a minimum 10-day supply of Class VIII.

e. Medical Evacuation.

Table H-36. Medical evacuation timelines.

PRIORITY	CATEGORY	TIMELINE
1	Urgent	1 Hour or Less
1a	Urgent Surgical	2 Hours or Less
2	Priority	4 Hours or Less
3	Routine	24 Hours or Less
4	Convenience	Situational

1. Patient Holding. The holding policy for the division is 72 hours for FSB and main support battalion medical companies. Table H-36 shows the MEDEVAC timelines for the division.
2. Air Medical Evacuation:
 - Air evacuation is used when ground evacuation is not available or is inadequate to save life, limb, or eyesight.
 - Request procedures. (Use MEDEVAC request; see reports section.)
3. Air Evacuation by Nonmedical Aviation Assets.
 - a. Division aviation brigade assets can backhaul stabilized wounded with the division AO and may be used when :
 - Ground evacuation routes are closed.
 - Ground ambulance would not be effective in transporting the patient in a timely manner.
 - The tactical situation requires rapid evacuation of casualties.
 - During mass-casualty situations.
 - MEDEVAC aircraft are unavailable.

b. Format is the standard MEDEVAC request.

4. Ground Evacuation.

- a. The primary means of MEDEVAC during combat operations is ground ambulance. An ambulance is any vehicle capable of transporting a patient on a litter undercover as care en route is being provided.
- b. Maneuver units evacuate casualties to battalion aid stations using organic assets or resupply vehicles. Units secure all radios, weapons, and sensitive items. The patient retains his protective mask. Members of a wounded soldier's unit will not escort him to an aid station without the verbal permission of his immediate supervisor or leader.
- c. Contaminated casualties will be decontaminated as far forward as possible by nonmedical personnel.
- d. The FSB medical company station tracks ambulances with supported maneuver battalion aid station, and evacuate patients from the battalion aid station to the supporting medical company. It establishes AXP between the maneuver battalion aid station and the BSA medical company for patient transfer.
- e. Division assets evacuate patients from medical companies to corps medical facilities.

5. Return to Duty:

- Parent units transport their return-to-duty patients, or the patients go forward, with LOGPACs.
- The return-to-duty patients outside the division area are processed through AG channels.

f. Preventive Medicine.

1. Field Sanitation Teams. Establishes and uses unit field sanitation teams to perform preventive medicine countermeasures.
2. Food Service. Units operating mobile kitchen trailers or other field kitchens must maintain operations according to sanitation or hygiene standards outlined in TB Med 530, FM 10-23, FM 21-10, and FM 21-10-1..
3. Potable Water and Ice.
 - Supply. The preventive medicine section inspects all water sources and conducts random samplings. Water purification tablets are issued at Class I point.
 - Distribution containers. Brigade preventive medicine teams conduct routine inspections of potable water containers (such as 400-gallon water trailers; 5-gallon containers).
 - Chlorine residual concentration is maintained at five parts per million (ppm); do not drop below two parts per million at the point of consumption.
 - Actions during NBC operations:
 - Stop all processing of potable water.
 - Immediately notify the division's preventive medicine section of suspected contamination.

- Water supply specialists must initiate detection procedures.
 - Report water sources (approved or unapproved) suspected of being contaminated to the division's preventive medicine section through G1 channels. Do not use until tested.
4. Waste Disposal.
- Contain and dispose of infectious and pathological wastes IAW AR 40-5.
 - Dispose of all garbage and trash according to the methods outlined in FM 1-10 and FM 21-10-1.
 - When committed, bury or incinerate waste.
5. Injuries and Illness. Report the following injuries and illnesses to the division surgeon immediately:
- Suspected NBC injuries.
 - Any cold weather injury.
 - Any heat injury.
 - Foodborne or suspected foodborne illness.
 - Waterborne or suspected waterborne illness.
 - Animal bites.
 - Field site infestations (before pesticide application).

g. Staff Judge Advocate.

1. SJA Operations.

- a. The SJA establishes operations at the S1 support element at the rear CP.
- b. The SJA dedicates a judge advocate to each maneuver brigade.
- c. The SJA designates roving legal teams to move forward as the situation permits to provide legal services in the units and supplement brigade judge advocates.
- d. Designated JAG personnel support PMO/S5 operations.

2. War Crimes.

- a. Soldiers must report suspected violations of the law of war to their immediate commanders. When the commander is implicated in the alleged violation, report him to the next higher commander. If this is not practical, report to the IG, PM, SJA, or chaplain.
- b. Commanders must forward reports through the chain of command to the commanding general. Reports must include all available information about the nature of each incident, where and when it occurred, who discovered it, and who witnessed it (with statements of witnesses and evidence).
- c. The SJA reviews and approves all claims and solatium payment requests to determine legal validity and to coordinate with the supporting finance unit for payment if warranted.

h. Public Affairs.

1. The PAO establishes a news media center at the S1 support element at the BSA.
2. Only media accredited by the theater PAO are authorized to function within the brigade AO. Any media representative violating established media ground rules are not allowed to operate in the brigade AO.
3. The PAO or PAO-designated personnel escorts all media personnel - no exception.
4. Guidelines for talking with news media personnel include the following:
 - If you command it, did it, or use it, then you can talk about it.
 - If you do not want it published; do not say it.
 - Always exercise OPSEC.

i. Public Information and Operations Security.

1. When directed, PAO conducts OPSEC review of any material provided for release.
2. The PAO will not conduct censorship activities of material provided for release, but will screen for OPSEC violations.

j. Chaplain Activities.

1. The priority of chaplain coverage is:
 - Combat units.
 - Medical facilities in AOs.
 - Mortuary affairs collection points and temporary burial sites.
2. Commanders coordinate religious service schedules with chaplains.
3. When no chaplain is assigned to a unit, the S1 requests chaplain services through the brigade chaplain's office at the brigade rear CP.

H-29. Military Police Procedures.

a. Military Police Platoon.

1. The MP platoon headquarters is initially collocated with S4 operations at the rear CP.
2. MP platoons provide DS to brigade tactical operations. Priority of employment of MP platoons is to area security in the BSA, Level II reaction force to the brigade rear CP, law enforcement, and operating the brigade central EPW collection point.

b. Request for Military Police Support. Battalion will forward all requests for MP support (and CID support) through the S3 operations section, located in the brigade main CP.

c. Enemy Prisoners of War Operations.

1. The brigade S4 establishes a centralized point for EPW collection in the BSA. Battalions establish EPW sites within their sector or zones.
2. Capturing units tag all EPWs and their property using DA Form 5976 and evacuate to the designated collection point.

3. MP escort EPWs from BSAs to division or corps collection points.

H-30. Civil-Military Operations.

- a. Civil Military Operations Center. The civil-military operations center (CMOC)
 - Is operated by the G5 at the division rear CP.
 - Is the net control station for the CMOC (FM) net.
 - Employs and controls all attached or OPCON supporting CA teams and elements.
- b. Military tactical requirements have priority over civil requirements.
- c. The brigade commanders will designate a member of their staff to serve as the unit S5. If the brigade is operating in advance of the division, the brigade XO coordinates for augmented staff assistance through the division headquarters.

SECTION IV. REPORTS

H-31. General.

- a. This section contains reports and prescribed formats that all elements in the division routinely use (see Table H-37). Reports exist to support the commander with CCIR. Reports are not tied to a fixed schedule, but rather, are submitted by specific request or by exception. Reports by exception require the commander to submit a report only when the status of a significant event or element is changed that either increases or decreases that unit's combat capability.

Table H-37. Report matrix.

REPORT TITLE	FORMAT ON PAGE	SUBMITTED BY:	SUBMIT TO:	SUBMIT AS OF:	SUBMIT NLT:	METHOD OF TRANSMISSION	PRECEDENCE
Spot Report (SPOTREP) (Blue 1)	H-84	MSC	G3/G2	As Necessary Or Upon First Contact or Spotting	NA	FM MSE FAX	Flash
Commander's Situation Report (SITREP) (Blue 2)	H-85	MSC	"G3: Committed Units Submit To TAC CP"	As Necessary	NA	MSE FM FAX	Immediate
Intelligence Summary (INTSUM) (Green 1)	H-87	Corps/ Div	MSC "92"	0200 1400	0400 1600	LAP TOP FAX MSE COURIER	Immediate
Periodic Intelligence Report (PERINTREP) (Green 2)	H-88	MSC	G2	As Necessary	NA	MSE FM FAX	Immediate
Weather Forecast Report (WXFCST) (Green 3)	H-99	G2	MSC	0500 1700	0600 1800	FAX MSE	Immediate
Logistics Spot Report (SPOTREP) (Yellow 1)	H-90	MSC	DISCOM	As Required	NA	FAX MSE FM	Priority
Equipment Status Report (STATREP) (Yellow 2)	H-90	MSC "S4" (thru FSB)	DISCOM/ G4 DMMC	1600	0800 1700	FAX MSE LAP TOP FM	Immediate

Table H-37. Report Matrix (continued).

REPORT TITLE	FORMAT ON PAGE	SUBMITTED BY:	SUBMIT TO:	SUBMIT AS OF:	SUBMIT NLT:	METHOD OF TRANSMISSION	PRECEDENCE
Ammunition Request (Yellow 3)	H-95	MSC "S4" (thru FSB)	G3/DISCOM	0800 1600	0900 1700	FAX MSE LAP TOP FM	Immediate
POL Request (Yellow 4)	H-98	MSC "S4" (thru FSB)	DISCOM	0800 1600	0900 1700	FAX MSE LAP TOP FM	Immediate
Personnel Daily Summary (Red 1)	H-100	MSC	G1	2000	2100	FAX MSE LAP TOP FM	Immediate
Personnel Battle Loss Report (Red 2)	H-101	MSC	G1	As Required	.	FAX MSE FM	Priority
Aerial Resupply Request	H-101	MSC	G3/Air	As Required	.	FAX MSE COURIER FM	Immediate
Bridge Repor (BRIDGEREP)	H-102	MSC	ACE	As Required	.	FAX MSE COURIER	Immediate
Closing Report	H-103	MSC	G3	As Required	.	FAX MSE FM	Immediate
Crossing Report (CROSSREP)	H-103	MSC	ACE	As Required	.	FAX MSE COURIER	Immediate
Medical Evacuation Request	H-104	Requesting Unit	Div Surgeon	As Required	.	FAX MSE	Flash
MIJI Report	H-105	Battalion & Separate Trp/Co	S2	As Required	.	FM MSE	Immediate
Minefield Report	H-106	Battalion & Separate Trp/Co	ABE	As Required	.	MSE FAX FM	Immediate
Patrol Report	H-107	Battalion & Separate Trp/Co	G2	As Required	.	FAX MSE FM	Immediate
EPW or Captured Material Report	H-109	Battalion & Separate Trp/Co	G2	As Required	.	MSE FAX FM	Immediate
Ration Request	H-109	Battalion & Separate Trp/Co	S4	As Required	.	MSE FAX FM	Immediate

Table H-37. Report Matrix (continued).

REPORT TITLE	FORMAT ON PAGE	SUBMITTED BY:	SUBMIT TO:	SUBMIT AS OF:	SUBMIT NLT:	METHOD OF TRANSMISSION	PRECEDENCE
Route Reconnaissance Report	H-110	Unit Tasked	G3 & G2	As Required	.	FM MSE	Immediate
Sensitive Item Report (SENSREP)	H-110	Battalion & Separate Trp/Co	S3	As Required	.	FM MSE	Immediate
Severe Weather Warning Report (SVRWXWARN)	H-111	S2	Battalion S2s	As Required	.	FM MSE	Priority
Shell Report (SHELREP)	H-112	Battalion & Separate Trp/Co	FSE	As Required	.	FAX MSE FM	Immediate
Splash Report	H-113	Battalion & Separate Trp/Co	S3	As Required	.	FM MSE FAX	Immediate
NBC1 Observer's Initial Report	H-113	Battalion & Separate Trp/Co	Chemical Bde	As Required	.	FM MSE	Flash (First Attack)
NBC2 Evaluated Data Report	H-114	Chemical Bde	Battalion & Separate Trp/Co	As Required	.	MSE FM FAX	Immediate
NBC3 Immediate Warning Of Expected Contamination	H-115	Chemical Bde	Battalion & Separate Trp/Co	As Required	.	MSE FM FAX	Immediate
NBC4 Report Of Radiation Dose-Rate Measurement	H-116	Battalion & Separate Trp/Co	Chemical Bde	As Required	.	MSE FM FAX	Immediate
NBC5 Report Of Areas of Contamination	H-116	Bde	Div	As Required	.	MSE FM	Immediate
NBC6 Detailed Information Of Chemical Or Biological Attacks	H-117	Bde	Div/Corps /JTF	As Required	.	FAX LAP TOP MSE	Priority
Effective Downwind Message	H-118	Chemical Bde	Battalion & Separate Trp/Co	As Required	.	MSE FAX LAP TOP FM	Immediate
NUCWARN Message	H-119	Chemical Bde	Battalion & Separate Trp/Co	As Requested	.	MSE FM	Immediate

- b. Although each report has a prescribed format to ensure the completeness of the information reported, users are reminded that in fast-moving tactical situations timely reporting, especially of enemy activity is critical. Do not delay reports only to ensure correct format, report accurate information in a timely manner.
1. The time zone used for all reports is local, unless specified otherwise.
 2. All color codes use the following criteria:
 - **Green:** 80% or better on hand - full strength.
 - **Amber:** 60% to 79% on hand - mission capable with minor deficiencies.
 - **Red:** 40% to 59% on hand - marginally mission capable with major deficiencies.
 - **Black:** 39% or less on hand - not mission-capable.
 3. Standardized report formats for the division are as follows:
 - a. Operations (blue reports).
 - Blue 1 - SPOTREP.
 - Blue 2 - Commander's SITREP.
 - b. Intelligence (green reports).
 - Green 1 - Intelligence summary (INTSUM).
 - Green 2 - Periodic intelligence report (PERINTREP).
 - Green 3 - Weather forecast report (WXFCST).
 - c. Logistics (yellow reports).
 - Yellow 1 - Logistics SPOTREP.
 - Yellow 2 - Equipment status report (STATREP). Reportable lines needed in Yellow 2 report.
 - Yellow 3 - Ammunition request.
 - Yellow 4 - POL request.
 - d. Personnel (red reports).
 - Red 1 - Personnel daily summary.
 - Red 2 - Personnel battle loss report.
 - e. As required reports.
 - Aerial resupply request.
 - Bridge report (BRIDGEREP).
 - Closing report.
 - Cross report (CROSSREP).

- MEDEVAC request.
- MIJI report (MIJIREP).
- Minefield report.
- Patrol report.
- EPW or captured materiel report.
- Ration request.
- Route reconnaissance report.
- Sensitive items report (SENSREP).
- Severe weather warning report (SVRWXWARN).
- Shell report (SHELREP).
- Splash report.

f. NBC reports.

- NBC 1 - Observers initial report.
- NBC 2 - Evaluated data report.
- NBC 3 - Immediate warning of expected contamination.
- NBC 4 - Report of radiation dose-rate measurement.
- NBC 5 - Report of areas of contamination.
- NBC 6 - Detailed information of chemical or biological attacks.
- Effective downwind message.
- NUCWARN message.

H-32. Blue Reports (Operations).

a. Blue 1 - Spot Report.

1. Purpose. The SPOTREP is used by all units when observing any known or suspected enemy activity. The SPOTREP is used when observing any characteristic of the AO likely to affect accomplishment of the mission. It is submitted through both command and OI channels. SPOTREP is submitted as a minimum, upon -

- First enemy contact.
- A break in contact.
- Contact with a new enemy unit or equipment.
- Significant change in tactical situation.
- Unusual or unexplained activity.
- Enemy reconnaissance activity.

- Any level I, II, or III rear activity.
- Indications of enemy NBC activity.
- Significant enemy ADA, aviation, or engineer activity.
- Indications that the enemy is changing its present COA.
- Other enemy and friendly activity as deemed significant.

2. Format.

SPOTREP

Line 1: Who is observer or source: _____
(Omit if calling station; otherwise use call signs or description.)

Line 2: What is observed: size, activity, location, unit, time, and equipment (S-A-L-U-T-E).
Size: _____
(The number of sighted personnel and/or vehicles.)

Activity: _____
(What the enemy is doing.)

Location: _____
(Grid or reference from a known point.)

Unit: _____
(Patches, signs, or markings.)

Time: _____
(The time the activity was observed.)

Equipment: _____
(Describe or identify all equipment associated with the activity.)

Line 3: What are or were your actions or what do you recommend: _____

3. SPOTREPs take priority over all other routine radio traffic.

b. Blue 2 - Commander's Situation Report.

1. Purpose. The SITREP is submitted by subordinate units to the S3 to report changes to the tactical situation and status. SITREPs are submitted after or during significant events when combat capability changes or when requested. Committed units in contact with the enemy submit the SITREP to the TAC CP. All others submit them to the main CP. Detailed yellow and red reports submitted by the unit support logistic and personnel assessments.

2. Format.

H-33. Green Reports (Intelligence).

a. Green 1 - Intelligence Summary.

1. Purpose. The INTSUM is used to provide the brigade S2 with INTSUMs that cover 12 hours of enemy activity. Items prescribed in the format are used when needed. Brigade S2 will submit to the G2.
2. Format.

Line 1: Issuing unit: _____

Line 2: Time of issue: _____

Line 3: (a) Summary of enemy situation:

- Close.
- Deep.
- Rear.
- Flank (right).
- Flank (left).
- Flank (right).
- Other, as significant (command and control, artillery, ADA, engineer, R&S target acquisition).

(b) Enemy frontline trace/assessed boundaries.

(c) Enemy disposition:

UNIT	LOCATION	STRENGTH	EQUIPMENT	LOSSES	ACTIVITIES
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

(d) Probable course of action:

24 to 36 hour protection:

Enemy strengths and capabilities:

Enemy vulnerabilities and weaknesses:

(e) Other: _____

b. Green 2 - Periodic Intelligence Report.

- a. Purpose. The PERINTREP is used by battalion intelligence personnel to report combat enemy information to the brigade S2 in a timely manner without having to complete a Green 1. Brigade S2 submits to G2.

b. Format.

PERINTREP

- Line 1: Transmission time: _____
(DTG of transmission. Use only if directed.)
- Line 2: Time: _____
(Time activity occurred: DTG.)
- Line 3: Identification: _____
(Size, activity, and unit observed.)
- Line 4: At: _____
(Location: best grid or reference to known points.)
- Line 5: Narrative: _____
(Equipment, uniform, markings, insignia, and anything significant about the sighting.)

c. **Green 3 - Weather Forecast Report (WXFCST).**

1. Purpose. The weather forecast report is used to report weather and light data to subordinate units.
2. Format.

WXFCST

- Line 1: Location: _____
(Center of forecasted weather.)
- Line 2: Valid: _____
(DTG forecast is effective.)
- Line 3: Until: _____
(DTG forecast is no longer in effect.)
- Line 4: Ceiling: _____
(Lowest forecast ceiling in hundreds of feet above ground level.)
- Line 5: Cover: _____
(Total sky coverage in eights.)
- Line 6: Visibility: _____
(Prevailing visibility in meters.)
- Line 7: Weather: _____
(Weather phenomena being forecasted.)
- Line 8: Maximum temperature: _____
(Maximum temperature in degrees Celsius.)
- Line 9: Minimum temperature: _____
(Minimum temperature in degrees Celsius.)
- Line 10: Freeze level: _____
(Minimum freezing level in thousands of feet. Transmitted only when appropriate.)
- Line 11: Wind: _____
(Direction of variable wind direction in degrees.)
- Line 12: Speed: _____
(Wind speed in knots.)
- Line 13: Gusts: _____
(Peak gusts in knots.)
- Line 14: Altimeter: _____
(Altimeter setting in hundredths of inches of mercury. Transmitted only when appropriate.)

Line 15: Wind direction at 2,000, 4,000, and 6,000 feet: _____
(Transmitted only when appropriate.)

Line 16: Light data and narrative: _____

Line 17: Transmission time: _____
(DTG of transmission. Use only if directed.)

Line 18: Authorization: _____
(Message authorized according to current guidelines. Use only if directed.)

H-34. Yellow Reports (Logistics).

a. Yellow 1 -Logistics Spot Report.

1. Purpose. The Yellow 1 Logistics SPOTREP is sent through logistics channels as losses occur to provide CSS personnel with immediate personnel and equipment losses. The personnel and equipment reported on the Yellow 1 Report are assumed to be incapable of performing combat missions. Units will report attachments, but not detached units.

2. Format.

LOGISTICS SPOTREP

Line 1: Reporting Unit: _____

Line 2: DTG of report: _____

Line 3: Equipment losses:

TYPE EQUIPMENT	LOSS	O/H
a. _____		
b. _____		
c. _____		
d. _____		

Line 4: Personnel losses:

POSITION	LOSS
a. _____	
b. _____	
c. _____	
d. _____	

Line 5: Significant supply losses:

CLASS	LOSS
a. _____	
b. _____	
c. _____	

Line 6: Combat capability of unit: (G) (A) (R) (B)

b. Yellow 2 - Equipment Status Report.

1. Purpose. The STATREP is submitted through the supporting MSB or FSB to the DMMC center by MSC S4 personnel. The DMMC consolidates the data and provides the status of mission-essential equipment to the G4. Changes are forwarded immediately upon loss of equipment.
2. Format.

EQUIPMENT STATUS REPORT

Unit provides data pertaining to critical equipment to the division G4.

Line 1: Reporting Unit: _____

Line 2: DTG of report: _____

Line 3: Equipment losses:

(1) ITEM	(2) LINE#	(3) #AUTHORIZED	(4) #ON HAND	(5) #NMC	(6) TOTAL OPERATIONAL STATUS	(7) COLOR
a.	_____	_____	_____	_____	_____	_____
b.	_____	_____	_____	_____	_____	_____
c.	_____	_____	_____	_____	_____	_____
d.	_____	_____	_____	_____	_____	_____
e.	_____	_____	_____	_____	_____	_____
f.	_____	_____	_____	_____	_____	_____
g.	_____	_____	_____	_____	_____	_____
h.	_____	_____	_____	_____	_____	_____
i.	_____	_____	_____	_____	_____	_____
j.	_____	_____	_____	_____	_____	_____

Line 4: Commander's overall assessment: (G) (A) (R) (B)

REPORTABLE LINES NEEDED IN YELLOW 2 REPORT:

1. When the entire combat system is a combat loss, report by the numerical line.
2. When a subsystem is a combat loss, report by the numeric-alpha line of the subsystem only.
3. Report combat loss of communications subsystems by the appropriate numeric-alpha line.

Combat Vehicles / Weapons Systems

Line Number / Nomenclature / Model

1. Tank, M1 and M1A1
2. IFV, M2
 - a. Gun, 25-mm
 - b. TOW
 - c. Vehicle
3. CFV, M3
 - a. Gun, 25-mm
 - b. TOW
 - c. Vehicle
4. ITV, M901

- a. TOW
- b. MG, M60
- c. Vehicle
- 5. Carrier, M113
 - a. MG, M2
 - b. Vehicle
- 6. Carrier, M106
 - a. Mortar, 4.2-in
 - b. Vehicle
- 7. Carrier CP, M577
- 8. CEV, M728
 - a. Gun, 165-mm
 - b. Blade
 - c. Vehicle
- 9. Howitzer, 105-mm, M102
- 10. Howitzer, 155-mm, M198
- 11. Howitzer, 155-mm, M109
- 12. MLRS
- 13. Mortar, 81-mm
- 14. Mortar, 60-mm
- 15. MG, 7.62-mm, M60
- 16. MG, 5.56-mm, M279
- 17. Ammo Carrier, M548
- 18. M139 and M87 VOLCANO
- 19. M60 AVLB
- 20. M58A3 and MK22 MICLIC
- 21. M9 ACE

Tactical Vehicles/Trailers

Line Number / Nomenclature / Model

- 22. Rec Veh, M88
- 23. Rec Veh, M578
- 24. HEMTT, Fuel
- 25. HEMTT, Cgo
- 26. HEMTT, Wrecker
- 27. Trk, Cgo, 5-T, M928
- 28. Trk, Trac, 5-T, M931
- 29. Trk, Wrecker, 5-T, M936
- 30. Trk, Cgo, HMMWV, M998
- 31. Trk, Armd HMMWV, M1025
- 32. Trk, Amb, HMMWV, M997
- 33. Trk, HMMWV, TOW, M966
- 34. Trk, Shelter, HMMWV, M1037
- 35. Semitr, 22-T, M871

- 36. Trlr, Flatbed 15-T
- 37. Trlr, 1 1/2-T Ammo
- 38. Trlr, 1 1/2-T Cgo
- 39. Trlr, 400-gal, Water
- 40. Trlr, 3/4-T Cgo
- 41. Armd Cbt Exca M9
- 42. Small Equip Exca (SEE)
- 43. Forklift, 6,000-lb
- 44. Forklift, 4,000-lb

Communications/Electronics

Line Number / Nomenclature / Model

- 45. Radio
 - a. AN/GRC-106 or 213
 - b. AN/GRC-160 or 88
 - c. AN/VRC-46 or 90
 - d. AN/VRC-47 or 89
 - e. AN/VRC-64 or 87
 - f. AN/VRC-49 or 92
 - g. AN/VRC-77 or 119
 - h. AN/VRC-12
 - i. AN/VRC-3
 - j. Fax
 - k. MSRT
 - l. DNVT
 - m. TCP/AC
 - n. TACFIRE
- 46. GSR, AN/PPS-5
- 47. GSR, AN/PPS-15
- 48. AN/TRQ-32, Teammate
- 49. AN/TRQ-30, Rad rec
- 50. AN/TPQ-36, Firefinder
- 51. AN/TPQ-37, Radar

Aircraft

Line Number / Nomenclature / Model

- 52. Helicopter, Atk, AH-64
 - a. Gun, 30-mm
 - b. Missile, HELLFIRE
 - c. Rocket, 2.75
- 53. Helicopter, Atk, AH-1S
 - a. Gun, 20-mm
 - b. Missile, TOW
 - c. Rocket, 2.75
- 54. Helicopter, OH-58D, Mast-Mounted Sight

- 55. Helicopter, OH-58C
- 56. Helicopter, UH-60
- 57. Helicopter, UH-1H
- 58. Helicopter, EH-60/EH-1

OTHER

- 59. _____
- 60. _____
- 61. _____
- 62. _____

c. **Yellow 3 - Ammunition Request.**

1. Purpose. A Yellow 3 Report provides routine requests for specific types of ammunition through logistics channels. Units submit Yellow 3 Reports through the brigade S4. The brigade S4 consolidates and sends reports through the FSB to the division ammunition office. Line or number designators follow.

2. Format.

Ammunition Request

Line Number / Nomenclature / Quantity Required

Small Arms:

- | | | |
|-----|--------------------|-------|
| 1. | 5.56 Ball | _____ |
| 2. | 5.56 Tracer | _____ |
| 3. | 5.56 Linked 4-1 | _____ |
| 4. | 7.62 Linked 4-1 | _____ |
| 5. | 9-mm Ball | _____ |
| 6. | 40-mm HEDP | _____ |
| 7. | 40-mm Illum | _____ |
| 8. | 40-mm Smoke Color | _____ |
| 9. | .50-cal Linked 4-1 | _____ |
| 10. | 20-mm Linked | _____ |
| 11. | 25-mm APDS-T | _____ |
| 12. | 25-mm HEI-T | _____ |

Mortar:

- | | | |
|-----|---------------------|-------|
| 13. | 60-mm Illum | _____ |
| 14. | 60-mm HE | _____ |
| 15. | 60-mm WP | _____ |
| 16. | 81-mm Illum | _____ |
| 17. | 81-mm HE | _____ |
| 18. | 81-mm WP | _____ |
| 19. | 4.2-in HE With Fuze | _____ |
| 20. | 4.2-in WP With Fuze | _____ |
| 21. | 4.2-in Illum/Fuze | _____ |

105-mm Howitzer:

- | | | |
|-----|--------------------|-------|
| 22. | Fuze Prox, 4.2" | _____ |
| 23. | Fuze PD, 4.2" | _____ |
| 24. | HE Without Fuze | _____ |
| 25. | HEPT WF BD | _____ |
| 26. | Illum WF MT | _____ |
| 27. | Smoke WF MT | _____ |
| 28. | HCBE WF MT | _____ |
| 29. | HE ICM WF MT | _____ |
| 30. | Smoke Without Fuze | _____ |
| 31. | APERS WF MT | _____ |
| 32. | Fuze MT | _____ |
| 33. | Fuze MTSQ | _____ |
| 34. | Fuze PD | _____ |
| 35. | Fuze PROX | _____ |

155-mm Howitzer:

- 36. HE APICM _____
- 37. HE DPICM _____
- 38. HE RAP _____
- 39. HE Without Fuze _____
- 40. ADAM _____
- 41. RAAM _____
- 42. HCBE _____
- 43. Illum _____
- 44. Copperhead _____
- 45. WP _____
- 46. CHG WH Bag ER _____
- 47. CHG GR Bag _____
- 48. CHG WH Bag _____
- 49. Reducer Flash _____
- 50. Fuze MTSQ _____
- 51. Fuze PD _____
- 52. Fuze Prox _____
- 53. Primer _____

Aircraft:

- 54. 7.62 Linked 4-1 _____
- 55. 20-mm Linked 4-1 _____
- 56. 30-mm Linked _____
- 57. 2.75 Rocket HE _____
- 58. 2.75 Rocket WP _____
- 59. 2.75 Rocket Illum _____
- 60. 2.75 Rocket FLECHETTE _____
- 61. 2.75 Rocket Smoke _____
- 62. Missile TOW _____
- 63. Missile HELLFIRE _____
- 64. Helicopter Mine Disp
Reload _____

Grenades:

- 65. Frag _____
- 66. Incd _____
- 67. CS _____
- 68. Smoke HC _____
- 69. Smoke _____
- 70. Smoke Yellow _____
- 71. Smoke Violet _____
- 72. Smoke Red _____

Rocket/Missile:

- 73. 66-mm HEAT (LAW) _____
- 74. 66-mm Incd (M202) _____
- 75. AT4 (84-mm)x _____
- 76. Dragon _____
- 77. TOW _____
- 78. Stinger (F1M 72) _____
- 79. Rocket POD, M26 MLRS _____

Mine:

- 80. APERS, M16 _____
- 81. APERS, M3 _____
- 82. APERS, M14 _____
- 83. APERS, M18 _____
- 84. APERS, M26 _____
- 85. AT, M15 _____
- 86. AT, M19 _____
- 87. AT, M21 _____
- 88. AT, M24 _____
- 89. M87 VOLCANO _____

Demolitions:

- 90. CHG, C-4, 1 1/4-lb _____
- 91. CHG, FLEX-X, M118 _____
- 92. DEMO Kit, Bangalore _____
- 93. CHG, TNT, 1/4-lb _____
- 94. CHG, TNT, 1/2 lb _____
- 95. CHG, TNT, 1-lb _____
- 96. CHG, Satchel, 20 lb _____
- 97. CHG, 40-lb Cratering _____
- 98. Electric Caps _____
- 99. Nonelectric Caps _____
- 100. Expl, Destructor _____
- 101. Demo Kit, Cratering M110 _____
- 102. Coupling Base, With Primer _____
- 103. CHG, Demo, Shape, 15-lb _____
- 104. CHG, Demo, Shape, 40-lb _____
- 105. CHG, Demo Kit, Proj CHG _____
M173
- 106. Det Cord _____
- 107. Military Dynamite _____
- 108. Firing Device, Pressure _____
Release
- 109. Firing Device, Pull Friction _____
- 110. Firing Device, Pull Release _____
- 111. Time Fuze _____
- 112. Igniter, Time Fuze _____
- 113. Document Destroyer _____
- 114. Crater Kit, M180 _____
- 115. M58A3 MICLIC _____
- 116. MK22 ROCKET _____

Signal Devices:

117.	Pers Distress Flare	_____
118.	Sig, Illum WSC	_____
119.	Sig, Illum RSP	_____
120.	Sig, Illum WSP	_____
121.	Sig, Illum GSC	_____

Tank Weapons:

122.	120-mm SABOT	_____
123.	120-mm HEAT	_____
124.	105-mm SABOT	_____
125.	105-mm HEAT	_____
126.	Ground, Smoke Vehicle Launched	_____

d. Yellow 4 - POL Request .

1. Purpose. A Yellow 4 Report is used to conduct routine requests for specific types and quantity of Class III items through the brigade S4. The brigade S4 consolidates and submits requests through the FSB. Line or number designators follow:

2. Format.

LINE NUMBER	NOMENCLATURE	U/L	QUANTITY REQUIRED
1.	Report as of DTG	gal	_____
2.	MOGAS	gal	_____
3.	Diesel	gal	_____
4.	Oil, OE-10	gal	_____
5.	Oil, OE-30	gal	_____
6.	Oil, OE-50	gal	_____
7.	Oil, OE-90	gal	_____
8.	Antifreeze	gal	_____
9.	Starter fluid	gal	_____
10.	Deicing fluid	gal	_____
11.	Brake fluid	gal	_____
12.	Hydraulic fluid OHA	qt	_____
13.	Hydraulic fluid OHT x	qt	_____
14.	Hydraulic fluid FRH	qt	_____
15.	Oil, penetrating	qt	_____
16.	Oil, PL-Special	qt	_____
17.	Oil, PL-Med	qt	_____
18.	Bore cleaner	gal	_____
19.	Oil, LSA	qt	_____
20.	Antifreeze comp C-12, 2 1/2-lb	cn	_____
21.	Grease, GAA	lb	_____
22.	Grease, Wheel bearing	lb	_____
23.	Solvent	gal	_____
24.	Sealer, gasket	cnl	_____
25.	Fog Oil	barrel	_____

H-35. Red Reports (Personnel).

a. Red 1 - Personnel Daily Summary.

1. Purpose. The Red 1 Personnel Daily Summary is a hasty personnel report transmitted daily (at 1900 hours) to the brigade S1 to monitor personnel combat strength as availability occurs. Report only those lines that have changed during the report period. Units must report attached, but not detached, units. A complete personnel status report (DA Form 5367-R) is submitted when sufficient information is available to determine personnel requirements.
2. Format.

PERSONNEL DAILY SUMMARY

Line 1: Report as of DTG:: _____

Line 2: Unit: _____

LINE #	AUTH	ASGD	PDY	KIA	WIA	MIA	NON COMBAT LOSSES	GAINS	REMARKS
--------	------	------	-----	-----	-----	-----	-------------------------	-------	---------

3. Commissioned:

4. Warrant:

5. Enlisted:

Line 6: Unit personnel status: (G) (A) (B) (R)

b. Red 2 - Personnel Battle Loss Report.

- b. Purpose. The Red 2 Personnel Battle Loss Report is transmitted to the G1 as the casualty occurs. The unit will also complete and deliver DA Form 1156 with witness statement (DA Form 1155) to the G1 daily. The Red 2 Report is an interim report to update data sent on the last Red 1.
- c. Format.

PERSONNEL BATTLE LOSS REPORT

Line 1: UMR position number or encoded grade, MOS, quantity: _____

Line 2: DTG of incident: _____

Line 3: Location (encoded): _____

Line 4: Type casualty: _____

a. KIA hostile action: _____

b. KIA nonhostile: _____

c. Body recovered: _____

d. Body not recovered: _____

e. Body identified: _____

f. Body not identified: _____

g. MIA: _____

h. Captured: _____

i. WIA hostile: _____

j. WIA nonhostile: _____

k. Accident: _____

Line 5: Evacuated to: _____

H-36. As Required Reports.

a. Aerial Resupply Request.

1. Purpose. An Aerial Resupply Request is submitted to program aircraft for routine resupply missions using division and corps assets. Battalion requests aerial resupply through the brigade S4.
2. Format.

AERIAL RESUPPLY REQUEST

Line 1: Unit supported: _____

Line 2: Type and quantities of supplies desired: _____

(Include description of supplies [200 rounds of 155-mm HE].)

Line 3: Priority of supplies: _____

Line 4: Requested time for drop: _____

Line 5: Exact location: _____
(Encoded 6-digit map coordinate.)
ONE Primary DZ or LZ.
TWO Alternate DZ or LZ.
THREE Leading friendly element or FEBA (trace by at least 2 points).

Line 6: Brief description of: _____
ONE Primary DZ, including size and long axis.
TWO Alternate DZ, including size and long axis.

Line 7: Recent/significant enemy activity on delivery area: _____

Line 8: Terrain characteristics that may: _____

ONE Interfere with the approach or exit flight pattern.
TWO Interfere with the identification of the DZ or LZ.
THREE Serve as checkpoints.

Line 9: Primary call sign and frequency: _____

Line 10: Alternate call sign and frequency: _____

Line 11: Signal to be used when DZ or LZ are unsafe: _____

Line 12: Recommended method of delivery: _____

ONE Parachute.
TWO Airdrop.
THREE Airland.

Line 13: Cancel request if not completed by: _____

(Date-time)

b. **Bridge, Overpass, Culvert, or Causeway Report.** The report is as follows.

BRIDGEREP

- Line 1: Type and location: _____
- Line 2: Overall length: _____
- Line 3: Width of roadway: _____
- Line 4: Height restriction: _____
- Line 5: Type and location: _____
- Line 6: Length of spans and number: _____
- Line 7: Computed class: _____
- Line 8: Bypass: _____
(Easy or difficult.)

c. **Closing Report.**

1. Purpose. The terms "closing" or "closed" indicate that the main body has arrived at the destination. A final Closing Report will be rendered for trail parties and disabled vehicles. Battalions submit reports on brigade OI.
2. Format.

CLOSING REPORT

- Line 1: Unit designation of closing unit: _____
- Line 2: Unit's new location: _____
- Line 3: DTG main body closed: _____
- Line 4: Explanation of accidents/incidents: _____

(Who, what, where, when, how, additional information if applicable.)
- Line 5: Estimated date and time of arrival trail party and/or disabled vehicles: _____

d. **Ford, Ferry, or Other CROSSREP.** The format is as follows.

CROSSREP

- Line 1: Type and location: _____
- Line 2: Length of crossing: _____
- Line 3: Usable width: _____
- Line 4: Current: (In meters/seconds.) _____
- Line 5: Maximum depth (In meters.): _____
- Line 6: Bottom material and condition: _____
- Line 7: If ferry has existing equipment: _____
(Capacity in tons.)
- Line 8: Slope of entry bank: _____
- Line 9: Slope of far bank: _____
- Line 10: Other comments: _____

e. Medical Evacuation Request.

1. Purpose. A MEDEVAC Request is a request from medical personnel or the senior person present.
2. Format.

MEDICAL EVACUATION REQUEST

- Line 1: Location of pick-up site: _____
- Line 2: Radio frequency, call sign, and suffix: _____
- Line 3: Number of patients by category: _____
A - Urgent.
B - Urgent surgical.
C - Priority.
D - Routine.
E - Convenience.
- Line 4: Special equipment required: _____
A - None.
B - Hoist.
C - Extraction equipment.
D - Ventilator.
- Line 5: Number of patients by type: _____
L - Litter.
A - Ambulatory.
- Line 6: Security of pick-up site: _____
N - No enemy: troops in area.
P - Possible enemy troops in area (approach with caution).
E - Enemy troops in area (approach with caution).
X - Enemy troops in area (armed escort required).
- Line 7: Method of marking pick-up site: _____
A - Panels.
B - Pyrotechnic signal.
C - Smoke signal.
D - None.
E - Other.
- Line 8: Patient's nationality and status: _____
A - US military.
B - US civilian.
C - Non-US military.
D - Non-US civilian.
E - EPW.
- Line 9: NBC contamination: _____
N - Nuclear.
B - Biological.
C - Chemical.

f. MIJI Report.

1. Purpose. When the reception of radio signals is hindered, confused, or distorted, by any external source, or if instructions are received from a station that cannot be authenticated, the person experiencing the problem must immediately submit a MIJI Report to the intelligence officer.
2. Format.

MIJIREP

Line 1: Unit: _____
(Unit identification.)

Line 2: Type: _____
(Type of interference.)

Line 3: Location: _____
(Best grid or reference to known point.)

Line 4: On time: _____
(Start DTG.)

Line 5: Off time: _____
(Official DTG.)

Line 6: Affects: _____
(Operations/equipment affected.)

Line 7: Frequency: _____
(Frequency/frequency range.)

Line 8: Narrative: _____

Line 9: Transmission time: _____
(DTG of transmission.)

Line 10: Authorization: _____
(Message authorized according to current guidelines. Use only if directed.)

g. Minefield Report.

1. Purpose. The Minefield Report is used when authorized; when requesting authorization to emplace hasty protective minefields; or when reporting intention, initiation, and completion of laying. The brigade OI is the primary net to submit reports.
2. Format.

MINEFIELD REPORT A (Intention to Lay)

- Line 1: Unit, type, and number: _____
(Call sign, Hasty-protective sequentially assigned number.)
- Line 2: Coordinates of extremities (ENCRYPT): _____
- Line 3: Estimated DTG of start and completion:(Send both times.) _____

MINEFIELD REPORT B (Initiation of Laying)

- Line 1: Type, and number: _____
(See Minefields Report A, Line 1.)
- Line 2: Actual DTG of start: _____

MINEFIELD REPORT C (Completion of Minefield)

- Line 1: Type, and number: _____
(See Minefields Report A, Line 1.)
- Line 2: Actual DTG of completion: _____
- Line 3: Changes to any information reported in Report A: _____

- Line 4: Total number of mines laid by type: _____
- Line 5: Method of laying: (Normally, hand-surface or hand-buried.) _____

- Line 6: Details of lanes: _____
(Specify location of gaps, entrance, exit, azimuth, type of marking, ENCRYPT digits.)
- Line 7: Details of minefield: _____
(Normally, under marking observation or single-wire fence and signs.)

h. Patrol Report.

1. Purpose. The Patrol Report is submitted on the brigade OI and is used to report combat information to the next higher headquarters. The duration and activity of dismounted reconnaissance patrols requires debriefing. The report ensures uniform reporting and guarantees that all significant information obtained by the patrol is reported. Only those items identified by an asterisk (*) are required to be submitted in an initial report.

2. Format.

PATROL REPORT

- *Line 1: Designation of patrol: _____
- Line 2: Size and composition of patrol: _____
- Line 3: Task: _____
- *Line 4: Time of departure: _____
- *Line 5: Time of return: _____
- *Line 6: Routes:(Out and back.) _____
- Line 7: Terrain: _____
(Description of terrain - dry, swampy, jungle; conditions of bridges as to type, size, and strength; effect on armored and wheeled vehicles.)
- *Line 8: Enemy: _____
(Strength, disposition, equipment, weapons, attitude, morale, exact location, movement, and any shift in dispositions. Time activity was observed. Coordinates where activity occurred.)
- Line 9: Map corrections: _____
- Line 10: Miscellaneous information: _____
(Including aspects of NBC warfare.)
- Line 11: Results of encounters with enemy: _____

(Number of EPWs captured, disposition of enemy casualties, captured documents, and captured equipment.)
- Line 12: Condition of patrol: _____
(Include status of dead and wounded.)
- *Line 13: Conclusions and recommendations: _____

- Line 14: Additional remarks by debriefer: _____

- Line 15: Distribution (optional): _____

i. EPW or Captured Materiel Report.

1. Purpose. The EPW or Captured Materiel Report is used to report a prisoner or materiel captured of immediate tactical importance to the brigade S2 within 30 minutes.
2. Format.

EPW OR CAPTURED MATERIEL REPORT

- Line 1: Item captured or EPW: _____
- Line 2: Time of capture: (DTG.) _____
- Line 3: Place of capture: _____
(Best grid or reference to known point.)
- Line 4: Capturing unit: (Call sign.) _____
- Line 5: Circumstances of capture: (Be brief.) _____

- Line 6: Transmission time: _____
(DTG of transmission. Use only if directed.)

j. Ration Request.

1. Purpose. The Ration Request is to be used by the unit when the tactical situation prohibits face-to-face coordination for rations.
2. Format.

RATION REQUEST

- Line 1: DTG of request: _____
- Line 2: Requested delivery time: _____
- Line 3: Number T-ration meals: _____
- Line 4: Number MRE-ration x meals: _____
- Line 5: Water in gallons: _____
- Line 6: Coordinates of delivery or linkup point: _____

k. **Route Reconnaissance Report.** The report is as follows.

ROUTE RECONNAISSANCE REPORT

Line 1: From: _____
Line 2: To: _____
Line 3: What: _____
1 - Highway
2 - Road
3 - Trail
4 - Cross-country.
Line 4: Class route: _____
1 - Only tracked vehicles.
2 - Any wheel vehicles.
3 - Dismounted only.
4 - Only wheels.
Line 5: Type: _____
1 - All weather.
2 - Limited all-weather.
3 - Fair weather.
Line 6: Movement possible: _____
1 - Fast.
2 - Slow
Line 7: Any critical points: _____

1. Sensitive Item Report.

1. Purpose. The SENSREP is used to report the status of sensitive items.
2. Format.

SENSITIVE ITEM REPORT

Line 1: Unit: _____
Line 2: Status: (G) _____ (B) _____
If Black:
Line 3: Item: _____
Line 4: Serial Numbers: _____
Line 5: DTG item discovered missing: _____
Line 6: Location item lost: _____

m. Severe Weather Warning Report.

1. Purpose. The SVRWXWARN is used to report forecast severe weather.
2. Format.

SVRWXWARN

- Line 1: Type: _____
(Type and name of severe weather.)
- Line 2: Location: _____
(Center of forecast weather.)
- Line 3: Valid: _____
(DTG forecast is effective.)
- Line 4: Until: _____
(DTG forecast is no longer in effect.)
- Line 5: Weather: _____
(Atmospheric conditions with respect to cloudiness, precipitation, other weather phenomena.)
- Line 6: Visibility: _____
(Minimum visibility in meters.)
- Line 7: Ceiling: _____
(Lowest forecast ceiling in feet above ground level.)
- Line 8: Maximum speed: _____
(Maximum wind speed in knots.)
- Line 9: Gusts: _____
(Peak gusts in knots.)
- Line 10: Direction: _____
(Wind direction in degrees.)
- Line 11: Narrative: _____

- Line 12: Transmission time: _____
(DTG of transmission. Use only if directed.)
- Line 13: Authorization: _____
(Message authorized according to current guidelines. Use only if directed.)

n. Shell Report.

1. Purpose. The SHELREP is used when any of the format information is requested.
2. Format.

SHELREP, MORTREP, BOMREP (Specify)

- Line 1: Unit of origin: _____
- Line 2: Observer's location: _____
- Line 3: Azimuth to bursts, flashes: _____
(Specify which: sound, groove of shell, rocket flight path, or type of azimuth, degrees or mils.)
- Line 4: DTG attack began: _____
- Line 5: DTG attack ended: _____
- Line 6: Location of attack grid: _____
- Line 7: Number and nature of guns, mortars (aircraft, or other methods of delivery): _____
- Line 8: Nature of fire, barrage, and registration: _____
- Line 9: Number and type and caliber of bombs, shells, and rockets: _____
- Line 10: Flash to bang time in seconds: _____
(Omit for aircraft.)
- Line 11: Damage: _____
(If friendly personnel/equipment.)
- Line 12: Transmission time: _____
(DTG of transmission. Use only if directed.)
- Line 13: Authorization: _____
(Message authorized according to current guidelines. Use only if directed.)

o. Splash Report.

1. Purpose. The Splash Report is used to report downed friendly aircraft.
2. Format.

SPLASH REPORT

- Line 1: Call sign: _____
- Line 2: Aircraft data: _____
(Type and status.)
- Line 3: Pilot status: _____
1 - Recovered
2 - Recovered WIA
3 - Recovered KIA
4 - Unknown

H-37. NBC Reports

- a. **NBC 1 - Observer's Initial Report.** The format is as follows.

OBSERVER'S INITIAL REPORT

- Line 1: Strike serial number: _____
(If known. Assigned by the NBCC.)
- Line 2: Position of observer: _____
(Coordinates or place.)
- Line 3: Direction measured clockwise from grid north, true north, or magnetic north
(state which) of the attack from observer: _____

(Degrees or mils; state which.)
- Line 4: DTG of detonation or date-time attack started: _____
- Line 5: Illumination time or DTG attack started: _____
- Line 6: Linear target grids or location of attack or location of area attacked: _____

(Coordinates of place. Actual or estimated; state which.)
- Line 7: Means of delivery or kind of attack: _____

(Guns, mortars, multiple rockets, missiles, bombs, spray; state which.)
- Line 8: Type of burst (air, surface, unknown; state which) including height or type of agent;
height of burst: _____

- Line 9: Number of munitions or aircraft; state which: _____

- Line 10: Flash to bang time in seconds: _____
- Line 11: Crater present or absent and diameter (meters) or description of terrain/vegetation:

- Line 12: Nuclear burst angular cloud width measured at H+5 minutes: _____
(Degrees or mils; state which.)
- Line 13: Stabilized cloud-top angle and/or cloud-bottom angle (state which) or cloud-top
height and/or cloud-bottom height (state which) measured at H+10 minutes: _____

(Degrees, mils, meters, or feet; state which.)
- Line 14: Date-time of reading or date-time contamination detected: _____

- Line 15: 20 CGY/HR contour line coordinates (black) or area of actual contamination
(yellow): _____

b. **NBC 2 - Evaluated Data Report.** The report is as follows.

EVALUATED DATA REPORT

- Line 1: Strike serial number: _____
(If known. Assigned by the NBCC.)
- Line 2: DTG of detonation or date-time attack started: _____
- Line 3: Linear target grids or location of attack or location of area attacked: _____

(Coordinates of place. Actual or estimated; state which.)
- Line 4: Means of delivery or kind of attack: _____

(Guns, mortars, multiple rockets, missiles, bombs, spray; state which.)
- Line 5: Type of burst (air, surface, unknown; state which) including height or type of agent;
height of burst: _____

- Line 6: Estimated yield (KT):

c. **NBC 3 - Immediate Warning of Expected Contamination.** The format is as follows.

IMMEDIATE WARNING OF EXPECTED CONTAMINATION

- Line 1: Strike serial number: _____
(If known. Assigned by the NBCC.)
- Line 2: DTG of detonation or date-time attack started: _____
- Line 3: Linear target grids or location of attack or location of area attacked: _____

(Coordinates of place. Actual or estimated; state which.)
- Line 4: Type of burst (air, surface, unknown; state which) including height or type of agent;
height of burst: _____

- Line 5: Coordinates of points to outline external contours of radioactive cloud or predicted
hazard area: _____

- Line 6: Downwind direction of radioactive cloud (in degrees or mils; state which) or
duration of hazard (days): _____

- Line 7: Direction measured clockwise from grid north, to then left and then to the right
radial lines: _____

(4 digits. Degrees or mils; state which.)
Representative downwind direction: _____
(4 digits. Degrees or mils; state which.)
Representative wind-speed: _____
(3 digits. Kmph or knots; state which.)

d. **NBC 4 - Report of Radiation Dose-Rate Measurement.** The format is as follows.

REPORT OF RADIATION DOSE-RATE MEASUREMENT

- Line 1: Type of burst (air, surface, unknown; state which) including height or type of agent; height of burst: _____

- Line 2: Location of reading or location where samples were taken and details of type of sample: _____

- Line 3: Dose rate cGy/H the words initial, increasing, peak, or decreasing may be added. When decay rate is reported the words decay normal, decay fast, or decay slow, or the actual value of decay constant may be inserted: _____

- Line 4: Date-time of reading or date-time contamination was detected: _____

e. **NBC 5 - Report of Areas of Contamination.** The format is as follows.

REPORT OF AREAS OF CONTAMINATION

- Line 1: Strike serial number: _____
(If known. Assigned by the NBCC.)
- Line 2: Reference date-time for estimated contours when not H+1 hour: _____
- Line 3: Date-time of reading or date-time contamination detected: _____

(Coordinates of place. Actual or estimated; state which.)
- Line 4: H+1 date-time or date-time of latest survey of contamination in the area: _____

- Line 5: 9,000 cGy/H contour line coordinates (red): _____

- Line 6: 300 cGy/H contour line coordinates (green): _____

- Line 7: 100 cGy/H contour line coordinates (blue): _____

- Line 8: 20 CGY/HR contour line coordinates (black) or area of actual contamination (yellow): _____

f. **NBC 6 - Detailed Information of Chemical or Biological Attack(s).** The format is as follows.

REPORT OF CHEMICAL OR BIOLOGICAL ATTACK

Line 1: Strike serial number: _____
(If known. Assigned by the NBCC.)

Line 2: Date-time attack started: _____
(Zulu [Z], local [L], or letter zone.)

Line 3: Date-time attack ended: _____
(Zulu [Z], local [L], or letter zone.)

Line 4: Area attacked: _____
(Location, UTM, or place.) (Actual [A], Estimated [E], state which.)

Line 5: Means of delivery, if known: _____

Line 6: Type of agent and height, if known: _____

Line 7: Number of munitions or aircraft: _____

Line 8: Description of terrain/vegetation: _____

Line 9: Enemy action before and after attack; effect on troops: _____

Line 10: Location (UTM) and type of sample(s): _____

Line 11: Date-time contamination initially detected: _____

(Zulu [Z], local [L], or letter zone.)

Line 12: Date-time of latest survey of contamination: _____
(Zulu [Z], local [L], or letter zone.)

Line 13: Area of tactical significance of contamination (UTM): _____
A: _____
B: _____
C: _____
D: _____
(Coded yellow on overlay.)

Line 14: Downwind direction: Wind speed: _____
(Degrees [D], or mils [M]; state which km/hr.)

Line 15: Remarks: _____

g. Effective Downwind Message.

EFFECTIVE DOWNWIND MESSAGE

Line 1: Strike serial number: _____
(If known. Assigned by the NBCC.)

Line 2: DTG of detonation or date-time attack started: _____

Line 3: Illumination time or DTG attack started: _____

Line 4: Linear target grids or location of attack or location of area attacked: _____

(Coordinates of place. Actual or estimated; state which.)

Line 5: Means of delivery or kind of attack: _____

(Guns, mortars, multiple rockets, missiles, bombs, spray; state which.)

Line 6: Type of burst (air, surface, unknown; state which) including height or type of agent;
height of burst: _____

Line 7: Number of munitions or aircraft; state which: _____

Line 8: Crater present or absent and diameter (meters) or description of terrain/vegetation:

Line 9: Stabilized cloud-top angle and/or cloud-bottom angle (state which) or cloud-top
height and/or cloud-bottom height (state which) measured at H+10 minutes: _____

(Degrees, mils, meters, or feet; state which.)

Line 10: Location of reading or location where samples were taken and details of type of
sample: _____

Line 11: Date-time of reading or date-time contamination detected: _____

Line 12: H+1 date-time or date-time of latest survey of contamination in the area: _____

Line 13: 20 CGY/HR contour line coordinates (black) or area of actual contamination
(yellow): _____

Line 14: Direction measured clockwise from grid north to the left and then to the right
radial lines: _____
(4 digits. Degrees or mils; state which.)
Representative downwind direction: _____
(4 digits. Degrees or mils; state which.)
Representative wind-speed: _____
(3 digits. Kmph or knots; state which.)

Line 15: Remarks: _____

h. **NUCWARN Message.** The format is as follows.

NUCWARN MESSAGE

- Line 1: Strike serial number: _____
(If known. Assigned by the NBCC.)
- Line 2: DTG of detonation or date-time attack started: _____

- Line 3: Linear target grids or location of attack or location of area attacked: _____

(Coordinates of place. Actual or estimated; state which.)
- Line 4: Type of burst (air, surface, unknown; state which) including height or type of agent;
height of burst: _____

- Line 5: Number of munitions or aircraft; state which: _____

- Line 6: Coordinates of points to outline external contours of radioactive cloud or predicted
hazard area: _____
- Line 7: Direction measured clockwise from grid north to the left and then to the right
radial lines: _____

(4 digits. Degrees or mils; state which.)
Representative downwind direction: _____
(4 digits. Degrees or mils; state which.)
Representative wind-speed: _____
(3 digits. Kmph or knots; state which.)

APPENDIX I DECISION MAKING

CONTENTS
Section I. Deliberate Decision-making Process
Section II. Abbreviated or Accelerated Decision-making Process

TRADOC Pam 525-5 states
"future technology will require
the Army to reassess time
honored means of battle

command to recognize that in the future, military operations will involve the coexistence of both hierarchical and internetted, nonhierarchical processes." The deliberate decision-making process (DDMP) is not easily used in a rapid, crisis situation where time is critical. Once operations have commenced, circumstances may make it difficult or impossible to always use the DDMP. The most detailed estimates cannot anticipate every possible branch or sequel, every action of the enemy, or changes in mission directed from higher headquarters. Even the most successful operations may "outrun" the initial plan under continuous operations.

The goal of the commander and staff is to maintain the initiative and anticipate the outcome of the current operation in order to determine the future requirements and set conditions for success. The brigade commanders position on the battlefield and the continuous focused information (CCIR) from his staff allow the commander to assess the operations and adjust as necessary. In addition, the commander must ensure he maintains control of the decision-making process.

SECTION I. DELIBERATE DECISION-MAKING PROCESS

Military decision making revolves around an established proven procedure called the DDMP. The relationship among the TLPs, decision making, and the estimate of the situation is depicted at Figure I-1. A more detailed discussion of the DDMP is found in FM 101-5.

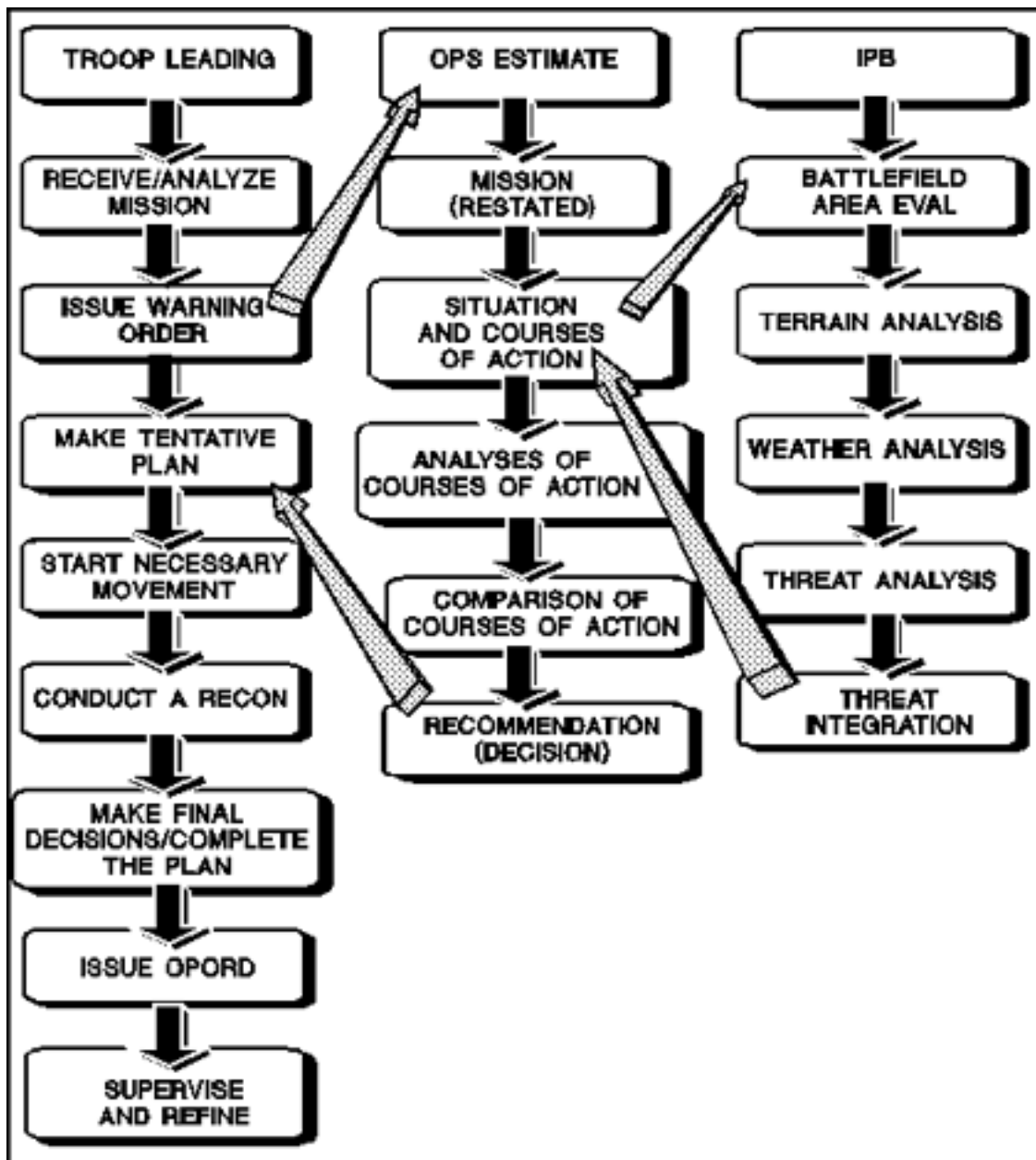


Figure I-1. Planning and execution.

The brigade commander is key to conceptualizing, planning, preparing, and executing operations - this is his personal responsibility. The commander participates in and propels the process. From the start of the process to the final product, the personal role of the commander is central. The role of the staff is defined and focused by the direction provided by the commander.

The DDMP is a continuous and sequential process, allowing the commander and his staff to examine possibilities of the battlefield and reach logical decisions. The key elements of the DDMP are:

- Information gathering (estimates).
- Mission analysis.
- Restated mission.
- Commanders guidance.
- COA development, analysis, comparison, and recommendation.
- COA approval.

- Preparation, approval, issuance of plans, orders, and FRAGOs.
- Execution.

The DDMP can require substantial time to develop the detail required to arrive at a good military decision. The commander routinely uses this method when adequate planning time and sufficient staff support are available and there is opportunity to thoroughly examine numerous friendly and enemy COAs. The DDMP, because of limited staff, is best utilized before operations commence. The key component is the commander participating in and controlling the entire process. He provides adequate guidance, and continual analysis of his mission and his units tasks, while receiving staff input at relevant intervals.

In DDMP, the commander uses the entire staff with its functional orientation and actively participates, guiding and making decisions as the staff works through the procedure. The staff has time to explore the full range of probable and likely enemy COAs as well as to develop, analyze, and compare its own COAs. The XO is the primary staff officer who ensures the staff is accomplishing their requirements throughout the DDMP, to include providing pertinent information to the commander.

The DDMP increases the commander time to perform critical troop-leading tasks while at the same time makes optimum use of the talents of his staff. The commander uses formal and informal briefings to further maneuver the staff through this procedure more efficiently. Such interaction helps the staff resolve questions they uncover and ensures the entire staff is involved in the total process. Regardless of the time available, the agreed upon solution (COA) is still directly linked to how well both commander and staff accomplish each phase.

The DDMP provides a firm basis for continued decision-making during continuous operations. It is extremely important that the deliberate process be used initially, returned to whenever operations tempo allows, and practiced during all training events.

SECTION II. ABBREVIATED OR ACCELERATED DECISION-MAKING PROCESS

Any abbreviated or accelerated planning process requires the commander to have a high level of expertise, intuition, creativity, and battlefield awareness. He and his staff must quickly decide on feasible COAs, use existing information on METT-T and detailed estimates, and arrive at a COA that meets the mission requirements. This COA may not be optimal. Obviously, as time for the decision-making process decreases, the commanders personal involvement in performing the process increases, either with the staff or by himself. The commander has several options he may choose to abbreviate the process. He may save time by shortening or foregoing an in-depth estimate, other than what has been accomplished previously. The commander may limit the number of COAs for development and subsequent analysis; and he may choose to prescribe an abbreviated method in the unit SOP. Under extreme time constraints the commander will perform the mission analysis himself and provide the staff with the restated mission and his intent. The commander must ensure the process is under his control and steps within the process are not arbitrarily ignored. The XO must have a thorough understanding of the on-going operation, the commanders guidance and intent, and continually exercise the staff in all critical steps of the decision-making process, as time and conditions permit. The staff will continue to provide guidance as necessary, coordinate actions, and implement the commanders decisions.

To a varying extent, staff members are always assessing the current operation and updating their estimates. Detailed planning prior to operations provides the commander and staff with components of information they need to make knowledgeable choices and decisions as operations continue.

Deliberate process productions (such as weather analysis, terrain analysis, enemy order of battle, and general situation analysis) usually do not change significantly during the initial stage of combat operations if estimates are kept current. Modifications are much simpler than returning to a zero base. These products, such as DSTs and event templates, identify critical points in the plan that require decisions and commanders consideration. Staff members should maintain sufficient, updated information on the changes from their initial estimates to be able to give the commander an indication of their ability to support new mission requirements.

Regardless of how the commander chooses to abbreviate the decision-making process, two areas he should always include are wargaming and risk assessment. Wargaming provides the opportunity to synchronize the BOS across the COA. It may be the only time the staff and subordinates test the suitability, feasibility, and acceptability of the COA. Risk assessment must be done to ensure a solution to a task or set of tasks will not render the force incapable of anticipating operations or lower the units combat effectiveness below acceptable levels.

GLOSSARY

A

A2C2 Army airspace command and control
AA assembly area
AAA antiaircraft artillery
AACG arrival airfield control group
AAFAD all arms for air defense
AAR after-action review
ABCS Army battle command system
ABE assistant brigade engineer
ABMOC air battle management operation center
ACA airspace coordination area
ACE armored combat earthmover
ACO airspace control orders
ACP air control points
ACR armored cavalry regiment
ACT air cavalry troop; analytical control team
actg accounting
ACU area common user
A/DACG arrival/departure airfield control group
AD armor division
ADA air defense artillery
ADALO air defense artillery liaison officer
ADAM area denial antipersonnel mine
ADAO assistant division air defense officer
ADC area damage control
ADC-M assistant division commander for maneuver
ADCOORD air defense coordinator
ADCT air defense coordination team
ADO air defense officer
ADW air defense warning
AF Air Force
AFAS advanced field artillery system
AFAC airborne forward air controller
AFCE Allied Air Forces Central Europe
AFCENT Allied Forces Central Europe
AFV armored fighting vehicle
AG adjutant general
AH attack helicopter
AGL above ground level
AGM attack guidance matrix
AHB attack helicopter battalion
AHC attack helicopter company
AI area of interest
AK automatic remote keying
A/L administrative/logistics
ALO air liaison officer
AM amplitude modification
amb ambulance
ammo ammunition
anal analysis
ANGLICO air and naval gunfire liaison officer

AO area of operation
AP antipersonnel
APC armored personnel carrier
APDS-T armor-piercing discarding sabot-tracer
APERS antipersonnel
APFSDS armor-piercing fin-stabilized discarding sabot
APFSDS-T armor-piercing fin-stabilized discarding sabot-tracer
API armor-piercing incendiary
APICM antipersonnel improved conventional munition
APOD aerial port of debarkation
APOE aerial port of embarkation
ARFOR Army forces
amrd armored
ARNG Army National Guard
ARTEP Army Training and Evaluation Program
arty artillery
ASAS all-source analysis system
ASCC Army service component commander
ASL authorized stockage list
aslt assault
ASOC air support operations center
ASP ammunition supply point
AST ammunition support team
AT antitank
ATA air to air
ATACMS Army tactical missile system
ATB attack battalion
ATCCS Army tactical command and control system
atcd attached
ATGM antitank guided missile
ATHS airborne target handoff system
ATIZ artillery target intelligence zone
atk attack
ATP ammunition transfer point
attn attention
AUEL automated unit equipment list
autmv automotive
AVIM aviation intermediate maintenance
AVLB armored vehicle launched bridge
avn aviation
AVUM aviation unit maintenance
AWACS airborne warning and control system
AWIS Army worldwide information system
AXP ambulance exchange point
AWOL absent without leave

B

BAI battlefield air interdiction

BAS	battlefield automated systems	CFA	covering force area
BCC	battlefield circulation control	CFL	coordinated fire line
BCV	battle command vehicle	CFFZ	call for fire zone
BCOR	brigade office of record	CFHQ	crossing force headquarters
BDA	battle damage assessment	CFL	coordinated fire line
BDAR	battle damage assessment and repair	CFV	cavalry fighting vehicle
bde	brigade	CFZ	critical friendly zone
BFACS	battlefield functional area command and control system	cgo	cargo
BDU	battle dress uniform	CH	cargo helicopter
BFV	Bradley Fighting Vehicle	chem	chemical
BGU	basic generator unit	CHEMWARN	chemical warning
BHL	battle handover line	CI	counterintelligence
BII	basic issue items	CIF	central issue facility
BLPS	ballistic laser protection system	CINC	commander-in-chief
BMNT	beginning morning nautical twilight	CIRS	commander's critical information requirements
BMO	battalion maintenance officer	C&J	collection and jamming
BMT	battalion maintenance team	CLAMMS	cleared lane mechanical marking system
bn	battalion	CLU	command and launch unit
BOS	battlefield operating system	cm	centimeter(s)
BP	battle position	cmd	command
BRIDGEREP	bridge report	cml	chemical
BSA	brigade support area	CMMC	Corps Materiel Management Center
BSFV	Bradley Stinger fighting vehicle	CMO	civil-military operations
btry	battery	CMOC	civil-military operations center
		CMT	company maintenance team
<u>C</u>		CNR	combat net radio
C2	command and control	CNRI	combat net radio interface
C2V	command and control vehicle	cntr	center
C3	command, control, and communication	CNV	combat net variable
C3I	command, control, communications, and intelligence	co	company
C4I	command, control, communications, computers, and intelligence	COA	course of action
CA	civil affairs	COLT	combat observation lasing team
CAAD	combined arms air defense	comm	communication
CAA	combined arms Army	COMMZ	communications zone
CAB	combat aviation brigade	COMSEC	communications security
cal	caliber	CONOPS	contingency operations
CANA	convulsant antidote nerve agent	CONPLAN	contingency plans
CARC	chemical agent resistant coating	CONUS	continental United States
CAS	close air support	COP	command and observation post
CBR	chemical, biological, radiological	COSCOM	corps support command
cbt	combat	CP	command post
CBU	cluster bomb unit	CPT	captain
CCIR	commander's critical information requirements	CPX	command post exercise
CCL	combat configured loads	CRC	Continental United States Replacement Center
CDMP	combat decision-making process	CROSSREP	cross report
cdr	commander	CRP	combat reconnaissance patrol
CEB	clothing exchange and bath	CS	combat support
CEO	communications electronic officer	CSC	combat stress casualty
CEV	combat engineer vehicle	CSG	corps support group
CEWI	combat electronic warfare and intelligence	CSM	command sergeant major
		CSR	controlled supply rate
		CSS	combat service support
		CSSCS-EAC	combat service support and control system for echelon above corps

CVRT	criticality, vulnerability, recuperability, and threats	EOD	explosive ordnance disposal
CZ	sensor zone	EP	electronic protection
<u>D</u>		EPW	enemy prisoner(s) of war
D-day	deployment day	equip	equipment (in illustration)
DA	Department of the Army	ES	electronic warfare support
DACG	departure airfield control group	est	establish
DAG	divisional artillery group (opposing forces)	EW	electronic warfare
DAO	division ammunition officer	EXTAL	extra time allowance
DCO	deputy commanding officer	1SG	first sergeant
DDMP	deliberate decision-making process	<u>F</u>	
decon	decontamination	FA	field artillery
DEH	Directorate of Engineering and Housing	FAAD	forward area air defense
det	detachment	FAADC3I	forward area air defense command and control communications and intelligence
DEW	directed energy weapon	FAAR	forward area alerting radar
DISCOM	division support command	FAC	forward air controller
div	division	FARP	forward arming refuel point
DIVARTY	division artillery	FARV	future armored resupply vehicle
DLIC	detachment left in contact	FASCAM	family of scatterable mines
DMD	digital message device	FASP	field artillery support plan
DMMC	division materiel management center	FAST	forward area support team
DNVT	digital nonsecure voice terminal	FAX	facsimile
DOCEX	document exploitation	FBCB2	Force XXI battle command--brigade and below
DODAC	Department of Defense Ammunition Code	FCT	firepower control teams
DOL	Directorate of Logistics	FDC	fire direction center
DP	decision point	FEBA	forward edge of battle area
DPICM	dual-purpose improved conventional munition	FED	forward entry devices
DRB	division ready brigade	FIST	fire support team
DRF	division ready force	FISTV	fire support team vehicle
DS	direct support	FLIR	forward looking infrared radar
DSA	division support area	FLOT	forward line of own troops
DST	decision support template	FM	field manual
DSVT	digital subscriber voice terminal	FO	forward observer
DTG	date-time group	FofF	fields of fire
DTO	division transportation officer	FOOGAS	(petroleum-based expedient inflammable material)
DTOC	division tactical operations center	FORSCOM	Forces Command
DZ	drop zone	FPF	final protective fire
<u>E</u>		FPL	final protective lines
EA	engagement area	FRAGO	fragmentary order
EBA	engineer battlefield assessment	FS	fire support
EAC	echelons above corps	FSB	forward support battalion
ECCM	electronic counter-countermeasures	FSCL	fire support coordination line
ECM	electronic countermeasures	FSCM	fire support coordination measures
EEFI	essential elements of friendly information	FSCoord	fire support coordinator
EEl	essential elements of information	FSE	fire support element
EN	electronic notebook	FSM	fire support measures
enr	engineer	FSM	fire support measures
EOC	emergency operations center	FSE	fire support element
		FSO	fire support officer
		fwd	forward

G

G1	assistant chief of staff (personnel)
G2	assistant chief of staff (intelligence)
G3	assistant chief of staff (operations and plans)
G3-Air	air operations and planning officer
G4	assistant chief of staff (logistics)
gal	gallon
GBS	ground base sensor
GCCS	global command and control system
GBU	guided bomb unit
GEMSS	ground-emplaced mine scattering system
GIRS	grid index reference system
GLD	ground laser designator
GMRD	guard motorized rifle division
GPS	global positioning system/ gunner's primary sight
gren	grenade
grp	group
GS	general support
GSR	ground surveillance radar
GT	gun target
G/VLLD	ground/vehicle laser locator designator

H

HAB	heavy assault bridge
HC	hydrochloroethane
HE	high-explosive
HE-APERS	high-explosive antipersonnel (ammunition)
HEAT	high-explosive antitank
HEAT-T	high-explosive antitank-tracer
HEDP	high-explosive dual-purpose
HEI	high-explosive incendiary
HEI-T	high-explosive incendiary-tracer
hel	helicopter
HEMTT	heavy expanded mobile tactical truck
HEP-T	high-explosive plastic tracer
HET	heavy equipment transport
HF	high frequency
HHB	headquarters and headquarters battery
HHC	headquarters and headquarters company
HHD	headquarters and headquarters detachment
HHT	headquarters and headquarters troop
HIMAD	high-to-medium-altitude air defense
hldg	holding
HMMWV	high mobility multipurpose wheeled vehicle
HPT	high payoff targets
HPTL	high payoff target list
hq	headquarters
hr	hour
HSS	health service support
HUMINT	human intelligence

HVT

high-value target

I

IAW	in accordance with
ICM	improved conventional munition
IEW	intelligence and electronic warfare
IFF	identification, friend, or foe
IEWO	intelligence and electronic warfare officer
IEWSE	intelligence and electronic warfare support element
IFSAS	initial fire support automation system
IFF	identification, friend, or foe
IFV	infantry fighting vehicle
IG	inspector general
inf	infantry
insp	inspection
intel	intelligence
INTREP	intelligence reports
INTSUM	intelligence summary
IP	initial point
IPB	intelligence preparation of the battlefield
IPW	prisoner of war interrogation
IR	infrared
IRC	initial ready company
ITB	independent tank battalion
ITO	installation transportation office
ITV	improved TOW vehicle
IVIS	intervehicular information system

J

JAAT	joint air attack team
JAG	Judge Advocate General
JOPEs	joint operation planning and execution system
JTF	joint task force
J-SEAD	joint suppression of enemy air defenses
JSTARS	joint surveillance target attack radar system

K

KE	kinetic energy
KEM	kinetic energy missile
KIA	killed in action
km	kilometer(s)
kmih	kilometers in the hour
kmph	kilometer(s) per hour (as a unit of measure that indicates motion)
kph	kilometers per hour (as a unit of measure only)

L

LADW	local air defense warning
LAN	local area network

LANTIRN low-altitude navigation and targeting
infrared for night
LAV-AD light armor vehicle air defense
lb pound
LBE load-bearing equipment
LC line of contact
LD line of departure
LD/LC line of departure is line of contact
ldr leader
LLTR low-level transit route
lnchr launcher
LO liaison officer
LOA limit of advance
LOC line(s) of communication
log logistics
LOGCAP logistical civil augmentation program
LOGPAC logistics package
LOGSTAT logistics status
LOS line of sight
LOSAT line-of-sight antitank
LOTS logistics-over-the-shore
LP listening post
LRF laser range finder
LRP logistic release point
LSA logistic support area
LSE logistics support elements
LST laser-spot tracker
lt lieutenant
LZ landing zone

M

m meter(s)
MAG Marine Air Group
maint maintenance
maj major
MALS Marine aviation logistics squadron
MANPAD man-portable air defense
MarDiv Marine Division
MBA main battle area
MCC movement control center
MBT main battle tank
MCO movement control officer
MCP maintenance collection point
MCS maneuver control system
MCT movement control team
mech mechanized
med medical
MEDEVAC medical evacuation
MEF Marine Expeditionary Force
METL mission essential task list
METT-T mission, enemy, terrain, troops and
time available
MG machine gun
mgmt management
MHE materiel-handling equipment

MI military intelligence
MIA missing in action
MICLIC mine clearing line charge
mih miles in the hour
MIJI meaconing, intrusion, jamming, and
interference
MIJREP meaconing, intrusion, jamming, and
interference report
min minutes
MK manual remote keying
MKT mobile kitchen trailers
MLRS multiple launched rocket system
mm millimeter(s)
MMC Materiel Management Center
MOPMS modular pack mine system
MOPMS module packed mine system
MOPP mission-oriented protectiveion posture
mort mortar
MOS military occupational specialty
MOUT military operations on urbanized terrain
MP military police
mph miles per hour
MR motorized rifle
MRB motorized rifle battalion
MRC motorized rifle company
MRD motorized rifle division
MRE meals, ready to eat
MRP motorized rifle platoon
MRR motorized rifle regiment
MRS motorized rifle squad
MSB main support battalion
MSC major subordinate command / Military
Sealift Command
MSCS manual short-range air defense control
system
MSE mobile subscriber equipment
msg message
MSR main supply route
MSRT mobile subscriber radio terminals
MST maintenance support team
MTC movement to contact
MTMC Military Traffic Management Command
MTOE modification table of organization and
equipment
MTP mission training plan

N

NAAK nerve agent antidote kit
NAI named areas of interest
NAPP nerve agent pretreatment pills
NATO North Atlantic Treaty Organization
NBC nuclear, biological, chemical
NBCO nuclear, biological, chemical officer
NBCWRS NBC warning and reporting system
NCA national command authority

NCO noncommissioned officer
 NCOIC noncommissioned officer in charge
 NCS net control station
 NET new equipment training
 NGF naval gunfire
 NGLO naval gunfire liaison officer
 NGO naval gunfire officer
 NLT not later than
 NOD night observation device
 NUCWARN nuclear warning
 NVD night-vision device

Q

obj objective
 OBSTINTEL obstacle intelligence
 OCOKA observation and fields of fire, cover and concealment, obstacles, key terrain, avenues of approach
 OCONUS outside continental United States
 OH observation helicopter
 OI operations and intelligence
 OIC officer in charge
 OIR other intelligence requirements
 OMG operational maneuver group
 OOTW operations other than war
 OP observation post
 OPCON operational control
 OPFOR opposing forces
 OPLAN operation plan
 OPORD operation order
 OPP offload preparation party
 ops operations
 OPSEC operations security
 ord ordnance
 org organization
 ORP objective rally point
 OSP on-board ship party

P

PA physician's assistant
 PAC Personnel and Administrative Center
 PADS position azimuth determining system
 PAO public affairs officer
 PAX passengers
 PCI precombat inspection
 PD point detonating
 PDS personnel daily summary
 PERINTREP periodic intelligence report
 pers personnel
 PEWS platoon early warning system
 PFC private first class
 phys physical
 Ph probability of hit
 Pi probability of incapacitation

PIR priority intelligence requirements
 Pk probability of kill
 PL phase line
 PLL prescribed load list
 plt platoon
 PM provost marshal
 PMCS preventive maintenance checks and services
 POD point of debarkation
 POE point of embarkation
 POL petroleum, oils, and lubricants
 POMCUS prepositioning of materiel configured to unit sets
 pos position
 POSNAV position navigation
 PP passage point
 PRI TGT priority target
 PSA post support activity
 PSG platoon sergeant
 PSNCO personnel services noncommissioned officer
 PSS personnel service support
 PST pass time
 PSYOP psychological operations
 PUL preconfigured unit loads
 PW prisoner of war
 PZ pickup zone

Q

QDMP quick decision-making process
 qtr quarter
 QSS quick supply store

R

RAAMS remote antiarmor mine system
 RAG regimental artillery group
 RAOC rear area operations center
 RAP rocket assisted projectile
 RATELO radiotelephone operator
 RATT radio teletypewriter
 RAU radio access unit
 recon reconnaissance
 REDCON readiness condition
 regt regiment
 RES radiation exposure status
 RETRANS retransmit
 RFA restrictive fire area
 RFL restrictive fire line
 RKV random key variable
 ROE rules of engagement
 ROM refuel-on-the-move
 ROZ restricted operations zone
 RP release point
 RPG rocket-propelled grenade

R&S	reconnaissance and surveillance	SLAR	side looking airborne radar
RSL	recommended stockage lists	SME	subject matter expert
RSR	required supply rate	SO	signal officer
RSTA	reconnaissance surveillance target acquisition	SOF	special operations forces
RTD	return to duty	SOI	signal operation instructions
RTF	regeneration task force	SOP	standing operating procedure
RTO	radiotelephone operator	SOSR	suppress, obscure, secure, and reduce
		SP	start point
<u>S</u>		SPBS-R	standard property book system-redesign
S1	adjutant	SPOD	seaport of debarkation
S2	intelligence officer	SPOE	seaport of embarkation
S3	operations and training officer	SPOTREP	spot report
S3-Air	assistant battalion S3 (air operations)	spt	support
S4	supply officer	sqdn	squadron
S5	civil affairs officer	SR	supply route
SAAFR	standard-use Army aircraft flight routes	SRIG	surveillance reconnaissance and intelligence group
SAB	separate armor brigade	SSG	staff sergeant
SAEDA	Subversion and Espionage Directed Against US Army and Deliberate Security Violations	S&T	supply and transport
SAB	separate armor brigade	ST	special text
SAFAD	small arms for air defense	STACCS	standard theater Army command and control system
SALT	supporting arms liaison team	STAMIS	Standard Army Management Information System
SALT Air	supporting arms liaison team S3 (air operations)	STANAG	Standardization Agreement
SALUTE	size, activity, location, unit, time, and equipment	STRATREP	status report
SAM	surface-to-air missile	svc	service
SARSS-1(I)	Standard Army Retail Supply System-1 Interim	SVRWXWARN	severe weather warning report
SCO	squadron commander	<u>T</u>	
sct	scout	TAA	tactical assembly area
SEAD	suppression of enemy air defense	TAACOM	Theater Army Air Defense Command
sec	section	TACAIR	tactical air
SEE	small emplacement excavators	TAC CP	tactical command post
SEN	small extension node	TACCS	Tactical Army Combat Service Support Computer System
SENSREP	sensitive items report	TACFIRE	tactical fire direction system
SFC	sergeant first class	TACMS	tactical missile system
SGM	sergeant major	TACP	tactical air control party
sgt	sergeant	TACSAT	tactical satellite
SHELREP	shell report	TACSSCS	Tactical Army Combat Service Support Computer System
SHORAD	short-range air defense	TAI	target areas of interest
SICPS	standard integrated command post system	TALCE	tanker airlift control element
SIF	selective identification feature	TAMMS	The Army Maintenance Management System
sig	signal	TAT	to accompany troops
SIGINT	signals intelligence	TC	tank commander
SIGSEC	signals security	TCF	tactical combat force
SINCGARS	single channel ground and airborne subsystem	TCP	traffic control post
sit	situation	TD	tank division
SITMAP	situation map	TDIS	time-distance
SITREP	situation report	TEWT	tactical exercise without troops
SJA	Staff Judge Advocate	TF	task force
		TGM	terminally guided munitions

tgt target
 THREATCON threat condition
 TIRS terrain index reference system
 TLP troop-leading procedures
 tm team(s)
 TMC troop medical clinics
 tns trains
 TOC tactical operations center
 TOE table(s) of organization and equipment
 TOT time on target
 TOW tube-launched, optically tracked, wire-guided (missile)

 TPFDD time-phased force deployment data
 TPFDL time-phased force deployment logistics
 TPN tactical packet network
 TR tank regiment
 TRADOC United States Army Training and Doctrine Command

 trans transportation
 trk truck
 trlr trailer
 trmt treatment
 TRP target reference point
 TSOP tactical standing operating procedures
 TTP tactics, techniques, and procedures
 TTU transportation terminal unit
 TV television
 TVA target value analysis
 typ typist

U

 UAV unmanned aerial vehicle
 UBL unit basic load
 UH utility helicopter
 UHF ultra high frequency
 UMCP unit maintenance collecting point

UMT unit ministry team
 USAARMS United States Army Armor School
 USAF United States Air Force
 USAMCCOM United States Army Armament, Munitions, and Chemical Command
 USAMMA US Army medical materiel agency
 USCINCTRANS United States Commander-in-Chief Transportation Command
 USTRANSCOM United States Transportation Command

V

 VFMED variable format message entry device
 VHF very high frequency
 V/STOL vertical/short takeoff and landing

W

 WCS weapons control status
 WESS weapons effect signature simulator
 WFZ weapons free zones
 WIA wounded in action
 WO warning order
 WP white phosphorus
 wpns weapons
 WP-T white phosphorous tracer
 wrkr wrecker
 WSM weapon system management
 WSRO weapon systems replacement operations
 WWMCCS worldwide military command and control system

 WXFCST weather forecast report

X

 XO executive officer

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INDEX

A

- absent without leave (AWOL), 8-15
- Adjutant (SI), 1-3, 1-5, 3-6, 3-16 and 3-19, 6-8, 8-3 through 8-5, 8-14 through 8-17, 8-25 and 8-26
- administrative/logistics (A/L), 3-5, 3-19, 8-5
- advance from the exit bank, 6-44
- advance guard, 4-18, 6-19, A-12
- advance party, 2-2 and 2-3, 6-8
- advanced field artillery systems (AFAS), E-10
- aerial port of debarkation (APOD), G-3
- aerial port of embarkation (APOE), G-3
- after-action reviews (AAR), F-6
- agility, 1-6 and 1-7, 2-7
- air assault units, 6-4 and 6-5
- air attack, 3-22
- air cavalry squadron, H-54 through H-57
- airborne units, 6-4 and 6-5
- airborne warning and control system (AWACS), E-13
- air defense, 3-7 through 3-9, 3-15, 4-6, 4-17, 4-46, 5-5, 6-15 and 6-16, 8-22, B-6, B-11, C-7, C-12, C-16. *See also* battlefield operating system (BOS).
 - active, 7-24
 - assets, 3-7, 6-8
 - battery, 3-7
 - capabilities, 3-7
 - element, 1-4, 1-16, 4-23
 - low-altitude, 4-17
 - passive, 2-7, 7-24
 - planning, 6-17, 8-22, B-11, C-7
 - warning net, 6-16
- air defense artillery (ADA), 2-7, 3-9, 3-13, 4-3, 4-6, 4-17, 6-8 and 6-9, 6-16, 6-26, 6-39, 6-42, 6-46, 8-6, 8-22, B-5 and B-6, C-7, C-16, C-19, H-30 through H-33
 - liaison officer (LO), 3-7
 - local air defense warning (LADW), H-31
 - officer (ADO), 2-7 and 2-8, 3-7, 3-15, 6-42
 - sensors, 3-7
 - warning, 2-7, H-30 through H-33
 - weapons, 3-7
- Air Force, 3-15, B-1
- AirLand Battle, E-4
- air liaison officer (ALO), 3-7, 3-13, 3-15
- airlift, 3-7
- Air Mobility Command, G-3
- airmobile, C-10 and C-11
- air naval gunfire liaison officer (ANGLICO), 3-7, 3-9
- airspace, 3-7, 3-15, B-6, E-13
- airspace coordination area (ACA), B-11, C-6
- all-source analysis system (ASAS), 1-7, 1-10, 2-6, 4-5, 5-8, E-1, E-7
- ambulance exchange point (AXP), 8-22, C-8
- ambushes, A-12, C-18
- ammunition transfer point (ATP), 2-8, 6-9, 6-12, 8-12
- amphibious operations, B-5
- AN/PRC-77 radios, C-3
- antiarmor, A-12, C-14 and C-15
- antipersonnel (AP), A-12
- antitank (AT), 3-20, 6-31, A-11 through A-13, C-8, C-11, C-15, E-10
- antitank guided missile (ATGM), A-11
- antitank platoon, C-3
- antiterrorism, A-2
- approach march, 6-48
- area damage control, 6-34
- area of operations (AO), 1-5, 2-2 through 2-4, 3-2, 3-7 through 3-9, 3-12, 3-23 through 3-26, 5-2, 6-7, 6-10, 6-14, 6-27, 6-33 and 6-34, C-18, F-7 and F-8
- areas
 - marshaling, 2-2
 - staging, 2-2
 - tactical assembly, 2-2
- arm bands, 6-4
- armor forces, A-13, C-2, C-10, C-12, C-15
- armor/light considerations, A-13
- armored and mechanized, C-12
- armored cavalry troop, 1-4
- armored operations, C-1 through C-19
 - air defense, C-7, C-16, C-19
 - armored brigade and light infantry battalion operations, C-2 through C-11
 - armored force capabilities, C-13
 - augmentation, C-3 and C-4
 - Bradley Stinger fighting vehicle (BSFV), C-4
 - breakout from encirclement, C-5
 - capabilities and limitations, C-13 and C-14, C-18
 - characteristics of the light infantry battalion, C-3 through C-9
 - combat service support (CSS), C-8 and C-9, C-17, C-19
 - combat support (CS), C-4
 - command and control, C-9, C-17, C-19
 - considerations to offset armored force limitations, C-13 and C-14
 - cover, C-5
 - defend in sector, C-5
 - defending a strongpoint, C-11
 - defense in sector, C-10
 - defensive techniques, C-10 and C-11
 - demonstration, C-5
 - employment considerations, C-12 and C-13, C-18 and C-19
 - exploitation, C-5, C-10
 - fire support (FS), C-6 and C-7, C-15 and C-16, C-19
 - follow and support, C-5
 - forward entry devices (FED), C-4
 - ground surveillance radar (GSR), C-4
 - hasty and deliberate attack, C-5, C-9 and C-10
 - initial fire support automation system (IFSAS), C-4
 - intelligence, C-5 and C-6, C-15, C-18
 - introduction, C-1 and C-2
 - light
 - battalion, C-5
 - brigade, C-4
 - corps, C-4
 - division, C-4

engineer, C-4
military intelligence battalion, C-4
truck company, C-4
 linkup, C-5
 maintenance team, C-4
 maneuver, C-6, C-15, C-19
 mess team, C-4
 missions, C-4 and C-5
 mobility and survivability, C-8, C-16 and C-17
 movement to contact, C-5, C-9 and C-10
 nuclear, biological, chemical (NBC), C-17
 offensive techniques, C-9 and C-10
 operational planning considerations, C-5
 organization, C-3
 planning considerations, C-14 through C-16
 pursuit, C-5, C-10
 remotely employed sensor (REMS), C-4
 retrograde operations, C-5, C-11
 smoke/decon platoon liaison officer (LO), C-4
 special operations forces, C-18 and C-19
 tactical employment, C-14
 task organization considerations, C-11 and C-12
 unit maintenance team, C-4
 Army airborne command and control system (A2C2S), E-13
 Army airspace command and control (A2C2), 3-11,3-14 and 3-15, B-6
 Army aviation liaison officer (LO), 3-7
 Army aviation procedures, H-52 through H-57
 Army battle command system (ABCS), E-1 and E-2
 Army global command and control system (AGCCS), E-2 and E-3
 Army National Guard, 1-4
 Army operations, 1-5 through 1-10, 2-1, 6-33
 agility, 1-6 and 1-7
 depth, 1-6 and 1-7
 initiative, 1-6 and 1-7
 synchronization, 1-6, 1-8
 versatility, 1-6, 1-8
 Army service component commander (ASCC), B-3
 Army tactical command and control system (ATCCS), E-3
 Army tactical missile system (ATACMS), E-16
 Army worldwide information system (AWIS), E-3
 artillery. *See* field artillery (FA).
 assault, 6-4, A-6
 assault crossing of the river, 6-44
 assembly area, 6-2, 6-8, 6-11, 6-14 through 6-18, 6-24 and 6-25, 6-27, 6-35, D-1 through D-7
 forward, D-5
 locations of, 4-4
 occupation of, D-6, H-24 through H-26
 assessment, 8-24
 Assistant Chief of Staff (G1), Personnel, 8-14, 8-16
 Assistant Chief of Staff, (G2), Intelligence, 3-18,C-15
 Assistant Chief of Staff (G3), Operations and Plans, 3-18, 8-25, C-15 and C-16
 Assistant division air defense officer (ADADO), B-6
 Atlantic Commands, B-1
 atmospheric conditions, 3-18
 attachment of critical combat service support assets to maneuver, 8-19 and 8-20
 attachment and detachment procedures, H-57through H-60
 attack
 continuation of, 4-31
 counterattack, 6-13
 deep, 3-12
 deliberate, 4-27 through 4-31, 6-15, C-5, C-10
 demonstration, 4-33
 feint, 4-31 and 4-32
 frontal, 4-11
 ground, 3-24
 hasty, 4-19, 4-24 through 4-26, C-5
 main, 4-3, 4-26, 4-32
 position, C-7
 pursuit, 4-34
 raid, 4-32, A-2
 spoiling, 5-11
 supporting, 4-3
 attack guidance matrix, 4-5
 Avenger, 2-7, B-6, E-1, E-10
 avenues of approach, 1-10, 3-21, 6-20, 8-6, C-6, C-14, D-3
 aviation. *See also* helicopters, attack.
 defensive, C-11, 5-4
 liaison officer (LO), 3-15
 offensive, 4-5, 4-28, 4-31, 6-21
 axes of advance, 6-1

B
 backbriefs, 3-23, 4-21, 6-21, F-2
 base defense operation, 6-34
 battalion
 armored and mechanized infantry, 1-2, 1-4 and 1-5, C-7
 assault amphibious, B-2
 combat engineer, B-2
 command post (CP), 3-19
 commander, 3-9 and 3-10, 6-5, 6-8, 6-23, 6-26,C-6, C-17
 field trains, 6-9
 headquarters, B-2
 light, C-3 and C-4
 light armored reconnaissance, B-2
 missions, A-6
 motor transportation, B-2
 operations, A-6
 tank and mechanized infantry, 4-28
 task force, 1-10, 4-5, 4-7, 4-16, 4-27 through 4-29, 6-5 and 6-6, 6-11, 6-17, 6-21, 6-24 through 6-26, 8-5, 8-8 and 8-9, B-6
 task force commanders, 3-26
 battle. *See also* main battle area (MBA).
 handover, 6-15, 6-18 and 6-19, 6-25
 handover line (BHL), 6-14, 6-16, 6-18 and 6-19, 6-24 through 6-26
 battle command, 3-1 through 3-29, E-3, E-12, I-1
 adjutant (S1), 3-6
 air defense officer (ADO), 3-7
 air liaison officer (ALO), 3-7
 air naval gunfire liaison officer (ANGLICO), 3-7
 Army aviation liaison officer (LO), 3-7 and 3-8
 brigade rehearsals, 3-22 through 3-28
 chain of command, 3-4
 chaplain, 3-8
 chemical officer, 3-8

civil affairs officer (S5), 3-6 and 3-7
 command and control, 3-2
 command and control facilities, 3-10
 command and control guidelines, 3-2
 command and control organization, 3-5 through 3-10
 command and staff communications, 3-4 and 3-5
 command group, 3-10
 command post displacement, 3-21
 command post operations, 3-19 through 3-21
 command post operations techniques, 3-19 and 3-20
 command post positioning, 3-20
 command post security, 3-20 and 3-21
 command sergeant major (CSM), 3-5 and 3-6
 commander, 3-3 through 3-5
 communication, 3-17 through 3-20
 communications security, 3-17 and 3-18
 conducting the rehearsal, 3-26 through 3-28
 confirmation brief, 3-23 and 3-24
 coordinating staff, 3-6
 coordination, 3-5
 definition, 3-1 through 3-3
 deputy commander, 3-5
 direct support military intelligence company commander, 3-8
 engineer, 3-8
 example terrain model rehearsal, 3-24 through 3-28
 executive officer, 3-5
 fire support coordinator (FSCOORD), 3-8 and 3-9
 forward support battalion (FSB) commander, 3-9
 full-dress rehearsal, 3-22
 functions, 3-4
 general, 3-1 through 3-3, 3-17, 3-22
 headquarters and headquarters company commander or headquarters commandant, 3-9
 intelligence officer (S2), 3-6
 key leader rehearsal, 3-22 and 3-23
 logistics officer (S4), 3-6
 main command post, 3-12 through 3-15, 3-19
 map rehearsal, 3-23
 maps, 3-20
 military police platoon leader, 3-9
 operations and training officer (S3), 3-6
 organization and facilities, 3-3 through 3-17
 personal staff, 3-5
 preparing a terrain model rehearsal, 3-24 through 3-26
 radio rehearsal, 3-23
 rear command post, 3-15 through 3-17
 rehearsal types, 3-22
 relationship with subordinate commands, 3-4
 responsibilities, 3-17
 responsibility and authority, 3-4
 signal officer (SO), 3-9 and 3-10
 site selection, 3-24
 sketch map rehearsal, 3-23
 special rehearsal, 3-24
 special staff, 3-7
 staff, 3-4
 surgeon, 3-10
 tactical command post (TAC CP), 3-10 through 3-12, 3-19
 tactical operations center (TOC) operations, 3-19
 terrain model or sand table, 3-23
 battle damage assessment (BDA), 2-6, 3-6
 battlefield automated system (BAS), E-3
 battlefield framework, 2-3 through 2-5
 battlefield functional area (BFA), E-3
 battlefield operating system (BOS), 1-10, 2-1, 2-5 through 2-9, 3-28, 4-4 through 4-8, 4-44 through 4-47, B-5 through B-11, C-5 through C-9, C-18 and C-19, E-3, I-4
 air defense, 2-7, 4-46, B-6, B-11, C-7 and C-8
 combat service support (CSS), 2-8, 4-8, 4-46, B-7, B-11, C-8 and C-9
 command and control, 2-9, 4-4, 4-46, B-7, B-11, C-9
 fire support (FS) , 2-6, 4-5, 4-45, B-6, B-10 and B-11, C-6 and C-7
 intelligence, 2-5 and 2-6, 4-4, 4-44, B-5, B-10, C-5 and C-6
 maneuver, 2-6, 4-5, 4-44, B-5 and B-6, B-10, C-6
 mobility and survivability, 2-7, 4-7, 4-46, B-6 and B-7, B-11, C-8
 nuclear, biological, chemical (NBC), 4-7
 battle position (BP), 5-8 and 5-9, C-10
 battle space, 1-5, 1-10, 2-3 and 2-4, 4-2, E-8, F-10
 belligerents, A-3 through A-6, A-11 through A-13
 booby traps, A-5
 Bradley Stinger Fighting Vehicle (BSFV), 2-7, 8-26, B-6, C-4, C-7 and C-8, E-1
 breaching operations, 4-38 through 4-42, 6-1, C-7 and C-8, C-17
 breakout forces, 6-5, 6-30, 6-41
 breakout from encirclement, 6-27 through 6-33
 actions upon encirclement, 6-28 and 6-29
 combat service support, 6-32
 command actions, 6-28
 command and control, 6-32
 diversionary force, 6-31 and 6-32
 execution, 6-30 through 6-33
 forces, 6-30
 general, 6-27
 main body, 6-31
 planning, 6-28 and 6-29
 preparation, 6-29 and 6-30
 rear guard, 6-32
 reserve force, 6-31
 rupture force, 6-30 and 6-31
 brigade, 1-1 through 1-11
 agility, 1-7 and 1-8
 air defense officer (ADO), 3-7, 6-42
 area of operations (AO), 3-8
 armored, 4-9, 5-1, B-1, B-4 through B-11, C-4 through C-17
 Army operation tenets, 1-6
 Army operations, 1-5 through 1-9
 assembly areas, 6-11, D-3 and D-4
 battlefield focus, 1-10 and 1-11
 capabilities, 1-1 and 1-2
 chaplain, 3-8, 8-16
 combat service support system, 8-3 through 8-8
 command and control, D-3 and D-4
 command group, 3-9

commander, 1-6 and 1-7, 1-10, 2-6, 3-1, 3-3 through 3-13, 3-17, 3-19, 3-26, 5-1 and 5-2, 6-7 and 6-8, 6-11, 6-15 through 6-17, 6-21 through 6-23, 6-29 through 6-36, 6-41 and 6-42, 6-48, 8-1 through 8-6, 8-15, 8-17, 8-19 and 8-20, B-11, C-7, C-9 and C-10, C-13, C-16, D-6 and D-7, E-16, H-2, I-1 and I-2

decontamination, 2-8

depth, 1-7

digitized, E-1 through E-17

elements, 3-16, 6-26

engineers, 3-8, 3-10, 4-78, 6-15, 6-17, 6-41 and 6-42, 6-45

executive officer (XO), 3-6, 3-8 and 3-9, 3-26 and 3-27, 8-4, 8-17, C-9

fire support coordinator (FSCOORD), 3-15, 6-5, 6-15

fire support element (FSE), 2-7, 4-5

fire support officer (FSO), 3-9, 3-27, 6-11, 6-15

formations. *See* formations.

functions, 1-2

generating combat power, 1-8 and 1-9

headquarters, 1-2, D-6

headquarters and headquarters company (HHC), D-3 through D-6

initiative, 1-6 and 1-7

light, C-4

limitations, 1-1 and 1-2

maneuver, 1-9

missions, 1-1, 1-4 and 1-5, 3-29, A-1

operations, 1-4, 1-7, 2-1 through 2-9, 3-2, 3-5, 3-8, 3-19, 3-25, 6-6, 6-16, 8-20

operation orders (OPORD), 3-23

organizations and functions, 1-2 through 1-5

passage of lines, 6-13 and 6-14

protection, 1-9

reconnaissance and surveillance (R&S), 3-28, C-6

rehearsals, 3-22 through 3-28

separate, 1-4 and 1-5

signal officer (SO), 3-9

staff, 1-7, 3-2, 3-6, 3-14, 3-24 through 3-26, 6-7, 6-16, 6-22, 8-16, B-7, C-7 through C-9, C-13, D-5 through D-7

support area (BSA), 2-8 and 2-9, 3-5 and 3-6, 3-9 and 3-10, 3-16 and 3-17, 4-8, 6-14, 6-27, 6-34 through 6-36, 6-47, 8-5 and 8-6, 8-13, 8-19 and 8-20

surgeon, 3-10, 8-4 and 8-5, 8-11

versatility, 1-8

zone, 3-7

brigade support area (BSA), 2-8 and 2-9, 3-5 and 3-6, 3-10, 3-16, 6-14, 6-34, 6-36, 6-47, 8-5 and 8-6, 8-13, 8-19, C-8, C-13

brigade support area/base cluster defense considerations, 6-35 and 6-36

bypass, 4-16 and 4-17, 4-22 through 4-26

C

casualties, 8-11 and 8-12, H-71

cease fires, A-2 through A-6, A-8

chaplain, 3-6, 3-8, 3-16, H-77

checkpoint, 6-23, A-2, A-6 through A-12

chemical officer, 2-8, 3-8, 3-28

choke point, 8-8, C-7 through C-11

civil affairs (CA), 2-3, 3-6 and 3-7, 3-16, 8-22, C-2, C-19

civil affairs officer (S5), 1-3, 3-7, 3-17

civil-military operations center (CMOC), H-78

classes of supply, 1-2, 6-5, 6-9, 6-12, 6-47, 8-12 through 8-14, 8-19, 8-21, B-7, C-8, C-13 and C-14

close air support (CAS), 1-7, 1-10, 2-6, 3-7, 4-3, 4-5, 4-26, 7-9 and 7-10, B-6, B-10, E-12, F-9

close operations. *See* operations, close.

cluster bomb units (CBU), F-10

combat forces, 2-2, 5-1, 6-33, 6-36, B-4, C-2

combat functions, D-12

combat net radio, 3-10, 3-17, E-7, H-36

combat net radio interface (CNRI), 3-19

combat operations, 1-2, 2-2 and 2-3, 3-11, 3-22, 6-28, 8-13, D-2, E-3 and E-4, I-4

combat power, 1-1, 1-6 through 1-9, 2-1 through 2-6, 3-1, 3-5, 4-30, 5-1 and 5-2, 6-8, 6-30, 6-44, A-6, C-1, C-11, D-2, E-5, E-7, E-9

dynamics of, 1-9 and 1-10

generating, 4-1

combat service support (CSS), 1-1, 1-8 through 1-10, 2-8 and 2-9, 3-5 and 3-6, 3-8 through 3-12, 3-15 and 3-16, 3-19, 3-27, 4-8 through 4-16, 4-27, 6-9, 6-12, 6-14, 6-16 and 6-17, 6-19, 6-22 through 6-24, 6-28, 6-30 through 6-32, 6-38, 6-42, 6-48, 8-1 through 8-26, A-2, B-7, B-11, C-8 and C-9, C-12, C-15, E-3, E-14, F-10. *See also* battlefield operating system (BOS), combat service support (CSS).

administrative services, 8-16 and 8-17

brigade support area (BSA), 8-6

forward support battalion (FSB), 8-8

health services, 8-16

key personnel, 8-4 and 8-5

main supply route (MSR), 8-6

maintenance operations, 8-9

medical operations, 8-10 and 8-11

overview, 8-2 and 8-3

personnel service support, 8-14 and 8-15

planning, 8-17

reconstitution, 8-23

regeneration, 8-24

relationships, 8-1

reorganization, 8-23

retrograde operations, 8-22

supply operations, 8-12

push system, 8-13

supply point, 8-13

unit distribution, 8-13 and 8-14

support plan, 8-18

weapon systems replacement operations (WSRO), 8-24 through 8-26, H-61 and H-62

combat service support control system for echelons above corps (CSSCS-EAC), E-3

combat support (CS) 1-1, 1-4, 1-7 through 1-10, 3-5 and 3-6, 3-9, 3-11 and 3-12, 3-15, 3-24, 3-27, 4-3 and 4-4, 4-18, 4-21, 4-28, 6-19, 6-23, 6-28, 6-31, 6-38, 6-48, 7-20 through 7-24, B-4, C-4, C-12, C-15, E-4, E-3, E-14, F-10

- air defense support, 7-20 through 7-24
- combat air support, 7-8 through 7-10
- fire support, 7-2 through 7-7
- intelligence and electronic warfare support, 7-25 through 7-27
- joint air attack team operations, 7-10 and 7-11
- military police support, 7-27 through 7-32
- mobility and survivability, 7-13 through 7-16
- naval and marine fire support, 7-11 through 7-13
- nuclear, biological, chemical operations, 7-16 through 7-18
- signal support, 7-33 and 7-34
- smoke operations, 7-19 and 7-20
- combat vehicles/weapons systems, H-92 through H-94
- combined arms, 6-18, E-1 through E-16
- commander, E-2
- concept, A-13
- forces, 4-27, B-10
- obstacle integration, 5-15 through 5-20
- operations, 1-10, 4-16 through 4-22, 8-3, F-6
- tactics, E-9
- team, 1-11, 2-7, 4-30, B-5, E-2
- command, F-10
 - joint task force, B-3 and B-4
 - subordinate unified commands, B-3 and B-4
 - unified and specified commands, B-3 and B-4
- command and control, 1-6 through 1-10, 2-7, 2-9, 3-1 through 3-5, 3-9, 3-12, 3-15, 3-19, 3-22, 4-8, 4-46, 5-6 and 5-7, 6-11, 6-19, 6-26, 6-27, 6-32, 6-43, 6-48, 8-20, 8-24, A-2, B-9, B-11, C-7, C-9 and C-10, C-17 and C-18. *See also* battlefield operating system (BOS), command and control.
 - alternate, 3-19
 - brigade facilities, 3-10 through 3-12
 - communication, 3-2
 - elements, 3-19
 - guidelines, 3-2
 - measures, 3-22, 4-30
 - systems, 1-7, 6-11, E-13
 - warfare, 3-16 through 3-19
- command and control vehicle (C2V), E-1, E-13
- command and launch unit (CLU), E-11
- command and support relationships, 8-1 and 8-2
- command, control, and communications, 2-9, 3-21, 6-34, B-9, C-19, E-7
- command, control, communications, and intelligence (C3I), 3-17 and 3-18, 4-7, 4-9, E-11, E-13
- command group, 1-5, 1-7, 2-9, 3-7 through 3-10, 3-19 and 3-20, 3-24
- command post (CP), 3-1 through 3-3, 3-8, 3-10, 3-14, 3-16, 3-19 through 3-22, 6-11, C-8, F-5, H-3 and H-4, H-38 and H-39
 - battalion, 3-19
 - brigade, 3-2, 3-6 through 3-8, 3-15, 3-19 through 3-21, C-8 and C-9, D-7
 - communications, 3-19 and 3-20
 - displacement, 3-21
 - jump, 3-21
 - locations, 3-20
 - main, 1-7, 2-9, 3-3 through 3-14, 3-19 through 3-21, 6-6, 6-11, 6-17, 8-4, 8-17, C-9
 - maps, 3-20
 - operations, 3-19 through 3-21, A-8
 - positioning, 3-20
 - rear, 1-7, 2-9, 3-5 through 3-10, 3-15 through 3-20, 6-9, 8-5 and 8-6, 8-19, 8-25, D-3
 - security, 3-20 and 3-21
 - tactical (TAC CP), 1-5 through 1-7, 3-5 and 3-6, 3-9 through 3-12, 3-14, 3-19, 3-22, 6-9, 6-17, 6-42, D-3
 - techniques, 3-19 and 3-20
- command relationship, 6-4, C-17
- Command Sergeant Major (CSM), 3-5 and 3-6
- commander
 - battalion, 3-10, 6-5 through 6-8, 6-17 through 6-19, 6-21, 6-23, 6-25 and 6-26, 8-23, C-6, E-13, I-4
 - brigade, 2-6, 3-1 through 3-13, 3-17 and 3-18, 5-1 and 5-2, 6-22 and 6-23, 6-29 through 6-36, 6-41 and 6-42, 6-48, 8-1 through 8-6, 8-15, 8-17, 8-19 and 8-20, B-11, C-7, C-9 and C-10, C-13, C-16 and C-17, D-6 and D-7, E-16, H-2, I-1
 - combined arms, E-2
 - corps, 6-14 and 6-15, E-13
 - diversionary force, 6-32
 - division, 2-7, 3-18, 6-14, 8-23
 - engineer, 6-12, 6-41
 - guidance, I-2
 - joint task force, E-2
 - maneuver, 6-15
 - passing, 6-18
 - rupture force, 6-30
 - stationary force, 6-17 and 6-18
 - task force, 3-12, 3-27, 6-21, B-4
 - unit, 3-28, 6-11, 8-24
- commander in chief (CINC), B-3, C-18
- commander's critical information requirements (CCIR), E-13
- commander's
 - decision, 3-1, 3-10, 3-19, I-4
 - intent, 1-6 through 1-9, 2-7 and 2-8, 3-1 through 3-3, 3-8, 3-26 and 3-27, 8-3 and 8-4, 8-17, A-4, B-9 and B-10, C-13, C-17, D-7, E-12, E-16, F-2
 - planning guidance, 3-5, I-4
- communications, 1-5, 2-9, 3-2, 3-14, 3-17 through 3-23, 6-17, 6-19, 6-29, 6-37, 7-33 and 7-34, 8-19, C-3, C-9, D-6, E-10, E-14
- command and staff, 3-4 and 3-5
 - operations security. *See* operations, security.
 - responsibilities, 3-17
 - security, 3-17 and 3-18
 - voice, 2-7
- communications security (COMSEC), 3-18 and 3-19, 8-12
- confirmation briefs, 6-17, F-2, F-10
- contact point, 6-15 through 6-19, 6-24
- contaminated areas, 2-8
- contingency operations (CONOPS), 1-11, C-18
- contingency plans, 3-19, 3-27, 6-16, A-3, D-7
- continental United States (CONUS), 2-3, 8-26
- control measures, 1-7, 2-4, 3-25, 6-5 and 6-6, 6-18, 6-23, 6-26, 6-40, B-6, C-13, F-4, F-10
- converging forces, 6-6
- convoys, A-2, A-11 and A-12
- coordinating fire line (CFL), 6-6, 6-25 and 6-26
- coordinating staff, 3-26 and 3-27
 - adjutant (S1), 3-6

- civil affairs officer (S5), 3-6 and 3-7
- intelligence officer (S2), 3-6
- logistics officer (S4), 3-6
- operations and training officer (S3), 3-6
- cordon and search, A-2 through A-7
- corps, 1-4, 5-1 and 5-2, 6-14, D-3 through D-5, F-10
- corps support group (CSG), B-7
- corps support command (COSCOM), 8-3, 8-6, 8-12
- counterair operations, 2-7
- counterattack, 1-6, 2-5, 6-19, 6-22 and 6-23, 6-37,6-41, 6-45, A-10 and A-11, C-13 through C-15
- counterintelligence support, 3-6
- countermeasures, 3-17 and 3-18, E-11
- countermobility, 4-7, 6-42, 6-46, C-8, C-17
- counterreconnaissance, C-5 and C-6
- course of action (COA), 2-4, 2-6, 3-2, 3-26 and 3-27,6-22, 6-25, 6-29, 8-1, 8-17, E-2, I-2 through I-4
- covering force, 5-13, 5-20 through 5-24
- covering force area (CFA), 4-17 and 4-18, 4-34through 4-35, C-14

D

- data base, 2-6, E-12
- deception, 3-17 and 3-18, 6-14, 6-24 and 6-25, 6-34,6-45, C-5, C-14, C-19, D-2
- decision making, I-1 through I-4
 - abbreviated or accelerated decision-making process, I-3 and I-4
- deliberate decision-making process, I-1 throughI-3
- decision-making process, 1-6 through 1-8, 3-1, E-13, I-1 through I-4
- decision point (DP), 3-27, 5-10, 6-23
- decision support template (DST), 1-6, 3-26 and 3-27,6-22, 6-25, C-15, I-4
- decisive point, 1-1, 1-6 through 1-9, 5-2, A-13, C-15and E-16
- decontamination, 2-8, 3-7, 3-24, B-6, C-4, C-17
- deep operations. *See* operations, deep.
- defense of the brigade support area (base cluster), 6-34 and 6-35
- defensive operations, 1-2, 3-22, 5-1 through 5-25, 6-12, 6-18, 6-22, 6-33, B-5, 6-1.
 - air defense, 5-5
 - area, 5-2, 5-7 through 5-13
 - brigade covering force operation, 5-20 through 5-25
 - chemical reconnaissance, 5-6
 - close, 5-2
 - combat service support (CSS), 5-6
 - combined arms obstacle integration, 5-15 through and 5-20
 - command and control, 5-6
 - conducting, 5-7 through 5-15
 - deep, 5-2
 - execution, 5-12 and 5-13
 - fire support, 5-4 and 5-5
 - fundamentals of, 5-1 through 5-7
 - intelligence, 5-4
 - limited visibility, 5-24
 - maneuver (aviation), 5-4
 - mobile, 5-2, 5-13

- mobility and survivability, 5-5
- night defensive doctrine, 5-24
- nuclear, biological, and chemical (NBC), 5-5
- patterns, 5-2 and 5-3
- planning, 5-7 through 5-11, 6-22
- preparation, 5-12 and 5-13
- purpose, 5-1
- rear, 5-2
- relief in place, 6-6
- reserve, 5-9
- synchronization, 5-3 through 5-7
- techniques, C-10 and C-11
- delay, 5-1, 6-19 through 6-23, 6-26, A-2, C-14, E-15
- deliberate attack, 4-27, 4-31, 6-40, C-10
- deliberate decision-making process (DDMP), I-1 and I-2
- demilitarization and demobilization, A-5
- demonstration, 3-18, 4-33, C-5, E-15
- departure airfield control group (DACG), G-4
- deployment, 2-2 through 2-5, C-12, E-3, E-6. *Seealso* PREPO AFLOAT operations, deployment.
- depth, 1-6 and 1-7, 2-1
- deputy commander, 3-5
- desertion, 8-15
- detachment left in contact (DLIC), 6-25, C-14
- digital nonsecure voice terminal (DNVT), 3-14,H-93
- digital message device (DMD), C-7
- digitized battlefield, 3-20, E-1 through E-17
 - advanced field artillery systems (AFAS) and future armored resupply vehicle, E-10
 - air defense platforms, E-10
 - Army airborne command and control system (A2C2S), E-13
 - Army battle command system (ABCS), E-1 through E-3
 - Army global command and control system (AGCCS), E-2
 - Army tactical command and control system (ATCSS), E-3
 - Army worldwide information system (AWIS), E-3
 - Avenger, E-10
 - battle command vehicle (BCV), E-13
 - battlefield automated system (BAS), E-3
 - battlefield functional area (BFA), E-3
 - battlefield functional area command and controlsystems (BFACS), E-3
 - Bradley Stinger Fighting Vehicle (BSFV), E-11
 - breaching operations, 4-43
 - capabilities, E-7
 - characteristics, E-5
 - combat service support control system for echelons above corps (CSSCS-EAC), E-3
 - command and control, E-4
 - command and control vehicle (C2V), E-13
 - command, control, and communications, E-7
 - communications, E-10
 - core functions, E-5 through E-7
 - decisive operations, E-6, E-16
 - digitally-equipped units, E-4
 - digitally units, E-4
 - dismounted soldier, E-11
 - doctrine and training, E-3 and E-4
 - enhanced force protector, E-9

Force XXI, E-1 through E-17
 Force XXI battle command--brigade and below (FBCB2), E-3
 force modularity, E-8
 force provider system, E-15
 forward area air defense (FAAD), E-13
 heavy assault bridge system (Wolverine), E-14
 indirect fire data system, E-12
 indirect fire platform, E-10
 influence greater volume of physical space, E-8
 information operations, E-6, E-16
 information systems, E-12
 intelligence system, E-12
 introduction, E-2
 lethality, E-9
 line-of-sight antitank (LOSAT), E-10
 man-portable antitank system, E-11
 missions, E-15
 mounted combined arms brigade, E-4 through E-15
 mounted maneuver platforms, E-9
 multiple launcher rocket system (MLRS), E-10
 nuclear, biological, chemical (NBC)reconnaissance system (Fox), E-15
 obstacle breaching system (Grizzly), E-14
 operational maneuver, E-8
 operations other than war (OOTW), E-6
 palletized load system, E-15
 precision movement and maneuver, E-8
 projected deploy and redeploy mounted combat power, E-5
 remote sensor system, E-14
 security operations, E-6, E-17
 service support systems, E-14
 support systems, E-14
 systems, E-2
 tactical operations, E-15 through E-17
 tactical engagements, E-7
 tactical vehicle, E-14
 target surveillance and attack radar system, E-13
 technological superiority, E-7
 unmanned aerial vehicle (UAV), E-13
 versatile employment, E-9
 wide area munitions (Hornet), E-14
 worldwide military command and control system (WMCCS), E-3

direct fire. *See* fire, direct.
 direct support (DS), 1-3 and 1-4, 2-6 through 2-8, 3-6, 3-7 through 3-11, 6-38, 8-1, 8-4, 8-6, 8-8, 8-10, B-5, C-3, C-7 and C-8, C-16
 disaster relief, A-2
 discipline, 3-6, 3-20
 disengagements, A-5
 division artillery (DIVARTY), C-16
 division materiel management center (DMMC), 8-25 and 8-26
 division support area (DSA), 8-4, 8-26
 division support command (DISCOM), 3-9, 8-3 through 8-5, 8-9, 8-19, 8-26, B-7
 divisional cavalry squadron, 4-18
 doctrine, 1-9 through 1-11, 2-1, B-5 through B-7, B-10 and B-11, C-13, E-2 through E-5, E-15, F-5

E

echelons, 2-2, 2-6, 3-11, 3-21, 6-8, C-3, C-5, E-2 and E-3
 electromagnetic signature, 3-11, 3-17, D-3
 electronic components, E-11
 electronic countermeasures (ECM), B-10
 electronic security, 3-18
 electronic warfare (EW), 1-7, 1-10, 2-7, 3-6, 3-15,3-18, 8-10, E-6, E-12, E-16
 encircling. *See* force, encircling.
 enemy prisoners of war (EPW), 2-3, 2-9, 3-8, 6-5, 8-5, 8-21, A-2, A-5, H-41 and H-42
 engagement areas (EA), 4-17, A-6, C-11, C-15
 engineers, 2-7, 3-8, 3-13, 6-9, 6-15, B-7, C-8, C-12, C-17, F-9
 battalion, 3-8, 4-7, C-17
 brigade, 3-8, 4-7
 commander, 6-12
 officer, 3-8, 4-6
 support, 6-12
 entry operations, 2-2
 envelopment, 4-9 through 4-11, C-13
 equipment, 3-6, 3-19, 6-5, F-3, F-6 through F-8
 essential elements of friendly information (EEFI), 3-18
 estimate, 3-4, 3-7, 8-5, I-3 and I-4
 logistics, 1-8
 of the situation, 1-6, D-6, F-5, I-1
 evacuation, 6-5, 6-22, 8-10, 8-12, 8-15, A-2, A-8, C-17, H-73 through H-75
 execution, 1-8, 5-22 and 5-23, 6-5 and 6-6, 6-11 and 6-12, 6-17 and 6-18, 6-22 and 6-23, 6-25, 6-27, 6-30 through 6-33, 6-45 through 6-47, 8-1, F-2 and F-3, I-2
 Executive Officer (XO), 3-5 through 3-9, 3-14, 3-19, 3-21, 3-23, 3-26 and 3-27, 6-36, 66
 electronic security, 3-18
 electronic warfare (EW), 1-7, 1-10, 2-7, 3-6, 3-15,3-18, R">F

F

facilities, 3-19, 5-1
 family of scatterable mines (FASCAM), 4-6, 4-31
 ADAM, 5-19
 Gator, 5-19
 MOPMS, 5-19
 RAAM, 5-19
 Volcano, 5-19
 feint, 3-18, 4-31 and 4-32, E-15
 field artillery (FA), 1-4, 1-10, 2-6, 3-27, 6-12, 6-15,6-21, 6-24, 6-26, A-11, B-5, C-3, C-7, C-12, C-16, F-9
 final protective fires (FPF), 6-41, F-9
 finance services, 8-16 and 8-17, H-73
 fire
 counterfire, E-13
 direct, 1-9, 2-4, 3-20, 6-19, 6-21, 6-47, C-15, D-3 E-9, F-8 through F-10
 flanking, C-8
 indirect, 1-9, 2-4, 2-7, 6-11, 6-17, 6-19, 6-21 and 6-22, 6-25, 6-28, 6-38, 6-41, 6-45, A-12, C-6 and C-7, C-10 and C-11, C-15, E-10, E-12, F-8 through F-10
 initial, 3-27
 firepower, 1-8, 4-23, 6-30 and 6-31, C-7, C-14, E-5 and E-6, E-10 and E-11

fire support (FS), 1-4, 1-8, 1-10, 2-6 and 2-7, 3-6, 3-9 through 3-11, 3-14 through 3-16, 3-19, 3-23, 3-28, 4-5, 4-10 through 4-14, 4-16, 4-18, 4-21, 4-45, 5-4 and 5-5, 6-6, 6-8, 6-11, 6-25, 6-28, 7-2 through 7-7, 8-3, B-6 and B-7, B-10, C-3, C-7, C-10, C-14 and C-15, E-10, E-12, F-9, H-49 through H-52 . *See also* battlefield operating system (BOS), fire support (FS).
 battle handover, 6-15
 brigade FSO, 2-7, 3-28
 coordination line (FSCL), F-5, F-9
 coordination measures (FSCM), 6-24
 coordinator (FSCOORD), 2-7, 3-8 through 3-10, 3-15, 3-26 and 3-27, 6-5, 6-8, 6-15, 6-28, 6-41, C-7
 element (FSE), 2-7, 3-7, 3-9, 3-13 through 3-15, 6-15
 naval, 3-7, 3-9
 officer (FSO), 2-7 and 2-8, 3-6, 3-9 and 3-10, 3-15, 3-23 and 3-24, 3-26 and 3-27, 4-5, 4-6, 6-8, 6-11, 6-15, 6-17, C-4, C-6, E-13, F-9
 personnel, 3-19
 planning, 3-27, 6-5, 6-17, 6-24, 6-41, 6-45, 8-4, B-10
 system, 1-8, 6-48, B-6, C-3
 team (FIST), 3-23 and 3-24, 3-27, C-4
 fixed call signs, H-18 through H-21
 fixing force, 5-13
 flank position, 1-6, 6-6, B-11
 Fleet Marine Forces, B-1
 follow-and-support forces, 6-38 through 6-40, 6-45, C-5
 follow-on elements, F-11
 follow-on missions, 2-3
 follow-on units, 6-4, F-7
 force
 armored, 6-2, A-13, C-2, C-6, C-10, C-13
 assault, 6-39
 delaying, 6-19 through 6-21
 diversionary force, 6-31 and 6-32
 enemy, 1-10, C-5
 encircling, C-5, 6-1 and 6-2, 6-28 and 6-29
 entry, 2-2
 follow and support, 6-39, C-5
 main body, 6-31
 projection, 1-11, 2-1 through 2-3, 5-1
 provider system, E-15
 rear guard, 6-32
 reserve, 6-31 and 6-32
 rupture, 6-30 through 6-32
 security, 2-3, 3-20, 3-27, 5-2
 support, 6-39
 Force XXI, E-1 through E-17
 Force XXI battle command--brigade and below (FBCB2), E-9
 formations, 1-7
 box, 4-13 and 4-14
 column, 4-11, 6-15
 on line without a reserve, 4-13
 tactical, 4-18
 vee, 4-12
 wedge, 4-14, 6-15
 forward air controller (FAC), 3-7
 forward area air defense (FAAD), 2-7, D-4, E-13
 forward area signal platoon, B-5
 forward arming and refueling point (FARP), 3-8
 forward defensive force, 5-13
 forward edge of the battle area (FEBA), 1-7, 6-14, 6-16, 6-18, 6-25
 forward entry devices (FED), C-4
 forward line of own troops (FLOT), 1-10, 2-5, 5-1, 6-10, 6-18, 6-22, 8-19, E-13 and E-14
 forward looking infrared radar (FLIR), E-14
 forward observer (FO), 6-41
 forward passage of lines. *See* passage of lines, forward.
 forward security force, 4-15
 forward support battalion (FSB), 2-8 and 2-9, 3-6 through 3-10, 3-15 through 3-17, 3-19, 4-4, 4-7, 6-9, 6-34, 6-46, 8-2 through 8-4, 8-8 through 8-21, B-5 through B-8, C-8, C-18
 fragmentary orders (FRAGO), 1-6 and 1-7, 3-27 and 3-28, 6-6, 6-18, 6-30, F-5, I-2
 framework, 2-1 through 2-5, 3-24, D-7, E-1, E-3, E-9. *See also* defensive operations; offensive operations.
 fratricide prevention, 1-9, 6-6, C-19, E-19, F-1 through F-11
 execution phase, F-3
 magnitude of the problem, F-1
 operation order (OPORD) format, F-6 through F-11
 planning phase, F-2
 preparation phase, F-2 and F-3
 reduction measures, F-2, F-5 and F-6
 risk assessment, F-3 and F-4
 risk identification and preventive measures, F-2 and F-3
 friendly fire, F-2
 frontal attack, 4-11
 fundamentals of brigade operations, 2-1 through 2-9
 air defense, 2-7
 area of operations, 2-4
 close operations, 2-5
 decontamination, 2-8
 deep operations, 2-4 and 2-5
 deployment, 2-2
 entry operations, 2-2
 force projection, 2-1 through 2-3
 general, 2-1
 intelligence, 2-5 and 2-6
 main effort, 2-5
 operations, 2-3
 predeployment activities, 2-2
 rear operations, 2-5
 reconnaissance, 2-8
 reconnaissance and security, 2-5
 redeployment and reconstitution, 2-3
 reserves, 2-5
 stages of force projection, 2-1 through 2-3
 tactical battlefield framework, 2-3 through 2-5
 tactical battlefield organization, 2-4 and 2-5
 war termination and postconflict operations, 2-3
 future armored resupply vehicle (FARV), E-10

G

G1. *See* Assistant Chief of Staff (Personnel).
 G2. *See* Assistant Chief of Staff (Intelligence).
 G3. *See* Assistant Chief of Staff (Operations and Plans).
 general support (GS), 2-6, 2-8, 3-9, 3-19

global command and control system (GCCS), E-2 and E-3
global positioning systems (GPS), 6-48, C-10, E-8,F-6
graphics control measures, 2-4, 6-4, 6-14, F-2
grenade launchers, C-3
grid lines, 3-27
Grizzly, E-14
ground maneuver, 5-7 and 5-8
ground surveillance radar (GSR), B-5, C-4, C-10
guard operations, A-2
 advance, A-10 through A-13
 flank, 4-17 and 4-18, 4-22
 rear, 4-17 and 4-18, 4-22, A-12
 reserve, A-12
 screen, 4-17

H

handover. *See* battle, handover.
hasty attack, 4-24, 6-40, C-9
hasty water crossing, 6-36
headquarters and headquarters company (HHC), 1-2 through 1-5, 3-8 and 3-9
headquarters and headquarters detachment (HHD), 8-8, 8-12, B-8
headquarters commandant, 3-9
health service support (HSS), 8-2, 8-9, 8-11, H-73
heavy assault bridge system (Wolverine), E-14
heavy equipment transport (HET), 8-26, B-11
heavy/light considerations, A-12 and A-13
 helicopters, 1-7, 1-11, 3-27, 5-2, 6-5, A-12, E-12
 assault, H-53 through H-57
 attack, 1-7, 1-11, 3-27, 5-2, A-12, C-12, E-12,H-52 through H-57, H-94
 Blackhawk, E-13
 utility, A-8, E-13
high payoff target (HPT), 1-10
high-value targets (HVT), C-19
Hornet, E-14
host nation, 2-3, B-11, C-19
howitzer battery, C-3
human intelligence (HUMINT), C-18

I

identification, friend, or foe (IFF), B-6
improved conventional munition (ICM), F-5, F-8 through F-10
indirect fire. *See* fire, indirect.
infantry. *See* battalion light; battalion tank and mechanized.
infantry fighting vehicles (IFV), A-13, H-92
infiltration, 4-10, C-10 and C-11
information, 2-5
information requests (IR), 2-5
 requirements, 2-6
infrared devices, 6-4
infrastructure, A-6, B-11
initial fire support automation system (IFSAS), C-4
initiative, 1-6, 4-1
intelligence, 1-10, 2-5, 2-9, 3-6, 3-8, 3-18 and 3-19, 3-23 and 3-24, 4-4, 4-31, 4-43 and 4-44, 5-4, 6-8, 6-11, 6-15, 6-29, 6-41, B-4 and B-5, B-10, C-6, C-9, C-

12, C-15, C-19, D-2, E-1, E-12. *See also* battlefield operating system (BOS), intelligence vicecomponent commander, B-4 subordinate unified commands, B-3 and B-4 task organization, B-4 and B-5
Intelligence Officer (S2), 1-3, 1-5, 2-6 through 2-8, 3-6, 3-8, 3-13 through 3-16, 3-18, 3-23, 3-25, 3-27, 6-8, 6-39, 6-42, A-10, C-15
intelligence preparation of the battlefield (IPB), 1-6 and 1-7, 1-11, 2-6, 4-4 and 4-5, 4-9, 6-15, A-12, C-5, C-15, I-3
intent statement, 3-3 and 3-4

J

jamming, 3-17 and 3-18, 5-2, C-13
Javelin, E-11
joint air attack team (JAAT), 7-10 and 7-11
joint and multinational operations, B-1 through B-11
 air defense, B-6, B-11
 battlefield operating systems, B-5 through B-9
 combat service support, B-7 and B-8, B-11
 command and control, B-9, B-11
 command relationships, B-1
 fire support, B-6, B-10 and B-11
 general, B-1, B-9
 intelligence, B-5
 joint environment, B-1
 joint task forces, B-4
 maneuver, B-5 and B-6, B-10
 Marine/Army integration, B-4
 mobility and survivability, B-6 and B-7, B-11
 multinational operations, B-9
 organization by function, B-10
 organization by nationalities, B-10
 organization by nationalities and function, B-10
 planning considerations, B-10
 responsibilities and roles of the Army
 servicecomponent commander, B-4
 subordinate unified commands, B-3 and B-4
 task organization, B-4 and B-5
 unified and specified commands, B-3
joint force, B-1
joint operation planning and execution system (JOPES), E-5
joint operations, 1-10, 2-1, 8-3, B-6 and B-7
joint suppression of enemy air defenses (JSEAD), 3-7, C-19
joint surveillance target attack radar system (JSTARS), E-13
joint task force, 1-2, B-3 and B-4, C-18, E-2
Judge Advocate General (JAG), 3-6 and 3-7, 3-9

K

key terrain, 5-1, C-2
kill zone, A-10
kinetic-energy missile (KEM), E-10

L

legal services, 8-5, 8-17

liaison officer (LO), 3-7 through 3-9, 3-15, 3-20, 3-26, 6-8, 6-25, 6-42, B-6, B-9 and B-10, C-3 and C-4, C-8 and C-9, C-13 and C-14, C-17, F-3 through F-5

light
 armored, C-2, C-11 through C-17, A-13
 battalion, C-3 through C-11
 brigade, C-4
 conditions, 6-6
 division, C-4, C-11, C-14 and C-15, C-17
 forces, C-1, C-6, C-15, C-17, H-60
 infantry, C-1 through C-19
 operations, 1-2, C-2, C-11 through C-17
 patterns, 6-4
 task force, C-7
 unit, C-9

light and special division interim sensor (LSDIS), 4-5

limitations, 1-1 and 1-2, 3-17, C-13, C-18

line-of-sight-antitank (LOSAT), E-10

lines of communication (LOC), 2-5, 6-4, C-5

linkup operations, 3-23, 6-1 through 6-8, C-5 and C-6, C-10, H-26 and H-27
 actions following linkup, 6-3
 execution, 6-5 and 6-6
 forces, 6-5 and 6-6
 forms, 6-1 through 6-3
 general, 6-1
 linkup of a moving force with a stationary force, 6-1 and 6-2
 linkup of two moving units, 6-2 and 6-3
 planning, 6-3 through 6-5
 preparation, 6-5
 points, 6-1 and 6-2, 6-5 and 6-6

lodgments, 2-2, A-6

logistic procedures, H-60

logistics, 1-7, 3-5, B-3, B-7, E-3. *See also* estimate; linkup operations.

logistics characteristics, 8-2 and 8-3

logistics package (LOGPAC), 8-14, C-13 and C-14

logistics plan, 4-7, 6-21, 8-5

logistics release points (LRP), 4-21

logistics support area (LSA), 1-5, 2-9, 6-4, C-13
 losses
 administrative, 8-15
 battle, 8-15
 nonbattle, 8-15
 personnel, 8-15

low-altitude hostile aircraft, C-13

M

M1A2 Abrams, E-1, H-92

M60 machine guns, C-3

M109A6 Paladin, 1-7

M2A3 Bradley Fighting Vehicle, E-1

M577, 3-10 through 3-13, 3-21, H-92

machine gun, C-3, E-11

main battle area (MBA), 3-17, 5-1 and 5-2, 6-13, 8-21

main body, 3-21, 4-25, 6-19, 6-26 and 6-27, 6-31 and 6-32, 6-48, A-10 through A-12, D-1, D-6

main effort, 1-8, 2-5, 2-9, 3-3

main supply route (MSR), 2-5, 2-9, 6-5, 6-34, 8-4 through 8-8, A-4, A-13, D-3, D-5

maintenance, 1-5, 3-6, 5-2, 8-9, B-8, C-4, D-2, D-6

maintenance support team (MST), 8-8 and 8-9

maneuver, 1-1, 1-8 through 1-10, 2-4 through 2-6, 2-9, 3-23, 3-25, 5-2, 6-5, 6-8 and 6-9, 6-13, 6-15, 6-20, 6-23, B-5, B-10, C-6, C-14 and C-15, E-10, F-8 and F-9.
See also battlefield operating system (BOS), maneuver.
 defensive, 5-4
 dismounted, 3-24
 forms of, 4-9 through 4-11
 mounted, 3-23
 planning, B-10
 units, 3-24

man-portable air defense (MANPAD), 2-7

man-portable antitank system, E-11

map boards, 3-21

maps, 3-20, 3-23 through 3-27

Marine Air Group (MAG), B-2

Marine Aviation Logistics Squadron (MALS), B-2

Marine Expeditionary Force, B-1 through B-13

Marines, B-1 through B-13

materiel, 3-18, 3-25, 6-5

Materiel Management Center (MMC), B-7

mechanized infantry, 6-11, C-2

medical evacuation (MEDEVAC), C-8, D-2, H-73 through H-75

medical operations, 8-10 through 8-12

medical support, 8-11, A-2

meeting engagement, 6-5, 6-48

military police (MP), 1-3 and 1-4, 3-9, 3-16, 6-27, 6-34 and 6-35, 6-39 and 6-40, 6-43, 8-6, B-5, C-12
 combat, 3-9
 platoon leader, 3-9
 procedures, H-78

Military Sealift Command (MSC), G-3

mines, 5-19, A-5, A-8, A-11, A-13, C-14, C-18
 family of scatterable mines (FASCAM), 5-19
 minefield, 6-1, 6-11 and 6-12, E-1, E-14, F-5, H-47 through H-49
 procedures, H-46

missing in action (MIA), 8-15

mission analysis, I-2

mission, enemy, terrain, troops, and time available (METT-T), 2-2, 2-8, 3-2, 3-8, 3-24, 6-9, 6-13, A-13, B-1, C-2, C-10, C-13, D-6 and D-7, F-5, I-3

mission essential task list (METL), 2-3, A-6, G-6

mission-oriented protective posture (MOPP), 3-26, 8-21 and 8-22, F-7, H-94 and H-95

mobile defense. *See* defensive operations, mobile.

mobile subscriber equipment (MSE), 2-9, 3-10, 3-17, 3-19, C-12

mobile subscriber radio terminals (MSRT), 3-10 and 3-11, 3-20, C-9, H-35 through H-39, H-93

mobility and survivability, 1-6, 2-7, 3-22, 4-7, 4-46, 5-1, 5-5, 6-15, 6-21 and 6-22, 6-30 and 6-31, 6-42, B-6, 7-13 through 7-16, B-11, C-8, C-11, C-13. *See also* battlefield operating system (BOS), mobility and survivability; survivability.

morale, 3-6, 8-5, 8-14

mortars, 1-7, C-3, C-7 and C-8, E-1, H-92

movement, 6-4, 6-8 and 6-9, 6-13, D-1 through D-7

movement and tactical road marches, D-1 and D-2

- close column, D-1
- infiltration, D-1
- march column, D-1 and D-2, D-6
- march unit, D-2, D-6
- open column, D-1
- quartering party (advance party), D-2
- reconnaissance party, D-2
- serial, D-2
- movement control, 6-8 and 6-9
- movement of forward support battalion within the brigade formation, 8-19
- movement to contact, 4-16 through 4-23, 6-5, 6-48, A-6, C-5, C-9, C-14
- multinational, 2-1, A-3, A-7, B-1 through B-11
- multiple rocket launchers system (MLRS), A-11, E-1, E-10, E-16

N

- national command authority (NCA), E-5
- naval gunfire (NGF), 2-6, 3-7, 7-11 through 7-13, B-6, B-10, E-12
- naval gunfire liaison officer (NGLO), B-5
- Navy, B-1
- net control station (NCS), 3-21, H-37
- net radio interface, 3-11
- night operations
 - advantages and disadvantages, 5-24
 - air defense, 5-24
 - combat service support, 5-24
 - command and control, 5-24
 - defensive doctrine, 5-24 and 5-25
 - fire support, 5-24
 - intelligence, 5-24
 - maneuver, 5-24
 - mobility and survivability, 5-24
 - offensive doctrine, 4-43 through 4-47
 - planning and preparation, 5-24
 - tactical planning considerations, 5-24
- night-vision equipment, D-1
- noncombat operations, 2-3
- noncombatant evacuation operations, A-2
- nuclear, biological, chemical (NBC) support, 2-7, 3-8, B-7, C-13, C-17, E-10, F-5, F-8
 - contamination, 4-17
 - decontamination, 2-8, 3-8, 4-7
 - defense, 5-5
 - facilities, organization, and duties, 7-17 and 7-18
 - operations, 2-8, 3-8, 7-18
 - planning operations, 3-8
 - procedures, H-43 through H-45
 - reconnaissance, 2-8, 4-8, 5-6, E-15
 - section organization, 7-16
 - smoke, 2-8, 4-8

O

- observation posts (OP), 3-21, 3-26, 6-11, 6-34, A-8, C-6
- obstacles, 5-15 through 5-20, 6-2, 6-11, 6-17 through 6-20, 6-34, B-7, B-11, H-47 through H-49
 - belts, 5-15, C-8
 - blocking, 5-17

- breaches, 4-38 through 4-43, E-14
- control measures, 5-15 and 5-16
- directed, 5-16
- disrupting, 5-18
- fixing, 5-17
- groups, 5-16
- integration, 5-15 through 5-20
- reserve, 5-19
- restrictives, 5-16
- situational, 5-19
- tactical, 5-16 through 5-18, 6-12, 6-15
- turning, 5-17, 6-8
- types, 5-6
- zones, 5-15
- offensive operations, 1-2, 2-7, 3-21 and 3-22, 4-1 through 4-47, 5-1, 6-1, 6-4, 6-6, 6-18, 6-33, 6-42, 8-21, B-5, D-3
 - advance guard, 4-18
 - attack, 4-24 through 4-33
 - breaching operations, 4-7, 4-38 through 4-43
 - brigade, 2-8
 - characteristics of, 4-1 and 4-2
 - covering force, 4-35 through 4-37
 - execution, 4-14, 4-21 and 4-22
 - exploitation, 4-33 and 4-34
 - flank and rear security, 4-18
 - formations. *See* movement, formation (offensive).
 - hasty attack, 4-24 through 4-26
 - maneuver, forms of, 4-9 through 4-11
 - movement to contact, 4-16 through 4-23
 - night, 4-43 through 4-44
 - pursuit, 4-34 and 4-35
 - raid, 4-32
 - relief in place, 6-6
 - smoke screen use during, 4-8
 - tactical planning considerations, 4-15 through 4-35, 4-44
 - techniques, C-9 and C-10
 - visibility, 4-8
- officer in charge (OIC), 3-6
- one-third/two-thirds rule, F-4
- operation order (OPORD), 3-9, 3-23, 3-26 and 3-27, C-9, F-5 through F-11, H-1, H-4 through H-7, I-3
- operation plan (OPLAN), 1-5, 2-2, F-8, H-1
- operational control (OPCON), 2-8, 3-9, 3-16, 3-21, 6-7 and 6-8, 6-11, 6-33 and 6-34, 8-1 and 8-2, B-3, C-2, C-11 through C-13, H-1
- operations, 2-3, 3-20
 - close, 1-5, 1-7, 2-5, 3-10, 3-14 and 3-15, 3-19, 5-2, 6-33, C-2
 - deep, 1-5, 1-7, 1-10, 2-4 and 2-5, 3-14 and 3-15, 5-2, 6-33, C-2
 - rear, 1-5, 2-4 and 2-5, 3-5, 3-12, 3-14, 5-1 and 5-2, 6-33 through 6-36. *See also* rear operations.
 - security, 1-9
 - support, 3-16
 - tactical, 1-1, E-3, E-7
- operations and intelligence (OI), 3-11, 3-14
- Operations and Training Officer (S3), 1-3, 1-5, 2-6 through 2-9, 3-6, 3-8, 3-10, 3-13 through 3-15, 3-18 and 3-19, 3-21 through 3-28, 6-6, 6-8, 6-14 through 6-

17, 6-30 through 6-33, 6-42, 8-6, 8-25, C-6 through C-8, C-15, D-1

operations other than war (OOTW), 1-1, 1-6, 1-11, 2-3 and 2-4, 6-6, 8-3, A-1 through A-13, E-5 through E-7, E-15, E-17

armor/light considerations, A-13

arms control, A-2

attacks, and raids, A-2

checkpoint tactics, A-10 and A-11

combatting terrorism, A-2

conduct of operations, A-9 through A-12

conflict, A-2

convoy security, A-11 and A-12

humanitarian assistance, A-2

nation assistance, A-2

noncombatant evacuation operations, A-2

overview, A-1 through A-2

peace enforcement, A-2, A5

peace enforcement patrols, A-10

peacekeeping, A-2, A-4 and A-5

peacekeeping patrols, A-9 and A-10

planning, A-3 and A-4

security assistance, A-2

show of force, A-2

support for insurgencies and counter insurgencies, A-2

support to counterdrug operations, A-2

support to domestic civil authorities, A-2

training, A-6 through A-8

operations security (OPSEC), 1-9, 3-17 and 3-18, 3-20 and 3-21, 6-8, C-9, D-2, E-6, E-9, E-12

orders, 3-4, H-4 through H-7, I-2

other tactical operations, 6-1 through 6-48

actions following linkup, 6-3

actions upon encirclement, 6-28 and 6-29

advance from the exit bank, 6-44, 6-46

advance to the river, 6-44

approach march, 6-48

assault crossing of the river, 6-44

assault forces, 6-39

assisted withdrawal, 6-23 and 6-24

base defense operations, 6-34

battle handover, 6-18 and 6-19

breakout from encirclement, 6-27 through 6-33

brigade support area/base cluster defense considerations, 6-35 and 6-36

combat service support, 6-32, 6-47

combat service support sustains the attack, 6-47

command actions, 6-28

command and control, 6-32 and 6-33

defense of the brigade support area (base cluster), 6-34 and 6-35

delay, 6-19 through 6-23

diversionary force, 6-31 and 6-32

exchange of plans and liaison personnel, 6-7

execution, 6-5 and 6-6, 6-17 and 6-18, 6-22 and 6-23, 6-25, 6-27, 6-30 through 6-33, 6-45 through 6-47

follow-and-support forces, 6-39

forces, 6-30, 6-38

forms of linkup, 6-1

general, 6-1, 6-6, 6-13, 6-19, 6-27, 6-33, 6-36

linkup force, 6-2

linkup of a moving force with a stationary force, 6-1 and 6-2

linkup of two moving units, 6-2

linkup operations, 6-2 through 6-6

main body, 6-31

movement control, 6-8 and 6-9

objectives, 6-38

passage of command, 6-7, H-29

passage of lines, 6-13 through 6-19, H-28 through H-30

rear guard, 6-32

rear operations, 6-33 through 6-36

reconnaissance, 6-7 and 6-8

relief in place, 6-6 through 6-12

reserve force, 6-31

retirement, 6-26

retrograde operations, 6-19 through 6-26

river crossing, 6-36 through 6-47

rupture force, 6-30

securing the bridgehead, 6-36 through 6-39, 6-44 and 6-45

security, 6-8

sequence of relief, 6-7

stationary force, 6-2

support forces, 6-39

types of attacks, 6-40

unassisted withdrawal, 6-24

withdrawal, 6-23 through 6-25

P

Pacific Commands, B-1

Paladin/Crusader artillery, E-1

palletized load system, E-15

passage of lines, 3-18, 6-1, 6-4, 6-13 through 6-19, 6-24 through 6-26

battle handover, 6-18 and 6-19

execution, 6-17 and 6-18

forward, 3-18, 6-13 through 6-15, 6-17, D-3

general, 6-13

lanes, 6-15, 6-17, 6-24

planning, 6-14 through 6-16

preparation, 6-16 and 6-17

rearward, 3-17, 6-13 and 6-14, 6-16 and 6-17, 6-25

passage point (PP), 3-21, 6-4, 6-17, 6-24

passing unit, 6-19

patrol, A-2, A-6 through A-10, C-6, D-4

peace enforcement, 6-6, A-1 and A-2, A-5 through A-9

peacekeeping, 6-6, A-1 through A-11, E-2

peace operations, A-4

penetration, 4-11, C-5

personal staff, 3-5 and 3-6

command sergeant major, 3-5 and 3-6

deputy commander, 3-5

executive officer (XO), 3-5

personnel, 3-6, 3-18, H-71

Personnel and Administrative Center (PAC), 8-16, 8-26

personnel daily summary reports, 8-15, H-100

personnel service support (PSS), 8-2, 8-5, 8-12 through 8-17

administrative accounting, 8-15

- administrative services, 8-16 and 8-17
- casualty reporting, 8-15
- chaplain activities, 8-16
- finance services, 8-16 and 8-17
- health services, 8-15
- legal services, 8-17
- personnel losses, 8-15
- postal services, 8-16
- replacement operations, 8-15
- sustainment personnel services, 8-16
- personnel support procedures, H-71 through H-77
- petroleum, oils, and lubricants (POL), 6-17, 8-21, B-7, C-8
- phase line (PL), 3-25, 6-13 through 6-16, 6-23, 6-25, 6-32
- planning, 3-1, 3-19 and 3-20, 6-11, A-2 through A-4, 5-20 through 5-22, 6-3 through 6-10, 6-14 through 6-16, 6-19 through 6-21, 6-24, 6-26, 6-36, 6-39 through 6-43, 8-1, A-3 and A-4, C-5 through C-9, C-14 through C-17
- air defense, B-11, C-7, C-16
- combat service support (CSS), 8-17, B-11, C-8 and C-9, C-17
- command and control, C-9, C-17
- engineer, 3-8
- fire support (FS), B-10, C-6 and C-7, C-15 and C-16
- intelligence, B-10, C-5, C-15
- maneuver, B-10, C-6, C-15
- mobility and survivability, B-11, C-8, C-16 and C-17
- nuclear, biological, chemical (NBC), C-17
- process, 3-6, 3-20
- position navigation (POSNAV), E-8 and E-9, F-6
- postconflict operations, 1-11, 2-3, E-6, E-15
- postal services, 8-5, 8-16, H-72
- predeployment, 2-2
- PREPO AFLOAT operations
 - accountability procedures, G-10
 - capabilities, G-1
 - command organizations, G-3 through G-5
 - deployment, G-3 through G-13
 - by air, G-3*
 - by sea, G-4*
 - concept of operations, G-14*
 - force projection, G-6 through G-8
 - limitations, G-2
 - logistics support, G-9
 - N-hour sequence, G-19 through G-28
 - onward movement, G-10 through G-13
 - motor transport, G-13*
 - port operations, G-11 and G-12*
 - redeployment, G-13 and G-14
 - role of armored brigade, G-2 and G-3
 - support organizations, G-4 and G-5
 - Theater reception, G-8 and G-9
- priority intelligence requirement (PIR), 1-6, 2-6, 3-8, C-15
- provost marshal (PM), 3-7
- psychological operations (PSYOP), 3-15, C-2, C-19, E-16, H-77
- public affairs officer (PAO), 3-6 and 3-7, 3-9, 3-16, 8-5
- pursuit, 4-34 and 4-35, C-5, C-10, C-13
- push system, 8-13

Q

- quartering party, 3-21, 6-17, D-2, D-6
- quick reaction force, A-2

R

- radar, 3-17
- radio, 3-18 and 3-19, 3-23, 6-2, 6-4, C-3, C-13
- radio electronic combat, C-13
- radio interface unit, E-9
- radio nets, 2-6, 6-2, 6-11 and 6-12
- raid, 4-32, A-2, C-14, C-18, E-15
- readiness condition (REDCON), H-18
- rear area security, 1-7, 2-9, 4-18, 6-1, C-5
- rear operations, 1-5, 2-4 and 2-5, 3-5, 3-12, 3-14, 5-1 and 5-2, 6-33 through 6-36, C-2
 - base defense operations, 6-34
 - brigade support area/base cluster defense considerations, 6-35 and 6-36
 - defense of the brigade support area (base clutter), 6-34 and 6-35
 - general, 6-33 and 6-34
- reconnaissance, 1-9, 2-8, 3-8, 3-28, 4-14 through 4-17, 5-2, 6-7 and 6-8, 6-12, 6-20, 6-24, 6-34, 6-42, 6-45, A-11 and A-12, B-5, C-5 and C-6, C-14, C-19, D-2, D-6, E-5
- reconnaissance and security, 1-7, 1-10, 2-5, 4-25
- reconnaissance and surveillance (R&S), 2-6, 3-24 through 3-26, 4-18, A-2, C-6, C-15, C-18 and C-19, E-6, E-13
- reconstitution, 2-3, 2-8, 8-23 and 8-24
- regeneration, 8-24
- reorganization, 8-23 and 8-24
- redeployment, 2-1, 2-3, E-2. *See also* PREPO AFLOAT operations, redeployment.
- refugees, 3-8, 8-7
- regeneration, 8-24
- rehearsals, 1-8, 3-20, 3-22 through 3-28, 6-16, 6-21 and 6-22, 6-44, and C-16, D-2, F-2 through F-5, F-10
 - application, 3-25
 - brigade, 3-23 through 3-28
 - conduct of, 1-8, 3-26 through 3-28
 - full dress, 3-22
 - full scale, 3-24
 - general, 3-22
 - key leader, 3-22
 - map, 3-23
 - passage, 6-17
 - personnel preparation, 3-24 and 3-25
 - radio, 3-23
 - site selection, 3-24
 - sketch, 3-23
 - special, 3-24
 - start time, 3-26
 - terrain model, 3-23 through 3-28
 - types, 3-22 through 3-24
- release point (RP), 6-9, 6-13, 6-37, 6-41 and 6-42, 6-44, 6-47, D-6
- relief in place, 2-3, 6-6 through 6-12, A-6, H-27
- relief operations, A-2, D-2
 - conduct of, 6-11
 - exchange of plans and liaison personnel, 6-7
 - execution, 6-11 and 6-12

- general, 6-6
- movement control, 6-8 and 6-9
- planning, 6-7
- preparation, 6-10 and 6-11
- reconnaissance, 6-7 and 6-8
- security, 6-8
- sequence of relief, 6-7, 6-10
- remote antiarmor mine system (RAAMS), 6-41
- remotely employed sensor (REMS), C-4
- reorganization, 8-23
 - deliberate, 8-24
 - immediate, 8-23
- reports. *See* tactical standing operating procedures (TSOP), reports.
- reserve, 1-6, 2-5, 3-20, 3-27 and 3-28, 5-1 and 5-2, 5-9, 5-11, 6-12, 6-22 and 6-23, 6-28, C-14, D-3, D-5
- reserve force, 5-14
- restricted fire lines (RFL), 6-3, 6-6, F-5
- resupply. *See* supply, resupply.
- retransmission, 2-9, 4-8
- retrograde operations, 1-2, 4-9, 6-19 through 6-27, 8-22, C-5, C-11
 - assisted withdrawal, 6-23
 - delay, 6-19 through 6-23
 - execution, 6-22 and 6-23, 6-25, 6-27
 - general, 6-19
 - planning, 6-19 through 6-21, 6-24, 6-26
 - preparation, 6-21 and 6-22, 6-24 through 6-27
 - unassisted withdrawal, 6-24
- risk assessment, I-4
- river crossings, 6-36 through 6-47
 - advance from the exit bank, 6-44, 6-46 and 6-47
 - advance to the river, 6-44
 - assault crossing of the river, 6-44
 - assault forces, 6-39
 - combat service support sustains, 6-47
 - execution, 6-45, 6-47
 - follow-and-support forces, 6-39
 - forces, 6-38
 - general, 6-36
 - objectives, 6-38
 - planning, 6-39 through 6-43
 - preparation, 6-43 through 6-45
 - securing the bridgehead, 6-36 and 6-37, 6-44 and 6-45
 - support forces, 6-39
 - types of attacks, 6-40
- roadblocks, A-2
- route of advance, C-9
- rules of engagement (ROE), 2-3, A-3, A-6 and A-7, A-10 and A-11, F-4 and F-5, H-3

S

- S1. *See* Adjutant.
- S2. *See* Intelligence Officer.
- S3. *See* Operations and Training Officer.
- S3 Air, 3-15
- S4. *See* Supply Officer.
- S5. *See* Civil Affairs Officer.
- scheme of maneuver, 3-8, 6-4, 6-15, 6-40 and 6-41, 8-4, B-6, C-9

- seaport of debarkation (SPOD), G-10
- seaport of embarkation (SPOE), G-10
- search patterns, A-11, A-13
- security, 1-9, 2-9, 6-8, 6-24, 6-35, 8-5, 8-12, A-13, C-13, C-18, D-4, D-6, H-4, H-39 through H-43. *See also* force; operations.
 - area, 5-1
 - assistance, A-2
 - brigade support, 3-26
 - convoy, A-8
 - during offensive operations, 4-35 through 4-37
 - element, 3-22, 6-1
 - flank, 4-18
 - forces, 3-20, 3-27, 4-18, 5-2, 6-24
 - measures, 6-8
 - missions, C-13
 - operations, 1-2, 1-7, E-15, E-17
 - passive, 3-20
 - rear, 4-18, C-5
- separate armor brigade, 1-4, 3-5 through 3-10, 3-15, 8-3
- sergeant major (SGM), 3-21, 3-25
- show of force, A-2
- signal officer (SO), 3-7, 3-9 and 3-10, 3-19, 3-21, H-35 through H-39
- signal operation instructions (SOI), C-9, C-17, F-11
- signals, 3-10, 3-21, 6-4, 6-6, F-10 and F-11
 - procedures, H-35 through H-39
 - recognition, 3-21, 6-19
 - units, 3-10
- signals intelligence (SIGINT), B-5
- signals security (SIGSEC), 3-17 and 3-18
- situation map (SITMAP), 3-16, 3-20, 3-25
- situation report (SITREP), F-5, H-79
- situation template, 3-27
- sketch map, 3-23
- small emplacement excavators (SEE), C-11, H-93
- smoke. *See also* defensive operations, limited visibility.
 - colored, 6-4
 - deception, 6-14
 - generated, 2-8
 - mission, 2-8
 - mortar, 2-8
 - operations, 2-8, 7-19 and 7-20
 - pots, 2-8, A-12
 - units, 2-8
- special forces, C-2
- special operations force (SOF), 1-2, C-1 through C-19, E-3, E-16
- special staff, 3-7, 3-15, 3-26
 - air defense officer (ADO), 3-7
 - air liaison officer (ALO), 3-7
 - air naval gunfire liaison officer (ANGLICO), 3-7
 - Army aviation liaison officer, 3-7 and 3-8
 - brigade engineer, 3-8
 - chaplain, 3-8
 - chemical officer, 3-8
 - direct support military intelligence company commander, 3-8
 - fire support coordinator (FSCOORD), 3-8 and 3-9
 - forward support battalion (FSB) commander, 3-9
 - headquarters and headquarters company (HHC) commandant, 3-9

military police platoon leader, 3-9
 signal officer (SO), 3-9 and 3-10
 surgeon, 3-10
 spoiling attacks, 5-11
 spot report (SPOTREP). *See* tactical standing operating procedures (TSOP), reports.
 staff, 3-2, 3-4 and 3-5, 3-7, 3-10, 3-18, 3-23, 3-27, C-12, E-2, F-10, I-1 through I-4
 command and staff communications, 3-4 and 3-5
 coordination, 3-5, 3-26
 functions, 3-4
 officer, 3-4 and 3-5, 3-26
 primary, 3-24
 relationship with subordinate commands, 3-4
 responsibility and authority, 3-4
 special, 3-7, 3-26, 4-7
 Standardization Agreement (STANAG), 2-8, H-2
 standard theater Army command and control system (STACCS), E-3
 standing operating procedure (SOP), 1-7, 2-8, 3-2 and 3-3, 3-9, 3-22, 3-26, 6-32, 6-42, 8-16, 8-25, B-9, C-9, C-15, D-6, F-3 through F-5, F-8, I-3
 start point (SP), 6-9, 6-13 and 6-24, 6-16, D-6
 start time, 2-8, 3-28
 stationary force, 6-1 through 6-3, 6-17 and 6-18
 stationary unit, 6-4, 6-19
 stay-behind forces, C-5 and C-6
 Stinger, B-6, C-4, C-7, C-16, E-11
 striking force, 5-13 and 5-14
 strongpoint, 5-9, 6-28, C-5, C-10 and C-11
 supply, 3-6, 6-5, 6-9, 6-26, 8-6, 8-12 through 8-14, C-8, D-2, H-62 through H-67
 classes, 1-2, 6-5, 6-9, 6-12, 6-47, 8-12 through 8-14, 8-19, 8-21, B-7, C-8, C-13 and C-14, H-63 through H-67
 operations, 8-12 and 8-13
 push system, 8-13
 resupply, 6-4, D-2, D-6
 supply point and unit distribution, 8-13 and 8-14
 throughput distribution, 8-13
 supply and transport (S&T), 1-3 and 1-4
 Supply Officer (S4), 1-5, 2-7 and 2-9, 3-6 through 3-9, 3-16, 6-5, 6-8, 6-42, 8-3 through 8-6, 8-17, 8-19, 8-25, C-8 and C-9
 support from brigade support area/displace as an entity, 8-20
 support for retrograde operations, 8-22
 supporting arms liaison team (SALT), B-5 and B-6
 supporting the defense, 8-21 and 8-22
 supporting the offense, 8-20 and 8-21
 suppression of enemy air defenses (SEAD), C-6, F-9
 surface-to-air missile, E-10
 surgeon, 3-6, 3-10, 3-16
 surveillance, 1-8, 6-34, A-2, B-5, D-4, E-11, E-14
 surveillance, reconnaissance, and intelligence group (SRIG), B-2
 survivability, 1-6, 3-20, 6-42, 6-46, C-8, C-17, E-1, E-5, E-9 through E-12. *See also* mobility and survivability.
 synchronization, 1-6 through 1-8, 1-10, 2-1, 3-2, 3-5, 3-26 and 3-27, 5-2, 6-36, 8-4, A-13, C-7, C-10 and C-11, C-14, E-16, F-6

I

table of organization and equipment (TOE), 3-7, 8-20, B-8, C-3, C-11
 tactical air (TACAIR), 3-7, 6-26, 6-39, E-13
 tactical air control party (TACP), 3-7, 3-10, B-5
 Tactical Army Combat Service Support Computer System (TACCS), 3-17, 8-14
 tactical battlefield, 1-5, 2-1 through 2-5
 tactical command post (TAC CP). *See* command post, tactical (TAC CP).
 tactical logistical functions, 8-2
 tactical missile system (TACMS), E-10
 tactical obstacles, 6-12, 6-15
 tactical operations center (TOC), 3-6, 3-9, 3-13, 3-19, 3-24, 6-8 and 6-9, 6-17, 6-34, 6-42, 8-21, A-8, D-3, D-6
 tactical plan, 3-22, 4-7, 8-21, D-7
 tactical road movement, H-21 through H-24
 tactical satellite (TACSAT), C-9, H-35
 tactical standing operating procedure (TSOP), E-4 and E-5, 6-18 and 6-19, H-1 through H-121
 air defense artillery procedures, H-30 through H-33
 alternate command posts, H-3
 application/scope, H-1
 Army airspace command and control operating procedures, H-33 and H-34
 Army aviation procedures, H-52 through H-57
 assembly area occupation, H-24
 attachment and detachment procedures, H-57 through H-60
 battle command procedures, H-2 through H-8
 blue reports (operations), H-83 through H-86
 civil-military operations, H-78
 command post shift cycles, H-4
 control methods and procedures, H-8 through H-21
 directed supporting documents, H-2
 displacement operations, H-4
 engineer procedures, H-45 through H-49
 fire support, H-49 through H-52
 general, H-1 and H-2
 green reports (intelligence), H-86 through H-89
 intelligence and security procedures, H-39 through H-43
 light forces integration procedures and responsibilities, H-60
 logistic procedures, H-60 through H-71
 military police procedures, H-78
 nuclear, biological, chemical procedures, H-43 through H-45
 orders and plans, H-4
 other tactical operating procedures, H-26 through H-30
 personnel support procedures, H-71 through H-77
 propensity, H-2
 purpose, H-1
 red reports (personnel), H-100 and H-101
 reports, H-79 through H-121
 aerial resupply request, H-101 and 102
 ammunition request, H-94 through H-98
 as required reports, H-101 through 121
 bridge report (BRIDGEREP), H-102
 closing report (CROSSREP), H-103

commander's situation report (SITREP), H-85 and H-86
effective downwind message, H-118 and H-119
EPW or captured materiel report, H-108 and H-109
equipment status report (STATREP), H-91 through H-94
ford, ferry, or other CROSSREP, 103 and 104
intelligence summary (INTSUM), H-86 through H-88
logistics spot report (SPOTREP), H-90
matrix, H-79 through H-82
medical evacuation report, H-104 and H-105
MIJI report, H-105 and H-106
minefield report, H-106 and H-107
NBC 1 Observer's initial report, H-113 and H-114
NBC 2 Evaluated data report, H-114 and H-115
NBC 3 Immediate warning of expected contamination, H-115 and H-116
NBC 4 Report of radiation dose-rate measurement, H-116
NBC 5 Report of areas of contamination, H-116 and H-117
NBC 6 Detailed information of chemical or security, H-117 and H-118
NUCWARN message, H-119 and H-120
patrol report, H-107 and H-108
periodic intelligence report (PERINTREP), H-88
personnel battle loss report, H-100 and H-101
personnel daily summary, H-99 and H-100
POL request, H-98 and H-99
ration request, H-109
route reconnaissance report, H-110
sensitive item report (SENSREP), H-110 and H-111
severe weather warning report, (SVRWXWARN), H-111 and H-112
shell report (SHELREP), H-112
splash report, H-113
spot report (SPOTREP), H-83 through H-85
weather forecast report (WXFCST), H-88 and H-89
security, H-4
signal procedures, H-35 through H-39
standing operating procedures, H-8 through H-11
succession of command, H-2
tactical road movement, H-21 through H-24
task organization, H-8
yellow reports (logistics), H-90 and H-91
target, 2-8, E-8, F-3
target area of interest (TAI), 6-22
target reference point (TRP), C-15
target surveillance and attack radar system, E-13
target value analysis (TVA), 3-15, 4-5
task, 1-7, 1-10, 2-2, 5-2, C-12
task force (TF), 2-2, 3-9, 3-28, 6-10 and 6-11, 6-22, 6-30, B-5, C-7
air-ground, B-1, B-5, B-6
commander's, 3-12, 3-27, 6-30, B-4
templates, 3-24, 3-27, I-4

event, 3-24, 3-27, 6-22, I-4
situational, 3-27, 4-21
terrain, 2-9, 3-17, 3-20, 3-22, 3-25, 5-1, 6-1, 6-8, 6-14 through 6-16, 6-18 through 6-20, 6-22, 6-37 and 6-38, 8-5, 8-15, 8-21, A-8, A-11, C-1, C-5 and C-6, C-9, C-11, C-13, C-15, E-1, E-8, F-7, I-3 and I-4
board, 3-27
key, 4-15, 4-17
model, 3-23 through 3-28
terrain index reference system (TIRS), H-12 and H-13
terrain model kit, 3-25
terrorists, 1-11, A-8
theater of operations, 2-2, B-7, E-3, E-7
thermal sights, A-13, C-10, E-11, F-1
thermal viewer, E-10
throughput distribution, 8-13
time distance (TDIS), 1-11, 3-2, 6-21 and 6-22
timeline, 3-26, C-9
time-phased force and deployment data (TPFDD), E-5
time-phased force development logistics (TPFDL), E-5
traffic control, 6-5, 6-8
traffic control point (TCP), 6-24
transportation, 6-4 and 6-5, 6-8, H-68 and H-69
troop-leading procedures (TLP), 3-24, D-7, I-1
tube-launched, optically tracked, wire-guided missile (TOW), C-3, H-93

U

unit maintenance collection point (UMCP), 2-8, 6-16, 6-21, 6-27, 6-46, 8-9
unit ministry team (UMT), 1-3, 1-5, 3-8, 8-11, 8-16
United Nations, A-2 through A-9, A-13
United States Commander-in-Chief Transportation Command (USCINCTRANS), G-3, G-8
United States Transportation Command, (USTRANSCOM), G-3 and G-4
unmanned aerial vehicle (UAV), E-1, E-13

V

versatility, 1-6
visibility, limited, 6-7 and 6-8, 6-30, 8-23, C-6, C-10, E-13 and E-14

W

war termination, 2-3
weapon systems replacement operations (WSRO) 8-24 through 8-26, H-61 and H-62
brigade management, 8-25
division management, 8-26
general, 8-24
issuing weapon systems, 8-26
weapon system management, 8-25
weather conditions, 1-6, 3-20, 3-22 and 3-23, 6-6, E-11, E-13 and E-14, F-1, F-7, I-3 and I-4
wide area munition, E-1
withdrawal, 6-23 through 6-25, 8-22, A-2, A-5, C-14, D-2.
See also retrograde operations.
assisted, 6-23 and 6-24

unassisted, 6-24
Wolverine, E-14
worldwide military command and control system
(WWMCCS), E-3
wounded in action (WIA), 8-15

X

XO. *See* executive officer.

Z

zone of action, 6-6
zone of attack, 3-22
zones, 6-14, C-6 and C-7