ATP 3-20.97

CAVALRY TROOP

SEPTEMBER 2024

DISTRIBUTION RESTRICTION: Approved for public release; distribution is unlimited.

This publication supersedes ATP 3-20.97, dated 1 September 2016.

Headquarters, Department of the Army

This publication is available at the Army Publishing Directorate site (https://armypubs.army.mil) and the Central Army Registry site (https://atiam.train.army.mil/catalog/dashboard).

Army Techniques Publication
No. 3-20.97

Headquarters
Department of the Army
Washington, DC, 12 September 2024

CAVALRY TROOP

Contents

Page

Preface ..... **vii**
Introduction ..... **ix**
CHAPTER 1 ..... **1**
ROLE OF THE CAVALRY TROOP **1**
Section I – Operational Overview **1**
Cavalry Troop Enabling Operations 1
Variables of the Operational Environment 2
Threats in the Operational Environment 2
Section II – Cavalry Troop Organizations **4**
Cavalry Troop Capabilities and Limitations 4
Armored Brigade Combat Team Cavalry Troop 5
Armored Brigade Combat Team Armored Company 7
Armored Brigade Combat Team Combined Arms Battalion Scout Platoon 7
Infantry Brigade Combat Team Cavalry Troop 8
Stryker Brigade Combat Team Cavalry Troop 11
Air Cavalry Troop 12
Section III – Combat Power Augmentation **13**
Engineer Support 13
Fire Support 14
Intelligence Support 18
Chemical, Biological, Radiological, and Nuclear Reconnaissance 18
Army Aviation Support 19
Air and Missile Defense Support 20
Close Air Support 20
Explosive Ordnance Disposal Support 22
Civil Affairs Support 22
Religious Support 22

DISTRIBUTION RESTRICTION: Approved for public release; distribution is unlimited.

*This publication supersedes ATP 3-20.97, dated 1 September 2016.

Military Information Support 22
Section IV − Cavalry Troop Responsibilities 22
Troop Commander 23
Executive Officer 24
First Sergeant 24
Scout Platoon Leader 25
Scout Platoon Sergeant 25
Troop Master Gunner 25
Fire Support Team 26
Mortar Section Leader 26
Communications Sergeant 27
Combat Medic 27
Field Maintenance Team 27
Chemical, Biological, Radiological, and Nuclear Noncommissioned Officer 28
Supply Sergeant 28
Armorer and Supply Specialist 28
CHAPTER 2 29
MISSION COMMAND 29
Troop Mission Command 29
Troop Integration of Squadron Staff Products 31
Intelligence Preparation of the Operational Environment 33
Mission Orders 34
CHAPTER 3 37
RECONNAISSANCE OPERATIONS 37
Section I – Basics of Reconnaissance Tasks 37
Reconnaissance Fundamentals 37
Reconnaissance Techniques 37
Reconnaissance Methods 37
Sensor Assets 39
Reconnaissance Management 39
Commander’s Reconnaissance Guidance 39
Reconnaissance Focus 39
Reconnaissance Tempo 40
Engagement Criteria 40
Disengagement Criteria 40
Section II – Types of Reconnaissance 40
Zone Reconnaissance 40
Area Reconnaissance 52
Route Reconnaissance 59

Reconnaissance in Force 61
Special Reconnaissance 64
Section III – Reconnaissance Handover 64
Reconnaissance Handover Planning Considerations 64
Reconnaissance Handover Preparation 64
Reconnaissance Handover Execution 65
CHAPTER 4 67
SECURITY TASKS 67
Section I – Basics of Security Tasks 67
Security Fundamentals 67
Commander's Security Guidance 67
Security Focus 68
Security Duration 68
Engagement and Disengagement Criteria 68
Section II – Types of Security Tasks 69
Screen 70
Guard 76
Cover 79
Area Security 79
Counterreconnaissance 82
Section III – Counter-Unmanned Aircraft System Planning 83
Techniques for Conducting Counter-Unmanned Aircraft System Air Guard 83
Passive Defense 84
Active Defense 86
Section IV − Transition Planning 86
Battle Handover 87
Passage of Lines (Forward and Rearward) 88
Relief in Place 91
Change of Mission 92
CHAPTER 5 93
SUSTAINMENT 93
Section I – Basics of Sustainment 93
Sustainment Functions 93
Classes of Supply 94
Troop Sustainment Personnel 94
Section II – Sustainment Planning 96
Reconnaissance Operations in Sustainment 96
Security Operations in Sustainment 96
Sustainment Planning Requirements 97

Supporting Attachments and Detachments 98
Communications 99
Reporting 99
Section III – Logistics Package Operations 99
Troop Trains 99
Supply Routes 100
Logistics Release Point 100
Resupply 100
Logistics Package Organization 100
Logistics Package Movement and Control 101
Convoy Survivability 101
Section IV – Troop Resupply Operations 102
Site Selection 102
Resupply Operation Methods 102
Section V – Maintenance 105
Field Maintenance 105
Recovery 105
Battle Damage Assessment 106
Maintenance Collection Point 106
Section VI – Army Health System 106
Treatment by Nonmedical Personnel 106
Treatment by Medical Personnel 107
Squadron Medical Platoon 107
Squadron Aid Station 108
Evacuation 109
Force Health Protection 109
Operational Public Health 109
Physical Fitness 109
Combat and Operational Stress Control 109
APPENDIX A 111
TROOP OPERATING DISTANCES 111
APPENDIX B 121
TROOP COMMAND POST 121
APPENDIX C 125
TROOP TRAINING MANAGEMENT 125
Glossary 135
References 141
Index 145

Figures

Figure 1-1. Armored brigade combat team Cavalry troop organization 6
Figure 1-2. Armored brigade combat team Armored company organization 7
Figure 1-3. Infantry brigade combat team mounted Cavalry troop organization 9
Figure 1-4. Infantry brigade combat team dismounted Cavalry troop organization 10
Figure 1-5. Stryker brigade combat team Cavalry troop organization 12
Figure 3-1. Infantry brigade combat team troop zone reconnaissance 42
Figure 3-2. Armored brigade combat team squadron zone reconnaissance, offense 46
Figure 3-3. Armored brigade combat team troop zone reconnaissance, offense 49
Figure 3-4. Armored brigade combat team troop area reconnaissance 53
Figure 3-5. Stryker brigade combat team troop route reconnaissance 60
Figure 4-1. Stryker brigade combat team troop stationary screen 74
Figure 4-2. Armored brigade combat team troop as part of squadron guard 78
Figure 4-3. Rearward passage of lines, example 89
Figure 5-1. Troop conduct of resupply by service station method 104
Figure A-1. Armored brigade combat team scout platoon in unrestrictive terrain 112
Figure A-2. Armored brigade combat team Cavalry troop in unrestrictive terrain 114
Figure A-3. Infantry brigade combat team Cavalry troop in severely restrictive terrain 116
Figure A-4. Infantry brigade combat team dismounted scout platoon in restrictive terrain 117
Figure B-1. Armored brigade combat team Cavalry troop command post 123
Figure B-2. Infantry brigade combat team Cavalry troop command post 123
Figure B-3. Stryker brigade combat team Cavalry troop command post 124
Figure C-1. Training plan development flowchart 125
Figure C-2. Unit training management, example 126
Figure C-3. Major training event glidepath, example 127
Figure C-4. Building blocks of training, example 129
Figure C-5. Task crosswalk, example 130

Tables

Table 1-1. Augmentation forces, examples 13
Table 1-2. Fire support capabilities of mortars 15
Table 2-1. Team-developed orders, example 36
Table 4-1. Unmanned aircraft system reporting format 84
Table 4-2. Passive defense measures of troop commanders 85
Table 5-1. Classes of supply 94
Table 5-2. Sustainment status code words 99
Table A-1. Scout platoon width and depth formulas 113
Table A-2. Armored brigade combat team scout platoon operational distances—unrestrictive terrain 114
Table A-3. Infantry brigade combat team scout platoon operational distances—severely restrictive terrain 115
Table A-4. Stryker brigade combat team scout platoon operational distances—restrictive terrain 118
Table A-5. Cavalry troop optics systems 119
Table A-6. Armored brigade combat team Cavalry squadron weapon system list 119
Table C-1. Troop training meeting agenda 126
Table C-2. Collective task proficiency levels 132
Table C-3. Training exercises 133
Table C-4. Training environments 133

This page intentionally left blank.

Preface

ATP 3-20.97 provides the doctrinal framework and tactical employment principles for Cavalry troops of the Cavalry squadrons in the Armored brigade combat team; the Infantry brigade combat team—mounted and dismounted—outside the continental United States (OCONUS); and the OCONUS Stryker brigade combat team.

The principal audience for ATP 3-20.97 is all members of the profession of arms. Commanders and staffs of Army headquarters serving as joint task force or of multinational headquarters also refer to joint or multinational doctrine about the range of military operations and joint or multinational forces. Trainers and educators throughout the Army also use this publication.

Commanders, staffs, and subordinates ensure their decisions and actions comply with applicable United States, international, and, in some cases, host-nation laws and regulations. Commanders at all levels ensure Service members operate in accordance with the law of armed conflict and the rules of engagement. (See FM 6-27 for legal compliance.)

In accordance with the Army Force Structure 2025–2029 and Total Army Analysis 25-29, ATP 3-20.97 has made the appropriate adjustments to align with the 2022 National Defense Strategy and the Fiscal Years 2024–2028 Defense Planning Guidance, while simultaneously investing in those Cavalry troop capabilities necessary for large-scale combat operations.

ATP 3-20.97 uses joint terms where applicable. Select joint and Army terms and definitions appear in both the glossary and the text. For definitions shown in the text, the term is italicized, and the number of the proponent publication follows the definition. This publication is not the proponent (the authority) of any Army terms. The use of a trade or brand name does not constitute endorsement of any specific commercial product, commodity, service, or enterprise by the United States Army.

ATP 3-20.97 applies to the Active Army, the Army National Guard/Army National Guard of the United States, the United States Army Reserve, Department of the Army Civilians, and Government contractors.

The proponent of ATP 3-20.97 is the United States Army Maneuver Center of Excellence. The preparing agency is the Doctrine and Collective Training Division, Department of Tactics, Training, and Doctrine, United States Army Maneuver Center of Excellence. Send comments and recommendations on DA Form 2028 (*Recommended Changes to Publications and Blank Forms*) to Commander, United States Army Maneuver Center of Excellence and Fort Moore, ATZK-TDD (ATP 3-20.97), 1 Karker St, Fort Moore, GA 31905-5410; by email to usarmy.moore.mcoe.mbx.doctrine@army.mil; or submit an electronic DA Form 2028.

This page intentionally left blank.

Introduction

To understand the doctrine of ATP 3-20.97, readers should review ADP 3-0 and the doctrinal principles in ADP 3-07, ADP 3-90, FM 3-55, FM 3-90, FM 3-98, and ATP 3-20.96. Readers should also understand offensive, defensive, and stability tasks, the operations process and its relation to the Army's military decision-making process, and troop leading procedures as described in ADP 5-0. Finally, readers must understand the concepts associated with mission command as described in ADP 6-0.

ATP 3-20.97 provides the combined arms tactics that Cavalry troops use to conduct reconnaissance and appropriate security tasks. This publication is authoritative but requires judgment in application.

The following summarizes each chapter of ATP 3-20.97:

- Chapter 1 provides information on the role of Cavalry troops in large-scale combat operations and provides a description of Cavalry troop organizations in each of the brigade combat teams (Armored, Infantry, and Stryker).
- Chapter 2 handles the updated concepts of mission command and command and control in relation to the commander's reconnaissance and security guidance, the operations process, and information collection.
- Chapter 3 covers the basics of reconnaissance, including types of reconnaissance and reconnaissance handover.
- Chapter 4 covers the fundamentals of security operations, the types of security operations, counterreconnaissance, and transition planning.
- Chapter 5—
  - Addresses how the Cavalry unit plans and organizes for sustainment tasks.
  - Provides information on the different types of logistics packages and the operations, maintenance, field services, and Army Health System support available for the Cavalry troop during large-scale combat operations.

The techniques and procedures addressed in this publication are specific examples of conducting a particular tactical enabling task. Collectively, they provide a set of tools that commanders use to employ tactical situations.

The existing rules of engagement in a specific situation control the actual application of the techniques and procedures presented in this publication.

This page intentionally left blank.

Chapter 1
Role of the Cavalry Troop

As the eyes and ears of the squadron commander, the Cavalry troop is the squadron commander's primary reconnaissance and security asset. Cavalry troops provide the information the squadron commander needs to conduct better informed planning, to help direct operations, and to visualize the area of operations (AO) for the brigade commander. The Cavalry troop skillfully conducts reconnaissance and security tasks to collect information about the threat's location, disposition, and composition. As part of the squadron, the Cavalry troop affords reaction time and maneuver space to the brigade combat team (BCT) commander. In turn, these operations allow the BCT commander to shape the AO proactively and to accept or initiate contact at times and in places of the commander's choosing. Cavalry troops conduct reconnaissance and security tasks throughout the squadron zone and in the BCT's AO.

SECTION I – OPERATIONAL OVERVIEW

1-1. Cavalry units conduct reconnaissance and security operations in close contact with enemy organizations and civilian populations. Cavalry organizations employ appropriate combinations of mounted and dismounted tactics, and both fight for information and develop the situation through stealthy tactics and observation based on the METT-TC (I) variables (mission, enemy, terrain and weather, troops and support available, time available, civil considerations, and informational considerations).

1-2. The troop commander and leader use available information and knowledge to make timely and effective decisions. Troop leaders develop and maintain situational understanding throughout the operations process. *Situational understanding* is the product of applying analysis and judgment to relevant information to determine the relationships among the operational and mission variables (ADP 6-0) to facilitate decision making. The considerations below apply to the two types of variables of an operational environment (OE)—operational variables and mission variables. Section II (of this chapter) provides information on the types of threat forces encountered in the OE. An *operational environment* is the aggregate of the conditions, circumstances, and influences that affect the employment of capabilities and bear on the decisions of the commander (JP 3-0).

CAVALRY TROOP ENABLING OPERATIONS

1-3. An *enabling operation* is an operation that sets the friendly conditions required for mission accomplishment (FM 3-90). The Cavalry troop's execution of reconnaissance and security tasks is essential to the overall success of offensive, defensive, and stability operations. Offensive, defensive, and stability operations begin with the commander's intent and concept of operations. The *commander's intent* is a clear and concise expression of the purpose of an operation and the desired objectives and military end state (JP 3-0). It supports mission command, focuses the staff, and helps subordinate and supporting commanders act to achieve the commander's desired results without further orders, even when the operation does not unfold as planned. The *concept of operations* is a statement that directs the manner in which subordinate units cooperate to accomplish the mission and establishes the sequence of actions the force will use to achieve the end state (ADP 5-0).

1-4. Mission command requires commanders to convey the commander's intent and concept of operations clearly. These prove essential in operations in which multiple operational and mission variables interact with the lethal application of ground combat power. Such dynamic interaction often compels subordinate commanders to make difficult decisions in unforeseen circumstances. In accordance with a specific idea of how to accomplish the mission, the commander and staff refine the concept of operations during planning and adjust the concept of operations throughout the operation as subordinates develop the situation or as conditions change. Often, subordinates acting on the higher commander's intent develop the situation in ways that exploit unforeseen opportunities. (See FM 3-0 for more information on the relationship between the commander's intent, the concept of operations, and mission command as an operation unfolds.)

VARIABLES OF THE OPERATIONAL ENVIRONMENT

1-5. Throughout the operations process, the commander considers the military and nonmilitary aspects of each AO because they change frequently, which impacts the conduct of operations. Operational variables describe the military aspects of an OE and the civilian population's influence on it. The two types of variables of the OE are operational variables and mission variables. Army planners analyze an OE in terms of eight interrelated operational variables—political, military, economic, social, information, infrastructure, physical environment, and time. (See FM 3-0 for more information on operational variables and their effects on the OE.)

1-6. The second type of variable is mission variables, which entail the characteristics of an AO and their potential effects on a mission. The mission variables are mission, enemy, terrain, weather, troops available, support available, time available, civil considerations, and informational considerations. (See FM 5-0 for more information on mission variables and their effects on the OE.)

THREATS IN THE OPERATIONAL ENVIRONMENT

1-7. Commanders at all levels develop their understanding of threats, enemies, criminal networks, and adversaries, including state and non-state actors, within the context of their OEs. When they understand the threat, they can visualize, describe, direct, lead, and assess operations to seize, retain, and exploit the initiative.

1-8. A *threat* is any combination of actors, entities, or forces that have the capability and intent to harm United States forces, United States national interests, or the homeland (ADP 3-0). Threats include individuals, groups of individuals (organized or unorganized), paramilitary or military forces, nation-states, or national alliances. Threats become enemies when they execute their capacity to do harm to the United States.

1-9. A *hybrid threat* is the diverse and dynamic combination of regular forces, irregular forces, terrorists, or criminal elements unified to achieve mutually benefitting effects (ADP 3-0). Hybrid threats combine regular forces with unregulated forces who act without restrictions on violence or targets. They can come in the form of nation-states. (See ADP 3-0 for more information on hybrid threats.)

1-10. A peer threat is an adversary or enemy who can effectively oppose U.S. Forces worldwide while enjoying a position of relative advantage in a specific region. Such threats can generate equal or temporarily superior combat power in geographical proximity to a conflict area with U.S. Forces. They may possess a cultural affinity to specific regions, which provides them with relative advantages in time, space, and access to sanctuary. Understanding a peer or near-peer threat is critical. It leads to seizing, retaining, and exploiting each echelon in deep operations and consolidating tactical gains to achieve sustainable outcomes consistent with the mission.

1-11. An *enemy* is a party identified as hostile against which the use of force is authorized (ADP 3-0). Cavalry units engage enemies in accordance with the rules of engagement (ROE) of the area in which the troop operates and with the law of armed conflict. An *adversary* is a party acknowledged as potentially hostile to a friendly party and against which the use of force may be envisaged (JP 3-0). A *neutral*, in combat and combat support operations, is an identity applied to a track whose characteristics, behavior, origin, or nationality indicate that it is neither supporting nor opposing friendly forces (JP 3-0). Land operation threats are more complex because threats, enemies, adversaries, neutrals, and friendly elements often intermix and prove difficult to differentiate.

THREAT CAPABILITIES AND TECHNIQUES

1-12. Current and future enemies and adversaries employ a series of integrated, tactical, and technical countermeasures against U.S. advantages of information collection capabilities, long-range precision fires, armor protection and mobility, communications, and combined arms integration. Enemy tactical countermeasures comprise deception operations, dispersion, concealment, and intermingling with civilians in urban terrain. Complementing these tactical techniques, the enemy employs technological countermeasures such as cyberspace attacks and Global Positioning System (GPS) jamming to evade and disrupt U.S. Forces' abilities to develop the situation, seize the initiative, and consolidate tactical gains into favorable political outcomes.

1-13. Peer and near-peer threats employ direct and indirect actions to create physical and psychological effects that can suddenly or progressively diminish the U.S. military element of power. Such threats have significant capabilities to act in all domains of land, air, maritime, space, and cyberspace to attack the United States and its interests. Primary and enabling actions with military, political, and informational means are integral to manipulating all elements of combat power and thereby to influencing a foe's situational awareness, understanding, and mission decision making in a particular OE. In addition to physical forms of attack, a threat may integrate a relevant population who is supportive of threat objectives, deception, distorted reporting through social media and political channels, and other modes of spreading credible-sounding misinformation throughout an OE with the purpose of convincing a foe to act in a favorable manner for a threat objective.

Note. "Peer threats employ networks of sensors and long-range massed fires that exploit electromagnetic signatures and other detection methods to create high risk for ground forces, particularly when they are static." Cavalry troops account for the enemy's capability for constant observation of large-scale combat operations through unmanned aircraft systems (UASs) saturating the OE.

1-14. These threats integrate capabilities to mitigate U.S. military power. Five broad physical and psychological approaches follow: systems warfare, preclusion, sanctuary, isolation, and information warfare. Some of these methods prove more appropriate at the operational and strategic levels of confrontation. However, actions and impacts can also be conducted or supportive at the tactical echelon. At all three levels, actions and outcomes focus ultimately on defeating a foe's resolve to achieve its stated objective. At the tactical level of operations in conflict, these threats use tactics linked to the necessary functions for combat action. "Threat forces use the term electronic warfare, which differs from U.S. doctrine's use of electromagnetic warfare. Electronic warfare consists of the measures [that] threats conduct to control or deny friendly use of the electromagnetic spectrum, while ensuring its use by the threat."

ELECTROMAGNETIC WARFARE CAPABILITIES

1-15. Electromagnetic warfare capabilities assist in shaping the OE to gain an advantage. For example, electromagnetic warfare serves to set favorable conditions for cyberspace operations by stimulating networked sensors, denying wireless networks, or other related actions. Operations in cyberspace and the electromagnetic spectrum depend on electromagnetic warfare activities' maintaining freedom of action in both. Electromagnetic warfare consists of three functions—electromagnetic attack, electromagnetic protection, and electromagnetic support. In any environment, the primary focus at the platoon and company levels is on electromagnetic protection as it relates to communications within small-unit operations. (See FM 3-12 for more information on electromagnetic warfare.)

1-16. During planning, units develop a primary, alternate, contingency, and emergency (PACE) plan for communications to prepare them for mitigating denied, degraded, and disrupted command and control (C2) systems and reduced access to cyberspace and space operations capabilities. Enemy force electromagnetic warfare activities, when they are most effective, may not appear as though anything were wrong. These key indicators of degraded C2 systems should be reported to higher headquarters:

- Degraded voice communications.
- Uncharacteristically few voice or digital transmissions.
- Increased latency in data transmissions.
- Frequent and accurate targeting by threat lethal and nonlethal effects.
- Increased pings or network intrusions.
- Inconsistent digital common operational picture (for example, spoofing).
- Inaccurate GPS data, no satellite locks, and inconsistency between inertial navigation systems and GPS-enabled systems.

REGULAR VERSUS IRREGULAR FORCES

1-17. The standing military units regulated by a nation-state or alliance of states compose regular forces. Their function is to provide military offense and defense in service to the nation-state or alliance. Regular

military units may be in direct or indirect coordination with irregular and unconventional warfare operations as described in JP 3-05.

1-18. Irregular forces include revolutionary, paramilitary, militia, partisan, insurgent, guerrilla, covert or underground, mercenary, and armed criminal elements. (See ATP 2-01.3 for example depictions of irregular forces.) Cavalry forces maintain the expectation of facing multiple threats when conducting reconnaissance and security operations. They are likely to encounter irregular forces in a higher concentration than other maneuver forces. Irregular forces are not mutually exclusive and can move from one form to another. (See TC 7-100 and TC 7-100.4 for more information on irregular forces.)

CRIMINAL ORGANIZATIONS

1-19. Cavalry forces may encounter criminal organizations. Every OE has criminal elements; the question is whether those criminal organizations find it in their interests to become part of an irregular force and to share common goals and objectives of preventing legitimate control of areas, commerce, and judicial systems. Normally, criminal organizations are independent of nation-state control. Large-scale criminal organizations often extend beyond national boundaries to operate regionally or globally and exert political influence. Usually, individual criminals or small gangs are incapable of adversely affecting legitimate host nation political, military, and judicial organizations. However, they may achieve such adverse influence at the level of local government.

SECTION II – CAVALRY TROOP ORGANIZATIONS

1-20. Section II provides information on current Cavalry formations, capabilities, and limitations common to each of the BCT Cavalry troops. These general capabilities and limitations apply to all types of Cavalry troops. The descriptions of each organization and of the organization's equipment in paragraphs 1-21 through 1-43 center specific troop capabilities on formation types.

CAVALRY TROOP CAPABILITIES AND LIMITATIONS

1-21. Each Cavalry troop can conduct simultaneous reconnaissance of up to six areas (one per scout section). All Cavalry troops can reconnoiter two routes per platoon in a permissive, no-threat environment, up to two routes as a troop in a low-level threat environment, and one route as a troop in a medium- to high-level threat environment. Troops can conduct detailed zone reconnaissance at a rate dependent upon the terrain and execution of all the tasks associated with the mission. Depending on the squadron commander's guidance, when faced with a lightly equipped threat, each Cavalry troop commander should focus on the guidance for each phase during tempo to provide additional focus and clarity during reconnaissance operations.

1-22. Cavalry troops can execute all-weather, accurate, and timely reconnaissance and security in nonrestrictive, restrictive, and urban terrains and do so employing surveillance systems and mounted and dismounted scouts. In addition, all troops can conduct reconnaissance and security operations while rapidly developing the situation. Troops can fight for information and conduct counterreconnaissance concurrently with information gathering, especially about unconventional and conventional threats.

1-23. Cavalry troops can employ integrated and synchronized reconnaissance and surveillance systems to defeat enemy deception, decoys, and cover and concealment that would otherwise remain undetected by single capability surveillance means.

1-24. Each Cavalry troop can also—

- Rapidly develop the situation and direct reconnaissance tasks to answer priority intelligence requirements (PIRs).
- Employ synchronized reconnaissance and surveillance systems, UASs, and scouts without the delays and excessive compartmentalization associated with coordination-intensive surveillance.
- Employ coordinated fires for support targeting and target acquisition, using available ground and aerial assets, including weapons-locating radar, the fire support team, and UASs.
- Reduce risk and enhance survivability by providing information, so the squadron can avoid contact or achieve situational dominance when in contact.
- Assist in shaping the OE by providing information or directing fires to disrupt the enemy.

1-25. One limitation of the Armored brigade combat team (ABCT), Stryker brigade combat team (SBCT), and mounted Infantry brigade combat team (IBCT) Cavalry troops is the limited number of dismounted scouts within scout sections, which requires combining two or more scout sections to generate the requisite number of dismounted scouts for conducting long-duration observation. Additionally, the ability to conduct continuous screening operations and dismounted tasks associated with zone, area, and route reconnaissance and local security faces its own limitations.

ARMORED BRIGADE COMBAT TEAM CAVALRY TROOP

1-26. The ABCT Cavalry troop has a headquarters section, two scout platoons, a mortar section, and attached fire and medical support (see figure 1-1 on page 6). The troop headquarters has a troop commander, an executive officer (XO), a first sergeant (1SG), a supply sergeant, a supply specialist, an operations noncommissioned officer (NCO), a chemical, biological, radiological, and nuclear (CBRN) NCO, and a forward signal support NCO. The two scout platoons each have one platoon leader, one platoon sergeant, and four squad leaders. The mortar section has a section leader, two squad leaders, two gunners, two assistant gunners, and two drivers. In addition, the mortar section has two armored mortar carrier vehicles with 120-millimeter (mm) mortars (self-propelled). The medical support normally attached to the ABCT Cavalry troop provides one combat medic with a medical equipment set per scout platoon. The ABCT Cavalry troop has the following equipment in each of the two scout platoons:

- M2A3/M2A4 Bradley fighting vehicle (known as BFV), six for the K-series modified tables of organization and equipment.
- M240L 7.62-mm machine gun.
- Javelin command launch unit.
- Raven small unmanned aircraft system (known as SUAS).

1-27. The ABCT Cavalry troop capabilities include survivability in large-scale combat operations and fighting for information. The M2A3/M2A4 BFV—armed with an M242 25-mm automatic cannon, a 7.62-mm coaxial machine gun, and a tube-launched, optically tracked, wire- or wireless-guided (known as TOW) missile system—provides firepower to estimated ranges of up to 4,350 meters. The ABCT's use of the commander's independent viewer—with the BFV in a silent watch mode of operation—allows for battlespace surveillance of assigned sectors requiring limited sustainment for extended periods of time.

1-28. One limitation to the ABCT Cavalry troop is its limited maneuverability in urban environments and other types of complex terrain. The troop's BFV is large and loud, which hinders stealthy maneuvering during reconnaissance and security operations. The troop's heavier vehicles require sustainment consideration for resupplying, refueling, recovery, and maintenance despite the ABCT's enhanced sustainment capability.

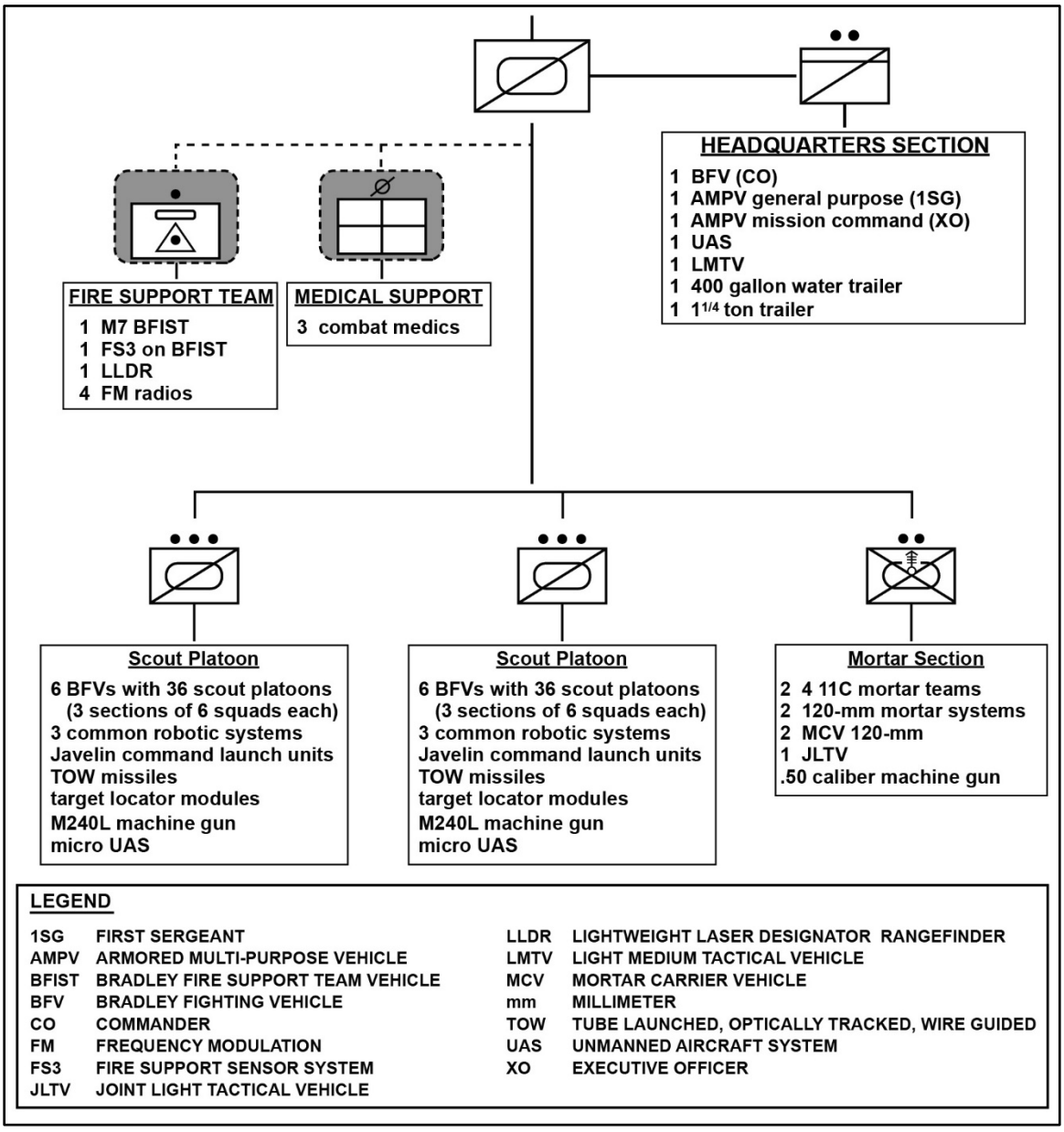


Figure 1-1. Armored brigade combat team Cavalry troop organization

ARMORED BRIGADE COMBAT TEAM ARMORED COMPANY

1-29. The ABCT Armored company has a headquarters section, three tank platoons, and attached medical support (see figure 1-2). The troop headquarters has a troop commander, an XO, a 1SG, a supply sergeant, a supply specialist, a master gunner, and an operations NCO. The three tank platoons each have one platoon leader, one platoon sergeant, and two section leaders with four M1A2 System Enhancement Package, version 3, (known as SEPv3) Abrams tanks. The attached medical support normally provides one ambulance team per Armored company, as well as one emergency care sergeant and three combat medics (one per Armored platoon) to each Armored company.

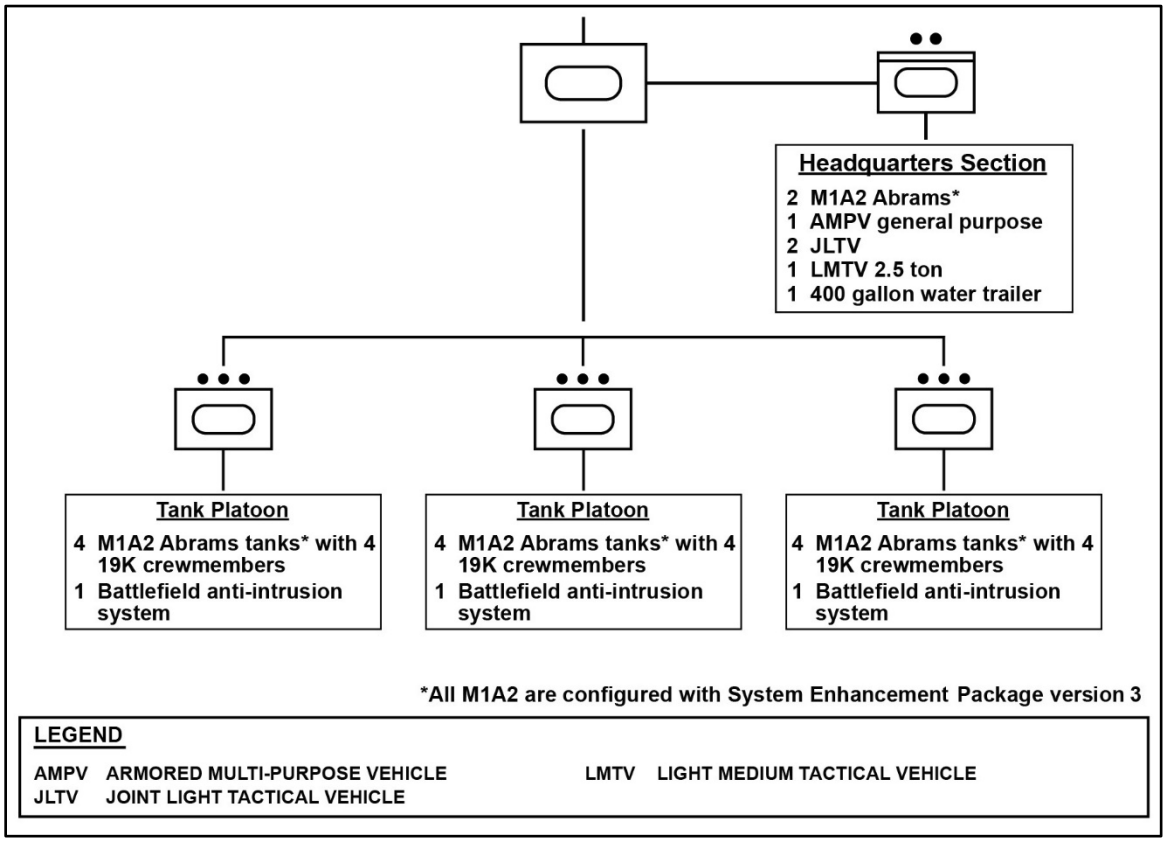


Figure 1-2. Armored brigade combat team Armored company organization

ARMORED BRIGADE COMBAT TEAM COMBINED ARMS BATTALION SCOUT PLATOON

1-30. ABCT combined arms battalion (CAB) scout platoons have three BFVs and five armored Joint Light Tactical Vehicles (known as JLTVs) outfitted with the Long-Range Advanced Scout Surveillance System (known as LRAS3). Paragraphs 1-31 and 1-32 provide information on the capabilities and limitations of the CAB scout platoons.

CAPABILITIES—COMBINED ARMS BATTALION SCOUT PLATOON

1-31. The CAB scout platoons in the ABCT have the following capabilities:

- The three M2A3/M2A4 BFVs provide firepower and survivability.
- A BFV has a stabilized turret employing a 25-mm automatic cannon, 7.62-mm coaxial machine gun, and TOW missile system.
- Each BFV carries up to three scouts to execute dismounted tasks.
- The LRAS3 enables the detection, recognition, identification, and location estimation of distant targets.
- Each platoon possesses an M240L 7.62-mm machine gun, an MK19 40-mm grenade machine gun, and a caliber .50 machine gun.

LIMITATIONS—COMBINED ARMS BATTALION SCOUT PLATOON

1-32. The CAB scout platoons in the ABCT have the following limitations:

- They are vulnerable to enemy counterreconnaissance and security measures.
- They have a limited ability to fight for information.
- A limited number of dismounted scouts reduces the platoon's capability to conduct long-term observation, continuous screening, and multiple, concurrent dismounted tasks associated with route, zone, or area reconnaissance.

INFANTRY BRIGADE COMBAT TEAM CAVALRY TROOP

1-33. There are two types of Cavalry troops in the IBCT—the mounted troop and the dismounted troop. Paragraphs 1-34 through 1-39 provide information on both types of IBCT Cavalry troops.

INFANTRY BRIGADE COMBAT TEAM MOUNTED CAVALRY TROOP

1-34. The IBCT mounted Cavalry troop has a headquarters section, three scout platoons, a mortar section, and attached fire and medical support (see figure 1-3). The troop headquarters has a troop commander, an XO, a 1SG, a supply sergeant, an operations NCO, an operation assistant, a CBRN NCO, and a forward signal support NCO. The three scout platoons each have one platoon leader, one platoon sergeant, and two section leaders. The mortar section has two 120-mm mortars (towed). The IBCT mounted Cavalry troop employs an organic 120-mm mortar section (towed) for fire support, and each of the three scout platoons has the following equipment:

- JLTV Heavy Guns Carrier.
- JLTV Close Combat Weapons Carrier.
- Caliber .50 machine gun.
- LRAS3.
- MK19 40-mm grenade machine gun.
- M240L 7.62-mm machine gun.
- Javelin command launch units.

Capabilities—Mounted Cavalry Troop

1-35. The IBCT mounted Cavalry troop has the following capabilities:

- It provides reconnaissance and security for IBCT operations.
- It possesses six mounted Improved Target Acquisition Systems.
- It possesses an organic 120-mm mortar section (towed).
- It possesses a short-range reconnaissance SUAS (quadcopter).

Limitations—Mounted Cavalry Troop

1-36. The IBCT mounted Cavalry troop has the following limitations:

- The JLTV provides limited protection against heavy weapon systems.
- The JLTV's added weight limits mobility, especially in complex terrain.

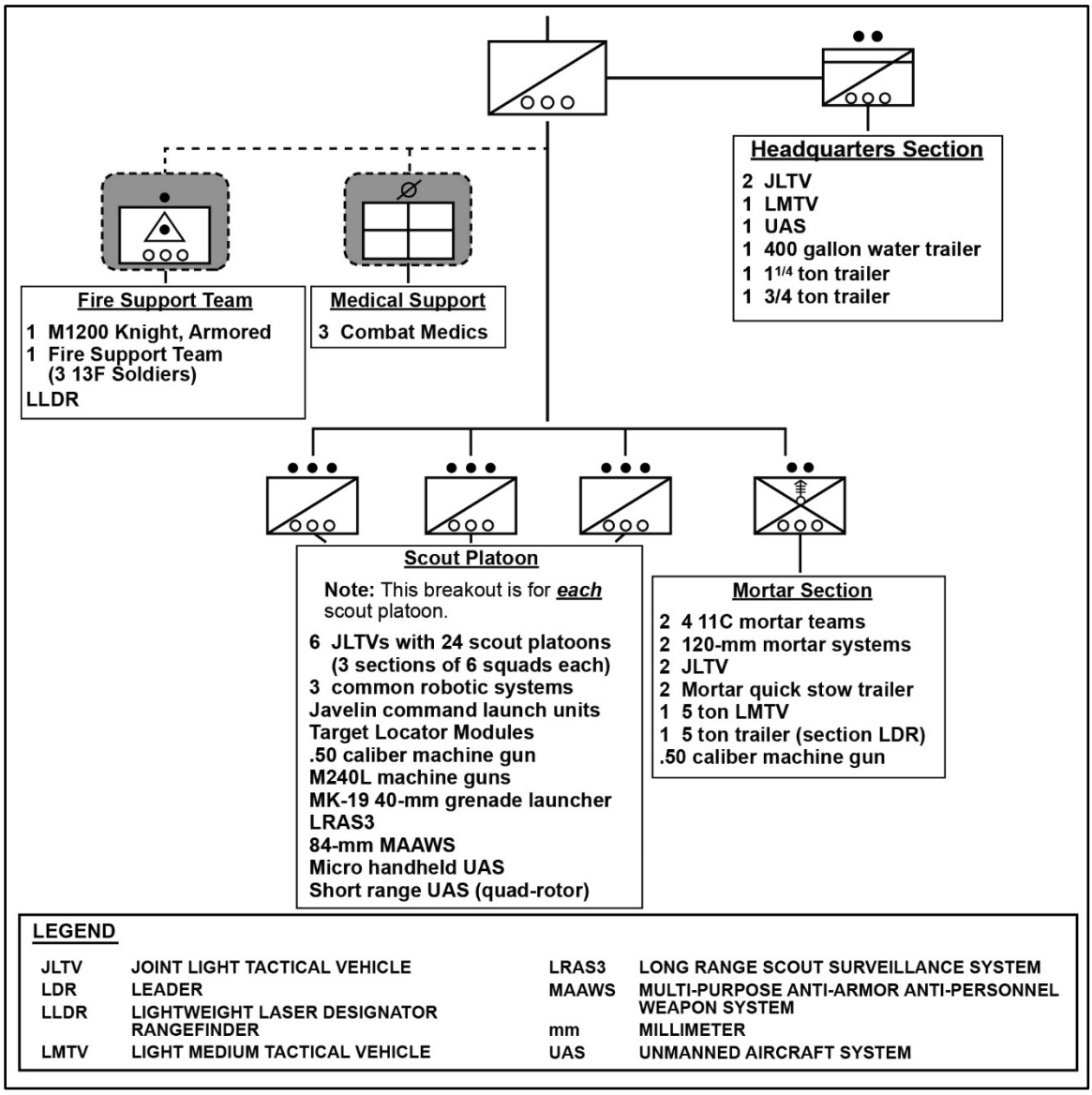


Figure 1-3. Infantry brigade combat team mounted Cavalry troop organization

INFANTRY BRIGADE COMBAT TROOP DISMOUNTED CAVALRY TROOP

1-37. The IBCT dismounted Cavalry troop has a headquarters section, two scout platoons, a mortar section, a sniper squad, and attached fire and medical support (see figure 1-4 on page 10). The troop headquarters has a troop commander, an XO, a 1SG, a supply sergeant, three radio operators, a CBRN NCO, an operations assistant, and a supply specialist. The platoons have three scout sections. The mortar section has a section leader, squad leader, two gunners, and two assistant gunners. The sniper squad has a squad leader, two senior snipers, and four snipers. Normally, the platoons operate as two heavy sniper teams or three light sniper teams. The IBCT dismounted Cavalry troop has the following equipment:

- One JLTV to each scout platoon and two JLTVs in headquarters.
- Raven SUAS.
- Landing inflatable craft boat.

Capabilities—Dismounted Cavalry Troop

1-38. The IBCT dismounted Cavalry troop has the following capabilities:

- It provides reconnaissance and security for IBCT operations.
- It provides mission command, staff planning, and supervision of operations of organic and attached units.
- It provides dismounted reconnaissance to support motorized troops in execution of the squadron mission.
- It possesses an organic 60-mm mortar section.

Limitations—Dismounted Cavalry Troop

1-39. The IBCT dismounted Cavalry troop has the following limitations:

- It has limited transportation capability.
- The lack of a mobility platform means additional consideration for the squadron when planning.

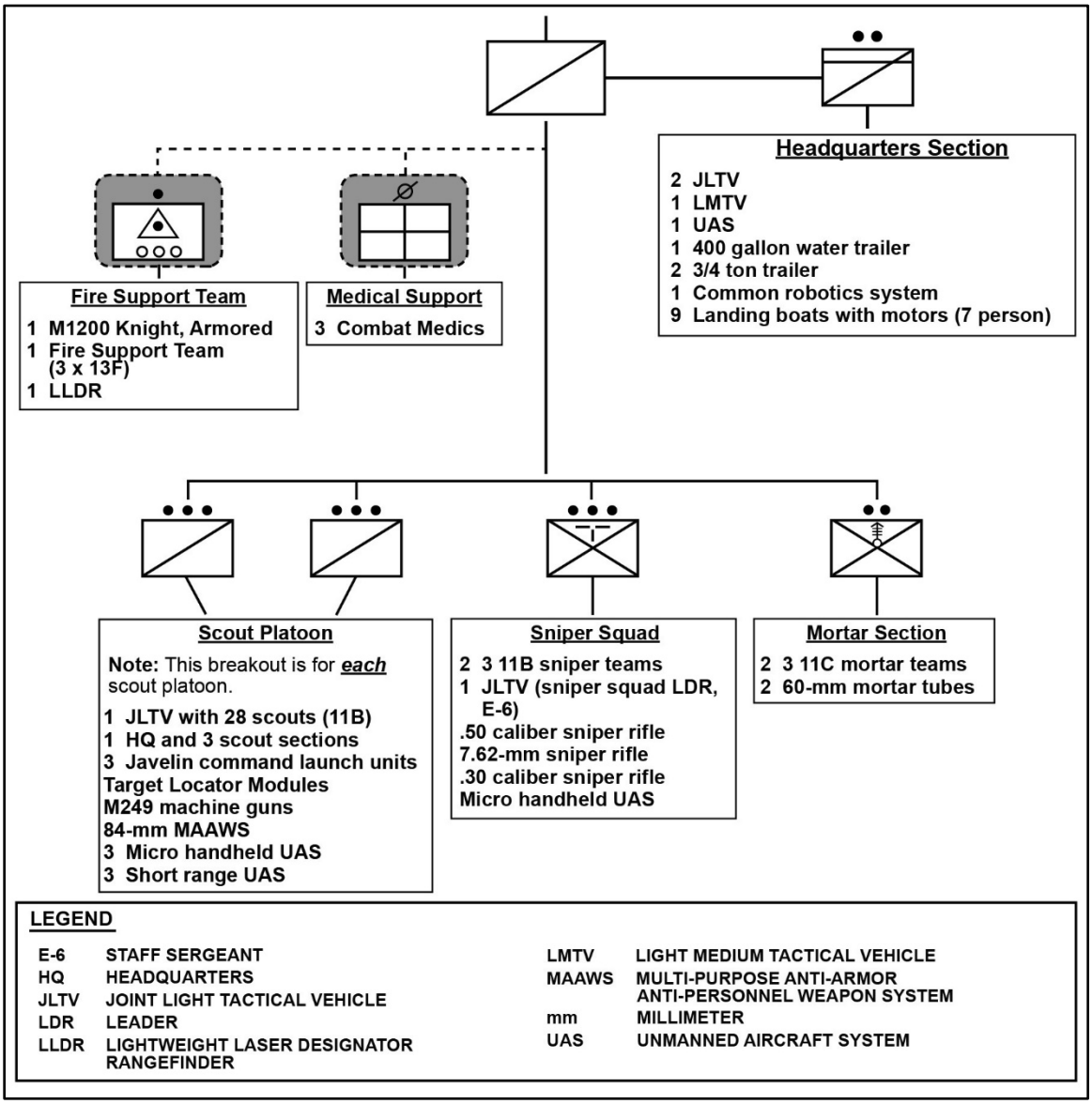


Figure 1-4. Infantry brigade combat team dismounted Cavalry troop organization

STRYKER BRIGADE COMBAT TEAM CAVALRY TROOP

1-40. The SBCT Cavalry troop has a troop headquarters, two scout platoons, and a mortar section (see figure 1-5 on page 12). The troop headquarters has a troop commander, an XO, a 1SG, an operations sergeant, an operations assistant, a CBRN NCO, a supply sergeant, and a supply specialist. The two scout platoons each have one platoon leader, one platoon sergeant, and four squad leaders. The mortar section has a fire detection center and two 120-mm mortars mounted on Stryker mortar carrier vehicles. The SBCT Cavalry troop has an organic 120-mm mortar section (mounted). Each of the scout platoons has the following:

- Stryker vehicles.
- Caliber .50 machine gun.
- LRAS3.
- M240L 7.62-mm machine gun.
- Javelin command launch units.
- MK19 40-mm grenade machine gun.

CAPABILITIES—STRYKER-MOUNTED CAVALRY TROOP

1-41. The SBCT Cavalry troop has the following capabilities:

- It maximizes the teaming of ground scouts and brigade surveillance systems to conduct close reconnaissance of enemy forces.
- It is equipped with 120-mm self-propelled mortars.
- It can fight for information against light and motorized forces or heavier threats when augmented.

LIMITATIONS—STRYKER-MOUNTED CAVALRY TROOP

1-42. In terms of the SBCT Cavalry troop's limitations, it has a limited ability to maintain enemy contact in some situations. Two situational examples are emergency resupply and casualty evacuation operations.

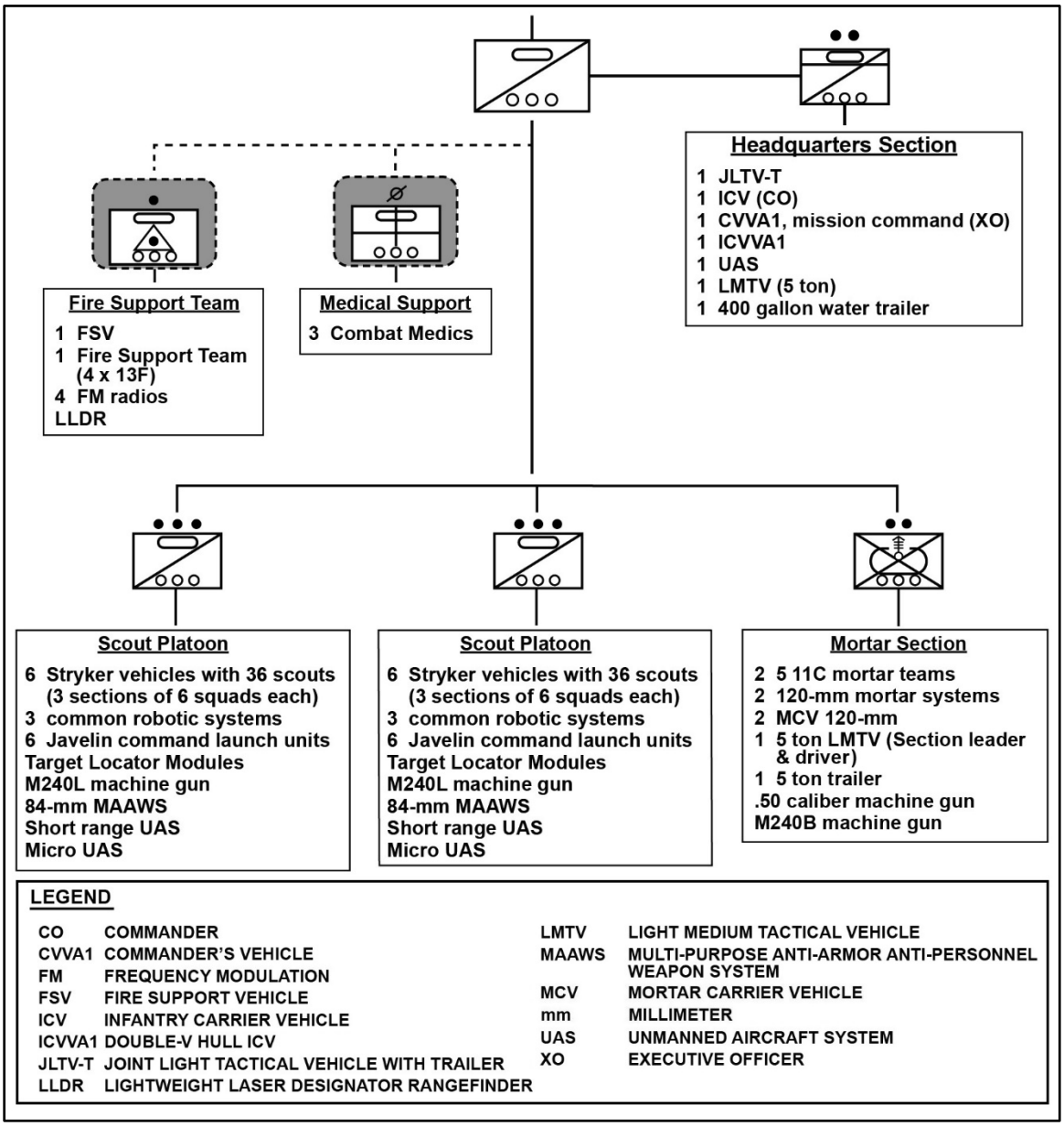


Figure 1-5. Stryker brigade combat team Cavalry troop organization

AIR CAVALRY TROOP

1-43. Each air Cavalry troop has eight AH-64s and four RQ-7B UASs. Furthermore, an air Cavalry troop has the following capabilities:

- It provides continuous, accurate, and timely reconnaissance and security in complex, close, and urban terrain.
- It provides zone, route, and area reconnaissance and screening.
- It guards and conducts area security when task-organized.
- It conducts reconnaissance in force when task-organized.
- It conducts movement to contact and attack.

SECTION III – COMBAT POWER AUGMENTATION

1-44. The squadron provides additional combat power to the troop that is either dedicated or habitually organic to the squadron or the BCT. The squadron's higher headquarters, the BCT, can provide what is considered frequent or priority-based augmentation, including military intelligence and signal companies and a CBRN reconnaissance platoon. In some cases, the request may go up to division to obtain engineer assists. (See table 1-1 for a depiction of which augments a Cavalry troop may receive upon request and which are habitual to the troop.)

Table 1-1. Augmentation forces, examples

DEDICATED OR HABITUAL	*FREQUENT OR PRIORITY-BASED*
Combat Engineer Platoon	Artillery
CBRN Reconnaissance Platoon	CAS
C-UAS	Aviation from Combat Aviation Brigade Air Cavalry Troops
IEW Systems	Reinforcing Combat Engineers
	Reinforcing CBRN Recon and Decon
	Reinforcing Sustainment FLE/DSSB

Legend:

CAS	close air support	Decon	decontamination
CBRN	chemical, biological, radiological, and nuclear	FLE	forward logistics element
C-UAS	counter-unmanned aircraft system	IEW	intelligence and electromagnetic warfare
DSSB	division sustainment support battalion	Recon	reconnaissance

1-45. When attached to the BCT and acting as the main reconnaissance effort, the troop can request combat multipliers through the BCT operations officer. Under normal operations, all requests for combat multipliers go through the squadron to the BCT operations officer. Section III explains habitual and other augmentation forces in detail.

ENGINEER SUPPORT

1-46. Combat engineers conduct mobility, countermobility, and survivability tasks to increase the effectiveness of troop operations. They integrate with the commander's maneuver and indirect fires assets and enhance the commander's opportunities to accomplish combined arms missions.

1-47. General (construction) engineers do not organize, equip, or train to perform close combat operations. When close combat is less likely to occur, they may employ their technical capabilities to support the troop for specialized missions such as reconnaissance tasks related to infrastructure or environmental conditions.

1-48. An engineer reconnaissance team is the baseline engineer reconnaissance element. The identified element may be a team, squad, platoon, or larger unit. Obstacle and other tactical engineer reconnaissance operations require highly trained personnel. (See ATP 3-34.22 and ATP 3-34.81 for more information on engineer reconnaissance support.)

1-49. Engineer reconnaissance teams assist the troop in conducting zone, area, and route reconnaissance to answer the commander's critical information requirements (CCIRs) with an additional focus on technical information. Engineer reconnaissance support can prove critical in urban, tunnel, and subsurface operations and other operations in complex terrain. It is also critical in mobility, countermobility, and survivability operations. Engineer capabilities support environmental and infrastructure classification in reconnaissance operations. Environmental and infrastructure assessments support the performance of a detailed survey when the situation permits. The engineer reconnaissance team is normally task-organized for a specific mission from one of the combat engineer platoons within the division engineer battalion's engineer companies. The engineer reconnaissance team—

- Provides detailed technical information on complex obstacles and enemy engineer equipment to increase the supporting unit's reconnaissance capabilities.
- Conducts an analysis of assets necessary for bypassing, breaching, marking, or reducing encountered obstacles.

- Provides detailed technical information on routes (including their classifications) and specific information on bridges, tunnels, fords, and ferries along the route.
- Provides the initial, requisite level of technical information for an airfield assessment.
- Conducts tactical reconnaissance and, in fulfillment of the commander's PIRs, focuses on the initial, requisite technical information for environmental or infrastructure assessments.

FIRE SUPPORT

1-50. *Fire support* comprises fires that directly support land, maritime, amphibious, space, cyberspace, and special operations forces to engage enemy forces, combat formations, and facilities in pursuit of tactical and operational objectives (JP 3-09). Paragraphs 1-51 through 1-77 provide information on the different fire assets available to Cavalry troop commanders and their related capabilities.

FIRE SUPPORT TEAM

1-51. A *fire support team* is a field artillery team provided for each maneuver company/troop and selected units to plan and coordinate all supporting fires available to the unit, including mortars, field artillery, naval surface fire support, and close air support integration (JP 3-09.3). It also assists in target acquisition, calls for fire, and fire control through digital links established with the squadron fires cell. The troop fire support officer (FSO), squadron FSO, brigade intelligence staff officer (S-2), and squadron or brigade operations staff officer (S-3) coordinate closely to focus and synchronize lethal and nonlethal effects. These effects support the troop's scheme of maneuver by taking advantage of near real time targeting information provided by intelligence, acquisition, and targeting systems. Target acquisition systems also provide targeting information useful to reconnaissance and fire support elements during reconnaissance and security missions.

TROOP MORTARS

1-52. The troop's mortar section, while organic, is herein listed with fire support to facilitate fires planning. It provides organic indirect fire support that is extremely responsive to the troop's tactical needs. It can place a heavy volume of timely, accurate, sustained indirect fires, which serve to disrupt enemy fires and movement and thereby allow the troop to maneuver to positions of advantage. Mortars are effective in covering obstacles or dead space, engaging dismounted threats, marking targets for air attack, or providing screening smoke (obscuration). They are ideal weapons for providing immediate suppression and for attacking targets on reverse slopes, in narrow ravines, in built-up areas, and in other areas that are difficult to strike with low-angle fires. Mortars are largely ineffective at destroying armored vehicles. Mortar planning and employment are for appropriate targets and missions.

1-53. The troop often operates in a large area that the mortar section cannot completely cover during missions. In this scenario, commanders decide whether to position the mortars to cover the most critical area or to move them to a position to cover portions of multiple areas and then adjust those positions appropriately. When commanders know the availability of other fires assets, they can incorporate them into their plans.

1-54. The progress of the troop determines the movement of the mortars during Cavalry operations. While the section is on the move, it remains prepared to provide immediate fires using the direct lay, direct alignment, or hip shoot method. The section plans the movement, so it is in position to support the troop at critical times such as when crossing danger areas or clearing complex terrain.

1-55. Cavalry troops in an ABCT or SBCT have a section of two mounted 120-mm mortars and a fire direction center. In the IBCT, motorized troops have a section of two 120-mm mortars (towed), while the dismounted troop has a section of two 60-mm mortars and a fire direction center. (See table 1-2 for mortar capabilities.)

Table 1-2. Fire support capabilities of mortars

WEAPON	*AVAILABLE MUNITIONS*	*MAX RANGE (in meters)*	*MIN RANGE (in meters)*	*MAX RATE*	*BURST RADIUS*	*SUSTAINED RATE*
60-mm	HE, WP, Illumination	3,500 (HE)	70 (HE)	30 rounds for 4 minutes	30 meters	15 to 20 rounds per minute
120-mm	HE, WP obscuration, Illumination	7,200 (HE)	200 (HE)	16 rounds for 1 minute	60 meters	4 rounds per minute
Note. The sustained rate of fire for the 60-mm mortar varies by ammunition type. See TM 9-1010-233-10 for further guidance on the specific sustained rate for each type of ammunition.						
Legend: HE high explosives max maximum min minimum mm millimeter TM technical manual WP white phosphorus						

Effect Types of Mortar Support

1-56. The troop requests one of five effect types of mortar support during a call for fire, depending on the desired results intended for the target. The five effect types of mortar support are destruction, neutralization, suppression, obscuration, and illumination.

Destruction

1-57. High-explosive rounds can destroy soft targets, but typically, achieving the intended effect requires a very large amount of ammunition. The destruction effect equates to 30-percent casualties or material damage to the targeted asset. High explosives are very effective against dismounted threats and in urban environments.

Neutralization

1-58. Once a target suffers 10-percent casualties or damage, it is deemed neutralized, which temporarily renders it ineffective or unusable. This effect is beneficial when maneuvering a unit for relative advantage. *Relative advantage* is a location or condition, in any domain, relative to an adversary or enemy that provides an opportunity to progress towards or achieve an objective (FM 3-0).

Suppression

1-59. High-explosive rounds cannot destroy armored vehicles unless they achieve a direct hit. However, their use can greatly disrupt enemy movement. High-explosive rounds can force mounted enemy units to button up or move to less advantageous positions.

Obscuration

1-60. Troops use smoke rounds for obscuration, marking targets, and screening. Placing smoke on or just in front of enemy positions obscures the enemy's vision. Obscuration can support infiltration and exfiltration. Screening places smoke between the enemy's and the troop's positions to conceal movement. Mortar-delivered obscuration can mark enemy positions and thereby enhance friendly maneuver and orient direct fires or close air support (CAS). Obscuration may be more effective in urban environments, where structures tend to minimize the impact of winds that normally disperse obscuration effects. In any situation, scouts carefully mark their own positions to prevent friendly obscuration from working against them.

> ***Note.*** The U.S. Army uses a 120-mm mortar smoke round with white phosphorus that produces incendiary and casualty-producing effects.

Illumination

1-61. Illumination rounds light an area or enemy position during periods of limited visibility. Doing so can increase the effectiveness of image intensification devices and sensors. It also assists the troop in gathering information, adjusting mortars or artillery, or engaging enemy targets with direct fire. Ground-burst illumination marks enemy positions and provides a thermal target reference point for control of direct and indirect fires. As with obscuration, though, scouts are careful not to illuminate friendly positions. They pay close attention to wind direction and speed to ensure the proper placement of the rounds whenever they employ illumination.

Employment of Mortar Section

1-62. The troop mortar section employs as a separate element during operations. It generally moves independently of the platoons and provides its own security. The commander usually designates positions for the section leader and provides guidance for indirect fires forward of the platoons. However, the commander may delegate this responsibility to the FSO, which allows the FSO and the section leader to work together to develop a firm fire support plan.

1-63. If the section divides into individual tubes, the section leaders split to ensure adequate coverage. Known as a split section operation, this is the least preferable method of operation because it isolates the individual tube and renders it dependent upon its dedicated element for all defense, maneuver, and sustainment requirements. Split section operations require a higher degree of crew training and do not provide for mutual support against air or ground threats. While they may provide a wider area of coverage, they also have inherent disadvantages. Split section operations degrade mass effects, particularly those of high explosives and illumination. Should the mortar section lose communications in either vehicle, it would render a split section operation impossible. Additionally, planning requirements double for the following:

- C2.
- Clearance of fires.
- Survivability moves.
- Resupply.

Mortars in Urban Operations

1-64. Mortars are well suited for operations in urban areas because they have a high rate of fire and a short minimum range. Also, mortar ammunition has a steep angle of fall, which minimizes any dead space behind buildings. Mortar fire dead space on the gun-target line beyond a building is only about one-half of the building's height. (See ATP 3-21.90 for details on mortar employment in the urban environment.)

FIELD ARTILLERY

1-65. A fires battalion or battery may employ both low- and high-angle fires to support the troop. Munitions include high explosives, dual-purpose improved conventional munitions, extended-range scatterable mines, obscuration, and illumination. The GPS-guided Excalibur high-explosive round is useful for striking well-located targets; its guidance system and top attack trajectory make it less likely to produce collateral damage. (See FM 3-09 for more information on fire support.)

1-66. In addition to cannon artillery, multiple launch rocket system units provide unguided or GPS-guided rocket or missile fires. They do not have obscuration or illumination munitions, although they do fire antitank scatterable mines that comply with international treaties for the use of landmines.

AVIATION FIRES AND CLOSE AIR SUPPORT

1-67. Attack helicopter fires are a powerful asset during large-scale combat operations because they can destroy enemy elements of varying sizes, including large armor formations. The troop may require Army rotary-wing aviation to support subordinate platoons and teams engaged in close combat.

1-68. *Close air support* is air action by aircraft against hostile targets that are in close proximity to friendly forces and that require detailed integration of each air mission with the fire and movement of those forces (JP 3-09.3). Planning of CAS targets is the responsibility of the commander and FSO in coordination with the squadron tactical air control party. The squadron tactical air control party includes air liaison officers and

joint terminal attack controllers. The air liaison officer advises the commander on the capabilities and limitations of fixed-wing CAS, while the joint terminal attack controller is the primary coordinator for requesting and controlling CAS. Joint fires observers act as extended eyes for the joint terminal attack controller in support of Type 2 or 3 terminal attack control or in response to an organic fire support personnel request. (See JP 3-09.3 for procedures associated with CAS execution for personnel who are not joint terminal attack controllers.)

TARGET ACQUISITION

1-69. Target acquisition systems gather information in several ways. Assets include those following:

- AN/TPQ-36 and AN/TPQ-37 radars.
- UASs.
- Fire support teams.
- AH-64 helicopters.
- Scouts.
- Fixed-wing aircraft performing reconnaissance and surveillance missions using advanced targeting pods.

1-70. Targeting is a command responsibility. Locating, identifying, classifying, tracking, and attacking targets and then assessing battle damage are difficult tasks. Competition for assets is intense. Detailed guidance, thorough planning, and disciplined execution prevent unnecessary redundancy and maximize available combat effects.

FIRES PLANNING

1-71. One of the commander's greatest challenges is to synchronize and concentrate all available assets at the critical time and place. To ensure assigned fires are effective and understood by subordinates, the commander conducts fires planning.

Fires Planning Considerations

1-72. The planning process begins with receipt of the mission. The commander, XO, and FSO interact throughout planning and execution to ensure continuous necessary support. While the commander is developing the plan for employment of forces, the commander and FSO plan for the best use of fires by determining—

- Fires and nonlethal assets that support the troop and subordinate elements.
- Targets to attack.
- Indirect fires and nonlethal assets to employ (ammunition and delivery).
- Desired target effects.
- Engagement priorities.

1-73. The commander clearly states the intent for fires and ensures the fires plan supports each phase of the operation. Areas the commander coordinates with the FSO follow:

- Scheme of maneuver, which includes the area of influence, timing and triggers of advance, rate of movement, passage of lines, and Army aviation in the AO.
- Priority of fires, which identifies which platoon has priority of fires.
- Critical targets, which seriously impede mission accomplishment when fires fail to create the desired effects upon them.
- Priority targets, along with the time duration for which they will be in effect.
- CAS assets, whose availability the commander and FSO, in coordination with the squadron tactical air control party, determine, as well as how to use them (including target selection and desired effects).
- Fire support coordination measure, which higher headquarters establishes. (These control measures are existing or proposed, permissive, or restrictive.)
- Ammunition restrictions, which place limitations on the use of obscuration, improved conventional munitions, or other ammunition (including established controlled supply rates).

1-74. The fire support plan outlines how to use lethal and nonlethal fires. The troop FSO develops the plan and constantly refines it as the operation continues. It orders targets by priority, matches them with the available indirect fires systems, eliminates duplication with squadron targets, and allows quick fires execution without specific direction from the commander. A fire support plan includes the following:

- Priority of fires.
- Critical and priority targets.
- ROE.
- Allocation of priority targets and any available final protective fire.
- Execution matrix.
- Fire support coordination measure.
- Clearance of fires.
- Requisite airspace coordinating measures.
- General concept of how indirect fire support the operation.
- Target list, including locations for fires use.

1-75. The FSO disseminates the fire support plan (see paragraph 1-74 for a list of all the plan elements) within the troop by an operation order (OPORD) or by other means such as a digital message. Upon receipt and modification, based on platoon indirect fires plans, the platoon leaders receive the updated fires plans.

Note. Scout platoons often generate platoon-level graphic control measures due to the decentralized nature of reconnaissance and security missions. The troop fire support team and troop headquarters element routinely incorporate platoon-level graphic control measures.

Fires Coordination Considerations

1-76. The troop FSO has the following responsibilities in coordinating fires:

- Ensure the squadron FSO, troop mortar section, and any other supporting elements have the correct fire support plan.
- Conduct fires rehearsals prior to every operation whenever feasible.
- Keep the squadron FSO informed of the tactical situation.
- Select the appropriate fires method to engage targets.
- Inform the troop commander of the status of all fires assets.
- Modify the fire support plan as necessary and disseminate changes.
- Coordinate any requests for additional fires.
- Monitor the execution of the fire support plan throughout the operation.

1-77. The FSO ensures the fires plan remains current and active in support of the missions. The FSO remains abreast of the tactical situation and coordinates, refines, and anticipates all fire support requirements. Whenever the plan becomes unworkable or circumstances dictate changes to the plan, the FSO immediately informs the commander.

INTELLIGENCE SUPPORT

1-78. The BCT intelligence cell assists the commander and staff develop understanding of the situation and with decision making. The intelligence cell provides timely, relevant, accurate, predictive, and tailored intelligence analysis, reporting, and products.

1-79. The military intelligence company supports the BCT and its subordinate commands through collection, analysis, and dissemination of information and intelligence. Its mission is to collect and analyze UAS full-motion video, intelligence and electromagnetic warfare (known as IEW), and human intelligence.

CHEMICAL, BIOLOGICAL, RADIOLOGICAL, AND NUCLEAR RECONNAISSANCE

1-80. A CBRN reconnaissance platoon assigned to the BCT can augment the reconnaissance and security efforts of the Cavalry troop. Two varieties of the platoon—heavy and light—operate in a mounted or dismounted role, respectively. The CBRN reconnaissance and surveillance platoons can detect, locate,

identify, mark, and report CBRN hazards and perform limited, conventional reconnaissance. Cavalry troops and other reconnaissance assets report contamination and suggested bypass routes through the squadron staff.

Note. With emerging CBRN threats and the battalion's limited detection capability, the CBRN NCO must advise the commander when CBRN threats exceed their organic detection and mitigation capabilities. Furthermore, the CBRN NCO must advise commanders on available resources at higher echelons that can mitigate risk.

ARMY AVIATION SUPPORT

1-81. Army aviation conducts air-ground operations as the aerial maneuver force of the combined arms team or as an independent maneuver force in support of ground forces. Army aviation supports the Cavalry troop conducting reconnaissance and security operations through various tasks, including movement to contact, attack, reconnaissance, security, and air assault. Depending on the required task, Cavalry squadrons request support using attack reconnaissance or lift air mission requests. (See FM 3-04 for both examples and for more information on Army aviation.)

MOVEMENT TO CONTACT

1-82. The speed, range, lethality, long-range communications, and reconnaissance capabilities of Army aviation make attack reconnaissance units ideally suited to conduct movement to contact, especially with the employment of manned-unmanned teaming. Cavalry troops can increase their freedom of maneuver by having aviation assets develop the situation and create favorable conditions to conduct subsequent tactical or enabling tasks.

ATTACK

1-83. Army aviation may conduct attacks against enemy forces in close friendly contact or out of friendly contact. Attacks against enemy forces in close friendly contact take advantage of aviation maneuver as part of the combined arms team, whereas attacks against enemy forces out of close friendly contact take advantage of aviation reach and lethality. These attacks support offensive or defensive operations, and they serve as hasty or deliberate operations.

1-84. When a Cavalry troop is in close contact with enemy forces, the ground maneuver commander controls the synchronization and integration of aviation maneuver and the distribution and deconfliction of aviation fires. When it does prove feasible to conduct, air-ground reconnaissance requires detailed planning. In this case, Cavalry troops use the attack aviation call for fire—a standardized, 5-line format for employing attack aircraft.

1-85. Alternatively, Army aviation conducts attacks against enemy forces out of friendly contact to preemptively divert, disrupt, delay, or destroy enemy capabilities before they are brought to bear on friendly forces. While these operations require more detailed planning and range from relatively low risk to extremely high risk, they may be effective at shaping the enemy force prior to Cavalry troop operations. The air mission commander controls the maneuver and fires for these operations.

RECONNAISSANCE

1-86. Army aviation conducts reconnaissance in a manner similar to that of the Cavalry troop. However, the aviation unit's capabilities are inherently different. Army aviation attack reconnaissance units are specifically equipped, trained, and organized to conduct all forms of reconnaissance except special reconnaissance. Assault and general support aviation units can also perform limited reconnaissance missions based on mission variables. Regardless of whether reconnaissance is a specified task or not, gathering and reporting the information on enemy and friendly disposition, terrain, and civil activities observed during all operations is always an implied task for every aviation element.

1-87. Effectively employing aviation assets by using a combination of manned and unmanned assets, Army aviation provides depth to the reconnaissance operation and allows the commander to collect information with multiple perspectives at the appropriate time. Ground and air reconnaissance assets can cue each other

to gain greater detail on a named area of interest (NAI). Aviation assets can also complement the sensors of ground reconnaissance forces by mixing systems to increase the probability of collection.

SECURITY

1-88. As it pertains to reconnaissance, Army aviation attack reconnaissance units are specifically equipped, trained, and organized to conduct security operations. However, the only security task that aviation can perform autonomously is the screen. Army aviation conducts screens at all echelons—from elements as small as an attack weapon and scout weapons team using manned-unmanned teaming, to elements as large as an attack reconnaissance battalion or squadron—either as a member of the combined arms team or independently as a pure aviation maneuver force. When task-organized to a ground maneuver force with an area, screen, guard, or covering force security mission, Army aviation conducts tactical, enabling, and sustaining tasks, including screen, attack, reconnaissance, air assault, air movement, aeromedical evacuation, and mission command support.

1-89. Unbound by complex terrain, Army aviation adds depth to the overall security operation for the protected force. For example, UASs in the deep area conduct reconnaissance of an NAI to provide early and accurate warning of impending enemy forces to manned assets screening along the forward line of own troops (FLOT). The manned assets then make and maintain enemy contact to provide early and accurate warning to the Cavalry troop or provide calls for fire on the enemy positions.

AIR ASSAULT

1-90. Army aviation conducts air assaults in support of offensive, defensive, and stability operations throughout the depth and breadth during large-scale combat operations. Aviation assault and heavy lift units transport Cavalry troops and their equipment from secure or permissive pickup zones to unsecure or secure landing zones in the objective area. For example, Cavalry troops are air-assaulted into the deep area to conduct dismounted reconnaissance, or engineer assets are air-assaulted rapidly to conduct bridge classification.

AIR AND MISSILE DEFENSE SUPPORT

1-91. Air and missile defense entails passive and active measures. Air and missile defense is designed to nullify and reduce the effectiveness of enemy attack or surveillance by enemy aircraft, UASs, and missiles. Air defense measures make the troop a less detectable target, which reduces the possibility of attack. In the event of attack, air defense counters the enemy by destroying aircraft or disrupting the attack.

1-92. The troop does not have specified, organic air defense assets. However, it can receive air and missile defense augmentation from a supporting higher headquarters. Joint doctrine employs Air Force assets to attain air superiority and reduce the risk of hostile aircraft engaging friendly ground units. (See ATP 3-01.94 for more information on air and missile defense support.)

CLOSE AIR SUPPORT

1-93. Commanders employ CAS to augment supporting fires that attack the enemy day or night in a variety of weather conditions. Improvements in tactics, techniques, procedures, and equipment have enhanced the ability of aircraft to provide support. The speed, range, and maneuverability of aircraft allow them to attack targets that other supporting arms may not be able to engage due to limiting factors such as target type, range, terrain, or the ground scheme of maneuver. Ground commanders with assigned AOs determine the priority, effects, and timing of all supporting fires and maneuvers in their respective AOs. The ground commander at the lowest level is responsible for the employment of CAS assets unless the higher commander in the ground force chain of command specifically retains the responsibility. Two types of CAS requests can be initiated—preplanned and immediate.

PREPLANNED CLOSE AIR SUPPORT REQUESTS

1-94. The ground commander coordinates preplanned CAS requests in accordance with the air tasking cycle timeline, resulting in the appearance of the preplanned CAS request as a mission on the air tasking cycle. Normally, this occurs 48 to 72 hours in advance of the operation. These requests may or may not include detailed target information, depending on the mission's lead time. However, these requests do include

potential targets, desired effects, proposed times, and a general priority. (See JP 3-30 for more information on the air tasking cycle.)

IMMEDIATE CLOSE AIR SUPPORT REQUESTS

1-95. Immediate CAS requests are those CAS requests not submitted to the air operations center in time for the mission to appear on the air tasking order. The window for submitting preplanned requests is specific to the theater.

CLOSE AIR SUPPORT CONSIDERATIONS

1-96. CAS mission success is directly related to thorough mission planning that considers the following:

- Weather.
- Target acquisition.
- Target identification.
- Identification of friendly forces.
- General ordnance characteristics.
- Final attack heading.
- Suppression of enemy air defense.
- CAS and artillery integration.

1-97. CAS assets provide night support using GPS- and laser-guided munitions. The two most important requirements of a night CAS operation are the same identification of the target and positive marking and identification of friendly unit locations.

1-98. Flares released from forward air controllers (airborne), other CAS aircraft, or flare ships illuminate target areas. However, artillery or mortar illumination rounds are preferable due to the longer sustained rate of fire capacities of their weapon systems.

1-99. Commanders rely on their own assets for marking and illumination requirements. Marking friendly unit locations improves safety and provides target area references. Tracers and infrared beacons serve both purposes.

AIRSPACE COORDINATION AREA

1-100. An airspace coordination area provides airspace for the relatively safe travel of aircraft. It also facilitates the simultaneous attacks of targets near each other by multiple fire support assets through the use of lateral, vertical (as related to altitude), or longitudinal (as related to time) separation or a combination thereof. Classification for airspace coordination areas is formal or informal, based on the amount of time available and the level of control desired. (See JP 3-09.3 for additional information airspace coordination areas.)

COUNTER-AIR THREATS

1-101. *Counterair* is a mission at the theater level that integrates offensive and defensive operations to attain and maintain a desired degree of control of the air and protection by neutralizing or destroying enemy aircraft and missiles, both before and after launch (JP 3-01). The counter-air mission integrates offensive counter-air and defensive counter-air operations to attain and maintain the joint force commander's desired degrees of control of air and protection by neutralizing or destroying enemy aircraft and missiles, before and after launch. Air threats have become one of the most dangerous threats to ground forces and the main command post to date. The awareness and survivability of ground troops and C2 elements have grown significant with the threat of enemy drones and missiles. The increased risk to assembly areas and static command posts is extremely high, which can hinder the building of combat power for follow-on operations.

1-102. Identifying and countering current air threats take dedication and appropriate additional capabilities. Counter-air operations are all defensive measures that entail active and passive defensive actions designed to identify, nullify, and destroy hostile air threats. The troop commander maintains a clear understanding of the squadron's counter-air planning, so the troop can conduct air and missile engagement in accordance with guidelines and rules established by the area air defense commander in the zone or corridor.

EXPLOSIVE ORDNANCE DISPOSAL SUPPORT

1-103. The Cavalry troop may require explosive ordnance disposal support to destroy enemy ammunition and to render safe unexploded ordnance. Explosive ordnance disposal capabilities are not organic to the troop. Squadrons request explosive ordnance disposal support through the BCT. Subsequently, the BCT forwards those requests to the supporting explosive ordnance disposal headquarters.

CIVIL AFFAIRS SUPPORT

1-104. Normally, a civil affairs company is allocated to support a brigade-sized element, with a civil affairs team being the lowest echelon civil affairs tactical support element provided to a supported commander. The civil affairs team conducts operations in a squadron's AO. It executes civil affairs operations and can conduct civil engagement with and civil reconnaissance and assessments of the civil component of the area. As part of the commander's civil-military operations, civil affairs personnel conduct operations nested within the overall mission and intent. The civil affairs team can leverage operational and strategic level civil affairs assets and capabilities through reachback to shape operations. Civil affairs reachback may include the following:

- Civil affairs company civil-military operations center.
- Civil affairs battalion headquarters.
- Civil affairs brigade headquarters.
- Civil-military advisory group.
- U.S. Army Reserve Military Support to Governance (38G) capacity.

RELIGIOUS SUPPORT

1-105. Unit ministry teams and chaplain sections advise commanders on the impacts of culture and religion in the OE. Specifically, Cavalry squadrons and BCTs have attached unit ministry teams to support planning and operations with cultural awareness information, specifically on indigenous religions in the AO. Religious support personnel may coordinate for subject matter expertise from chaplains who have advanced training on world religions. Chaplains and religious affairs specialists advise on ethical and moral matters in operational settings, ranging from one-to-one, confidential counsel to unit leaders' ethical dilemmas to broader issues in the ordinary course of staff operational planning and working group participation. Unit ministry support can be particularly helpful to stability operations in identifying protection for key religious personnel and facilities, in protecting vulnerable members of the population such as dislocated civilians, and in planning and preparing liaison mission support to engage local indigenous leaders.

MILITARY INFORMATION SUPPORT

1-106. The current rules of allocation for psychological operations (PSYOP) forces allow for the attachment of a tactical detachment to brigade-sized units. However, in contingency operations, major combat operations, and other extraordinary situations, an entire PSYOP tactical company with organic audio, visual, and audio-visual development personnel and equipment may attach, depending on operational necessity and authorization. The commander directs and leads military information support operations, PSYOP influence activity, and military deception as integral to all operations. The commander employs PSYOP forces to shape the area and to set the conditions for success at the tactical level. In addition, the commander employs PSYOP forces to inform and influence target groups and individuals in the offensive and defensive.

1-107. When properly employed, PSYOP forces can save the lives of friendly people, whether military or civilian, while degrading the enemy's morale, efficiency, and willingness to fight. The PSYOP forces' execution of military information support operations discourages aggressive actions by creating dissidence and disaffection within enemy and adversary ranks, ultimately inducing desertion, malingering, infighting, and surrender. (See FM 3-53 and ATP 3-53.2 for more information on allocation and capabilities.)

SECTION IV − CAVALRY TROOP RESPONSIBILITIES

1-108. Cavalry officers and NCOs are highly trained in the use of organic weapons, indirect fires, land navigation, supporting fires, demolitions, obstacles, communications, reconnaissance, liaison, and security

techniques. They are familiar with combined arms tactics and can react to rapidly changing situations. They also know how to employ surveillance, UASs, and sustainment assets attached to or supporting the troop.

TROOP COMMANDER

1-109. The commander establishes a positive command climate that instills and fosters trust and mutual understanding. The commander's most important role in mission command is combining the art of command with the science of control. The commander visualizes and describes the AO, directs actions to achieve results, and leads the troop to mission accomplishment.

Note. The commander continuously analyzes the situation to ensure command presence at the decisive point.

1-110. The relationship between the squadron commander and troop commander rests on all the elements of mission command, with special emphasis on mutual trust and shared understanding. The troop commander is knowledgeable in reconnaissance and security operations and in the troop's capabilities and limitations. Additionally, the troop commander develops mutual trust and shared understanding with subordinates.

1-111. The commander, with the assistance of subordinate leaders, is responsible for the integration and synchronization of all assets and augmentation within the troop to accomplish the mission. The troop commander's additional responsibilities include those following:

- Serve as the subject matter expert in reconnaissance and security fundamentals and tasks.
- Preserve the troop's reconnaissance capability.
- Plan and execute fires to support the troop's missions.
- Synchronize operations with adjacent and supporting units.
- Synchronize and plan the use of additional assets such as the following:
  - UASs.
  - Ground sensors.
  - IEW system.
  - Human intelligence collection teams.
- Synchronize and integrate additional combat assets such as Infantry platoons, antitank guided missile platoons, or tank platoons.

1-112. The troop commander establishes priorities with the XO and 1SG. The troop commander defines expectations and standards and ensures the XO and 1SG execute those expectations. The commander ensures the XO, as the second in command, shares the situational understanding and visualization of the commander for the mission. The commander also ensures the XO actualizes the commander's visualization in running the command post. The commander personally manages the troop's rest and ensures no one attempts to perform without attaining proper rest prior to mission execution.

EXECUTIVE OFFICER

1-113. The XO is the second in command. The XO supervises the troop command post and remains attuned to the tactical situation in the troop's AO. The troop commander establishes priorities with the XO. The XO receives, verifies, and consolidates digital and voice tactical reports from the platoons and forwards them to the squadron, adjacent, and following units. Under limited digital platforms and networks, the XO ensures the command post converts digital reports into voice reports to generate situational awareness of friendly, enemy, and adversary positions and activities. One of the XO's duties is to maneuver the troop tactical command post to a position from which to assist the troop commander's conduct of mission command tasks that generate friendly and threat situational awareness of friendly, enemy, and adversary positions and activities. The XO's other duties include those following:

- Assume command of the troop as required.
- Serve as the primary sustainment planner and coordinator (see chapter 5 for more information on the XO as a sustainment planner).
- Assist in the preparation of the OPORD.
- Ensure all voice and digital communications are functioning properly.
- Conduct tactical coordination with higher, adjacent, and supporting units.
- Assist the commander in preparing for follow-on missions.
- Conduct additional duties such as serving as officer in charge for a quartering party.

FIRST SERGEANT

1-114. The 1SG is the troop's senior NCO. Those serving as 1SGs carry the primary responsibility for training individual skills and sustaining the troop's ability to fight. They are the troop's sustainment operator; they help commanders plan, coordinate, and supervise all sustainment activities that support tactical missions. The 1SG's duties include those following:

- Establish and maintain the foundation for troop discipline.
- Manage the refit and recuperation of forces (see FM 3-98 for more information).
- Assist the commander in performing precombat inspections.
- Execute and supervise routine operations, which may involve the following duties:
  - Enforcing the tactical standard operating procedures (SOPs).
  - Planning and coordinating training.
  - Coordinating and reporting personnel and administrative actions.
  - Supervising supply, maintenance, communications, and field hygiene operations.
- Supervise, inspect, and observe all matters designated by the commander.
- Assist the commander as the primary sustainment operator to plan, coordinate, and supervise all sustainment activities that support the tactical mission. (See chapter 7 for more information.)
- Assist in the preparation of the OPORD, especially the execution and sustainment sections.
- Plan, rehearse, and supervise key sustainment actions in support of the tactical mission, such as the following:
  - Resupply of Class I, III, IV, V, and VIII products and materials (see table 5-1 on page 94).
  - Maintenance and recovery.
  - Medical treatment and evacuation.
  - Replacement and return to duty processing.
- Coordinate with the XO in all critical functions.
- Assist the XO during command post functions.
- Conduct training and ensure proficiency in individual and unit collective skills that support the troop's mission-essential task list (METL).

Note. The 1SG ensures the Class VIII resupply (see table 5-1 on page 94) is conducted. This may be completed through the company senior medic or as with other classes of supply.

SCOUT PLATOON LEADER

1-115. The scout platoon leader is responsible to the troop commander for the discipline, combat readiness, training, and equipment maintenance of the platoon. The platoon leader maintains a thorough knowledge of reconnaissance and security operations and works closely with the troop commander during the mission analysis portion of the planning process. A solid understanding of troop leading procedures and the ability to apply them quickly and efficiently in the field are essential. The scout platoon leader remains proficient in the tactical employment of the scout platoon, knows the capabilities and limitations of the personnel and equipment, and maintains expertise in threat organizations, doctrine, and equipment.

1-116. The scout platoon leader is versatile, able to exercise sound judgment, and makes correct decisions quickly based on the commander's intent and the tactical situation. The platoon leader has the responsibility to ensure every leader in the platoon understands and can successfully accomplish the following:

- Subject matter expertise in reconnaissance and security fundamentals.
- Troop leading procedures.
- Tactical movement.
- Patrolling and local security.
- Action on contact.
- Deployment.
- Observation post establishment and operation.
- Employment of direct and indirect fires.
- Reporting procedures.
- Proper use and maintenance of all organic equipment and communications, including digital assets.
- Employment of additional assets such as IEW systems and UASs.

SCOUT PLATOON SERGEANT

1-117. A platoon sergeant is the most experienced NCO within a platoon formation. Platoon sergeants assist the platoon leader in all platoon-related functions and any other capacities the platoon leader requires. They take responsibility of all sustainment functions and manage the status of and deficiencies found with platoon-issued equipment. They assume command in the platoon leader's absence. They are responsible for the daily reporting of the platoon, platoon readiness, and mentorship of subordinate leaders. They oversee maintenance operations, lead reconnaissance and security operations alongside the platoon leader, and understand and report the CCIRs. They enforce the platoon's SOPs and oversee discipline within platoons.

TROOP MASTER GUNNER

1-118. Master gunners are institution-trained and certified subject matter experts on direct fire weapons, systems, and platforms assigned to the unit. They maintain an extensive understanding of various ammunitions, weapon systems maintenance requirements, and training programs. Troop master gunners assist the troop commander in the planning and execution of training, range operations, and training and simulations resourcing. Master gunners coordinate range usage and ammunition requests with the squadron and manage and track training proficiency at the troop level. Troop master gunners, where authorized, have the following responsibilities:

- Develop unit direct fire training programs, manage resources, and execute troop-level live-fire training plans.
- Support and oversee armament system maintenance and services appropriately.
- Work with unit maintenance to correct weapon or system malfunctions or deficiencies appropriately.
- Complete and update DA Form 2408-4 (*Weapon Record Data*) (hard or digital copy) for all medium- and large-caliber weapons, including sniper rifles.
- Coordinate with the squadron operations officer and squadron master gunner to secure troop live-fire training assets.
- Train live-fire evaluators.
- Develop, design, and create deployed live-fire training ranges as directed.
- Report unit live-fire training results to the higher headquarters' master gunner.
- Ensure the continuous use of training aids, devices, simulators, and simulations (known as TADSS).

1-119. Troop master gunners are valuable members to the troop, and their proper employment has the capacity to enhance training readiness. Troop master gunners run gunnery skills test training events, provide valuable feedback during after action reviews, and conduct retraining for turbulent or unqualified crews during live-fire qualifications. Whenever available, they are employed during the planning and execution of all training-related tasks.

FIRE SUPPORT TEAM

1-120. The fire support team is critical to the Cavalry troop. The troop FSO works for the troop commander during combat operations to accomplish all fire support tasks. The troop fire support sergeant or fire support NCO is the senior enlisted assistant to the troop FSO. The fire support sergeant performs the duties of the FSO when absent. The *forward observer* is an individual operating with front line troops trained to adjust ground or naval gunfire and pass back battlefield information (JP 3-09). The fire support team is responsible for coordinating indirect fires (mortar, field artillery, and CAS) for the troop. The team processes the calls for fire from the platoons and allocates the appropriate indirect fires system based on the commander's guidance for fire support.

1-121. The fire support team vehicle can serve as the alternate troop command post. The FSO has ready access to the higher level situation and to the requisite radio systems for replacing the troop command post as necessary. The FSO's additional responsibilities include those following:

- Advise the commander on the capabilities and status of all available fire support assets.
- Serve as the commander's primary advisor on the enemy's indirect fires capabilities.
- Assist the commander in developing the OPORD to ensure full integration of fires.
- Recommend targets, fire support coordination measures, and methods of engagement and maintain responsibility for initiating indirect fires.
- Determine the requisite tasks and instructions to conduct and control the fires plan.
- Develop an observation plan, with limited visibility contingencies, that supports the troop's and higher headquarters' missions.
- Request critical friendly zones to assist counterbattery fires in response to enemy artillery and mortar attacks.
- Refine and integrate the troop target worksheet, DA Form 4655 (*Target List Worksheet*), and submit the completed worksheet to the squadron fires cell.
- Assist the commander in integrating the indirect fires and target acquisition plan into each rehearsal, especially since integrating indirect fires observers into the rehearsal plan is critical.
- Alert the commander to denials in requests for fires against targets in tactical situations.
- Monitor the location and capabilities of friendly fire support units and assist the commander in clearance of indirect fires in tactical situations.
- Designate no-fire areas as necessary to protect friendly forces.
- Assist the troop command post in UAS synchronization for targeting and observation.

MORTAR SECTION LEADER

1-122. The mortar section leader is responsible for providing responsive indirect fires to support the troop commander's concept of the operation. The section leader assists the commander in indirect mortar fires planning. The leader assists in establishing movement control, triggers for movement, triggers for shifting targets, and mortar caches. As a rule, the mortar section maintains two-thirds of the maximum range of mortar fire forward of the reconnaissance elements. The section leader maintains discipline, conducts training, and exercises control over the mortar section. The leader supervises the section's sustainment, including supply and equipment maintenance. The mortar section leader's additional responsibilities include those following:

- Act as the fire direction center during call for fire missions.
- Recommend employment techniques and positionings of the mortars to support the scheme of maneuver.
- Assist in developing the troop fire support plan to determine the best type and amount of mortar ammunition to fire based on the METT-TC (I) variables.
- Train the section to ensure technical and tactical proficiency and combat lifesaver skills; cross-train personnel within the section on key tasks to ensure continuous operations.

- Select and reconnoiter new positions and routes for the section (in conjunction with overall troop plan) and then control the movements of the section.
- Keep abreast of the enemy situation and locations of friendly units to ensure the best use of ammunition and the safety of friendly troops.
- Supervise the execution of orders.
- Always ensure coverage of priority targets and then establish the amount and type of ammunition set aside for priority targets.
- Coordinate the fires and displacement of the mortar section with the action of other units.
- Anticipate needs and submit timely ammunition resupply, maintenance, and refuel requests to sustain combat operations.

COMMUNICATIONS SERGEANT

1-123. The communications sergeant assists in all aspects of tactical communications. The communications sergeant locates with the XO or 1SG per the SOPs and may operate the troop's net control station. The communications sergeant receives and distributes signal operation instructions and communications security encryption keys. The communications sergeant ensures the troop receives the appropriate database for systems operating on the tactical internet. These systems include Joint Battle Command-Platform (known as JBC-P) and the single-channel ground and airborne radio system. The communications sergeant trains operators in the initialization and reinitialization of the systems and maintains the troop's addressing and routing schemes. The communications sergeant troubleshoots the troop's digital communications equipment and ensures the completion of necessary repairs.

COMBAT MEDIC

1-124. Combat medics attached to the troop provide emergency medical treatment for sick, injured, and wounded personnel. Their responsibilities include those following:

- Assist in the training of troop personnel and combat lifesavers in tactical combat casualty care.
- Inspect unit personnel's individual first aid kits and the combat lifesaver's medical equipment set for proper and updated supplies and equipment.
- Requisition Class VIII supplies (see table 5-1 on page 94) through the unit commander or squadron supply section.
- Provide medical guidance to troop leaders as necessary.
- Recommend locations for troop casualty collection points.
- Advise the troop commander and 1SG on mass casualty operations.
- Conduct triage for sick, injured, and wounded friendly and enemy personnel.
- Provide guidance to the troop's combat lifesavers as necessary.
- Request and coordinate the evacuation of sick, injured, and wounded personnel under the direction of the 1SG.
- Keep the 1SG informed on the status of casualties.
- Coordinate with the 1SG for additional Army Health System requirements.

FIELD MAINTENANCE TEAM

1-125. Field maintenance teams (FMTs) support the companies. The FMTs in the fire support cell maintenance platoons offer field maintenance, battle damage assessment and repair, and recovery. Usually, an FMT travels in full or in part with the company trains. The team focuses on completing maintenance requirements on site as the tactical situation permits.

1-126. FMT priorities are set in compliance with the battalion commander's directives by the maintenance control section and the supported company commander. The maneuver company, under the direction of the noncommissioned officer in charge, receives operational authority from the FMT. FMTs are completely included within the maneuver unit's operational plans.

1-127. FMTs carry out repairs as soon as possible to get equipment back into the fight. They work to perform battle damage assessment and repair on replaceable unit parts and systems with proper diagnostics. As a tactical situation allows, FMTs concentrate on finishing tasks on site. To complete some repairs, since FMTs

carry limited combat spares on board to aid with forward repairs, they must evacuate the equipment to the maintenance collection point. Furthermore, due to resource constraints, the support of non-mission-capable equipment sometimes requires evacuation to the fire support cell at the company trains or to the maintenance collection point at the field trains.

CHEMICAL, BIOLOGICAL, RADIOLOGICAL, AND NUCLEAR NONCOMMISSIONED OFFICER

1-128. Troops are authorized a CBRN NCO, as well as individual and team CBRN defense equipment. The responsibilities of the CBRN NCO follow:

- Advise the commander on troop CBRN defense operations.
- Advise the troop commander and XO on all aspects of CBRN defense within OEs that may contain CBRN threats, including CBRN reconnaissance support requirements.
- Monitor reports of CBRN attacks and advise the commander of their impacts.
- Serve as the CBRN threat expert and advise the commander on the employment of organic CBRN defense capabilities.
- Operate from the troop command post and assist the XO in executing mission command operations.
- Organize, train, and supervise unit personnel who conduct CBRN monitoring, detection, and decontamination operations as an additional duty.
- Train equipment operators and decontamination teams.
- Supervise operators and conduct field maintenance of CBRN equipment.

SUPPLY SERGEANT

1-129. The supply sergeant picks up, transports, and issues supplies and equipment to the troop. The supply sergeant works closely with the 1SG to accomplish these tasks. The supply sergeant leads the logistics package (LOGPAC) to the linkup point or, when the situation dictates, moves it forward to the supported unit's location. The supply sergeant also evacuates detainees and assists in the evacuation of deceased Soldiers to the mortuary affairs collection point.

ARMORER AND SUPPLY SPECIALIST

1-130. The unit armorer may perform small arms repairs or services in accordance with the applicable weapon system's technical manual, especially when a military occupational specialty 91F Small Arms/Towed Artillery Repairer is not collocated. Maintenance tasks performed by the unit armorer should be coordinated with brigade maintenance control section. Armorers, supply sergeants, or designated personnel evacuate those weapon systems for repair or service to a higher maintenance support echelon.

Chapter 2
Mission Command

Squadron and troop commanders apply the principles of mission command to develop the situation in close contact with the enemy and civilian populations. Commanders use the principles of mission command to develop their understanding, visualizations, and descriptions of OEs, terrain, local populations, and enemies.

The role of reconnaissance and security operations in mission command is essential. To make effective decisions in an uncertain environment, the BCT commander requires timely and accurate combat information from reconnaissance and security formations.

TROOP MISSION COMMAND

2-1. *Mission command* is the Army's approach to command and control that empowers subordinate decision making and decentralized execution appropriate to the situation (ADP 6-0). *Command and control* entail the exercise of authority and direction by a properly designated commander over assigned and attached forces in the accomplishment of the mission (JP 1, Volume 2).

2-2. The *command and control warfighting function* comprises the related tasks and a system that enable commanders to synchronize and converge all elements of combat power (ADP 3-0). A *warfighting function* is a group of tasks and systems united by a common purpose that commanders use to accomplish missions and training objectives (ADP 3-0). (See also ADP 6-0 for more information on the C2 warfighting function.)

2-3. Commanders execute C2 during operations by applying mission command, providing a clear commander's intent, and using mission orders to assign tasks, allocate resources, and issue broad guidance. Guided by the squadron commander's intent and the mission's purpose, troop commanders take actions that accomplish the mission. They take appropriate actions and perform the necessary coordination without needing new orders.

2-4. Troop leading procedures extend the military decision-making process to the small-unit level. The military decision-making process and troop leading procedures are similar but not identical. Commanders with a coordinating staff use the military decision-making process as their primary planning process. Company-sized and smaller units lack formal staffs and use troop leading procedures to plan and prepare for operations. Planning is primarily a commander's or small-unit leader's responsibilities. (See FM 5-0 for more information on troop leading procedures.)

2-5. *Troop leading procedures* compose a dynamic process used by small-unit leaders to analyze a mission, develop a plan, and prepare for an operation (ADP 5-0). They enable leaders to maximize available planning time while developing effective plans and preparing units for an operation.

Eight Steps of Troop Leading Procedures

Step 1. Receive the mission. The troop commander quickly analyzes the mission upon receipt and identifies reconnaissance or security tasks that the troop needs to conduct. The troop commander provides the higher commander with a confirmation brief following the receipt of a mission.

Step 2. Issue a warning order (WARNORD). Upon determining a tentative course of action, the troop commander issues a WARNORD, so subordinate units can begin their planning and preparation centered largely on the tasks for the desired form of reconnaissance or security. The troop commander incorporates all warfighting functions into the WARNORD, including, for example, fires and sustainment planning. At the end of this step, the commander receives a confirmation brief from leaders to ensure clear communication of instructions and subordinate leaders' understanding.

Step 3. Make a tentative plan. The commander develops a tentative plan to direct or synchronize the reconnaissance guidance based on an evaluation of the METT-TC (I) variables to answer PIRs. The commander develops a tentative plan without becoming rigidly fixed on this plan and can adapt as information changes. The troop commander develops a reconnaissance and security plan based on the squadron commander's guidance and the overall reconnaissance and security plan. A clear understanding of this guidance aids the troop commander in planning and executing the troop mission. Reconnaissance and security guidance enables clarification of intent to subordinate leaders.

Step 4. Initiate movement. The commander relies heavily on the XO and 1SG. Cavalry troops remain adept at quickly setting units in motion toward start points, lines of departure, or lines of contact positions to support the rapid deployment of Cavalry forces.

Step 5. Conduct reconnaissance. The commander evaluates the designated AO using all available tools, maps, satellite imagery, video surveillance footage, aerial flyovers, intelligence products, and previous reports to determine routes, possible engagement areas, and the possible and additional assets required such as aviation, fires, and engineers.

Step 6. Complete the plan. Inherent in completing the plan is the face-to-face coordination with adjacent units. A Cavalry troop's maneuvering, traversing, or staging in other maneuver forces' AOs increases the risk of fratricide and introduces vulnerabilities to the maneuver forces. Whenever Cavalry troops take any maneuver actions, they consider the possibility of forward or rearward passage of lines. The commander mitigates risk through the exchange of plans with the adjacent and higher commanders, including operational graphics. The commander determines route and possible engagement area development using squadron S-2 products such as obstacle overlays and modified combined obstacle overlays. The commander determines both the available assets and the possibly required assets such as aviation, fires, engineers, and military intelligence.

Step 7. Issue the order. Upon issuing the order and depending on time, the commander may participate in the supported commander's combined arms rehearsal. Upon completion of this rehearsal, the Cavalry troop commander conducts a unit rehearsal with all leaders and augmented assets to imprint a mental picture of the sequence of the key actions and to develop mutual understanding. Due to time constraints at the Cavalry troop level and mission requirements, the confirmation brief is usually the only option. (See FM 6-0 for information on rehearsals.)

Step 8. Supervise and refine. After issuing the order, the commander continues to supervise execution preparation. The commander evaluates and adjusts the plan as new information becomes available.

TROOP INTEGRATION OF SQUADRON STAFF PRODUCTS

2-6. The troop commander receives staff products from the squadron to aid with troop leading procedures. Paragraphs 2-7 through 2-22 describe some of the squadron products and the troop commander's application of them. Troop commanders have a responsibility to refine products generated by the squadron staff appropriately for a troop-level focus. Verbatim copying of items such as mission and intent from the squadron OPORD and issuing them as the troop's mission and intent will not provide sufficient clarity to the troop's subordinate leaders. Troop commanders also develop complete understanding of all squadron products. Otherwise, they seek clarification from the responsible staff section to avoid achieving only an incomplete understanding and trying to make it happen on their own initiative.

DIRECTED FRIENDLY COURSE OF ACTION

2-7. The squadron directed friendly course of action includes the commander's intent, mission concept of operations, subordinate unit tasks, and the commander's reconnaissance and security guidance by phase (or as necessary). Upon receiving the order and issuing the WARNORD, in conjunction with task organization and the latest time information is of value (LTIOV), the commander begins step 3 of troop leading procedures—make a tentative plan. Troop commanders maintain understanding of the squadron commander's objective and the boundaries for the units. Their understanding of the timelines and the assets available to complete the mission is critical.

2-8. Troop commanders maintain clear understanding of what the squadron commander expects of the troops. When troop commanders are unclear of the commander's intent, they should seek additional guidance. They make a tentative plan and begin troop leading procedures, yet they remain cognizant of changing facts that could alter the original plan. They avoid overcommitting to or fixating on the plan, making hasty assumptions, or diminishing legitimate concerns simply because they fear altering the plan. During execution, the tactical situation changes rapidly. The troop commander requires maximum latitude to take advantage of unforeseen situations in the form of both opportunities and challenges to meet the commander's intent, especially when the original order no longer applies.

2-9. The troop commander provides a confirmation brief to the squadron on the details of the troop's scheme of maneuver. The brief nests the plan within higher headquarters' intent, including platoon-level graphic control measures that the troop commander consolidates at the troop level.

MANEUVER GRAPHIC CONTROL MEASURES

2-10. Graphic control measures are always prescriptive. The squadron or higher command provides detailed graphic control measures to the troop by assigning a line of departure, a series of lateral boundaries, and a limit of advance to identify the zone. Troop commander is responsibility for synchronizing troop graphic control measures with higher headquarters after confirmation from ground units. (See ADP 6-0 to develop a better understanding of control measures.) The troop commander further divides the operational area with additional lateral boundaries to define platoon zones. The troop commander includes additional phase lines (PLs) and contact points at necessary locations, so platoons operating abreast can make physical contact and coordinate movement and information exchange. Commanders designate recognizable landmarks as checkpoints. Higher headquarters may include airspace coordinating measures to facilitate aerial reconnaissance in the troop's area. (See figure 3-1 on page 42 for example graphic control measures.)

INFORMATION COLLECTION PLAN

2-11. The squadron information collection plan contains adequate detail to conduct effective reconnaissance. Troop commanders highlight specified tasks for their organizations. They maintain understanding of squadron and brigade decision points, the PIRs that support those decisions, and which NAIs associate with each PIR. Commanders maintain understanding of their role in the BCT, the BCT and squadron commander's intent, and how their troop tasks nest within the BCT. Failure to understand these linkages and supporting relationships results in a loss of synchronization and effectiveness for the overall information collection plan. Commanders respect the LTIOV to support their higher headquarters in a timely manner. They answer PIRs quickly, so the squadron commander can select a course of action. Additionally, the troop commander may develop troop PIRs or indicators that support the BCT and squadron commanders' intent and guidance.

2-12. Troop commanders are careful not to assign NAIs to everything. Information collection assets are finite. Therefore, each NAI is to associate with at least one PIR, which, in turn, supports a squadron or BCT decision point. Reverse line of sight analysis, accurate terrain analysis, and thorough enemy analysis help the troop commander decide where to look and, of equal importance, when to look there.

2-13. The squadron naming convention identifies which NAI belongs to which troop. Like fire support target blocks, SOPs dictate how troops are to label their NAIs and target areas of interest (TAIs) to ensure no two troops are using the same name for different NAIs. For example, A Troop could designate its NAIs 100 to 199, B Troop could designate its NAIs 200 to 299, and C Troop could designate its NAIs 300 to 399.

Note. Troop commanders maintain understanding of the LTIOV and the importance of how BCT decision points and CCIRs tie into the information collection plan and squadron or troop tasks. (See FM 3-98, FM 3-55, and ATP 2-01 for more on information collection plans.)

EXECUTION MATRIX

2-14. The squadron execution matrix is a visual, sequential representation of the key tasks and responsible organizations over time. It supports visualization of the timeline for the squadron mission and closely mirrors Annex L (Information Collection) from the squadron OPORD. The troop commander visualizes troop tasks in time and space to identify any obvious problems or situations requiring augmentation or changes to the scheme of maneuver. Visualization helps ensure the troop synchronizes with the squadron scheme of maneuver, adjacent units, and any attached elements.

EVENT TEMPLATE

2-15. The event template aids the development of the information collection overlays and decision support template for the supported commander. Its use during the execution phase of the operations process aids the determination of which course of action the enemy has adopted. It comprises the following elements: time-phase lines, NAIs, TAIs, and enemy decision points. Time-phase lines are linear geographic areas that depict when enemy activity will occur. Usually, the commander selects NAIs to capture indications of enemy courses of action, but the commander may also relate the event template to conditions of the OE. An enemy decision point is a point in time and space when the enemy commander anticipates conducting a decision-making process for a specific course of action.

2-16. An enemy situation template depicts a single, potential enemy course of action and does not provide enough detail about the enemy situation to determine the different enemy objectives and how the objectives may affect the troop's AO. Troop commanders refine the squadron event template to depict anticipated enemy actions in or near the troop's AO. They incorporate expected enemy actions into the troop's scheme of maneuver. The enemy's techniques in employing their weapons and equipment influence information collection planning. For example, the enemy's techniques in employing crew-served weapons might indicate enemy objectives. (See ATP 2-01.3 for more information on creating both situation and event templates.)

FIRE SUPPORT PRODUCTS

2-17. The troop commander and troop fire support team use the scheme of fires to describe the troop's use of available fires to support the concept of operations, with emphasis on the scheme of movement and maneuver and the synchronization matrix. The troop commander, with the troop FSO's assistance, ensures the targets assigned to the troop support the scheme of maneuver. The commander may task the FSO to refine and resubmit targets that the squadron assigns. The fire support annex, or Annex D (Fires), typically includes the following products: fire support execution matrix, attack guidance matrix, and target list worksheet. (See ATP 3-09.42 for more information on the fire support annex.)

2-18. The fire support execution matrix is a detailed portrayal of the portions of the fire support plan that the subordinate element is responsible for executing. The format and techniques for its development and the intent of its use vary by each individual unit's tactical SOPs. The fire support execution matrix generally includes the targets assigned to each subordinate unit, available fixed-wing and rotary-wing assets, active fire support coordination measures, active airspace coordination measures, radar zones, locations of fire support elements, and priorities of fire. Typical formatting of the information is by phase or key event. The fire

support execution matrix may include additional information such as a communication plan with the field artillery battalion, restrictions, ammunition available, and time on station. (See ATP 3-09.42 for more information on the fire support execution matrix.)

2-19. The attack guidance matrix is a targeting product, approved by the commander, that addresses how and when to engage targets and the desired effects. It includes specific high-payoff targets, timing of engagements, and the commander's desired effects. It addresses which weapon system to use and how to use it to execute the request for fire. It ensures the execution synchronizes with the scheme of maneuver. (See ATP 3-60.1 for more information on dynamic targeting.)

Note. The decision support template provides the requisite information to provide effective fires in support of the maneuver force.

TASK ORGANIZATION

2-20. The troop commander evaluates the requisite tasks, troop capabilities and limitations, and conditions to conduct an initial assessment and to determine any need for additional assets. The troop commander requests any further necessary information from higher headquarters and evaluates internal section and sizing requirements to determine any need to reconfigure platoons.

PLATOON TASK ASSIGNMENTS

2-21. The squadron staff provides a detailed explanation of PIRs, which decision points the PIRs support, and which NAIs associate with each PIR. Troop commanders refine this information into indicators for the platoons, which, once assigned against a collection asset, become specific information requirements. Of critical importance is the troop commander's provision of sufficient detail for subordinate leaders to understand these linkages, as well as the implications of the information they collect, such as confirming or denying enemy courses of action or an LTIOV.

2-22. Assigning the proper task and purpose to each platoon supporting the higher commander's intent is critical. The troop commander assigns appropriate tasks to each platoon based on shared understanding and mutual trust with subordinate leaders. The troop commander's assessment of the experience, skills, training, abilities, personnel, and discipline of the individual platoons determines the assignment of platoon tasks. Troop commanders exercise discernment when assigning appropriate tasks for scout platoons. As an example, were the squadron mission to conduct a guard, an appropriate task for a platoon would be to conduct a screen. Platoons may have differing tasks from one another. One platoon might conduct zone reconnaissance while another platoon conducts route reconnaissance.

INTELLIGENCE PREPARATION OF THE OPERATIONAL ENVIRONMENT

2-23. *Intelligence preparation of the operational environment* is the systematic process of analyzing the mission variables of enemy, terrain, weather, and civil considerations in an area of interest to determine their effect on operations (FM 2-0). Commanders apply intelligence preparation of the operational environment (IPOE) to gain the necessary information for the selective application and the maximization of operational effectiveness at critical points in time and space. (See FM 2-0 for more information on the IPOE.)

2-24. The troop commander uses the IPOE process as part of mission planning for constant evaluation of and reduction in uncertainties about the enemy, terrain, weather, and civil considerations in the AO. Commanders conduct the IPOE during mission planning and throughout the conduct of operations. The supported command's S-2, supported by intelligence staff at the squadron level, provides the products troop commanders use. The information and products help the S-2 and intelligence staff accomplish troop-level planning and troop leading procedures. Troop commanders refine these IPOE products and combine them with their own assessments to facilitate planning and situational awareness at the scout platoon level.

2-25. Commanders initiate troop planning with their use of the IPOE and with a narrow focus on developing a detailed understanding of the troop's AO. Developing an understanding of the troop's AO requires judgment concerning adversary capabilities and limitations in relation to the factors of observation and fields

of fires, avenues of approach, key terrain, obstacles, and cover and concealment and how they impact the enemy's employment of soldiers and combat systems.

2-26. Troop commanders further refine squadron IPOE products and assessments to provide additional detail and insight based on their assessments of the mission variables in their AOs. The IPOE process is cyclic. One of the most critical steps is to determine threat and adversary courses of action. Such a determination assists in developing the event template, which, in turn, drives information collection planning. (See FM 2-0 for more information on the IPOE and the preparation of event templates.) In developing multiple threat courses of action, the commander considers factors such as potential or assessed methods of enemy maneuver based on the terrain, enemy task organization, and varying objectives of the enemy commander. By identifying multiple enemy courses of action, the troop commander can determine how the enemy could array against the formation. Threat and adversary courses of actions nest within the higher command's assessment. Whenever the troop commander disagrees with higher headquarters on the enemy courses of actions, the troop commander notifies the commander and staff for a resolution. Creating threat courses of action inconsistent with higher headquarters introduces confusion at several echelons during information reporting.

2-27. The troop commander refines higher headquarters' indicators, which distinguish the various enemy courses of action. As the commander determines indicators and locations to answer PIRs, the IPOE process determines the friendly scheme of maneuver. The troop commander understands the higher headquarters information collection plan and optimizes the cueing, mixing, and redundancy of available collection assets.

2-28. A detailed IPOE forms the foundation of an information collection plan. During the IPOE process, the troop commander identifies tactical hazards to bypass or mitigate as appropriate to the mission variables.

MISSION ORDERS

2-29. Commanders issue plans and orders to subordinates to communicate their understanding of the situation and their visualization of operations. Mission orders focus subordinates on the mission and its purpose without prescribing exactly how to execute it, allowing subordinates the freedom to seize opportunities or to react effectively to unforeseen enemy actions and capabilities. Mission orders also coordinate and synchronize subordinate actions and inform those outside the unit how to cooperate and provide support. Commanders ensure all operations plans and orders comply with applicable domestic and international laws. They also confirm the plan or order is relevant and suitable for subordinates.

2-30. Effective orders development allows commanders the maximum planning time that serves to preclude confusion and uncertainty among the subordinates who will be receiving the orders. Commanders develop an orders development process that maximizes time management and affords subordinates pre-mission planning time. Commanders allot one-third of available mission planning time for themselves while preserving two-thirds of the available time to subordinates to prepare prior to mission execution.

2-31. Mission orders follow the five-paragraph format (situation, mission, execution, sustainment, and command and signal) and are brief and simple in style. They convey the unit's mission and commander's intent clearly. They summarize the situation, describe the operation's objective and desired end state, and provide a simple concept of operations to accomplish the unit's mission. In assigning tasks to subordinate units, they include all the components of a task statement—who, what, when, where, and why. Commanders emphasize the purpose (why) of the tasks to guide individual initiative. (See FM 6-0 for more information on mission orders development.) Effective plans and orders foster mission command by—

- Describing the situation to cultivate shared understanding.
- Conveying the commander's intent and concept of operations.
- Assigning tasks to subordinate units and stating the purposes for conducting the tasks.
- Providing the necessary control measures to synchronize the operation while retaining the maximum freedom of action for subordinates.
- Task-organizing forces and allocating resources.
- Directing preparation activities and establishing times or conditions for execution.

2-32. Commanders ensure reconnaissance and security guidance is satisfactorily explanatory in their orders. Orders both contain and explain the focus, tempo of reconnaissance or security, engagement and disengagement criteria, and displacement criteria.

TYPES OF MISSION ORDERS

2-33. Commanders issue oral or written orders. The five-paragraph format remains the standard. Whether the issuance is oral or written is the commander's discretion and depends on time and each situation. Army organizations use three types of orders—OPORDs, fragmentary orders (FRAGORDs), and WARNORDs. (See FM 6-0 for more information on these three types of orders.) Definitions for each type of order follow:

- An *operation order* is a directive issued by a commander to subordinate commanders for the purpose of effecting the coordinated execution of an operation (JP 5-0).
- A *fragmentary order* is an abbreviated operation order issued as needed to change or modify an order or to execute a branch or sequel (JP 5-0).
- A *warning order* is a preliminary notice of an order or action that is to follow (JP 5-0).

2-34. Commanders issue orders orally when operating in extremely time-constrained conditions. Oral orders offer the advantage of quick distribution but risk a listener's missing or misunderstanding information. Written FRAGORDs normally follow the issuing of oral orders to confirm the guidance and direction of the latter.

2-35. Commanders issue written plans and orders that contain both text and graphics. Graphics convey information and instructions through military symbols. (FM 1-02.2 lists approved military symbols.) Graphics complement the written portion of a plan or an order and promote clarity, accuracy, and brevity. Commanders often develop and disseminate written orders electronically to shorten the time needed to gather and brief the orders group. Troop commanders can easily edit and modify electronically produced orders and incorporate staff products into their orders. They can send the same order to multiple recipients simultaneously. Commanders use digital applications to develop and disseminate precise, corresponding graphics and to add to the efficiency and clarity of the orders process, but they still need to verify subordinates understand the orders. Electronic editing makes importing text and graphics into orders easy. Unfortunately, such ease can result in orders becoming unnecessarily large, without added operational value. Commanders need to ensure orders contain only the necessary information to facilitate effective execution. Orders are not to be redundant with the unit's SOPs. They should be clear, concise, and relevant to the mission.

2-36. Commanders do not always have the luxury of consolidating platoons or platoon leaders to issue an OPORD in person. For example, the Cavalry troop is often planning its next reconnaissance mission while simultaneously conducting security operations. (The BCT is planning to transition from defensive to offensive operations.) In such a situation, commanders may choose to write their OPORD in JBC-P and create overlays to transmit digitally to subordinates.

ORDERS DEVELOPMENT METHODS

2-37. Commanders use different methods when developing their orders. They are responsible for the orders regardless of the methods they choose for developing them. One method involves the commander's writing the order with little or no input from other unit leaders and teams. The commander controls the development and speed of the process, but this often limits input and creativity.

2-38. The second method has the commander using the strengths of the unit leaders and teams and any subject matter experts attached to the troop. When using the team technique, the commander receives input from the other unit leaders and teams to help develop the order. (See table 2-1 on page 36 for a list of the paragraphs that the leader and team may contribute to orders in development.)

Table 2-1. Team-developed orders, example

LEADER OR TEAM MEMBER	*ORDERS PARAGRAPH*
Executive Officer	4 and 5
First Sergeant	4
Commander, Platoon Leaders, or Platoon Sergeants	3 and 5
Fire Support Officer	3
Mortar Platoon Sergeant	3
Communications Sergeant	5
Information Collection	1 and 3
Combat Medics	3 and 4
Chemical, Biological, Radiological, and Nuclear Noncommissioned Officer	3
Supply Sergeant	4

Chapter 3

Reconnaissance Operations

Cavalry troops conduct reconnaissance to determine enemy composition and disposition and to gather information on terrain and populations. Reconnaissance operations enable all units to seize, retain, and exploit the initiative across the range of military operations by identifying, creating, and capitalizing on opportunities. Reconnaissance tasks provide commanders with information, facilitate decision making, and concentrate unified efforts against decisive points.

SECTION I – BASICS OF RECONNAISSANCE TASKS

3-1. Cavalry troops use visual means or other detection assets to conduct reconnaissance operations for information gathering. The information may be the identification of enemy or civilian population activities and resources in the AO, or it may be regarding the meteorological, hydrographical, or geographical characteristics of the AO.

RECONNAISSANCE FUNDAMENTALS

3-2. The Cavalry troop commander uses the same seven reconnaissance fundamentals when developing the reconnaissance plan as in the deployment of reconnaissance assets. (See FM 3-98 for more information on reconnaissance fundamentals.) The seven reconnaissance fundamentals follow:

- Ensure continuous reconnaissance.
- Do not keep reconnaissance assets in reserve.
- Orient on the reconnaissance objective.
- Report all information rapidly and accurately.
- Retain freedom of maneuver.
- Gain and maintain enemy contact (see FM 3-90 for information on the nine forms of contact).
- Develop the situation rapidly.

RECONNAISSANCE TECHNIQUES

3-3. Two reconnaissance techniques for the Cavalry commander to understand and to recognize while conducting reconnaissance are reconnaissance push and reconnaissance pull. Unit commanders employ these techniques based on their levels of understanding of the OE combined with the time available to refine their understanding. (See FM 3-98 for more information on reconnaissance techniques.)

3-4. Reconnaissance push occurs when the higher maneuver commander develops a course of action and pushes the reconnaissance units to confirm or deny specific information gaps that will validate or invalidate the suitability of the course of action. Reconnaissance push requires a higher fidelity to the enemy and friendly situations, as well as to the terrain.

3-5. Reconnaissance pull occurs when the friendly maneuver commander does not have a course of action and sends the Cavalry units to find information that pulls the rest of the organization into a course of action. The Cavalry unit finds and communicates the enemy situation and terrain information, so the maneuver commander can develop a course of action based on that information. Reconnaissance pull requires a broad and detailed plan on the part of the Cavalry commander. The plan remains adaptable and flexible to address an evolving situation.

RECONNAISSANCE METHODS

3-6. Cavalry troop commanders use the METT-TC (I) variables to determine the best method for conducting reconnaissance missions. Cavalry troops use combinations of methods to ensure the unit provides depth and redundancy throughout the AO. The four methods of reconnaissance are dismounted, mounted, aerial, and reconnaissance by fire.

DISMOUNTED RECONNAISSANCE

3-7. The dismounted method of reconnaissance collects detailed information about the threat, civil considerations, terrain, and weather effects in a given area or zone or along a route. The tradeoff for conducting dismounted reconnaissance is its high consumption of time. Platoons conduct dismounted reconnaissance when in close proximity to enemy positions and when encountering danger areas. Dismounted platoons are highly effective at using optics at long ranges, identifying the enemy and potential courses of action early, and shaping the fight through indirect fires. Additional situations in which the troop commander would direct the platoons to conduct dismounted reconnaissance are when stealthy or detailed reconnaissance is required, time is available, or restrictive terrain is limiting mounted reconnaissance.

3-8. Of the three types of BCTs, the IBCT is the only organization with a dedicated dismounted troop. The IBCT dismounted troop can assume a motorized reconnaissance role if given additional mobility assets. It is well suited to air assault operations when assault aviation assets are available to insert and extract them. The commanders of the other BCT Cavalry troop types can task-organize mounted scouts to conduct dismounted reconnaissance when the situation requires its use. However, those troops are limited in the number of scouts they can dismount without leaving scout vehicles crewless.

MOUNTED RECONNAISSANCE

3-9. Mounted reconnaissance permits a more rapid, limited, and forceful tempo but at the expense of stealth. The scout platoon uses the LRAS3 or other organic optics to observe the enemy from a distance. These are the primary means of collecting information during mounted reconnaissance. Units conducting mounted reconnaissance operations bear in mind that dismounted activities are required for security reasons.

3-10. The troop commander plans mounted reconnaissance for these conditions:

- Limited time.
- Known enemy locations.
- Distances requiring mounted movement.
- No primary concern with stealth.
- Capability of providing the same information as the dismounted method.
- Unrestrictive terrain to the use of vehicles in the vicinity of an NAI or a TAI.

AERIAL RECONNAISSANCE

3-11. Aerial reconnaissance provides flexible, low risk means for gaining basic information in the least amount of time. Cavalry troops conduct aerial reconnaissance using organic UAS or Army aviation assets placed under the operational or tactical control of the troop.

3-12. The troop commander plans the use of or requests aerial reconnaissance for these conditions:

- Extreme time limits, including those due to the requirement for rapid information.
- Objectives at extended ranges.
- Targets requiring verification.
- Lack of available ground reconnaissance elements.
- High risks to ground reconnaissance assets.
- Complex terrains and favorable weather conditions for flying and aerial visibility.

3-13. The troop commander considers the limitations to aerial reconnaissance such as the following:

- Inclement weather and adverse environmental conditions for aerial reconnaissance.
- Reliance on visual cues (imagery).
- Inability to gather audio cues, which assist in answering information requirements.
- Poor representation by the imagery due to optical constraints or concealment from aerial observation.
- Inconsistent appropriateness for stealthy reconnaissance, depending on the platform.

RECONNAISSANCE BY FIRE

3-14. *Reconnaissance by fire* is a technique in which a unit fires on a suspected enemy position (FM 3-90). The goal is to cause the enemy to move or return fire, thereby disclosing its disposition to fight. Commanders

may direct reconnaissance by fire when expecting enemy contact, when under time limitations, or when reconnaissance elements cannot maneuver to develop the situation.

3-15. Reconnaissance by fire may require one firing element while another observes the area. Alternatively, it may use indirect fires while Cavalry units in a proper position observe the impact to watch for any reaction from the enemy. When the enemy has fortified overhead cover, indirect fires may not provoke any reaction.

SENSOR ASSETS

3-16. A scout directly observing a target is the most versatile reconnaissance asset because that Soldier can assess the enemy's moral and react to unforeseen circumstances to accomplish the mission. A commander uses internal sensors such as unattended ground sensors with external sensors such as artillery radars to enhance the troops' reconnaissance capabilities.

RECONNAISSANCE MANAGEMENT

3-17. No single means of reconnaissance management can answer every information requirement, and rarely enough reconnaissance assets are available to cover every requirement. Troop commanders manage their reconnaissance assets by using cueing, mixing, and redundancy. Additionally, they may task-organize any organic or attached elements. (See FM 3-98 for more information on reconnaissance management.)

COMMANDER'S RECONNAISSANCE GUIDANCE

3-18. The squadron commander specifies different reconnaissance guidance for each phase of an operation and can adjust the components of the guidance throughout an operation as the situation changes or develops. In providing this guidance, the commander describes, shapes, and prioritizes the intended vision of the reconnaissance effort supporting the overall scheme of maneuver and of the specific roles of the Cavalry troop. (See FM 3-98 for information on the commander's dialogue and the commander's reconnaissance guidance.)

3-19. The troop commander develops a reconnaissance plan based on the squadron commander's guidance and overall plan. This guidance enables troop commanders to clarify their own intents for subordinate leaders. Reconnaissance and security guidance appears in the five-paragraph OPORD. The commander's reconnaissance guidance is how the commander communicates the way to conduct the directed form of reconnaissance.

3-20. The troop commander evaluates the required tasks and the troop's capabilities to accomplish the mission. When the troop does not have the time or resources to complete all the tasks, the troop commander informs the squadron commander. The squadron commander issues further guidance on mandatory tasks for the troop to complete, restates the priority of the tasks (which is usually clear from the reconnaissance objective), or augments the troop. If, after the troop commences reconnaissance, the troop commander determines the troop cannot complete an assigned task, the troop reports to the squadron commander and awaits further instructions.

RECONNAISSANCE FOCUS

3-21. The focus for the reconnaissance effort determines the Cavalry squadron's area of emphasis and has four categories—threat, civil considerations, terrain, and weather effects. The higher commander's intent establishes the focus for the reconnaissance tasks. Focus allows the troop commander to determine which tasks the troop must accomplish first, where to concentrate the reconnaissance activities, and what assets are required. The troop uses focus to narrow the scope of tasks for acquiring the most important information and for developing the situation for future operations. Like many elements within the commander's reconnaissance guidance, the focus can change during different phases of the operation.

3-22. Troop commanders orient their reconnaissance assets by identifying the reconnaissance objective, which is the most desired of results for that specific reconnaissance effort. The reconnaissance objective clarifies the intent of the reconnaissance effort by specifying the most important result for it to attain. Every reconnaissance mission specifies a reconnaissance objective. The commander assigns a reconnaissance objective based on PIRs from the IPOE process, which directly support the end state as defined in the commander's intent.

RECONNAISSANCE TEMPO

3-23. Reconnaissance tempo comprises the levels of detail and of necessary aggressiveness to accomplish the reconnaissance operation. The level of detail is either rapid or deliberate, depending on the number of requisite tasks and the amount of time available in a reconnaissance operation to answer the supported commander's PIRs sufficiently. The level of aggressiveness is either forceful or stealthy, depending on the necessity to avoid either detection or engagement.

3-24. Reconnaissance tempo reflects influential factors such as planning time, movement formations, and methods. Troop commanders analyze the METT-TC (I) variables when determining the best reconnaissance tempo for the specific type of reconnaissance.

ENGAGEMENT CRITERIA

3-25. *Engagement criteria* are protocols that specify those circumstances for initiating engagement with an enemy force (FM 3-90). They establish which targets the troop is to engage, under which circumstances to use direct or indirect fires, and which targets the troop is to hand over to a maneuver element. The commander develops engagement and disengagement criteria based on established ROE and analysis of the METT-TC (I) variables. Commanders plan engagement criteria for all missions, even for security tasks. (See FM 3-98 for more information on engagement and disengagement criteria.) The commander issues guidance to define:

- Engagement criteria.
- Engagement priorities.
- Direct fire control measures to mass fires and control fire distribution.
- Guidance for actions on contact.
- Bypass criteria.
- Reconnaissance handover criteria.
- Priority of fires.
- ROE or rules for use of force.
- Fire support coordination measures.
- Weapons control status.

DISENGAGEMENT CRITERIA

3-26. Disengagement criteria are protocols that specify those circumstances in which a friendly force must break contact with enemy direct fire and observed indirect fire to prevent decisive engagement. The commander develops disengagement criteria for reconnaissance operations. Those disengagement criteria are well-thought-out products from the planning process designed to prevent Cavalry units from becoming decisively engaged and to allow them instead to retain freedom of maneuver.

SECTION II – TYPES OF RECONNAISSANCE

3-27. The five types of reconnaissance operations are zone, area, route, reconnaissance in force, and special reconnaissance. All types of reconnaissance, driven by the fundamentals of reconnaissance, answer PIRs, which allow the commander and staff to understand and visualize the environment, develop the situation, create options, identify opportunities, and make decisions.

3-28. Cavalry troops use four of the five types of reconnaissance, in combination with other ground and aviation reconnaissance assets, to perform reconnaissance missions. Organizations such as engineers, civil affairs, and chemical units have specific reconnaissance tasks to perform that complement the troop's overall reconnaissance effort. The BCTs use organic or attached Cavalry troops primarily to conduct reconnaissance operations.

ZONE RECONNAISSANCE

3-29. *Zone reconnaissance* is a form of reconnaissance operation that involves a directed effort to obtain detailed information on all routes, obstacles, terrain, and enemy forces within a zone defined by boundaries (FM 3-90). A commander assigns zone reconnaissance when the enemy situation is vague or when information related to the threat, civil considerations, terrain, and weather effects is limited. Commanders

require specific information from zone reconnaissance to develop or refine their courses of action before deploying additional forces into the zones. In this regard, zone reconnaissance may orient on the main body's subsequent AO or a specific axis of advance. (See figure 3-1 on page 42 for an example of assigned zones.)

3-30. The troop commander, in conjunction with the squadron commander, determines the priority of tasks that best answer PIRs and then focuses the troop's collection efforts based on these requirements. Tasks associated with zone reconnaissance follow:

- Find, report, and clear all enemy forces who can influence movement along the route in accordance with engagement criteria.
- Determine the trafficability of all terrain in the zone, including built-up areas.
- Locate and determine the extent of all contaminated areas in the zone.
- Inspect and classify all bridges in the zone.
- Locate fords, crossing sites, and obstacle bypasses in the zone.
- Inspect and classify all overpasses, underpasses, and culverts.
- Locate and clear all mines, obstacles, and barriers in the zone (within capability).
- Report reconnaissance information.
- Reconnoiter defiles along the route, clear them of enemy elements and obstacles, or locate a bypass.

3-31. Based on priority, the commander may direct the following:

- Reconnoiter all terrain in the zone.
- Reconnoiter specific terrain in the zone.
- Locate bypasses around built-up areas, obstacles, and contaminated areas.

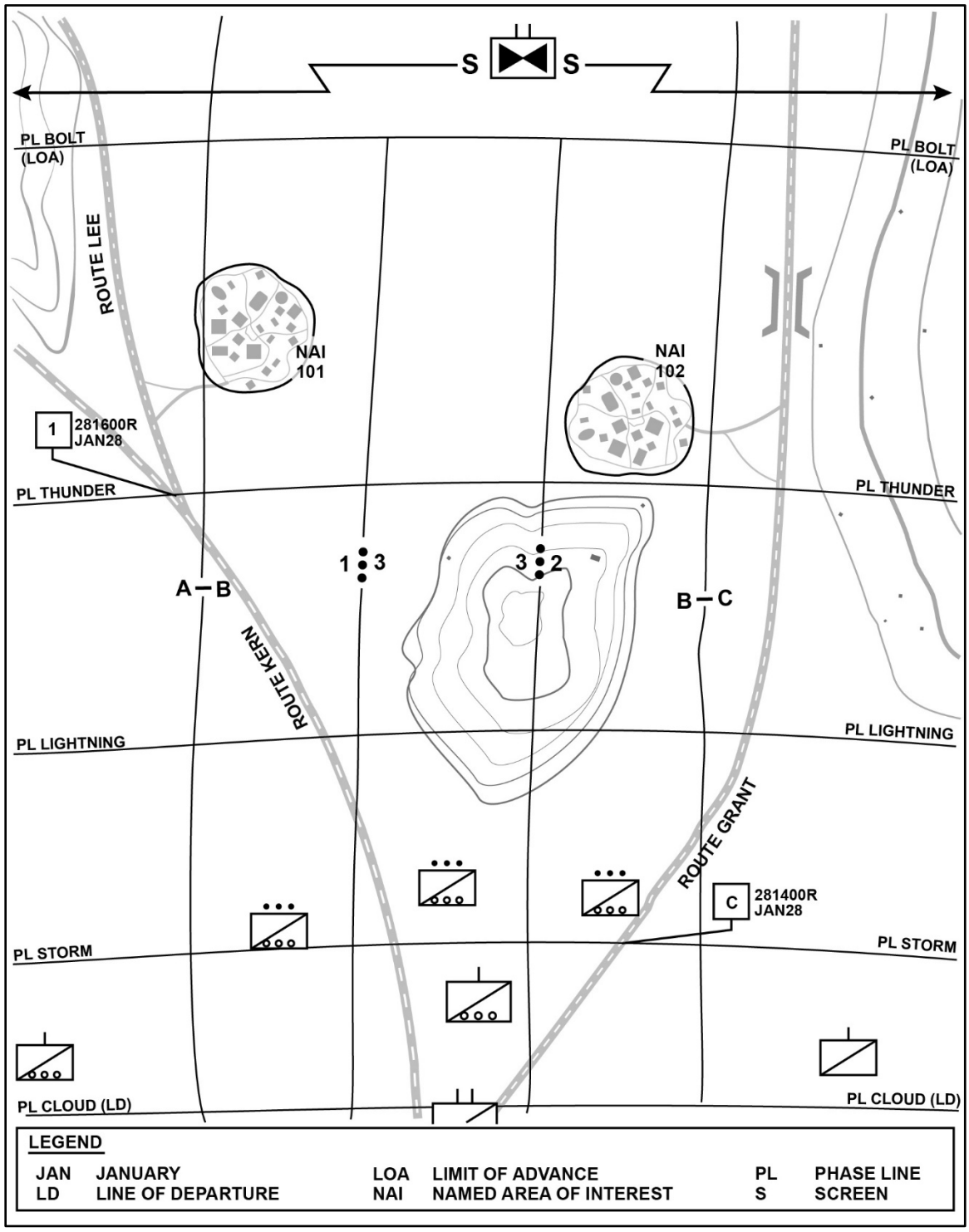


Figure 3-1. Infantry brigade combat team troop zone reconnaissance

ZONE RECONNAISSANCE CONSIDERATIONS

3-32. The commander develops a plan based on the METT-TC (I) variables. During troop leading procedures, the commander considers the criteria in paragraphs 3-33 through 3-40. The commander evaluates information requirements against troop capabilities to determine the reconnaissance guidance to provide.

Friendly Forces

3-33. The commander incorporates the status of friendly forces into a plan. Friendly force considerations for zone reconnaissance include those following:

- Missions of adjacent and follow-on forces.
- Reconnaissance objectives of higher headquarters and follow-on forces.
- CCIRs of higher headquarters and follow-on forces.
- Higher commander's reconnaissance focus, tempo, and engagement and disengagement criteria, including considerations for adjusting tempo and engagement criteria during reconnaissance.
- Missions of elements operating in the troop's AO but not under the troop's control.
- Capabilities and limitations of other elements such as ground sensors attached to or controlled by the troop and higher.

Enemy Forces

3-34. The commander develops a plan, focusing largely on how to collect information relating to the PIRs, while considering enemy forces. Enemy force considerations include those following:

- Type and capabilities of likely enemy weapon systems, surveillance systems, ground sensors, signal intercepts, night observation devices, and related systems.
- Anticipated enemy courses of action, including an event template depicting composition, known and templated disposition, enemy decision points, and potential engagement areas.

Planning Considerations for Reactions to Unmanned Aircraft Systems

3-35. Understanding the threat and capabilities of the various groups and types of UASs dictates how each can be deployed. During the planning phase of the operation, anticipating the enemy's most likely course of action surrounding NAIs, routes, and loiter points is key to determining how to counter. Troop commanders and platoon leaders use a variety of techniques to prepare for reactions to UASs during reconnaissance operations. Each phase of the operation requires clear understanding of how each UAS group and type can be deployed based on weather effects and altitudes (see ATP 3-01.81). The troop commander is responsible for the tasks associated with counter-unmanned aircraft systems (C-UASs).

3-36. The primary goals are to detect while avoiding detection, remain covert, track the aerial platform system or UASs, and engage by any available organic means. A common technique, easily adopted by any leader, is to identify Soldiers who can act as primary and alternate observers (air guard). This will gradually progress into a planned response during technique rehearsal, executed as actions on contact during observation of UASs. The following steps are identified during rehearsals and executed throughout all phases:

- Identify an observer based on the type of reconnaissance (mounted or dismounted).
- Identify a reporting technique (contact report followed by a report on size, activity, location, and time).
- Select how to communicate alerts at the troop or platoon level (tactics, techniques, and procedures).
- Take actions to neutralize or destroy enemy UASs.

Note. "Soldiers serving as air guard should establish positions within visual ranges of the unit (between 500 meters and 1.5 kilometers [km]). This should allow the air guard to see, hear, and report potential threats."

Terrain and Weather

3-37. During planning the commander considers the effects of terrain and weather on both friendly and threat forces. The terrain and weather may affect threat forces differently than they effect U.S. reconnaissance forces. Terrain and weather affect the following:

- Weapon systems effective ranges, laser designators, and night observation devices.
- UAS and other aviation assets for reconnaissance, transport, resupply, fire support, and medical evacuation.
- Cross-country mobility.
- Fords and bypasses.
- Civil functions and services.

Civil Considerations

3-38. When the zone includes civilian populations, and especially when zone reconnaissance is focusing on civilian populations, troop leaders consider the six civil characteristics—areas, structures, capabilities, organizations, people, and events (ASCOPE)—in relation to the eight operational variables. The supported commander's PIRs may be related to the ASCOPE factors of key infrastructure facilities, including government agencies, political party offices, and nongovernmental organizations. They may also include the locations of power and transformer facilities, water treatment plants, food distribution points, communications networks, and media outlets.

3-39. Leaders are to know the locations of police stations, armories or barracks, encampments, weapons holding areas, and staging areas. Priority information collection may focus on the ASCOPE factors of military forces to include the compositions and dispositions of regional and local military, paramilitary, and law enforcement organizations and their uniforms, insignias, vehicles, markings, and equipment.

3-40. Priority information collection activities routinely focus on the ASCOPE factors of economics to include the locations, factions, key leaders, compositions, and dispositions of known friendly, neutral, and belligerent (criminal) elements. The supported command may have PIRs related to identifying ASCOPE characteristics of social variables, including recent trends in public opinion, intensity levels of current and past disturbances, and the effects of lethal force against civilians. Using the ASCOPE characteristics to assess the political variable and information activities is also a potential for the Cavalry troop zone reconnaissance plan as it relates to the supported commander's PIR.

ZONE RECONNAISSANCE PLANNING CONSIDERATIONS

3-41. The commander develops a concept of operations that describes the scheme of maneuver. The concept develops reconnaissance focus, tempo, and engagement and disengagement criteria, including changes to tempo based on anticipated contact or requirements.

3-42. The supported commander's PIRs and LTIOV, in relation to reconnaissance considerations, drive the reconnaissance focus, tempo, and engagement criteria. The commander decides whether platoons will conduct zone, area, or route reconnaissance or a combination of the three to enable the troop to complete its zone reconnaissance mission and thereby to answer the supported commander's PIRs. The troop commander further identifies subordinate element tasks, including any reconnaissance and security, while determining task organization and subordinate units' AOs based on tasks and the METT-TC (I) variables.

3-43. The commander integrates reconnaissance methods (dismounted, mounted, aerial, and reconnaissance by fire) in conjunction with deployment methods and selects movement techniques that support the desired tempo of reconnaissance operations. In zone reconnaissance, the troop identifies infiltration routes against potential or confirmed enemy positions that allow the use of organic information collection systems against those positions. The troop determines positions that allow the surveillance of NAIs.

3-44. The commander plans to establish a screen upon reaching the limit of advance. The commander develops target acquisition assignments, synchronized with reconnaissance tasks, that provide target description, location (known or templated), method of engagement, desired target effect and purpose, and criteria requiring change from target surveillance to designation (illumination).

3-45. The troop determines locations and criteria for reconnaissance and target handover. It coordinates the handover plan with external units, coordinates engagement criteria between units, develops passage of lines graphic control measures to support noncentralized linkup procedures, and recommends infiltration routes for the follow-on units during reconnaissance handover planning.

3-46. Graphic control measures, which support the concept of operations, include those following:

- Boundaries identifying the troop and platoon's AO, line of departure, and limit of advance.
- Routes or lanes and the designated start points, release points, checkpoints, and rally points for each.
- PLs, checkpoints, and contact points for coordination with other elements.
- Terrain index reference systems or grid index reference systems to assist in controlling subordinate movements and reporting.

3-47. Commanders carefully plan sustainment operations for Cavalry assets before, during, and after their commitments as a vital part of maintaining reconnaissance capabilities. Sustainment considerations include priorities and security of sustainment assets. Commanders plan movement and positioning of trains and sustainment supply points. They plan casualty consolidation and evacuation, vehicle recovery (including secured collection points and maintenance procedures), and equipment and supply destruction criteria. Resupply, including emergency resupply and caches, covers the following:

- Caches for Class I, III, IV, and VIII products and materials (see table 5-1 on page 94) and other mission-specific items such as batteries.
- Drop points away from vehicles in hide positions and observation posts.

Note. Sustainment plans for reconnaissance and security operations vary greatly by the maneuver commander's guidance for the tempo of the operation.

Integration of Other Elements or Assets

3-48. The troop integrates other elements or assets into the reconnaissance effort. Other elements or assets include UASs and Army aviation assets such as attack reconnaissance units to reconnoiter routes, possible infiltration lanes, and key and restrictive terrain in the AO. The troop uses IEW collection assets provided by the BCT to monitor communications traffic or transmissions in designated areas containing suspected enemy or supporting forces. Additionally, the troop employs the LRAS3 and unattended ground sensors on avenues of approach into the troop's flanks. Finally, when a commander has priority or they are available, the troop integrates engineers to assist with the classification of bridges, overpasses, culverts, fords, routes, obstacles, infrastructure, environment, and other classifications related to area damage control in the designated zone.

Fires

3-49. During reconnaissance operations, the troop commander provides the commander's guidance for fires to the FSO. The commander's guidance emphasizes, in broad terms, when, where, and how the commander intends to synchronize the effects of fires with other elements of combat power for mission accomplishment. The commander's guidance for fires includes the commander's intent and desired end state. Understanding the commander's intent makes it easier for the FSO to advise the commander on how to maximize indirect fire capabilities to support all phases of the operation and to achieve the desired end state.

3-50. The commander provides the FSO with the platoon priority of fires by phases. The *priority of fires* is the commander's guidance to the staff, subordinate commanders, fires planners, and supporting agencies to employ fires in accordance with the relative importance of a unit's mission (FM 3-09). (See figure 3-2 on page 46 for an example ABCT in the offense executing zone reconnaissance with troop roles and responsibility.)

3-51. Once the commander provides the FSO with the guidance for fires, the FSO develops a fire support plan. At the minimum, the troop fire support plan factors in the following:

- Guidance on the establishment of primary and alternate mortar firing points to keep the mortar section in position.
- Displacement and movement criteria for positioning the mortar section. (See paragraph 1-52 for more information on the use of mortars.)

- Guidance on the establishment of primary and alternate observer positions.
- Trigger points the mortar section can cover as the platoons bound forward.
- Trigger for each of the planning targets.
- Restrictions from higher.
- Attack guidance.
- Fire support tasks in the task, purpose, effect format.
- Priority of fires by phase.
- Assessments (measures of performance and effectiveness).

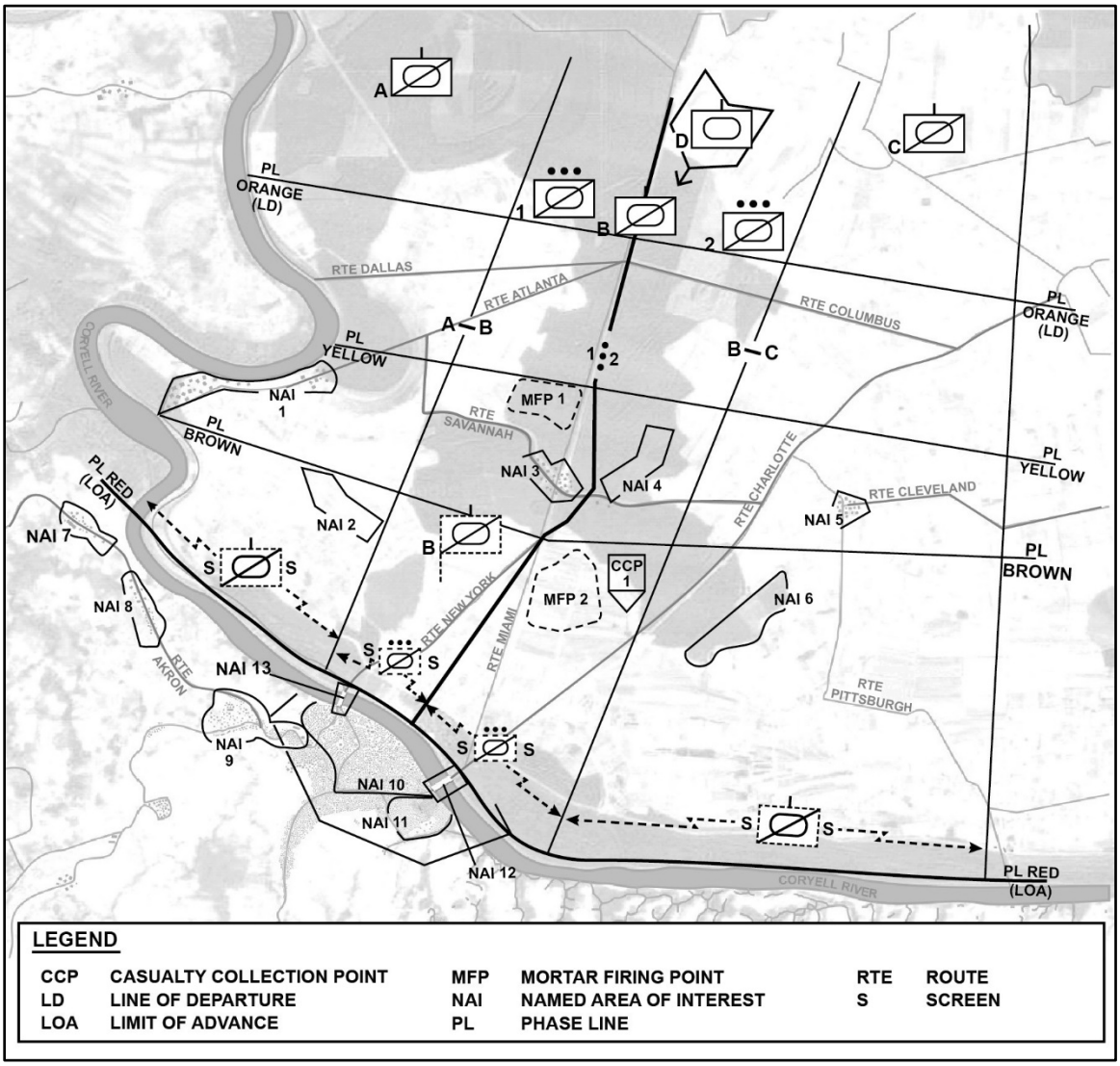


Figure 3-2. Armored brigade combat team squadron zone reconnaissance, offense

Troop Mission

3-52. This section illustrates Bravo Troop's mission during the squadron's zone reconnaissance operation. It provides a snapshot of some of the tasks executed during the four phases of the operation in accordance with the contingency response group and in conjunction with graphic control measures.

Example

Situation: Bravo Troop conducts zone reconnaissance to gather information throughout the AO from 031100DEC20XX to 040500DEC20XX and to enable future BCT offensive operations.
Commander's intent expanded purpose: Deny the enemy a key safe haven for planning and conducting future operations throughout the designated zone.
Key tasks:

- Identify and report routes that support friendly, armored vehicles throughout the zone.
- Destroy enemy forces within capabilities located in the zone.
- Report all bypass criteria in accordance with the reconnaissance guidance.
- Locate and confirm the report of subterranean routes that could support platoon-sized or greater movement.
- Anticipate and plan to transition from offensive to defensive operations throughout each phase from a forward passage of lines, relief in place, or change of mission.

End state: On order, be prepared to conduct a forward passage of lines during the final phase of the operation to prevent the enemy from gaining access to key terrain and consequently delaying or influencing future offensive operations.
Friendly: Higher echelons informed and able to conduct planning for offensive operations.
Terrain: Primary avenues of approach classified.
Civil: Ensure impact upon patterns of life are minimal. The troop commander's guidance includes the following:

- Reconnaissance focus. The focus is to determine the threat in the zone and identify routes and key terrain leading up to the limit of advance, PL Red. Reconnaissance objective is to ensure no enemy in the troop's AO.
- Reconnaissance tempo. The tempo for this operation will consist of both a level of detail and a level of aggressiveness throughout each phase. The aggressiveness in phases I and II will be forceful. The level of detail for phases I and II is deliberate because the BCT grants the squadron ample time based on how it wants to shape its offensive operation.
- Engagement criteria. BFVs engage enemy light armor and antitank guided munitions between PL Orange and PL Red. The mortar section provides suppression of enemy, light armored vehicles. The commander retains bypass authority.
- Disengagement criteria. Platoons disengage from more than three heavy armored vehicles. Platoons disengage from tunnels when encountering sustained small arms fire coming from the subterranean feature if dismounted. On order, break contact to regain contact from alternate locations to observe indirect fires.

Zone Reconnaissance—Phase I

3-53. Bravo Troop conduct of operations during phase I is as follows. Phase I is penetration into the zone by recognizing a gap that had not been exploited. Phase I begins with penetration into the zone and concludes at the line of departure, PL Orange, and ends at PL Yellow. The tempo has been identified as rapid and forceful throughout this portion of zone reconnaissance from the line of departure to PL Yellow. Conduct route reconnaissance of all primary and secondary routes. The engagement criteria are to identify and destroy any enemy reconnaissance elements with indirect first and direct if within favorable odds (3-to-1) and to engage any observation posts along all routes. Disengagement criteria would be to break but maintain contact and to observe with indirect to prevent becoming decisively engaged and to preserve combat power.

3-54. Identify and destroy enemy observation posts in zone. Enemy observation posts in today's battlespaces have many characteristics. Platoons search for covert, military-style observation posts, as well as enemy personnel disguised as civilians collecting information on friendly forces.

3-55. Collect obstacle information. Platoons focus on tactical, enemy-prepared obstacles, naturally occurring obstacles, and civilian-created obstacles for their reports. Examples of enemy-prepared obstacle include mine and wire obstacles, tank ditches, and dragon's teeth. Examples of naturally occurring obstacles include escarpments, changes in soil composition, and creek beds. Examples of civilian-created obstacles include civilian traffic patterns, urban areas, and new road construction.

Zone Reconnaissance—Phase II

3-56. Bravo Troop will conduct some urban reconnaissance within PL Yellow and end by crossing PL Brown (see figure 3-3). Critical events during this phase are identifying bypass routes around urban areas and conducting area reconnaissance of NAIs 3 and 4. Due to time constraints, the commander controls the zone reconnaissance tempo by phases. The commander mitigates some prudent risk by conducting rapid and stealthy zone reconnaissance from PL Yellow to PL Brown due to the multiple NAIs in the small towns. Zone reconnaissance missions are time intensive, so the commander communicates to subordinate platoons the risks the troop is willing to assume.

3-57. Identify bypass routes around urban areas. Moving through an urban area can slow a unit for several reasons, which may encourage a commander to bypass urban areas along the axis of advance. Bypassing an urban area, especially while on the way to an objective, allows a commander to expedite movement, avoid lethal engagement with enemy forces, or avoid nonlethal engagement with the civilian population, both of whom can slow movement to the objective significantly. During zone reconnaissance, a troop locates bypass routes around urban areas, so follow-on units have the option of bypassing those urban areas when bypassing does not affect mission accomplishment negatively. When identifying a bypass, the troop considers the trafficability of the bypass to all the vehicles within the follow-on force, as well as the ability of enemy forces in the urban area to influence friendly movement on the bypass.

3-58. Conduct area reconnaissance of NAI 4. In this phase of the operation, NAI 4 is an open area in which the enemy has possibly used a subterranean network to move undetected. The troop has a variety of available methods for conducting reconnaissance in this NAI. The troop conducts dismounted reconnaissance through NAI 4, looking for the presence of the templated subterranean networks. It is highly unlikely the troop would find signs of a subterranean network by observing the NAI from a distance.

3-59. Conduct area reconnaissance of NAI 3. Reconnaissance of NAI 3, which is in an urban area, would require special consideration by the commander if the commander were attempting to observe normal patterns of civilian activity or enemy activity in the urban area without influencing the enemy or civilian actions. The troop uses optics with enough standoff to conduct surveillance undetected. To develop the situation rapidly, the troop may need to conduct active reconnaissance in NAI 3, with dismounted observation posts. If the commander is looking to provoke a reaction from possible enemy forces in the urban area, the troop could move in an overt, aggressive manner, taking steps to avoid detection. Since the reconnaissance effort in NAI 3 is area reconnaissance within a larger zone reconnaissance mission, the troop avoids becoming decisively engaged in the town to retain its freedom of maneuver.

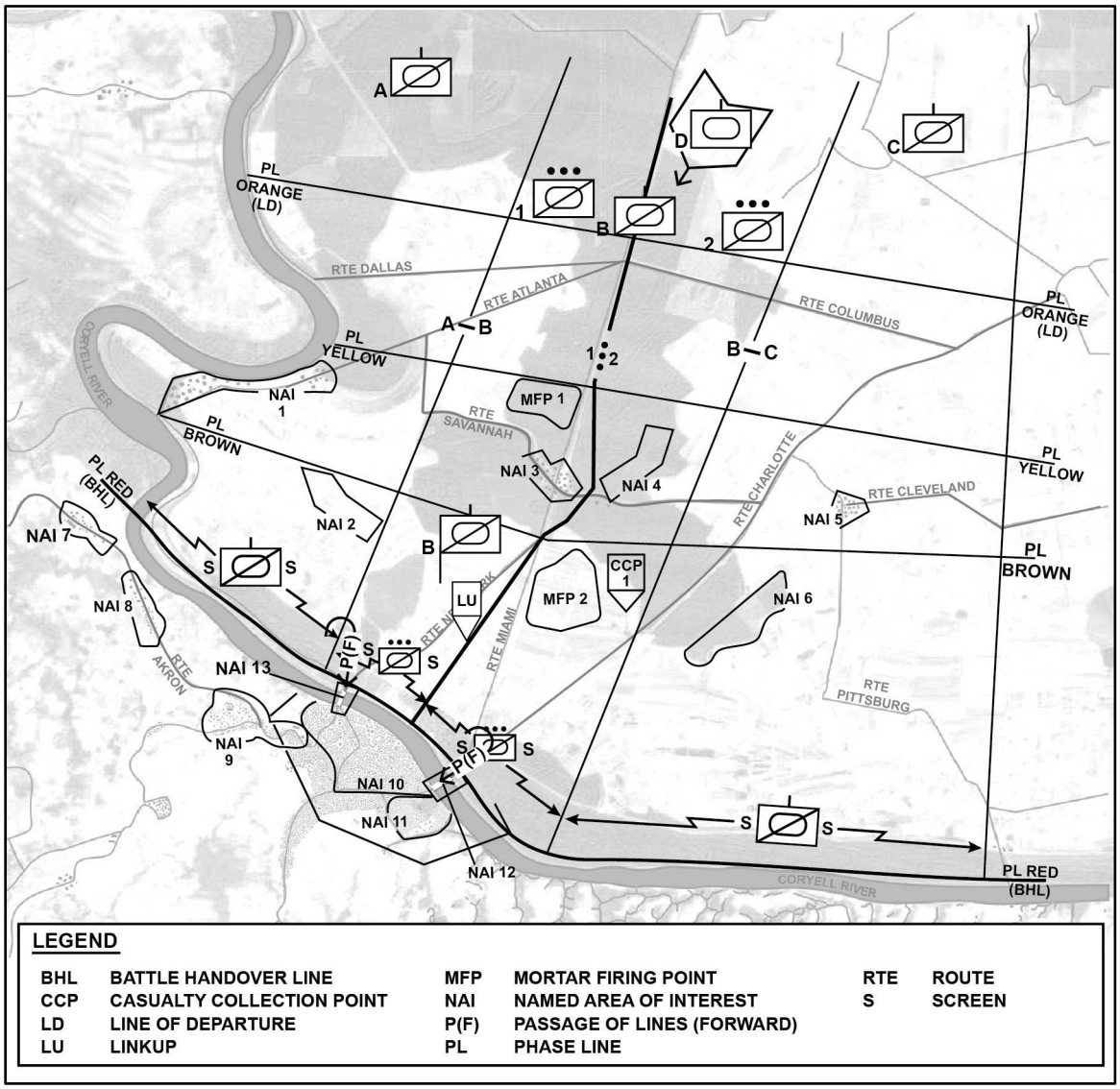


Figure 3-3. Armored brigade combat team troop zone reconnaissance, offense

Zone Reconnaissance—Phase III

3-60. Reconnoitering multiple routes simultaneously continues with crossing PL Brown and ends with identifying a trafficable crossing point. Critical events during this phase are conducting the linkup and confirming route classifications on Routes New York, Miami, and Charlotte beyond phase II of the operation. Identify the locations for the troop command post, mortar firing point, and casualty collection point. The troop conducts bridge classification to identify bypass and ford sites and possible enemy control vehicle and UAS launch sites.

3-61. Conduct linkup and confirm locations for the troop command post, mortar firing point, and casualty collection point. Upon crossing PL Brown, the platoons converge at the intersection of Routes New York and Miami. Phase III also requires the most security since it is closest to the enemy main body. The troop plans to conduct this phase of the operation under limited visibility conditions; thus, the troop may need to adjust its tempo during this transition phase prior to execution.

3-62. While the rest of the squadron conducts area reconnaissance of NAIs 2 and 6, Bravo Troop, prior to moving, dismounts forward to classify the bridges in NAIs 12 and 13 and to establish proper security

measures. Platoons stop short of the bridges and establish overwatch positions. Platoons use optics, UASs, and additional sensors to observe the far side of the bridge and to inspect the bridge for obstacles or explosives. The approach to and classification of the bridges uses the stealthiest method available to reduce the chance of enemy contact. When they are available, the commander equips platoons with engineers to clear, breach, or identify and mark explosives hazards. The site may contain a small guarding force or be reinforced with tactical obstacles. The scout platoons maintain understanding of engagement criteria from the troop commander during this phase, prepare to fight for the information, develop the situation rapidly, and prepare to gain and maintain contact employing additional augmentations from the squadron.

3-63. Identify fording and armored vehicle launch bridge sites. Should the bridges prove impassable for tanks, the troop continues to orient on the reconnaissance objective by finding a bypass route at a fording site, finding an alternate bridge not listed on the map due to new construction, or providing a recommended site for an armored vehicle launch bridge or other type of bridge.

Zone Reconnaissance—Phase IV

3-64. Establish a screen to conduct a forward passage of lines. The screen begins with mounted observation posts set observing NAIs 10, 12, and 13 and ends after the forward passage of lines. Critical events during this phase are the observation of NAIs 10, 12, and 13, forward passage of lines, and reconnaissance handover.

3-65. During the critical event of the observation of NAIs 10, 12, and 13, the platoons orient on several NAIs—NAI 10 with PIR 5, NAI 12 with PIRs 1 and 2, and NAI 13 with PIRs 1 and 2. The BCT remains aware of the trafficability of the bridges leading across the river to ensure the BCT can access its objectives. The troop develops the situation rapidly yet remains stealthy, in accordance with the commander's reconnaissance guidance, to provide the information to the BCT. The information gained from NAIs 10, 12, and 13 is reported rapidly and accurately to the BCT, so the BCT can complete its course of action development. To avoid keeping reconnaissance assets in reserve, the troop can use its organic Raven SUAS to collect information to answer PIR 5 in NAI 10. Since the platoons operate around an urban area, this phase involves the most risks and ideally occurs during hours of limited visibility. The platoons ideally have the most information collection assets available to mitigate risks. Redundancy and mixing of collection assets provide the BCT with information in greater detail while information collection assets are not assuming as much risk. As all units observe their NAIs, each collection asset maintains visual contact with any threat indicator until the reconnaissance handover with the BCT is complete.

3-66. The reconnaissance handover is critical to the mission because it ensures continuous reconnaissance. The forward passage of lines passes the BCT forward of the troop's limit of advance while the troop's observation posts stay in place and continue to observe the NAIs for any change in information. As the BCT is moving through the troop, a designated unit links up, either on the ground or through digital communications, with the troop command posts to receive the most up-to-date graphics, positions of friendly forces, and information about the NAIs.

Warfighting Function Considerations

3-67. The warfighting considerations described in paragraphs 3-68 through 3-78 apply to the above example, but for illustrative purposes only. Other considerations may apply.

Command and Control

3-68. Regarding facilities, platoons update the squadron command post throughout the operation with answers to indicators. The troop command post establishes at each phase in a location from which the troop can communicate collected information rapidly and accurately to squadron command posts. All collected information is vital to the planning timelines within the brigade. Thus, collected information requires timely refinement and reporting.

3-69. Regarding systems, the distance the troop travels during this operation may extend beyond the reach of frequency modulation or digital systems. The commander may need to request retransmission sites or to communicate via satellite routing from the troop to squadron.

3-70. Regarding graphics, troops cultivate shared understanding through graphics in mission orders, especially when forces converge or collectively transition the reconnaissance tempo. In this scenario, creating the coordination point allows the commander to adjust the troop's tempo to balance with security, to reposition forces to support subsequent area reconnaissance, and to ensure the right amount of information is collected and provided to the squadron during critical events.

Movement and Maneuver

3-71. For a mounted example, the unit identifies routes that can support tanks and an armored vehicle launch bridge. The platoons continuously seek bypass routes for any points where trafficability reduces below that level. When contact is possible or likely and the follow-on force needs to transition to traveling overwatch or bounding overwatch, the platoons then report whether the routes can support only a column or whether they can support unit dispersion.

3-72. For dismounted, the trafficability of areas off the main roads may increase the chances for vehicles to get stuck or to roll over. Dismounting to clear safety areas is paramount to speed, but leaders are to inform the troop commander and higher for their situational understanding. Dismounted reconnaissance in NAIs is more likely to locate caches, especially when supported with mine detection devices, site exploitation kits, and cameras.

3-73. For subterranean, the troop commander maintains full understanding of the squadron commander's guidance in dealing with subterranean networks. (See ATP 3-21.51 for more information on movement and maneuver in relation to the subterranean environment.) Commanders weigh the priority of reconnaissance in subterranean areas with other NAIs.

Intelligence

3-74. Synthesizing and reporting collected information to the squadron command post in a timely manner drive the BCT's future offensive operations. Zone reconnaissance transpires during the brigade's planning process as a reconnaissance pull technique. Troops remain expectant of changes and additions to PIRs and NAIs throughout the operation.

Fires

3-75. When the movement of the troop extends beyond the range of available artillery assets, the troop emplaces the mortar firing point to support both platoons. The troop plans final protective fires during phase IV due to the troop's proximity to the enemy main body. The troop establishes no-fire areas and ensures all friendly areas include critical infrastructure.

Sustainment

3-76. The XO coordinates to receive ammunition resupply in a timely manner that does not sacrifice availability should the mission require a great deal of mortar employment. The troop requests the FMT be as far forward as possible to assist in maintenance operations. Recovery operations during this example include self-recovery at the platoon level, followed by like-vehicle recovery to pull vehicles to the squadron maintenance collection point. Troops plan sustainment for all four phases. Resupply may not be necessary during the mission. However, troops plan resupply for phase IV prior to conducting follow-on operations. They also plan multiple casualty collection points throughout the operation to allow for frequent casualty evacuations.

Protection

3-77. Troops use camouflage, cover, concealment, movement techniques, and noise and light disciplines to avoid detection by enemy forces. They apply appropriate personal protective equipment for the current mission-oriented protective posture. When stationary, troops build survivability positions to withstand hostile actions.

3-78. To increase survivability, troop commanders may employ security operations, modify tempo, take evasive action, maneuver to gain positional advantage, decrease electromagnetic signatures, disperse, and

establish local security. Additionally, a troop coordinates with their higher headquarters for the additional protection resources necessary to achieve mission success. (See ADP 3-37 for more information on protection of troops during the conduct of zone reconnaissance.)

AREA RECONNAISSANCE

3-79. *Area reconnaissance* is a form of reconnaissance operation that focuses on obtaining detailed information about the terrain or enemy activity within a prescribed area (FM 3-90). It provides information about a specified area such as a town, ridge, wood, or another feature critical to operations. The commander specifies exactly what to seek and why. Two ways of conducting area reconnaissance exist—by maneuvering elements through the area or by establishing observation posts inside or outside the area of interest. Frequently, area reconnaissance is designated for an NAI or a TAI to focus the unit on a more specific area such as a building, a bridge, an obstacle, or key terrain (See FM 3-98 for more information on area reconnaissance in an NAI or a TAI.)

3-80. Area reconnaissance tasks are the same as the zone reconnaissance tasks (see paragraph 3-30). Based on time and intent, the commander may direct reconnaissance toward specific information requirements only. As with zone reconnaissance, the commander provides focus to the unit through the commander's intent in the OPORD and lists the tasks in the specific instructions. Primary tasks associated with area reconnaissance include those following:

- Find and report all enemy in the area.
- Reconnoiter specific terrain in the area.
- Report reconnaissance information.

3-81. Other tasks include those following:

- Inspect and classify all bridges in the area.
- Locate fords or crossing sites near all bridges in the area.
- Inspect and classify all overpasses, underpasses, defiles, and culverts.
- Locate and clear all mines, obstacles, and barriers in the area.
- Locate bypasses around built-up areas.
- Locate CBRN hazards and bypasses around hazardous areas.
- Locate any bypasses for existing obstacles in the area that cannot be cleared.

AREA RECONNAISSANCE CONSIDERATIONS

3-82. As with zone reconnaissance, the troop commander ensures the troop has all known information and intelligence pertaining to the AO. The squadron may designate troop infiltration lanes. The troop commander determines the infiltration method and sequence. At times, the commander may be required to identify the infiltration lanes. At those times, the troop conducts reconnaissance during troop leading procedures to identify and select infiltration lanes. The troop commander coordinates reconnaissance support from other reconnaissance and surveillance assets available to the squadron and BCT. Information from IEW and imagery intelligence helps the commander develop and complete the scheme of maneuver during troop leading procedures. The troop commander uses intelligence and imagery, along with detailed map reconnaissance, to determine how the terrain supports movement. The commander views the terrain not only from the perspective of how it supports mission success, but also from the enemy's perspective. Measurement and signature intelligence assets previously coordinated for and provided from echelons above brigade intelligence organizations focus on restrictive terrain or high-speed avenues of approach to provide early warning of potential enemy movements. Aviation and UAS assets can provide early warning and reconnaissance of areas inaccessible to the ground troop. (See figure 3-4 for an example of what an entire troop effort may resemble during area reconnaissance of an NAI.)

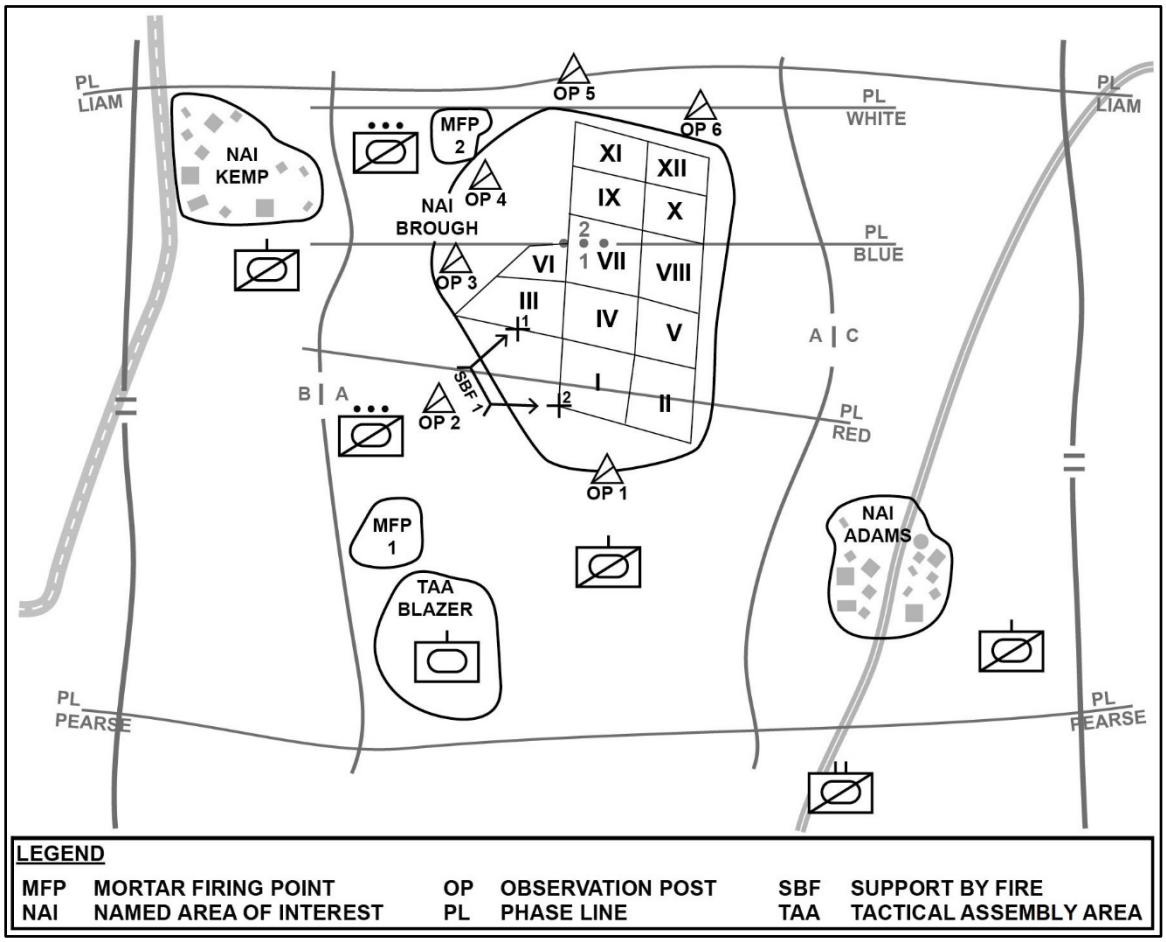


Figure 3-4. Armored brigade combat team troop area reconnaissance

AREA RECONNAISSANCE PLANNING CONSIDERATIONS

3-83. While developing an area reconnaissance plan during troop leading procedures, the commander considers the mission variables, infiltration, and exfiltration. (See paragraphs 3-33 through 3-40 for a detailed list of mission variable and additional considerations.)

Mission Variables

3-84. The commander considers each mission variable when planning area reconnaissance (see paragraphs 3-41 through 3-47). The commander develops an operations sketch that portrays key terrain. The sketch highlights the following: restricted or protected areas—as designated by the ROE; hazardous areas, intersections, and bridges; and known hostile, belligerent, or criminal areas. In addition, the sketch depicts the following: major terrain features such as parks; industrial complexes; airports and buildings that mask or interfere with communications or GPS; assembly areas, including main thoroughfares and improved road surfaces; and escape evasion routes or corridors, access routes, and subterranean routes.

3-85. The commander develops a concept of operations. Below are the considerations specific to area reconnaissance. (See paragraphs 3-33 through 3-40 for a detailed list of considerations.)

Area Reconnaissance Considerations for Concept of Operations

Reconnaissance focus and tempo include the movement to the areas to reconnoiter, as well as any applicable techniques and formations. Commanders select movement techniques that support the reconnaissance tempo and that avoid known enemy forces outside the areas to reconnoiter. They select the route(s), establish a march order on each route, identify a filtration route against a higher level threat, and establish an order of march. Additionally, they identify dismount points, suitable concealment locations to position vehicles prior to conducting reconnaissance, and vehicle positions that allow the use of onboard optics such as the LRAS3 or Information Technology Approval System to assist in observation and provide overwatch. The commander's planning ensures reconnaissance of the designated areas answers information requirements.

Commanders ensure they synchronize and integrate all the command assets—including target acquisition assignments, UAS and Army aviation assets, ground sensors, and engineers—with reconnaissance tasks. They also integrate available joint sensors into the reconnaissance effort.

Commanders plan for area reconnaissance by determining locations and criteria for reconnaissance and target handover and priorities and uses of fires to maintain maximum range forward of platoons. Additionally, commanders designate bypass and engagement criteria during movement to and from and reconnaissance of designated areas.

Finally, commanders develop disengagement and displacement criteria and actions of the higher headquarters reaction force or reserve to support the troop's conduct of reconnaissance. They develop graphic control measures that support the concept of operations, including boundaries that identify the troop's AO, each subordinate element's AO, line of departure, checkpoints and PLs, fire support coordination measures, and specific areas of interest to be examined in a given AO.

Infiltration and Exfiltration

3-86. Cavalry troops frequently employ infiltration and exfiltration in executing forms of reconnaissance and security to avoid detection and direct fire contact with enemy elements. Infiltration and exfiltration can occur during zone, route, or security tasks, but this publication treats infiltration and exfiltration as part of area reconnaissance, primarily for dismounted troops. Cavalry troops can employ infiltration and exfiltration during any form of reconnaissance or security. Area reconnaissance is an especially effective form of reconnaissance for infiltration and exfiltration. Infiltration and exfiltration occur mounted, dismounted, or by a combination of the two methods. Preceding infiltration, the troop may require insertion into the AO in which it will be conducting infiltration. Insertion may be by ground, air, or water assets, depending on availability and what the tactical situation permits. The troop exfiltrates at the conclusion of the mission, and it may require extraction by ground, air, or water assets.

3-87. The following is a sequence of operational events useful for mitigating the compromise of reconnaissance assets:

- Insertion (as required) by ground, air, or water assets.
- Execution of the reconnaissance mission.
- Extraction (as required) by ground, air, or water assets.
- Infiltration (mounted, dismounted, or in combination).
- Exfiltration (mounted, dismounted, or in combination).

3-88. As an example of infiltration and exfiltration, a troop emplaces observation posts for a reconnaissance mission. The METT-TC (I) variables dictate deliberate and stealthy emplacement of the observation posts.

Vehicles infiltrate the AO to insert dismounted scouts, who conduct infiltration on foot to the observation post locations. The dismounted scouts establish the observation posts to confirm or deny the commander's PIRs. When this mission is complete, the dismounted scouts conduct exfiltration to an extraction point (different from the insertion point, as in most cases) for pickup by the vehicles, which then exfiltrate to the line of departure.

Infiltration

3-89. *Infiltration* is a form of maneuver in which an attacking force conducts undetected movement through or into an area occupied by enemy forces (FM 3-90). Historically, the scope of the mission for the infiltrating force has been limited. Infiltration is also a march technique useful within friendly territory for moving forces in small groups at extended or irregular intervals. (See FM 3-90 for the treatment of infiltration as a movement technique.) The elements avoid enemy detection when moving through or into an area occupied by enemy or friendly forces. The troop infiltrates through the AO without engaging the enemy or fighting through prepared defenses. Infiltration is slow and often occurs in reduced visibility conditions. Synchronized reconnaissance and security operations using other assets, as well as IPOE, provide the troop with additional security by locating likely enemy positions and identifying infiltration routes that avoid enemy contact. The troop's higher headquarters uses UASs cued by geospatial intelligence, IEW systems, and ground sensors to locate gaps in enemy positions and assist the troop in infiltrating.

3-90. Enemy dispositions may require the BCT to attack and destroy specific elements in the enemy's disruption zone or to penetrate the defense, so the troop can infiltrate. The BCT can also conduct a feint or demonstration as a military deception, so the troop can infiltrate at another point.

Infiltration Planning Considerations

3-91. Infiltration and exfiltration are similar. They both require centralized planning and decentralized execution planning and movement security considerations. Infiltration is one of the troop's most difficult missions, so it falls on the troop's higher headquarters to resource and support infiltration. The troop requires detailed knowledge of the terrain and current enemy information to maximize its chances for success and survivability. The BCT's higher headquarters, as part of its IPOE process, gathers detailed terrain analysis, focusing on identifying potential infiltration routes and likely enemy positions. Corps or division analysis and the control elements of the BCT's attached headquarters use several databases to provide detailed enemy dispositions and compositions to support infiltration planning. The S-2 evaluates intelligence shortfalls. The BCT S-3 tasks information collection assets to obtain more details to support the infiltration mission. For example, the BCT S-3 may task UASs to conduct aerial reconnaissance of the proposed infiltration lanes and thereby to obtain a current picture of the AO prior to and during movement of the ground scouts.

3-92. The troop commander, XO, forward support officer, 1SG, operations sergeant, platoon leaders, platoon sergeants, and the leaders of any supporting organizations review terrain analysis and enemy data to identify gaps within enemy dispositions and potential infiltration routes. The troop commander participates in this analysis and determines whether to move the troop as a unit or in echelon on single or multiple infiltration lanes. The overriding factor in this determination is the ability to remain undetected. Space and time separate the forces moving along the infiltration lane. Moving the troop by platoons is faster and easier to control. Conversely, echeloned movement by sections or individual vehicles lessens the likelihood of detection due to the smaller size of the moving elements.

3-93. The higher headquarters and troop commander plan adequate time for infiltration. They allow time for potential delays, and they ensure the troop has sufficient time to reach its AO and subsequent primary or alternate rally point. The contingency plan addresses conducting actions on contact, aborting the infiltration, and shifting elements during reconnaissance. It also addresses actions upon an element's failure to arrive or late arrival at the primary rally point. It designates alternate rally points for when the enemy occupies the primary rally point, the primary rally point is compromised, or the identified rally point is unsuitable.

3-94. The concept of operations describes the infiltration method, sequencing (by unit of echelon), and timing, as well as the higher headquarters' military deception actions and their purpose or relation to the infiltration. Commanders use the concept to identify potential observation posts, objective rally points, and hide positions for vehicles. They also use the concept to prescribe actions on contact and infiltration abort criteria. They integrate indirect fires to support the infiltration, including priority of fires, and use the assigned

NAIs and information requirements to develop the reconnaissance focus and objective. They identify primary and alternate rally points. The first scout element reaching the rally point establishes security and then uses JBC-P or radio voice to identify and exchange recognition signals with follow-on troop elements.

3-95. Terrain analysis engages the IPOE process products, imagery, and ground reconnaissance to identify primary and alternate infiltration routes. These routes avoid enemy positions, obstacles, populated areas, main avenues of approach, and heavily populated routes and trails. In addition, movement along the routes never exposes vehicle or Soldier silhouettes along crest lines.

3-96. Graphic control measures include checkpoints or terrain index reference systems to control movement and provide mission command flexibility in response to anticipated and unanticipated events. The troop can use a checkpoint as a rallying point when a scout element becomes lost or when it must move off the infiltration route or away from the observation post.

3-97. Threat analysis supports additional planning considerations. It assists in identifying the enemy's probable lines for deployment. It also assists with identifying lines of contact, battle positions, fighting positions, obstacles, security forces deployed for counterreconnaissance, and times of reduced alert status.

3-98. Availability of signal support is also a planning consideration for the troop commander. Possible signal support includes the provision of digital identification means and combat net radio retransmission capabilities for follow-on sections to maintain contact with the lead elements.

3-99. Other planning considerations include weather, casualty evacuation procedures, and an emergency resupply plan. Weather analysis helps to identify periods of reduced visibility. It can also predict the effectiveness of troop and enemy night observation devices.

Infiltration Execution

3-100. Paragraphs 3-102 through 3-111 describe the applicable operational considerations for executing the infiltration. Other considerations may apply, depending on the situation. The size of the infiltrating element depends on the assigned mission, available time, available cover and concealment, and acquisition capabilities of both friendly and enemy forces. The troop can infiltrate as a whole or by platoons. Infiltration can be executed mounted, dismounted, or in a combination of the two. Scouts insert into the AO by ground vehicles, aircraft, or watercraft, depending on the availability of equipment and the type of mission. The troop may use single or multiple infiltration lanes or zones.

3-101. The lanes or zones must have sufficient width to allow the infiltrating elements to change their planned routes and thereby to avoid contact. The troop commander enforces radio listening silence, except when the troop is in contact or when directed otherwise by the commander. Infiltration planning includes indirect fires. The troop employs fires only when the infiltrating element makes contact or when the commander employs fires at another location to divert attention from the infiltration lane. Fires can occur as troop mortars, artillery, rotary-wing or (in rare circumstances) fixed-wing air support, or a combination of all four. The commander's guidance engagement and disengagement criteria state actions on contact clearly. If the unit makes visual contact undetected, it will continue the mission. If detected, elements will execute actions on contact.

Infiltration Order of Movement

3-102. Troop commanders position themselves in the infiltration order of movement where they can best exercise mission command. When a penetration is required, they may initially locate with the maneuver force command group. The troop command post and the commanding officer may collocate with the stationary force command post to coordinate a forward passage of lines. The commander and the command post commanding officer track forward movement using JBC-P. The commander modifies the troop's scheme of maneuver based on the METT-TC (I) variables and directs necessary changes using FRAGORDs via JBC-P or by radio voice to combat net radio; this serves to maneuver the troop and ensure synchronization of effort.

Infiltration Methods

3-103. The troop can move as a unit or echeloned by individual platoons. Infiltration can be executed mounted, dismounted, or in a combination of the two. Insertion by ground vehicles, rotary-wing aircraft, or watercraft depends on the availability of equipment and type of mission. The techniques and procedures may

address shifts to alternate infiltration lanes, actions at rally points or objective rally points, and actions upon loss of communications. Paragraphs 3-104 through 3-110 detail information about the methods.

3-104. Employment by unit lends itself to mission command since the entire troop infiltrates at one time. The troop uses multiple lanes to gain flexibility. It infiltrates mounted and dismounted to conduct different Cavalry missions.

3-105. With the employment by section method, the entire troop can infiltrate at one time, which allows the commander to retain control over all troop elements. A troop can use multiple lanes to gain increased flexibility. The troop infiltrates using situationally appropriate mounted and dismounted movement techniques to conduct different tactical missions.

3-106. With the dismounted infiltration method, the troop commander directs scouts to conduct dismounted infiltration in the following conditions:

- Available time.
- Requirement for stealth.
- Expected or achieved enemy contact through visual means.
- Terrain or enemy-occupied or -dominated areas that scout vehicles cannot traverse.
- Primary concern for security.

3-107. With the mounted infiltration method, though the infiltration may be primarily mounted, dismounted activities may be required during the operation to achieve stealth and security. The troop commander directs scouts to conduct mounted infiltration in the following conditions:

- Limited time.
- Known enemy locations.
- Distance requiring mounted movement.

3-108. With the aerial insertion method, the planning and conduct of a troop aerial insertion is similar to an air assault operation. (See FM 3-99 for information on air assault operations.) The planning team must include the following: the squadron commanding officer; S-2; S-3; battalion or brigade logistics staff officer (S-4); battalion or brigade signal staff officer (S-6); FSO; aviation liaison officer; Air Force air liaison officer; and troop commander. The plan accounts for deceptive actions, use of reserves, suppression of enemy air defense, actions at the landing and pickup zones, and sustainment, including casualty and medical evacuations.

Note. FM 3-99, ATP 3-18.10, AR 95-1, and unit-specific SOPs or regulations provide additional guidance and considerations for insertion and extraction operations.

3-109. Though the single-lane infiltration method remains an option, the least desirable method of infiltration is by a single lane. It requires all infiltrating groups to move at intervals in the same lane. The troop commander uses the single-lane technique when METT-TC (I) variable analysis identifies only one gap in the enemy position. The troop commander considers the number of vehicles and dismounted Soldiers, time available, route concealment, and vehicle and Soldier time and distance intervals to prevent detection.

3-110. The multilane infiltration method is the preferable method of infiltration. The troop infiltrates by multiple lanes through two or more gaps in the enemy's defense.

Actions on Contact

3-111. When Cavalry elements infiltrate, the detection of one subordinate element may alert the enemy and compromise the entire mission. The troop rehearses techniques and procedures for actions with known and chance contact during infiltration (for example, detected subordinate elements return fire, break contact, and report). When the Cavalry unit makes visual contact but remains undetected, it bypasses the enemy force and continues the mission. The commander's intent clearly states what the unit is to do upon enemy contact.

Exfiltration

3-112. *Exfiltration* is the removal of personnel or units from areas under enemy control by stealth, deception, surprise, or clandestine means (JP 3-50). When the troop infiltrates to conduct its mission, it can expect to exfiltrate once the mission is complete. The commander plans for exfiltration in conjunction with infiltration

and refines the plan as the mission progresses. The commander plans for contingency exfiltration in the event conditions force the troop or subordinate elements to conduct an unplanned exfiltration. The troop order addresses actions for both planned and unplanned exfiltration.

Exfiltration Planning Considerations

3-113. Planning considerations for an exfiltration are like those for infiltration. The principles of route selection, movement formations, and movement security for infiltration apply during movement along exfiltration routes or to the extraction site. Exfiltration operations require additional time to account for unforeseen circumstances such as inadvertent contact with enemy forces or unexpected restrictive terrain. Exfiltration timing is critical from a standpoint of personnel morale and mission accomplishment. Commanders plan extraction before the operation, with alternate plans for contingencies such as the evacuation of sick or injured personnel. The plan addresses actions upon the loss of communications. When an element has missed a certain number of required transmissions, the commander assumes the element has a communications problem, is in trouble, or both. The commander prescribes a plan for no communication, the ability to resupply, and triggers for exfiltration that accounts for all possibilities. In addition, the plan addresses alternate forms of exfiltration in addition to a linkup with the element's vehicles. The OPORD may specify dismounted exfiltration or defending in place with a later linkup with advancing friendly forces. Any of these means serve as alternatives when the element's vehicles cannot extract the element or when capture is imminent.

3-114. Extraction points for the exfiltration of dismounted Soldiers lie far enough away from observation posts to ensure the enemy does not hear vehicle or helicopter noises. Mountains, dense foliage, and other similar terrain features can screen these noises. In flat, open terrain on a clear night, rotary-wing aircraft lose most of their audio signatures at approximately a 5-km distance. Commanders plan movement routes that put ridgelines, rivers, and other restrictive terrain between the unit and enemy forces. Near and far recognition signals undergo coordination, dissemination, and rehearsal prior to the mission. Lastly, primary and alternate linkup points never lie within a single azimuth leading away from the observation post of an exfiltration route.

Exfiltration Methods

3-115. Ground exfiltration is the preferable method when scouts are in stay-behind mode (withdrawal or delay). Exfiltration by ground is useful in the following conditions:

- Friendly lines are close.
- Widely dispersed enemy forces are present.
- Largely uninhabited areas exist along the route.
- Other methods are not feasible.
- Enemy forces are not conducting aggressive or active counterreconnaissance and security activities.
- Terrain is degrading the enemy's ability to maneuver against the exfiltrating element.
- Units must reach an extraction point after the execution phase of the mission is complete.

3-116. The abundant availability of ground vehicles makes extraction the most common method of exfiltration for troop elements. Generally, platform-based extraction is useful in the following conditions:

- Troop elements are covering long distances.
- Cover and concealment are lacking.
- Time of return is essential.

3-117. Extraction by air or water assets is preferable in the following conditions:

- Resources are available.
- Time requirements preclude any other extraction methods.
- Heavily populated hostile areas obstruct ground extraction.
- Their use does not compromise the mission.
- Enemy does not have air or naval superiority.

3-118. Extraction points lie far enough away from the enemy for extraction assets to remain undetected. The commander plans movement routes that put restrictive terrain between the unit and enemy forces. The

commander never places primary and alternate extraction points within a single azimuth leading away from the objective.

ROUTE RECONNAISSANCE

3-119. *Route reconnaissance* is a form of reconnaissance operation to obtain detailed information of a specified route and all terrain from which the enemy could influence movement along that route (FM 3-90). That route may be a cross-country mobility corridor. It provides new or updated information on route conditions such as obstacles, bridge classifications, and enemy and civilian activity along the route. Normally, the commander who assigns this mission wants to use a specific route for friendly movement. When the reconnaissance tempo has been identified as rapid or when the desired detail for specialized route information is high, the scout platoon receives augmentation of engineer reconnaissance capability.

ROUTE RECONNAISSANCE TASKS

3-120. Route reconnaissance includes the accomplishment of certain tasks, unless otherwise directed by the squadron commander. These tasks are neither presented as a checklist nor in sequential order, for some may not be necessary for mission accomplishment. Under time constraints, the commander directs reconnaissance toward specific information requirements only. The following are tasks associated with route reconnaissance:

- Find, report, and, based on engagement criteria, clear within capabilities all enemy forces who can influence movement along the route.
- Reconnoiter and determine the route's trafficability.
- Reconnoiter all terrain the enemy can use to influence movement along the route, such as chokepoints, ambush sites, and pickup, landing, and drop zones.
- Reconnoiter all built-up areas along the route.
- Reconnoiter all lateral routes.
- Inspect and classify all bridges in the area.
- Reconnoiter defiles along the route, clear them of enemy elements and obstacles, or locate a bypass.
- Inspect and classify all overpasses, underpasses, and culverts.
- Locate fords or crossing sites near all bridges on the route.
- Locate and clear all mines and barriers on the route and locate bypasses around any obstacles that cannot be cleared.
- Locate bypasses around built-up areas and contaminated areas.
- Submit route report.

ROUTE RECONNAISSANCE CONSIDERATIONS

3-121. Higher headquarters specifies the route, including the start point, release point, and other critical points along the route. It establishes airspace coordinating measures, specifies the reconnaissance start time, and designates a completion time. Using the provided IPOE products (including imagery), the troop commander analyzes the terrain to gain appreciation of the danger areas in the AO and the nature of the potential enemy. The troop commander determines how much terrain on each flank of the route to reconnoiter. Higher headquarters' constraints or restrictions also influence how much terrain to reconnoiter. The troop commander coordinates with other reconnaissance and surveillance assets to ensure support is available to the squadron and BCT prior to and during reconnaissance. The commander may direct a platoon to conduct route reconnaissance as a specific task in another mission. (See figure 3-5 on page 60 for a depiction of route reconnaissance.)

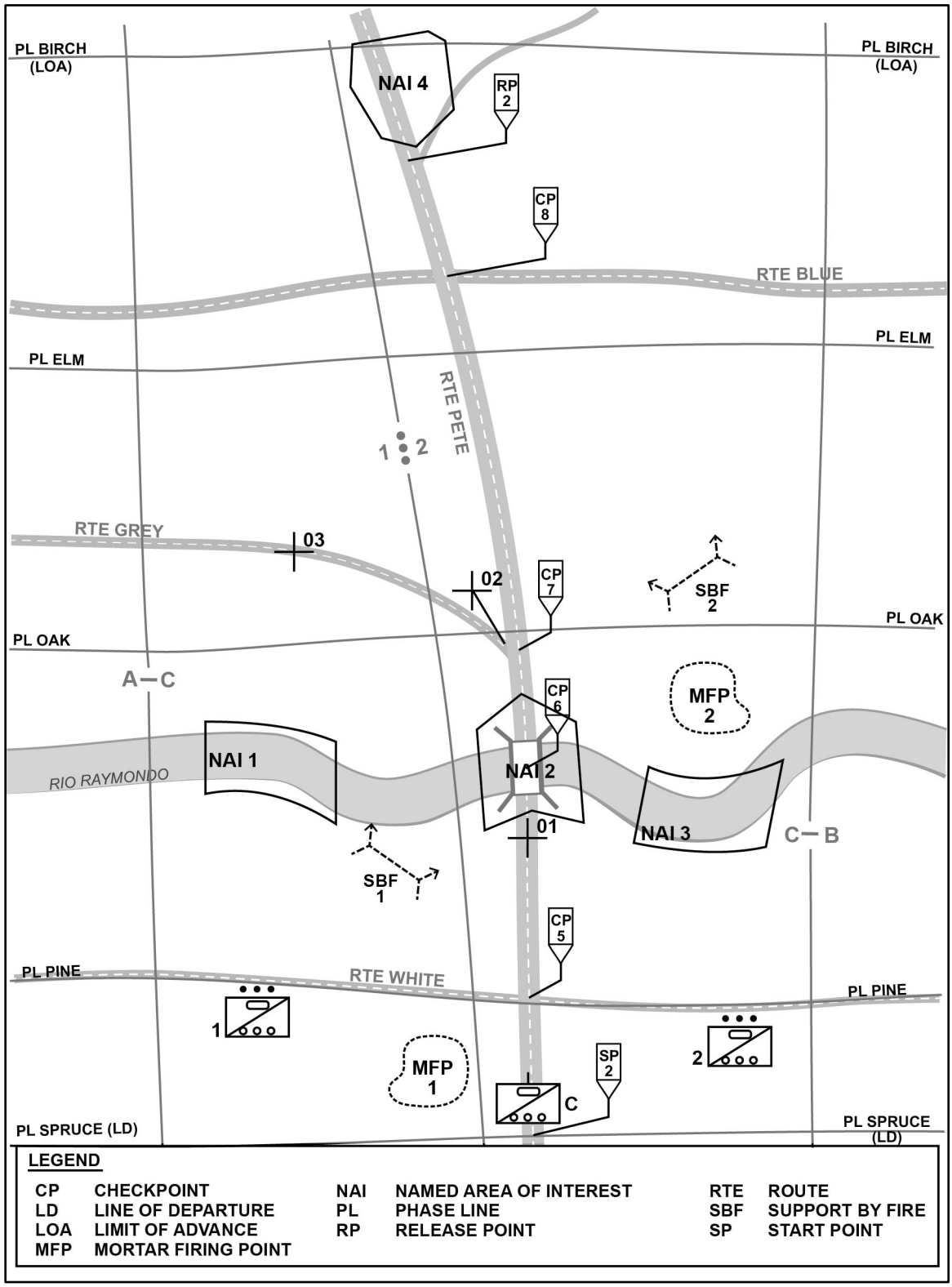


Figure 3-5. Stryker brigade combat team troop route reconnaissance

ROUTE RECONNAISSANCE PLANNING

3-122. The troop normally performs a tactical road march to the line of departure and deploys to execute route reconnaissance. The commander determines security requirements for the move to the line of departure based on the quantity and quality of intelligence about the enemy. The commander also considers the effect the final disposition of forces has on the troop's follow-on mission. The commander develops an operational concept—such as that depicted in figure 3-5—that yields route reconnaissance procedures. The zone reconnaissance planning considerations apply to the conduct of route reconnaissance, with the following additional civil considerations (See paragraphs 3-29 through 3-78 for additional considerations.):

- Local government jurisdictions that encompass the route.
- Relief agencies and other nongovernmental organizations using the route.
- Dislocated civilians using the route.

3-123. The commander develops the reconnaissance focus and tempo and reconnaissance of the route to answer the applicable information requirements (including requirements to reconnoiter and classify the route or designated portions of the route; requirements to conduct area reconnaissance of designated terrain on the flanks of the route). In addition, the commander selects movement techniques that support the reconnaissance tempo. Considerations for sustainment and communications during route reconnaissance are the same as those for zone reconnaissance. The troop commander specifies actions at built-up areas and actions upon contact with enemy forces or civilians. The commander specifies the transition to the follow-on mission upon completion of reconnaissance or upon the troop's reaching the limit of advance. Additionally, the commander plans the following:

- Synchronizing target acquisition assignments with reconnaissance tasks.
- Integrating other elements or assets into the reconnaissance effort, including UAS and Army aviation assets.
- Reconnoitering for contamination and bypasses by IEW systems, ground sensors, engineers, and CBRN reconnaissance elements.
- Determining locations and criteria for reconnaissance handover.
- Maintaining maximum indirect fire range forward of the platoons with fires and priorities of fires.
- Establishing bypass and engagement criteria.
- Developing graphic control measures that support the concept of operations, including those following:
  - Boundaries identifying the troop's zone and sector.
  - Subordinate element's boundaries lateral to the route to support reconnaissance on the flanks.
  - Routes with start points, release points, and checkpoints, or other critical points.
  - PLs and contact points for coordination with other elements.
  - Limit of advance.

RECONNAISSANCE IN FORCE

3-124. A *reconnaissance in force* is a form of reconnaissance operation designed to discover or test the enemy's strength, dispositions, and reactions or to obtain other information (FM 3-90). Battalion-sized task forces or larger organizations usually conduct reconnaissance in force. A commander assigns reconnaissance in force when the enemy is operating in an area from which the commander cannot obtain adequate intelligence by any other means. A unit may also conduct reconnaissance in force in restrictive terrain where the enemy is likely to ambush smaller reconnaissance forces. Reconnaissance in force is aggressive reconnaissance, conducted as an offensive operation with clearly stated reconnaissance objectives. The overall goal of reconnaissance in force is to determine enemy weaknesses to exploit. It differs from other reconnaissance operations because it normally attempts to gain information about the enemy and not the terrain. The commander plans for the retrograde or reinforcement of the force in case it encounters superior enemy forces. The commander also plans to exploit success.

3-125. A Cavalry troop usually conducts its portion of higher reconnaissance in force as an attack or as zone reconnaissance. The Cavalry troop requires augmentation to conduct reconnaissance in force since it must penetrate the security area of a larger enemy force. These augmentations include those following:

- Tanks.
- Aviation or UAS reconnaissance.
- Artillery (or missile) fire support.
- Engineer mobility and countermobility assets.
- Short-range air defense.
- CBRN reconnaissance assets.

3-126. Tasks for reconnaissance in force include those following:

- Penetrate the enemy's security area and determine the enemy's size and depth.
- Determine the location and disposition of enemy forces.
- Attack enemy positions and attempt to force the enemy to react by using local reserves or major counterattack forces, employing fires, adjusting positions, and employing specific weapon systems.
- Determine weaknesses in the enemy's disposition for exploitation.
- Locate obstacles and create lanes as specified.
- Enter AOs in complex terrain not previously occupied by friendly forces, such as urban environments.

3-127. A unit conducting reconnaissance in force performs tasks within its capabilities. When it does not have the time or resources to complete all these tasks, the troop commander informs the higher commander assigning the mission. The higher commander then issues further guidance on which tasks the troop must complete or restates the priority of tasks, which is usually clear from the reconnaissance objective. Whenever, after starting reconnaissance in force, the troop determines it cannot complete an assigned task, it must report to the higher commander and await further instructions.

3-128. The tasks for the Cavalry troop are attack or zone reconnaissance to support the squadron reconnaissance in force. Paragraph 3-30 lists the zone reconnaissance tasks. FM 3-98 provides the tasks of the higher command during reconnaissance in force.

COMBAT FORMATIONS

3-129. The troop uses different formations based on the METT-TC (I) variables. The troop may use a combat formation as part of reconnaissance in force. The troop moves in one of the movement formations during tactical operations—column, line, vee, wedge, echelons, diamond, and box. The troop uses two types of formations—coil and herringbone—to provide security during halts. All these formations are flexible in execution. The troop commander often modifies them by the situation, enemy, terrain, and factors within the troop itself (for example, task organization, combat losses). The formations become second nature for all troop elements, so the troops can transition into and out of the various movement formations easily and quickly. (See FM 3-90 for more information on movement formations during combat.)

TROOP COLUMN AND STAGGERED COLUMN

3-130. The troop uses the column formation when moving on a designated route, when speed is essential, and when contact with the enemy is not expected. Column formation moves the troop quickly and efficiently from one place to another. In column formation, the troop usually moves at a designated speed and with a set distance between vehicles. The situation and the troop's SOPs determine the march speed and the distance between the vehicles. In most situations, the column formation allows the fastest movement of any formation. It facilitates effective control of the troop during the move but leaves the troop vulnerable to enemy air or ground attack.

3-131. The staggered column is a modified column formation with elements offset rather than in roughly straight alignment (as in the column). Advantages of the staggered column include all-around observation and fields of fire and enhanced overwatch capability. The staggered column often entails vehicles moving off or near the edge of the roadway, so leaders must exercise extreme caution to avoid mines.

TROOP LINE

3-132. The troop line formation, in which elements are roughly abreast during movement, is applicable to nearly all troop missions, including the conduct of defensive tasks. It affords maximum reconnaissance (and applicable firepower) forward over a wide frontage. A key disadvantage is the requirement for overwatch from external or adjacent elements because vehicles or elements moving on-line can provide only limited security.

TROOP VEE

3-133. The troop vee formation is common to reconnaissance and security missions. Its purpose is to provide maximum reconnaissance or firepower forward and to enhance mission command. The forward platoons conduct most of the information-gathering, reporting, and security tasks while the rear platoons and headquarters element, positioned in depth, provide overwatch and protection and control the forward movement of the troop.

3-134. In addition to positioning maximum assets forward, the vee formation allows the troop commander to mass combat power at the decisive point. It also gives the troop depth, flexibility, and immediate mutual support during movement. Disadvantages include limited firepower to the front and somewhat limited security compared to other formations.

Note. One means of enhancing the security of the vee formation is to position the troop mortars in or near the center of the formation and thereby provide indirect fire support across the troop front.

3-135. The troop split-vee is a variation of the vee formation. Reconnaissance and security missions employ it in conjunction with the traveling overwatch movement technique. In the split-vee formation, the forward platoons move approximately abreast to provide maximum reconnaissance or security. The rear platoons, when the troop has three or more platoons, work in depth, but each rear platoon initially follows one of the forward platoons while it conducts the operation. The rear platoons key their movement to the progress of the forward platoons, based on guidance from the troop commander.

3-136. The split-vee allows the rear platoons to maintain positions from which they can provide necessary support rapidly to the forward platoons. In turn, the forward platoons can reconnoiter routes and positions for the rear platoons. A key disadvantage of the split-vee is its limited firepower to the front.

TROOP WEDGE

3-137. The wedge formation, though not a typical Cavalry formation, may occur when enemy contact is likely and when the troop must fight for information. The wedge provides elements with effective local security and mutual support. It allows the troop to employ responsive firepower to the front and flanks and to shift fires rapidly. A disadvantage of the wedge is its limited reconnaissance capability to the front.

TROOP COIL AND HERRINGBONE

3-138. The troop uses the coil and herringbone formations to establish effective all-around security during halts. The troop commander develops SOPs for the formations and conducts rehearsals, so correct execution becomes automatic for all elements.

3-139. The coil formation provides a perimeter defense during extended halts or lulls in the operation. Platoons and other elements position themselves in a roughly circular formation to cover enemy avenues of approach to their positions.

3-140. The troop uses the herringbone formation when it must assume a hasty defense with 360-degree security during a short halt. Scouts may dismount to provide greater security, and elements move off the road when the terrain allows.

Note. When executing the coil or herringbone formation, platoons and other elements exercise extreme caution to avoid mines emplaced off or along the edge of the roadway.

SPECIAL RECONNAISSANCE

3-141. *Special reconnaissance* comprises reconnaissance and surveillance actions conducted as a special operation in hostile, denied, or diplomatically and/or politically sensitive environments to collect or verify information of strategic or operational significance, employing military capabilities not normally found in conventional forces (JP 3-05). These actions provide an additive capability for commanders and supplement other conventional reconnaissance actions. Even with long-range sensors and overhead platforms, some information in the target area may only come from visual observation or other collection methods. Special operations forces can gain access to denied, hostile areas, worldwide communications, and specialized aircraft and sensors, so they can conduct special reconnaissance against targets inaccessible to other forces.

3-142. Cavalry troops are the most likely to encounter special reconnaissance forces. Therefore, Cavalry troops prepare to conduct reconnaissance handover with special reconnaissance forces. Special reconnaissance activities include environmental and armed reconnaissance, target and threat assessment, and post-strike reconnaissance. (See JP 3-05 for more information on special reconnaissance.)

Note. The troop commander maintains knowledge of the capabilities of electromagnetic reconnaissance and how to request augmentation. *Electromagnetic reconnaissance* is the detection, location, identification, and evaluation of foreign electromagnetic radiations (JP 3-85), or energy, generally reserved at BCT or higher. It is an action to support information collection and an element of tactical task reconnaissance.

SECTION III – RECONNAISSANCE HANDOVER

3-143. *Reconnaissance handover* is the action that occurs between two elements to coordinate the transfer of information and responsibility for observation of potential threat contact, or the transfer of an assigned area from one element to another (FM 3-98). It may cover an area or zone such as an AO, an NAI, or a TAI. It may involve visual, electronic, digital, or analog observation and information sources or any combination of these. It is usually associated with a designated reconnaissance handover coordination point or with a PL designated as a reconnaissance handover line.

3-144. A reconnaissance handover provides the information connection, the overlapping communications, and the commander's reconnaissance focus required when planning and executing layered reconnaissance and surveillance operations with multiple assets. The commander's focus may differ for each echelon. (See FM 3-98 for more information on reconnaissance handover.)

RECONNAISSANCE HANDOVER PLANNING CONSIDERATIONS

3-145. Reconnaissance handover shares several tasks with battle handover, including relief in place, linkup, and passage of lines. (See FM 3-90 for more information on battle handover and its associated tasks.) Unlike battle handover, however, it does not imply direct fire contact.

RECONNAISSANCE HANDOVER PREPARATION

3-146. The troop begins coordination as soon as it identifies the reconnaissance handover requirements between units. The commander finds handover criteria in the higher headquarters order. Coordination includes establishing any necessary communication plan between the units. The communication plan includes the following: radio frequencies; net identifications; need lines for the Enhanced Position Location Reporting System; host files for the linkup (when units are on different Maneuver Control Systems); and communications security variables for communications. Recognition signals are established and confirmed to prevent fratricide. When necessary, the troop coordinates indirect fires and fire support coordination measures, critical friendly zones, preplanned targets, final protective fires, and obscuration missions.

3-147. Troops conduct coordination to identify the transfer of command relationships for subordinate platoons and elements between units as necessary. A technique is for the troop to leave a scout section in contact with an enemy security element while the rest of the troop continues reconnaissance farther into the AO. As the squadron shifts the handoff between the units, the follow-on unit may accept operational or tactical command of the scout section until one of its own sections is able to relieve the original scout section

currently observing the enemy element. Additionally, higher headquarters may issue on-order missions to other information collection assets to assist in the handover. A technique is to task a UAS to establish and maintain contact with a moving force while conducting a reconnaissance handover between the troops and a follow-on unit. As reconnaissance handover becomes imminent and final coordination begins, this level of coordination supports the reconnaissance handover by allowing the UAS maximum time on station and ensuring redundant observation during handover. Reconnaissance handovers also occur between other elements, like the airspace control system.

3-148. Rehearsals are important before executing any reconnaissance handover. During rehearsals, elements involved in the reconnaissance handover synchronize their plans and SOPs to ensure clarity and shared understanding during execution. (See FM 6-0 for additional information on the conduct of rehearsals.)

RECONNAISSANCE HANDOVER EXECUTION

3-149. The troop may conduct reconnaissance handover with follow-on or security (stationary) forces, may accept reconnaissance handover from a forward force, or may control the handover between subordinate elements. The requirement to maintain liaison and exchange information becomes even more important as the distance closes between the forces executing reconnaissance handover. Units may establish liaison by collocating commanders, XOs, and command posts appropriately. The follow-on unit may attach a scout section to the troop to facilitate coordination and handover. The unit may establish a face-to-face liaison. When a face-to-face liaison is not possible, units establish a reliable digital or voice linkup to exchange critical information.

3-150. When conducting a face-to-face linkup, units perform a final coordination, exchange information, and then confirm reconnaissance handover is complete based on the specified criteria. When conducting target handover, the accepting unit acquires the target before handover is complete. The unit handing over responsibility supports the accepting unit by executing responsibilities of the stationary unit while conducting a forward passage of lines or relief in place. When follow-on forces are conducting an attack, the unit handing over reconnaissance may facilitate the attack by conducting reconnaissance pull, executing targeting, and employing previously coordinated indirect fires. (See FM 3-90 for information on those responsibilities.)

This page intentionally left blank.

Chapter 4
Security Tasks

Troop missions often transition from reconnaissance to security along the front, flank, or rear of friendly units and populations who and facilities and areas that require protection from unforeseen circumstances. Security tasks provide the protected force with the reaction time and maneuver space necessary to react to the enemy, to develop the situation, and, thus, to allow commanders to employ the force effectively. Troops often perform security operations as part of a squadron security operation, but they can perform security independently as situations allow.

The main difference between the conduct of security and reconnaissance is security orients on the force, populations, facility, and area to protect while reconnaissance seeks information on the enemy, populations, infrastructure, and terrain. The reconnaissance objective is the most important of the desired results from the applicable reconnaissance effort.

SECTION I – BASICS OF SECURITY TASKS

4-1. Security tasks provide higher commanders with reaction time and maneuver space to react to the enemy and to develop the situation. Four security operations exist—screen, guard, cover, and area security. Cavalry troops are incapable of cover and cannot conduct guard without significant augmentation.

4-2. The Cavalry troop organization and organic equipment make it difficult to execute a security mission above screen without augmentation. The troop may participate in some other security tasks as a member of a robust combined arms force. Commanders at all levels consider the METT-TC (I) variables when employing units in a security role.

4-3. Current trends stress the likelihood of Cavalry troops conducting operations in noncontiguous, extended AOs, possibly creating significant gaps. The troop commander uses all available assets to minimize these gaps. Despite the continual evolution of sophisticated sensors and collection assets, a troop's common operational picture is never perfect, especially in conditions of limited visibility or adverse weather. The troop prepares to conduct security missions because uncertainty is always present in an AO.

SECURITY FUNDAMENTALS

4-4. Successful security operations depend on properly applying the five fundamentals of security. (See FM 3-98 for information on each of the five security fundamentals.) These fundamentals follow:

- Provide early and accurate warning.
- Provide reaction time and maneuver space.
- Orient on the force, facility, or area to be secured.
- Perform continuous reconnaissance.
- Maintain enemy contact.

Note. During stability operations, providing early and accurate warning is much harder to achieve. Proximity to the local population results in less distance and less reaction time. When friendly forces alienate the local populace, detecting threats becomes more difficult because locals are less likely to warn U.S. Forces of pending threats and threat developments.

COMMANDER'S SECURITY GUIDANCE

4-5. The commander's security guidance has unique components that require additional consideration and planning to the reconnaissance guidance. (See FM 3-98 for more information on security task planning.) Like the squadron commander, the troop commander analyzes the AO and builds the necessary depth to provide reaction time and maneuver space to the force being protected. The troop commander determines appropriate

observation post types and locations, oriented on the force to secure. The commander develops requirements such as the time to establish an observation post, augmentation, intelligence support, and fire support planning, as well as integrating engineers, air-ground operations, and logistics. Also planned are special requirements in addition to mission command and sustainment asset locations.

4-6. The Cavalry troop commander develops the security guidance in line with the squadron commander's security guidance and the squadron's overall concept of operations. Understanding this guidance aids the Cavalry troop commander in planning and executing the troop's mission. The squadron commander's dialogue enables the troop commander to clarify troop guidance and intent for subordinate leaders. Dissemination of the Cavalry troop commander's guidance to the lowest level ensures all leaders and Soldiers understand and can execute the mission. (See FM 3-98 for information on the commander's dialogue.)

SECURITY FOCUS

4-7. The security focus provides the what and the why for the Cavalry troop's conduct of the task of protection. It is defined by the security objective, and it outlines the anticipated outcomes of the security operation. Threat, terrain, civil, and friendly are the four areas comprising the security focus. Throughout the security operation, the security focus may shift.

4-8. The commander uses the security emphasis to decide which tasks to prioritize, how important they are, and how they relate to any goal and to the desired end state. Additionally, concentration enables scout platoon leaders to focus their operations on safeguarding the most vital activities and on gathering the most crucial information for higher headquarters.

4-9. The Cavalry troop's security objectives are identified and prioritized within the maneuver plan, guiding their security assets in the AO. "As an example, the security objective may constitute locating and defeating enemy reconnaissance forces [within the troop's capabilities,] providing early warning and reaction time to the main body, or protecting the main body from enemy observation and engagement." (See FM 3-98 for more information on security focus.)

SECURITY DURATION

4-10. Troop commanders can establish time requirements for the purpose of security operations planning through the clear articulation of the durations of those security operations. The method for establishing observation posts (mounted or dismounted), battle positions, lengths of UAS rotations, and necessary logistical and communications support inform troop commanders in their security duration determinations. Troop commanders also consider various factors such as tasks, CCIRs, LTIOVs, tactical risk, movement techniques, reconnaissance methods, and formations when determining security durations. Durations are identified as short (lasting under 12 hours) and as long (lasting over 12 hours). How long a security duration lasts sometimes depends on depth. For example, screen missions require the time necessary for proper deployment into screen areas and then the achievement of the required depth throughout the AO.

4-11. Observation posts established for a short duration are expected to execute directed security tasks within a 12-hour period. Cavalry troops "establish short duration observation posts quickly, so [the troop commanders] can take advantage of available time and mass reconnaissance assets by maximizing the number of observation posts and associated observing forces on the ground and in the air for a short period."

4-12. Cavalry troops establish long duration observation posts for periods to exceed 12 hours. In a long duration security operation, the number of established observation posts decreases to allow platoons to allocate additional forces to each observation post and to manage staff rotation and rest. The troop provides adequate resupply of all classes of supply to support those observation posts operating for extended periods.

ENGAGEMENT AND DISENGAGEMENT CRITERIA

4-13. The squadron commander provides Cavalry troops with engagement and disengagement criteria for the security operation. The troop commander revises that engagement and disengagement criteria for the platoons after assessing the designated AO and security focus. "Engagement criteria direct the [troop] either to engage and destroy enemy reconnaissance assets or to allow enemy reconnaissance assets to [bypass] to identify, disrupt, or isolate the enemy's second-echelon forces with direct and indirect fires." The squadron disseminates a plan to maintain contact with enemy reconnaissance assets that bypass the security force.

4-14. Engagement criteria identify two themes—under which conditions the Cavalry troop can attack enemy forces, and what the troop can attack within its capabilities and task organization. The Cavalry troop receives restrictive engagement criteria when the higher headquarters desires the security force to remain hidden while reporting on enemy composition and disposition. It receives unrestrictive engagement criteria when the higher headquarters directs the destruction of enemy reconnaissance assets within the troop's capabilities or when an aggressive counterreconnaissance effort is required.

4-15. The troop commander receives engagement and disengagement criteria for security operations from the squadron commander. By design and through planning, the disengagement criteria serve to prevent the decisive engagement of the Cavalry troop. The disengagement criteria indicate those conditions or sizes of enemy forces that could overmatch the troop or spoil the mission objectives upon contact. Disengagement moves the troop to a location that prevents the enemy force from engaging the troop through direct fire contact or observed indirect fires.

4-16. Disengagement criteria in security operations are often linked to planned transitions, which depend upon the conditions for a squadron as a whole to break contact with the enemy or the anticipated duration of a security operation. A Cavalry troop may meet their disengagement criteria to avoid decisive engagement or enemy overmatch.

Note. The troop commander plans for actions conducted during a screening mission that will allow the enemy to penetrate the screen, knowingly or unknowingly, in accordance with the bypass criteria and engagement criteria.

SECTION II – TYPES OF SECURITY TASKS

4-17. Leaders categorize security operations in terms of the degree of security provided and the amount of combat power required. (See FM 3-98 for more information on categorizing security operations.) The four primary types of security operations follow:

- Screen:
  - Stationary.
  - Moving (flank and rear).
- Guard:
  - Advance guard (stationary and moving).
  - Flank guard (stationary and moving).
  - Rear guard.
- Cover:
  - Offensive cover (advance and flank).
  - Defensive cover (front, flank, and rear).
- Area security:
  - Route security.
  - Convoy security.

4-18. The four types of security operations provide varying levels of protection to the protected force and are dependent upon the size of the unit conducting the security operation. Screen operations provide early warning to the main body. Guard operations prevent enemy observation and direct fire on the main body. Cover operations protect the main body from enemy observation and effective direct fire. Area security protects friendly installations, routes, units, and facilities in a prescribed area.

4-19. All types of security operations provide protection and early warning to the protected force. These benefits, in turn, provide reaction time and maneuver space to the protected force and preserve freedom of action. Commanders consider the following when assigning a security mission and employing a security force:

- Force or area to secure.
- Location and orientation of the security area.
- Initial location and types of observation posts as applicable.
- Time allocated to establish the security operation.
- Criteria for transitioning from the security operation to offensive operations.
- Task organization and augmentation of security forces.
- Level of protection and briefest warning time requirements.
- Threat considerations such as the smallest enemy element allowed passage without engagement or the threat's capability to influence the main body's activities.

4-20. ATP 3-37.10 provides information on local security activities. The troop provides local security by—

- Establishing a contiguous, defensive perimeter around its location.
- Employing obstacles and command-detonated munitions around and inside the defensive perimeter.
- Conducting stand-to.
- Using effective camouflage.
- Using observation posts and patrols.
- Employing strict movement control.
- Enforcing noise and light disciplines.
- Enforcing operations security.
- Employing proper communications procedures.
- Establishing specific alert levels within the troop.

Note. Local security is a priority of work and the responsibility of all units as a force protection measure. *Local security* is the low-level security activities conducted near a unit to prevent surprise by the enemy (ADP 3-90). It involves avoiding detection or deceiving the enemy regarding friendly actions, positions, and intentions. It includes finding enemy forces in the immediate vicinity and knowing as much about their positions and intentions as possible. Units use active and passive measures to provide local security.

SCREEN

4-21. A *screen* is a type of security operation that primarily provides early warning to the protected force (ADP 3-90). A screening troop is a security element who primarily observes, identifies, and reports information related to a commander's PIRs. Concurrently, it aggressively executes counterreconnaissance, which impedes, harasses, or destroys the enemy's reconnaissance effort. Although a screen provides the least amount of protection of any security mission, it is appropriate when operations have created extended flanks, when gaps between forces exist that are not secured in force, or when early warning is needed over gaps that are not considered critical enough to require security in greater strength.

4-22. Troops plan screens in depth. "Depth prevents the threat from easily identifying and penetrating the screen, prevents gaps from occurring when observation posts displace, and facilitates the destruction of enemy reconnaissance elements without compromising critical observation posts."

4-23. Troops screen a stationary force to the front, flanks, and rear of the main body and a moving force to the flanks or rear. Screening operations are not conducted forward of a moving force. Cavalry troops conduct zone reconnaissance, reconnaissance in force, or part of a guard forward of a moving force. Their commanders plan a series of observation posts, augmented with patrols, to surveil dead space and establish a screen.

4-24. Execution considerations guide screen planning. Tasks that a Cavalry troop conducts for the screen include the following:

- Maintain continuous surveillance of all avenues of approach that affect the main body's mission.
- Conduct counterreconnaissance to destroy, defeat, or disrupt all enemy reconnaissance elements in accordance with engagement criteria.
- Allow no enemy ground element to pass through the screen undetected and unreported.
- Locate and identify the lead elements who indicate the enemy's main attack, as prescribed in the enemy's order of battle, based on the IPOE (when facing an echeloned enemy force).
- While displacing, determine the direction of enemy movement, maintain contact, and report threat activities.
- Maintain contact with the protected force and other forces operating on its flank.
- Detect and report all enemy elements attempting to pass through the screen, both ground and aerial, to provide the protected force commander with early warning of enemy activities.
- Maintain contact with enemy forces and report activity in the assigned area.

EXTENDED SCREEN

4-25. When the METT-TC (I) variables dictate an extended screen across frontages that will exceed what the Cavalry troop can effectively accomplish, the troop commander, as part of mission analysis, determines where to accept risk in the extended screen based on the IPOE analysis. The troop commander also identifies what additional augmentation is required to cover the AO.

DEPTH

4-26. Depth allows one element of the screen to pass enemy contact to another element without displacement by conducting a reconnaissance handover. Screen lines only apply to the security provided along the forward trace. Depth allows the troop to accomplish the following:

- Prevent the enemy from identifying and penetrating the screen.
- Prevent gaps in the screen from occurring with displaced or destroyed screening elements.
- Facilitate the destruction of enemy elements without compromising critical observation posts.
- Maintain contact with enemy elements without compromising observation posts.

4-27. Troop commanders assign platoons areas for multiple observation posts to establish a screen and depth. They plan section-level operations in depth to support their security plans. Often, the observation posts on a screen do not support each other by direct fire. At the minimum, the observation posts must support and overlap by observation while still observing NAIs and avenues of approach. The mortar section positions behind the screen, where they can support all elements of the screen. The degree to which depth can be attained is a function of many factors, including those following:

- Higher commander's intent and concept as expressed in the OPORD.
- Geographical location of the screen based on time-distance analysis.
- Positioning of the protected force, population, facility, or area.
- Engagement and disengagement criteria.
- Width of the AO.
- Terrain and avenues of approach the element will support.
- Attachments and detachments.
- Logistical and fire support from the main body.

STATIONARY SCREEN

4-28. Planning considerations include establishing observation posts in depth and conducting patrols to ensure adequate surveillance of the assigned AO. Screens are active, with stationary observation posts as only one part of the mission. To ensure continuous, overlapping surveillance, the troop employs observation posts, patrols (mounted and dismounted), aerial reconnaissance, and sensors.

4-29. A troop executing a screen requires a minimum of guidance from higher headquarters. The troop commander evaluates each of the following considerations, which paragraphs 4-30 through 4-40 further address, when developing the troop plan and information collection plan:

- Location of the initial screen.
- Movement or maneuver to occupy the screen.
- Assigned AOs for subordinate elements.
- Security.
- Air and ground integration.
- Surveillance and acquisition assets.
- Fires.
- Protection.
- Mission command.
- Sustainment.
- Control of displacement to subsequent positions.
- Reconnaissance handover between screening elements.

Screen Location

4-30. The troop commander determines the likely enemy avenues of approach based on detailed IPOE and directs the screen accordingly. The troop commander uses platoon boundaries, PLs, and recognizable terrain features to assign subordinate AOs. The troop commander maintains knowledge of the capabilities and limitations of organic and attached sensors and arrays them along the screen line to maximize their effects.

Stationary Screen Occupation

4-31. The troop commander determines whether the troop is to conduct zone reconnaissance, infiltration, or tactical road march to the screen based on time-distance analysis of both friendly and enemy units. The troop commander keeps the screening force within logistical and fire support range of the main body. The troop commander considers the time required to establish primary positions, identify subsequent positions, rehearse displacement lanes, and emplace mortars.

Observation Post Emplacement

4-32. The troop commander is responsible for planning the emplacement of section-level observation posts to gain observation on assigned NAIs. The commander provides mission orders and security guidance to subordinate platoons and other attachments with the commander's intent and security guidance. That guidance also develops the indicators for subordinates to seek in NAIs.

Trigger Line and Decision Point Defining

4-33. The troop commander develops specific engagement and disengagement criteria for the platoons to trigger specified actions. These can include displacement to secondary observation posts or the initiation of direct or indirect fires against the enemy. Producing a well-developed set of engagement, disengagement, and displacement criteria for the subordinate units allows the commander to exercise effective control over the troop.

Engagement Area Development

4-34. Troop commanders and platoon leaders conduct an abbreviated or limited form of engagement area development during screens and area security missions or anytime they are employing observation posts. Screens use engagement areas wherever the commander anticipates engaging enemy reconnaissance elements. The commander follows the seven engagement area development steps and plans them in depth throughout the screen. Troop engagement area development is a complex function and requires parallel planning from the squadron to the platoon levels for a scout platoon.

Stationary Screen Planning Considerations

4-35. Proper engagement area development is vital for both the troop and the scout platoons to develop and provide adequate security for the assigned zone or area. The troop commander takes into consideration the environmental factors and the capabilities of the augmentation forces, along with the organic enablers and scout platoons, while planning execution of the troop's mission. The environmental factors are as follows:

- The natural defensive characteristics of the terrain.
- Existing roads and waterways for military lines of communication and civilian commerce.
- The control of land and water areas and avenues of approach surrounding the area to be secured, extending to a range beyond that of enemy artillery, rockets, and mortars.
- The control of airspace.
- The proximity to critical sites such as airfields, power generation plants, and civic buildings.

Mobility, Countermobility, and Survivability

4-36. The troop commander addresses the mobility of screening forces during planning by developing a detailed terrain and enemy analysis and subsequently developing a maneuver plan to address those factors. The troop commander develops primary and alternate routes and lanes to direct subordinate units during displacement. The troop commander impedes enemy maneuver using fires and obstacles. The troop commander improves the survivability of the force through detailed planning and synchronization of enablers such as the use of indirect fire obscuration to support displacement. A troop commander is unlikely to have a prepared position due to the nature of a screen. Thus, the troop commander uses the terrain and enabler capabilities deliberately.

4-37. To develop passage lanes or routes and to identify passage gaps and passage points, the troop commander coordinates with the supported unit. These efforts prevent fratricide, enable troop elements to displace, and allow the protected force to pass forward of the screen. The troop commander plans and disseminates near and far recognition between the passing and stationary units. (See FM 3-90 for more information on gaps.)

4-38. In the positioning of mission command nodes, the troop commander places the troop command post in a location from which to maintain communication with subordinate elements and higher headquarters and to develop situational awareness. The command post remains highly mobile, displaces often, and may move continuously—all the while outside of enemy contact—while undergoing incorporation into the troop displacement plan.

4-39. As regards sustainment, the troop commander determines how to resupply screening platoons while maintaining contact with the enemy. A troop commander can establish service stations at troop or platoon level or can pre-position caches at planned subsequent positions. At each resupply point, the troop commander determines the appropriate types and amounts of supplies by the classes of supply. Commanders will time the occurrences of resupply for each resupply point to avoid unit contact with the enemy. Casualty collection points can serve as troop internal logistic release points established by the 1SG, where platoon sergeants conduct linkup and transfers of casualties and supplies. The troop commander plans resupply following the troop's displacement and passage of lines prior to conducting a follow-on mission.

4-40. When elements of the screen displace to other or alternate positions, the displacement is normally event driven. The screen continues to maintain contact and provide security while displacing (see figure 4-1 on page 74). The following factors may dictate displacement:

- Approach of an identified, specified enemy element.
- Detection by an enemy force.
- Relief by a friendly unit.
- Movement of the main body.

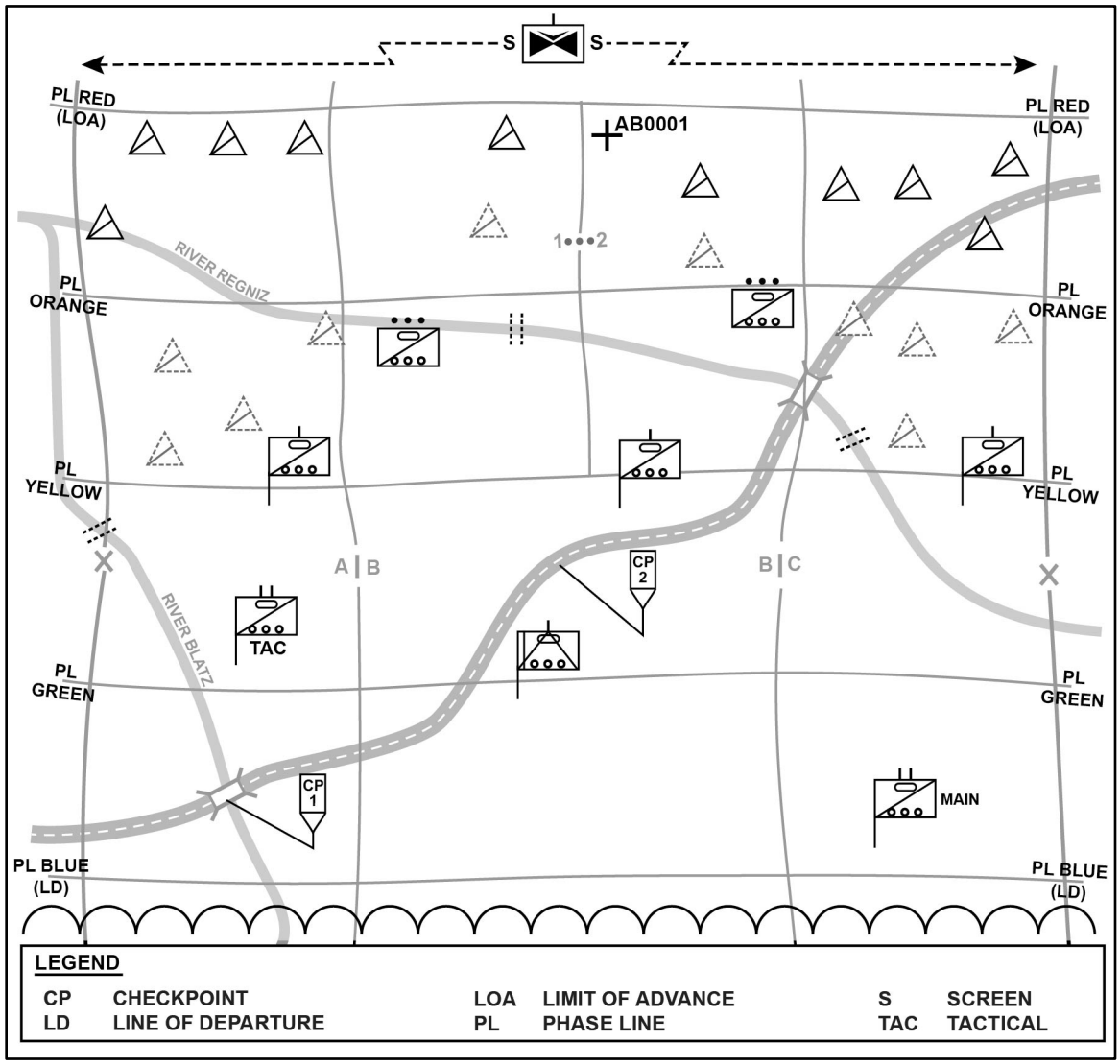


Figure 4-1. Stryker brigade combat team troop stationary screen

MOVING SCREEN

4-41. The troop can conduct a moving screen to the flank or rear of a moving force. The troop does not screen forward of a moving force. Screening the rear of a moving force is essentially the same as a stationary screen. As the main body moves, the troop occupies a series of successive positions. The main body commander directs time and distance factors to maintain movement. Sensors or UASs can enhance the screen during the maneuver of scout platoons or sections, and they can work to extend the areas of coverage.

4-42. The planning considerations for a stationary screen also apply to a moving screen. However, the commander needs also account for the movement of the main body. The moving flank screen poses additional considerations. The width of the screen area is not as important as maintaining orientation on the main body and maintaining continuous observation of avenues of approach that might affect the main body's maneuver.

Moving Screen Graphic Control Measures

4-43. The inherent dual orientation of a moving flank screen (the direction of movement versus orientation of the screen) poses challenges for operational control. Graphic control measures facilitate both orientations. While the use of graphic control measures and the requisite planning may seem excessive, they provide

maximum flexibility in terms of mission execution. Troop commanders will issue FRAGORDs to adjust the plans to the enemy situation using these control measures. The procedures in paragraphs 4-44 through 4-46 apply when using graphic control measures for a moving flank screen.

Phase Lines

4-44. Troop commanders use PLs to control the unit's movement. The troop commander plans to use these PLs as on order boundaries to control platoon movement (parallel to the main body's direction of travel). The commander places PLs based on the planned width of a scout platoon's screen (perpendicular to the main body's direction of travel). The troop commander does not divide avenues of approach with a PL. Troop commanders use PLs rearward of the initial screen to control retrograde movement (toward the main body). The troop commander uses PLs as subsequent (on order) screen lines.

Objectives, Checkpoints, and Axis of Advance

4-45. The commander can use objectives, checkpoints, or an axis of advance to control the movement of task-organized maneuver platoons and teams in a command relationship to the troop. The commander positions these forces to support the scouts on the moving screen. When the scouts make enemy contact, the commander can use these control measures to designate battle positions for these maneuver forces to occupy. The commander also plans subsequent (on order) battle positions between the screen limit of advance and the main body. The conduct of a delay by the troop using these battle positions provides additional time for the protected force to react to the enemy attack.

Mortar Firing Points

4-46. The commander uses mortar firing points or checkpoints to control movement of the mortar section. The commander positions firing points rearward of the screen line, where they allow the mortars to fire two-thirds of the maximum range forward or to cover likely avenues of approach. The commander plans subsequent (on order) mortar firing points between the screen line and the main body.

Note. The screen's scheme of maneuver and engagement and disengagement criteria nested within the BCT plan define the conditions or time criteria triggering transition. PLs and checkpoints control transition. Transition of a screening unit is a decision point that marks a shift from security operations to offensive or defensive operations. The moving screen is event driven. It takes the form of triggers related to the movement of the main body in conjunction with survivability considerations for the screening elements.

Moving Screen Occupation

4-47. The troop uses three basic techniques for occupying a moving force's flank screen. The factors for employing a specific technique, or a combination of techniques, are the enemy situation (and available knowledge about the enemy), squadron commander's intent, speed at which the main body is moving, screening force's capability, and terrain. All three methods require the troop to maintain contact with the main body, orient the screen in relation to the main body's maneuver, and conduct reconnaissance and screen in two directions (to the flank of the main body and to the direction of travel). The three methods follow:

- Tactical road march.
- Movement to contact.
- Zone reconnaissance.

Tactical Road March Method

4-48. In the tactical road march method, the troop crosses the line of departure separately from the main body and conducts a tactical road march in an AO parallel to the force. The troop then deploys from a release point to the initial screen positions and orientation. Platoons occupy observation posts as they reach them. UASs can conduct surveillance forward of the troop or assist in maintaining contact with the main body. Sensors can augment observation posts by providing long-range surveillance of enemy avenues of approach. The parallel tactical road march technique is the fastest but least secure technique for providing a flank screen for

a moving force. This technique is appropriate to employ when the main body is moving very quickly, the line of departure is not a line of contact, or earlier reconnaissance and security indicates enemy contact is not likely in the area through which the troop is moving.

Movement to Contact Method

4-49. In the movement to contact method, the troop crosses the line of departure separately from the main body and conducts zone reconnaissance in an AO parallel to the force. Platoon elements establish the screen as they arrive at their positions. This technique is appropriate to employ when the main body is moving slowly, the line of departure is not a line of contact, or earlier reconnaissance indicates enemy contact is possible in the troop's AO.

Zone Reconnaissance Method

4-50. In the zone reconnaissance method, the troop crosses the line of departure with the main body and conducts zone reconnaissance out to the screen. This technique requires more time but provides the most security for the main body. This technique is appropriate to employ when the main body is moving slowly, the line of departure is the line of contact, the enemy situation is vague, or enemy contact is expected.

Screen Repositioning

4-51. The speed of the main body, distance to the objective, and enemy situation determine the movement of the screen. Troop movement centers on a designated route of advance. The route is parallel to the axis of advance of the main body and is large enough to accommodate rapid movement of the troop and to facilitate occupation of the screen. The troop keeps the route clear to ensure rapid movement of the troop's enablers, sustainment, and mission command assets. Sustainment elements remain off the main route unless moving or traveling on alternate routes in depth.

4-52. Both ground and aerial reconnaissance assets use the four basic movement methods to reposition the screen—alternate bounds by observation posts, alternate bounds by units, successive bounds, and continuous marching. (See FM 3-90 for more information on these methods of movement.)

Limited Visibility

4-53. Troop commanders plan for limited visibility conditions since these conditions often occur during the conduct of a screen mission. Troop commanders never allow gaps in the screen whenever aircraft cannot fly and whenever scouts cannot observe their assigned areas. The troop takes the following actions to guard against gaps:

- Adjust ground observation posts.
- Employ night and thermal observation devices.
- Increase the use of electronic surveillance devices, ground-based sensors, and the LRAS3.
- Place trip flares and observation posts along dismounted avenues of approach.
- Conduct dismounted patrols.

4-54. Depth in the screen facilitates the acquisition of enemy forces who may elude forward elements. Coordinating the conduct of patrols prevents misidentification and fratricide. Rigorous noise, light, and litter disciplines during limited visibility prevent compromise and the bypass of observation posts by enemy forces. Additional observation posts established as listening posts take advantage of the extended distance sound travels at night. Observation posts plan and use indirect fires illumination rounds appropriately.

GUARD

4-55. A *guard* is a type of security operation done to protect the main body by fighting to gain time while preventing enemy ground observation of and direct fire against the main body (ADP 3-90). The squadron conducting a guard mission cannot operate independently because it relies on fires and functional and multifunctional support assets of the main body. The troops have neither the ability nor the necessary combat power to conduct a guard with its organic formation.

4-56. The guard differs from the screen because it prevents observation and direct fire on the force, facility, or area to protect. It reconnoiters, attacks, defends, and delays to prevent enemy ground observation and direct fire against the main body. (See ADP 3-90 and FM 3-98 for more information on the guarding force.) A guard is appropriate in the following conditions:

- Contact is expected.
- An exposed flank or an enemy force is to the rear.
- The main body is conducting a retrograde.
- A requirement exists for greater protection than a screen can provide.
- Reaction time and maneuver space are required based on the scheme of maneuver.

4-57. A squadron conducting a moving guard normally tasks a troop with the conduct of zone reconnaissance or a screen. The troop conducts a screen or defense during a stationary guard. On order, the troop collapses the screen depth or width to provide overlapping fires to the guarding force. Existing knowledge of the terrain, enemy situation, and main body's objective and speed of advance may determine which mission the troop receives. (See figure 4-2 on page 78 for an example of the troop's role while conducting a squadron guard with control measures for the troop.)

4-58. Troops do not commonly conduct a guard; the tasks listed below are squadron tasks. Cavalry squadrons perform certain tasks while conducting a guard. It is the staff's responsibility to plan for and obtain the requisite augmentation to the troop conducting a guard mission. The tasks follow:

- Detect and report all enemy elements attempting to pass through the guard—both ground and aerial—and provide the protected force commander early warning of enemy activities.
- Conduct counterreconnaissance to destroy or defeat all enemy reconnaissance elements in accordance with the engagement criteria.
- Maintain contact with the protected force and other forces operating on its flanks.
- Maintain observation of avenues of approach that affect the protected force's mission.
- Locate and identify the lead elements who indicate the enemy's main attack, as prescribed in the enemy's order of battle, based on the IPOE (when facing an echeloned enemy force).
- While displacing, determine the direction of enemy movement, maintain contact, and report threat activities.
- While displacing, impede and harass the enemy to provide the protected force commander with additional reaction time and maneuver space.
- Cause the enemy's main body to deploy prematurely.
- Maintain contact with enemy forces and report activity in the assigned area.
- Deny ground observation and prevent direct fire contact on the protected force.
- Deny the enemy information about the size, strength, composition, and objective of the main body.

4-59. The following tasks apply when an encounter turns into a meeting engagement:

- Destroy enemy reconnaissance and lead elements of the main body.
- Determine the location of the enemy's assailable flanks.
- Fix enemy forces to allow the main body to maneuver around the enemy strengths or through its weaknesses.

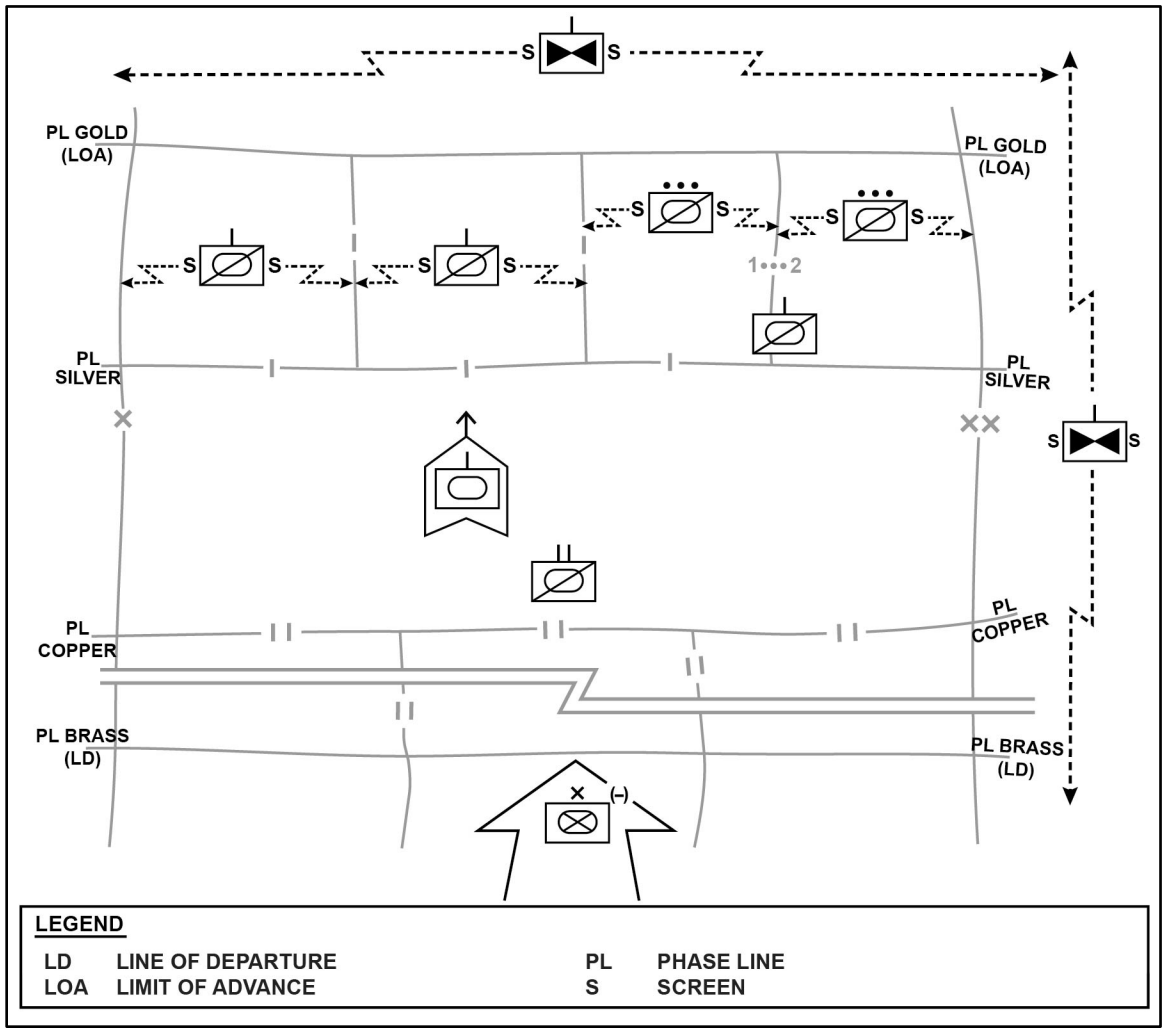


Figure 4-2. Armored brigade combat team troop as part of squadron guard

4-60. The troop commander and the subordinate leaders use a standard set of procedural steps to develop an engagement area. Commanders often use the mnemonic I ID PEPR to list the steps of engagement area development. The engagement area is where the troop commander intends to mass fires and their effects on the enemy. The commander employs the preferred forms of engagement—indirect fires, attack aviation, or CAS. After considering the METT-TC (I) variables, the commander conducts the engagement area development. During the execution of steps 4, 5, and 6, the troop emplaces obstacles first to ensure they tie into the terrain and shape the engagement area. Then, it emplaces observation and direct fire weapon systems to overwatch those obstacles. Finally, the FSO plans indirect fires to support the commander's intent and to cover any dead space in the engagement area. However, the commander may conduct steps 4 to 6 in any order. The engagement area development procedural steps follow:

- Step 1: I—Identify likely enemy avenues of approach.
- Step 2: I—Identify the most likely enemy course of action.
- Step 3: D—Determine where to kill the enemy.
- Step 4: P—Plan and integrate obstacles.
- Step 5: E—Emplace direct fire weapon systems.
- Step 6: P—Plan and integrate fires.
- Step 7: R—Rehearse the execution of operations in the engagement area.

COVER

4-61. A *cover* is a type of security operation done independent of the main body to protect them by fighting to gain time while preventing enemy ground observation of and direct fire against the main body (ADP 3-90). The covering force develops the situation early and deceives, disorganizes, and destroys enemy forces. They fight to gain time while observing, reporting information, and preventing enemy ground observation of and direct fire against the main body. They reconnoiter, attack, defend, and delay to prevent effective indirect fires, direct observation, and direct fires against the main body.

4-62. A covering force accomplishes all the tasks of screening and guarding forces. A covering force or portions of it often engage with enemy forces. Therefore, it maintains substantial combat power to engage the enemy and still accomplish its mission. The reconnaissance unit's higher headquarters may order it to participate in a cover as part of a larger force. The covering force is generally a reinforced, BCT-sized element. The BCT's Cavalry squadron may participate as part of the covering force, performing reconnaissance or security missions. Covering forces perform the following functions:

- Operate beyond the artillery range of the main body.
- Determine the distance from the main body by way of the METT-TC (I) variables.
- Develop the situation earlier, fight longer and more often, and defeat larger enemy forces.
- Prevent enemy units from bypassing the covering force.
- Subordinate elements of the covering force perform the following actions:
  - Reconnoiter.
  - Screen.
  - Attack.
  - Defend.
  - Delay.

4-63. A covering force may be offensive or defensive in nature, but a covering force executes all covering force operations aggressively to maximize offensive opportunities. It executes its mission as it would in zone reconnaissance or reconnaissance in force in that it is force oriented. (See FM 3-98 for more information on cover.)

AREA SECURITY

4-64. An *area security* is a type of security operation conducted to protect friendly forces, lines of communications, installation routes and actions within a specific area (FM 3-90). It includes reconnaissance of the area. Area security missions include protecting personnel, critical points, airfields (as well as the terrain around the airfields from which surface-to-air missiles launch), facilities, equipment, convoys, main supply routes, lines of communication, terrain features, and towns. Area security prevents the enemy from influencing friendly actions in a specific area and denies the enemy use of an area for its own purposes. It may include occupying and establishing a 360-degree perimeter around the area or taking actions to destroy enemy forces already present in that area. Area security operations may require the execution of a wide variety of supporting operations and tasks. When assessing the METT-TC (I) variables, the supported commander identifies the troop who may require augmentation when performing area security.

4-65. A troop can execute the following tasks when conducting area security operations:

- Screen.
- Route security.
- Convoy security.
- Local security.
- Zone, area, and route reconnaissance.
- Offensive and defensive tasks (within capabilities).
- Checkpoint operations to monitor or control movement.
- Patrols to cover gaps between secured perimeters.
- Established observable presence.

AREA SECURITY TECHNIQUES

4-66. The troop conducts an area security mission by preventing enemy ground elements from directly observing friendly activities in the secured area. Within its capabilities, the troop prevents enemy maneuver forces from penetrating the defensive perimeter of the defended force or installation. The troop is more likely to be in close contact with a local population in area security, requiring a close relationship with local leaders and security forces who can assist in identifying enemy forces.

4-67. The commander has the platoons employ a variety of enabling tasks such as patrolling, establishing observation posts, conducting convoy security, occupying battle positions, conducting ambushes, and establishing combat outposts to accomplish security tasks. The commander can react to unforeseen contingencies by employing a quick reaction force or by re-tasking platoons or sections. The troop can execute ambushes and preemptive strikes with greater precision by integrating information collection platforms and techniques with the IPOE process products.

4-68. Early warning of enemy activity is paramount in area security and provides the commander with time and space to react. Successful operations require proper reconnaissance planning coupled with dismounted or mounted patrols and aerial reconnaissance, especially when securing fixed sites. The METT-TC (I) variables determine augmentation requirements for the troop. Thus, the needs of aviation, maneuver forces, engineers, and artillery receive consideration. Failure to conduct continuous reconnaissance can create a vulnerable location for the enemy to infiltrate or attack.

4-69. A troop conducting area security conducts area reconnaissance of its assigned AO to detect and then eliminate enemy forces who and enemy capabilities that can damage or destroy the protected force. In the appropriate situations, the troop establishes a defensive perimeter to protect the unit, installation, facility, or activity. Troop commanders typically divide the perimeter into platoon areas with boundaries and contact points. Perimeters vary in shape and distribution of assets based on the results of the IPOE and on the METT-TC (I) variables. The most probable direction of attack may require extra weighting of assets to defeat an attack or infiltration. The troop orients on the force to protect.

4-70. The troop commander ensures platoons integrate observation posts, ground-based sensors, UASs, human intelligence, and mounted and dismounted patrols. Organic or attached tanks, BFVs, and other antiarmor weapon systems orient on high-speed avenues of approach. UASs and ground-based sensors provide overlapping surveillance coverage at extended distances from the perimeter.

4-71. Platoons can establish perimeters around critical infrastructures and high-value assets, while other units conduct operations to provide security and assist with the provision of the minimally essential stability tasks. The troop commander can position reaction forces between several secured locations. Other missions or tasks to support area security may include those following:

- Screen along zones of separation or other designated areas to detect violations of peacekeeping agreements.
- Conduct route and convoy security.
- Conduct checkpoint operations to monitor or control movement.
- Patrol between secured locations.

MOVEMENT INTO SECURITY AREA FOR STATIONARY SECURITY MISSION

4-72. The security force establishes stationary security missions in a similar manner. When deploying into the security area, the security force addresses competing requirements—to establish the security area quickly and thereby to meet mission requirements, and to provide the necessary level of security for itself. The security force moves into the security area using one of the following methods (See FM 3-98 for more information on these three methods.):

- Tactical road march.
- Movement to contact.
- Zone reconnaissance.

CONVOY SECURITY

4-73. Both military and civilian convoys are subject to attack, necessitating constant security. Unlike most military convoys, civilian convoys have no internal security force. Therefore, a security force often escorts

civilian convoys of two or more vehicles. The size of the convoy determines the number of required security force elements. A general rule recommends one platform for every five vehicles in the civilian convoy.

4-74. Commanders plan artillery and mortar support for the entire route of movement. They integrate troop mortars into the escort element itself or position artillery elements to provide fire support along the route. They coordinate with the squadron fires cell to provide fire along the route of movement to ensure that fire support teams can enter the radio or digital net of the fire direction center, send routine location reports, and request and adjust fires at a moment's notice. They coordinate call signs, frequencies, areas of employment, schedules of movement, and target numbers prior to convoy movement.

4-75. The troop addresses air defense of the convoy whenever an air threat is possible. The convoy elements review small arms air defense procedures and establish orientation areas. The commander integrates air defense reinforcements into the movement and defense plan. When the route falls under an existing air defense umbrella, the squadron staff, along with the controlling air defense headquarters, makes the appropriate coordination.

4-76. Convoy security operations in an urban or built-up area require different emphases and techniques than those in rural areas. The population density and characteristics of the area may require the use of nonlethal weapons and the careful application of lethal weapons. To ensure they apply the minimally essential force to minimize loss of life and destruction of property, leaders conduct detailed planning, coordination, and control. Whenever possible, convoys move through populated areas when least congested and, therefore, less dangerous to the security of the convoy. Convoy operations may require assistance from military or local police and other government agencies to secure the route before the convoy enters the built-up area.

4-77. The commander, XO, and 1SG plan for sustainment in convoy security operations. Fuel and maintenance elements travel in the convoy itself or take positions in secure areas along the route. Leaders perform precombat inspections before the convoy starts movement to ensure vehicles are full of fuel and preventive maintenance checks and services are complete. Crews perform rollover and fire evacuation drills. Troops plan and rehearse their response to casualties and casualty evacuations along the entire movement of a route. Ensuring the availability of immediate medical support requires ongoing coordination between the convoy security force, the troop command post, any troop trains command post, and the designated units along the route. Troops plan and rehearse medical evacuation. The primary means of standard medical evacuation is by ground, but the preferable method remains aeromedical evacuation due to operations occurring at extended distances from the supporting medical treatment facility.

ROUTE SECURITY

4-78. Enemy forces use various methods to sever supply routes and lines of communication. Roads, waterways, and railways may have mines along them. The enemy can locate ambush sites adjacent to the route or can destroy bridges and tunnels by demolitions, rendering long routes difficult to secure.

4-79. Route security is a subset of area security. Cavalry troops and other forces conduct route security to prevent a threat from attacking, destroying, seizing, containing, impeding, or harassing traffic along the route. Troops prevent the enemy from placing obstacles on or destroying portions of the route to interdict traffic. Route security operations are defensive in nature and, unlike screen missions, are terrain oriented.

4-80. The troop commander deploys platoons on and to the flanks of a designated route. The troop performs the following functions to accomplish the route security mission:

- Conduct mounted and dismounted reconnaissance of the route and key locations along it to ensure the route is trafficable.
- Conduct route clearance (as required, task-organize with attached engineers and other elements).
- Conduct IPOE to identify sections of the route to search for suspected enemy locations.
- Establish roadblocks and checkpoints along the route and lateral routes to stop and search vehicles and persons on the route and those entering the route, which may require augmentation from other units such as an Infantry platoon.
- Occupy key locations and terrain along or near the route.
- Aggressively conduct ground and aerial reconnaissance and surveillance to maintain route security.
- Establish observation posts (covert and overt) or ambushes at critical points to watch for enemy activity.

Route Security Techniques

4-81. Paragraphs 4-82 and 4-83 highlight two techniques the Cavalry troop may use to execute route security, depending on the nature of the enemy, purpose of the security mission, and characteristics of the route.

4-82. In the first technique, the troop conducts route reconnaissance at irregular intervals to avoid developing an exploitable pattern to the enemy. The troop reconnoiters the route, including conducting zone reconnaissance to either flank. Organic or attached UAS or supporting aviation assets can reconnoiter in advance of ground troops or assist in screening the flanks. In addition to conducting reconnaissance, troop elements may escort engineers conducting route clearance, improvement, or maintenance; clearing terrain at potential ambush sites; and repairing damage caused by enemy actions.

4-83. The second technique entails outposts. (See ATP 3-20.96 for more information on combat outposts.) The troop employs outposts on critical portions of a route or key avenues of approach to the route to provide early warning of enemy elements attempting to interdict the route. The primary purpose of outposts is to acquire the enemy and to direct the employment of reaction forces or indirect fires to destroy them.

4-84. Based on the METT-TC (I) variables, the troop can employ outposts either covertly or overtly. Covert techniques involve designated personnel discreetly staying behind once vehicles stop at a predetermined location and everyone has dismounted and then remounted the vehicles. Patrolling under limited visibility to the outpost site is another technique for covert employment. Overt employment involves parking a vehicle along the route or establishing visible observation posts to provide security to the route (and possibly to influence the enemy to conduct activities such as emplacing artificial obstacles or mines on another route, preferably one with covert outposts). Outposts can include fire support assets, troop mortar sections, or howitzer sections who can mass fires to support the observation posts.

Route Security Procedures

4-85. Troop mortars deploy into fixed firing positions collocated with command posts on the route. Fire support assets are controlled and deployed to render fire support available to all reconnaissance elements along the route. Fire support can mass effects at critical positions or into areas of the most frequent enemy activity. Fires plans have priority targets to support convoy or patrol movement, as well as final protective fire to support checkpoints or outposts.

4-86. Enemy forces may emplace mines and demolitions; create craters or abatises; and establish ambushes or roadblocks to interdict or destroy traffic. Therefore, units conduct patrols at irregular intervals along the route based on enemy trends and recent activities. Air, mounted, and dismounted patrols facilitate detection of enemy forces before they can emplace obstacles or execute ambushes. Leaders organize patrols with sufficient forces to reconnoiter off-route ambush sites and with enough combat power to survive initial enemy contact. Engineers, Infantry, military police, and other assets augment reconnaissance patrols to increase combat effectiveness based on enemy capabilities. Other techniques to defeat those enemy attempts to interdict the route or ambush convoys include those following:

- Deceptive mock convoys under escort to determine enemy reactions.
- Ambushes along known or suspected dismounted approaches to the route.
- Registered indirect fires triggered by sensor cues such as the Improved Remotely Monitored Battlefield Sensor System, followed by patrols.

4-87. Although UASs cannot secure the route, they can assist in observing the route, cover large areas in a short time on a continuous basis, and provide depth to the screen securing the route. Ground sensor devices are for the surveillance of key avenues of approach or for areas not requiring continuous surveillance by scouts. Employing ground sensors and UASs reduces the personnel requirement and logistical demands on the troop's resources.

COUNTERRECONNAISSANCE

4-88. *Counterreconnaissance* is a tactical mission task that encompasses all measures taken by a unit to counter enemy reconnaissance and surveillance efforts (FM 3-90). The focus of counterreconnaissance is to deny the enemy any information about friendly operations. The counterreconnaissance plan addresses how

to acquire and defeat enemy reconnaissance elements by deception, defeat, or destroying enemy reconnaissance efforts.

4-89. Counterreconnaissance keeps enemy reconnaissance forces from observing the main body by deterring or blocking them. The troop is task-organized to defeat enemy reconnaissance forces without requiring reinforcement. The squadron, along with brigade intelligence, considers enemy reconnaissance capabilities to determine whether additional maneuver or sustainment assets are required. The result of an effective counterreconnaissance fight blunts the enemy reconnaissance effort, forcing the enemy to attack without information about the friendly force disposition. (See FM 3-98 for more detail on counterreconnaissance.)

Note. Whatever option the commander employs, the counterreconnaissance fight is firmly controlled, monitored at the squadron level, coordinated early, and thoroughly rehearsed.

SECTION III – COUNTER-UNMANNED AIRCRAFT SYSTEM PLANNING

4-90. Troop commanders plan for the threat environment in which the platoons will conduct operations. Passive air defense, combined arms for air defense, and counterreconnaissance task training are integral parts of troop C-UAS practices. The troop tailors C-UAS planning to the expected threat environment. The squadron and troop plan and execute operations as an integrated combined arms team, employing all forms of passive air defense techniques when active air defense is limited or not available. IPOE provides the commander with specific threat information on known enemy locations, tactics, and threat capabilities.

4-91. Examples of key tasks to integrate into security plans that address SUAS threats:

- Employ dedicated observers (conducting air guard techniques).
- Perform visual aircraft recognition training.
- Conduct air threat avoidance techniques.
- Establish a security force and quick reaction force.
- Establish an early warning, organic sensor network.
- Conduct UAS reporting procedures.
- Perform cover and concealment.
- Select appropriate SUAS defeat mechanisms.
- Conduct hardening of unit positions.
- Disseminate the air defense warning and weapons control status.
- Employ countertracking techniques.

TECHNIQUES FOR CONDUCTING COUNTER-UNMANNED AIRCRAFT SYSTEM AIR GUARD

4-92. Air guard technique employment complements troop security tasks. An air guard may assist with mitigating the threat to a UAS's capabilities to conduct reconnaissance, surveillance, and information-gathering operations and to execute attacks on friendly forces. Air guards provide vigilant eyes on the horizon. They perform actions such as search and scan techniques for approaching threat UASs while observing their assigned sectors. They position themselves where they can best observe and more importantly listen for threat UASs. When conducting a short listening halt, the observation posts exercise noise discipline, ensure all engines are off, and remove their headgear to listen (but only while stationary and for the shortest time possible). Early warning is the key for air guards since it is their job to alert the formation of any possible air threats. Reports of threat UAS activity include an estimate of the threat location from the air guard's position. The air guard reports the approximate size, distance, elevation, time, duration, and direction of the UAS and its location, detection, or heading upon detection, respectively. The reporting of a threat UAS follows a standard format (see table 4-1 on page 84 for an example format for reporting UASs in accordance with ATP 3-01.81). Leaders always have the following plans:

- Plan for air guards while moving and at halts.
- Plan for air guards in assembly areas and in defensive positions.
- Plan for air guards when in overwatch positions.

Table 4-1. Unmanned aircraft system reporting format

Line	*Information*	*Example*
1	**Size**	Report the number of UASs or the size of the UAS formation.
2	**Activity**	Report a detailed account of actions: • What is the UAS's direction of movement? • Was there any hostile action? • Is the threat UAS loitering in one spot? • Is it flying straight? • Was the UAS's approach observed, or was it spotted overhead?
3	**Location**	Report where you saw the activity. Include 6- to 8-digit grid coordinate of reporting element and either grid coordinates or distance and direction from reporting element location (known point).
4	**Unit (Description of UAS)**	Include details such as the following: • Fixed-wing or rotary-wing (single rotor or multiple rotors). • For fixed-wing: ▪ Estimated length of wingspan. ▪ Tail configuration. • For rotary-wing: ▪ Number of rotors. ▪ Height. ▪ Payload, sensors, and weapons. ▪ Any lights. ▪ Distinguishable markings.
5	**Time**	Report the time the activity was observed.
6	**Equipment**	Report the equipment associated with the UAS, such as payload or weapons, as possible.
Legend: UAS unmanned aircraft system		

4-93. Based on threat activity and mission tasks related to C-UAS, observers (air guards) may develop quick reference or pre-deployment and combat checklists to focus the team on C-UAS. The checklists are available through standard military digital devices or by hard copy, and they include the following:

- Current UAS trends (classification types).
- Specific data on local air threats and NAIs.
- Secure radio operations and frequencies.
- Unit call signs to request support (quick reaction force or reconnaissance and information collection support).
- Military map of area.
- Binoculars and night-vision devices.
- Orientation techniques (location, heading, speed, and line of sight).
- C-UAS spot report.

PASSIVE DEFENSE

4-94. The troops remain ready to employ passive defense measures to protect the platoons and themselves from detection, observation, and attack. Passive defense measures decrease the effectiveness of enemy attacks that employ UASs. Damage-limiting and attack avoidance measures are useful passive defense measures for avoiding detection from aerial threats and limiting damage from attack. Platoons use caution when exercising C-UAS passive defense measures. Platoon leaders select positions of advantage that provide concealment for Soldiers, equipment, and troop activities. The troop commander considers the plan concurrently with damage control, damage-limiting measures, and attack avoidance measures. Troop leaders maintain focus on the passive defense techniques (see table 4-2).

Table 4-2. Passive defense measures of troop commanders

Protection Focus	*Techniques*	*Additional Comments*
Detection	Operate at night or during limited visibility.	Practice light restrictions and discipline during night operations and times of limited visibility.
	Use emission control to limit electromagnetic and acoustic footprints.	The selective and controlled use of electromagnetic, acoustic, or other types of emitters optimize mission command systems and command and control capabilities while minimizing operations security.
	Use camouflage and concealment.	Camouflage is the use of natural or artificial materials to disguise personnel and equipment. Concealment reduces the factors of recognition. Hiding, blending, and disguising are some concealment techniques.
	Use decoys and deception.	Using such deceits as decoys to stage false locations, with smoke to draw attention away from an operation, or as emitters and emulators to confuse collection activities can conceal unit activities from enemy detection.
	Use obscurants to reduce the glare or noise of equipment.	Placing mud on headlights and using camouflage nets obscures the glare of reflective surfaces such as windshields and prevents the drawing of attention to units' positions.
	Minimize heat signatures.	Units keep engines off when they are stationary.
Observation	Practice good operations security.	Operations security is an essential part of the planning process. Leaders always enforce units' operations security measures.
	Employ countertracking measures.	When a mechanized platoon moves and occupies an assembly area or battle position, it avoids leaving multiple sets of tracks since they produce a large signature to overhead observation.
	Maintain vigilance.	Platoons maintain the assumption that they are always vulnerable to targeting attempts by an enemy. This is especially true when they are conducting troop movements, performing supply actions, moving through open areas, and concentrating at chokepoints.
Attack	Disseminate early warnings of air threats to the lowest echelon.	Early warning to the lowest echelon is essential in countering the UAS threat.
	Establish an air defense early warning network with the radios and digital networks.	
	Practice hardening.	Using protective construction and overhead cover protects personnel and limits equipment damage. The hardening and the fortifying of cover limit a threat UAS's ability to detect and limit the damaging effects from an aerial attack.
	Disperse units and assets to minimize detection and to minimize casualties and the damage from an attack.	Dispersion may be the most effective damage-limiting measure. Proper dispersion of units and equipment lessens target density and reduces the lethal effects of threat ordnance.
Legend: UAS unmanned aircraft system		

ACTIVE DEFENSE

4-95. The troop commander has the responsibility to take the necessary actions to protect friendly forces and equipment against attack and to ensure Soldiers operate in accordance with the established ROE. Active measures for the platoon include basic rules that assist in the processes for identifying and defeating threat UASs (for example, SOPs for disseminating weapons control status, hostile criteria).

4-96. The commander considers training forces on the following active measures:

- Define threat UAS characteristics by these factors:
  - Speed.
  - Altitude.
  - Location.
  - Heading.
- Develop and transmit weapons control status:
  - Weapons control status is a control measure for establishing procedures for forces using surface-to-air weapons (including small arms weapons) to engage threats.
  - Such a measure applies to weapon systems, volumes of airspace, and types of air platforms, including established restricted and engagement zones.

Note. Categories of weapons control status follow:

Weapons Free—Indicates weapon systems may fire at any target not positively identified as friendly. This is the least restrictive weapons control status.

Weapons Tight—Indicates weapon systems may only fire at targets identified as hostile in accordance with the current ROE.

Weapons Hold—Indicates weapon systems may only fire in self-defense or in response to a formal order. This is the most restrictive weapons control status.

- Designate air guards for every vehicle and position to establish 360-degree security and to execute the following:
  - React to threat UASs by determining distance and bearing to the threat and capture imagery of threat UASs whenever possible.
  - Immediately report sightings of threat UASs (spot report) as prescribed by SOPs.
  - When an air guard's position and personnel are threatened, respond in accordance with the unit's established SOPs, which may include moving to alternate positions, engaging the threat UAS with small arms and using combined arms for air defense firing techniques, and requesting engagement support from air and missile defense weapon systems and aviation assets.

SECTION IV − TRANSITION PLANNING

4-97. The transition from offensive to defensive operations or vice versa consistently occurs during large-scale combat operations. Cavalry units perform battle handovers by conducting a passage of lines (forward or rearward), a transition using a relief in place, or a change of mission. The passage of lines and the relief in place are enabling operations found in ADP 3-90.

4-98. The squadron is consistently transitioning from reconnaissance and security operations or vice versa. Therefore, planning for transitions begins early in the operations process, during the development of the concept of operations and scheme of maneuver, which identifies decision points for when to execute those necessary transitions. The reconnaissance and security efforts by the Cavalry troop answer information requirements, thereby enabling the squadron commander and staff to develop transition decision points or refine the same decision points (should the troop need to transition earlier or later than originally planned) based on effects from the enemy or terrain. The decision points that drive the transition of each troop require understanding at each echelon to ensure the squadron maintains tempo as transitions occur.

BATTLE HANDOVER

4-99. A battle handover is a coordinated operation between two units that transfers responsibility for fighting an enemy force from one unit to the other. During defensive operations, the battle handover is usually coordinated in advance, so when ordered to occur, the operation requires a minimum of coordination. In the offense, based on the situation at hand, a FRAGORD often initiates it. Clear SOPs allow units to establish the necessary coordination quickly and to preclude a loss of momentum in the attack. A battle handover is typically associated with the conduct of a passage of lines (forward or rearward).

BATTLE HANDOVER PLANNING

4-100. Battle handover can occur during either offensive or defensive operations. During defensive operations, the battle handover is usually planned and coordinated in advance to facilitate execution, and it frequently involves a rearward passage of lines. The battle handover line (BHL) is located where elements of the passing unit can be overwatched effectively by direct fires or supported by indirect fires of the forward combat element of the stationary unit until the battle handover is complete.

4-101. Physical handover frequently occurs near the BHL. Events may require a force to break contact forward of or behind the BHL. For example, this may occur where there is a gap between echelons of the attacking enemy force. Close coordination (physical, digital, or voice) between the units involved in the handover allows them to coordinate and execute this process at the small-unit level.

Note. Coordination for battle handover 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 is concurrent.

SYSTEMS TO SUPPORT BATTLE HANDOVER

4-102. Digital information systems assist the squadron staff with its coordination and synchronization efforts for the operation. Each troop transmits or delivers a complete copy of its OPORD and overlays by either digital or analog means. Any changes made after initial distribution are incorporated immediately. The coordination between the two commanders involves the following:

- Establishing digital and voice communications.
- Providing updates of friendly and enemy situations (digital, voice, and graphic).
- Coordinating passage points and routes and ensuring their display on operational overlays (digital and analog).
- Co-locating contact points and exchanging liaison personnel as required.
- Coordinating fires (direct and indirect) and ensuring the direct fire control measures and fire support coordination measures display on operational overlays (digital and conventional).
- Providing updated obstacle overlays, including self-destruct and the date-time groups of the emplaced family of scatterable mines, obstacles, and reserve demolitions in the affected AO.
- Determining the need for and dispatching contact point representatives.
- Establishing and coordinating recognition signals.
- Exchanging locations of obstacles and related covering fires.
- Exchanging route information, including waypoints.
- Determining sustainment requirements.

4-103. Due to the fluid nature of a battle handover, commanders can use digital systems to speed the planning, coordination, and execution processes. Troops plan for the use of radio voice; if digital capabilities were hampered, troops would use frequency modulation to coordinate and execute battle handovers.

PASSAGE OF LINES (FORWARD AND REARWARD)

4-104. Cavalry troops usually begin and end reconnaissance and security operations with a passage of lines or a reconnaissance handover. A passage of lines is a tactical operation designed to pass one unit through the positions of another unit without interference. A passage may operate as a forward or rearward passage of lines. A passage of lines is an inherent aspect of transferring responsibility for the battle between commanders while maintaining continuity of the fight.

4-105. The passing force uses two techniques. In the first technique, the passing force deploys in its attack formation in the attack positions to the rear of the FLOT and then crosses the FLOT in attack formation. This technique is appropriate to employ when adequate maneuver space exists for the passing force to deploy effectively and to do so without disrupting the stationary force's defensive positions. This technique also allows the passing force to attack rapidly once it crosses the FLOT.

4-106. In the second technique, the passing force deploys after crossing the FLOT, which it does in march column formation. It then deploys into attack formations prior to crossing the BHL. Restrictive terrain requires this technique. With this technique, the FLOT lies outside direct fire range of the threat to allow the passing force to deploy before making direct fire contact with the threat.

4-107. Both techniques require stationary unit scouts on or near the BHL. The passing unit may have the scout platoon link up with stationary unit scouts and continue the mission, or it may have combat units deploy along the BHL to overwatch the movement of other units. The units on the ground at the BHL maintain knowledge of the scheme of maneuver of the passing force, so they can act accordingly.

FORWARD

4-108. A *forward passage of lines* occurs when a unit passes through another unit's positions while moving toward the enemy (ADP 3-90). Cavalry units conduct a forward passage of lines as a transitional operation, typically before reconnaissance and security missions, when the METT-TC (I) variables do not permit the bypassing of a forward friendly unit. They also conduct one to—

- Continue the attack or counterattack.
- Envelop a threat force.
- Pursue a fleeing threat.
- Pass between friendly AOs during nonlinear operations.

REARWARD

4-109. Historically, Cavalry units conducting a rearward passage of lines have been associated with covering force operations. This remains true in the contemporary OE. Additionally, the nonlinear battlespace continually requires the rearward passage of lines. A *rearward passage of lines* occurs when a unit passes through another unit's positions while moving away from the enemy (ADP 3-90). It may or may not be conducted under threat pressure. For example, a Cavalry squadron serving as a covering force might conduct a rearward passage of lines with the stationary unit in the main battle area. In such a scenario, the covering force (Cavalry squadron) might withdraw through the stationary force and hand off control of the fight at the BHL. (See figure 4-3 for an example of a rearward passage of lines with graphic control measures.)

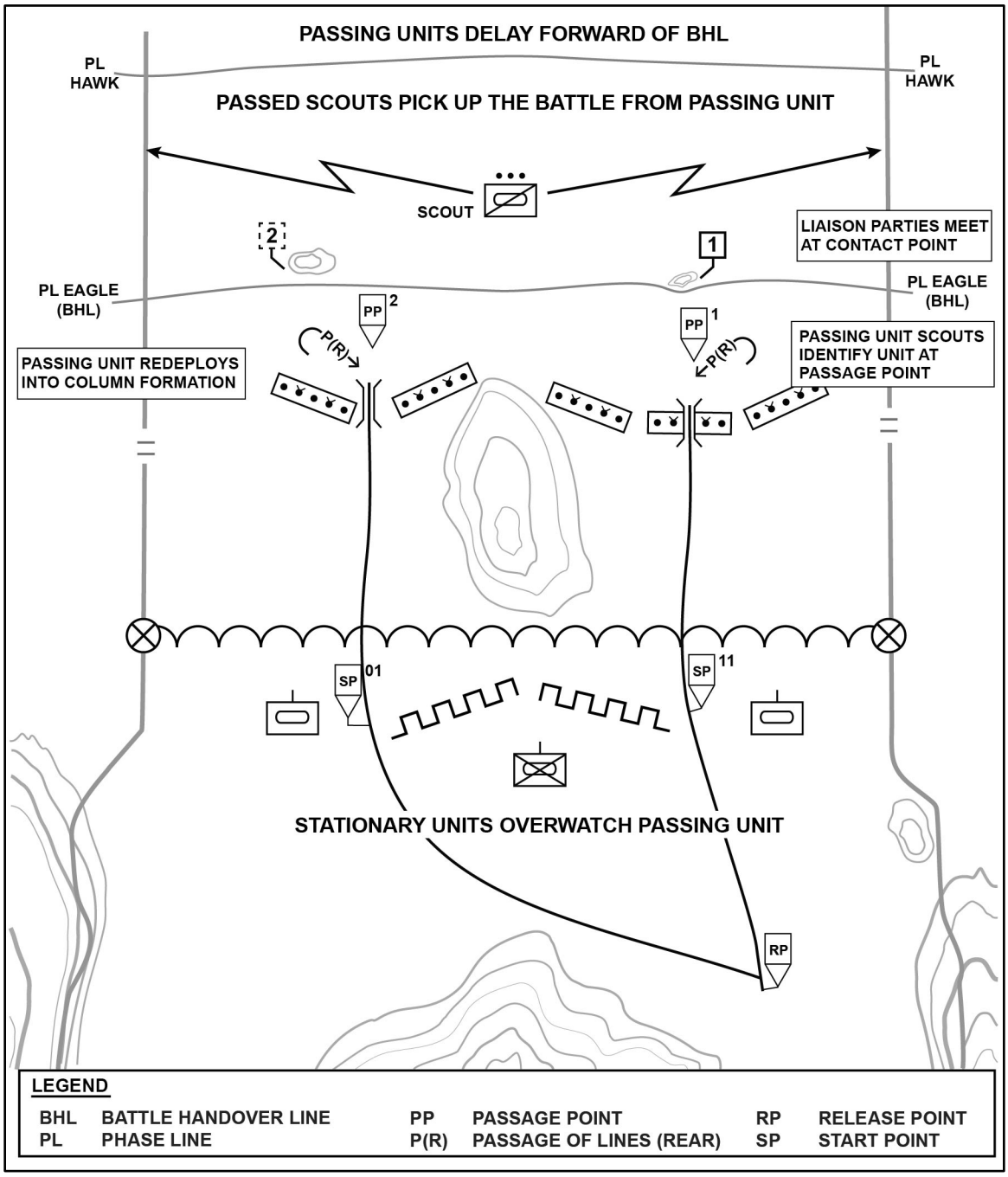


Figure 4-3. Rearward passage of lines, example

PASSAGE OF LINES PLANNING CONSIDERATIONS

4-110. Planning procedures for a rearward passage of lines closely resemble those for a forward passage of lines. However, rearward movement may be more difficult due to the following:

- The threat probably has the initiative, which tends to reduce the time available to conduct liaison and reconnaissance and to make detailed plans.
- When the rearward moving force has been in action, the Soldiers are often tired and disorganized.
- The threat may be applying pressure on the passing force.
- Friendly forces often prove difficult to recognize when threat forces have intermixed with them.

4-111. To facilitate a rearward passage of lines, the stationary force commander develops an overlay. Once the overlay is prepared, the stationary commander transmits it and any amplifying information to the passing force commander by way of digital C2 systems. The following graphic control measures are included in a passage of lines overlay:

- BHL.
- Contact points forward of the BHL.
- Passage points along the forward edge of the battlespace.
- Lanes to the rear of the main battle area.
- Assembly area.
- Release point.

4-112. During a passage of lines, friendly unit density in a relatively small maneuver space may cause problems for the commander in maintaining the common operational picture in relation to the passed and passing units. The stationary and passing commanders determine the best method of exercising mission command to avoid slowing the tempo of the operation and to reduce the potential of fratricide.

REHEARSAL

4-113. A rehearsal benefits all units responsible in the execution of a passage of lines operation. It allows the passing and stationary units to work through issues common to such complex operations. It allows for easy identification of the passage points and routes to and from AOs and for units to conduct a communication linkup on voice and digital communication systems. Other rehearsal items include the following:

- Fire support observation plan, target execution, communication linkages, and mutual support operations.
- Fire support coordination measures confirmation.
- Unit routes and positioning review.
- Obstacles, lanes, bypasses, and markings locations and descriptions.
- Passage points, routes, and recognition procedures.

Note. Units verify these and review the number of vehicles, by type, that they expect at each passage point.

- Route management, contact points, and use of guide's confirmation.
- Locations for and movement of sustainment units.

Note. Units arrange for mutual support and any transfer of supplies.

- Locations of aid stations, ambulance exchange points, and casualty evacuation procedures.

RESPONSIBILITIES DURING A PASSAGE OF LINES

4-114. The stationary unit is responsible for providing the passing unit with as much assistance as possible. Indirect and direct fire support from the stationary unit to the passing unit is pivotal to the success of the rearward passage of lines. Stationary unit support is especially important in covering the withdrawal of elements left in contact during a delay. The stationary unit's fire support assets answer calls for fire from the passing unit until battle handover occurs. The passing unit's fire support assets echelon rearward to provide continuous fire support for the passing unit until it successfully transitions. Once the passing unit hands over control of the battle to the stationary unit, the stationary unit initiates and clears calls for all fires forward of its location. The same procedure applies to the dedicated air defense assets of the passing and stationary units.

4-115. The stationary unit's engineer assets provide support to prepare the defense and execute the passage. Priority of effort initially ensures the passing unit can move through passage lanes around the stationary unit's defensive positions. The passing unit shifts to close these passage lanes once the passing unit and any security elements disengage and withdraw through the security area and obstacles. The stationary unit provides the passing unit with the previously coordinated sustainment support as far forward as possible. The stationary unit concentrates on providing the passing unit with emergency medical, treatment, recovery, and fuel supplies, so the passing unit can move through the stationary unit's positions rapidly.

RELIEF IN PLACE

4-116. *Relief in place* is an operation in which, by direction of higher authority, all or part of a unit is replaced in an area by the incoming unit and the responsibilities of the replaced elements for the mission and the assigned zone of operations are transferred to the incoming unit (JP 3-07.3). Commander's conduct a relief in place as part of a larger operation, primarily to maintain the combat effectiveness of committed units. Cavalry units conduct relief in place operations for the following reasons:

- To reconstitute a unit who has sustained heavy losses.
- To decontaminate a committed unit.
- To rest a unit who has been in prolonged combat.
- To conform to a larger tactical plan.
- To resupply a defending Cavalry unit.
- To assign a new mission to the relieved unit.
- To introduce a new unit into combat.
- To set the stage for resuming the offense.

4-117. Defensive relief is conducted to continue the defense. Cavalry units can relieve a larger force as an economy of force defensive mission. Offensive relief may follow from a follow and assume mission requiring a forward passage of lines.

RELIEF TECHNIQUES

4-118. Three techniques exist for conducting a relief—sequential, simultaneous, or staggered. A sequential relief is the most time-consuming relief technique but also the most secure. Relief proceeds by troop or company team. Normally, units are relieved in place with the relieving unit assuming the relieved unit's positions and missions. This technique is most common when units have similar organizations or when occupied terrain must be retained.

4-119. The simultaneous relief technique is faster but less secure because all units are moving at the same time. The decentralized nature of a simultaneous relief requires close coordination to prevent excessive battlespace clutter. Once command groups and combat trains are collocated, troops move forward at the same time along designated routes. Relief occurs simultaneously at each location. Relieved units withdraw immediately upon relief.

4-120. A staggered relief occurs when a commander relieves each element in a sequence, as determined by the tactical situation and not by an element's geographic orientation. It occurs with relief elements occupying positions in depth or adjacent to the relieved unit; this is considered an area relief. This technique is appropriate to employ when units are dissimilar, when the relief unit performs a different mission, or when improved defensive terrain is away from the line of contact. A staggered relief is also appropriate to employ when the relieved unit has suffered chemical or radiological contamination. The relieved element withdraws one unit at a time or simultaneously and conducts a rearward passage of lines through the relief unit.

RELIEF PLANNING CONSIDERATIONS

4-121. Fire support coordination and liaison are conducted between the units. When field artillery units are to be relieved, they are the first to collocate and the last to leave. The incoming unit receives DA Forms 5517 (*Standard Range Card*), target lists, and overlays to ensure the effective delivery of fire. Fire support assets of the relieved unit remain in position throughout the relief of maneuver units and remain prepared to support both units. Fire support assets of the relieving unit move into positions as quickly as possible, so they can support both units during the relief. Combat trains are collocated to facilitate the coordination and transfer of equipment, excess ammunition, fuel, water, and medical supplies.

4-122. The relieving unit establishes continuous liaison with the relieved unit immediately upon receipt of the order. The squadron command group moves to the contact point of the relieving unit to coordinate the operation. The relieving unit enters and monitors the command net of the relieved unit. Troops and company teams of both units remain on their internal and parent unit nets. The relieving unit maintains radio listening silence on all nets until the relief is complete. The sudden increase in radio traffic is a quick indicator to the threat that a relief is occurring. Upon passage of command, the relieving unit returns to its command net and lifts any listening silence. The relieved unit maintains radio listening silence during its withdrawal.

MOVEMENT CONTROL

4-123. A priority of maintaining movement control is designating and ranking routes. The squadron XO supervises unit movement. Rally points for the relieved unit are used at company level to quickly organize the unit for withdrawal. Guides are positioned at critical points along the routes. Assembly areas are designated, and activities performed in these areas are specified. Separate assembly areas are designated for the incoming and outgoing units to minimize confusion. Time spent within as is minimized to avoid possible compromise.

PASSAGE OF COMMAND

4-124. Passage of command may be specified in the division or corps order as a time when relief is to be completed. At unit level, the commanders mutually agree to the sequence for the passage of command. This is physically accomplished when a specified percentage, normally greater than one-half of the relieving units are in position and report relief. Passage of command at the squadron and task force level is acknowledged face to face by both commanders and passed to subordinates.

CHANGE OF MISSION

4-125. A change of mission is another type of transition Cavalry units expect during reconnaissance and security operations. The commander's guidance establishes the change of mission, and the planning of a change of mission uses branches and sequels. A change of mission applies when units transition from defensive to offensive operations or when the unit changes to a different type of security operation.

Chapter 5

Sustainment

Cavalry squadrons frequently operate in locations distant from their organic sustaining bases. They often carry a configured load or are task-organized with the necessary assets to ensure their sustainment until they can be relieved.

Sustainment of a Cavalry troop is critical to squadron mission success. This chapter provides information on the basics of sustainment, sustainment planning, LOGPAC operations, troop resupply operations, maintenance, and field services in addition to the health service support (HSS) and personnel service support available to the troop commander.

SECTION I – BASICS OF SUSTAINMENT

5-1. The troop's ability to continue its mission for extended periods depends on the squadron's ability to obtain, transport, and distribute resources such as fuel, ammunition, replacement personnel, and rations. Likewise, the troop develops rapid and dependable ways to treat and evacuate casualties and repair combat equipment to sustain troop morale, combat power, and the readiness to fight. The troop's sustainment capabilities allow for quicker deployment and the reduction of the support footprint in the squadron operations and brigade support area. Supporting wide-ranging and decentralized operations remains a challenge despite advances in C2, sustainment, and the ability to maintain situational awareness, all of which facilitate support of the troop's sustainment. The responsibility to sustain the troop properly rests with the commander. The troop XO and 1SG share responsibility for sustainment activities to support all troop operations.

SUSTAINMENT FUNCTIONS

5-2. Sustainment involves the interrelated functions of conducting logistics, providing personnel services, and providing HSS. Logistics determines the depth and duration of troop operations and is essential to retaining and exploiting the initiative. (See ADP 4-0 for more information on logistics.) Logistics includes the following:

- Maintenance.
- Transportation.
- Supply.
- Field services.
- Distribution.
- Operational contract support.
- General engineering support.

5-3. Personnel services include the following:

- Human resources support.
- Legal support.
- Religious support.
- Band support.

5-4. HSS functions include the following:

- Medical treatment.
- Hospitalization (including treatment of CBRN-related casualties).
- Medical evacuation (including medical regulating).
- Medical logistics (including blood and blood products).

CLASSES OF SUPPLY

5-5. Supplies fall into categories, or classes, for management and planning (see table 5-1).

Table 5-1. Classes of supply

CLASS	*DEFINITION*
I	Subsistence, including food, water, and free health and welfare items.
II	General support items, including clothing, individual equipment, tentage, tool sets and tool kits, hand tools, and administrative and housekeeping supplies and equipment (including maps).
III	Petroleum, oils, and lubricants.
IV	Construction materials, including installed equipment and all fortification/barrier materials.
V	Ammunition of all types (special weapons), bombs, explosives, mines, fuses, detonators, pyrotechnics, missiles, rockets, propellants, and other associated items.
VI	Personal demand items or nonmilitary sales items.
VII	Major end items, including tanks, helicopters, and radios.
VIII	Medical materiel, including specialized repair parts for medical items.
IX	Repair parts and components required for maintenance support of all equipment.
X	Material to support nonmilitary programs—such as agricultural and economic development—not included in Classes I through IX.

TROOP SUSTAINMENT PERSONNEL

5-6. Troop sustainment requires planning and oversight from several key leadership positions. Paragraphs 5-7 through 5-11 review the minimum of duties and responsibilities by position.

COMMANDER

5-7. The troop commander plans, prepares, and executes the troop commander's portion of the squadron sustainment plan and ensures the troop sustainment operations meet the tactical plan. Concurrent with other planning, the company develops its sustainment plan during mission analysis and refines it in the wargaming portion of the troop leading procedures. Routinely conducted troop rehearsals ensure support and services do not affect reconnaissance and security tasks.

EXECUTIVE OFFICER

5-8. The XO is the troop's primary sustainment planner and coordinator, reporting directly to the commander. During preparations for the mission, the XO works closely with the 1SG to determine specific support requirements of the tactical plan. The XO performs the following sustainment functions:

- Assists the troop commander in developing sustainment priorities and guidance in accordance with the squadron's concept of support and enforces those priorities.
- Determines the troop's resupply point location through analysis during operational planning.
- Compiles reports from subordinate elements, completes the troop logistics status (known as LOGSTAT) reports to submit to the squadron S-4 daily, and requires more frequent reports during periods of increased intensity.
- Leads the company sustainment rehearsal in cooperation with the company 1SG.
- Determines the resupply method based on the METT-TC (I) variables.
- Determines the requirements for all classes of supply during operations.
- Prepares paragraph 4 and the sustainment appendix of the troop OPORD.

FIRST SERGEANT

5-9. The 1SG is the troop's primary sustainment operator. The 1SG executes the troop's logistical plan, relying heavily on the troop's and the squadron's SOPs, and directly supervises and controls the troop trains. The 1SG performs the following sustainment functions:

- Leads sustainment rehearsals with the XO and integrates sustainment into the troop's maneuver rehearsals.
- Directs and supervises the troop's casualty response plan and casualty evacuations and ensures medical assets remain flexible and conform to tactical missions.
- Directs and supervises the collection, initial identification, and evacuation of human remains to the casualty collection point for further transfer to the mortuary affairs collection point.
- Establishes and organizes the troop's resupply point.
- Meets the LOGPAC at the logistics release point; guides it to the troop's resupply point; supervises resupply operations there; and if necessary, guides the LOGPAC to its subsequent destination.
- Tracks changes in expenditure rates of supply Classes I and V (see table 5-1) and submits those changes to the troop XO for further reporting to the squadron S-4 via a LOGSTAT report.
- Coordinates and supervises the evacuation of detainees and damaged equipment with squadron staff.
- Coordinates and synchronizes human resources support with the squadron personnel staff officer, including personnel accountability reports, casualty reports, replacement operations, personnel readiness management, mail operations, essential personnel services, and other administrative or personnel requirements.
- Provides troop orientation for new personnel and, in consultation with the commander, assigns replacements to the troop's subordinate elements.
- Maintains the troop battle roster.

SUPPLY SERGEANT

5-10. The supply sergeant is the troop's representative in the squadron's field trains. The supply sergeant assembles the LOGPACs and moves forward with the LOGPACs to the troop. In addition, the supply sergeant performs the following sustainment functions:

- Maintains responsibility for organizing the troop's LOGPACs in the field trains.
- Assists the troop XO with determining requirements based on the operation and based on the troop's consumption of food; water; ammunition; petroleum, oils, and lubricants; and batteries.
- Coordinates with the battalion S-4 for resupply of the troop.
- Receives and evacuates human remains to the mortuary affairs collection point in the brigade support area.
- Maintains and provides supplies for troop field sanitation activities.
- Transports, guards, or transfers detainees.
- Coordinates with the squadron personnel staff section to drop off or pick up mail and personnel action documents.
- Picks up replacement personnel and delivers them to the 1SG.
- Manages the commander's property book and prepares financial liability investigations of property loss.

PLATOON SERGEANT

5-11. The platoon sergeant performs the following sustainment functions:

- Ensures Soldiers perform maintenance on all assigned equipment.
- Compiles and submits LOGSTAT reports for the platoon as directed and in accordance with the troop's SOPs.
- Obtains supplies and mail from the supply sergeant and ensures proper distribution across the platoon.

SECTION II – SUSTAINMENT PLANNING

5-12. Sustaining Cavalry assets before, during, and after their commitments is a vital part of maintaining reconnaissance capabilities. Sustainment plans for reconnaissance and security operations vary greatly by the maneuver commander's guidance for the tempo of the operation. For instance, stealthy reconnaissance operations may require most pre-positioned stocks and may rely on covered or concealed resupply routes to remain undetected. However, forceful reconnaissance operations, for which detection is not a concern, may facilitate routine sustainment operations such as LOGPACs on any trafficable route at any hour of the day. The methods employed to sustain those assets are situationally dependent because a commander's methods of deploying Cavalry assets depends on the METT-TC (I) variables. The commander addresses the METT-TC (I) variables as part of the planning process for each Cavalry operation. (See ATP 3-20.96 for more information on sustainment for reconnaissance and security operations.)

RECONNAISSANCE OPERATIONS IN SUSTAINMENT

5-13. The overriding consideration in reconnaissance sustainment is maintaining the operation's momentum. The availability of adequate supplies and transportation to sustain the operation becomes more critical as the operation progresses. The XO and 1SG work closely with the S-4 in the planning process to ensure sustainment capabilities meet the demands of the reconnaissance operation.

5-14. The planning of reconnaissance operations includes the following:

- Considering the use of blivets for fuel and water and caching for other classes of supply.
- Ensuring units deploy with basic loads and meet replenishment requirements.
- Planning for the increased consumption of petroleum, oils, and lubricants.
- Planning for the recovery of damaged vehicles to the maintenance collection point.
- Using push packages of preplanned and preconfigured essential sustainment items.
- Planning for increased vehicular maintenance.
- Requesting additional sustainment assets from the squadron to support attachments or extended operations.
- Planning for aerial resupply.
- Planning and coordinating detainee operations.
- Planning for longer transportation and turnaround times.
- Planning for trains and convoy security.
- Planning for the increased use of medical assets, including the following:
  - Casualty evacuation from discrete operations remotely located at extended distances across the line of departure.
  - Casualty collection points and ambulance exchange points.
  - Augmentation of medical treatment elements.

SECURITY OPERATIONS IN SUSTAINMENT

5-15. As with reconnaissance, emphasis on any consideration varies by the mission assigned and the shifts during mission execution. The planning of security operations includes the following:

- Planning for the increased use of Class IV and V supplies (see table 5-1 on page 94).
- Requesting additional sustainment assets from the squadron to support attachments.
- Continuing routine resupply in accordance with SOPs.
- Resupplying during limited visibility to reduce the chance of enemy contact.
- Preparing to conduct immediate resupply (which is a different technique than that performed during unit internal distribution operations due to the unexpected enemy situation).
- Planning for alternate means for casualty evacuation.
- Emphasizing recovery and evacuation of equipment over forward repair.
- Planning for trains and convoy security.

SUSTAINMENT PLANNING REQUIREMENTS

5-16. The XO is the primary sustainment planner at troop level, with input from the 1SG. The 1SG is the primary executor of sustainment operations at the troop. Both will work together for cohesion and for friction reduction. Supply is essential for enhancing Soldiers' quality of life and providing prolonged endurance of support to offensive, defensive, and stability operations. Supply provides the material and life supports that give the troop the combat power and prolonged endurance to accomplish the mission. That reconnaissance and security forces often require a basic load greater than the typical 3 days of supply configuration due to mission requirements is significant to sustainment planning. Paragraphs 5-17 through 5-25 relate the troop position(s) with primary planning responsibility for a class of supply to each given class of supply. Troop leaders consider the following information when planning requirements for the classes of supply and maintenance. (See table 5-1 on page 94 for definitions of the classes of supply.)

CLASS I (EXECUTIVE OFFICER AND FIRST SERGEANT)

5-17. The troop supply sergeant typically delivers the loads via LOGPACs from the brigade support area to the squadron combat trains, where the supply sergeant links up with the troop 1SG or representative. The XO plans when the LOGPAC arrives based on the METT-TC (I) variables and discusses the arrival time with the troops during the troop rehearsal. Generally, the unit basic load for each Soldier is nine meals, ready to eat. The XO works with the squadron S-4 to obtain the ration and issue cycle and the LOGPAC schedule for resupply. For water, the XO calculates requirements based on gallons per Soldier per day. (See ATP 4-44 for the water planning factor tables.) The XO adjusts the standard planning factor for unique conditions of any given operation. The supply sergeant plans for retrograde of waste from the troop during resupply operations.

CLASS II (EXECUTIVE OFFICER)

5-18. The troop XO, in conjunction with the supply sergeant, determines supply Class II requirements. The 1SG ensures troops deploy with limited stocks of Class II items. The troop supply sergeant can request additional Class II supplies through the squadron S-4. For example, the XO and supply sergeant consider chemical lights for night operations (marking breech lanes at night) and engineer tape (marking helicopter landing zones or marking platoon areas during quartering party operations).

CLASS III (EXECUTIVE OFFICER)

5-19. The XO plans for the troop's supply Class III requirements and generates fuel consumption estimates based on historical data. How the troop receives fuel depends on the troop's SOPs, the OE, and the higher headquarters' plan for Class III supply distribution. It is imperative that platoon sergeants anticipate requirements and submit timely refuel requests to the XO. The XO monitors subordinates' reports during operations and submits daily LOGSTAT reports to the squadron S-4 to ensure accurate resupply operations.

CLASS IV (EXECUTIVE OFFICER OR SUPPLY SERGEANT)

5-20. Usually, little to no requirement exists for the troop to have Class IV supplies on hand. When assigned the following tasks, the supply sergeant, with oversight from the XO, determines the requirements and coordinates with the squadron S-4 to obtain supply Class IV packages to support the following activities:

- Blocking passes.
- Conducting traffic control post operations.
- Staffing detention holding areas.
- Conducting security operations.

CLASS V (EXECUTIVE OFFICER WITH INPUT FROM THE FIRST SERGEANT)

5-21. The troop deploys with a combat load of munitions. Operational requirements initiate supply Class V sustainment, and requirement drives the forecasting process. The troop XO maintains knowledge of the current ammunition requirement, ammunition basic load, and troop's on-hand balance to submit the LOGSTAT report. The XO coordinates with the squadron S-4 to ensure the distribution concept for Class V supplies includes the capability for rapid distribution of preconfigured ammunitions packages and loads. The XO tracks the delivery frequency of LOGPACs of munition supplies and maintains knowledge of the primary and alternate resupply plans.

CLASS VI (FIRST SERGEANT)

5-22. Troops normally deploy with a minimum of health and comfort items. When an operation endures longer than 30 days, health and comfort packs are available through the supply system and provide everyday necessities. Leaders include Class VI supplies into the packing list and in precombat checks and inspections.

CLASS VII (EXECUTIVE OFFICER)

5-23. Command levels manage and control Class VII major end items. The troop XO is the subject matter expert on which major components are fully mission capable. Thus, the troop XO tracks the operational readiness rates and reports these to the squadron S-4.

CLASS VIII (MEDICS OR SUPPLY SERGEANT WITH OVERSIGHT FROM THE EXECUTIVE OFFICER AND FIRST SERGEANT)

5-24. Supply Class VIII includes all medical supplies on hand at the troop. Prior to any operation, the supply sergeant, with assistance from medical personnel, checks all medical supplies in the combat lifesaver bag for expiration. The troop supply sergeant, with oversight from the XO or 1SG, requests replacement and resupply through the squadron medical platoon.

CLASS IX AND MAINTENANCE SUPPORT (EXECUTIVE OFFICER)

5-25. The commander establishes maintenance priorities based on what systems are critical to the success of the operations. The link between the troop and the maintenance support is a trained operator or crew who can properly use and maintain equipment. The continued demand for equipment requires the operator or crew to perform preventive maintenance checks and services. The XO compiles the troop copies of DA Form 5988-E (*Equipment Maintenance and Inspection Worksheet*) from the platoon leader, platoon sergeants, and maintenance team chief and informs the commander. Generally, the XO sends the worksheets to the appropriate maintenance section for verification and repair via the LOGPAC.

SUPPORTING ATTACHMENTS AND DETACHMENTS

5-26. Commanders will plan and coordinate for the sustainment of attachments and detachments prior to the execution of each mission. Paragraphs 5-27 through 5-29 present techniques the troop commander uses in sustainment planning.

ATTACHMENTS

5-27. Augmentation normally comprises maintenance, recovery, and supply support for supply Classes III, V, and IX. The troop attaches the necessary sustainment augmentation when a supporting element attaches to the troop. The coordination of an SOP to establish this augmentation occurs in advance. Additional sustainment assets can attach to squadron sustainment elements or attach directly to the troop.

5-28. Leaders receive basic information to anticipate support requirements when receiving attachments. Planning considerations include those following:

- Number and type of vehicles, personnel, and weapon systems.
- Status and strength.
- Time and duration when attachment is effective.
- Sustainment assets accompanying the attachment.
- Time and location of linkup and who is responsible for linkup.

DETACHMENTS

5-29. The squadron detaches Cavalry troops for certain missions as the situation requires. The same considerations apply as when receiving attachments. The troop deploys with the appropriate level of support, including maintenance, based on how long the troop will be detached. The commander pays particular attention to Class III and V resupply and to medical, which also applies when the troop operates at a considerable distance from the squadron's sustainment assets. The squadron S-4 sends the following information to the receiving unit's S-4 when the troop detaches to another unit:

- Number and type of vehicles, personnel, and weapon systems.
- Time and location of linkup and who is responsible for linkup.
- Current status and strength.
- Time and duration when attachment is effective.

COMMUNICATIONS

5-30. The combat train's command post is the net control station for the squadron administrative and logistics net. All sustainment leaders and sites operate on the administrative and logistics net to respond to requests and coordinate sustainment execution. The troop XO and 1SG use this net to submit sustainment reports and support requests. The net is useful for controlling the movement of sustainment assets during LOGPAC displacement and until the LOGPAC's release to the 1SG at the logistics release points.

REPORTING

5-31. Accurate LOGSTAT reporting of the troop's sustainment status is essential for keeping the troop combat ready. SOPs establish report formats, reporting times, and radio voice brevity codes to keep sustainment nets manageable. The troop commander sends detailed information to the supporting sustainment element and the higher tactical command post. The troop commander sends detailed radio voice reports to the supporting sustainment element and, at the same time, gives a summarized status in each general category to the higher tactical command post using a brevity code. Limiting routine reports to a summary of changing items is preferable during the reporting period. The troop commander submits immediate reports as necessary. (See FM 6-99 for more information on reporting.)

5-32. The commander always knows the sustainment status of the troop. The command post tracks the status of subordinate elements by a code; this allows the commander to use the percentage of available combat power, fuel, ammunition, and personnel to assess the troop's combat capability quickly. (See table 5-2 for code words the troop may assign to indicate percentage availabilities.)

Table 5-2. Sustainment status code words

STATUS CODE WORD	*PERCENTAGE OF AVAILABILITY OF SUPPLIES*
GREEN	90 to 100 percent
AMBER	80 to 89 percent
RED	60 to 79 percent
BLACK	Less than 60 percent

SECTION III – LOGISTICS PACKAGE OPERATIONS

5-33. A *logistics package* is a grouping of multiple classes of supply and supply vehicles under the control of a single convoy commander (FM 3-90). The tactical grouping of sustainment elements accommodates the METT-TC (I) variables but adheres to some fundamental tenets that are suitable for inclusion in SOPs.

TROOP TRAINS

5-34. The trains provide sustainment during operations. Trains collocate with the command post or operate separately under the control of the 1SG. Usually, troop trains locate at least 2,000 meters away from the troop's combat operations. They are out of the enemy's direct fire range when at least one terrain feature separates them and the enemy. They can consolidate with the squadron trains whenever locations and distances allow for colocation, thereby alleviating stress on the troop's limited sustainment assets.

5-35. The supply sergeant and armorer usually locate in the squadron field trains. The troops train in the ABCT include an FMT, with capabilities for maintenance, recovery, and limited combat spares.

SUPPLY ROUTES

5-36. Distances vary from operation to operation, and unit locations target maximum effectiveness. Sustainment and BCT planners and leaders consider operational and mission variables when locating units and the impact the distances have on sustainment support. Distribution platform capability and convoy security are considerations when determining distances. (See ATP 4-90 for more details regarding echeloned sustainment.)

5-37. The planning factor for line haul operations is two trips per day (one trip per shift) at approximately 144 km each way per shift. The planning factor for local haul operations is four trips per day (two trips per shift) at approximately 34 km each way per shift.

5-38. The main supply route is the route designated in an operational area on which the bulk of traffic flows in support of military operations. The commander plans alternate supply routes in case the enemy interdicts the main supply route or the route becomes too congested. Alternate supply routes meet the same criteria as the main supply route. In the event of CBRN contamination, one of these supply routes should be designated as the dirty route to handle contaminated traffic. The security of supply routes in a noncontiguous AO may dictate the troop's providing security for sustainment convoys and other sustainment elements such as caches.

LOGISTICS RELEASE POINT

5-39. The headquarters and headquarters troop 1SG are responsible for ensuring the LOGPAC reaches the logistics release point. The logistics release point is the point along the supply route at which the Cavalry troop 1SG takes control of the troop's LOGPAC. Likely areas for logistics release points are near main supply routes, at crossroads, or close to bodies of water (for example, lakes, ponds, reservoirs). In some situations, the METT-TC (I) variables may require the placement of the logistics release point in a less conspicuous location. In all cases, logistics release points are secure. The use of logistics release points controls the movement of assets and specifies which functions occur at the checkpoint. Movement of sustainment assets is primarily based on three methods:

- On order.
- Triggered by events (such as a troop's Class V supplies dwindling to 60- to 79-percent availability, which is a condition that would receive RED status according to table 5-2 on page 99).
- Triggered by distance between sustainment assets and the supported elements.

RESUPPLY

5-40. The troop XO or 1SG submits the LOGSTAT report to the squadron S-4. The S-4 coordinates the LOGPACs and ensures they contain the correct supplies (requested and required). Additionally, the S-4 determines which logistics release points best support the operation and notifies all units. Normally, LOGPACs operate every 24 to 72 hours for routine resupply. The S-4 remains prepared to organize unscheduled LOGPACs to provide for immediate resupply.

LOGISTICS PACKAGE ORGANIZATION

5-41. The troop supply sergeant is responsible for organizing the troop's LOGPACs in the field trains. Normally, the troop's LOGPAC includes the following (see table 5-1 on page 94 for the classes of supply):

- Troop supply truck, which brings replacements, incoming mail, and the troop's water trailer.
- Class I rations.
- Bulk fuel and packaged petroleum, oil, and lubricant products (Class III).
- Class V, including demolitions and mines.
- Additional trucks as necessary to carry other classes of supply that the troop requests.
- Class IX parts or other requested maintenance items.

Note. As regards the Class V supplies, the squadron's SOPs usually establish a standard LOGPAC load of munitions. S-4s use reports from the XO or 1SG to adjust the standard load.

LOGISTICS PACKAGE MOVEMENT AND CONTROL

5-42. Once the squadron's LOGPAC is operational, the headquarters and headquarters troop 1SG move it forward to the logistics release point. At the logistics release point, Cavalry troop 1SGs, or their representatives, assume control of the troop's LOGPAC. The S-4, or a combat trains command post representative, is present at the logistics release point to monitor the operation, coordinate with troop 1SGs, receive hard copies of the logistics reports, and deliver sustainment situation updates. The squadron identifies LOGPAC turnaround times in its SOPs. Upon completion of resupply operations, the troops return the LOGPAC vehicles to the logistics release point. The headquarters and headquarters troop 1SG forms the vehicles into a convoy for movement back to the field trains.

CONVOY SURVIVABILITY

5-43. Convoys take all necessary measures to avoid ambush during combat situations. Generally, they take passive measures, supplemented by active measures, to defeat or escape from an ambush.

5-44. No single defensive measure, nor any combination of measures, can prevent or effectively counter all ambushes or well-placed landmines. The effectiveness of counterambush measures directly relates to the state of Soldiers' training and leaders' abilities.

AVOIDING AN AMBUSH

5-45. Troops take the following actions to avoid an ambush, using the IPOE process and products:

- Select the best convoy route.
- Maintain vigilant observation of the route ahead of the convoy to detect anything suspicious.
- Conduct map (digital), ground, and aerial reconnaissance.
- Obtain current information.
- Use operations security to deny the enemy foreknowledge of the convoy.
- Present a formidable target.
- Schedule convoys that avoid time and route routines.

REDUCING THE EFFECTIVENESS OF AN AMBUSH

5-46. Troops take the following actions to reduce the effectiveness of an ambush:

- Harden vehicles.
- Cover loads.
- Space prime targets throughout the convoy.
- Wear protective equipment.
- Use assistant drivers.
- Carry troops and supplies.
- Use prearranged signals to warn the convoy of an ambush.
- Coordinate for escort vehicles using a combination of overwatch and 360-degree local security based on the METT-TC (I) variables.
- Coordinate for reaction force support.
- Maintain the interval between vehicles.
- Thoroughly brief and rehearse all convoy personnel on immediate action drills.
- Move through the kill zone, if possible.
- Stop short of the kill zone.
- Prevent themselves from blocking the road.
- Rapidly respond to orders.
- Aggressively return fire.
- Counterattack with escort vehicles.
- Call for fire support.
- Call for the reaction force.

SECTION IV – TROOP RESUPPLY OPERATIONS

5-47. The commander uses standard procedures to rearm, refuel, and refit the troop as quickly and efficiently as possible to sustain its continuity of effort. The troop has a limited amount of time to conduct sustainment when operating at extended distances from the squadron field trains' location in the BCT support area. Supply Classes I, III, and V (see table 5-1 on page 94) take priority. Resupply techniques vary based on the METT-TC (I) variables. They rely on coordination of the troop headquarters elements and the resupplying element. Nonstandard elements may resupply the troops, depending on proximity and availability, but may not be from their supported squadron.

5-48. The squadron staff conducts detailed planning and coordination for the combat resupply of the troops operating in the BCT's forward security area. The troop carries a 3-day supply forward. The squadron plans to extract the troop prior to the troop's depleting the 3-day supply and conducts resupply of the troop in its assembly area. When this is not feasible, the troop XO and 1SG, along with the squadron staff, plan and coordinate for ground infiltration or aerial insertion of resupply items to designated drop points or cache points.

5-49. A troop conducts routine resupply activities in its assembly area or at a location behind its positions. These resupply activities take place when the troop is not in contact with enemy forces. They also take place when the troop commander decides the risk of not conducting resupply outweighs the risk of interrupting the troop's ongoing operations.

SITE SELECTION

5-50. The 1SG carefully chooses the logistics release point to provide responsive support for the troop, to support the movement of wheeled resupply vehicles, and to limit exposure to enemy fires. The 1SG maintains knowledge of the current tactical situation and can determine what the troop will be doing when resupply takes place. The 1SG selects the exact LOGPAC delivery site based on map and ground reconnaissance. The 1SG ensures the site meets the following criteria:

- Available cover and concealment.
- Reduced thermal signature.
- Sufficient room to disperse the vehicles.
- Level terrain for refueling.
- Proximity to the platoon positions, which are 3 to 8 km behind the FLOT and the center of the AO.
- Road or trail network to support the wheeled resupply vehicles and heaviest troop vehicles.
- Road or trail network to support one-way inbound traffic flow.

RESUPPLY OPERATION METHODS

5-51. The tailgate method and service station method are two basic methods for resupply operations. A troop or platoon may perform either method, depending on the dispersion of the elements. It may also conduct resupply using a combination of the two methods, and it can vary the specifics of the two basic methods. During a screen mission, for example, it could use the tailgate method for its most forward observation posts and the service station method for its observation posts in depth. Other resupply methods, which can prove useful in specific situations, are aerial resupply, troop pre-stock resupply (pre-positioning and caching), and emergency resupply.

TAILGATE

5-52. The troop uses the tailgate method in static positions such as assembly areas. (See figure 5-1 on page 104 for a depiction of resupply by the service station method.) Class III and V supply vehicles and other bulk cargo vehicles move from troop vehicle to troop vehicle to conduct resupply. The rest of the sustainment vehicles are centrally located in the troop's area. The reconnaissance vehicles require little or no movement. Personnel move to a centralized location to receive additional supplies. The tailgate method provides 360-degree security throughout the resupply operation. However, it is very time consuming and requires an adequate road network for the wheeled supply vehicles to reach each troop vehicle. Paragraph 5-53 reviews the tailgate resupply procedures.

5-53. During tailgate resupply, reconnaissance vehicles remain in place while petroleum, oil, and lubricant and ammunition trucks travel in a clockwise direction around the assembly area to each troop vehicle's position and conduct resupply. Crewmembers rotate through the feeding area and pick up supplies, water, and mail. Soldiers maintain security throughout the rotation process. The 1SG and platoon sergeants arrange for the evacuation of the remains of Soldiers killed in action and their personal effects. They transfer the remains and personal effects to a mortuary affairs collection point. Ambulances pick up, treat, and evacuate seriously wounded Soldiers. Casualties with less serious wounds report to the ambulance for emergency medical treatment and disposition. Soldiers either return to duty or evacuate for further treatment. Soldiers consolidate and secure detainees. Soldiers transport detainees to the squadron trains on a returning supply vehicle as soon as possible, or they coordinate with military police units for detainee pickup and transport. Troop armorers, radio repair personnel, and supporting maintenance personnel perform repairs of known problems and spot-check other vehicles. Soldiers repair vehicles needing maintenance on site or evacuate them to a maintenance collection point. The 1SG and platoon sergeants closely monitor the resupply operation. Empty LOGPAC vehicles move to a holding area, where they are loaded with the remains of Soldiers killed in action, enemy prisoners, and inoperative equipment. The supply sergeant moves the LOGPAC back to a logistics release point. The supply sergeant links up with and transfers the LOGPAC to the support platoon leader and then returns to the field trains. Troops may be required to provide an element to conduct convoy security for the safe return of the LOGPAC to the brigade support area and the retrograde storage area.

5-54. The tailgate method is the least preferable resupply method due to the limited assets in the squadron and the amount of time it requires to execute. A resupply operation employs it only when it allows for faster resupply than the service station method or for better operations security.

SERVICE STATION

5-55. The commander employs the service station method (see figure 5-1 on page 104) during those tactical operations that preclude the troop's establishing an assembly area for the resupply. This method is most effective when the troop is in an AO no wider than 3 to 5 km. Individual platoons or sections resupply at the LOGPAC delivery site while the rest of the troop stays in position. The 1SG sets up the LOGPAC. Soldiers from the trains who are not involved in the resupply, in addition to platoon vehicles that resupplied or are awaiting resupply, provide LOGPAC security. Paragraph 5-56 reviews the service station resupply procedures.

5-56. The service station method begins with the vehicles of the first platoon or section entering the LOGPAC delivery site at a designated location and following a one-way traffic flow. Vehicles carrying the remains of Soldiers killed in action move to the mortuary affairs holding area (out of view of the troop) and transfer the remains and personal effects at the casualty collection point. Vehicles take Soldiers needing medical attention to the combat medics, who treat them or prepare them for evacuation. Platoon sergeants supervise the operation and conduct face-to-face coordination with 1SGs for any special requirements while platoon leaders contact the troop commander face to face or by radio for orders and situation reports. Crews requiring maintenance support move to a designated maintenance holding area for onsite repair. When vehicles rotate through stations with maintenance personnel, armorers and radio repair personnel repair known problems and spot-check other vehicles. Crews then rotate to the supply truck to pick up mail, supplies, and supply Class I items. Finally, platoon leaders and platoon sergeants conduct precombat inspections, and upon the completion of resupply, the platoon or section moves to its designated position. The remaining platoons rotate individually through the LOGPAC for resupply. The troop's LOGPAC returns to the logistics release point after the resupply operation. The troop's LOGPAC links up with the combat or field trains representative who led the LOGPAC forward. The troop's LOGPAC returns to the brigade support area and the retrograde storage area.

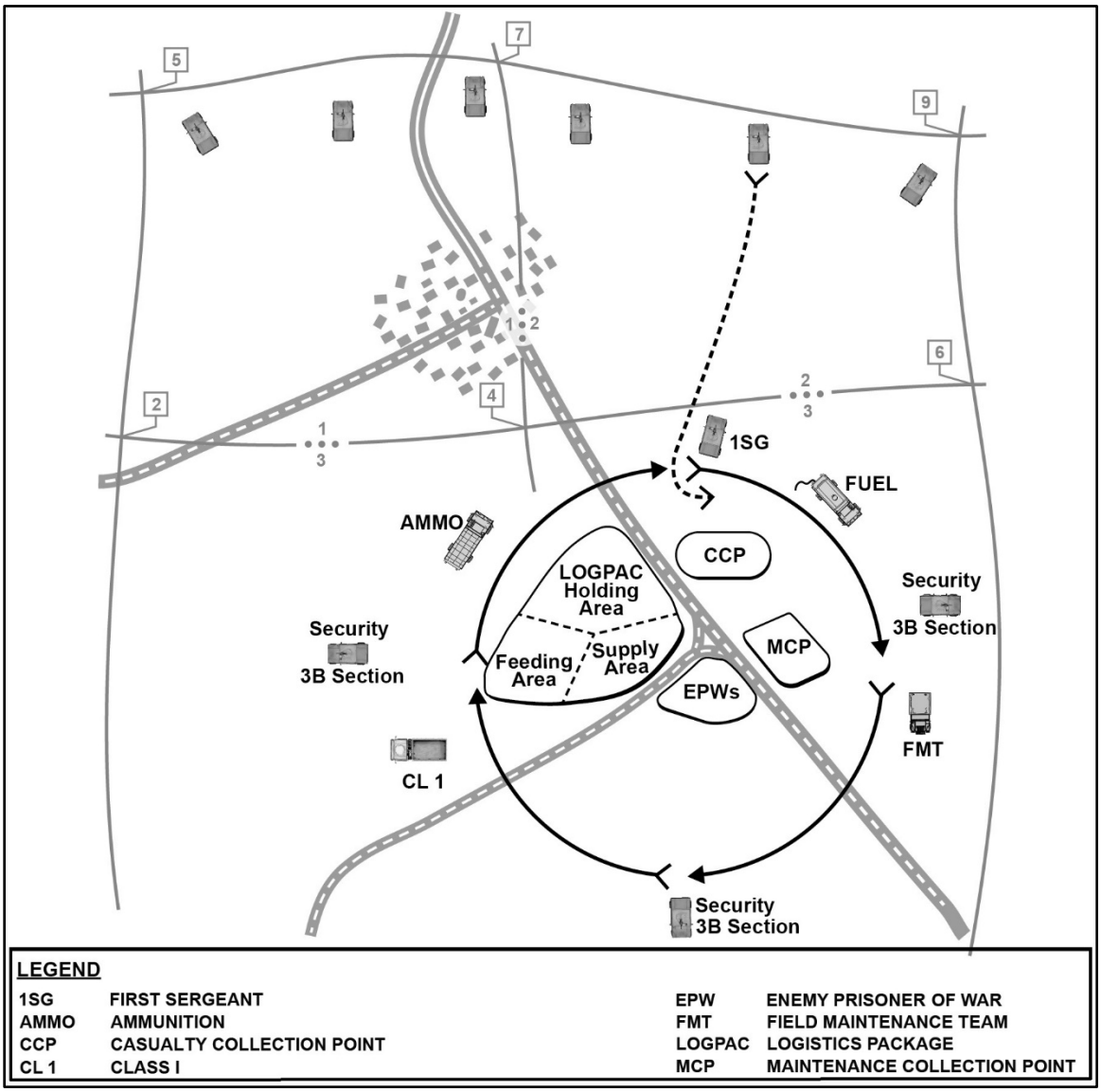


Figure 5-1. Troop conduct of resupply by service station method

AERIAL

5-57. Aerial resupply is a vital link in the distribution system; it provides the capability to supply the troop despite disrupted ground lines of communication or hostile terrain. Helicopters are a lifeline when Cavalry troops operate forward of friendly lines for extended periods. Aerial resupply provides the troop freedom of movement by drastically reducing its dependence upon surface logistic support. Its flexibility and effectiveness make it a responsive asset. However, it requires significant planning and entails the consideration of a different set of risks. In addition, resupply helicopter signatures can compromise troop positions. A careful choice of resupply routes and landing zones minimize this risk. Nevertheless, aerial assets are useful in resupplying dismounted Cavalry troops in observation posts in restrictive terrain.

TROOP PRE-POSITIONING AND CACHING

5-58. The pre-positioning and caching methods of resupply differ in the level of security each provides for the supplies. With pre-positioning, supplies remain unattended, although leaders take steps to prevent enemy elements from locating the supplies. When the unit caches the resupply, security personnel guard the site.

5-59. Both pre-positioning and caching occur in a variety of reconnaissance and security operations. During reconnaissance, advance elements stock positions along the intended route of advance or near the objective. In security operations, Cavalry elements set up cache points throughout the AO. Caches may lie in alternate or supplementary observation posts in addition to other locations throughout the depth of the troop's area. Scouts also use rally points to provide resupply for patrols.

5-60. Leaders carefully plan and execute resupply operations at every level. Leaders place cache points in easy-to-find locations to someone who has never visited the site. All leaders, down to a vehicle commander and squad leader, know the exact locations of cache points. The troop sustainment team takes steps to ensure the security and survivability of pre-positioned supplies by emplacing dug-in caches, selecting covered and concealed positions, and considering the effects of weather, terrain, and wildlife. The sustainment team also develops plans to remove or destroy cache supplies to prevent the enemy's capturing them.

EMERGENCY

5-61. "Requests for emergency resupply often indicate a breakdown in coordination and collaboration between sustainment and maneuver forces," which renders emergency resupply the least preferrable method of supply. Accurate and timely logistic status reporting decreases the need for emergency resupply operations. Alternatively, immediate resupply, commonly used at the troop level in a Cavalry organization, is a technique that may involve a request for a fuel and ammunition resupply operation while the troop is in contact with the enemy.

5-62. The resupply begins at the section and platoon levels by redistributing ammunition between unit vehicles to cross-level loads. The platoon sergeant reports the need for emergency resupply to the 1SG, who relays the request to the squadron S-4. The unit's combat trains maintain a small load of Class III and V supplies (see table 5-1 on page 94) for these situations. The S-4 coordinates a linkup between the combat trains and the troop 1SG. The 1SG meets the resupply trucks and moves back to the troop's AO. The 1SG and troop XO choose a resupply point just behind the troop's position and masked by terrain from enemy direct fire and observation. The fuel truck moves to the resupply point, and vehicles or sections rotate through the resupply point to refuel. Emergency resupply occurs only when the troop has expended fuel and ammunition at a rate greater than expected; it is not a routine solution for failures in sustainment planning and execution.

SECTION V – MAINTENANCE

5-63. The Army has two levels of maintenance—field maintenance and sustainment maintenance. Field maintenance is on-system maintenance and mainly involves preventive maintenance and replacement of defective parts. It includes maintenance actions performed by operators and always returns repaired equipment to the troop. Sustainment maintenance provides off-system repairs of components or end items and returns all repaired equipment to the supply system.

FIELD MAINTENANCE

5-64. Within the squadron, field-level maintainers concentrate in the FMT. Generally, the ABCT includes an FMT with capabilities for field maintenance, recovery, and limited combat spares. The FMT provides replenishment of Class IX supplies (see table 5-1 on page 94) to perform field maintenance on all equipment, including small arms and communications equipment. The FMT moves forward to support the troop as close to the battle as possible. When standard maintenance repairs are not practical, the troop, in coordination with the FMT, may apply battle damage repairs following battle damage assessment.

RECOVERY

5-65. The first level of recovery for the troop is self-recovery. The operator and crew use basic issue items, additional authorization lists, and on-vehicle equipment to perform self-recovery. When self-recovery fails, it uses like-vehicle or like-equipment recovery. The troop uses another vehicle or piece of equipment of the same or heavier weight class to recover the damaged vehicle or equipment, with further support from tow bars, chains, or tow cables. When both self-recovery and like-to-like recoveries fail, the troop uses FMT-dedicated recovery assets.

5-66. The troop plans for recovery operations and includes the recovery plan in the sustainment rehearsal. The troop commander establishes maintenance time guidelines for making a repair or recovery decision. The type of recovery method used depends on the METT-TC (I) variables. The troop remains aware of the location of the maintenance collection point.

BATTLE DAMAGE ASSESSMENT

5-67. Battle damage assessment is the procedure for returning disabled equipment rapidly to the operational commander by a field-expedient repair of components. Troop commanders address battle damage assessment in the sustainment section of their OPORDs. (See ATP 4-31 for more information on battle damage assessment.)

MAINTENANCE COLLECTION POINT

5-68. When the FMT cannot repair the equipment quickly on site, it evacuates the component to the squadron's maintenance collection point, where FMT maintainers repair it. Unrepairable components are evacuated to the squadron field trains, which are generally located in the brigade support area.

SECTION VI – ARMY HEALTH SYSTEM

5-69. Organic medical assets provide Army Health System support to maneuver forces. The focus of the medical effort at the BCT level and below is to locate, acquire, treat, stabilize, and evacuate patients rapidly. The Army Health System is a component of the Military Health System, which is responsible for operational management of the HSS and force health protection (FHP) missions for training, pre-deployment, deployment, and post-deployment operations.

5-70. The increased number of casualties and patients is common during Cavalry operations, though this does challenge the unit's casualty response and HSS capabilities. A unit's casualty response, which is a unit leader's responsibility, remains in synchronization with the unit's HSS and FHP medical plans, which are a medical responsibility. Synchronization supports better handling of increased casualty and patient volumes and continued, concurrent responsiveness to operational requirements.

TREATMENT BY NONMEDICAL PERSONNEL

5-71. Nonmedical personnel performing first aid assist combat medics in their duties. An individual administers first aid (self-aid and buddy aid) while enhanced first aid comes from the combat lifesaver. Combat lifesavers and buddy aid are crucial to sustaining medical care for sick, injured, and wounded Soldiers.

SELF-AID AND BUDDY AID

5-72. Each individual Soldier remains proficient in a variety of first aid procedures. These include aid for CBRN-related casualties with an emphasis on lifesaving tasks. The Soldier's or buddy's ability to perform lifesaving tasks means the potential alleviation of a life-threatening situation.

COMBAT LIFESAVER

5-73. The combat lifesaver is a nonmedical Soldier selected by the unit commander for additional training beyond basic first aid. Usually, a minimum of one individual per squad, crew, team, or unit of equivalent size serves as a combat lifesaver. The primary duty of this individual does not change. The combat lifesaver's additional duty is to provide enhanced first aid before the combat medic arrives. The combat lifesaver is usually the first person on the scene to provide first aid to sick, injured, and wounded personnel.

TACTICAL COMBAT CASUALTY CARE

5-74. One additional consideration for medical treatment is the incorporation of tactical combat casualty care. Though not yet a formalized medical support function, it remains a vital option for leaders to consider and to implement appropriately during tactical operations. Tactical combat casualty care is divided into three phases—care under fire, tactical field care, and tactical evacuation care. It occurs during a combat mission

and is the military counterpart to prehospital emergency medical treatment. (See ATP 4-02.4 for more details on tactical combat casualty care.)

TREATMENT BY MEDICAL PERSONNEL

5-75. The combat medic, physician, physician assistant, or health care specialist in the squadron aid station provides medical treatment after initial care. Emergency medical treatments, known as immediate far forward care, are lifesaving steps that do not require a physician's knowledge and skills. The combat medic is the first individual in the medical chain to make decisions based on the training specific to medical military occupational specialties. The physician and physician assistant in a treatment squad provide advanced trauma management to casualties at the squadron aid station and conduct routine sick calls when the tactical situation permits.

SQUADRON MEDICAL PLATOON

5-76. The squadron medical platoon is the focal point of Army Health System support for the squadron and troops. The platoon receives, treats, and evacuates patients and coordinates for further medical evacuation as necessary. It establishes and operates the squadron aid station, which is the primary medical treatment facility for the squadron and troops. The squadron medical platoon has a headquarters section, treatment squad, combat medic section, and ambulance squads (two squads for the IBCT and four squads for the ABCT).

HEALTH SERVICE SUPPORT

5-77. The medical platoon's HSS mission requirements include the following:

- Provide Role 1 medical care, which includes the following:
  - Emergency medical treatment for sick, injured, and wounded patients.
  - Advanced trauma management.
  - Casualty collection.
  - Medical evacuation from point of injury or supported troop location to the squadron aid station or supporting treatment team.
  - Sick call services.
  - Tactical combat casualty care.
  - Class VIII resupply (see table 5-1 on page 94).
- Establish the squadron aid station where it can best support squadron operations under the direction of the main command post or the combat trains command post.
- Establish a patient decontamination site near the aid station during CBRN defense operations.
- Provide training to certify combat lifesavers and to recertify them every 12 months for their skill sustainment.
- Attach combat medics from the combat medic section to each of the platoons and troop headquarters to form the troop medical team.
- Place ambulances forward with supported troops to provide emergency medical treatment, reduce evacuation time, and augment troop medical capabilities upon requirement.
- Maintain field medical records in accordance with AR 40-66.

MEDICAL PLATOON FORCE HEALTH PROTECTION RESPONSIBILITIES

5-78. One of the medical platoon's mission requirements is to establish a combat and operational stress control program for the troop. For this, the medical platoon may need to request assistance from the supporting mental health section. The mental health section conducts combat and operational stress control classes on stress reduction techniques and the prevention of combat and operational stress reactions. Other medical platoon mission requirements include the following:

- Implement FHP operations to counter health threats.
- Implement FHP operations to prevent disease and noncombat injuries.
- Plan and conduct pre-deployment and post-deployment health assessments.
- Establish and execute a medical surveillance program.
- Coordinate the occupational environmental health surveillance program.
- Ensure troop personnel practice effective oral hygiene.
- Assist with the training of field sanitation teams.
- Develop FHP measures in the troop's SOPs.
- Send chemical and biological specimens to the area medical laboratory for theater validation analysis.
- Conduct sanitation inspections of the troop's living area, food service areas, and waste disposal.
- Conduct sanitation inspections of potable water distribution points and equipment.

SQUADRON AID STATION

5-79. The squadron medical platoon establishes and operates the squadron aid station. Trained personnel at the medical treatment facility stabilize patients for further evacuation, provide emergency lifesaving and limb-saving treatments, and treat minor wounds or illnesses for patients who could return to duty. The squadron aid station normally consolidates with the combat trains command post.

TREATMENT TEAMS

5-80. The squadron medical platoon can split the treatment squad into two treatment teams to support squadron and troop operations, depending on the mission. These treatment teams (Teams Alpha and Bravo) operate the squadron aid station and provide medical care and treatment, including sick calls, emergency medical treatment, and advanced trauma management. Team Alpha has an operational medical officer (primary care physician and squadron surgeon), a health care NCO, and two health care specialists. Team Bravo has a physician assistant, a health care NCO, and two health care specialists. The physician, physician assistant, and health care NCOs and specialists provide emergency medical treatment and assist with advanced trauma management procedures based on their occupational specialties.

5-81. The treatment teams can operate for limited times during split-based operations in direct support of squadron units. They can also operate in split-based operations when the squadron aid station must move to a new location. One team remains at the initial location and continues to treat patients while the other team moves to the new location and establishes patient care capabilities. Once the jump team has established treatment capability at the new location, the other team ensures the appropriate evacuation of or return to duty for all patients and then moves to the new location. When echeloned, the aid stations are limited primarily to triaging, stabilizing, and preparing patients for evacuation.

AMBULANCE SQUADS

5-82. Medical platoon ambulances provide medical evacuation and care during transport from the Soldier's point of injury or the troop casualty collection point to the squadron aid station. The ambulance team supporting the troop works in coordination with the combat medics supporting the platoons. Medical evacuation teams attach to the troop on a habitual basis. They assist the troop combat medics with medical treatment and evacuation to the squadron aid station and plan and execute aerial evacuation for litter and urgent patients when possible.

Note. The squadron's or the troop's SOPs and the OPORDs for mass casualty situations include plans for using nonmedical vehicles.

COMBAT MEDIC SECTION

5-83. The usual allocation of combat medics is one combat medic per each platoon in the troop. The platoon combat medic normally locates with, or near, the platoon leader or platoon sergeant. The senior troop combat medic normally collocates with the 1SG. As the tactical situation allows, the senior troop medic manages the troop casualty collection point, provides treatment, and prepares patients for medical or casualty evacuation, as appropriate for their condition.

EVACUATION

5-84. There are two methods of evacuating injured Soldiers—medical evacuation and casualty evacuation. Medical evacuation employs ground or air ambulances to evacuate a patient from the point of injury to a supporting medical treatment facility or from one medical treatment facility to another while providing care during transport. Casualty evacuation employs nonmedical vehicles or other means of patient transport without the provision of care during transport.

5-85. Medical evacuation is critical in HSS planning. The troop is responsible for the evacuation of casualties from the point of injury to the casualty collection point. The medical platoon is responsible for the evacuation of casualties from the casualty collection point to the squadron aid station. The squadron or brigade personnel staff officer or the S-4 ensures a coordinated evacuation plan is in place to support movement from all troop casualty collection points to the squadron aid station, to the brigade support medical company, or to higher medical treatment facilities. Patients evacuate no further than their condition requires and then return to duty as soon as possible.

FORCE HEALTH PROTECTION

5-86. Leaders at all levels are responsible for maintaining the health and fighting fitness of Soldiers. Commanders emphasize personnel protective measures designed to reduce exposure to health hazards and to mitigate their effects on military personnel. Leaders set the example by following and enforcing FHP guidance related to hygiene, sanitation, safety, sleep habits, physical fitness, counseling, and the treatment of combat stress and fatigue.

OPERATIONAL PUBLIC HEALTH

5-87. Operational public health support is provided by preventive medicine units and staff officers. Preventive medicine detachments and teams conduct deliberate, consistent analysis of health threats to enable the implementation and enforcement of the unit and individual countermeasures required to reduce associated health risks. The troop's SOPs establish these rules of hygiene and field sanitation. Individual Soldiers and unit leaders form the first line of defense in the early recognition and application of appropriate procedures to reduce health risks. FHP actions that are understood and proactively implemented by unit leaders and individual Soldiers have the greatest impact on preventing and controlling casualties from disease and injuries. Preventive medicine personnel who are organic to the BCT brigade support medical company provide operational public health support. The BCT preventive medicine section is equipped to conduct medical surveillance (including that of disease and of injuries unrelated to combat), and they can recommend appropriate preventive countermeasures.

PHYSICAL FITNESS

5-88. Physical fitness is essential to Soldier maintenance of stamina and energy levels. Leaders need to be creative in establishing and implementing physical training opportunities around mission requirements, especially for deployed Soldiers.

COMBAT AND OPERATIONAL STRESS CONTROL

5-89. Combat and operational stress control focuses on protecting the force through treatment and prevention. The brigade support battalion has a combat and operational stress control team comprising a behavioral science officer and a mental health specialist. Chaplains also assist with combat stress control by identifying Soldiers who are under extreme stress.

This page intentionally left blank.

Appendix A

Troop Operating Distances

Troop commanders and leaders develop troops' areas of operations based on personnel coverage needs, available weapon systems, and the desired amount of depth. The primary considerations are the METT-TC (I) variables. Considerations to emphasize when developing operational distances include enemy, friendly optics and laser capabilities, weapons ranges, and terrain.

Troop commanders and leaders may apply the following basic equations prior to mission execution to calculate an approximate operating area for each platoon. When all the platoons have similar METT-TC (I) variables, the commanders can triple the distance, basing the calculation on one platoon's AO, when conducting map reconnaissance. Using the formula implemented throughout this appendix will help leaders make tentative plans for positions and fires coverage.

This appendix provides several examples troop commanders and leaders can reference to develop mission-specific operating distances. Many METT-TC (I) variables are not addressed in these generic examples. Leaders need to apply all planning specifics to their missions.

ARMORED BRIGADE COMBAT TEAM SCOUT PLATOON

A-1. An ABCT scout platoon maximizes its capabilities in firepower and optics. The scout platoon has protection, allowing for greater risk against ABCT-arrayed threats. ABCT troop commanders can use the following method to calculate their planning distances and depths, starting at the platoon level, in unrestrictive terrain for a six-vehicle scout platoon:

- Disperse vehicles based on enemy fires capability, yet still within friendly fires coverage; the minimum recommended planning factor of 500 meters between vehicles provides force protection against enemy indirect fire.
- Optics for the ABCT Cavalry troop usually allow enemy target acquisition of up to 10 km and identification at 3 km.
- Weapon systems vary across formation types and significantly influence distance planning considerations (for example, the M242 25-mm cannon allows over 1,000 meters between vehicles to maintain mutual support and sufficient weapons range beyond the supported vehicle).
- Analyze terrain as unrestrictive, restrictive, or severely restrictive (See ATP 2-01.3 for more information on terrain types for Armored forces, especially as related to mobility.):
  - Typically, unrestrictive terrain is free of any restriction to movement.
  - Unrestrictive terrain for Armored or mechanized forces is typically flat to moderately sloping terrain with scattered or widely spaced obstacles such as trees or rocks.
  - For example, in desert terrain, troops can screen more area by maximizing the use of optics and weapons capabilities.

A-2. To find the planning screen front, given the above planning factors, take one-half of the maximum effective range of the weapon system and multiply that by three-quarters of the number of vehicles, which will account for the mutually supporting position. Incorporate a factor of 1 for the terrain classification. Finally, add in the maximum effective range of the weapon system to cover the flank security factor, which will establish a front of 9 km. To find the planning screen depth, divide the front in half to establish a depth of 4,500 meters. By changing the planning factors to meet their variables, commanders can rapidly estimate their fires protection and planning distances. (See figure A-1 on page 112 for a depiction of the resulting operational distances and table A-1 on page 113 for an expression of this process in mathematical equations.)

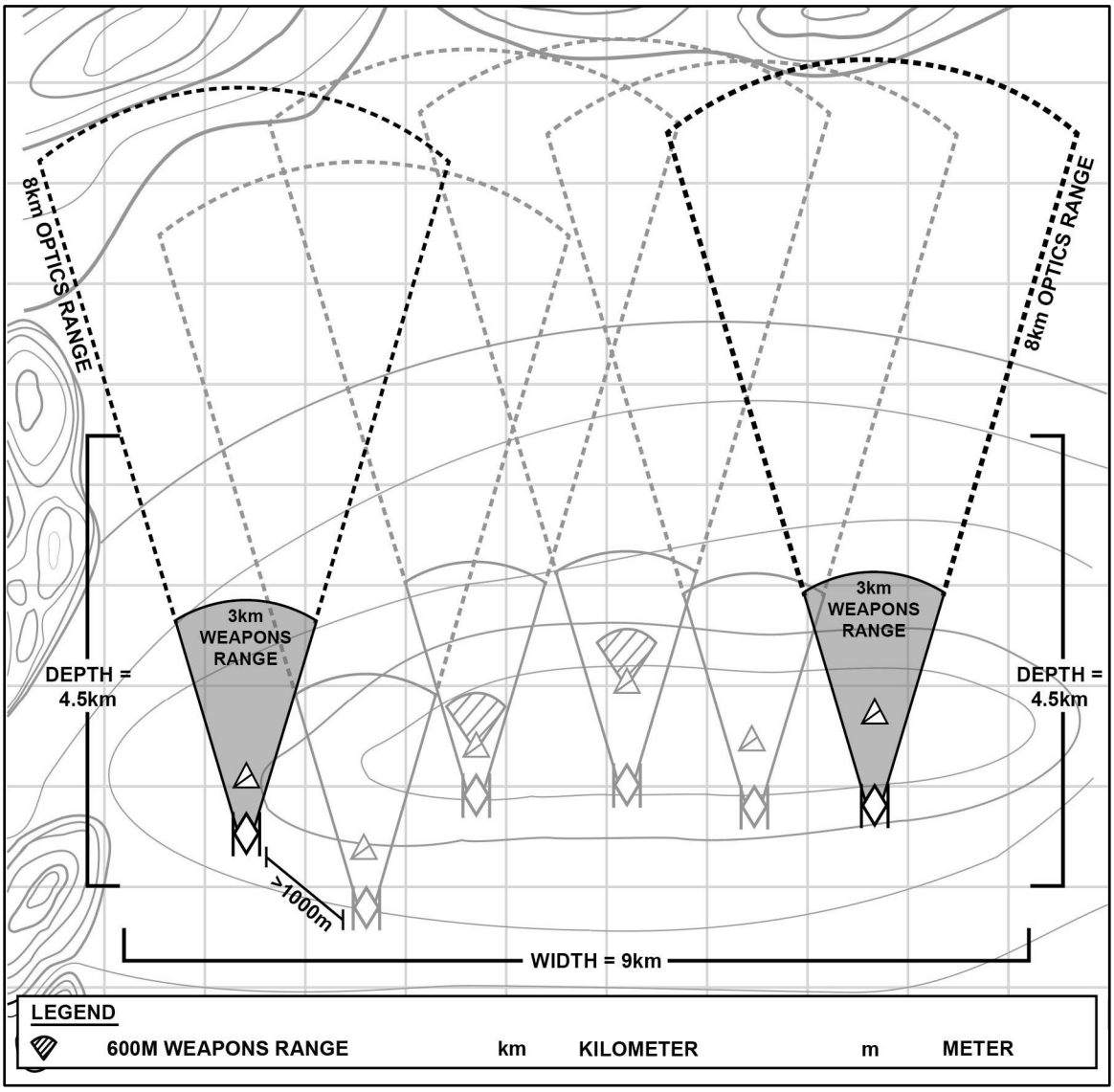


Figure A-1. Armored brigade combat team scout platoon in unrestrictive terrain

Table A-1. Scout platoon width and depth formulas

<table>
<tr><td colspan="3">To calculate width and then depth:</td></tr>
<tr><td colspan="3">Width Formula</td></tr>
<tr><td colspan="3">width =
one-half of the weapon system max effective range x three-quarters of the number of vehicles x terrain + flank security
or
W = ([(0.5R)(0.75Nv)] T) + F
simplified to
W = (0.375RNvT) + F</td></tr>
<tr><td colspan="3">Depth Formula</td></tr>
<tr><td colspan="3">depth = width/2
or
D = W/2
Note. Depth will not be greater than one-third of the maximum effective range of the internal indirect fire assets.</td></tr>
<tr><td colspan="3">Variables</td></tr>
<tr><td>D – depth</td><td>F – flank security</td><td>Nv – number of vehicles in formation</td></tr>
<tr><td>R – maximum effective range of weapon system</td><td>T – terrain</td><td>W – width</td></tr>
<tr><td colspan="2">Common Number of Vehicle Terms</td><td>Terrain Values</td></tr>
<tr><td colspan="2" rowspan="3">0.75 x 2 (vehicles) = 1.5
0.75 x 3 = 2.25
0.75 x 4 = 3
0.75 x 5 = 3.75
0.75 x 6 = 4.5</td><td>1 for unrestrictive
0.5 for restrictive
0.25 for severely restrictive</td></tr>
<tr><td>Flank Security Value</td></tr>
<tr><td>Use the maximum effective range of the weapon system.</td></tr>
</table>

ARMORED BRIGADE COMBAT TEAM CAVALRY TROOP

A-3. For an ABCT Cavalry troop over a contiguous front in unrestrictive terrain, the mission variables of terrain and troops available require the most stringent consideration since both have substantial effects on the width and depth dimensions of space that a formation can occupy. At the troop level, mortars are an additional weapon system to incorporate as a planning factor. The troop commander deliberately plans where to locate the mortars such that they provide maximum coverage to the element. In addition, the troop commander communicates clear priorities of fire when organic indirect fires cannot provide sufficient coverage of the troop's frontage. The above planning factor establishes a front of 25 to 28 km. Using available dismounted personnel in observation posts, the troop commander rounds the planning depth to 4 to 5 km for platoons. (See figure A-2 and table A-2, both on page 114.)

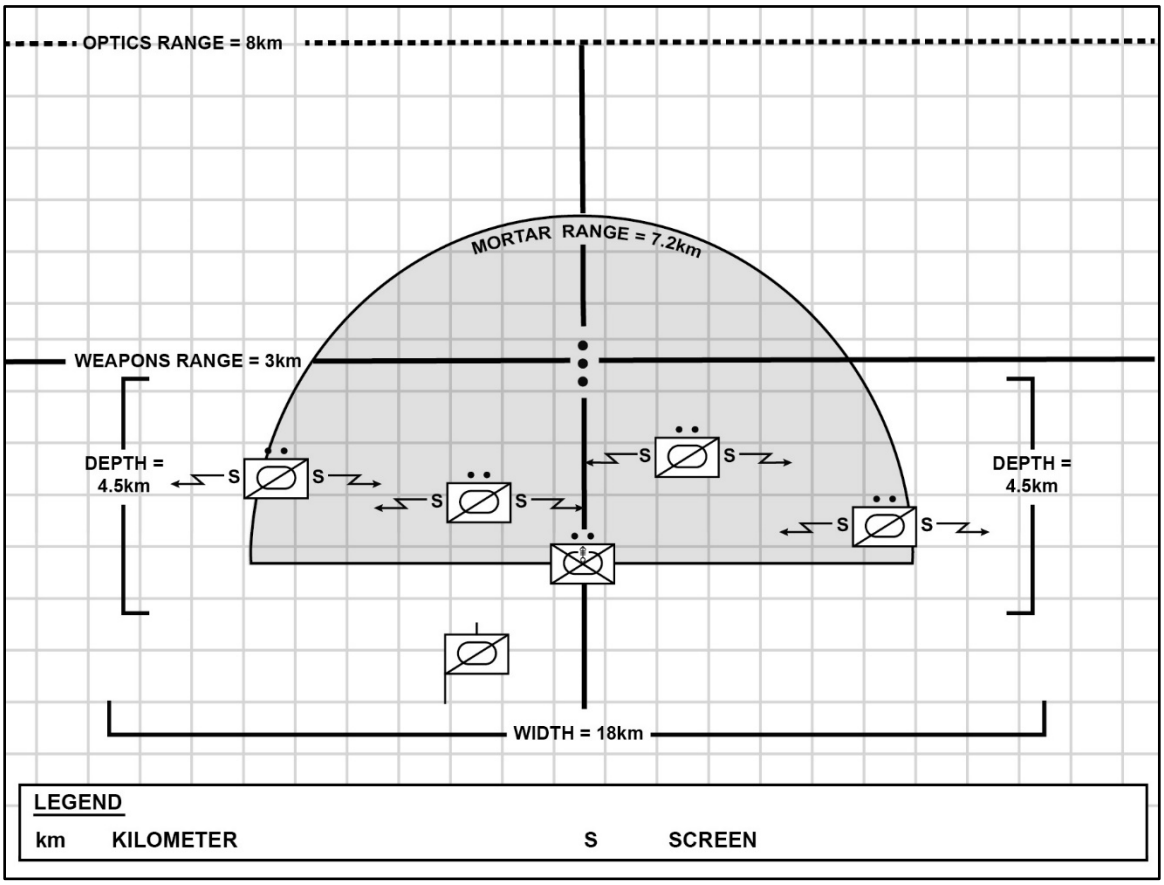


Figure A-2. Armored brigade combat team Cavalry troop in unrestrictive terrain

Table A-2. Armored brigade combat team scout platoon operational distances—unrestrictive terrain

Example calculations of width and depth for a screen:	
Width and Depth Formulas	
width = one-half of the weapon system max effective range x three-quarters of the number of vehicles x terrain + flank security depth = width/2	
Given Variables	***Terrain Values***
M242 maximum effective range = 3,000 meters Number of vehicles in formation = 6 Type of terrain = unrestrictive	1 for unrestrictive 0.5 for restrictive 0.25 for severely restrictive
	Flank Security Value
	Use the maximum effective range of the weapon system, so in this example for the M242, the value is 3,000.
Screen Width	
W = ([(0.5 x 3,000)(0.75 x 6)] 1) + 3,000 W = ([1,500 x 4.5] 1) + 3,000 W = 9,750 meters	
Screen Depth	
D = 9,750 / 2 D = 4,875 meters	

INFANTRY BRIGADE COMBAT TEAM MOUNTED SCOUT PLATOON, AND CAVALRY TROOP INFANTRY BRIGADE COMBAT TEAM MOUNTED SCOUT PLATOON

A-4. The firepower, mobility, and mix of weapon systems afford leaders the flexibility to array forces in an IBCT scout platoon appropriately for the METT-TC (I) variables. IBCT troop commanders often use the following method to calculate planning distances and depths, starting at the platoon level, in severely restrictive terrain for six-vehicle scout platoons:

- Disperse vehicles based on enemy fires capability, yet still within friendly fires coverage; the minimum recommended planning factor of 500 meters between vehicles provides force protection against enemy indirect fire.
- Optics for the IBCT Cavalry troop usually allow enemy target acquisition at up to 10 km and identification at 3 km.
- The available weapon systems—the combination of the caliber .50 machine gun, MK19 grenade machine gun, and TOW 2 series—allow for up to 1,000 meters between vehicles to maintain mutual support and sufficient weapons range beyond the supported vehicle.
- Severely restrictive terrain severely hinders or slows movement in combat formations, so commanders may attempt to enhance mobility by committing engineer assets toward improving mobility or by deviating from doctrinal tactics such as moving in columns instead of line formations or moving at speeds much slower than those preferred.

A-5. To find the planning screen front, given the above planning factors, take one-half of the maximum effective range of the weapon system and multiple that by three-quarters of the number of vehicles, which will account for the mutually supporting position. Incorporate a factor of 0.25 for the terrain classification. Finally, add in the maximum effective range of the weapon system to cover the flank security factor, which will establish a front of 3 km. To find the planning screen depth, divide the front in half to establish a depth of 1,500 meters. (See table A-3 for these example calculations in mathematical equations.)

Table A-3. Infantry brigade combat team scout platoon operational distances—severely restrictive terrain

Example calculations of width and depth for a screen:	
Width and Depth Formulas	
width = one-half of the weapon system max effective range x three-quarters of the number of vehicles x terrain + flank security depth = width/2	
Given Variables	***Terrain Values***
M2 Caliber .50 maximum effective range = 1,830 meters Number of vehicles in formation = 6 Type of terrain = severely restrictive	1 for unrestrictive 0.5 for restrictive 0.25 for severely restrictive
	Flank Security Value
	Use the maximum effective range of the weapon system, so in this example for the M2, the value is 1,830.
Screen Width	
W = ([(0.5 x 1,830)(0.75 x 6)] 0.25) + 1,830 W = ([915 x 4.5] 0.25) + 1,830 W = 2,860 meters	
Screen Depth	
D = 2,860 / 2 D = 1,430 meters	

INFANTRY BRIGADE COMBAT TEAM MOUNTED CAVALRY TROOP

A-6. The IBCT Cavalry troop combines mobility and firepower against the threat forces facing the IBCT. The mobility and firepower density in a Cavalry troop is unique from the rest of the IBCT forces, allowing it to conduct reconnaissance and security tasks forward of the maneuver battalions. (See figure A-3.)

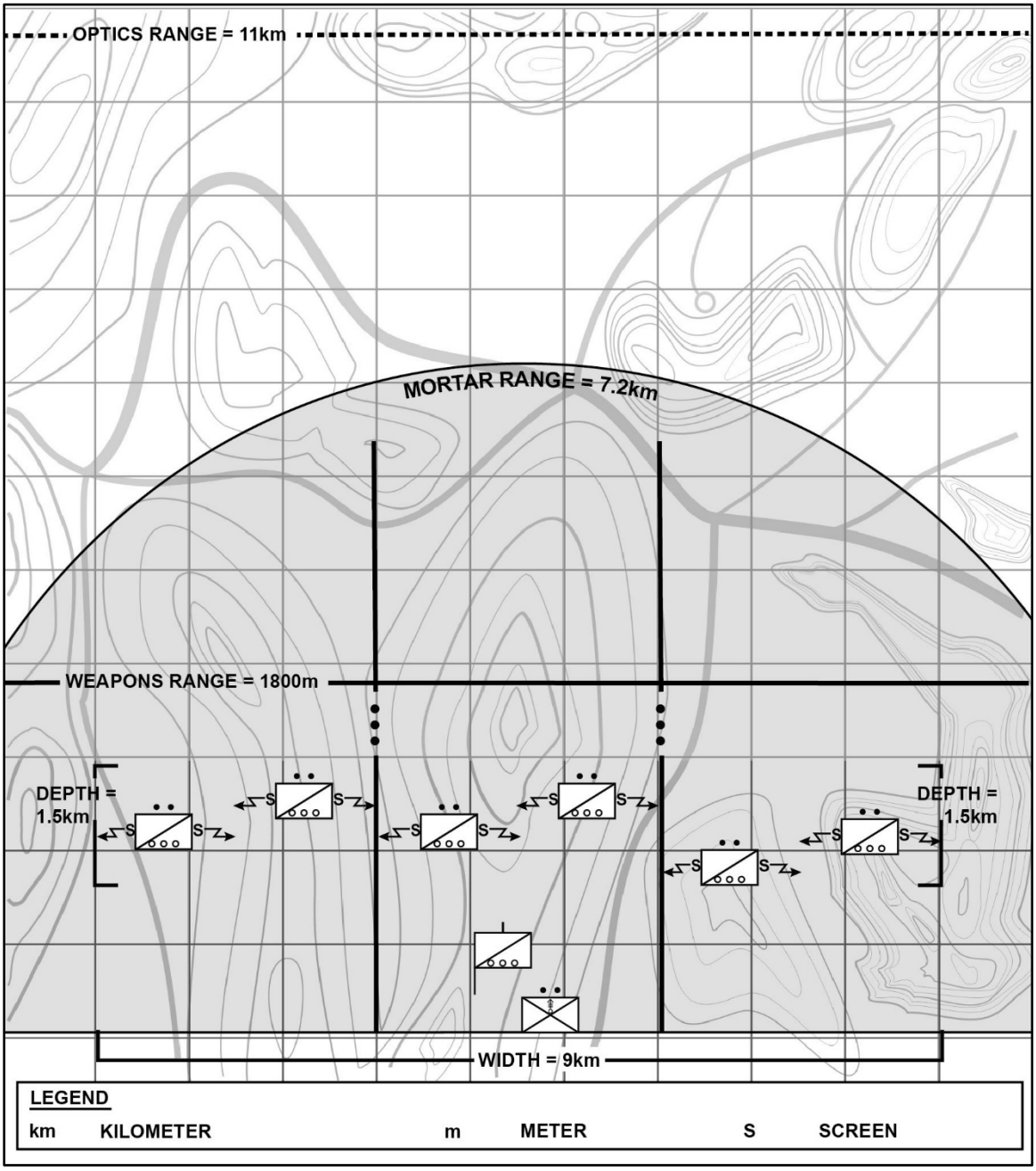


Figure A-3. Infantry brigade combat team Cavalry troop in severely restrictive terrain

STRYKER BRIGADE COMBAT TEAM MOUNTED SCOUT PLATOON

A-7. The platform commonality of SBCT scout platoons allows commanders simplicity of planning. The troop commanders and staffs often use the following method to calculate their planning distances and depths, starting at the platoon level, for restrictive terrain for a six-vehicle scout platoon (see figure A-4):

- Disperse vehicles based on enemy fires capability, yet still within friendly fires coverage; the minimum recommended planning factor of 500 meters between vehicles provides force protection against enemy indirect fire.
- Available optics allow target acquisition up to 10 km and identification at 3 km.
- For weapon systems, the effective ranges of the caliber .50 machine gun and MK19 grenade machine gun allow up to 1,000 meters between vehicles for maintaining mutual support, as well as sufficient weapons range beyond the supported vehicle.
- Restrictive terrain hinders movement to some degree:
  - Units may have difficulty maintaining preferred speeds, moving in combat formations, or transitioning from one formation to another.
  - Restrictive terrain slows movement by requiring zigzags or frequent detours.
  - Typically, restrictive terrain for Armored or mechanized forces entails moderate to steep slopes or moderately to densely spaced obstacles such as trees, rocks, or buildings.

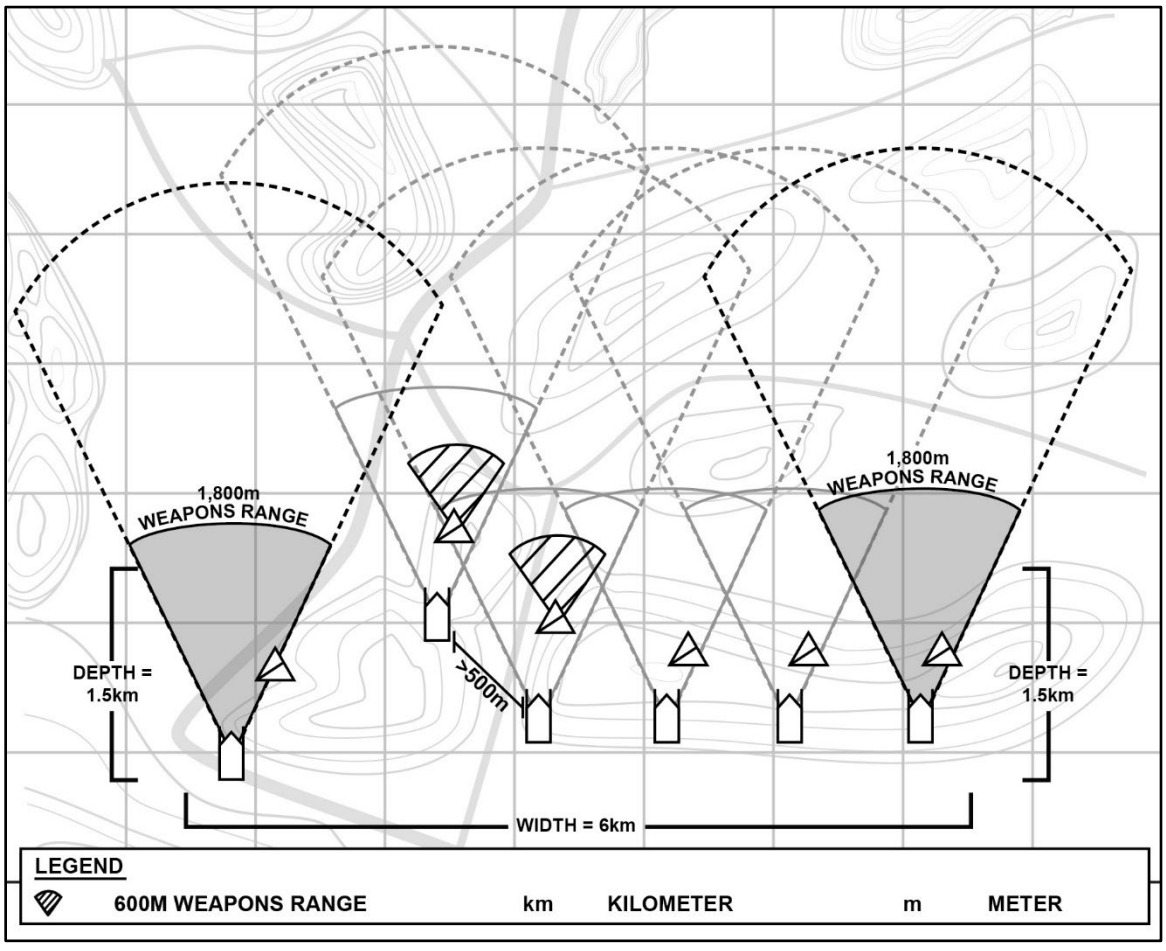


Figure A-4. Infantry brigade combat team dismounted scout platoon in restrictive terrain

STRYKER BRIGADE COMBAT TEAM CAVALRY TROOP

A-8. The SBCT Cavalry troop combines mobility and firepower against the threat forces facing the team and has similar capabilities to the parent BCT. It relies on mobility coupled with protection to conduct reconnaissance and security tasks.

A-9. Formulas are available to Cavalry troop leaders for their planning of operational distances (see table A-4 for an explanation of these formulas). They aid in staff and commander planning of operational area distances for the squadrons of those commanders and leaders.

A-10. Various optics are available to Cavalry troops by BCT formation type (see table A-5 for a chart of these optics). This chart aids in staff and commander planning of operational area distances for the squadrons of those commanders and leaders.

A-11. Specific weapons are available to the ABCT Cavalry troop (see table A-6 for a chart of these weapons). This chart aids in staff and commander planning of operational area distances for the squadrons of those commanders and leaders.

Table A-4. Stryker brigade combat team scout platoon operational distances—restrictive terrain

Example calculations of width and depth for a screen:	
Width and Depth Formulas	
width = one-half of the weapon system max effective range x three-quarters of the number of vehicles x terrain + flank security depth = width/2	
Given Variables	***Terrain Values***
M2 Caliber .50 maximum effective range = 1,830 meters Number of vehicles in formation = 6 Type of terrain = restrictive	1 for unrestrictive 0.5 for restrictive 0.25 for severely restrictive
	Flank Security Value
	Use the maximum effective range of the weapon system, so in this example for the M2, the value is 1,830.
Screen Depth	
W = ([(0.5 x 1,830)(0.75 x 6)] 0.5) + 1,830 W = ([915 x 4.5] 0.5) + 1,830 W = 3,889 meters	
Screen Width	
D = 3,889 / 2 D = 1,945 meters	

Table A-5. Cavalry troop optics systems

DAYSIGHTS	*TARGET RECOGNITION*	*TARGET IDENTIFICATION*
Binocular: Modular Construction, Mil-scale Reticle, 7x50	2,000 m	Not tested
Telescope: M145 Straight Telescope	900 m with M240B	No data
Soldier-carried		
Laser Target Locator Module (LTLM)	4.2 km day, 900 m night	2.7 km day, 0.45 km night
Crew Systems		
Rangefinder–Target Designator: Lightweight Laser Designator Rangefinder (LLDR) AN/PED	No data	4.3 km day, 1.4 km night
Command Launch Unit: (Javelin) 13305405-119	2,500 m (Block 0)	No data
Soldier Weapon Sight		
Night Vision Sight (NVS)	2,500 m (Block 1)	No data
AN/PVS-30 Clip-on Sniper Night Sight	600 m (Half-moon)	No data
Light Weapon Thermal Sight (LWTS): AN/PAS-13(V)1	550 m	No data
Medium Weapon Thermal Sight (MWTS): AN/PAS-13(V)2	1,200 m (MWTS I) 1,430 m (MWTS II)	No data
Heavy Weapon Thermal Sight (HWTS): AN/PAS-13(V)3	2,200 m (HWTS I) 2,753 m (HWTS II)	– – –
Target Acquisition System: M41 TOW ITAS	– – –	3,750 m
TOW 2A Missile	– – –	4,200 m
TOW 2A RF Missile	– – –	3,750 m
TOW 2B Missile	No data	4,200 m
TOW 2B Aero Missile	No data	3,750 m
TOW Bunker Buster Missile	No data	4,200 m

Legend:
ITAS Improved Target Acquisition System
km kilometer
m meter
mil milliradian
RF radio frequency
TOW tube-launched, optically tracked, wire- or wireless-guided

Table A-6. Armored brigade combat team Cavalry squadron weapon system list

Weapon	*Weapon System Quantity*	*Maximum Range (depends on ammunition type)*
M3A3 25-mm	23	1,600 to 3,000 m
M320A1 Grenade Launcher	65	150 to 350 m
Caliber .50 Machine Gun	32	1,500 to 1,830 m
MK19 40-mm Grenade Machine Gun, Mod 3	12	100 to 2,200 m
M240B/L 7.62-mm	75	600 to 1,800 m
9-mm	112	50 m
M4	293	600 m
12-guage Shotgun	36	50 m
120-mm Mortar	6	7,200 m
TOW Missile	23	3,750 m
Javelin	12	2,500 m

Legend:
m meter
mm millimeter
Mod model
TOW tube-launched, optically tracked, wire- or wireless-guided

This page intentionally left blank.

Appendix B

Troop Command Post

The Cavalry troop is the only combat arms company-sized element in the BCT to have an authorized command post. Paragraphs B-1 through B-8 describe the personnel positions and associated responsibilities as they relate to the different Cavalry troop command posts and their functions and layouts.

COMMAND POST PERSONNEL DUTIES AND RESPONSIBILITIES

B-1. The XO collaborates with the 1SG to ensure the command post seamlessly conducts required activities. The XO focuses on the usefulness and effectiveness of the acquired information from the command post and ensures the dissemination and implementation of the commander's guidance and intent. The XO manages the battle rhythm of the command post, including rest cycles, which supports 24-hour operations. The following are the minimum of activities the XO conducts or supervises:

- Ensure subordinate sections accomplish their duties in accordance with the commander's intent, the unit's SOPs, and orders.
- Ensure analog battle tracking systems are in place (and digital systems when applicable).
- Synchronize logistic support.
- Provide a centralized point for information collection and dissemination, coordination, time management, and the tracking of subordinate elements' statuses.
- Identify information related to the CCIRs.
- Coordinate the integration of combat enabling units (attachments).
- Receive and submit the LOGSTAT report.
- Enforce adherence to the operational timeline.

B-2. The 1SG ensures the command post is functioning as the commander intends and properly provides the information the XO and commander need. The 1SG also provides feedback to the XO and commander on how to improve command post operations to achieve the commander's intent. The following are the minimum of activities the 1SG conducts or supervises:

- Manage troop trains operations.
- Execute casualty evacuations.
- Execute logistic support.
- Establish and periodically inspect tactical assembly area security.
- Enforce discipline and adherence to the troop's SOPs.
- Manage personnel replacement and mortuary affairs operations.
- Monitor health and welfare of troop personnel.
- Enforce adherence to the operational timeline.

B-3. The operations NCO consolidates reports and battle-tracks troop units. Additionally, the operations NCO—

- Deploys the command post.
- Establishes the command post.
- Implements the security plan.
- Manages reports to and from subordinate, adjacent, and higher units.
- Monitors the tactical situation.
- Maintains and updates the subordinate, adjacent, and higher units' locations and activities.
- Monitors the enemy situation.
- Manages the command post log or DA Form 1594 (*Daily Staff Journal or Duty Officer's Log*).
- Serves as a communications relay between units as necessary.
- Publishes orders and instructions to subordinate units.
- Updates both digital and analog graphics.
- Enforces adherence to the operational timeline.

B-4. The communications NCO—

- Supervises or assists with command post tasks, including those following:
  - Relay information.
  - Monitor the situation.
  - Establish the command post security plan and the radio watch schedule.
  - Inform the commander and subordinate elements of significant events.
- Establishes troop headquarters communications networks.
- Implements radio-telephone operator plan.
- Performs troubleshooting and limited repair of organic communications equipment.
- Conducts preventive maintenance checks and services on communications equipment.
- Identifies shortcomings on communications equipment.

B-5. The CBRN NCO—

- Determines the likelihood of these types of threats and hazards and their effects on the battlespace.
- Oversees employment of CBRN detection equipment.
- Disseminates clean and dirty routes as designated by higher headquarters.
- Enables all CBRN defense techniques.
- Identifies possible decontamination sites.
- Assists with command post duties as necessary.

B-6. When available, the information collection plan—

- Develops and updates the enemy situation.
- Develops the enemy situation template, with the most likely and most dangerous enemy courses of action.
- Provides weather and light data.
- Plans UAS employment to answer PIRs.
- Conducts battle damage assessment tracking.

B-7. Medics—

- Establish and rehearse routes to squadron aid station.
- Identify areas for casualty collection points.
- Produce the medical evacuation plan, with time and distance estimates.
- Conduct reconnaissance of sites for and mark helicopter landing zones for medical evacuation as necessary.

B-8. When available, the FMT—

- Updates the maintenance collection point location on operational graphics.
- Identifies possible vehicle evacuation locations.
- Reviews and verifies faults annotated on DA Form 5988-E.
- Updates the maintenance tracker.

COMMAND POST FUNCTIONS

B-9. The command post design and layout considerations support functionality and successful mission command. Troop command posts can have any configuration that supports the mission. Commanders ensure the XO, with assistance from the 1SG, executes—

- Efficient facilitation of deployment, employment, and displacement.
- Analysis and synthesis of collected information.
- Efficient facilitation of information flow.
- The provision of connectivity to information systems and the network whenever accessible.
- The positioning of information displays for ease of use.
- The integration of information onto maps and displays.
- The provision of adequate workspace for the commander and headquarters personnel.
- The provision of effective and efficient power generation and distribution.

TROOP COMMAND POST LAYOUT

B-10. Cavalry troop command posts differ by BCT types. (For reference only, see figures B-1 and B-2 and figure B-3 on page 124 for prescriptive depictions of different types of BCT Cavalry troop command posts.) Units vary configurations based on available equipment and personnel.

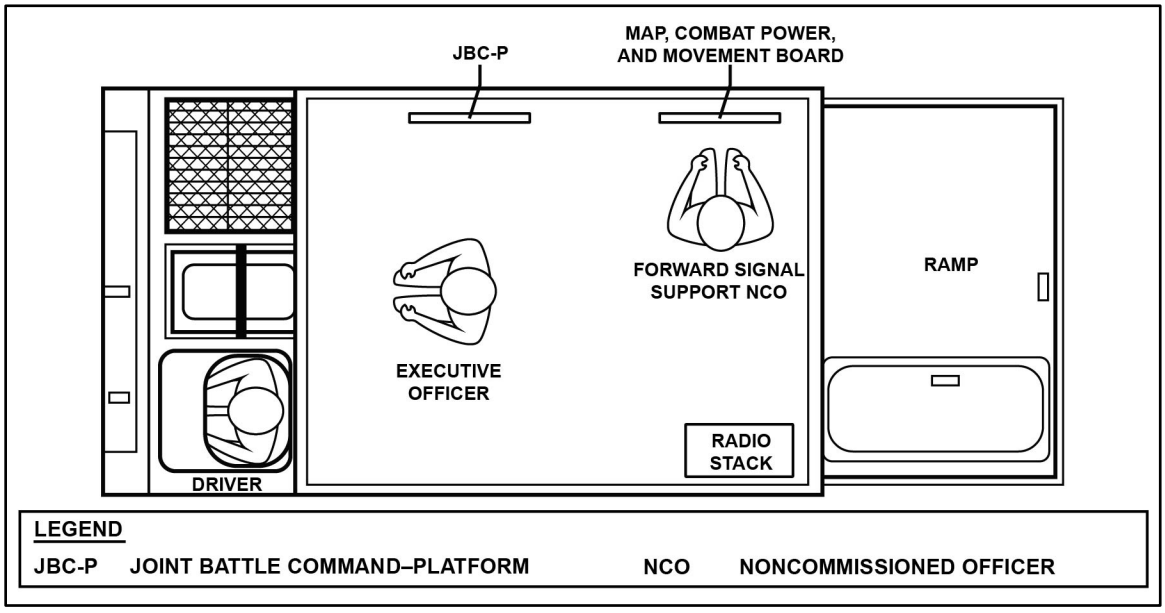


Figure B-1. Armored brigade combat team Cavalry troop command post

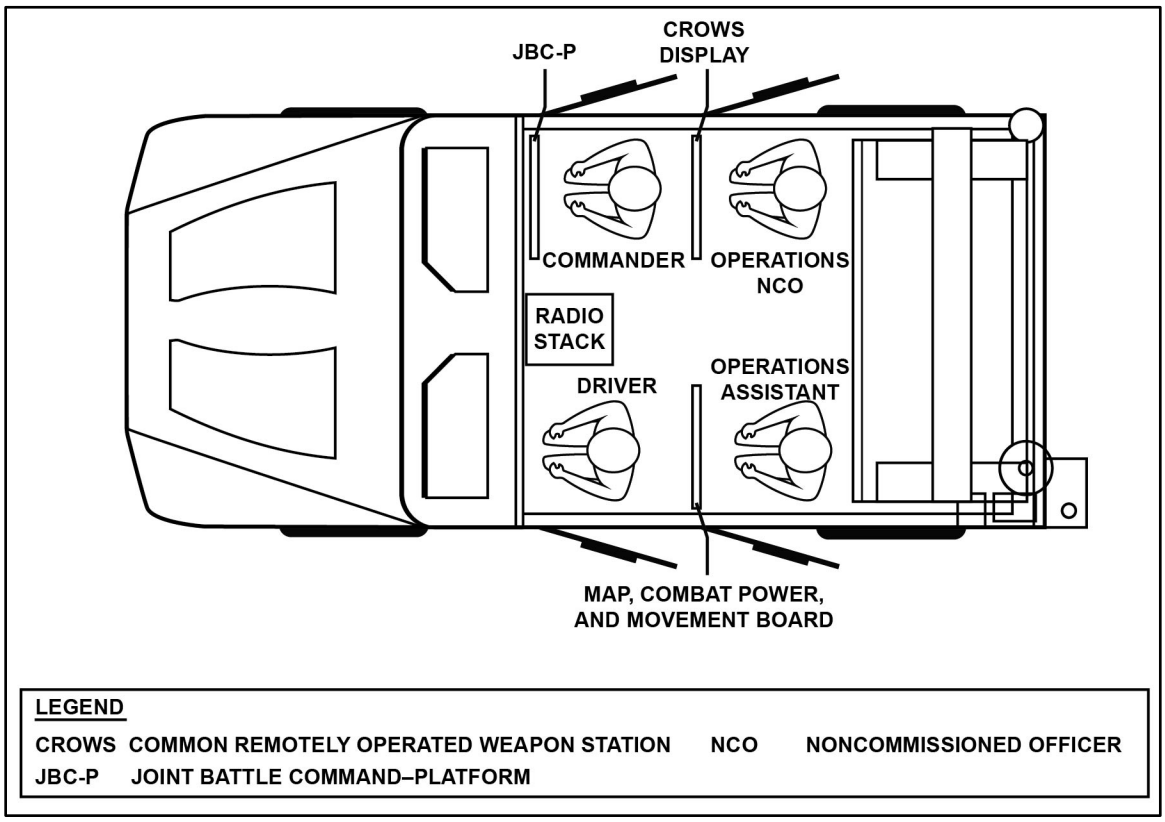


Figure B-2. Infantry brigade combat team Cavalry troop command post

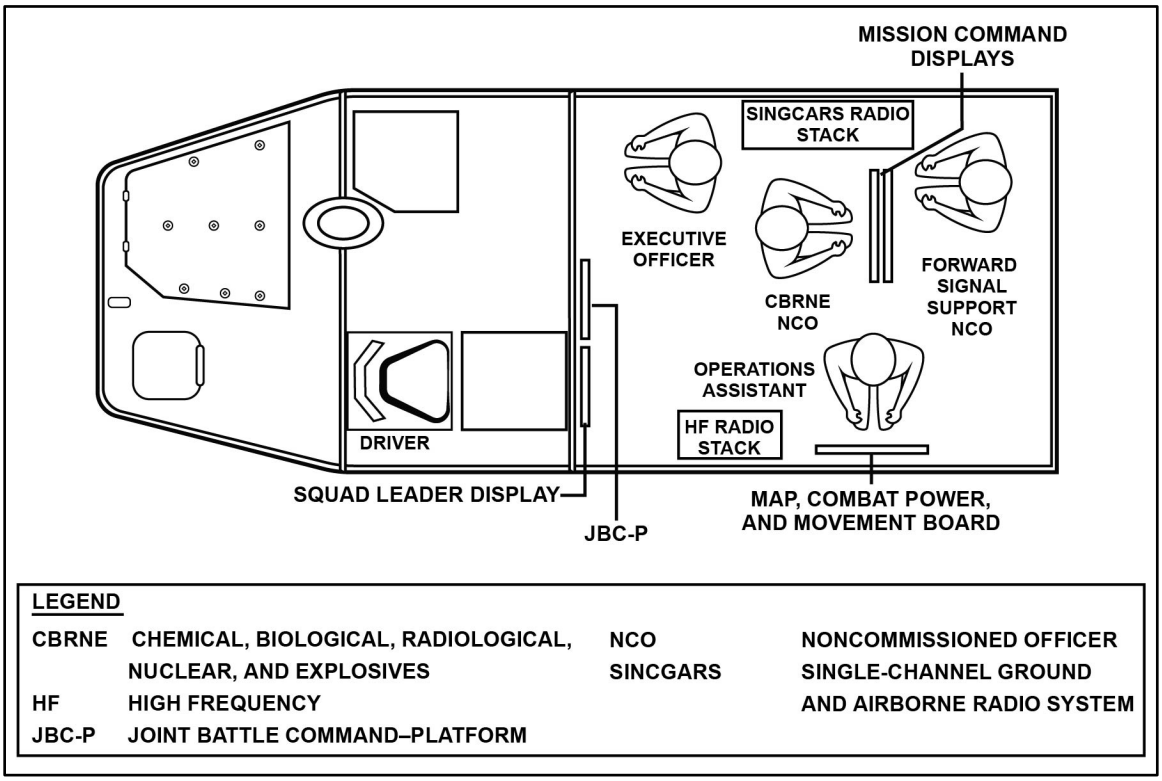


Figure B-3. Stryker brigade combat team Cavalry troop command post

Appendix C

Troop Training Management

To fight and win the Nation's wars the Army needs highly trained, professional, and lethal Soldiers who know how to operate their equipment, know how to shoot, move, and communicate, know how to find their locations on a map and get from one place to another, and know how to eliminate the enemy in the modern and complex battlespace. Soldiers develop into professional military athletes through repetitious, relentless, realistic, and challenging military training, starting from warrior battle drills to mastering their individual, crew, and platoon weapon systems, equipment, and platforms. The Army spares no expense to train Soldiers to the highest caliber to overcome the adversaries of the United States and to overcome all challenges in the OE. Every Army leader's responsibility is to ensure they do their parts to train subordinates. This appendix highlights the training methodology for the Cavalry troop and the available tools for planning, tracking, and assessing training.

CAVALRY TROOP TRAINING

C-1. Every unit is designed for a certain function in the battlespace, and each unit is organized and equipped for that role. The Cavalry troop is designed to conduct reconnaissance and security operations for the commander and to function in a certain way. It maintains the capabilities, equipment, and resources to accomplish tasks for those operations. It is allocated the proper modified table of organization and equipment and table of distribution and allowance positions. It trains, to standard, on the METL and battle tasks for reconnaissance and security operations. Commanders prioritize training based on the unique METL for that organization and publish training guidance for all subordinate commanders and leaders to follow. Cavalry troops cannot train on every task available to them; therefore, unit training plan development prioritizes training tasks through training guidance. (See figure C-1 for an illustration of how commanders develop a unit training plan.)

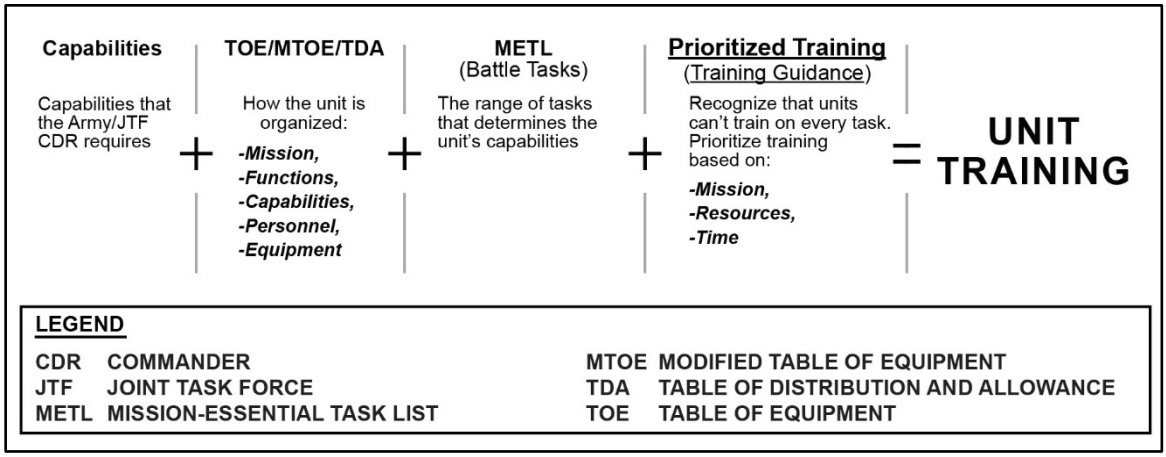


Figure C-1. Training plan development flowchart

UNIT TRAINING MANAGEMENT

C-2. Commanders are responsible for unit training management. To maintain a culture of training, commanders develop and establish a unit battle rhythm in which they publish their training guidance, incorporate commanders' dialogues, establish time management cycles, and implement training briefings, meetings, and schedules. Unit leaders prioritize training and decide what training to conduct, what training method to incorporate, and an appropriate training schedule, and they evaluate and assess training. (See figure C-2 for an example of unit training management.)

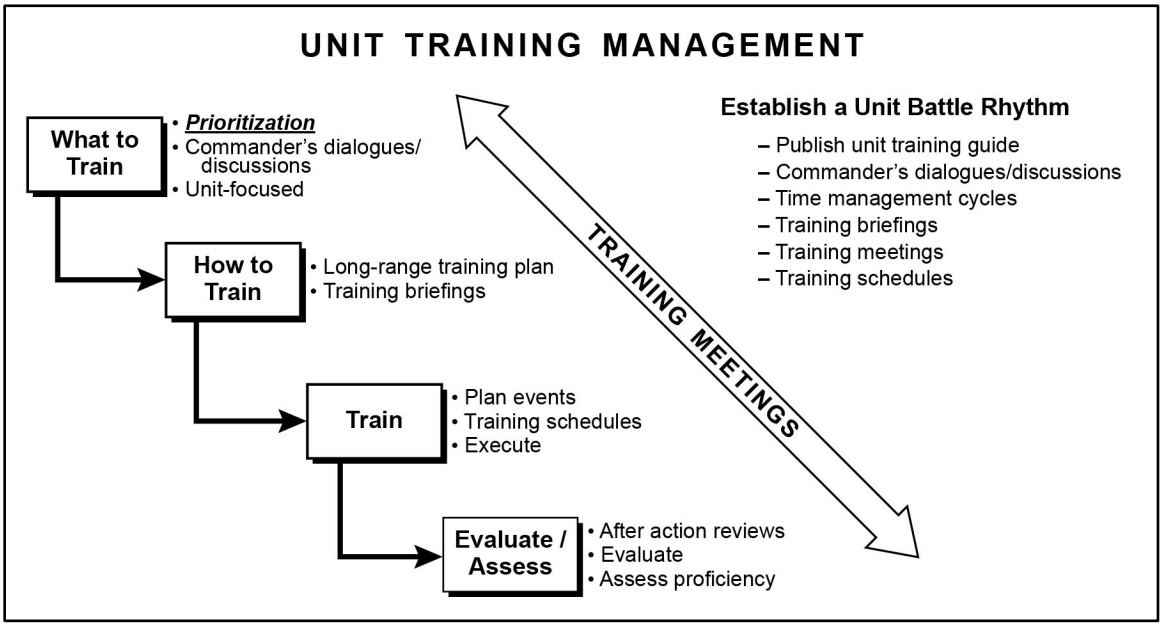


Figure C-2. Unit training management, example

TRAINING MEETINGS

C-3. Troop training meetings are the forum for reviewing freshly conducted training, for planning future events, and for commanders to issue training guidance. They facilitate the flow of training information and coordination among unit leaders. They serve as the center of gravity for unit training management and occur weekly at the same scheduled time. Leader participation is essential for successful troop training meetings, including the commander, XO, 1SG, platoon leaders, platoon sergeants, master gunners, key staff NCOs, supporting maintenance personnel, and supply sergeant. Troop training meetings have a specific agenda and allow troop leaders to coordinate training, update trackers, and develop a common operational picture across the troop. (See table C-1 for a useful troop training meeting agenda.) More information about training meetings appears in FM 7-0 and on the Army Training Network website.

Table C-1. Troop training meeting agenda

Training Proficiency Overview
Training just conducted (previous week). Subordinate feedback from training: • Observations. • After action review results. • Completed evaluator training and evaluation outlines. • Other sources of feedback available to the commander.
Troop leader development planning for training events focused on leader development goals and objectives.
Mid-range planning and preparations (Weeks T–16 to T–7).
Short-range planning and preparations (Week T–6 to T-week) and commander's short-range training guidance.
Legend: T-week training week Week T– training week minus (number of weeks prior to execution)

TRAINING SCHEDULES

C-4. Troop commanders develop their long-range, mid-range, and short-range training calendars by taking their desired end states or culminating events and then performing reverse planning for all the training objectives, so the training prepares a troop to achieve the desired end state. For the example in figure C-3, the culminating event is a combat training center rotation at the National Training Center. They must be certified to participate in brigade live-fire training events prior to coming to the National Training Center. Reverse planning allows troop commanders to incorporate all training into their training calendars, so they can participate during live-fire training events.

C-5. Troop commanders work with the squadron to meet all the training requirements. Throughout the training cycle, the troop also trains evaluators, trainers, ammunition handlers, combat lifesavers, and unit movement officer representatives. Range safety officers for weapons ranges attend post range control certification courses. Master drivers train drivers and certify them on equipment. Bus drivers undergo development and are managed at the troop level. (See figure C-3 for all the requisite training objectives in the preparation for combat training center rotation.)

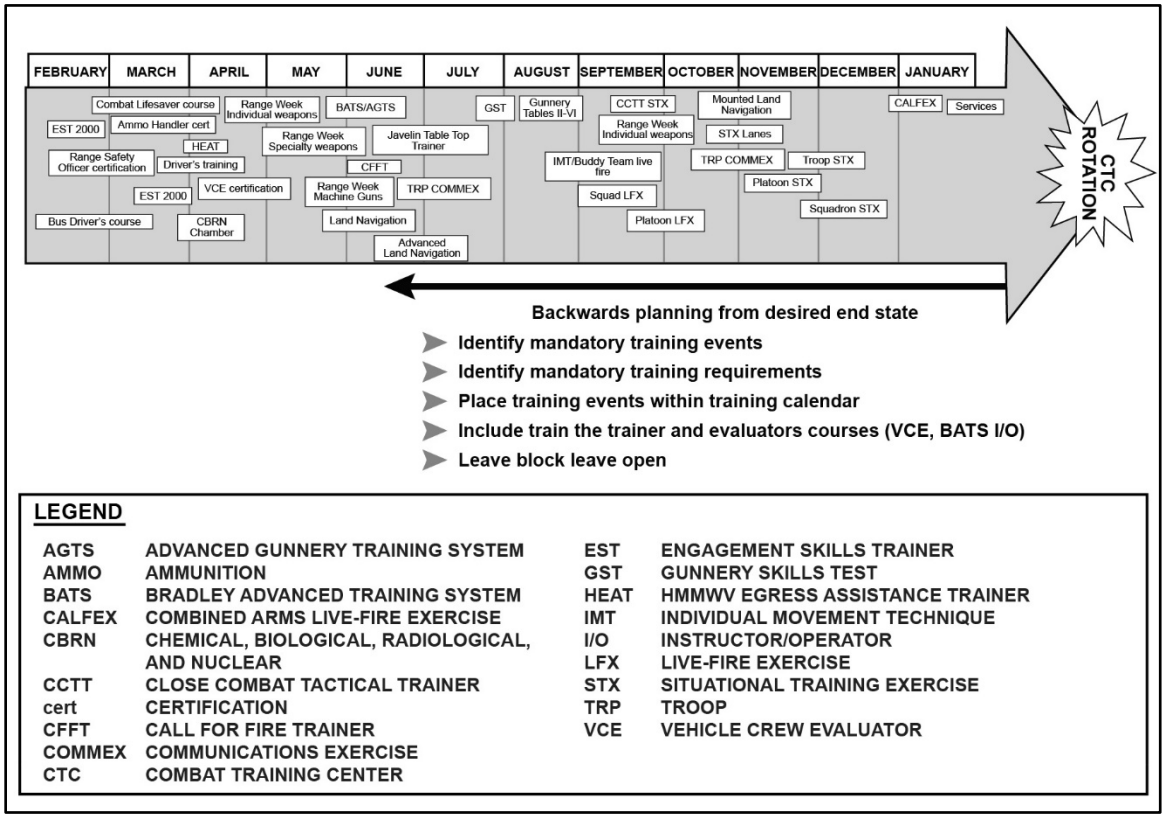


Figure C-3. Major training event glidepath, example

UNIT TRAINING FUNDAMENTALS

C-6. Following the unit training fundamentals achieves a highly trained and lethal troop, able to conduct reconnaissance and security operations during large-scale combat operations. The fundamentals are a tool for commanders to use when developing their training schedules and managing training. Commanders focus on training by incorporating the following unit training fundamentals:

- Prioritize training.
- Develop crosswalk.
- Include training proficiency in—
  - METL.
  - Weapons.
  - Collective live fire.
- Select events to train tasks and build a long-range training plan.
- Resource training.
- Protect training.
- Execute training.
- Evaluate in accordance with a standard (training and evaluation outline).
- Assess training and the recording of training.
- Repeat as necessary.

TRAINING PRIORITIZATION

C-7. Commanders prioritize training to optimize limited training time and resources and to achieve proficiencies based on units' missions. They maintain dialogue with the next higher echelon commander to determine the priorities for each proficiency (which are in mission-essential tasks, weapons qualification, and collective live fire tasks) based on mission requirements. Troop commanders determine and establish their training priorities in preparation for deployments, combat training center rotations, and installation support services. They always include as training priorities the fundamentals—shoot, move, communicate, and survive, but also a basis in units' missions. (See figure C-4 for an example of the building blocks of training.)

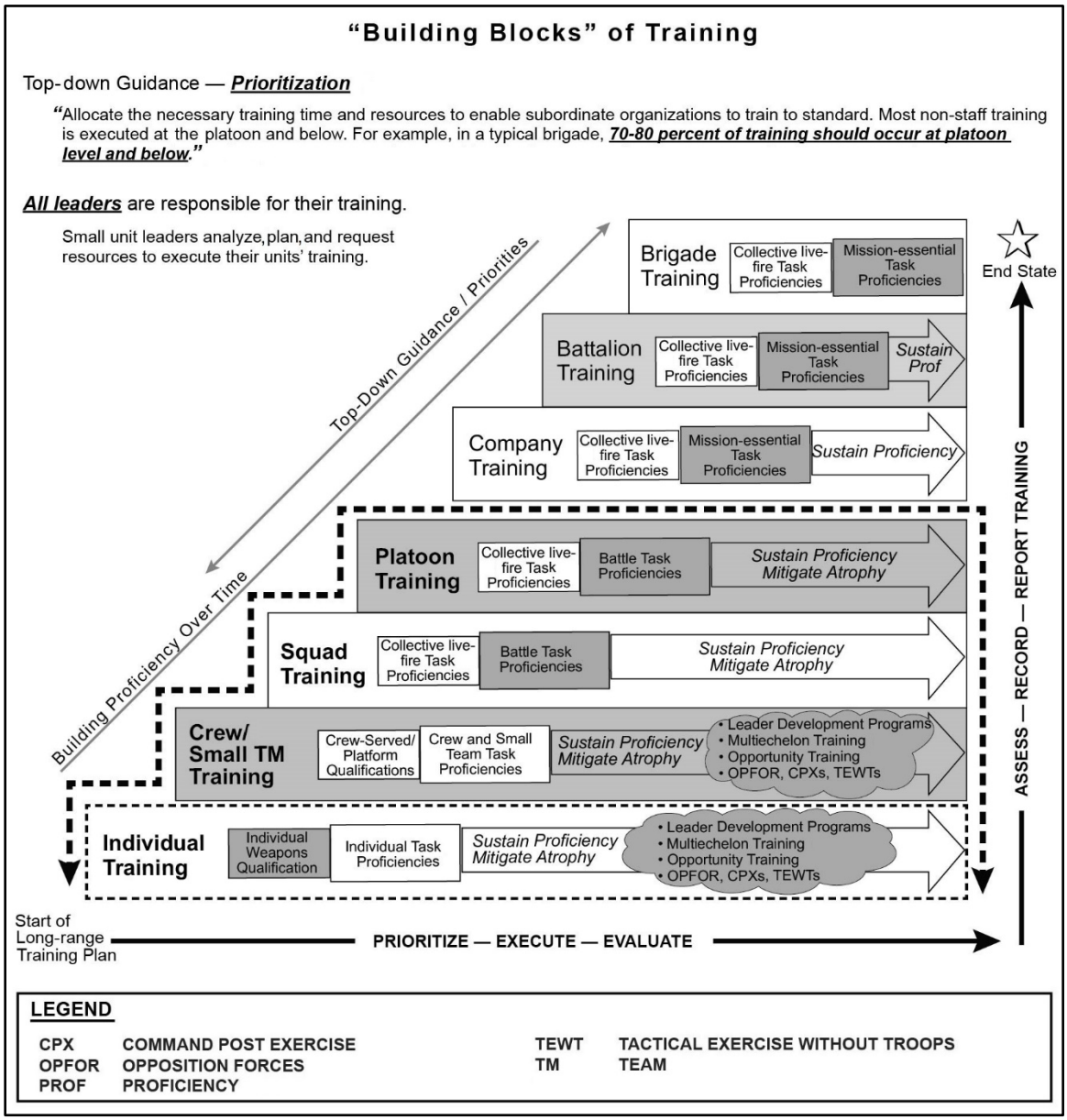


Figure C-4. Building blocks of training, example

TASK CROSSWALK

C-8. A task crosswalk links higher echelon tasks to a lower echelon task based on mission requirements. Commanders focus training on units' prioritized mission-essential tasks to optimize limited training time and resources. Subordinate leaders prioritize training on the collective tasks, battle tasks, and individual tasks that directly support units' prioritized mission-essential tasks. Individual tasks link to a team, crew, or squad battle task. Squad battle tasks link to a platoon battle task. Commanders use the crosswalk to select the best tasks to prepare the squads, sections, platoons, and troops for the next higher level operation. Tasks are chosen from a unit's mission-essential tasks, Army-provided standardized mission-essential tasks, battle tasks (for platoon and below), and warrior tasks and battle drills. (See FM 7-0 for guidance on how to develop a crosswalk for task selection.)

C-9. Army Training Management System, software from Army Training Network website, the Combined Arms Training Strategies, and Digital Training Management System are extremely beneficial to the task selection process. Within these resources are useful tools for identifying, selecting, and prioritizing training for the Cavalry troop. (See figure C-5 for a demonstration of how battle tasks can support the higher level mission-essential task.)

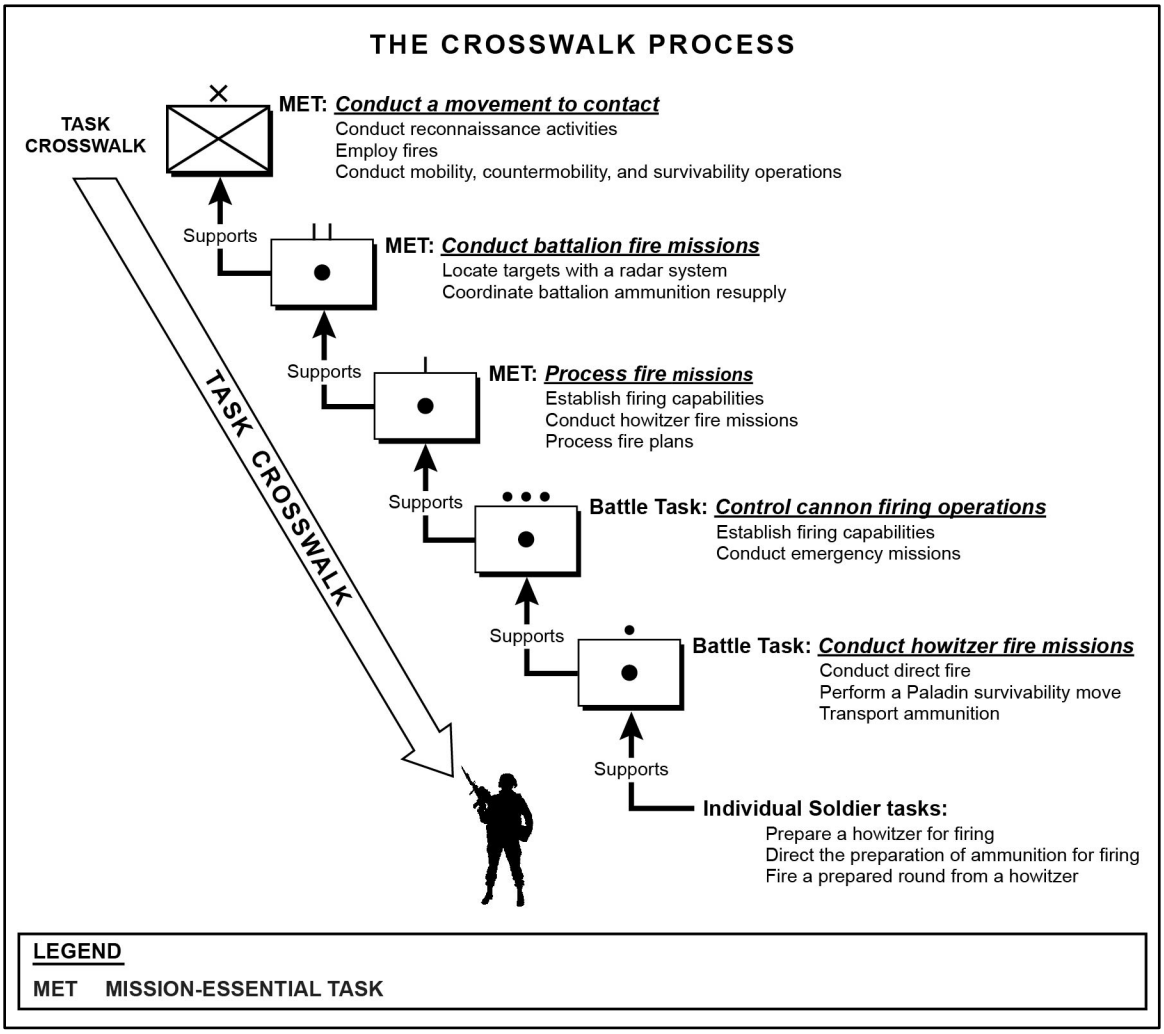


Figure C-5. Task crosswalk, example

MISSION-ESSENTIAL TASK

C-10. A mission-essential task is a collective task on which an organization trains for proficiency in designed capabilities or an assigned mission. Indeed, it is based on the unit's mission and capabilities, so the training organization can rely on its guidance for preparation. An METL is a tailored group of mission-essential tasks.

STANDARDIZED MISSION-ESSENTIAL TASK LIST

C-11. The Army provides a standardized METL for most deployable troop- and company-level and above units. Proponents develop these lists, and Headquarters, Department of the Army approves them. They reflect the unit's design capabilities. (See the Army Training Network website for more information about standardized METLs.)

BATTLE TASKS

C-12. A battle task is a collective task that a lower echelon trains and that supports a troop mission-essential task. Troop leaders develop battle tasks, and the commander approves them. This process continues to lower echelons, with NCOs determining the battle tasks that apply to their echelons (squad, team, or crew). For example, if the troop task were collective task 07-CO-1092 (Conduct an Attack—Rifle Company [IBCT]), the platoon task would be to set up a support by fire. Leaders would draw a storyboard to identify key tasks for their part of attack and then identify the key battle tasks to train (for example, tasks to integrate direct fires, integrate indirect fire support, or breach an obstacle).

WARRIOR TASKS AND BATTLE DRILLS

C-13. STP 21-1-SMCT provides Soldiers with a list of warrior tasks and battle drills critical for every Soldier to know and to maintain the capability to conduct. Understanding critical warrior tasks and being able to accomplish these tasks enhances lethality and survivability for individual Soldiers and consequently for units. STP 21-1-SMCT provides a detailed list of the most common types of tasks to each rank and position. Leaders at all echelons use warrior tasks and battle drills to train Soldiers at every opportunity. STP 21-1-SMCT provides detailed instructions on how to perform the warrior task or battle drill. The battle drills in STP 21-1-SMCT are as follows:

- React to Contact.
- Establish Security at the Halt.
- Perform Tactical Combat Casualty Care.
- React to Ambush, near and far.

TRAINING PROFICIENCY

C-14. Units train to develop three proficiencies, and the unit is considered trained when it proves proficient in an area specified by the commander. The three proficiencies the Army trains are in mission-essential tasks, weapons qualification, and collective live fire tasks.

MISSION-ESSENTIAL TASK PROFICIENCY

C-15. Mission-essential task proficiency is achieved when the unit is able to perform mission-essential task training to standard. The unit trains in multiple, complex, and dynamic Oes, with external evaluation, while accomplishing the appropriate Soldier, unit, and leader tasks as illustrated in training and evaluation outlines.

WEAPONS QUALIFICATION PROFICIENCY

C-16. Weapons qualification involves proficiency with individual, crew-served, and platform-based weapons. The unit achieves weapons qualification proficiency by qualifying on all its organic weapons, under all conditions, and as specified by applicable weapon system publications.

COLLECTIVE LIVE FIRE TASK PROFICIENCY

C-17. Collective live fire task proficiency is achieved when the unit can execute specified collective tasks while employing its organic weapon systems in a live-fire environment. Collective live fire task proficiency is calculated by weapon kill standards, hits on target, and training and evaluation outlines. (See table C-2 on page 132 for collective task proficiency levels from the highest to lowest rankings.)

Table C-2. Collective task proficiency levels

Proficiency Level	*Ranking Conditions*
Trained or T (advanced task proficiency)	• This proficiency level means a unit is trained. • That unit has attained advanced task proficiency, free of significant shortcomings. • The unit's shortcomings require minimal training to meet the Army standard.
Practiced or P (basic task proficiency)	• This proficiency level means a unit is practiced. • That unit has attained basic task proficiency, with shortcomings. • The unit's shortcomings may require significant training to meet the Army standard.
Untrained or U (unable to perform task)	• This proficiency level means a unit is untrained. • That unit cannot perform the task. • The unit requires complete training on the task to achieve the Army standard.

TRAINING TO STANDARD

C-18. The Army has developed standards for acceptable levels of understanding of tasks, training objectives, battle drills, and proficiencies. It publishes those standards in training circulars, training and evaluation outlines, leaders' statements, and SOPs. Some standards are high, and no flexibility in meeting the standard is possible, especially when dealing with weapon-related tasks such as clearing, loading, and firing individual and crew weapons. For some standards, it is acceptable for a unit to meet their bare minimums. For example, crews qualified on a BFV could shoot a 700 and qualify 7 out of 10 engagements, but those minimums would give a crew only a 50-percent probability of engaging and destroying an enemy vehicle in combat. Thus, crews strive to achieve better results than the bare minimum. It is the leader and trainer's responsibility to know the standards and use them during all training. When Soldiers, teams, squads, or platoons fail to meet published standards, they undergo remedial training.

TRAINER RESPONSIBILITIES

C-19. Commanders and leaders at echelon are responsible and accountable for the training and performance of the units. Commanders train and resource training one echelon down, and they evaluate to two echelons down. They are responsible for assessing unit training proficiency and prioritizing unit training. Subordinate unit leaders are the primary trainers of the subordinate elements. For example, a platoon leader is responsible for the training and performance of the platoon.

TYPES OF TRAINING AND ENVIRONMENTS

C-20. Cavalry troops undergo many different types of training and in multivarious training environments. The troop commander plans and schedules training events using the crawl-walk-run training mentality and all the types of training environments. Typical troop and below training events entail situational training exercises, external evaluations, and field training exercises. Cavalry troops may be tasked to support staff exercises and command post exercises. AR 350-1 provides information on training qualifications, new equipment training, and other mandatory Army training.

TRAINING EXERCISES

C-21. Training exercises are scenario-driven, multi-echelon, multi-task training events. Live environment training exercises are preferable over all other types of training environments, but when they cannot happen, the commander considers using virtual, constructive, or mixed training environments to achieve the training objectives. (See table C-3 for the types and related abbreviations of training exercises.)

Table C-3. Training exercises

Type	*Abbreviation*
Combined arms live-fire exercise	CALFEX
Command post exercise	CPX
Communications exercise	COMMEX
Deployment exercise	DEPEX
Emergency deployment readiness exercise	EDRE
External evaluation	EXEVAL
Field training exercise	FTX
Fires coordination exercise	FCX
Live-fire exercise	LFX
Map exercise	MAPEX
Mission readiness exercise	MRE
Situational training exercise	STX
Staff exercise	STAFFEX
Tactical exercise without troops	TEWT
Warfighter exercise	WFX

TRAINING ENVIRONMENTS

C-22. A training environment includes conditions, supporting resources, and time, and it enables units to practice their training tasks to proficiency. Three basic training environments exist—live, virtual, and constructive. With unlimited time and resources, units execute realistic training in a live environment. The realities of limited training time and resources require commanders to use creative and innovative means and resources to train in other-than-live training environments or in a combination of all three environments. (See table C-4 for the environments of different types of training.)

Table C-4. Training environments

Environment	*Participants*	*Description*
Live	Battalion and below	Field conditions with the use of tactical equipment
Virtual	Brigade and below	Computer-generated battlespaces (simulators)
Constructive	Platoon through echelons above corps	Computer models and simulators
Blended	Platoon through echelons above corps	Two or more training environments
Integrated	Platoon through echelons above corps	Virtual and constructive environments, including information systems

TRAINING MODELS

C-23. Training models are an effective technique for small units (troop and below) to plan and prepare a training event. They provide a logical and reliable framework of activities and actions for small-unit leaders to plan and prepare, execute, and evaluate single training events. The eight-step training model is the Army's preeminent training model.

TRAINING AIDS, DEVICES, SIMULATORS, AND SIMULATIONS

C-24. TADSS enhance a unit's ability to train and provide for cost-efficient training. TADSS resourced from the military installation training support center provide a troop commander access to many enhancements to training at every level. Ammunition, fuel, and range use restrict training in the live training environment, but TADSS allow familiarization with and learning of platform-specific systems and functions in a safe, virtual system. Simulations replicate a realistic combat environment and prepare the Soldier mentally for the shock-and-awe experience of warfare.

C-25. This publication defines TADSS as follows:

- Training aids—Tools that aid with conducting training.
- Devices—Appended equipment, including three-dimensional training products, that mount on the actual platform and activate either mechanically or electrically.
- Simulators:
  - Stand-alone training devices that replicate the functions of equipment or systems.
  - They use electronic or mechanical means to reproduce the conditions necessary for an individual or crew to practice operational tasks in accordance with training objectives.
- Simulations:
  - Computer-based replications of a combat environment for training from the individual to the collective level.
  - They link to simulators to afford collective training experience.

C-26. The unit master gunner or a local training support center keeps a more detailed list of TADSS available for unit use. Simulators such as the Engagement Skills Trainer, the Bradley Advanced Training System, the family of conduct of fire trainers, and the Close Combat Tactical Trainer, to name a few, require unit-trained instructor operators to run the simulators and simulations for unit training. Commanders identify the requisite simulators for the units and then enroll NCOs into the instructor courses to maximize TADSS usage. To sign for TADSS, the training support center requires the commander's approval through signature cards on file. A signature cardholder can sign for simulators such as the Javelin tabletop trainer and the family of call for fire trainers. The simulators can be set up at the troop's area for long-term and concurrent training.

Glossary

The glossary lists acronyms and terms with Army or joint definitions. For acronyms without full forms defined by Army or joint publications, *known as* precedes the acronym's introduction in the text body. For terms with differing Army and joint definitions, *Army* or *joint* precedes the definitions in effect. The proponent publications of terms appear in parentheses at the ends of the definitions. ATP 3-20.97 is not the proponent (the authority) of any Army terms.

SECTION I – ACRONYMS AND ABBREVIATIONS

1SG	first sergeant
ABCT	Armored brigade combat team
ADP	Army doctrine publication
AFTTP	Air Force tactics, techniques, and procedures
AO	area of operations
AR	Army regulation
ASCOPE	areas, structures, capabilities, organizations, people, and events
ATP	Army techniques publication
BCT	brigade combat team
BFV	Bradley fighting vehicle
BHL	battle handover line
C2	command and control
CAB	combined arms battalion
CAS	close air support
CBRN	chemical, biological, radiological, and nuclear
CCIR	commander's critical information requirement
C-UAS	counter-unmanned aircraft system
DA	Department of the Army
DOD	Department of Defense
FHP	force health protection
FLOT	forward line of own troops
FM	field manual
FMT	field maintenance team
FRAGORD	fragmentary order
FSO	fire support officer
GPS	Global Positioning System
HSS	health service support
IBCT	Infantry brigade combat team
IEW	intelligence and electromagnetic warfare
IPOE	intelligence preparation of the operational environment
JBC-P	Joint Battle Command-Platform

JLTV	Joint Light Tactical Vehicle
JP	joint publication
km	kilometer
LOGPAC	logistics package
LOGSTAT	logistics status
LRAS3	Long-Range Advanced Scout Surveillance System
LTIOV	latest time information is of value
MCRP	Marine Corps reference publication
MCTP	Marine Corps tactical publication
MCWP	Marine Corps warfighting publication
METL	mission-essential task list
METT-TC (I)	mission, enemy, terrain and weather, troops and support available, time available, civil considerations, and informational considerations
mm	millimeter
NAI	named area of interest
NCO	noncommissioned officer
NTTP	Navy tactics, techniques, and procedures
OCONUS	outside the continental United States
OE	operational environment
OPORD	operation order
PACE	primary, alternate, contingency, and emergency (plan)
PIR	priority intelligence requirement
PL	phase line
PSYOP	psychological operations (forces)
ROE	rules of engagement
S-2	battalion or brigade intelligence staff officer
S-3	battalion or brigade operations staff officer
S-4	battalion or brigade logistics staff officer
S-6	battalion or brigade signal staff officer
SBCT	Stryker brigade combat team
SEPv3	System Enhancement Package, version 3
SMCT	Soldier’s manual of common tasks
SOP	standard operating procedure
STP	Soldier training publication
SUAS	small unmanned aircraft system
TADSS	training aids, devices, simulators, and simulations
TAI	target area of interest
TC	training circular
TM	technical manual
TOW	tube-launched, optically tracked, wire- or wireless-guided
UAS	unmanned aircraft system
U.S.	United States

WARNORD	warning order
XO	executive officer

SECTION II – TERMS

adversary

A party acknowledged as potentially hostile to a friendly party and against which the use of force may be envisaged. (JP 3-0)

area reconnaissance

A form of reconnaissance operation that focuses on obtaining detailed information about the terrain or enemy activity within a prescribed area. (FM 3-90)

area security

A type of security operation conducted to protect friendly forces, lines of communications, installation routes and actions within a specific area. (FM 3-90)

close air support

Air action by aircraft against hostile targets that are in close proximity to friendly forces and that require detailed integration of each air mission with the fire and movement of those forces. (JP 3-09.3)

command and control

The exercise of authority and direction by a properly designated commander over assigned and attached forces in the accomplishment of the mission. (JP 1, Volume 2)

command and control warfighting function

The related tasks and a system that enable commanders to synchronize and converge all elements of combat power. (ADP 3-0)

commander's intent

A clear and concise expression of the purpose of an operation and the desired objectives and military end state. (JP 3-0)

concept of operations

(Army) A statement that directs the manner in which subordinate units cooperate to accomplish the mission and establishes the sequence of actions the force will use to achieve the end state. (ADP 5-0)

counterair

A mission at the theater level that integrates offensive and defensive operations to attain and maintain a desired degree of control of the air and protection by neutralizing or destroying enemy aircraft and missiles, both before and after launch. (JP 3-01)

counterreconnaissance

A tactical mission task that encompasses all measures taken by a unit to counter enemy reconnaissance and surveillance efforts. (FM 3-90)

cover

(Army) A type of security operation done independent of the main body to protect them by fighting to gain time while preventing enemy ground observation of and direct fire against the main body. (ADP 3-90)

electromagnetic reconnaissance

The detection, location, identification, and evaluation of foreign electromagnetic radiations. (JP 3-85)

enabling operation

An operation that sets the friendly conditions required for mission accomplishment. (FM 3-90)

enemy

A party identified as hostile against which the use of force is authorized. (ADP 3-0)

engagement criteria

Protocols that specify those circumstances for initiating engagement with an enemy force. (FM 3-90)

exfiltration

The removal of personnel or units from areas under enemy control by stealth, deception, surprise, or clandestine means. (JP 3-50)

fire support

(joint) Fires that directly support land, maritime, amphibious, space, cyberspace, and special operations forces to engage enemy forces, combat formations, and facilities in pursuit of tactical and operational objectives. (JP 3-09)

fire support team

A field artillery team provided for each maneuver company/troop and selected units to plan and coordinate all supporting fires available to the unit, including mortars, field artillery, naval surface fire support, and close air support integration. (JP 3-09.3)

forward observer

An individual operating with front line troops trained to adjust ground or naval gunfire and pass back battlefield information. (JP 3-09)

forward passage of lines

Occurs when a unit passes through another unit's positions while moving toward the enemy. (ADP 3-90)

fragmentary order

An abbreviated operation order issued as needed to change or modify an order or to execute a branch or sequel. (JP 5-0)

guard

A type of security operation done to protect the main body by fighting to gain time while preventing enemy ground observation of and direct fire against the main body. (ADP 3-90)

hybrid threat

The diverse and dynamic combination of regular forces, irregular forces, terrorists, or criminal elements unified to achieve mutually benefitting effects. (ADP 3-0)

infiltration

A form of maneuver in which an attacking force conducts undetected movement through or into an area occupied by enemy forces. (FM 3-90)

intelligence preparation of the operational environment

The systematic process of analyzing the mission variables of enemy, terrain, weather, and civil considerations in an area of interest to determine their effect on operations. (FM 2-0)

local security

The low-level security activities conducted near a unit to prevent surprise by the enemy. (ADP 3-90)

logistics package

A grouping of multiple classes of supply and supply vehicles under the control of a single convoy commander. (FM 3-90)

mission command

(Army) The Army's approach to command and control that empowers subordinate decision making and decentralized execution appropriate to the situation. (ADP 6-0)

neutral

In combat and combat support operations, an identity applied to a track whose characteristics, behavior, origin, or nationality indicate that it is neither supporting nor opposing friendly forces. (JP 3-0)

operation order

A directive issued by a commander to subordinate commanders for the purpose of effecting the coordinated execution of an operation. (JP 5-0)

operational environment

The aggregate of the conditions, circumstances, and influences that affect the employment of capabilities and bear on the decisions of the commander. (JP 3-0)

priority of fires

The commander's guidance to the staff, subordinate commanders, fires planners, and supporting agencies to employ fires in accordance with the relative importance of a unit's mission. (FM 3-09)

rearward passage of lines

Occurs when a unit passes through another unit's positions while moving away from the enemy. (ADP 3-90)

reconnaissance by fire

A technique in which a unit fires on a suspected enemy position. (FM 3-90)

reconnaissance handover

The action that occurs between two elements to coordinate the transfer of information and responsibility for observation of potential threat contact, or the transfer of an assigned area from one element to another. (FM 3-98)

reconnaissance in force

A form of reconnaissance operation designed to discover or test the enemy's strength, dispositions, and reactions or to obtain other information. (FM 3-90)

relative advantage

A location or condition, in any domain, relative to an adversary or enemy that provides an opportunity to progress towards or achieve an objective. (FM 3-0)

relief in place

An operation in which, by direction of higher authority, all or part of a unit is replaced in an area by the incoming unit and the responsibilities of the replaced elements for the mission and the assigned zone of operations are transferred to the incoming unit. (JP 3-07.3)

route reconnaissance

A form of reconnaissance operation to obtain detailed information of a specified route and all terrain from which the enemy could influence movement along that route. (FM 3-90)

screen

A type of security operation that primarily provides early warning to the protected force. (ADP 3-90)

situational understanding

The product of applying analysis and judgment to relevant information to determine the relationships among the operational and mission variables. (ADP 6-0)

special reconnaissance

Reconnaissance and surveillance actions conducted as a special operation in hostile, denied, or diplomatically and/or politically sensitive environments to collect or verify information of strategic or operational significance, employing military capabilities not normally found in conventional forces. (JP 3-05)

threat

Any combination of actors, entities, or forces that have the capability and intent to harm United States forces, United States national interests, or the homeland. (ADP 3-0)

troop leading procedures

A dynamic process used by small-unit leaders to analyze a mission, develop a plan, and prepare for an operation. (ADP 5-0)

warfighting function

A group of tasks and systems united by a common purpose that commanders use to accomplish missions and training objectives. (ADP 3-0)

warning order

A preliminary notice of an order or action that is to follow. (JP 5-0)

zone reconnaissance

A form of reconnaissance operation that involves a directed effort to obtain detailed information on all routes, obstacles, terrain, and enemy forces within a zone defined by boundaries. (FM 3-90)

References

All websites accessed on 16 May 2024.

REQUIRED PUBLICATIONS

These documents must be available to intended users of this publication.

DOD Dictionary of Military and Associated Terms. July 2024.

FM 1-02.1. *Operational Terms*. 28 February 2024.

FM 1-02.2. *Military Symbols*. 28 February 2024.

RELATED PUBLICATIONS

These documents are cited in this publication.

JOINT PUBLICATIONS

Most joint publications are available online: https://www.jcs.mil/Doctrine/.

JP 1, Volume 2. *The Joint Force*. 19 June 2020.

JP 3-0. *Joint Campaigns and Operations*. 18 June 2022.

JP 3-01. *Countering Air and Missile Threats*. 6 April 2023.

JP 3-05. *Joint Doctrine for Special Operations*. 22 September 2020.

JP 3-07.3. *Peace Operations*. 1 March 2018.

JP 3-09. *Joint Fire Support*. 10 April 2019.

JP 3-09.3. *Joint Close Air Support*. 10 June 2019.

JP 3-30. *Joint Air Operations*. 25 July 2019.

JP 3-50. *Personnel Recovery*. 14 August 2023.

JP 3-85. *Joint Electromagnetic Spectrum Operations*. 22 May 2020.

JP 5-0. *Joint Planning*. 1 December 2020.

ARMY PUBLICATIONS

Most Army doctrinal publications are available online: https://armypubs.army.mil. Most collective tasks are available online: https://rdl.train.army.mil/.

ADP 3-0. *Operations*. 31 July 2019.

ADP 3-07. *Stability*. 31 July 2019.

ADP 3-37. *Protection*. 10 January 2024.

ADP 3-90. *Offense and Defense*. 31 July 2019.

ADP 4-0. *Sustainment*. 31 July 2019.

ADP 5-0. *The Operations Process*. 31 July 2019.

ADP 6-0. *Mission Command: Command and Control of Army Forces*. 31 July 2019.

AR 40-66. *Medical Record Administration and Healthcare Documentation*. 17 June 2008.

AR 95-1. *Flight Regulations*. 22 March 2018.

AR 350-1. *Army Training and Leader Development*. 10 December 2017.

ATP 2-01. *Collection Management*. 17 August 2021.

ATP 2-01.3. *Intelligence Preparation of the Operational Environment*. 1 March 2019.

ATP 3-01.81. Counter-Unmanned Aircraft System (C-UAS). 11 August 2023.

ATP 3-01.94. *Army Air and Missile Defense Command Operations*. 20 April 2016.

ATP 3-09.42. *Fire Support for the Brigade Combat Team*. 1 March 2016.

ATP 3-18.10. *Special Forces Air Operations*. 3 June 2021.

ATP 3-20.96. *Cavalry Squadron*. 12 May 2016.

ATP 3-21.51. *Subterranean Operations*. 1 November 2019.

ATP 3-21.90/MCTP 3-01D. *Tactical Employment of Mortars*. 9 October 2019.

ATP 3-34.22. *Engineer Operations—Brigade Combat Team and Below*. 14 April 2021.

ATP 3-34.81/MCWP 3-17.4. *Engineer Reconnaissance*. 1 March 2016.

ATP 3-37.10/MCRP 3-40D.13. *Base Camps*. 27 January 2017.

ATP 3-53.2. *Military Information in Conventional Operations*. 7 August 2015.

ATP 3-60.1/MCRP 3-31.5/NTTP 3-60.1/AFTTP 3-2.3. *DT: Multi-Service Tactics, Techniques, and Procedures for Dynamic Targeting*. 5 January 2022.

ATP 4-02.4. *Medical Platoon*. 12 May 2021.

ATP 4-31/MCRP 3-40E.1. *Recovery and Battle Damage Assessment and Repair (BDAR)*. 18 November 2020.

ATP 4-44/MCRP 3-40D.14. *Water Support Operations*. 16 December 2022.

ATP 4-90. Brigade Support Battalion. 18 June 2020.

Collective Task 07-CO-1092. *Conduct an Attack – Rifle Company (IBCT)*. 9 April 2024.

FM 2-0. *Intelligence*. 1 October 2023.

FM 3-0. Operations. 1 October 2022.

FM 3-04. *Army Aviation*. 6 April 2020.

FM 3-09. *Fire Support and Field Artillery Operations*. 12 August 2024.

FM 3-12. *Cyberspace Operations and Electromagnetic Warfare*. 24 August 2021.

FM 3-53. *Military Information Support Operations*. 4 January 2013.

FM 3-55. *Information Collection*. 3 May 2013.

FM 3-90. Tactics. 1 May 2023.

FM 3-98. Reconnaissance and Security Operations. 10 January 2023.

FM 3-99. *Airborne and Air Assault Operations*. 6 March 2015.

FM 5-0. *Planning and Orders Production*. 16 May 2022.

FM 6-0. *Commander and Staff Organization and Operations*. 16 May 2022.

FM 6-27/MCTP 11-10C. *The Commander's Handbook on the Law of Land Warfare*. 7 August 2019.

FM 6-99. *U.S. Army Report and Message Formats*. 17 May 2021.

FM 7-0. Training. 14 June 2021.

STP 21-1-SMCT. *Soldier's Manual of Common Tasks Warrior Skills Level 1*. 16 October 2023.

TC 7-100. *Hybrid Threat*. 26 November 2010.

TC 7-100.4. *Threat Force Structure Organizational Guide*. 4 June 2015.

TM 9-1010-233-10. *Operator Manual for Lightweight Company Mortar, 60-mm, M224A1 (NSN 1010-01-586-2874) (EIC 4ST)*. 30 July 2024.

OTHER PUBLICATIONS

2022 National Defense Strategy of The United States of America. 27 October 2022. Available online at U.S. Department of Defense Publications website: https://www.defense.gov/News/Publications.

WEBSITE

Army Training Network. https://atn.army.mil/

PRESCRIBED FORMS

This section contains no entries.

REFERENCED FORMS

Unless otherwise indicated, DA forms are available online: https://armypubs.army.mil.

DA Form 1594. *Daily Staff Journal or Duty Officer's Log*.

DA Form 2028. *Recommended Changes to Publications and Blank Forms*.

DA Form 2408-4. *Weapon Record Data*.

DA Form 4655. *Target List Worksheet*.

DA Form 5517. *Standard Range Card*.

DA Form 5988-E. *Equipment Maintenance and Inspection Worksheet*. (Available from Unit Level Logistics System [ULLS].)

This page intentionally left blank.

Index

Entries are by paragraph number.

A

ABCT Cavalry troop. 1-26

area reconnaissance. 3-79

area security. 4-64

Army Health System. 5-69

C

Cavalry troop capabilities and limitations. 1-21

combat formations. 3-129

combat medic. 1-124

combat power augmentation. 1-44

commander's reconnaissance guidance. 3-18

commander's security guidance. 4-5

counter-air threats. 1-101

D

disengagement criteria. 3-26

E

electromagnetic warfare capabilities. 1-15

engagement and disengagement criteria. 4-13

engagement criteria. 3-25

exfiltration planning considerations. 3-113

extended screen. 4-25

F

field maintenance team. 1-125

I

infiltration. 3-89

intelligence and electromagnetic warfare. 1-79

intelligence preparation of the operational environment. 2-23

M

military information support. 1-106

moving screen. 4-41

R

reconnaissance fundamentals. 3-2

reconnaissance operation types. 3-27

reconnaissance techniques. 3-3

reconnaissance tempo. 3-23

S

security duration. 4-10

security focus. 4-7

security fundamentals. 4-4

T

threats in enabling operations. 1-7

troop leading procedures. 2-5

troop master gunner. 1-118

troop training management. C-1

This page intentionally left blank.

ATP 3-20.97

12 September 2024

By Order of the Secretary of the Army:

RANDY A. GEORGE
General, United States Army
Chief of Staff

Official:

MARK F. AVERILL
Administrative Assistant
to the Secretary of the Army
2425417

DISTRIBUTION:
Active Army, Army National Guard, and United States Army Reserve. To be distributed in accordance with the initial distribution number IDN 116198, requirements for ATP 3-20.97.

This page intentionally left blank.

This page intentionally left blank.

This page intentionally left blank.

PIN: 202003-000