TC 2-19.01

Military Intelligence (MI) Company and Platoon Reference Guide

MARCH 2021

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

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).

Training Circular
No. 2-19.01

Headquarters
Department of the Army
Washington, D.C., 09 March 2021

Military Intelligence (MI) Company and Platoon Reference Guide

Contents

		Page
	PREFACE	**vii**
Chapter 1	**INTELLIGENCE AND OPERATIONS**	**1-1**
	The Operational Environment	1-1
	Unified Action and Joint Operations	1-3
	Unified Land Operations and Decisive Action	1-3
	National to Tactical Intelligence	1-5
	Large-Scale Combat Operations	1-8
	The Army's Strategic Roles	1-9
	Fighting for Intelligence	1-10
	Intelligence Within the Operations Process	1-10
Chapter 2	**THE MI COMPANY (CORPS AND BELOW)**	**2-1**
	Brigade Combat Team (BCT) MI Company Mission	2-1
	BCT MI Company Roles and Responsibilities	2-2
	BCT MI Company Command and Control Considerations	2-10
	Expeditionary-MI Brigade Intelligence and Electronic Warfare Battalion	2-13
Chapter 3	**KEY TRAINING CONSTRUCTS**	**3-1**
	Institutional Training	3-1
	Operational Training	3-1
	Self-Development Training	3-10
Chapter 4	**OPERATIONS**	**4-1**
	The Operations Process	4-1
	Orders Process	4-5
Appendix A	**DOCTRINE CROSSWALK**	**A-1**
Appendix B	**TRAINING RESOURCES**	**B-1**
Appendix C	**UNMANNED AIRCRAFT SYSTEM OPERATIONS**	**C-1**
Appendix D	**CALL FOR FIRE CONSIDERATIONS**	**D-1**
Appendix E	**MOVEMENT AND MANEUVER**	**E-1**
Appendix F	**OBSTACLE CONSIDERATIONS**	**F-1**
Appendix G	**REACTION DRILLS**	**G-1**
Appendix H	**SUSTAINMENT PROCEDURES**	**H-1**

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

Appendix I **INTELLIGENCE AND ELECTRONIC WARFARE MAINTENANCE I-1**
Appendix J **CASUALTY RESPONSE J-1**
Appendix K **CBRN CONSIDERATIONS K-1**
Appendix L **COVER AND CONCEALMENT L-1**
Appendix M **REPORTING M-1**
Appendix N **COMMUNICATIONS N-1**
Appendix O **LAND NAVIGATION O-1**
Appendix P **NONTACTICAL MOVEMENT CONSIDERATIONS P-1**
Appendix Q **THE MDMP AND COMMAND AND SUPPORT RELATIONSHIPS Q-1**
Appendix R **STANDARD OPERATING PROCEDURE CONSIDERATIONS R-1**
Appendix S **PROPERTY MANAGEMENT S-1**
GLOSSARY Glossary-1
REFERENCES References-1

Figures

Figure 1-1. Intelligence across the echelons 1-7
Figure 1-2. The conflict continuum and the range of military operations 1-8
Figure 1-3. The Army's strategic roles and their relationship to the joint phases 1-9
Figure 1-4. Intelligence within the operations process 1-11
Figure 2-1. BCT MI company operating concept 2-1
Figure 2-2. BCT MI company structure 2-3
Figure 2-3. Expeditionary-MI brigade IEW battalion operating concept 2-13
Figure 2-4. Expeditionary-MI brigade general structure 2-14
Figure 2-5. Multi-domain MI detachment 2-15
Figure 3-1. Military Intelligence Training Strategy certification tiers 3-3
Figure 3-2. Example MI company long-range training calendar 3-5
Figure 3-3. BCT communications PACE plan example 3-8
Figure 4-1. Parallel planning from higher to lower echelons 4-7
Figure 4-2. Example company-level operation order outline 4-11
Figure C-1. Unmanned aircraft system area reconnaissance example C-2
Figure C-2. Manned unmanned teaming example C-3
Figure C-3. Communications relay example C-4
Figure C-4. Unmanned aircraft system equipment C-5
Figure C-5. Unmanned aircraft system capabilities C-6
Figure C-6. Unmanned aircraft components C-7
Figure C-7. Portable ground control system C-8
Figure C-8. Ground data terminal C-8
Figure C-9. Local equipment assembly C-9
Figure C-10. Remote equipment assembly C-9

Figure C-11. Platoon command and control C-10
Figure D-1. Polar plot example D-2
Figure D-2. Shift-from-a-known point using cardinal direction example D-2
Figure D-3. Lateral and range shifts example D-3
Figure D-4. Target description example D-3
Figure D-5. Deviation spotting example D-4
Figure D-6. Mil scale on binoculars example D-5
Figure D-7. Using the hand and fingers technique to determine deviation D-5
Figure D-8. Deviation spotting with binoculars example D-5
Figure D-9. Determining the observer target factor D-6
Figure D-10. Converting mil deviation to deviation correction example D-6
Figure D-11. Range spotting examples D-7
Figure D-12. Bracketing example D-8
Figure D-13. Hasty bracketing example D-9
Figure D-14. Creeping example D-10
Figure D-15. Observer's actions after fire for effect D-10
Figure E-1. Fire team wedge and fire team file E-11
Figure E-2. Squad column, fire team in wedge E-12
Figure E-3. Squad file E-12
Figure E-4. Platoon column E-16
Figure E-5. Platoon line, squads on line E-16
Figure E-6. Platoon line, squads in column E-17
Figure E-7. Platoon vee E-17
Figure E-8. Platoon wedge E-18
Figure E-9. Platoon file E-19
Figure E-10. Staggered column formation with dispersal for added security E-20
Figure E-11. Wedge formation E-21
Figure E-12. Line formation E-21
Figure E-13. Echelon right formation E-22
Figure E-14. Coil formation E-22
Figure E-15. Herringbone formation E-23
Figure E-16. Squad traveling and squad traveling overwatch E-24
Figure E-17. Squad bounding overwatch E-24
Figure E-18. Squad successive and alternate bounds E-25
Figure E-19. Platoon traveling and platoon traveling overwatch E-26
Figure E-20. Platoon bounding overwatch E-26
Figure E-21. Platoon leader order for bounding overwatch example E-28
Figure E-22. Traveling, platoon mounted E-28
Figure E-23. Traveling overwatch E-29
Figure E-24. Bounding overwatch E-29
Figure E-25. Methods of bounding overwatch E-30

Figure F-1. Initial lane-marking pattern F-3
Figure F-2. Intermediate lane-marking pattern F-4
Figure F-3. Full lane-marking pattern F-5
Figure F-4. Sample bypass marking F-6
Figure G-1. Assuming nearest covered position G-1
Figure G-2. Control of the support element G-2
Figure G-3. React to ambush (near) (dismounted) G-4
Figure G-4. Return fire immediately G-4
Figure G-5. Assaulting through enemy positions G-5
Figure H-1. Principles of sustainment H-2
Figure H-2. Movement of logistics packages H-9
Figure J-1. Fireman's carry J-5
Figure J-2. Supporting carry J-6
Figure J-3. Arms carry J-6
Figure J-4. Two-man supporting carry J-7
Figure J-5. Two-man arms carry J-8
Figure J-6. Four-hand seat carry J-8
Figure J-7. Personnel drag J-9
Figure J-8. Neck drag J-10
Figure J-9. Cradle-drop drag J-10
Figure J-10. Standard collapsible litter J-11
Figure J-11. Rigid pole folding litter and adjustable handle rigid pole folding litter J-12
Figure J-12. Folding litter J-12
Figure J-13. Multihinged folding litter J-13
Figure J-14. Polymer flexible litter J-13
Figure J-15. Litter made with blankets and poles and jackets and poles J-14
Figure J-16. M998 truck, cargo/troop carrier, HMMWV (four-man configuration) J-15
Figure J-17. M998 truck, cargo/troop carrier, HMMWV (two-man configuration) J-16
Figure J-18. Loading the M1093, medium tactical vehicle J-17
Figure J-19. Loading the M1081, light medium tactical vehicle J-18
Figure J-20. Clothing loosened and feet elevated J-23
Figure J-21. Body temperature maintained J-23
Figure L-1. Hide position/hull defilade position L-10
Figure L-2. Ultra Lightweight Camouflage Net System (GTA 05-04-043) L-12
Figure N-1. Transmitter and receiver connection example N-3
Figure N-2. Whip antenna body repair N-4
Figure N-3. Disperse, assemble, and V formation signals N-5
Figure N-4. Enemy in sight, change direction/change elevation, and cease firing signals N-6
Figure N-5. NATO standard panel code figures for numbers N-7
Figure N-6. Understood/Not understood ground signal examples N-7
Figure N-7. Special signal using panels example N-8

Figure N-8. Emergency code symbols N-8
Figure O-1. Scale classifications O-2
Figure O-2. Origin of azimuth circle O-4
Figure O-3. Back azimuth calculation with azimuth less than 180 degrees O-5
Figure O-4. Measuring a grid azimuth O-5
Figure O-5. Three norths O-6
Figure O-6. Military protractor O-7
Figure O-7. Plotting an azimuth on a map O-8
Figure O-8. Tracked vehicle capabilities O-9
Figure O-9. Primary route O-11
Figure O-10. Determining an azimuth, dismounted O-12
Figure P-1. Strategic mobility triad P-1

Tables

Table 1-1. Elements of decisive action 1-4
Table 2-1. BCT intelligence weather responsibilities 2-8
Table 3-1. Best practices for planning Military Intelligence Training Strategy lessons 3-4
Table 3-2. Timelines for planning Military Intelligence Training Strategy lessons 3-4
Table 3-3. Recommended evaluators 3-6
Table 4-1. Parallel planning checklist 4-8
Table C-1. Flight-hour minimums C-14
Table C-2. Duty day during flight training (garrison) C-15
Table C-3. Rest period reductions C-15
Table C-4. Maximum flight time allowed C-15
Table C-5. Platoon leader common daily tasks C-19
Table C-6. Platoon leader common weekly tasks C-21
Table E-1. Primary formations E-9
Table E-2. Comparison of fire team formations E-10
Table E-3. Comparison of squad formations E-11
Table E-4. Comparison of platoon formations E-14
Table E-5. Mounted formation characteristics E-20
Table E-6. Movement techniques and characteristics E-23
Table F-1. Standard contamination marking signs F-7
Table H-1. Classes of supply H-4
Table H-2. Bulk water storage and requirements H-5
Table H-3. Water consumption factors in gallons/persons/day H-5
Table H-4. Vehicle consumption rates in gallons/hour H-5
Table H-5. Bulk fuel storage capability H-6
Table H-6. Requirements for 300-meter sections of various wire obstacles H-7
Table J-1. Categories of evacuation precedence J-2

Table J-2. Medical evacuation request J-19
Table L-1. Material thickness required to protect against direct fire projectiles L-3
Table L-2. Small-arms protection characteristics of various materials L-4
Table L-3. Material thickness required to protect against direct fire HE-shaped charges L-5
Table L-4. Material thickness required to protect against an RPG-direct hit with HEAT/thermobaric warhead L-6
Table L-5. Material thickness required to protect against indirect fire fragmentation and blast exploding 50 feet away L-6
Table L-6. Camouflage and concealment techniques L-7
Table L-7. Dimensions of vehicle positions L-8
Table N-1. Phonetic alphabet N-1
Table N-2. Pronunciation of numerals and exact multiples of one thousand N-2
Table N-3. Procedure words or phrases N-2
Table P-1. Company-level deployment readiness tasks P-4
Table P-2. Company-level deployment execution tasks P-5
Table Q-1. Joint support categories Q-3
Table Q-2. Army command relationships Q-4
Table Q-3. Army support relationships Q-6

Preface

TC 2-19.01 is designed to combine key doctrinal discussions; detailed tactics, techniques, and procedures; key training concepts; field craft; and references for military intelligence (MI) companies and platoons.

The principal audience for TC 2-19.01 is the MI company- and platoon-level leadership. Division and brigade commanders and staffs and trainers may also use this training circular (TC) as a reference. Commanders of MI companies serving in a joint role/capacity should also refer to applicable joint or multinational doctrine concerning the range of military operations and joint or multinational forces.

Commanders and subordinates ensure their decisions and actions comply with applicable United States (U.S.), international, and, in some cases, host-nation laws and regulations. Commanders at all levels ensure their Soldiers operate in accordance with the law of war and the rules of engagement. (See FM 6-27.)

TC 2-19.01 has 19 appendixes (meant as quick reference tools) of topics that require familiarization from MI company and platoon leaders. The topics include but are not limited to obstacle considerations, intelligence and electronic warfare (IEW) maintenance, casualty evacuation (CASEVAC), cover and concealment, and reports.

TC 2-19.01 uses joint terms where applicable. Selected 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 for any Army terms.

TC 2-19.01 applies to the Active Army, Army National Guard/Army National Guard of the United States and U.S. Army Reserve unless otherwise stated.

The proponent of TC 2-19.01 is the U.S. Army Intelligence Center of Excellence. The preparing agency is the Directorate of Doctrine and Intelligence Systems Training, U.S. Army Intelligence Center of Excellence. Send written comments and recommendations on a DA Form 2028 (*Recommended Changes to Publications and Blank Forms*) to Commander, U.S. Army Intelligence Center of Excellence, ATTN: ATZS-DST-D (TC 2-19.01), 550 Cibeque Street, Fort Huachuca, AZ 85613-7017; by email to usarmy.huachuca.icoe.mbx.doctrine@mail.mil; or submit an electronic DA Form 2028.

This page intentionally left blank.

Chapter 1
Intelligence and Operations

Throughout modern history, intelligence has been and remains an inherent part of military operations. From national and Department of Defense (DOD) levels down to the Army battalion level, intelligence is an activity that never stops. Army forces are globally engaged, always executing operations and preparing for future operations as part of a joint team. A key part of global engagement is the continuous use of intelligence, the collection and analysis of information, and the production of intelligence. This constant activity, referred to as intelligence, is never at rest. To understand Army intelligence, it is important to understand intelligence within the operational environment (OE) as well as in the larger context of unified action and joint operations, including unified land operations, both joint large-scale combat and Army large-scale ground combat operations, and the Army strategic roles.

Intelligence

Intelligence is (1) the product resulting from the collection, processing, integration, evaluation, analysis, and interpretation of available information concerning foreign nations, hostile or potentially hostile forces or elements, or areas of actual or potential operations; (2) the activities that result in the product; and (3) the organizations engaged in such activities (JP 2-0).

THE OPERATIONAL ENVIRONMENT

1-1. An *operational environment* is a composite of the conditions, circumstances, and influences that affect the employment of capabilities and bear on the decisions of the commander (JP 3-0). An OE encompasses the air, land, maritime, space, and cyberspace domains; the information environment; the electromagnetic spectrum (EMS); and other factors. Commanders at all levels have their own OE for their particular operation.

1-2. Commanders and staffs analyze an OE using the eight operational variables (political, military, economic, social, information, infrastructure, physical environment, and time [PMESII-PT]) and six mission variables (mission, enemy, terrain and weather, troops and support available, time available, civil considerations [METT-TC]). An OE for a specific operation comprises more than the interacting variables that exist within a specific physical area. It also involves interconnected influences (for example, politics and economics)—globally or regionally—that impact the conditions and operations within that physical area. Thus, each commander's OE is part of a higher commander's OE. (See FM 6-0 for more on the operational and mission variables.)

INTELLIGENCE PREPARATION OF THE BATTLEFIELD

1-3. *Intelligence preparation of the battlefield* 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 (ATP 2-01.3). Intelligence preparation of the battlefield (IPB) allows commanders and staffs to take a holistic or comprehensive approach to analyzing the OE. The IPB process comprises four steps:

- Define the OE.
- Describe environmental effects on operations.
- Evaluate the threat.
- Determine threat courses of action (COAs).

1-4. The IPB process considers all threat capabilities in and across each domain in a unit's area of operations (AO) and area of interest (AOI) and the relevant aspects of the information environment. IPB starts immediately upon receipt of the mission, is refined throughout planning, and updated to support subsequent operational planning. The other staff sections assist the intelligence staff in developing the IPB products required for planning. The staffs' input is mission-dependent and not all-inclusive. (For a detailed IPB discussion, see ATP 2-01.3.)

1-5. Platoon leaders seldom have all of the information needed about the enemy. Therefore, they obtain the best possible IPB products and integrate new and updated intelligence throughout the operation. Leaders use their own analysis of the mission variables (METT-TC) and IPB products to determine the most advantageous way to maneuver to collection position in order to avoid direct enemy contact, orient collectors for the mission, and reduce fratricide and friendly fire from direct fire systems. Platoon leaders may have to request information from the supported unit's intelligence staff to answer their information requirements.

THREATS AND HAZARDS

1-6. Although threats are a fundamental part of an OE for any operation, they are discussed separately here for emphasis; hazard is an important related term that also affects operations:

- 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 may include individuals, groups of individuals (organized or not organized), paramilitary or military forces, nation-states, or national alliances. Generally, a threat can be categorized as an enemy or an adversary:
  - An *enemy* is a party identified as hostile against which the use of force is authorized (ADP 3-0).
  - 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 *peer threat* is an adversary or enemy with capabilities and the capacity to oppose U.S. forces across multiple domains worldwide or in a specific region where they enjoy a position of relative advantage. (See FM 3-0 and ADP 3-0 for a detailed discussion.) Peer threats—
  - Possess roughly equal combat power in geographical proximity to a conflict area with U.S. forces.
  - May also have a cultural affinity to specific regions, providing them relative advantages in terms of time, space, and sanctuary.
  - Generate tactical, operational, and strategic challenges that are an order of magnitude more challenging militarily than those the Army has faced since the end of the Cold War.
- A *hazard* is a condition with the potential to cause injury, illness, or death of personnel; damage to or loss of equipment or property; or mission degradation (JP 3-33).

MULTI-DOMAIN EXTENDED BATTLEFIELD

1-7. The interrelationship of the air, land, maritime, space, and cyberspace domains; the information environment; and the EMS requires cross-domain situational understanding of the OE. Commanders and staffs must understand the friendly and enemy capabilities and vulnerabilities that reside in each domain. From this understanding, commanders can better identify windows of opportunity during operations to converge capabilities for the best effects. Since many capabilities are not organic to Army forces, commanders and staffs plan, coordinate for, and integrate joint and other unified action partner capabilities in a multi-domain approach to operations. Intelligence plays an important role in facilitating situational understanding across all domains. This type of intelligence effort requires time, significant intelligence capabilities, and an analytical focus.

1-8. Since the Army conducts operations across all domains and the information environment, a multi-domain approach to operations is neither new to the Army nor to national to tactical intelligence. Rapid and continued advances in technologies and the military's use of new technologies within the space domain, the EMS, and the information environment (particularly cyberspace) will drive new requirements for special considerations for intelligence, planning, and converging effects from across all domains. Key considerations for operating in multiple domains are—

- Command and control (C2).
- Reconnaissance in depth.
- Mobility.
- Cross-domain fires.
- Tempo and convergence of effects.
- Protection.
- Sustainment.
- Information operations.
- Cyberspace electromagnetic activities (CEMA).

UNIFIED ACTION AND JOINT OPERATIONS

1-9. *Unified action* is the synchronization, coordination, and/or integration of the activities of governmental and nongovernmental entities with military operations to achieve unity of effort (JP 1). *Unified action partners* are those military forces, governmental and nongovernmental organizations, and elements of the private sector with whom Army forces plan, coordinate, synchronize, and integrate during the conduct of operations (ADP 3-0). Army contributions to unified action are called unified land operations (see paragraph 1-11). (For more information, see ADP 3-0.) *Joint operations* are military actions conducted by joint forces and those Service forces employed in specific command relationships with each other, which of themselves, do not establish joint forces (JP 3-0).

1-10. The Army provides adaptable intelligence capabilities that are dedicated to both joint and Army forces operating as a part of the joint team. This intelligence effort is synchronized, networked, and includes collaboration with unified action partners to achieve unity of effort and to meet the commander's intent. Multinational and interagency partners provide unique capabilities that reinforce and complement Army intelligence capabilities. They also provide invaluable cultural awareness and different perspectives on the OE. Using the appropriate procedures, foreign disclosure guidance, and established policy, Army intelligence leaders provide information and intelligence support to multinational forces against an array of threats across multiple domains.

UNIFIED LAND OPERATIONS AND DECISIVE ACTION

1-11. An *operation* is a sequence of tactical actions with a common purpose of unifying theme (JP 1). Army forces, as part of the joint and multinational force, contribute to the joint mission through the conduct of unified land operations. Unified land operations is the Army's operational concept and contribution to unified action; it is how the Army applies combat power. *Unified land operations* is the simultaneous execution of offense, defense, stability, and defense support of civil authorities across multiple domains to shape OEs, prevent conflict, prevail in large-scale ground combat, and consolidate gains as part of unified action (ADP 3-0). The goal of unified land operations is to establish conditions that achieve the joint force commander's (JFC's) end state by applying landpower as part of a unified action to defeat the enemy. Military forces seek to prevent or deter threats through unified action, and, when necessary, execute operations to defeat aggression.

1-12. Land operations, particularly large-scale ground combat operations, focus on destroying or dislocating enemy forces or securing key land objectives that reduce the enemy's ability to conduct operations. Land operations against a peer threat (highly adaptive and technologically advanced) are especially challenging. At the beginning of a conflict, peer threats often occupy a position that greatly complicates Army forces' ability to conduct operations.

1-13. Peer threats are developing the capability to mass effects across multiple domains at a speed that will impact ongoing operations. They will most likely attempt to deny U.S. and multinational forces access to their territory. Once Army forces achieve access, the threat will attempt to deny them freedom of maneuver. Future adversaries are likely to use offensive cyberspace operations and counterspace measures to deny and degrade U.S. forces' maneuver, communications, intelligence collection, and targeting capabilities. Land-based threats will impede joint force freedom of movement and action across all domains and the information environment.

1-14. Within unified land operations, Army forces conduct decisive action. *Decisive action* is the continuous, simultaneous combinations of offensive, defensive, and stability operations or defense support of civil authorities tasks (ADP 3-0). In unified land operations, commanders seek to seize, retain, and exploit the initiative while synchronizing their actions to achieve the best effects possible. Operations conducted outside the United States and its territories simultaneously combine three elements—offense, defense, and stability. Within the United States and its territories, decisive action combines the elements of defense support of civil authorities (DSCA) and, as required, offense and defense to support homeland defense. (See table 1-1.)

1-15. It is critical for the intelligence staff to support the commander's ability to visualize threats and relevant aspects of the OE during the conduct of decisive operations. However, information requirements, information collection tactics and techniques, the theater intelligence architecture, the nature of intelligence analysis, the employment of MI units, and specific tactics and techniques differ significantly depending on the specific decisive action task.

Table 1-1. Elements of decisive action

Offense	***Defense***
Offensive operation is an operation to defeat and destroy enemy forces and gain control of terrain, resources, and population centers (ADP 3-0).	***Defensive operation*** is an operation to defeat an enemy attack, gain time, economize forces, and develop conditions favorable for offensive or stability operations (ADP 3-0).
Types of offensive operations:	**Types of defensive operations:**
• Movement to contact. • Attack. • Exploitation. • Pursuit.	• Mobile defense. • Area defense. • Retrograde.
Purposes:	**Purposes:**
• Dislocate, isolate, disrupt, and destroy enemy forces. • Seize key terrain. • Deprive the enemy of resources. • Refine intelligence. • Deceive and divert the enemy. • Provide a secure environment for stability operations tasks.	• Deter or defeat enemy offense. • Gain time. • Achieve economy of force. • Retain key terrain. • Protect the population, critical assets, and infrastructure. • Refine intelligence.
Stability	***Defense support of civil authorities***
Stability operation is an operation conducted outside of the United States in coordination with other instruments of national power to establish or maintain a secure environment, provide essential government services, emergency infrastructure reconstruction, and humanitarian relief (ADP 3-0).	***Defense support of civil authorities*** is an operation conducted outside of the United States in coordination with other instruments of national power to establish or maintain a secure environment, provide essential government services, emergency infrastructure reconstruction, and humanitarian relief (ADP 3-0).
Stability operations tasks:	**Defense support of civil authorities tasks:**
• Establish civil security. • Establish civil control. • Restore essential services. • Support to governance. • Support to economic and infrastructure development. • Conduct security cooperation.	• Provide support to domestic disasters. • Provide support for domestic, chemical, biological, radiological, and nuclear incidents. • Provide support for domestic civilian law enforcement agencies. • Provide other designated support.
Purposes:	**Purposes:**
• Provide a secure environment. • Secure land areas. • Meet the critical needs of the population. • Gain support for host-nation government. • Shape the environment for interagency and host-nation success. • Promote security, build partner capacity, and provide access. • Refine intelligence.	• Save lives. • Restore essential services. • Maintain or restore law and order. • Protect infrastructure and property. • Support maintenance or restoration of local government. • Shape the environment for intergovernmental success.

NATIONAL TO TACTICAL INTELLIGENCE

1-16. The national to tactical intelligence effort consists of the sum total of all of the intelligence capabilities of the entire U.S. intelligence community and those of other unified action partners. The value of the national to tactical intelligence effort is the ability it provides to leverage information from all unified action partners, including access to national capabilities, as well as nonintelligence information, larger volumes of information and intelligence, and specialized analysis by unified action partners.

1-17. National to tactical intelligence assets include all U.S. intelligence professionals, sensors, systems, federated organizations, information, and processes supported by a network-enabled architecture. The most important element is the people who make it work. The intelligence warfighting function is the Army's contribution to national intelligence.

Intelligence Warfighting Function

The *intelligence warfighting function* is the related tasks and systems that facilitate understanding the enemy, terrain, weather, civil considerations, and other significant aspects of the operational environment (ADP 3-0). Specifically, other significant aspects of the OE include threats, adversaries, the operational variables (PMESII-PT), and other aspects, depending on the nature of operations. (See ADP 2-0 for more information on the intelligence warfighting function.) The intelligence warfighting function is the Army's contribution to the intelligence effort. The intelligence warfighting function tasks are—

- Provide intelligence support to force generation.
- Provide support to situational understanding.
- Conduct information collection.
- Provide intelligence support to targeting and information operations.

1-18. Army units provide accurate and detailed intelligence on the threats and relevant aspects of the OE (especially those related to Army activities), while other portions of the DOD intelligence effort provide expertise and access not readily available to the Army. Additionally, DOD agencies provide governance over certain intelligence methods and activities.

1-19. Numerous DOD and non-DOD agencies and organizations in the intelligence community support Army operations by providing specific intelligence products and services. *Intelligence community* is all departments or agencies of a government that are concerned with intelligence activity, either in an oversight, managerial, support, or participatory role (JP 2-0):

- DOD members include the Defense Intelligence Agency, National Security Agency, National Geospatial-Intelligence Agency (NGA), National Reconnaissance Office, and the United States Air Force (USAF), Army, Navy, and Marine Corps Intelligence.
- Non-DOD members include the Central Intelligence Agency, Department of State, Department of Energy, Federal Bureau of Investigation, Department of the Treasury, U.S. Coast Guard Intelligence, Department of Homeland Security, the Drug Enforcement Administration, and the Office of Director of National Intelligence.

REGIONALLY ALIGNED FORCES AND SETTING THE THEATER

1-20. *Regionally aligned forces* are those forces that provide a combatant commander at up to joint task force capable headquarters with scalable, tailorable capabilities to enable the combatant commander to shape the environment. They are those Army units assigned to combatant commands, those Army units allocated to a combatant command, and those Army capabilities distributed and prepared by the Army for combatant command regional missions (FM 3-22). Regionally aligned forces also include capabilities that are Service-retained but aligned with a combatant command. Regional missions include theater security cooperation and other shaping efforts. A large portion of joint and Army intelligence is regionally aligned.

1-21. Regionally aligned forces and other specified Army units require ready access to and seamless interaction with their associated combatant command's intelligence architecture. When an Army headquarters enters a geographic combatant command theater as a joint force command, joint task force (JTF), or combined joint task force (CJTF), it primarily receives intelligence support through the joint intelligence architecture. Specifically, the geographic combatant command joint intelligence center/joint intelligence operations center (also called JTC/JTOC) provides all-source intelligence support unless another support relationship is established. Other Army units within the geographic combatant command depend on the combatant command's military intelligence brigade-theater (MIB-T) for situational awareness throughout the area of responsibility (AOR). This relationship allows units to tailor mission planning and training, establish an effective intelligence architecture, and leverage DOD intelligence effectively. This concept refers to the MIB-T as the anchor point within that specific theater.

1-22. The intelligence warfighting function must constantly set the theater for Army forces across all echelons of a deployed force in theater. Intelligence staffs and MIB-T units must carefully transition intelligence capabilities and activities to support all engagements and operations as the Army moves from shape to prevail in large-scale ground combat and to consolidate gains. Setting the theater involves three core tasks:

- The intelligence staff plans, builds, and evolves an intelligence architecture based on the information collection; processing, exploitation, and dissemination (PED); and analysis capabilities allocated or requested to support operations.
- The intelligence staff builds the knowledge needed to understand the OE through coordination and collaboration with regionally aligned forces, using the MIB-T as the anchor point. This includes connecting the intelligence architecture to and incorporating reports and products into C2 systems.
- The intelligence staff supports theater security cooperation and engagements that develop context and build relationships with unified action partners through the successful conduct of intelligence operations, intelligence analysis, and intelligence PED. (See ADP 2-0 and FM 2-0.)

ESTABLISHING THE INTELLIGENCE ARCHITECTURE

1-23. National to tactical intelligence is enabled by the communications network. Specifically, the intelligence architecture is based on communications that transmit intelligence and information to and from various collection elements, units, and agencies by means of different technologies and systems, as well as to and from intelligence analysts to use organic PED data from various collection platforms and sources. With the continued development of sensors, processors, and communications systems, it is increasingly important to understand the requirements of establishing an effective communications architecture. Adequate communications that facilitate access to national intelligence organizations is often the most critical enabler for the intelligence warfighting function. The intelligence staff must identify the specific intelligence warfighting function requirements to the unit's overall communications architecture. (See ADP 2-0 and FM 2-0 for more information on establishing the intelligence architecture.)

INTELLIGENCE ACROSS ARMY ECHELONS

1-24. Army intelligence supports decisive action at all echelons. Specifically, the intelligence warfighting function supports operations from theater army to battalion levels. The commander and staff need accurate, relevant, and predictive intelligence to understand threat centers of gravity, goals and objectives, and COAs. The commander and staff must also have detailed knowledge of threat strengths, vulnerabilities, organizations, equipment, capabilities, and tactics to plan for and execute friendly operations. Precise intelligence is critical to target threat capabilities at the right time and place and to open windows of opportunity to achieve positions of relative advantage.

1-25. The basic intelligence support provided by G-2/S-2s and intelligence staffs at each echelon is the same. What differs is the size, composition, and number of supporting capabilities for intelligence staffs; access to higher-level information and intelligence; number and complexity of the requirements; and time available to answer those requirements. Generally, the higher the echelon, the greater the volume, depth, and complexity (for example, detailed intelligence products about threat cyberspace activities) of analysis and intelligence production intelligence staffs can perform. Lower-echelon G-2/S-2s and intelligence staffs must often depend on higher echelons for certain intelligence products and support. Therefore, commanders and staffs must understand the intricacies or specifics of the intelligence warfighting function across each echelon.

1-26. MI unit structures and capabilities differ significantly across theaters and echelons. For example—

- Each theater army MIB-T is structured differently and has different capabilities and capacities.
- The corps expeditionary-military intelligence brigade (E-MIB) is the lowest level with organic counterintelligence (CI) teams and human intelligence (HUMINT) units specifically designated for detainee facility interrogations.
- The theater army, corps, and BCT have organic MI units—the MIB-T, E-MIB, and MI company respectively—but the division and battalion do not have an organic MI unit. ***Note.*** Some of the corps E-MIBs can be task-organized to support the division or even some brigade combat teams (BCTs).

1-27. These aspects of the intelligence warfighting function matter to the success of operations. Figure 1-1 provides a summary of the operations, intelligence staffs, and organic MI units at each level. (For more on Army echelons, see FM 3-0; for more on units and capabilities from theater army to battalion, see FM 2-0.)

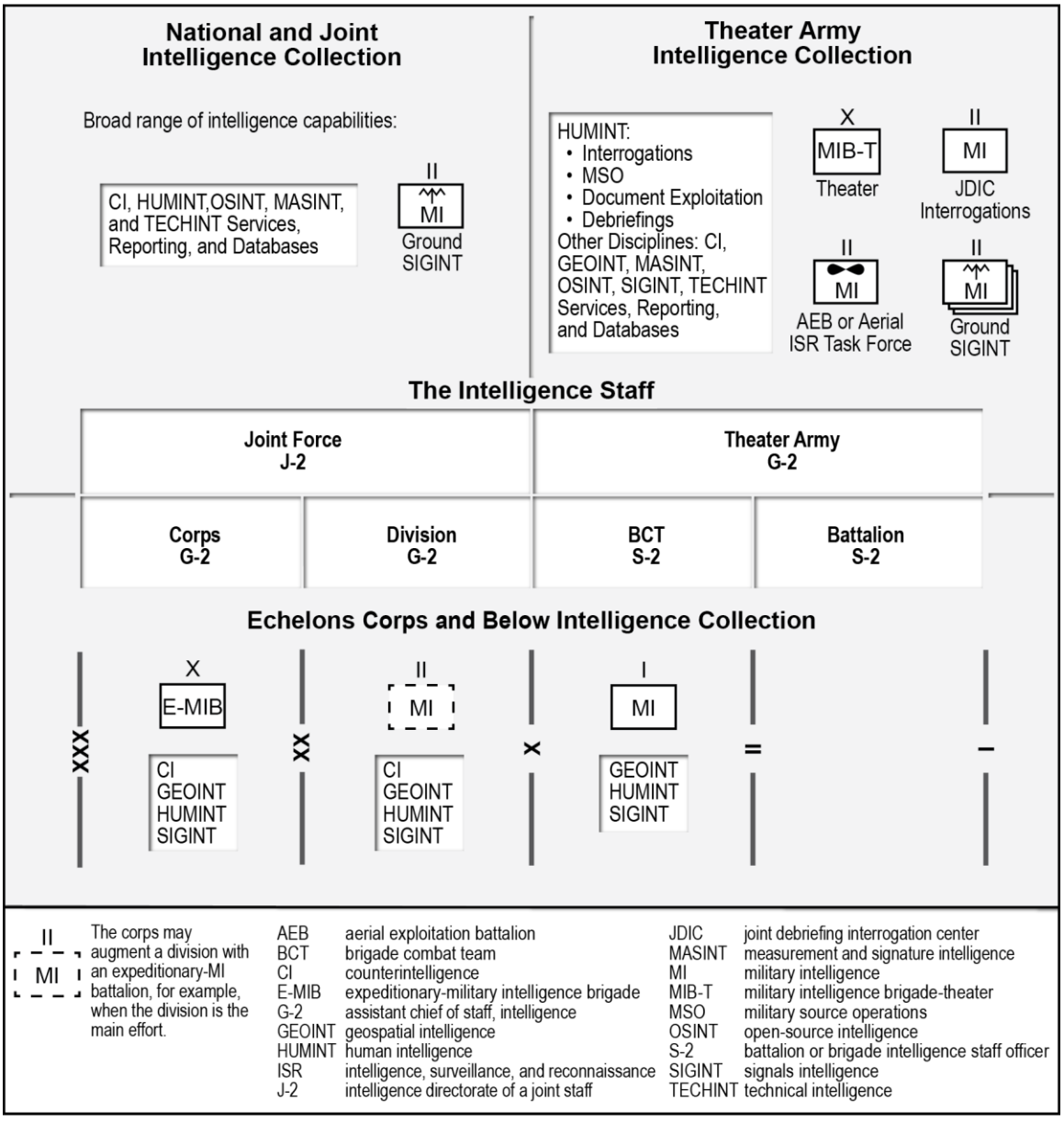


Figure 1-1. Intelligence across the echelons

LARGE-SCALE COMBAT OPERATIONS

1-28. Threats to U.S. interests worldwide are countered by the U.S. forces' ability to respond to a variety of challenges along a conflict continuum that spans from peace to war as shown in figure 1-2. U.S. forces conduct a range of military operations to respond to these challenges. The conflict continuum does not proceed smoothly from stable peace to general war and back. The range of military operations is a fundamental construct that helps relate military activities and operations in scope and purpose within a backdrop of the conflict continuum. All operations along this range share a common fundamental purpose—to achieve or contribute to national objectives.

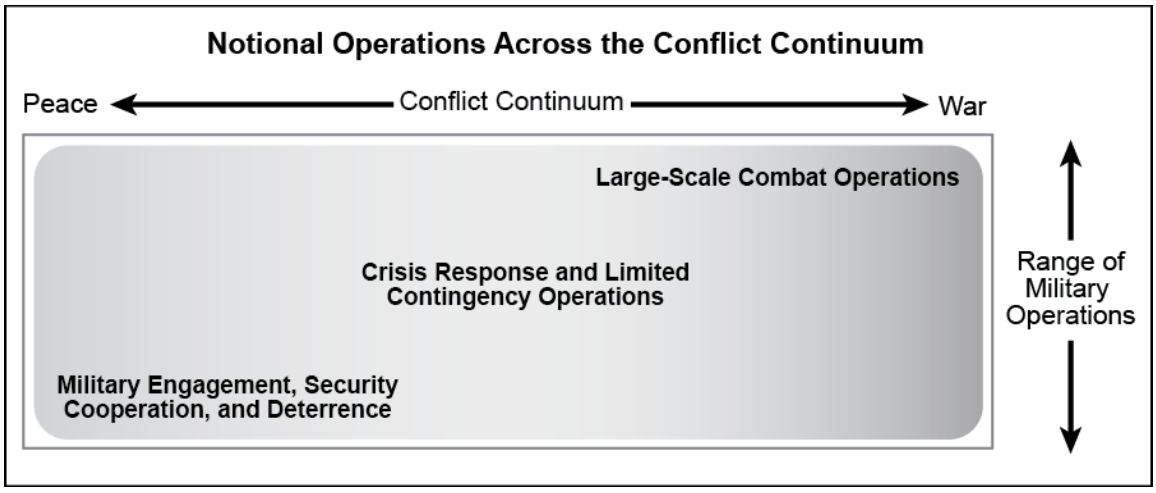


Figure 1-2. The conflict continuum and the range of military operations

1-29. Military engagement, security cooperation, and deterrence activities build networks and relationships with partners, shape regions, keep day-to-day tensions between nations or groups below the threshold of armed conflict, and maintain U.S. global influence. Typically, crisis response and limited contingency operations are focused in scope and scale and conducted to achieve a specific strategic- or operational-level objective in an operational area. *Large-scale combat operation*s are extensive joint combat operations in terms of scope and size of forces committed, conducted as a campaign aimed at achieving operational and strategic objectives (ADP 3-0).

1-30. Army forces conduct large-scale ground combat operations with a focus on the defeat and destruction of enemy ground forces as part of the joint team. *Large-scale ground combat operations* are sustained combat operations involving multiple corps and divisions (ADP 3-0). Large-scale ground combat operations are not synonymous with total war and can occur below the nuclear threshold. However, they entail significant operational risk, synchronization, capabilities convergence, and a high operating tempo. Army forces close with and destroy enemy forces in any terrain, exploit success, and break the opponent's will to resist.

1-31. Most joint operations share certain activities or actions in common. There are six general groups of military activities that typically occur in preparation for and during a joint large-scale combat operation. These six groups are shape, deter, seize initiative, dominate, stabilize, and enable civil authorities. These six general groups of activities provide a basis for thinking about a joint operation in notional phases. These phases often overlap, and they are not necessarily sequential.

1-32. As a part of joint operations, the Army is the dominant fighting force in the land domain. Across the globe, mission-tailored Army units build partnerships, deter adversaries, and overcome challenges to defeat enemies using simultaneous actions integrated in time, space, and purpose. Army forces both depend on and enable joint forces across all domains and the information environment. This mutual interdependence creates powerful synergies and reflects that all operations have multi-domain components. The Army depends on the other Services for strategic and operational mobility, joint fires, and other key enabling capabilities like information collection in the deep area. The Army supports other Services, combatant commands, and unified action partners with ground-based indirect fires and ballistic missile defense, defensive cyberspace operations, electronic protection, communications, intelligence, rotary-wing aircraft, logistics, and engineering.

1-33. Joint and Army intelligence staffs, units, and organizations within the theater intelligence architecture operate as mutually supporting entities that ensure information and intelligence are shared across echelons to support commanders at all levels. Intelligence, surveillance, and reconnaissance (ISR) is an important construct in both joint and Army intelligence. Consistent with joint doctrine, *intelligence, surveillance, and reconnaissance* is an integrated operations and intelligence activity that synchronizes and integrates the planning and operation of sensors, assets, and processing, exploitation, and dissemination systems in direct support of current and future operations (JP 2-01). The Army continually executes ISR worldwide through the operations and intelligence processes (with an emphasis on intelligence analysis and leveraging intelligence at each echelon) and information collection.

THE ARMY'S STRATEGIC ROLES

1-34. The Army's primary mission is to organize, train, and equip its forces to conduct prompt and sustained land combat to defeat enemy ground forces and seize, occupy, and defend land areas. The Army accomplishes its missions by supporting the joint force through the Army's four strategic roles: shape OEs, prevent conflict, prevail during large-scale ground combat, and consolidate gains. The strategic roles clarify the enduring reasons for which the Army is organized, trained, and equipped. Figure 1-3 shows the Army's strategic roles in a general relationship to the joint phasing model.

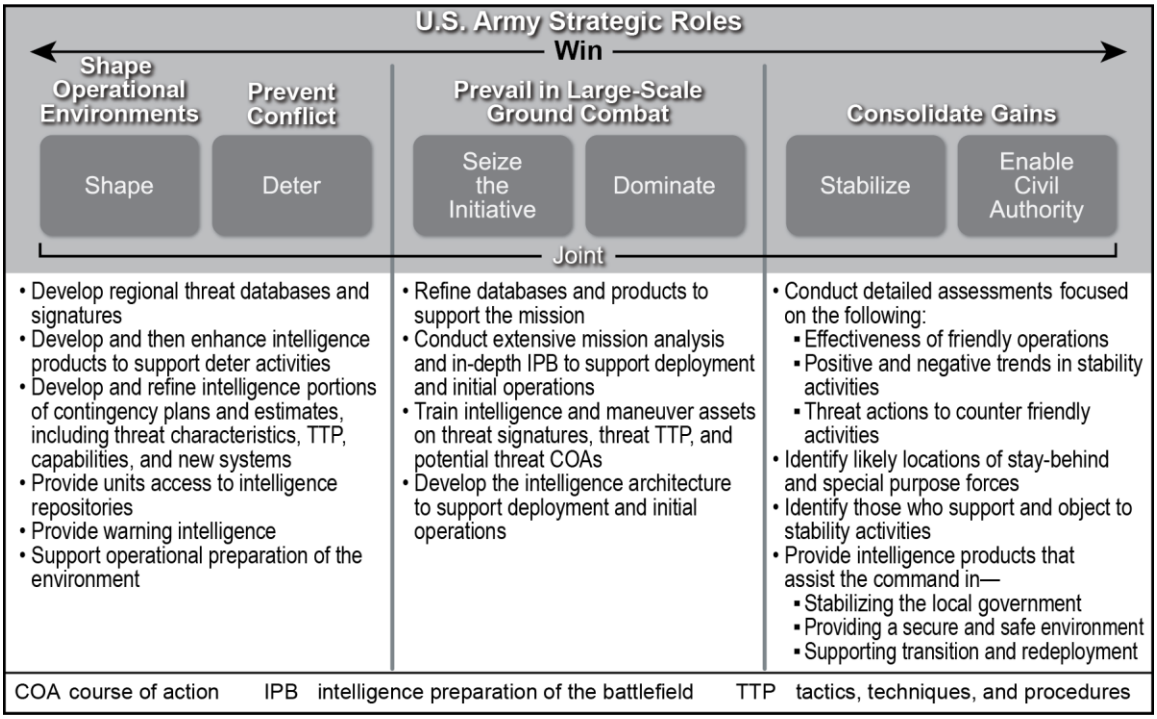


Figure 1-3. The Army's strategic roles and their relationship to the joint phases

1-35. There are requirements for intelligence during each strategic role. Some intelligence activities are specific to certain strategic roles, while others span multiple roles. (See figure 1-3 for some of the most important intelligence tasks for each strategic role.) Commanders and leaders ensure adequate planning for, collection, storage, PED, and analysis of information and intelligence during each strategic role. Ideally, regionally aligned forces build on and enhance existing threat data, information, and intelligence during the shaping activities. However, during the shape role, there may be instances in which regionally aligned forces must develop and populate an authoritative database of threat signatures and associated contextual information, in conjunction with joint forces and the Defense Intelligence Agency. This allows units to access, maintain, populate, and continually update the database throughout all subsequent activities. Commands prepare to establish localized intelligence databases during all activities. It is critical for commands to update the intelligence database continually with actual and potential adversaries to maximize the value of intelligence products and reports.

FIGHTING FOR INTELLIGENCE

1-36. Of the Army's four strategic roles (shape, prevent, conduct large-scale ground combat, and consolidate gains), the intelligence warfighting function is most challenged to meet the vast number of large-scale ground combat operation requirements. When fighting a peer threat during large-scale ground combat operations, units must be prepared to fight for intelligence against enemy formations, a range of sophisticated threat capabilities, and many unknown conditions within the OE.

1-37. The challenges to information collection include integrated air defense systems, long-range fires, counterreconnaissance, cyberspace and electronic warfare operations, and camouflage, concealment, and deception. To achieve situational understanding against peer threats, friendly forces must strive to identify or open windows of opportunity across domains. Staff integration is difficult but crucial; the staff must collaborate to overcome challenges and mitigate information collection capability and system limitations by developing an integrated information collection plan. Fighting for intelligence also encompasses the basics of establishing an effective intelligence architecture, synchronizing the intelligence warfighting function, and planning and conducting information collection.

1-38. A successful information collection effort is key to achieving and exploiting positions of relative advantage. The intelligence staff can then analyze collected information and provide products, updates, and predictive assessments that support targeting, decision making, and the execution of branches and/or sequels. Staff integration, operational planning, and information collection plans are not foolproof and can become ineffective. Conceptually, fighting for intelligence is not new, but the Army must emphasize this principle due to the complexity of large-scale operations. Conducting information collection requires thorough and creative planning, aggressive execution, and adjustments based on the situation. Key aspects of fighting for intelligence to support operations include the following:

- Commanders drive intelligence.
- Effective staff integration is crucial.
- Effective intelligence requires a comprehensive intelligence architecture.
- A thoroughly developed and flexible information collection plan is critical.
- A successful information collection plan begins with identifying the right requirements.
- Together, commanders, staffs, and subordinate units strive and constantly adjust to develop and execute a layered and aggressive information collection plan.

A successful information collection effort as well as commander and staff involvement effect an effective execution of the intelligence process.

1-39. *Information collection* is an activity that synchronizes and integrates the planning and employment of sensors and assets as well as the processing, exploitation, and dissemination systems in direct support of current and future operations (FM 3-55). Information collection is an integrated intelligence and operations function. The intelligence staff conducts information collection in collaboration with the operations staff to collect, process, and analyze information the commander requires concerning threats, terrain and weather, and civil considerations that affect operations. The primary Army information collection missions/means are reconnaissance, surveillance, security operations, and intelligence operations.

1-40. A successful information collection effort results in the timely collection and reporting of relevant and accurate information, which either supports the production of intelligence or is disseminated as combat information. The information collection effort includes organic units and capabilities and support from DOD intelligence assets, as well as nonintelligence sources, which provide civil considerations and sociocultural information. The information collection tasks are collection management, direct information collection, execute collection, and conduct intelligence-related missions and operations. (See FM 3-55 and ATP 3-55.4.)

INTELLIGENCE WITHIN THE OPERATIONS PROCESS

1-41. The C2 warfighting function integrates the elements of combat power across the warfighting functions. To ensure effective intelligence support, commanders and staffs must understand the interrelationship of C2, the intelligence warfighting function, and fundamental intelligence doctrine. Intelligence drives operations and operations enable intelligence; this relationship is continuous. Intelligence supports operations by supporting C2. The intelligence process supports the operations process by developing information requirements, collecting

on those requirements, processing data into information, analyzing information and intelligence from all sources, producing intelligence, and when necessary, developing the situation through operations. (See ADP 2-0 and ADP 6-0.)

1-42. Intelligence supports commanders (and in some cases other decision makers) and staffs by providing situational understanding of the threat, terrain and weather, civil considerations, and other aspects of the OE and thereby the effective exercise of C2. The Army's intelligence process consists of four steps (*plan and direct*, *collect and process*, *produce*, and *disseminate*) and two continuing activities (*analyze* and *assess*). (See ADP 2-0 for a detailed discussion of the steps and continuing activities of the intelligence process.)

1-43. Commanders drive the intelligence process, which supports all of the activities of the operations process (plan, prepare, execute, and assess). (See figure 1-4.) Although the intelligence process includes unique aspects and activities, it is designed similarly to the operations process:

- The *plan and direct* step of the intelligence process closely corresponds with the *plan* activity of the operations process.
- The *collect and process*, *produce*, and *disseminate* steps of the intelligence process together correspond to the *execute* activity of the operations process.
- *Assess* and *analyze* are continuous. These activities form part of the overall *assessment* activity of the operations process.
- *Assess*, which is continuous, is part of the overall *assessment* activity of the operations process.

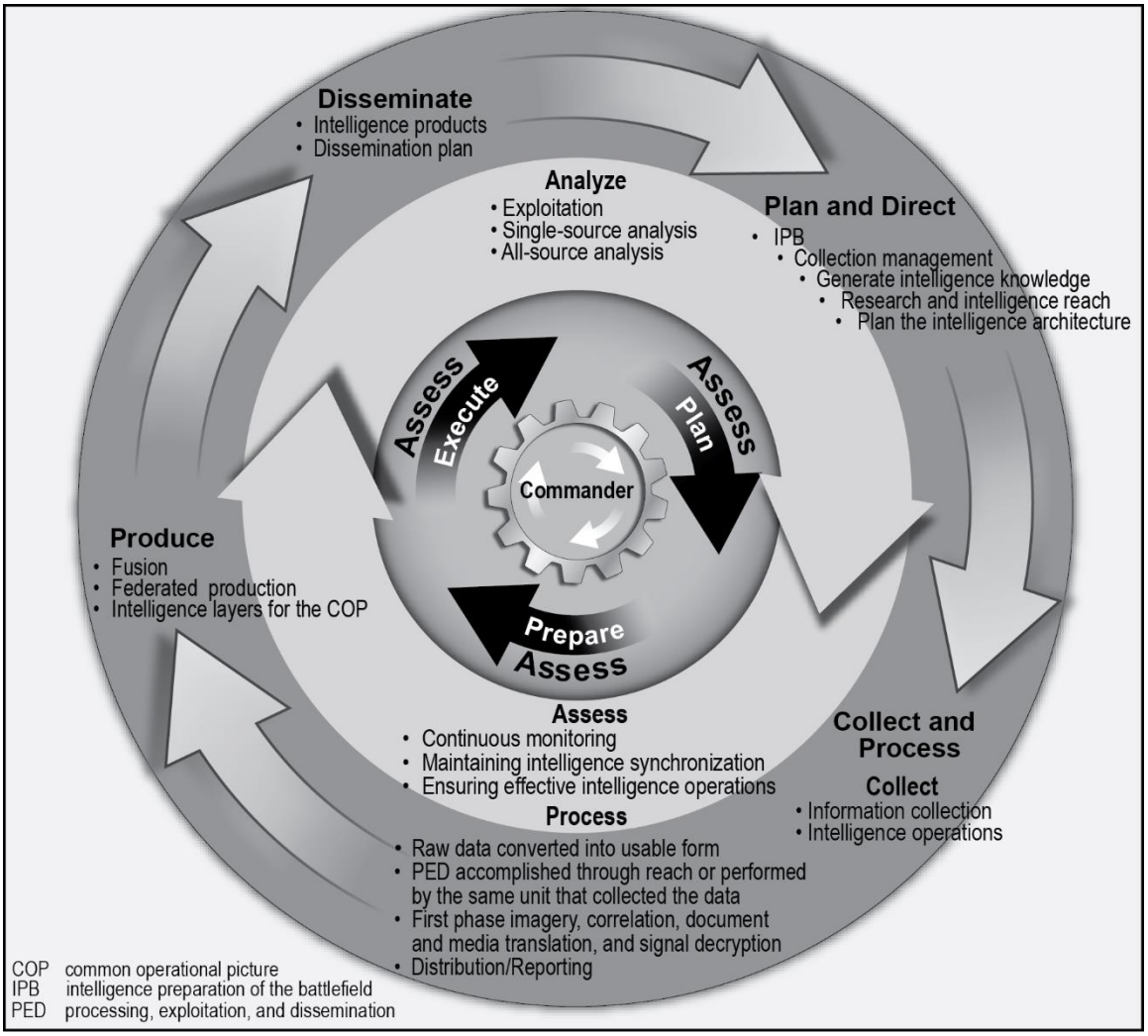


Figure 1-4. Intelligence within the operations process

This page intentionally left blank.

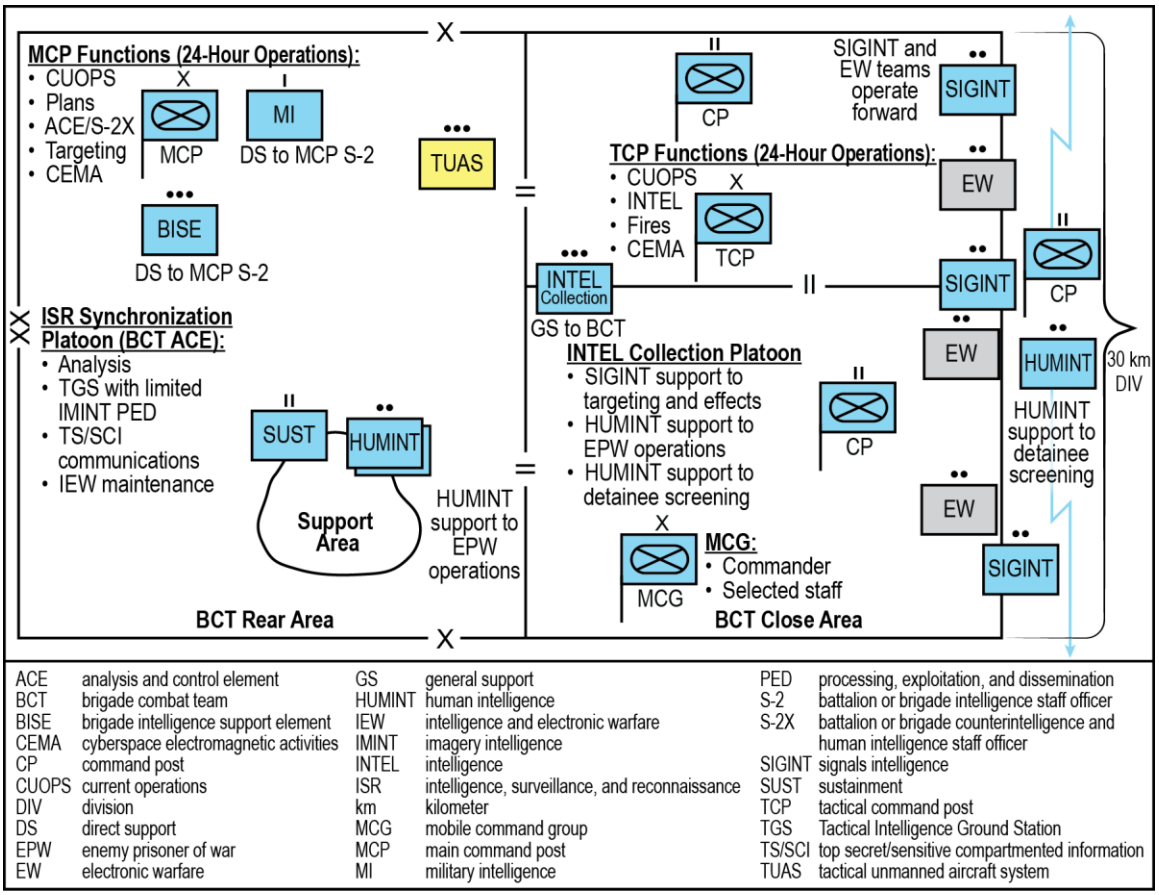
Chapter 2

The MI Company (Corps and Below)

This chapter outlines the mission and roles and responsibilities of the MI company and subordinate platoons of a BCT. It also includes the same for the multi-domain MI detachment of an E-MIB's IEW battalion. These capabilities enable Army units to collect, process, and exploit intelligence in their respective AOs and echelons, as well as understand the execution of synchronized multi-domain intelligence operations.

BRIGADE COMBAT TEAM (BCT) MI COMPANY MISSION

2-1. The BCT MI company provides timely, relevant, and accurate intelligence and synchronized information collection support to commanders, staffs, and subordinate units during the planning, preparation, and execution of unified land operations. It provides a clear intelligence picture to assist maneuver commanders in making educated, tactical decisions on the battlefield. The BCT MI company integrates collection assets with maneuver units and the G-2/S-2 and supports the targeting effort. It deploys and provides single-source collection, tactical unmanned aircraft system (TUAS) capabilities, and collected intelligence processing capabilities. (See figure 2-1.)



ACE	analysis and control element	GS	general support	PED	processing, exploitation, and dissemination
BCT	brigade combat team	HUMINT	human intelligence	S-2	battalion or brigade intelligence staff officer
BISE	brigade intelligence support element	IEW	intelligence and electronic warfare	S-2X	battalion or brigade counterintelligence and human intelligence staff officer
CEMA	cyberspace electromagnetic activities	IMINT	imagery intelligence	SIGINT	signals intelligence
CP	command post	INTEL	intelligence	SUST	sustainment
CUOPS	current operations	ISR	intelligence, surveillance, and reconnaissance	TCP	tactical command post
DIV	division	km	kilometer	TGS	Tactical Intelligence Ground Station
DS	direct support	MCG	mobile command group	TS/SCI	top secret/sensitive compartmented information
EPW	enemy prisoner of war	MCP	main command post	TUAS	tactical unmanned aircraft system
EW	electronic warfare	MI	military intelligence		

Figure 2-1. BCT MI company operating concept

BCT MI COMPANY ROLES AND RESPONSIBILITIES

2-2. The BCT MI company is assigned to the brigade engineer battalion (BEB). The BCT commander establishes relationships between the BCT S-2, BEB, and the MI company. During BCT planning, the MI company commander assists the BCT S-2 in developing tasks and employing strategies for MI company signals intelligence (SIGINT), HUMINT, TUAS, and other collection capabilities. When the BCT commander approves the order, the MI company commander produces the company operation order (OPORD).

MI Company Commander Responsibilities

In addition to task organization considerations (see FM 6-0), the MI company commander—

- Directs MI platoons to constantly maintain equipment and accounts.
- Ensures MI platoons implement and proficiently execute the communications plan.
- Develops relationships with the BCT and combined arms and infantry battalion cells to provide advice, assistance, and guidance on MI company capabilities and employment considerations.
- Assists in creating collection management tools.
- Recommends task organization and command and support relationships to the BCT staff for optimum use of MI collection assets.
- Coordinates terrain management issues with the BCT and battalion staff for MI collection asset locations.
- Reallocates and repositions company assets in response to changes in the BCT's mission, concept of operations (CONOPS), intelligence scheme of support, and enemy actions.
- Establishes sustainment and security relationships with the BCT headquarters company and subordinate battalions to sustain and protect MI company personnel and equipment.
- Integrates E-MIB augmentation into company operations as directed in the BCT OPORD.
- Provides C2 and coordination of the electronic warfare platoon, which integrates SIGINT and electronic warfare capabilities into target adversary electromagnetic capabilities to support the friendly scheme of maneuver.

2-3. The employment of MI company assets is a coordinated effort between the BCT staff (through the conduct [plan, prepare, execute, and assess] of operations), the MI company commander, and subordinate BCT units (when necessary). Terrain deconfliction, security, and sustainment coordination between the staff and subordinate units ensure collection assets are located and supported to provide collection that answers the commander's priority intelligence requirements (PIRs). (See FM 2-0 for employment considerations of MI company assets conducting intelligence operations.)

2-4. The BCT MI company is organized to accomplish specific intelligence activities to support BCT operational requirements. Figure 2-2 illustrates the MI company structure, including military occupational specialties (MOSs). (For information on BCT intelligence cells, see ATP 2.19-4.)

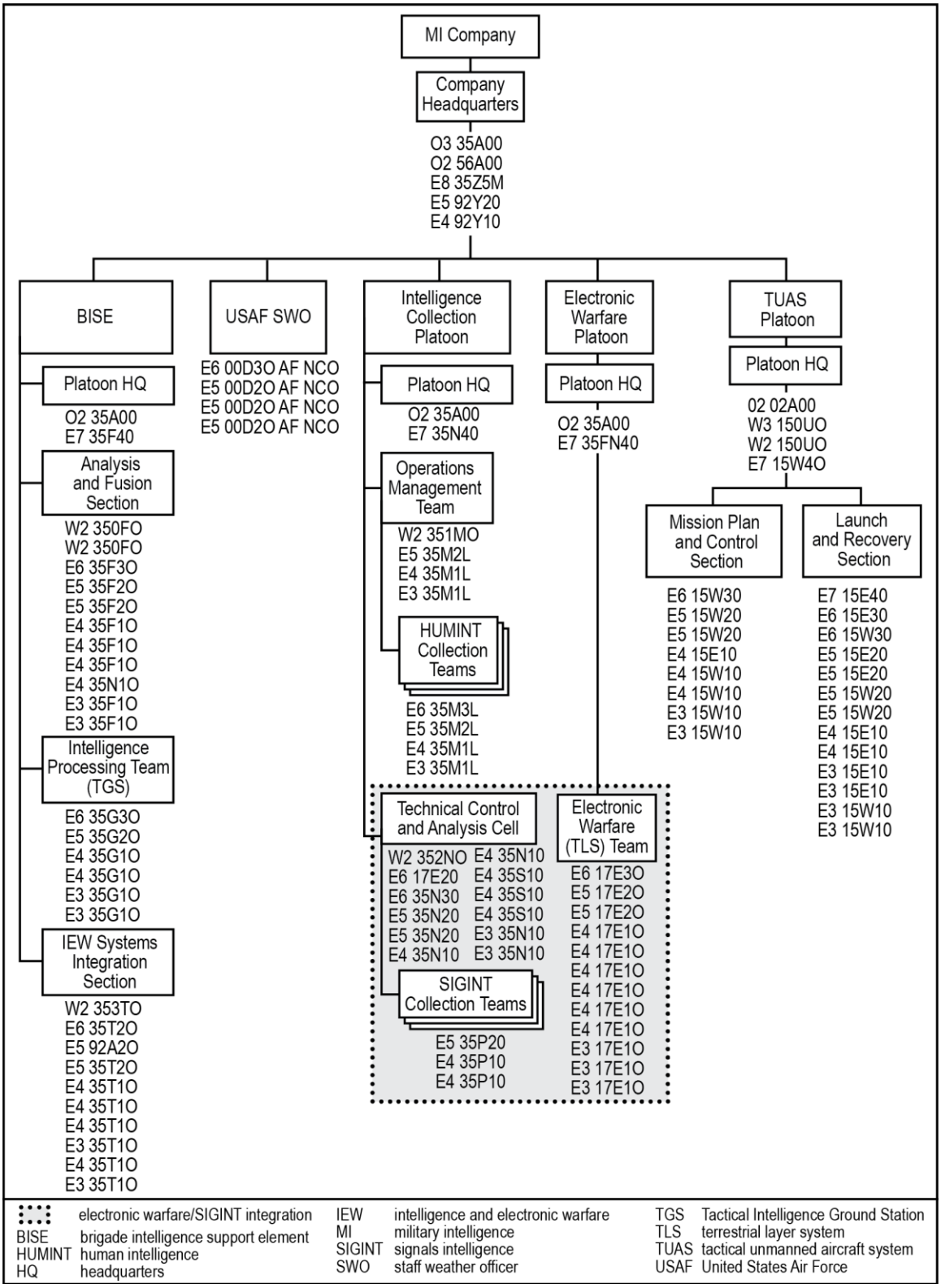


Figure 2-2. BCT MI company structure

COMPANY HEADQUARTERS

2-5. The MI company commander directs the employment of the company according to missions and guidance from the BCT headquarters. The commander locates where the headquarters can best exercise C2 and sustainment of company assets. As part of exercising C2, the MI company commander visits company elements deployed with forward units and throughout the BCT, maintains situational awareness of all team positions, and performs required administrative functions. The company commander also ensures all reinforcing MI assets are fully integrated into the company, to include training, mission planning, and mission execution.

2-6. The MI company commander focuses on commanding the unit and conducting intelligence operations. MI company commander duties and responsibilities include—

- Participating in any BCT staff planning exercise as required.
- Ensuring MI company Soldiers are trained in individual and collective tasks. (See chapter 3.)
- Ensuring readiness through command supply discipline and maintenance.
- Coordinating with the BCT S-2 at home station for intelligence-specific training (such as Foundry). (See chapter 3.)
- Coordinating through the BCT intelligence cell for contractor support on MI-specific equipment as required.
- Coordinating with the BEB staff for yearly training requirements.
- Maintaining relationships with BCT and battalion intelligence cells (especially collection managers) and providing briefings and information on MI company capabilities and employment considerations.
- Expanding intelligence readiness of all BCT intelligence personnel through training and study in terms of potential or likely threat characteristics/order of battle factors. (See ATP 2-01.3.)

2-7. The MI company conducts intelligence operations to satisfy the BCT commander's PIRs. The MI company commander directs the employment of the company in accordance with missions and guidance from the BCT OPORD. MI company tasks may be contained within the BCT OPORD in—

- Paragraph 3c (3) (Scheme of Information Collection).
- Paragraph 3d (Scheme of Intelligence).
- Paragraph 3i (Tasks to Subordinate Units).
- Annex B (Intelligence).
- Annex L (Information Collection).

BRIGADE INTELLIGENCE SUPPORT ELEMENT

2-8. There are several ways to task-organize the brigade intelligence support element (BISE), which provides BCT commanders flexibility to tailor the force based on mission requirements. The BISE provides the BCT S-2 with some PED, all-source analysis and production, and intelligence reach and dissemination capabilities. The BISE—

- Receives collected enemy and civil considerations information.
- Tracks enemy movement.
- Assesses enemy capabilities and some other significant aspects of the OE.
- Creates graphic and textual products that depict intelligence analysis results.

2-9. The BISE collaborates and disseminates its information, intelligence products, and analytical conclusions with the rest of the BCT intelligence cell elements, the subordinate battalion intelligence cells, and higher- and lateral-echelon intelligence organizations. The BISE comprises a BISE chief and noncommissioned officer (NCO) in charge, the analysis and fusion section, the intelligence processing team (Tactical Intelligence Ground Station [TGS]), and the IEW systems integration section.

Brigade Intelligence Support Element Chief

2-10. The BISE chief provides C2 of the element's assets to ensure mission accomplishment. It is responsible for the collation, analysis, and dissemination of intelligence collected by the MI company's other sections, reconnaissance elements, and Soldiers in the BCT, providing intelligence to the BCT commander. Additionally, the BISE chief manages and supervises the work efforts of assigned MI analysts supporting the BCT S-2 and supervises the production and presentation of intelligence products to the commander, staff, and subordinate units.

2-11. The BISE chief—

- Focuses and prioritizes work and supervises interactions between the BISE and other BCT intelligence cell staff elements.
- Is responsible to the BCT S-2 for producing timely intelligence that answers the commander's PIRs to facilitate ethical and effective decision making. To accomplish this, the BISE chief and the collection manager collaborate closely to—
  - Evaluate and track requirements.
  - Focus information collection and analysis efforts.
  - Review BISE products for quality and timeliness.
- Supervises personnel in the analysis and fusion section, the intelligence processing team, and the IEW systems integration section.

Analysis and Fusion Section

2-12. The analysis and fusion section is responsible for the collation, analysis, fusion, and dissemination of intelligence collected by organic and external assets, reconnaissance elements, and other Soldiers in supported BCT formations, providing intelligence to the BCT commander. Additionally, the analysis and fusion section—

- Conducts all long-term all-source analysis.
- Provides all-source intelligence support to targeting and information collection capabilities.
- Serves as the BCT PED manager to facilitate all analytical efforts.
- Continually updates the enemy portion of the common operational picture (COP) in coordination with the BCT S-2 current operations element.
- Receives intelligence requests for information (RFIs), coordinates for answering the requests, and disseminates results according to unit standard operating procedures (SOPs).
- Compiles and produces BCT intelligence summaries or graphic intelligence summaries and intelligence estimates according to unit SOPs.
- Continually updates the terrain and civil considerations portion of the COP in coordination with the BCT S-2 current operations element.
- Provides feedback to assess measures of effectiveness of information collection (such as intelligence information report evaluations).
- Coordinates closely with the collection manager to—
  - Recommend changes to existing PIRs.
  - Develop and maintain the intelligence running estimate.
  - Develop and submit intelligence RFIs.
  - Identify information gaps to drive RFIs.

2-13. The analysis and fusion section depends on analytical support and expertise in employing the various intelligence disciplines. Collection management tasks identify the best way to satisfy the supported commander and staff's requirements. The section supports information collection planning by creating and updating the collection management tools (information collection matrix, information collection synchronization matrix, and information collection overlay) based on input from the commander and other staff members. As required, this section also updates the information collection plan to ensure the it remains synchronized with current and future operations.

2-14. The analysis and fusion section—

- Monitors the status of PIRs and RFIs.
- Participates in BCT planning.
- Coordinates daily with the BCT's S-2 plans element.
- Provides briefings to the commander and staff as required.
- Develops and submits recommendations for information collection tasks to the BCT S-3.
- Coordinates with the MI company commander on the employment of MI collection assets.
- Develops collection-asset specific information requirements based on approved PIRs.
- Coordinates with BCT and battalion commanders and staffs on the employment of information collection assets.
- Maintains daily communications with BCT subordinate units to remain current with operations and targeting priorities.
- Receives and coordinates nonorganic requests for collection and manages the employment of organic information collection assets.
- Receives requests for collection from subordinate maneuver elements and incorporates those requirements into the BCT's information collection plan.
- Develops requests for collection and submits requests to higher headquarters for incorporation into the higher headquarters' information collection plan.
- Coordinates with the brigade aviation element for airspace use and coordination by aerial collection assets. (See FM 3-52 for more information on airspace control.)
- Coordinates daily with the BCT's S-2 current operations element and obtains information collection asset status reports from the BCT's S-2 current operations element and MI company.
- Represents the S-2 section as part of the knowledge management working group. (See ATP 6-01.1.)

Intelligence Processing Team (Tactical Intelligence Ground Station)

2-15. The intelligence processing team (TGS) provides a mobile and responsive intelligence processing capability using the Distributed Common Ground System-Army- (DCGS-A)-enabled TGS and stored secondary imagery. The team—

- Supports the staff in terrain analysis.
- Disseminates geospatial intelligence (GEOINT) data, products, and reports.
- Manages the reception, answering, and development of RFIs.
- Integrates GEOINT into the intelligence architecture to support C2.
- Manages the geospatial and imagery foundation of the COP.
- Identifies gaps in existing GEOINT databases and develops the nominations for collection.
- Coordinates GEOINT requirements with the appropriate requirements management personnel.
- Analyzes GEOINT data and develops—
  - Intelligence.
  - Imagery-derived products.
  - Full-motion video (FMV) and moving target indicator PED.

2-16. The intelligence processing team (TGS) also provides intelligence support to targeting at all echelons by integrating collection, analysis, and targeting expertise into the support unit's operational and analytical elements. Targeting support includes the development of target materials through basic, intermediate, and advanced target development; information collection target vetting; collateral damage estimation; and battle damage assessment (BDA). This includes plan development, target list maintenance, target analysis and material production, precise point mensuration, certification/accreditation, and vetting.

2-17. Automated GEOINT systems provide the team with moving target indicators, FMV, and imagery exploitation capabilities. The same systems also have a collateral SIGINT reporting capability, primarily to correlate with GEOINT information and products.

Intelligence and Electronic Warfare Systems Integration Section

2-18. The MI company contains a unique set of low-density intelligence capabilities. These capabilities include intelligence analytical and PED systems, terrestrial- and aerial-based intelligence systems, and electronic warfare systems. The IEW systems integration section integrates IEW equipment into the secure intelligence architecture for all BCT units to facilitate the convergence of IEW. Intelligence systems integrators/maintainers in the MI company execute these tasks. When possible, these Soldiers also provide field and sustainment maintenance for all IEW systems at unit locations to reduce the down time of major systems and prevent the loss of needed capabilities.

2-19. The IEW systems integration section is responsible for the organizational and direct support maintenance of MI systems. Intelligence systems integrators/maintainers execute the support mission, supporting MI systems and integrating access to classified networks used by MI Soldiers in the MI company and the BCT intelligence cell.

2-20. The intelligence systems integration/maintenance technician serves as the officer in charge of the IEW systems integration section and works directly with battalion and brigade staffs, U.S. Army Communications-Electronic Command (also called CECOM) support elements, and other staff elements for maintenance support and MI systems integration.

2-21. The officer in charge also supports the MI company commander in developing a comprehensive maintenance plan to support operations. The maintenance plan includes the complete process of preventive maintenance checks and services, fault identification, component removal and replacement procedures, and equipment evacuation to higher-maintenance support if required. The maintenance plan becomes part of the unit's maintenance SOPs. This establishes responsibilities and procedures in order to preserve MI system maintenance readiness. Maintenance and intelligence architecture plans are specific for garrison operations and for the tactical environment based on the commander and staff's needs.

UNITED STATES AIR FORCE STAFF WEATHER OFFICER

2-22. The USAF staff weather officer (SWO) provides detailed, tailored weather forecasting. For the BCT to conduct effective operations, the staff must have current, accurate, timely, and relevant weather (ground, atmospheric, and space) information. Although the BCT relies heavily on reachback for intelligence and weather support, it requires local tailoring of weather products by onsite USAF SWOs.

Note. Due to their highly specialized function and per AR 115-10/AFI 15-157, USAF SWOs are not assigned duties (such as driver, guard duty) outside of their weather specialty.

2-23. The USAF SWO—

- Provides the operational weather support requirements for the BCT.
- Coordinates operational weather squadron and service matters through the BCT S-2.
- Acts as the weather liaison between the BCT and the USAF forecasting resources developed at centralized (regional) production centers.

2-24. The USAF SWO team is staffed with experts who determine the effects of weather on operations and provide information about the environment. They evaluate and apply weather analysis and forecasts to specific BCT missions, weapon systems, strategies, tactics, and applications. The USAF SWO team deploys with the BCT and provides direct and indirect weather support tailored to the BCT's needs. Specifically, the USAF SWO team—

- Provides—
  - Weather updates to support collection operations.
  - Weather input to operational decision briefs.
  - Climatological information.
  - Current and predictive analysis of weather effects on friendly and enemy forces.

- Advises the—
  - BCT commander on USAF weather capabilities, limitations, and ways in which weather affects operational weather support requirements.
  - USAF on Army command operational weather support requirements.
- Integrates weather effects into—
  - Information collection, particularly weather effects on collection systems.
  - Targeting and RM processes in accordance with ATP 5-19.
- Coordinates with all BCT cells to integrate weather information into the planning and execution of BCT operations.
- Coordinates and employs a meteorological sensing strategy for the battlefield with higher-echelon USAF SWOs.
- Assists the BCT S-2 and S-3 in monitoring the weather support mission, identifying responsibilities, and resolving weather support deficiencies.
- Monitors weather effects on operational limitations for mission execution and provides warnings of impending negative impacts as well as emerging opportunities.

2-25. Table 2-1 lists BCT intelligence weather responsibilities performed by the USAF SWO/weather team.

Table 2-1. BCT intelligence weather responsibilities

The USAF SWO/weather team—
• Integrates accurate, timely, and relevant weather effects across the warfighting functions into the planning and execution of operations.
• Obtains weather data or information and the types of weather products available.
• Ensures correct analysis of weather information that affects information collection.
• Coordinates and consolidates the commander's requirements for weather support.
• Coordinates with the chief of fires to arrange for the timely exchange of meteorological information.
• Disseminates processed weather information and intelligence to the appropriate command elements.
• Informs the BCT S-3 of requests for weather observations. The BCT S-3 instructs subordinate units on required information—*where* and *when* it is required, and *how* it will be forwarded.
• Receives information and disseminates current, accurate, timely, and relevant weather information through electronic means, briefings, and written studies.
• Integrates weather information into advanced planning to ensure weather is incorporated into future operations.
• Receives CBRNE hazard prediction information from the CBRNE staff officer based on data provided. (See FM 3-11.)
• Coordinates, supervises, and oversees all weather support for designated Army units.
• Trains BCT personnel on methods to take and report weather observations.
• Incorporates and coordinates weather support services from higher and adjacent echelons and centralized weather facilities into the overall weather support structure.
• Implements higher-echelon weather unit instructions.
• Develops weather observation collection strategies, forecast support, and dissemination procedures for the supported unit, and, as required, any associated lower-echelon units without dedicated direct or host-nation weather support.
• Supervises weather activities, performs weather analysis, and uses automated weather data processing systems as available.
• Evaluates, interprets, analyzes, coordinates, supervises, and oversees the production of all-weather support products to support the commander's requirements.
• Describes weather effects on the BCT's AO.
• Describes specific and projected weather effects on enemy and friendly operations in the BCT's AO.
• Advises the commander and subordinate units of weather considerations for ongoing and planned operations.

AO	area of operations	S-3	battalion or brigade operations staff officer
BCT	brigade combat team	SWO	staff weather officer
CBRN	chemical, biological, radiological, nuclear, and explosives	USAF	United States Air Force

INTELLIGENCE COLLECTION PLATOON

2-26. The intelligence collection platoon manages the MI company's collection capabilities by providing C2 of HUMINT and SIGINT teams in response to taskings and monitoring assets to ensure mission accomplishment and logistical support. The platoon headquarters is responsible for all C2, sustainment, administrative, and training functions.

Operations Management Team

2-27. The operations management team (OMT) provides technical control, in-depth analysis, integration, and synchronization of HUMINT operations to deconflict ongoing national to tactical HUMINT operations and maximize support to the commander through access to the entire HUMINT enterprise. OMTs collaborate closely with the technical control and analysis cell (see paragraph 2-29) to ensure cross-cueing of HUMINT and SIGINT mission management.

Note. While not a formal command or support relationship, technical control is a critical function that ensures the collection asset has the required technical data and guidance to perform the mission. (For more information on technical control, see ATP 2-22.33 and ATP 2-22.6.)

Human Intelligence Collection Teams

2-28. Human intelligence collection teams (HCTs) provide HUMINT collection for the BCT. HUMINT Soldiers (35M HUMINT collectors) collect information from individuals and their associated documents and media sources to support HUMINT collection requirements designed to identify elements, intentions, composition, strength, dispositions, tactics, equipment, personnel, and capabilities. They use a HUMINT source as a tool and a variety of collection methods to collect information to satisfy collection tasks and cross-cue other intelligence disciplines. HUMINT missions include screenings, liaisons, interrogations, debriefings, and source operations. (See FM 2-22.3 and ATP 2-22.31 for HUMINT operations.)

Technical Control and Analysis Cell

2-29. The technical control and analysis cell provides technical control, in-depth analysis, integration, and synchronization of SIGINT operations to deconflict ongoing national to tactical SIGINT operations and maximize support to the commander through access to the entire SIGINT enterprise. This involves coordinating with other intelligence organizations/agencies, both in theater and through reach, to ensure BCT SIGINT operations do not conflict with the other intelligence organizations'/agencies' planning and conduct of SIGINT operations. The technical control and analysis cell—

- Creates target packages for SIGINT collection missions.
- Integrates electronic warfare with SIGINT capabilities.
- Recommends targets for action to the commander.
- Conducts analysis of combat information to provide intelligence for the commander.
- Provides SIGINT support to IPB and the military decision-making process (MDMP), situational awareness, and target development.
- Provides SIGINT mission management.
- Provides transcription services.
- Disseminates tactical warnings to the force based on SIGINT collection or analysis.
- Maintains technical mission control of SIGINT assets under its control.

Signals Intelligence Collection Teams

2-30. SIGINT collection teams, operating in a general support role—

- Provide SIGINT collection, exploitation, and limited analysis to generate timely, relevant, and accurate intelligence, and detect, track, and locate targets.
- Provide SIGINT support to electronic warfare and cyberspace operations to support missions in assigned areas of the BCT AO.
- Operate mounted and dismounted using organic SIGINT equipment or SIGINT equipment provided by other means.
- Work independently or together with attached electronic warfare teams to collect, exploit, and analyze signals of interest to provide force protection monitoring and geolocation of signals of interest.
- Support precision targeting and geolocation missions against signals of interest.

ELECTRONIC WARFARE PLATOON

2-31. The electronic warfare platoon provides electronic warfare capabilities to target adversary electromagnetic capabilities to support the friendly scheme of maneuver. The platoon integrates with SIGINT capabilities in order to provide synergetic capabilities to—

- Locate enemy signal emitters.
- Succinctly communicate their locations across multiple spectrums to the commander.
- Provide options for enemy signal disruption to the commander.

2-32. The electronic warfare platoon should consider where to best position its survey and collection assets while minimizing risks. Additionally, the platoon must ensure it maintains communication with the supported maneuver element, commander, and BISE using multiple communications methods. For example, the electronic warfare platoon can send urgent information over the primary communications channel while sending less urgent information over the alternate communications channel.

TACTICAL UNMANNED AIRCRAFT SYSTEM PLATOON

2-33. The TUAS platoon comprises a mission planning and control section and a launch and recovery section and is equipped with four aircraft. GEOINT collection from the TUAS platoon assists commanders and planners primarily by—

- Serving as a confirming source of intelligence for another intelligence discipline, such as SIGINT or HUMINT.
- Supporting the targeting effort, including information for combat assessment, by detecting and tracking targets before and after an attack.
- Providing situational awareness of both natural and man-made terrain to support the GEOINT cell in creating products to support the staff's IPB process.

Note. TUAS platoon activities must comply with aviation safety and standardization regulations and controls.

BCT MI COMPANY COMMAND AND CONTROL CONSIDERATIONS

2-34. Integration with staff functions is vital to the success of the MI company mission. The following are not exhaustive. There are some variations at echelon, but integration and planning factors are very similar.

BCT MI COMPANY RELATIONSHIP WITH BCT HEADQUARTERS

2-35. The MI company's intelligence collection platoon, IEW systems integration section, and the USAF SWO are operational control (OPCON) to the BCT headquarters and headquarters company (HHC). They are further detailed to the BCT S-2 to augment the BCT intelligence staff section and facilitate the establishment of the BCT intelligence cell. These MI company elements provide to the BCT intelligence cell automated intelligence PED, analysis, and dissemination capabilities, as well as access to higher- and lower-echelon intelligence products. (See FM 2-0.)

BCT MI COMPANY RELATIONSHIP WITH THE COMBINED ARMS AND INFANTRY BATTALION INTELLIGENCE CELL

2-36. Combined arms and infantry battalion intelligence cells are responsible for providing timely and accurate intelligence to the commander, staff, and subordinate units. The battalion S-2 supervises and coordinates information collection (in conjunction with the battalion S-3) and the production and dissemination of intelligence. The battalion intelligence cell—

- Makes analytical predictions on when and where actions will occur.
- Provides analysis on the effects of the OE on friendly and enemy COAs and capabilities.

- Evaluates the enemy in terms of doctrine, threat characteristics, high-value targets and high-payoff targets, capabilities, and vulnerabilities.
- In conjunction with the battalion S-3, coordinates the entire staff's recommended PIRs for inclusion in the commander's critical information requirements (CCIRs).
- Integrates staff input into IPB products for staff planning, decision making, targeting, and assessments.
- Plans and controls intelligence operations in coordination with the S-3 and battalion fire support officer.

2-37. The combined arms and infantry battalion intelligence cell's primary means of collecting information are subordinate maneuver companies, patrols, scout platoons, unmanned aircraft systems (UASs) (such as the Raven and Puma), snipers, Soldier observations, and field artillery forward observers. The battalion S-2 may also request support from BCT information collection assets. If allocated, these assets normally have a support relationship with the battalion. The BCT MI company commander assists the battalion in planning when MI company assets are provided to the battalion.

2-38. The combined arms and infantry battalion intelligence cell usually has representatives in both the battalion main and tactical command posts (CPs) (when formed). The battalion intelligence cell coordinates with the BCT intelligence cell for intelligence products as well as for MI collection assets from the MI company. The combined arms and infantry battalion intelligence cell also supervises the incorporation of combat information or intelligence received from higher headquarters into battalion intelligence products.

BCT MI Company Relationship with the Cavalry Squadron Intelligence Cell

2-39. The cavalry squadron intelligence cell interacts more closely with the BCT intelligence cell than with other battalion intelligence cells. Along with the MI company, the cavalry squadron is the main provider of information collection assets. The cavalry squadron intelligence cell collaborates closely to synchronize the information collection effort based on BCT priorities. The cavalry squadron S-2 should collaborate in concert with the cavalry squadron staff to identify information collection requirements for inclusion in the BCT information collection plan and implement the squadron's portion of the BCT information collection plan. The cavalry squadron S-2 also collaborates with the GEOINT cell to obtain products that assist in planning and executing the squadron's reconnaissance and security missions.

BCT MI Company Relationship with the S-2X

2-40. While the MI company is responsible for tactical HUMINT collection, the S-2X provides the collection focus, technical support, and technical guidance. The S-2X element receives support and advice from the BCT operational legal team. The S-2X element—

- Develops HUMINT specific information requirements from the commander's PIRs.
- Deconflicts and synchronizes all HUMINT and CI activities in the BCT's AO.
- Assists BCT planners in developing HUMINT information collection tasks based on the information collection plan.
- Coordinates technical support (such as polygraph support), as needed, for HUMINT assets in the BCT's AO.
- Conducts analysis of HUMINT reporting and provides input to the BCT intelligence cell.
- Oversees the source registry for the BCT.
- Conducts source validation.
- Oversees the BCT's intelligence contingency fund and source incentive program.
- Reviews HUMINT tasking, funding requests, and collections to ensure compliance with legal, regulatory, and procedural guidelines.
- Oversees the reporting of questionable activities by HUMINT assets through command channels to the Inspector General of the Army and serious federal crimes to the Army Deputy Chief of Staff for Intelligence, pursuant to AR 381-10, procedures 15 and 16.
- Participates in the planning for deployment and employment of CI assets to support operations. (CI assets are attached to the BCT from higher headquarters.)

BCT MI COMPANY RELATIONSHIP WITH THE S-2 CURRENT OPERATIONS ELEMENT

2-41. The S-2 current operations element is responsible for enemy situation development and presentations concerning current operations. The MI company's technical control and analysis platoon augments the S-2 current operations element. The element focuses on enemy activity in the BCT's AO and AOI that affects operations, assisting in tracking enemy activities and alerting the commander of changes to predicted enemy COAs, capabilities, or intentions. Additionally, the S-2 current operations element—

- Receives, analyzes, and distributes relevant information from higher, subordinate, and adjacent units.
- Continually updates the enemy portion of the COP.
- Submits recommendations to the commander based on the decision support template.
- Ensures information collection operations remain synchronized with current operations.
- Monitors the location and activity of information collection assets during the execution of the information collection plan.
- Conducts daily coordination with the analysis and fusion section.
- Briefs enemy assessments during the commander's update briefs.
- Provides a summary of friendly and enemy current operations during the shift change.
- Supports dynamic targeting operations.
- Provides intelligence support to current operation battle drills.

2-42. During COA development—

- The S-2 and the MI company collaborate with other BCT staff elements, supporting information collection staff organizations, and subordinate battalion S-2s to refine IPB products and recommend collection priorities that support future operations.
- The S-2 plans element updates the S-2 current operations element and the MI company on planning assumptions and projected requirements.

2-43. After developing enemy COAs, the S-2 and MI company develop the intelligence running estimate. IPB products form the basis of the intelligence running estimate. The intelligence running estimate—

- Forms the basis of facts and assumptions of the MDMP, driving various running estimates from the staff and the remaining steps of the MDMP.
- Is a logical and orderly analysis of the operational (PMESII-PT) and mission variables (METT-TC) and their effects on the following:
  - Friendly COAs.
  - Enemy COAs.
  - Enemy capabilities and vulnerabilities.
  - Analysis of enemy capabilities; tactics, techniques, and procedures (TTP); COAs; and their probability of adoption.
- Provides the best possible answer to the commander's PIRs (available at the time).
- Is dynamic and changes constantly with the situation.

BCT MI COMPANY RELATIONSHIP WITH THE S-6

2-44. The MI company also coordinates with the BCT S-6 for the required communications links for the company's intelligence collection assets. The MI company commander must ensure the company is briefed on the analog and digital communications capabilities available at the company level to access the lower and upper tactical internet and integrate into the intelligence architecture.

2-45. The G-2/S-2 coordinates with the G-6/S-6 to ensure the organization conducts C2 validation exercises primarily to support the MI company commander and to exercise aspects of the intelligence architecture during the planning and predeployment phases. Validation exercises comprise—

- Personnel (trained on various intelligence systems).
- Various networks.
- Information and intelligence systems.

- Processes and procedures (sending and receiving reports; testing SOPs).
- Facilities and equipment (CPs; signal nodes; support equipment (generators and cables).

EXPEDITIONARY-MI BRIGADE INTELLIGENCE AND ELECTRONIC WARFARE BATTALION

2-46. The E-MIB conducts multidiscipline intelligence operations to support field army/corps/CJTF and division multi-domain operations during large-scale combat operations. The E-MIB headquarters receives, integrates, employs, and sustains assigned and attached national to tactical elements supporting deployed corps/CJTFs. The size and composition of the deployed E-MIB and its subordinate organizations depend on the theater missions required.

2-47. The E-MIB IEW battalion reinforces the G-2 with an analysis and PED detachment, enabling the G-2 to provide full spectrum intelligence support to the CP nodes (main CP, support area CP, tactical CP, and the mobile command group), PED, joint and national ISR throughout AORs (consolidation, support, close, and deep areas), and dedicated open-source intelligence (OSINT) analysts. The E-MIB IEW battalion also provides a multi-domain MI detachment to execute synchronized multi-domain intelligence operations (collection, PED, target development) to support multi-domain operations (fires, aviation, CEMA, space, and information operations). (See figure 2-3.)

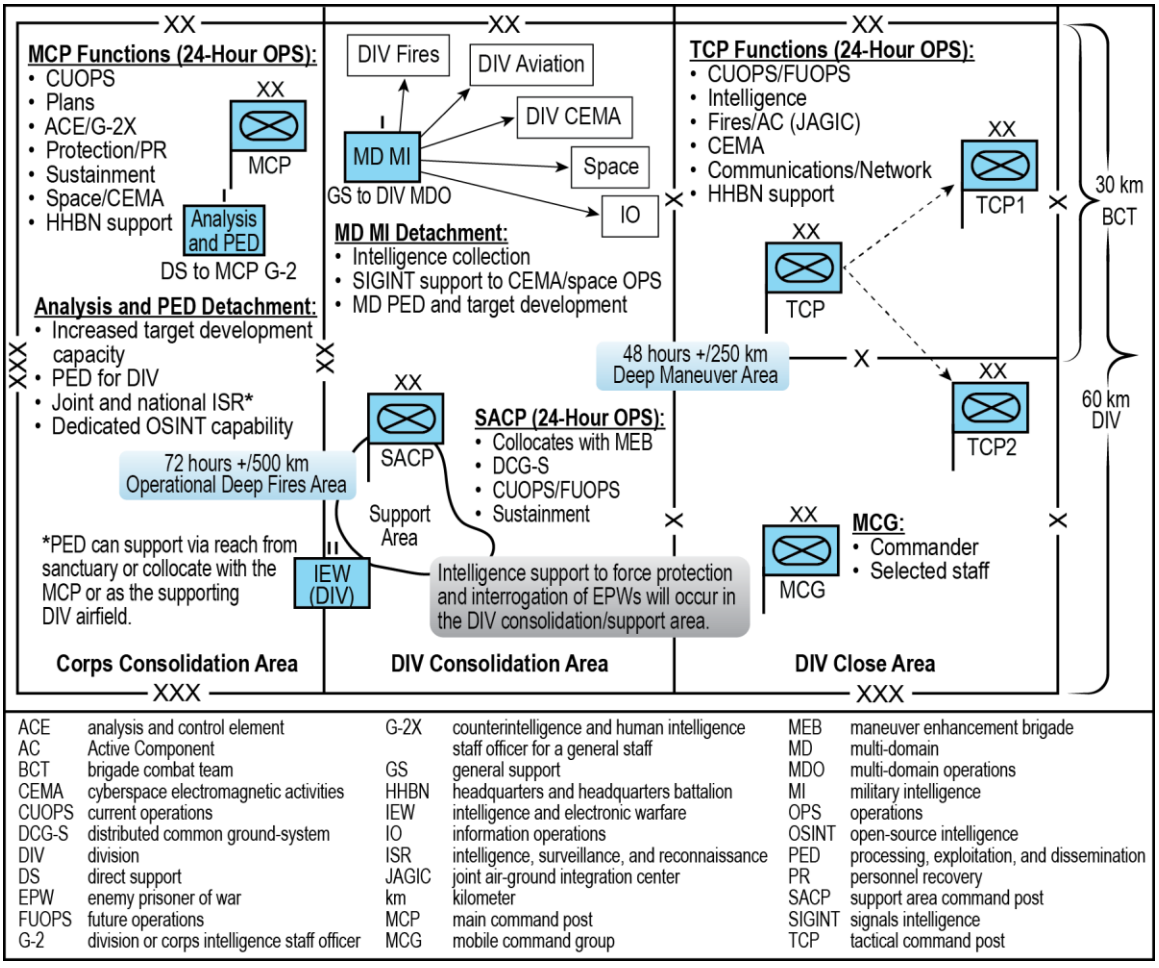


Figure 2-3. Expeditionary-MI brigade IEW battalion operating concept

2-48. The E-MIB structure supports processing and analytic and multi-domain capabilities for corps and divisions through IEW battalion detachments. The analysis and PED detachment directly supports the G-2, and the multi-domain MI detachment provides dedicated support to multi-domain operations. Figure 2-4 illustrates the E-MIB corps and division IEW battalion structures.

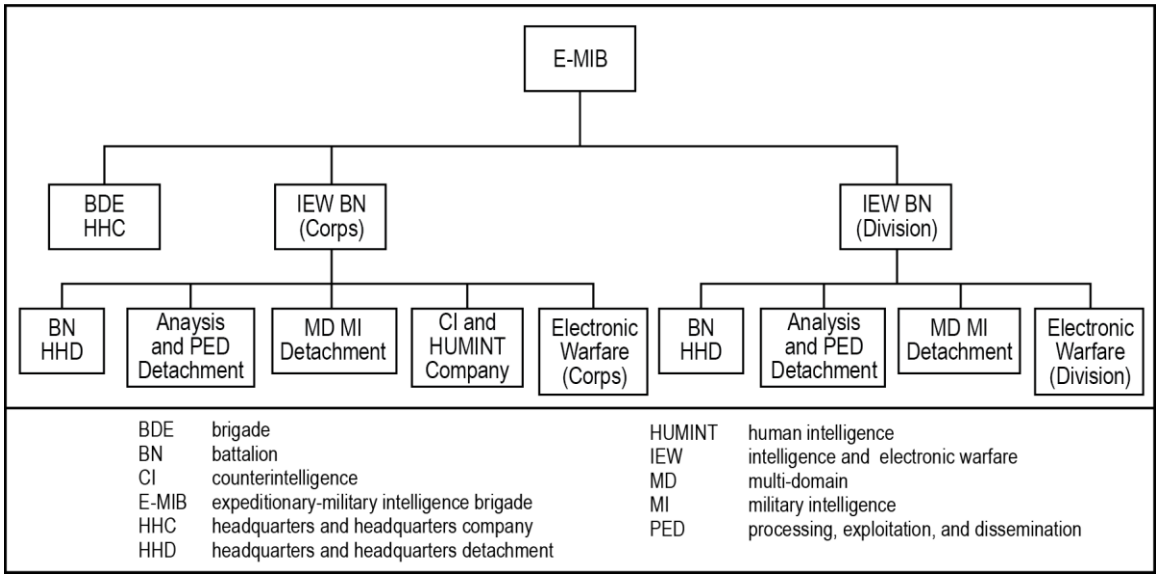


Figure 2-4. Expeditionary-MI brigade general structure

Note. The E-MIB's corps and division IEW battalions each have three detachments; the corps also has two companies and the division has one company. This chapter only discusses the mission and roles and responsibilities of the multi-domain MI detachment because of the many tactical challenges to effectively employ the detachment on the battlefield. The next version of ATP 2-19.3, *Corps and Division Intelligence Techniques*, will discuss the mission and roles and responsibilities of the battalion headquarters and headquarters detachment, analysis and PED detachment, CI and HUMINT company, and electronic warfare company.

MULTI-DOMAIN MI DETACHMENT MISSION

2-49. The multi-domain MI detachment, located in the corps/CJTF area, provides multidiscipline intelligence analysis and targeting support, including BDA; SIGINT collection support to electronic warfare and cyberspace operations; and expeditionary PED capability, enabled by organic classified communications, to support multi-domain (air, land, sea, and cyberspace) situational awareness and target development.

MULTI-DOMAIN MI DETACHMENT ROLES AND RESPONSIBILITIES

2-50. Figure 2-5 illustrates the multi-domain MI detachment structure, including MOSs. The multi-domain MI detachment the following:

- MI detachment headquarters.
- Multi-domain operations targeting support cell.
- Technical control and analysis cell, including three SIGINT collection teams.
- IEW systems integration section.
- TGS/PED section.

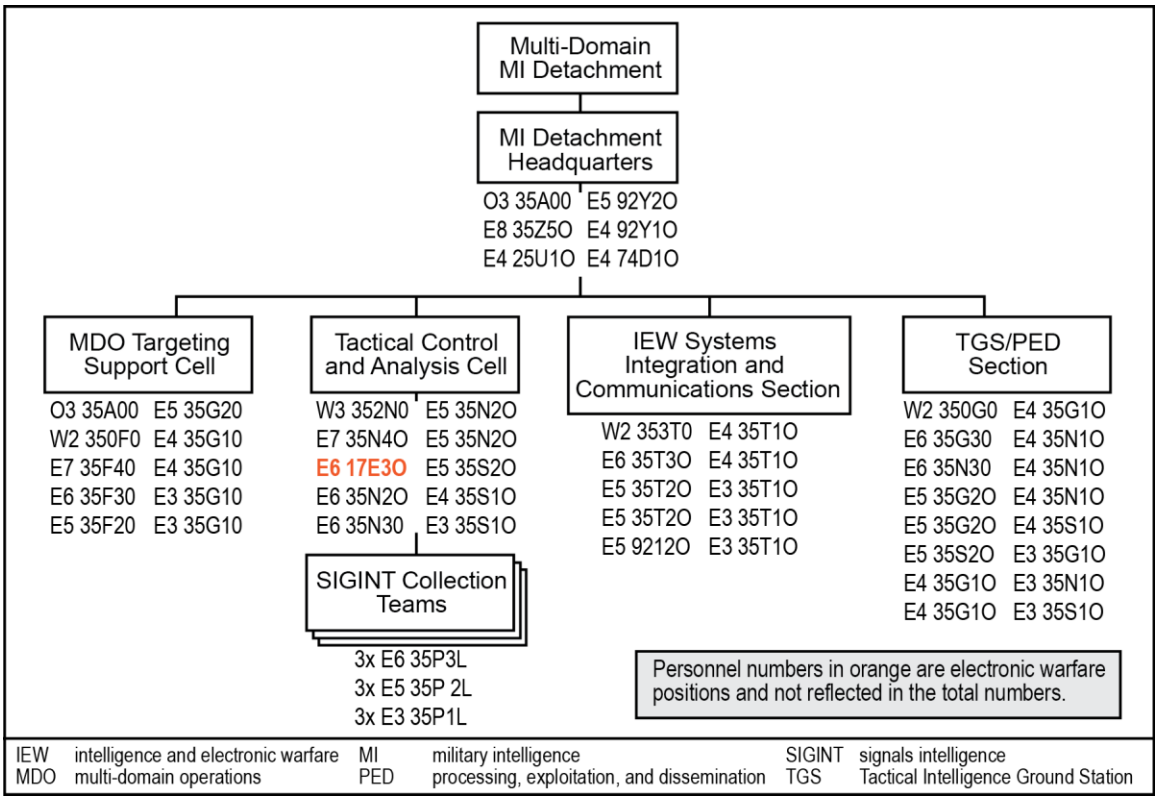


Figure 2-5. Multi-domain MI detachment

MI Detachment Headquarters

2-51. The MI detachment headquarters manages the E-MIB staff's administration and logistics sustainment; provides supply, resupply, deployment, and redeployment of headquarters personnel and equipment to and from forward deployed headquarters elements; maintains chemical, biological, radiological, and nuclear (CBRN) equipment for the headquarters; and maintains headquarters personnel records.

Multi-Domain Operations Targeting Support Cell

2-52. The multi-domain operations targeting support cell provides intelligence support to corps tactical CPs in conjunction with field force artillery elements for rapid corps-level engagement and high-payoff target list development.

Technical Control and Analysis Cell

2-53. The technical control and analysis cell provides technical control, in-depth analysis, integration, and synchronization of SIGINT operations to deconflict ongoing national to tactical SIGINT operations and maximize support to the commander through access to the entire SIGINT enterprise. This intelligence task involves coordination with other intelligence organizations and agencies, both in theater and through reach, to ensure SIGINT operations do not conflict with the SIGINT operations that these other intelligence organizations and agencies are planning and conducting. The technical control and analysis cell—

- Creates target packages for SIGINT collection missions.
- Recommends targets for action to the commander.
- Conducts analysis of combat and classified information to provide intelligence for the commander.

Signals Intelligence Collection Teams

2-54. The SIGINT collection teams—

- Provide SIGINT collection, exploitation, and limited analysis to generate timely, relevant, and accurate intelligence, and detect, track, and locate targets.
- Provide SIGINT support to electronic warfare and cyberspace operations to support missions in assigned areas of the corps AO.

Intelligence Electronic Warfare Systems Integration and Communications Section

2-55. The IEW systems integration and communications section provides for the integration and maintenance of national to tactical intelligence systems in the multi-domain MI detachment integrates sensitive compartmented information communications into the intelligence architecture.

Tactical Intelligence Ground Station/Processing, Exploitation, and Dissemination Section

2-56. The TGS/PED section also provides a mobile and responsive intelligence processing capability using the DCGS-A-enabled TGS. The TGS/PED section—

- Supports the planning, employment, processing, and integration of sensors. These sensors are critical to the MI company mission of multi-domain, long-range sensing in support of warning intelligence as well as multi-domain targeting. When not deployed, the PED section provides reach PED support to deployed formations.
- Monitors sensors.
- Integrates collection, analysis, and targeting expertise into supported units' operational and analytical elements to assist them in developing and prosecuting targets for exploitation.
- Oversees supported units to point out significant detections.
- Rapidly processes and performs initial analysis (exploitation) of collected data and information, and accurately reports based on collected sensor data outputs from assigned/supporting sensor platforms.

Chapter 3
Key Training Constructs

The Army conducts training and education in three domains: institutional (schoolhouse), operational (unit-led) and self-development. It is important for platoon leaders to understand the connections between and limitations of each domain in order to maintain readiness within the platoon.

INSTITUTIONAL TRAINING

3-1. The *institutional training domain* is the Army's institutional training and education system, which primarily includes training base centers and schools that provide initial training and subsequent professional military education for Soldiers, military leaders, and Army Civilians (ADP 7-0). The United States Army Intelligence Center of Excellence (USAICOE) is responsible for the institutional training of individual Soldiers. Institutional training begins with a critical task site selection board (also known as CTSSB) for each intelligence MOS. During the board, personnel currently holding the MOS decide on the tasks, conditions, and standards that individual Soldiers at every level (from new recruits to officers) must be able to perform. From the critical task list, a team of training developers and instructors—

- Identify learning objectives and determine how to assess them.
- Create the training materials.
- Prepare instructors to teach.
- Provide instruction.
- Assess student progress against identified learning objectives.

3-2. Soldiers graduating from USAICOE Advance Individual Training (AIT), Officer Professional Military Education, or NCO Education System courses are qualified in their designated MOSs. Platoon leaders can expect that while these trained Soldiers can complete their tasks to the required standard, they are not experts since institutional training is not specialized to a platoon's particular SOPs. After Soldiers graduate from a USAICOE course, platoon leaders are then responsible for teaching, coaching, and mentoring those Soldiers to develop their skills and expertise further while integrating them into a cohesive, highly functioning platoon.

OPERATIONAL TRAINING

3-3. The *operational training domain* is the training activities organizations undertake undertake while at home station, at maneuver combat training centers, during joint exercises, at mobility centers, and while operationally deployed (ADP 7-0). Leaders must maximize operational training opportunities for MI Soldiers at their home station. The technical aspect of the intelligence core competencies (intelligence synchronization, intelligence operations, intelligence PED, and intelligence analysis) requires constant engagement and maintenance. In addition to technical proficiency, Soldiers, leaders, and units should be training to build a baseline of knowledge of anticipated threats and OEs to understand their capabilities, systems, terrain, culture (not all inclusive).

3-4. The current Army operational posture affords commanders with excellent opportunities to train analytic skills to support regional and global operations. MI Soldiers must know, practice, and routinely implement information security, operations security, and other safeguards and countermeasures to maintain the integrity of the Nation's information and communications systems. Rigorous OE training enables units to operate independently of host-nation or partner systems, preventing systemic access to adversaries. Protecting sensitive information and receiving CI training are critical for all Soldiers, leaders, and units. They can implement and integrate those capabilities while training and deployed in OEs with personnel and technology from adversarial countries. To ensure the Army Intelligence Enterprise (also known as AIE) can accomplish strategic, operational, and tactical objectives, it must train!

MILITARY INTELLIGENCE TRAINING STRATEGY

3-5. Platoon leaders are accountable for the readiness of MI Soldiers in their formations. Measures of readiness for MI Soldiers are based on objective, empirical, and reportable standards. The Military Intelligence Training Strategy (MITS) provides standards to certify the intelligence warfighting function, which is critical to unit readiness. MITS is a standardized certification program for leaders to plan training before certifying their tactical intelligence warfighting function capabilities both objectively and quantifiably.

3-6. MITS certifies the intelligence warfighting function to the same level and standard, which ensures standardization across the force. MITS assists in establishing, resourcing, and sustaining an intelligence readiness program that integrates Foundry training sites, mission training complexes (MTCs), and the Intelligence and Electronic Warfare Tactical Proficiency Trainer (IEWTPT) at home station. (See appendix B.) The United States Army Forces Command (FORSCOM) emphasizes mastery at the team, squad, and platoon levels; MITS provides the process to both train and certify the intelligence warfighting function in achieving this goal.

3-7. Despite many attempts to address intelligence training deficiencies, there was no standardization across the force and no process to certify intelligence MOS-specific critical task lists. Without standardization, intelligence professionals were unable to perform their intelligence duties moving between tactical- and strategic-level units. FORSCOM and USAICOE collaborated to develop MITS certification to ensure that tasks applied across the force and were transferable and translatable across any formation. FORSCOM established some basic principles:

- Mirror the Integrated Weapons Training Strategy to enable operations and intelligence to speak the same language and use a similar lexicon.
- Objectively certify units.
- Use external evaluation for credibility.
- Use internal resourcing as much as possible.
- Be as prescriptive as possible.
- Evaluate the entire intelligence process and core competencies.

3-8. MITS standardizes and improves FORSCOM-unit intelligence warfighting function certification using an iterative process of tiers and their corresponding tables—beginning with individual (Tier 4), crew (Tier 3), and platform (Tier 2) certification tasks, and culminating with integrated intelligence warfighting function capabilities (Tier 1) for a BCT and MI company. (See figure 3-1.) The execution of MITS certification is a combined effort with support from the Foundry, MTCs, and IEWTPT.

Note. IEWTPT is the *digital range* for MI and is essential for the execution of Tiers 3, 2, and 1.

3-9. MITS certification is not meant to be part of a warfighter- or maneuver-centric training event until Tier 1; however, there are benefits to training alongside battalions in a BCT and other warfighting functions during MITS certification—as long as it does not interfere with the certification process. The intelligence warfighting function's mission is to provide timely, relevant, accurate intelligence and synchronized information collection, surveillance, and reconnaissance support to the BCT commander, staff, and subordinate battalions during the planning, preparation, and execution of unified land operations.

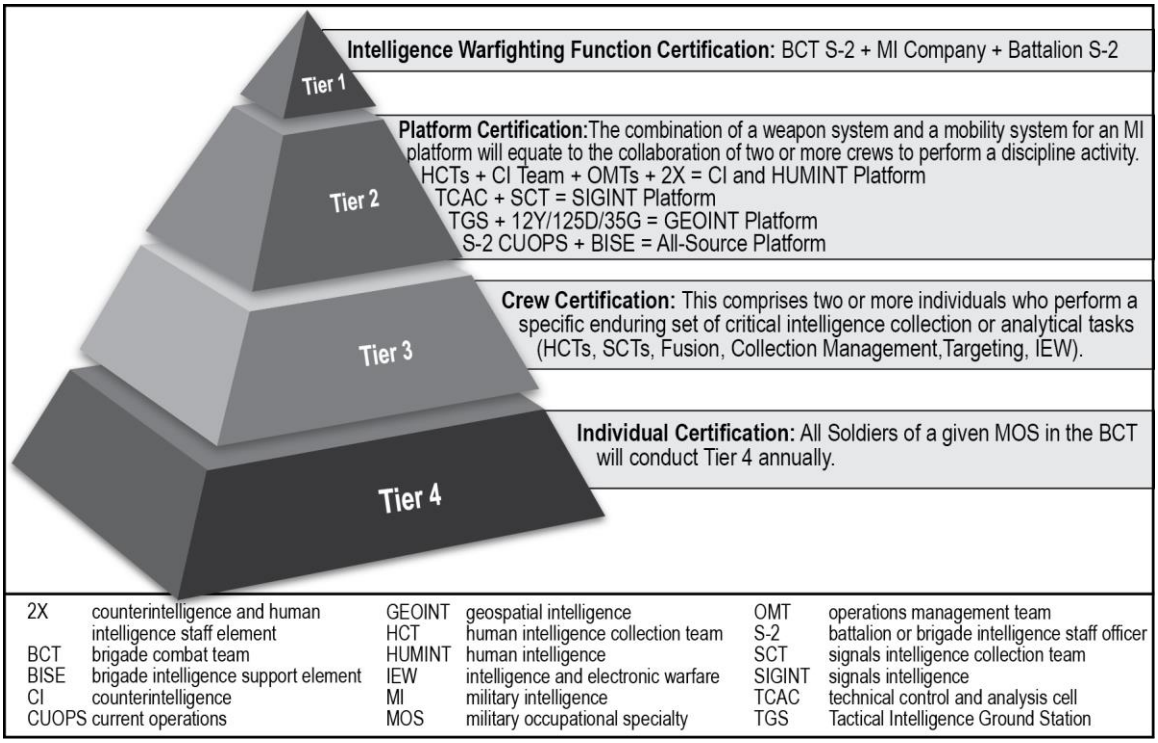


Figure 3-1. Military Intelligence Training Strategy certification tiers

MILITARY INTELLIGENCE TRAINING STRATEGY PLANNING

3-10. In preparation for MITS Tier 3 certification, planning typically begins 180 days out. This allows time to request resources, identify resourcing gaps, coordinate with outside organizations, certify evaluators, and publish orders. TC 2-19.400 provides a sample of major events by T-week (not all encompassing and not refined down to the crew/team level). Units should be as specific as possible when defining their T-minus tasks.

3-11. Army leaders use the Unit Training Management (also known as UTM), which is located on the Army Training Network (also called ATN), to identify training requirements and subsequently plan, prepare, execute, and assess training. The Unit Training Management provides a systematic way of managing time and resources in order to meet training objectives through purposeful training activities. It is the practical application of the training doctrine found in ADP 7-0. Commanders must effectively implement unit training to execute MITS successfully. (See FM 7-0 to apply the content of this handbook.)

3-12. To meet the demands of unified land operations, the Army has standardized mission-essential task lists (METLs) for Army organizations at theater and below levels. Standardized METLs ensure similar units deliver the same capabilities and provide the Army strategic flexibility to provide trained and ready forces to operational commanders. The standardized METL for an MI company in a BEB can be found on the Army Training Network, which is accessible 24/7 on NIPRNET. Tables 3-1 and 3-2 on page 3-4 list best practices and timelines, respectively, for planning MITS lessons.

Note. Typically, the Army National Guard and Army Reserve encounter additional time, training, and resource challenges in the execution of MITS certification.

Table 3-1. Best practices for planning Military Intelligence Training Strategy lessons

• Ensure IPRs have the right personnel in attendance. • Identify requirements and assign responsibilities. • Develop an execution checklist by intelligence discipline or staff section; track the checklist at each IPR.
Use mission MTCs and Foundry teams to provide the IEWTPT-scenario simulation to drive training across MI systems.
When possible, division G-2s should assist in resourcing/tasking external evaluators (from divisions, collocated E-MIBs, or higher echelons) to brigade combat teams in order to provide objective evaluations and the feedback required for MITS certification.
Although battalion S-2 sections are not the primary certification audience for MITS certification, include them so they can practice and refine processes for bottom-up refinement.
• Identify the different means and modes of communication for each tier. • Codify and disseminate a logical PACE plan and rehearse that plan before the beginning of each tier.
• Include S-6 and signal company representation in all IPRs. • Involve S-6 and signal company representation as early as possible in the planning process. • Since MI systems rely on S-6 support, deconflict MITS certification with any other brigade combat team priorities.

E-MIB	expeditionary military intelligence brigade	MITS	Military Intelligence Training Strategy
G-2	division or corps intelligence staff officer	MTC	mission training complex
IEWTPT	Intelligence and Electronic Warfare Tactical Proficiency Trainer	PACE	primary, alternate, contingency, and emergency
IPR	internal progress review	S-2	battalion or brigade intelligence staff officer
MI	military intelligence	S-6	battalion or brigade signal staff officer

Table 3-2. Timelines for planning Military Intelligence Training Strategy lessons

> 180 days before Tier 3 or 2 execution
• Division plans and coordinates BCT MITS certification with enabling organizations, including the Foundry, mission training complexes, and opposing force as necessary. • The MI company commander and BCT S-2 brief the MITS concept and certification objectives to BEB and BCT commanders. • MITS certification is protected on the BEB/BCT long-range training calendar. This facilitates the division G-2's support and coordination across the division at monthly G-2/S-2 training meetings.
180 days before Tier 3 or 2 execution
• Plan conference with the BCT S-2/MI company command team to identify all tier dates and to develop certification objectives. • Assist in developing the MI company training glide path for individual, crew, and company training. • Consider the integration of tactical unmanned aircraft system flight operations into geospatial intelligence training objectives.
120 days before Tier 3 or 2 execution
• Develop a maintenance glide path for all MI systems to ensure all equipment (hardware and software) required for certification is present and fully mission capable. • Plan/Resource evaluators through the division G-2 or aligned BCT. • Design an intelligence architecture plan that supports MITS certification.
90 days before Tier 3 or 2 execution
• Field service representative support requests for MI systems; ensure field service representative support begins on day 1 of the communications rehearsal through the completion of the MITS certification. • Reserve MITS exercise space (mission training complex /Foundry/local training area), including maneuver areas for enablers.
60 days before Tier 3 or 2 execution
• Coordinate for 24/7 upper-tactical internet support from the signal company and vehicle/generator maintenance support team (BEB forward support company). • Submit a network request (BCT S-6), T-SCI request, and SIGINT exercise request for live SIGINT collection. • The MI company commander locks in training schedule. • Finalize scenario support with IEWTPT (and mission training complex /Foundry).
30 days before Tier 3 or 2 execution
• Issue the operation order to the MI company. • Conduct evaluator academy. • Pick up communications security. • Conduct precombat checks/precombat inspections. • Confirm training resourcing requests (Classes I, II, III, IV, IX) for certification. • Review standard operating procedures.
7 days before Tier 3 or 2 execution
Conduct a communications rehearsal with MI company support. ***Note.*** While representatives from all crews/platforms are necessary to conduct the communications rehearsal, much of the certification for the intelligence and electronic warfare maintainers (35T/353T) will be completed during the rehearsal.

BCT	brigade combat team	MITS	Military Intelligence Training Strategy
BEB	brigade engineer battalion	S-2	battalion or brigade intelligence staff officer
G-2	division or corps intelligence staff officer	S-6	battalion or brigade signal staff officer
IEWTPT	Intelligence and Electronic Warfare Tactical Proficiency Trainer	SIGINT	signals intelligence
MI	military intelligence	T-SCI	temporary-sensitive compartmented information

Training Schedules

3-13. In tactical terms, a unit's training schedule reveals the training scheme of maneuver, CONOPS, and the commander's intent. Figure 3-2 illustrates an example MI company long-range training calendar depicting MITS Tiers 3 and 2 planning and execution timelines.

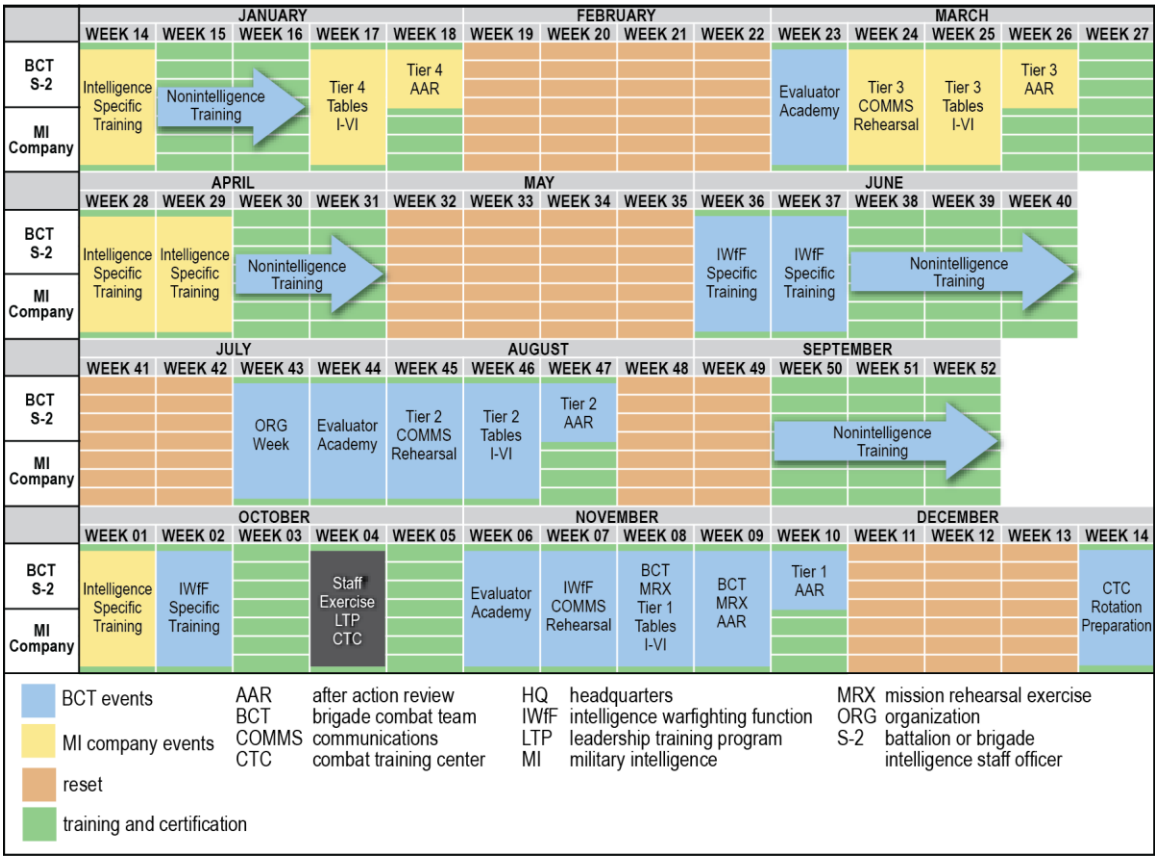


Figure 3-2. Example MI company long-range training calendar

Military Intelligence Training Strategy Scenario Requirements and the Intelligence and Electronic Warfare Tactical Proficiency Trainer

3-14. For Tiers 3 and 2, MITS certification requires a validated scenario to ensure crews and platforms are stimulated in a complete and codified manner. For these tiers, MITS uses the Decisive Action Training Environment (also known as DATE) scenario guidance to create scenarios built on the IEWTPT framework and specifically designed for different geographic regions. For each location, the Tier 2 scenario is built from the Tier 3 scenario and can be conducted consecutively. USAICOE validates all scenarios; units do not develop their own scenarios for Tiers 2 and 3.

3-15. The MITS scenario package comprises IEWTPT products as well as analog support products (division OPORD, brigade OPORD, road to war, information collection plan). The road to war, at a minimum, includes the following:

- Explain the deployment and disposition of the certifying unit at the start of the exercise.
- Identify exercise scenario days/timeline in chronological order.
- Explain the opposing force organization of the battlefield, organization of forces, and dispositions.
- Reflect opposing force doctrine in the TC 7-100 series.
- Provide reasoning for execution of certification objectives.

3-16. If conducting MITS Tiers 3 or 2 away from home station, IEWTPT should be on site two to three days before the execution of the communications rehearsal in order to test data transfer across all associated networks. IEWTPT relies on the supported unit architecture for Internet protocol addresses in order to push information and products to the certifying crews and platforms.

Military Intelligence Training Strategy Evaluator

3-17. TC 2-19.405, *The MITS BCT Evaluator Handbook*, details evaluator requirements for the execution and management of MITS certification. Evaluators should be experienced leaders in their MOSs and validated as *competent* by the most senior leader available. (See table 3-3.) Crew/Platform leaders should prepare their Soldiers for certification. Evaluators, based on precertification tables, objectively guide and mentor evaluated crews/platforms to ensure (within reason) successful Table VI certification.

3-18. Before certification, evaluators complete the evaluator academy (approximately two to three weeks before certification) and become familiar with MITS requirements and standards as well as the scenario. During certification, evaluators—

- Conduct a daily touchpoint at the start of each day with certification administrators (Foundry/MTC/IEWTPT).
- Preview the scenario play.
- Observe the certifying crews/platforms.
- Complete the scorecard/checklists for the crews/platforms.
- Conduct after action reviews (AARs) accordingly.
- Conduct an end-of-the-day hotwash with the certification administration.

Note. Evaluators can function as white cells or role players based on discipline requirements.

Table 3-3. Recommended evaluators

Crew	*Evaluator*	*Crew*	*Evaluator*
All-source production	350F W3/4	Cryptologic support team and SCT	352N W3
Collection management and targeting	350F W2/3	Prophet	35P30
Operations management team	351M W2	Intelligence processing	35G30
human intelligence collection team	35M40	Intelligence and electronic warfare systems	353T W2
SCT signals intelligence collection team			

Platoon/MI Company Leader Lessons and Best Practices

3-19. The following leader lessons and best practices assist in ensuring MITS certification preparedness for MI company platoons.

Precombat Checks and Precombat Inspections

3-20. Problems encountered by units during MITS certification are typically from incomplete preparedness. Precombat checks (PCCs) and precombat inspections (PCIs) assist in preparing units for MITS certification; PCCs/PCIs should also include components of end items:

- **PCCs** of subordinate personnel readiness include but are not limited—
  - Uniforms (for example, clean and serviceable uniform with name tape, Army tape, rank; issued or authorized boots only; eye protection with clear lenses; ear protection; and improved outer tactical vest/fighting load carrier with name tape and rank, full magazines with rounds facing down, and individual first aid kit pouch accessible by Soldier).
  - Equipment (for example, functional night-vision goggles tied down to kit or helmet; clean, lubricated weapon with completed functions check; and rucksack with name tape; meals, ready to eat [also called MREs]; and water).
  - Mission knowledge (for example, unit's mission, task, and purpose; individual task and purpose; and route and actions on contact).

- **PCIs** of team equipment include but are not limited to—
  - Convoy equipment/premovement inspection (for example, mission brief, CONOPS, and OPORD on hand; sensitive items list; battle roster numbers; convoy listed by vehicle; meals, ready to eat, accounted for and stowed; rucksacks and equipment, accounted for and stowed; medical evacuation [MEDEVAC] request (see table J-2 on page J-19); communications checks completed between vehicles; fire extinguishers, charged and tagged; lights, operational [infrared as applicable]; established weapons posture; ammunition—present, serviceable, and secured; and preventive maintenance checks and services, completed on all rolling stock moving).
  - Vehicle (for example, preventive maintenance checks and services; fuel, full level; training manual on hand; licensed driver for vehicle; load plan, verified and equipment secured; and battlefield illumination present, inventoried and serviceable.)
  - Soldiers' uniforms and equipment (for example, serviceable and complete).
  - Mission knowledge (for example, unit's mission, task, and purpose; individual task and purpose; and route and actions on contact).

3-21. For initial PCIs—

- Soldiers must go through PCCs and DD Forms 1750 (*Packing List*) H+24 or more (last duty day of the week) and stage and secure equipment 24 hours out.
- Leaders must prepare lists (sensitive items, battle rosters, convoy serial list) H+24 or more (no later than the last duty day of the week).
- Team and squad leaders must verify Soldiers' PCCs and DD Forms 1750 the last duty day of the week, verify and ensure equipment is staged and secured, and conduct initial PCIs on vehicles and equipment.

3-22. For final PCIs, Soldiers account for all of their equipment and receive and secure their sensitive items. Leaders must review the PCI checklist; conduct final verifications on equipment functionality (communications equipment and vehicles), the load plan, and rosters; and ensure equipment is secured and Soldiers understand the mission.

3-23. Problems can be avoided by—

- Planning early to meet all T-week requirements.
- Confirming MI and communications systems have current software and the appropriate communications security. This includes ensuring DCGS-A information assurance vulnerability alert updates are current.
- Confirming leaders and Soldiers understand their respective role, mission, function, task, and purpose for the training event.
- Verifying that Soldiers possess the tokens, certifications, or accounts required to access training-event systems, networks, and databases.
- Confirming that SOPs and references are accessible.

Rehearsals

3-24. Conducting rehearsals is another method of ensuring MITS certification preparedness. A *rehearsal* is a session in which the commander and staff or unit practices expected actions to improve performance during execution (ADP 5-0). A rehearsal is a critical performance step in avoiding failure during operations or training. Oftentimes, MI organizations arrive at a collective training location (including combat training center rotations) unsure of how the MI enablers will operate as part of the supported unit's task organization.

3-25. At a minimum, MI company element leaders should meet the maneuver elements conducting operations with them, or who control the AO where the MI company element will conduct operations. MI company element leaders should attend and participate in maneuver element rehearsals on the objective or rehearsal of concept drills. Maneuver-specific SOPs should augment MITS tables during Tiers 4, 3, and 2 to prepare for a successful Tier 1 certification.

3-26. Failure to rehearse BISE operations causes MI company and intelligence cell sections to unknowingly duplicate work, each with differing quality standards. Rehearsing BISE operations should identify duplicative procedures, establish a common quality standard, and enable more accurate and timely products provided to the supported commander.

Primary, Alternate, Contingency, and Emergency Plans

3-27. A complete and tested primary, alternate, contingency, emergency (PACE) plan is another method of ensuring certification preparedness. Each element of the PACE plan is an element of the communications plan and implemented in the same sequence as listed in the acronym. Units must identify the means and modes of communications for a particular exercise, codify and disseminate a logical PACE plan, and rehearse that plan before beginning the exercise. This includes communications between brigades and battalions and between single-source elements (HUMINT/SIGINT teams) and BISEs or BCT S-2s.

3-28. Units should codify the intelligence architecture plan with the Foundry, MTC, and brigade S-6 early in planning and conduct a deliberate communications rehearsal to ensure simulated feeds are received across all intelligence platforms.

3-29. For MITS certification, PACE plans—

- Should be based on communications networks and equipment availability.
- Are established by echelon but should include both voice and data. (See figure and 3-3.)

3-30. High performing units—

- Establish a PACE plan for communications and a complementary PACE plan for intelligence products and/or information collection results. This may include mechanisms for sharing intelligence analysis products and information collection tasks, including how to use the PACE plan for conducting PED actions.
- Identify and ensure the *Command* and *Signal* paragraphs of MI company OPORDs identify those events that trigger *when* to progress from one PACE element to the next element. For example, when MI company collection teams unilaterally chose to implement the PACE plan, they lost contact with the supported BCT and MI company due to local and temporal conditions. Measures had not been established to revert to earlier stages of the plan to re-establish communications.
- Schedule and focus training on tactical satellite radios. Although MI companies have tactical satellite capabilities, Soldiers often require substantial training to confidently employ them.

	Cavalry Squadron	***Infantry Battalion***	***Infantry Battalion***	***Infantry Battalion***	***Brigade Engineer Battalion***	***Military Intelligence Company***
P	**WIN-T:** • Jabber/ Transverse • SVOIP • CPOF Chat	**WIN-T:** • Jabber/ Transverse • SVOIP • CPOF Chat	**WIN-T:** • Jabber/ Transverse • SVOIP • CPOF Chat	**WIN-T:** • Jabber/ Transverse • SVOIP • CPOF Chat	**WIN-T:** • Jabber/ Transverse • SVOIP • CPOF Chat	**JCR:** • Messenger
A	**JCR:** • Messenger	**JCR:** • Messenger	**JCR:** • Messenger	**JCR:** • Messenger	**JCR:** • Messenger	**FM:** Voice
C	**FM:** Voice	**FM:** Voice	**FM:** Voice	**FM:** Voice	**FM:** Voice	**Courier**
E	**Courier**	**Courier**	**Courier**	**Courier**	**Courier**	
Freq	##	##	##	##	##	##

CPOF	Command Post of the Future	PACE	primary, alternate, contingency, emergency
FM	frequency modulation	SVOIP	secure voice over internet protocol
Freq	frequency	WIN-T	Warfighter Information Network-Tactical
JCR	Joint Capabilities Release		

Figure 3-3. BCT communications PACE plan example

MILITARY INTELLIGENCE TRAINING STRATEGY EXECUTION—COMMUNICATIONS REHEARSAL

3-31. Conducting communications rehearsals assist in ensuring MITS certification execution. The following provides communications rehearsal lessons and best practices.

Intelligence Architecture and Communications Rehearsal Lessons and Best Practices

3-32. Intelligence architecture planning and execution is a significant aspect of MITS certification. Establishing an intelligence architecture without a communications rehearsal has resulted in failure of the certification process. Understanding that each BCT is unique and requires its own architecture is critical to the success of the certification process. ADP 2-0 and FM 2-0 provide guidance to the BCT on planning, preparing, deploying, and redeploying the intelligence architecture.

3-33. Many communications rehearsal tasks are either implied or not specified in MITS TCs. The following includes some considerations:

- Full system connectivity.
- Proper equipment preventative maintenance checks and services.
- Current software updates.
- Validated PACE plans.
- Radio communications/network tests.
- IEWTPT personnel who will support the MITS certification should be prepared to support the communications exercise.

Note. Most MTC systems do not operate on the Trojan network; therefore, those systems will be unable to disseminate real-time data to MI companies in field locations where DCGS-A equipment is configured for the Trojan network.

Tier 4 Certification Lessons and Best Practices

3-34. TC 2-19.404, *MITS for the BCT Tier 4*, is a tool designed to assist unit certification management and planning for individual MI Soldier tasks and skills. The implied tasks are—

- Ensure intelligence equipment is mission-capable.
- Ensure all accounts and credentials are current.

Tier 3 Certification Lessons and Best Practices

3-35. TC 2-19.403, *MITS for the BCT Tier 3*, is a tool designed to assist unit training management and planning for collective MI Soldier tasks and skills. The execution of Tier 3 certification occurs in a field environment over a period of five days using an MI company's organic intelligence systems. The certifying unit must complete a communications rehearsal before initiating Tier 3 certification. This critical task must also include each crew testing the functionality of its intelligence systems to receive stimulated intelligence and IEWTPT data over tactical communications.

Tier 2 Certification Lessons and Best Practices

3-36. TC 2-19.402, *MITS for the BCT Tier 2*, provides Army leaders with a systemic process to better evaluate and assess a unit's training management and planning approaches in preparation for intelligence platform-based operational tasks and associated skills. The execution of Tier 2 certification occurs in a field environment over a period of five days using the MI company's organic intelligence systems. The certifying unit must complete a communications rehearsal before initiating Tier 2 certification, unless the event immediately follows Tier 3 certification. This critical task must also include each platform testing the functionality of its intelligence systems to receive stimulated IEWTPT data over tactical communications.

Tier 1 Certification Lessons and Best Practices

3-37. Lessons and best practices related to BCT Tier 1 home station training and combat training center rotations can be found on the Intelligence Knowledge Network (also known as IKN) on the NIPRNET.

COMPREHENSIVE OPERATIONAL TRAINING TO SUPPORT MILITARY INTELLIGENCE TRAINING STRATEGY

3-38. The implementation of MITS certification has exposed a gap in the tactical and operational integration of intelligence to support large-scale ground combat operations. To close this gap, FORSCOM and the U.S. Army Intelligence and Security Command (also called INSCOM)/Foundry have executed a series of courses that build on the institutional training foundation and achieve intelligence effectiveness at echelons corps and below. The courses—

- Include areas of concentration specific to each intelligence discipline.
- Are three weeks long.
- Take place at the Army Foundry Platform at Fort Bragg, NC.

3-39. This enables the execution of MITS Tier 2 and 1 certification at the mastery level and corps and division intelligence operations. These courses target Services members in SSG to SFC and WO1 to CW3 ranks, who then act as primary instructors at home station for the intermediate operational courses. These courses focus on individual and crew systems and their integration and operational employment, thereby improving MITS Tiers 4, 3, and 2 certification. Courses for HUMINT, GEOINT, SIGINT, all-source intelligence, CI, and maintenance will be executed in fiscal year 20. Attendance is coordinated through FORSCOM. Graduates will have the opportunity to advance to the Defense Intelligence Systems Master Gunner course, which supports the success of MITS certification at all tiers.

SELF-DEVELOPMENT TRAINING

3-40. *Self-development training domain* is planned, goal-oriented learning that reinforces and expands the depth and breadth of an individual's knowledge base, self-awareness, and situational awareness; complements institutional and operational learning; enhances professional competence; and meets personal objectives (ADP 7-0). There are three types of self-development:

- **Structured self-development** is required learning that continues throughout a career that is closely linked to and synchronized with classroom and on-the-job learning.
- **Guided self-development** is recommended, but optional learning that assists in keeping personnel prepared for changing technical, functional, and leadership responsibilities throughout their career.
- **Personal self-development** is self-initiated learning where the individual defines the objective, pace, and process.

3-41. The self-development training domain recognizes that Army forces require continual, life-long learning and that structured training activities in Army schools and operational units do not fully meet the needs of all Army intelligence professionals. Leaders assist subordinates in identifying those areas where self-development training may improve performance in current assignments and prepare them for future career assignments. Leaders must incorporate time in training plans for self-development training.

Chapter 4
Operations

The operations process provides a broadly defined approach to developing and executing operations. It is a commander-led activity informed by C2. Commanders use the operations process to drive the conceptual and detailed planning necessary to understand the OE, visualize and describe the operation's end state and operational approach. make and articulate decisions, and direct, lead, and assess operations.

THE OPERATIONS PROCESS

4-1. The *operations process* is the major command and control activities performed during operations: planning, preparing, executing, and continuously assessing the operation (ADP 5-0). The activities of the operations process are—

- Plan.
- Prepare.
- Execute.
- Assess.

ACTIVITIES OF THE OPERATIONS PROCESS

4-2. The activities of the operations process may be sequential or simultaneous; they are not discrete and often overlap and recur as circumstances demand. While planning may start an iteration of the operations process, it does not stop with the production of an order. After the completion of the initial order, the commander and staff continuously revise the plan based on changing circumstances. Preparation for a specific mission begins early in planning and continues for some subordinate units during execution. Execution puts a plan into action and involves adjusting the plan based on changes in the situation and the assessment of progress. Assessing is continuous and influences the other three activities.

Plan

4-3. *Planning* is the art and science of understanding a situation, envisioning a desired future, and laying out effective ways of bringing that future about (ADP 5-0). Planning is both conceptual and detailed:

- **Conceptual planning** includes developing an understanding of the OE, framing the problem, defining a desired end state, and developing an operational approach to achieve the desired end state. Conceptual planning generally corresponds to the art of operations and is commander-led.
- **Detailed planning** translates the operational approach into a complete and practical plan. Detailed planning generally corresponds to the science of operations and encompasses the specifics of implementation. Detailed planning works out the scheduling, coordination, or technical issues involved with moving, sustaining, administering, and directing forces.

4-4. Army leaders employ three methodologies for planning: the Army design methodology, the MDMP, and troop leading procedures (TLP). During planning, MI unit commanders use specified and implied tasks, supported unit commanders' guidance and staff assessments, and the information collection plan.

Planning Activities for Intelligence Operations

Employing Army methodologies allows MI unit commanders to tailor planning activities for intelligence operations, including but are not limited to—

- Determining the amount and type of equipment required and available for the mission.
- Determining and requesting the augmentation of personnel and equipment, including required PED support to exploit GEOINT, SIGINT, and measurement and signature intelligence collection.
- Determining communications (network and voice) and connectivity architecture, requirements, and limitations to support the mission.
- Coordinating with other units to support the MI unit's mission, including but not limited to—
  - Medical personnel to establish CASEVAC procedures.
  - The fire support officer to coordinate fire support.
  - The airspace coordinator if using airborne intelligence systems.
  - Supported units to ensure the required mission, communications, logistics, and life support are available for the MI element/personnel.
  - Maneuver units to coordinate terrain management where MI personnel are expected to operate.
  - Adjacent MI unit commanders to identify threat information and coordinate and deconflict operations.
- Observing subordinate execution of TLP by section, platoon, and company leaders.
- Identifying language requirements and requesting augmentation as appropriate.
- Identifying intelligence contingency funds requirements. (See AR 381-141.)
- Identifying IEW maintenance support and procedures before deployment. During deployment, this requires continuous assessment, especially when there are few or no organic IEW technicians and facilities.

Prepare

4-5. *Preparation* is those activities performed by units and Soldiers to improve their ability to execute an operation (ADP 5-0). Preparation creates conditions that improve friendly forces' opportunities for success. Preparation activities assist in developing a shared understanding of the situation and requirements for execution. These activities—such as back briefs, rehearsals, training, and inspections—help units, staffs, and Soldiers better understand their roles in upcoming operations, gain proficiency on complicated tasks, and ensure their equipment and weapons function properly.

Preparation Activities for Intelligence Operations

For MI collection assets conducting intelligence operations, preparation activities include but are not limited to—

- Conducting the necessary coordination, as the situation requires, including logistics (by class of supply), maps, and MEDEVAC procedures.
- Verifying fire support, CASEVAC, fratricide avoidance, airspace coordination, spectrum management, and other coordination measures and procedures.
- Coordinating with the USAF SWO to determine weather effects on collection assets (platforms and sensors) based on their specific weather threshold sensitivities and the current and predictive weather conditions in the OE.
- Reviewing signal surveys, including the required technical data and appropriate encryption, and the inventory and test the signal equipment.
- Verifying existing intelligence discipline reports for the target and sharing them with the supported commander.
- Refining plans, back briefs, SOP reviews, and rehearsals, and coordinating products with various elements and organizations.
- Conducting inspections to ensure unit personnel and sections are prepared to conduct their mission. Subordinate leaders conduct PCCs of their personnel supporting the mission. Participating MI element leaders conduct PCIs before mission execution.
- Conducting information collection rehearsals to ensure the correct information is collected and Soldiers use the right techniques to support the mission. In a time-constrained environment, the information collection rehearsal may be combined with a combined arms rehearsal or fires rehearsal.

Execute

4-6. Planning and preparation enable effective execution. *Execution* is the act of putting a plan into action by applying combat power to accomplish the mission and adjusting operations based on changes in the situation (ADP 5-0). Execution uses situational understanding to assess progress and adjust operations as the situation changes. In execution, commanders and staffs focus their efforts on translating decisions into actions. They apply combat power to seize, retain, and exploit the initiative to gain and maintain a position of relative advantage.

Execution Activities for Intelligence Operations

During execution, MI leaders ensure their unit—

- Is properly staged with the supported unit and in the right order of movement.
- Monitors asset locations and support and ensures force protection of those elements.
- Is on the right communications network and conducts communications checks.
- Reports technical, threat, and administrative information through the appropriate communications network (intelligence and operations) as specified in reporting guidelines established in Annex B (Intelligence) and unit SOPs.

Assess

4-7. *Assessment* is the determination of the progress toward accomplishing a task, creating a condition, or achieving an objective (JP 3-0). Assessment precedes and guides the other activities of the operations process and concludes each operation or phase of an operation. The focus of assessment differs during planning, preparation, and execution:

- During *planning*, assessment focuses on collecting information to understand the current situation and developing an assessment plan.
- During *preparation*, assessment focuses on monitoring changes in the situation and on evaluating the progress of readiness to execute the operation.
- During *execution*, assessment involves a deliberate comparison of forecasted outcomes to actual events, using criterion to judge progress toward success. Assessment during execution assists commanders in adjusting plans based on changes in the situation.

4-8. Assessment involves deliberately comparing forecasted outcomes with actual events to determine the overall effectiveness of force employment. Assessment assists commanders in determining the progress toward achieving the desired end state, attaining objectives, and performing tasks.

Assessment Activities for Intelligence Operations

MI leaders assess intelligence operations by—

- Collaborating with collection managers to—
  - Identify if information requirements have been satisfied.
  - Evaluate the quality and accuracy of reported information.
  - Adjust the information collection plan based on the remaining information gaps.
- Requesting feedback from technical authorities (such as the G-2X) on the efficiency of information collection activities, and to identify the right collection activity to support the mission.
- Attending AARs with the supported commander and staff to assess how well the MI element integrated with and supported the unit during the mission. These AARs should cover the—
  - Integration of MI elements into the larger mission plan.
  - Effectiveness of supporting the commander's information requirements.
  - Identification of equipment or personnel deficiencies.
  - Identification of lessons learned and emerging TTP that could support the unit better in the future.

COLLABORATION

4-9. Commanders and staffs actively build and maintain a shared understanding within the force and with unified action partners by continually collaborating throughout the operations process. Collaboration is more than coordination; it is multiple people and organizations working together towards a common goal by sharing knowledge and building consensus. It requires dialogue that involves a candid exchange of ideas or opinions among participants and encourages frank discussions in areas of disagreement. Throughout the operations process, commanders, subordinate commanders, staffs, and unified action partners collaborate, sharing and questioning information, perceptions, and ideas to understand situations and make decisions.

4-10. Through collaboration, the commander creates a learning environment by allowing participants to think critically and creatively and share their ideas, opinions, and recommendations without fear of reproach. Effective collaboration requires candor and a free, yet mutually respectful, exchange of ideas. Participants must feel free to make viewpoints based on their expertise, experience, and insight. This includes sharing ideas that contradict the opinions held by those of higher rank. Successful commanders listen to novel ideas and counterarguments. Effective collaboration is not possible unless the commander enables it.

4-11. Due to the nature of command and support relationships during operations for both MI company and E-MIB structures, collaboration with adjacent commanders and staffs is vital. Effective collaboration includes but is not limited to—

- Nesting company goals with supported units' goals. This includes leader involvement at every level and a clear commander's intent for the company.
- Integrating company and supported units. Company and supported units likely have limited rapport and little to no time working together; therefore, integration can lead to successful collaboration, mutual respect, and an exchange of ideas.

INTEGRATION

4-12. Commanders and staffs integrate the warfighting functions and synchronize the force to adapt to changing circumstances throughout the operations process. They use several integrating processes to do this. An integrating process consists of a series of steps that incorporate multiple disciplines to achieve a specific end. For example, during planning, the MDMP integrates the commander and staff in a series of steps to produce a plan or order.

Integrating Processes

Key integrating processes that occur throughout the operations process include—

- IPB.
- Information collection.
- Targeting.
- Risk management (RM).
- Knowledge management.

ORDERS PROCESS

4-13. A product of the planning activity is a plan or order—a directive for future action. Commanders issue plans and orders to subordinates to communicate their understanding of the situation and their visualization of an operation. Plans and orders direct, coordinate, and synchronize subordinate actions and inform those outside the unit how to cooperate and provide support. To properly understand and execute the joint commander's plan, Army commanders and staffs must be familiar with joint planning processes, procedures, and orders formats.

PLANNING FUNCTIONS

4-14. Planning has several functions, including but not limited to assisting leaders in understanding situations and developing solutions to problems and task-organizing the force and prioritizing efforts. In its simplest form, planning assists leaders in determining how to move from the current state of affairs to a more desirable future state while identifying potential opportunities and threats along the way.

Understand Situations and Develop Solutions to Problems

4-15. Planning assists commanders and staffs in understanding situations, to include discerning the relationship between the operational (PMESII-PT) and mission variables (METT-TC). Effective planning not only assists leaders in understanding the land domain, but also in understanding how capabilities in the air, maritime, space, and cyberspace domains and the information environment impact operations on land and vice versa.

4-16. Understanding the situation requires both analysis and synthesis. *Analysis* is the process of studying a situation by successively dividing it into parts and addressing each part in turn. For example, the initial stages of mission analysis and IPB rely heavily on analysis. Understanding the parts of a situation is necessary; however, understanding the parts alone does not provide an appreciation of the relationships among the parts. That appreciation requires synthesis. *Synthesis* is thinking about how the parts of a situation work together as a whole rather than in isolation. As part of planning, the commander and staff synthesize results of mission analysis to make sense of the situation before developing COAs.

4-17. Planning also assists leaders in identifying problems and developing solutions to solve or manage those problems. Not all problems require the same level of planning. Leaders often identify simple problems immediately and quickly decide on a solution—sometimes on the spot. Planning is critical, however, when a problem is actually a set of interrelated issues, and the solution to each affects the others. For unfamiliar situations, planning offers ways to solve the complete set of problems as a whole. In general, the more complex a situation is, the more important and involved the planning effort becomes.

4-18. This planning function is important for MI companies because there is limited manpower and resources to be delegated and support the assigned mission. Thorough understanding of the problem and development of multiple solutions sets the conditions to mission success. When MI leaders truly understand a problem set, they can allocation efforts and resources accordingly.

Task-Organize the Force and Prioritize Efforts

4-19. When developing their CONOPS, commanders first visualize the decisive operation that directly accomplishes the mission. They then visualize how shaping and sustaining operations support the decisive operation. The decisive operation prioritizes efforts and is the focal point around which the plan is developed. When developing associated tasks to subordinate units, commanders ensure subordinates have the capabilities and resources to accomplish their assigned tasks. They do this by task-organizing the force and establishing priorities of support. Commanders consider the following principles of war when task-organizing the force and prioritizing efforts:

- Mass: concentrate the effects of combat power at the decisive place and time.
- Economy of force: allocate minimum-essential combat power to secondary efforts.
- Unity of command: for every objective, ensure unity of effort under one responsible commander.

4-20. *Task-organizing* is the act of designing a force, support staff, or sustainment package of specific size and composition to meet a unique task or mission (ADP 3-0). It includes providing assets to subordinate commanders and establishing their command and support relationships. Some assets are retained under the commander's immediate control to retain flexibility to exploit opportunities or counter threats.

4-21. Task-organizing results in a *task organization*—a temporary grouping of forces designed to accomplish a particular mission (ADP 5-0). The unit's task organization is stipulated in the base plan or order or addressed in Annex A (Task Organization) to the base plan or order. The operation plan (OPLAN) or OPORD also stipulates changes in the task organization by phase or event. During execution, commanders modify the task organization as required based on the situation through fragmentary orders (FRAGORDs). Appendix Q provides a breakdown of task organization relations and responsibilities. (See FM 6-0 for task organization formats in Army plans and orders.)

4-22. Commanders avoid exceeding the span of control of a subordinate headquarters when task-organizing. *Span of control* refers to the number of subordinate units under a single commander. This number is situation-dependent and may vary. Allocating more units to subordinate commanders gives subordinate units greater flexibility and increases options and combinations. However, increasing the number of subordinate units increases the number of decisions the commander must make, and that may decrease agility. Running estimates and COA analysis provide the information that assists commanders in determining the best task organization to—

- Facilitate the commander's intent and CONOPS.
- Weight the decisive operation or main effort.
- Create effective combined arms teams.
- Retain flexibility to meet unforeseen events and support future operations.
- Allocate resources with minimum restrictions on their employment.

COLLABORATIVE AND PARALLEL PLANNING

4-23. Both collaborative planning and parallel planning help optimize available planning time. *Collaborative planning* is two or more echelons planning together in real time, sharing information, perceptions, and ideas to develop their respective plans simultaneously (ADP 5-0). This type of planning speeds planning efforts as organizations share their understanding of the situation, participate in COA development and decision making together, and develop their respective plans or orders instead of waiting for a higher echelon to complete the plan before beginning planning.

4-24. *Parallel planning* is two or more echelons planning for the same operations nearly simultaneously facilitated by the use of warning orders by the higher headquarters (ADP 5-0). In this type of planning, several echelons develop their plans in parallel, which significantly shortens planning time across the force. The higher headquarters shares information concerning future operations with subordinate units through warning orders (WARNORDs) and other means. (See figure 4-1.)

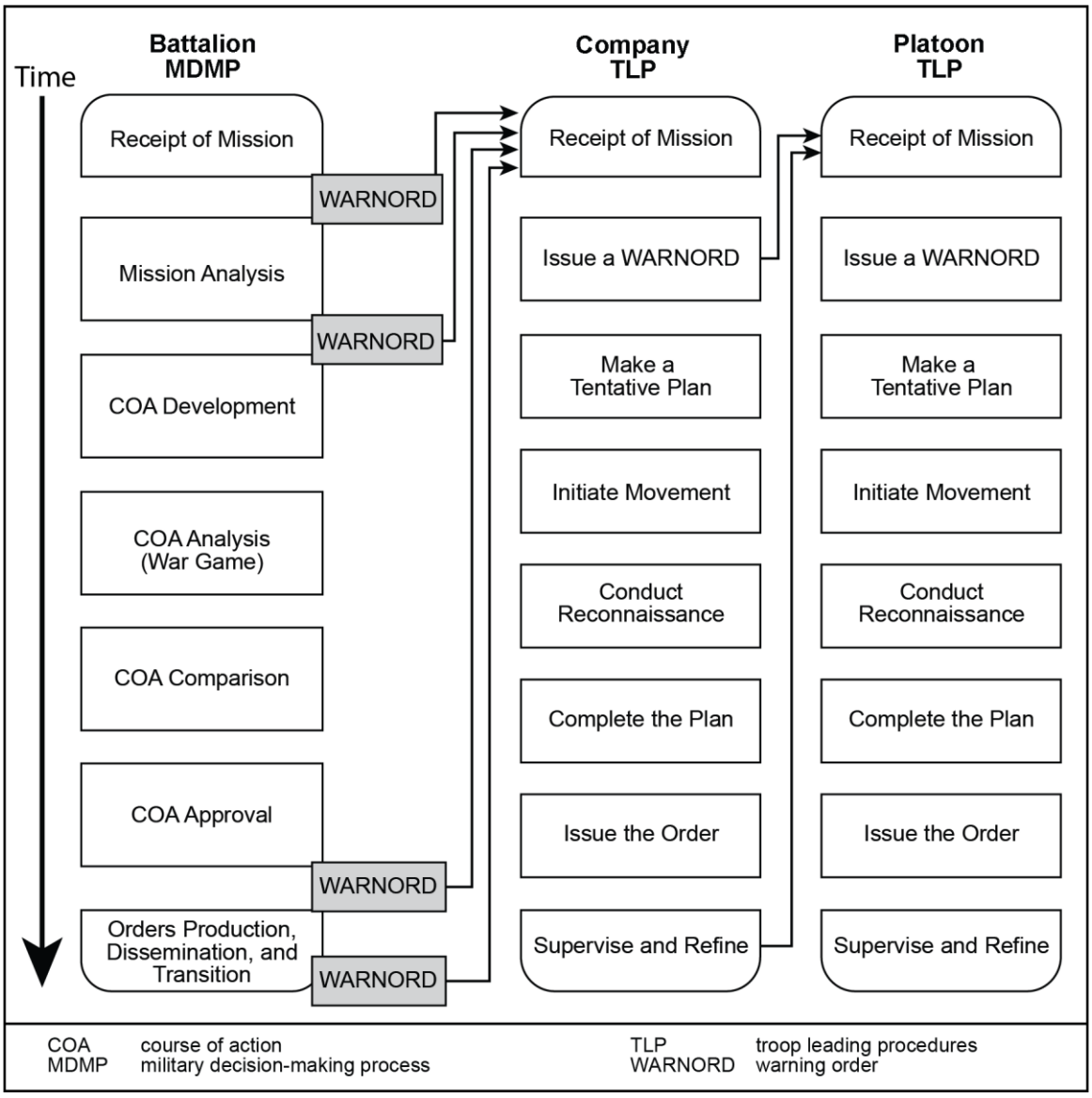


Figure 4-1. Parallel planning from higher to lower echelons

4-25. Frequent communications between commanders and staffs and sharing of information (such as IPB products) help subordinate headquarters plan. Parallel planning is used when time is of the essence and the likelihood of execution of the plan is high. (See table 4-1.)

Table 4-1. Parallel planning checklist

MDMP step	*Input*	*Planner actions*	*Output*	*TLP*
Receipt of mission	Brigade WARNORD	• Understand the mission and the commander's intent. • Conduct a terrain analysis and IPB. • Establish communications with key players for support. • Make a tentative plan according to the 1/3 and 2/3 rule.	WARNORD #1 with initial timeline	• Receive the mission. • Issue WARNORD #1.
Mission analysis	Brigade OPORD: • Staff estimates • Facts and assumptions	• Analyze the OPORD in terms of intent, mission, AO, constraints, intelligence, and requirements. • Prepare mission analysis briefing: ▪ Requirements: casualty estimate. ▪ Capabilities: on-hand and projected. ▪ Shortfalls: to brigade support medical company. • Understand essential, specified, and implied tasks and clarify RFIs.	• WARNORD #2 • Mission analysis products • Commander's guidance	• Make a tentative plan. • Issue WARNORD #2.
COA development	• Restated mission • Commander's guidance and intent • Enemy COAs	• Visualize and sketch a COA based on mission analysis. • Refine casualty estimates based on COA development. • Prepare the CHS matrix and overlay.	• COA statement • COA sketches	• Initiate movement. • Conduct reconnaissance and coordination.
COA analysis (War game)	• Updated enemy COA • Event templates • Symbols and map of AO • Final casualty estimates and COAs • Current/Projected combat	• Brief casualty estimate by phone. • Brief the CHS plan to treat and evacuate casualties. • Ensure casualty evacuation is emphasized and the S-2 generates casualty-producing scenarios. • Finalize the CHS matrix and graphics based on the outcome.	• Decision points • Completed and integrated CHS plan • Completed CHS matrix and graphics	Complete the plan.
Orders production	• Synchronization matrix • Risk controls	• Brief the CHS plan: brief routes, casualty collection points, medical treatment facilities, ambulance exchange points, helicopter landing zones, and contingencies. • Do not indicate a grid without pointing to it on map.	• OPORD • CHS matrix • CHS overlay	• Issue OPORD. • Conduct precombat inspections. • Rehearse, supervise, and refine operations.

AO	area of operations	OPORD	operation order
CHS	combat health support	RFI	request for information
COA	course of action	TLP	troop leading procedures
IPB	intelligence preparation of the battlefield	WARNORD	warning order
MDMP	military decision-making process	S-2	battalion or brigade intelligence staff officer

TROOP LEADING PROCEDURES

4-26. The primary strength of MI company is the flexibility to support multiple and diverse missions. MI company leaders should work with the maneuver unit throughout the entire TLP process.

4-27. The MI company's plan should be integral to and executable by the maneuver unit. The sequence of the TLP process steps is not rigid. MI company leaders modify the sequence to meet the mission, situation, and available time. Some steps are executed concurrently while others occur continuously throughout the operation. The TLP process comprises eight steps:

- Receive the mission.
- Issue a WARNORD.
- Make a tentative plan.
- Initiate movement.
- Conduct reconnaissance.
- Complete the plan.
- Issue the order.
- Supervise and refine.

The TLP Process

The TLP process, which assists in planning and preparing the MI company mission—

- Is supported by RM.
- Is dynamic and used by small-unit leaders to analyze a mission, develop a plan, and prepare for an operation.
- Enables leaders to maximize available planning time while developing effective plans and preparing their units for an operation.

Receive the Mission

4-28. The MI company commander—

- Receives the mission from the supported unit's operations staff (with G-2/S-2 coordination). A mission is disseminated as a WARNORD, OPORD, FRAGORD, or verbal order (due to time constraints).
- Confirms the mission with the G-3/S-3 by conducting a back brief immediately after receiving the mission of the intent and end state; all specified, implied, and essential tasks; the CONOPS; and the timeline or critical events list.
- Analyzes the company's current capability to accomplish the assigned mission.
- Assesses any possible issues (personnel, equipment, or maintenance) that could limit mission support.
- Raises any issues to the supported unit that could hinder mission accomplishment.

Issue a Warning Order

4-29. The MI company commander issues—

- A WARNORD to the platoons as soon as possible (usually within an hour of receiving the mission) to ensure subordinate leaders have key information to maximize their preparation time.
- Multiple WARNORDs as additional information or changes from the G-3/S-3 are received. The initial WARNORD should include a manifest and timeline:
  - The manifest provides the detailed task organization for the mission: formation, personnel, and equipment.
  - The timeline is a schedule of all preparatory tasks from receipt of mission to start point.

Make a Tentative Plan

4-30. The MI company commander works with the first sergeant, who ensures team members have all available information in order to complete the mission. A simplified approach to tactical planning makes use of the basic considerations of the mission variables (METT-TC). The plan is an overall concept of the mission and execution in order to set conditions to begin necessary movement.

4-31. The first sergeant ensures individual Soldiers are prepared to execute any tasks assigned by the team leader, who also ensures all equipment and vehicles are prepared for the mission, inventoried, and operational.

Initiate Movement

4-32. The MI company commander may need to initiate movement that team members are still planning or conducting reconnaissance. This step could occur at any time during the TLP process.

Conduct Reconnaissance

4-33. The MI company commander, at a minimum, conducts a map reconnaissance and coordinates with the maneuver element to review products (such as ground reconnaissance; geospatial information or imagery, including aerial photography; scout photographs; and sketches) and to verify terrain analysis, plans, and the usability of routes. This step could occur any time during the TLP process.

Complete the Plan

4-34. The MI company commander completes the plan based on reconnaissance and any changes in the situation. The MI company commander confirms the mission, as received from the G-3/S-3, to ensure it meets mission requirements and remains within the framework of the commander's intent. The MI company commander also coordinates with the maneuver platoon leader or commander to confirm actions on the objective.

Issue the Order

4-35. The MI company commander provides final directions to the team regarding the mission. Subordinate leaders should conduct a back brief or confirmation brief to the MI commander at the conclusion of the order to ensure specific tasks and purposes are understood. Designated personnel attend the mission brief, usually led by the maneuver element's mission leader.

Supervise and Refine

4-36. The MI company commander ensures all designated team members attend all rehearsals, PCCs, PCIs, and critical events to be conducted during the planning process. The first sergeant ensures the team adheres to the MI company commander's guidance and that all equipment, personnel, and vehicles are prepared for the mission.

FIVE-PARAGRAPH OPERATION ORDER FORMAT

4-37. An order is a communication (verbal, written, or signaled) that conveys instructions from a superior to a subordinate. Commanders issue orders verbally or in writing. The five-paragraph format (situation, mission, execution, sustainment, and command and signal) remains the standard for issuing orders. The technique used to issue orders (verbal or written) is at the discretion of the commander; each technique depends on time and the situation:

- The **situation paragraph** is mostly derived from the IPB process during the mission analysis step of MDMP. The situation paragraph defines the unit's task organization for the operation. It includes defining the AO and the AOI, which occurs during step 1 of the IPB, and sets the boundaries in which the unit may operate freely. Step 2 of IPB describes terrain and weather effects on the operation. Steps 3 and 4 of IPB describe threat characteristics (such as capabilities, composition, disposition); the S-2 prescribes the most likely/most dangerous COA. The higher-echelon leader (one to two levels higher) ensures the mission in the OPORD is nested with the higher-echelon mission and commander's intent.
- The **mission paragraph** is one sentence that assigns the unit the overall mission. This paragraph should answer the *who*, *what*, *where*, *why*, and *when* questions; each question should be answered as clearly as possible and have tactical tasks associated with it.

- The **execution paragraph** is the most important paragraph of the OPORD. This paragraph conveys exactly *how* the mission will be accomplished and associated steps. It is also includes where subordinate units are tasked with their missions and any coordinating tasks. The CONOPS includes the steps to accomplish the mission. The scheme of maneuver is how the unit will execute the mission to meet the overall steps. Coordinating instructions include the timeline and the CCIRs, PIRs, and friendly force information requirements for the operation.
- The **sustainment paragraph** explains how the unit will sustain the operation. It includes all classes of supply, medical operations, and support and enemy prisoner of war (EPW) procedures. This paragraph assists company-level executive officers in understanding how the company will be resupplied during the operation.
- The **command and signal paragraph** includes the location of the commander and the succession of the command, as well as the PACE plan and frequencies, which ensure the company can verify having the correct PACE plan and frequencies in case of emergencies.

4-38. Figure 4-2 shows an outline for an effective company-level OPORD, beginning with task organization.

Task Organization (Ensure subordinate leaders understand the organization of forces available and command/support relationships with other units)

Situation (Rely on Annex B [Intelligence]; make copies/overlays of staff products)

- Area of Interest (Areas outside the area of operations that can affect the operation)
- Area of Operations
  - Terrain (Use the military aspects of terrain [**O**bservation and Fields of Fire, **A**venues of Approach, **K**ey Terrain, **O**bstacles, and **C**over and Concealment (also called OAKOC)])
  - Weather (Use the military aspects of weather [Visibility, Wind, Precipitation, Cloud Cover, Temperature, Humidity, Atmospheric Pressure])
- Enemy Forces
  - Composition, Disposition, Strength, Capabilities
  - Recent Activity
  - Most Likely and Most Dangerous Courses of Action
- Friendly Forces
  - Higher Headquarters Mission and Intent
    - Two Levels Up
    - One Level Up
  - Adjacent Units
    - Mission
    - Location on a Map
- Attachments and Detachments
- Interagency, Intergovernmental, Nongovernmental Organizations
- Civil Considerations (Analyze in terms of these civil considerations characteristics [**A**reas, **S**tructures, **C**apabilities, **O**rganizations, **P**eople, and **E**vents (also called ASCOPE)])

Mission (*Who*, *What* [Task], *When*, *Where*, *Why* [Purpose] from higher headquarter maneuver paragraph)

Execution

- Commander's Intent
  - Purpose of Operation
  - Key Tasks
  - End State
- Concept of Operations
  - How the Unit Will Accomplish the Mission from Start to Finish
  - States the Different Phases of the Operation

Figure 4-2. Example company-level operation order outline

- Scheme of Movement and Maneuver
  - Briefed by Phase
    - Employment of Each Subordinate Unit
    - Subordinate Units' Tasks and Purposes
    - Key Events by Phase
    - Movement Routes/Alternate Movement Routes
    - Graphic Control Measures During This Phase
    - Sequencing of Events
    - Engagement and Disengagement Criteria
    - Actions on Contact
    - Targets and Indirect Fire Targets
    - Casualty Collection Points
  - Key Leaders (Key leaders can assist with this brief [Senior NCO briefs casualty evacuation, Senior Lieutenant identifies indirect fire targets, and Senior Leaders brief their movement by phase])
- Tasks to Subordinate Units
  - Clearly Stated Task and Purpose for Each Subordinate Unit
  - Detailed Instructions for Key Individuals (Platoon Sergeant, Radio-Telephone Operator)
  - Tactical Tasks That Affect Two or More Units in Coordinating Instructions
- Coordinating Instructions (Only instructions that apply to two or more subordinate units)
  - Timeline
  - CCIR
    - PIR (Information about the operational environment and enemy)
    - FFIR (Information about friendly forces)
    - EEFI (Information, if known by the enemy, leads to failure or limited operational success)
  - Risk Reduction Control Measures
    - Supplement Unit SOPs
    - Postures Specific to a Mission
  - Rules of Engagement
  - Force Protection
  - Environmental Considerations

Sustainment

- Logistics
  - Sustainment Overlay (Includes location of company trains, helicopter landing zones, casualty collection points, ambulance exchange points, and higher, and adjacent friendly sustainment locations)
  - Maintenance Coordinating Instructions
  - Transportation
    - Method of Transportation for Insertion and Extraction
    - Brief of Lifts and Serials
    - Bump Plan
    - Recovery Assets and Recovery Plan
  - Supply (Brief status and coordinating instructions for each class of supply)
- Personnel Services Support (Method of marking and handling enemy prisoners of war)
- Health System Support
  - Medical Command and Control (Location of medics)
  - Medical Treatment (How wounded or injured Soldiers will be treated)
  - Medical Evacuation (How personnel will be evacuated, including friendly, enemy, dead personnel)
  - Preventive Medicine (Any specific to the mission [sun block, insect repellent, country/area of operations-specific])

Figure 4-2. Example company-level operation order outline (*continued*)

Command and Signal

- Command
  - Location of Commander and Key Leaders
  - Succession of Command
  - Liaison Requirements
- Control
  - Location of Command Posts
  - Reporting Requirements Not Covered in SOPs and PACE by Report
- Signal
  - Concept of Signal Support and Location of Key Signal Nodes/Equipment
  - Signal of interest Index in Effect
  - General Mission PACE Plan
  - Code Words, Challenge/Password/Number Combinations/Running Password
  - Recognition Signals
  - Communications Security Changeover Procedures

CCIR	commander's critical information requirement	PACE	primary, alternate, contingency, emergency
EEFI	essential element of friendly information	PIR	priority intelligence requirement
FFIR	friendly force information requirement	SOP	standard operating procedure
NCO	noncommissioned officer		

Figure 4-2. Example company-level operation order outline (*continued*)

This page intentionally left blank.

Appendix A
Doctrine Crosswalk

SECTION I – THE ROLE OF DOCTRINE

A-1. Doctrine serves as a starting point for thinking about and conducting operations. When leaders and Soldiers allow it to fulfill its role, doctrine makes six basic contributions to the conduct of operations, mission effectiveness, and the development of military professionals. Each is necessary and equally important. Doctrine's contributions are—

- **Provide a coherent vision of warfare.** Doctrine accounts for the Army's understanding of and reflects its vision of warfare. This understanding and vision enable leaders to cope with the stress and uncertainty caused by the fog and friction of warfare operations. Doctrine provides leaders and Soldiers with sound practices to account for that friction and assists them in making decisions.
- **Enhance operational effectiveness.** Doctrine recognizes that Army forces capture best practices and lessons learned validated from past and current operations and training. Therefore, doctrine incorporates best practices and validated lessons learned into doctrinal TTP. Best practices and lessons learned are disseminated along with enduring principles and TTP identified from historical analysis. Although doctrine cannot account for every circumstance, it is always a good place to start. Creatively applying different combinations of these doctrinal tools—adapted to the specific circumstances—is the true art of tactics and the foundation of operational success.
- **Provide a common frame of reference and cultural perspective.** By providing a common and standardized set of principles, TTP, and terms and symbols for the Army, doctrine enables flexibility, supports rapid action and reaction to emerging opportunities and threats, and facilitates swift adaptation during changing circumstances.
- **Provide a common professional language.** Doctrine allows units to disseminate a lot of information quickly and succinctly. If each Soldier understands the specified tasks associated with a zone reconnaissance, then a commander can assign those tasks without specifying all they entail. This common language should result in clearer, shorter orders; greater precision in operations; and greater flexibility and speed of operations.
- **Discuss Army contributions to unified action.** Doctrine provides a systematic body of thought describing how Army forces intend to operate as part of a joint, multinational, or interagency force. This provides a common body of knowledge for education, training, and coordination with unified action partners.
- **State and foster desirable traits in leaders and Soldiers.** Effective doctrine demands initiative, creativity, adaptability, and ethical action. While doctrine should be broad yet detailed enough to cover various situations, it should also be flexible enough to deal with unforeseen and evolving situations.

A-2. Doctrine clearly distinguishes between descriptive and prescriptive information. Most doctrine is descriptive—it must be applied with judgment and not as dogma to be applied blindly. Doctrine must be adjusted to the circumstances of an OE. Techniques and procedures have a clearer distinction. Whereas techniques are nonprescriptive ways to complete tasks, procedures are prescriptive ways to complete tasks. Explicitly, techniques allow for deviation and adjustment based on the circumstance; procedures must be followed without deviation.

A-3. Sometimes Army forces must apply some aspects of doctrine prescriptively—performed without deviation. Prescriptive doctrine derives from the need to—

- Adhere to the Army Ethic, law of war, national law, the Uniform Code of Military Justice, and often Army regulations.
- Precisely use terms, symbols, and the language of the profession to ensure a common understanding.
- Adhere to control measures to ensure coordination, ensure synchronization, and prevent fratricide.
- Use report, message, and order formats to ensure information is reported rapidly, accurately, and in a commonly understood manner.

THE STRUCTURE OF DOCTRINE

A-4. To understand doctrine, it is necessary to understand the structure of doctrine. Three taxonomies comprise the body of knowledge called doctrine: elements of information, types of doctrine, and types of Army doctrine and their hierarchy.

ELEMENTS OF INFORMATION

A-5. Army doctrine includes five basic elements:

- **Principles.** A *principle* is a comprehensive and fundamental rule or an assumption of central importance that guides how an organization approaches and thinks about the conduct of operations (ADP 1-01).
- **Tactics.** A *tactic* is the employment and ordered arrangement of forces in relation to each other (CJCSM 5120.01A). For the Army, *tactics* include the ordered arrangement and maneuver of units in relation to each other, the terrain, and the enemy in order to translate potential combat power into decisive results. Tactics vary with terrain and other circumstances; they change frequently as the enemy reacts and friendly forces explore new approaches. Applying tactics usually entails acting under time constraints with incomplete information. Tactics always require judgment in application and often require creative thinking; they are always descriptive, not prescriptive. Employing a tactic may require using and integrating several techniques and procedures.
- **Techniques.** *Techniques* are non-prescriptive ways or methods used to perform missions, functions, or tasks (CJCSM 5120.01A). Techniques are more specific than tactics and less structured than procedures. Techniques are similar to tactics in that they are descriptive. They are similar to procedures in that they are often described in terms of steps. As with tactics, techniques require judgment in application. Leaders and Soldiers choose specific techniques based on the situation and the precise mission or task.
- **Procedures.** *Procedures* are standard, detailed steps that prescribe how to perform specific tasks (CJCSM 5120.01A). Procedures also include formats for orders, reports, and control measures. Procedures are prescriptive. They consist of a series of steps in a set order that Soldiers complete the same way, at all times, regardless of circumstances or a series of formats that Soldiers must use without variation.
- **Terms and symbols.** Terms and symbols are the language and graphics used on operations. *Terms* are words defined in doctrinal publications specifically for Army use and codified in FM 1-02.1, *Operational Terms*, and the *DOD Dictionary of Military and Associated Terms*. *Symbols* are those graphics defined specifically for military use. They are codified in FM 1-02.2, *Military Symbols*, and MIL-STD 2525D, *Joint Military Symbology*. Symbols specific to large-scale ground combat operations are contained in FM 1-02.2. Terms and symbols provide a common language for communicating during the conduct of operations. Establishing and using terms and symbols with a common military meaning enhances communications among military professionals in all environments and makes a common understanding of doctrine possible. Terms and symbols are prescriptive; they must be used as defined in FM 1-02.1 and FM 1-02.2, respectively.

TYPES OF DOCTRINE

A-6. The five types of information in Army doctrine represent a set of guidelines or tools that can be combined in an almost infinite set of combinations to accomplish missions. Using the same approach or the same set of tools consistently often makes operations predictable, providing an enemy with valuable insights into methods to defeat a particular approach. The application of doctrine requires creative thinking. Doctrine is much more about knowing *how* to think about the conduct of operations than it is about *what* to think. Doctrine is a starting point for determining how to accomplish missions and how to adjust and react to changing circumstances.

A-7. Army doctrine exists within a larger set of doctrine publications. In theory, this is also a hierarchy in which higher-level doctrine should drive lower-level doctrine. In turn, lower-level doctrine should be consistent with higher-level doctrine. However, there are exceptions. Doctrine delineations are listed roughly in hierarchical order, highest to lowest. The Army recognizes four general types of doctrine:

- ***Joint doctrine*** is fundamental principles that guide the employment of U.S. military forces in coordinated action toward a common objective and may include terms, tactics, techniques, and procedures (CJCSI 5120.02D). Joint doctrine broadly covers the strategic and operational levels of war and is (only by exception) tactical in nature. U.S. joint doctrine provides the overarching joint context for multi-Service doctrine.
- ***Multinational doctrine*** is the agreed upon fundamental principles that guide the employment of forces of two or more nations in coordinated action toward a common objective (JP 3-16). The North Atlantic Treaty Organization (NATO) is the only organization that writes true multinational doctrine and largely fills the same niche as U.S. joint doctrine. When operating in a NATO context, U.S. forces follow NATO doctrine.
- ***Multi-Service doctrine*** is a publication containing principles, terms, tactics, techniques, and procedures used and approved by the forces of two or more Services to perform a common military function consistent with approved joint doctrine (CJCSM 5120.01A). Multi-Service publications are treated as Service doctrine. A multi-Service publication has a Service doctrine publication number on it for each Service that has agreed to it.
- ***Service doctrine*** are those publications approved by a single Service for use within that Service (ADP 1-01). This doctrine provides fundamental principles that guide the employment of Service forces in coordinated action toward a common objective and may include (as Army doctrine does) TTP, terms, and symbols. Each Service publishes its own doctrine publications under various nomenclatures.

A-8. Army doctrine follows joint doctrine to a large extent. Some variation exists as each domain (land, air, maritime, space, and cyberspace) has different requirements for some doctrine constructs and terms. As a rule, Army forces must use terms and control measures issued from the joint headquarters order to Army echelons exactly as stated (these terms and control measures are prescriptive). Beyond that, Army doctrine mirrors joint doctrine wherever possible to facilitate interoperability and common understanding. When joint terms and constructs are not adequate for large-scale ground combat, Army doctrine will vary, but only enough to account for the unique nature of large-scale ground combat. When it does vary, Army doctrine points out that it varies and why.

TYPES OF ARMY DOCTRINE AND THEIR HIERARCHY

A-9. Currently all Army doctrine fits into three types of publications. These publication types form a doctrine hierarchy related to the conduct of operations. (The hierarchy does not establish precedence for doctrine over other types of publications such as Army regulations and operators' manuals). Each type of publication has a different purpose:

- **Army doctrine publications** (ADPs) contain the fundamental principles. Operating forces and elements of the institutional force that directly support operations use these publications to guide their actions to support national objectives. An ADP provides the intellectual underpinnings of how the Army operates as a force.

- **Field manuals** (FMs) contain principles, tactics, procedures, and other doctrinal information. Army forces use these publications to understand how the Army and its organizations conduct and train for operations. FMs describe how the Army executes operations described in the ADPs. They fully integrate and comply with the doctrine in the ADPs.
- **Army techniques publications** (ATPs) contain techniques. Army forces use these publications for ways or methods and the flexibility to accomplish missions, complete functions, and perform specific tasks. These publications fully integrate, nest, and comply with the doctrine contained in ADPs and FMs.

A-10. The hierarchy makes it easier to determine what a professional needs to know. It allows Soldiers to trace a body of knowledge from general to specific, getting more detail about any given topic as one topic progresses from ADPs to FMs to specific topics in ATPs. The breakout of principles from TTP makes it easier to change publications incrementally. The top tiers should change less frequently while ATPs can change more rapidly as techniques evolve. The hierarchy establishes which publication Soldiers reference when a conflict exists between publications. In short, ADPs take precedence over FMs, which take precedence over ATPs. This precedence only applies if a conflict arises between or among publications in different categories.

SECTION II – DOCTRINAL PUBLICATIONS

A-11. The Army creates doctrine for the conduct of operations that accounts for the Army's vision of war. Taxonomies (the classification of things or concepts) are used to organize thoughts about the conduct of operations. They provide a conceptual framework to help Soldiers—

- Understand an OE.
- Organize and guide thinking about operations.
- Visualize how to move from the current state to the desired end state.
- Derive the tasks, missions, and other responsibilities assigned to units.
- Assess both plans and the execution of operations.

A-12. Doctrine are aids for thinking about and conducting operations at the company and platoon levels. The terms of Army doctrine should facilitate, not constrain, that thinking. All the publications listed below can be downloaded from Army Publishing Directorate's website.

FM 1-02.1, OPERATIONAL TERMS

A-13. FM 1-02.1 compiles definitions of all Army terms approved for use in Army doctrinal publications, including ADPs, FMs, and ATPs. It also includes joint terms defined in the glossaries of Army doctrinal publications as of August 2019. FM 1-02.1 also lists shortened forms (whether considered acronyms or abbreviations) approved for use in Army doctrinal publications. Additionally, FM 1-02.1 incorporates NATO terms appearing in the glossaries of Army doctrinal publications.

A-14. When communicating instructions to subordinate units, commanders and staffs from company through corps echelons should use this publication as a dictionary of operational terms. FM 1-02.1 is organized as follows:

- **Chapter 1** presents Army-only terms, joint definitions commonly used in Army publications, and NATO definitions commonly used in Army publications.
- **Chapter 2** presents acronyms, abbreviations, and country codes.

FM 1-02.2, MILITARY SYMBOLS

A-15. FM 1-02.2 compiles DOD MIL-STD 2525D-approved military symbols applicable to land operations for use in Army doctrinal publications and C2 systems. FM 1-02.2 is the proponent for all Army military symbols in use or that apply to doctrine that are not currently included in MIL-STD 2525D. MIL-STD 2525D establishes the single standard for developing and depicting hand-drawn and computer-generated military symbols for situation maps, overlays, and annotated aerial photographs for all types of military operations. When communicating instructions to subordinate units, commanders and staffs from company through corps echelons use this publication as the standard for properly constructing land operations associated military symbols. FM 1-02.2 has seven chapters:

- **Chapter 1** introduces military symbol fundamentals.
- **Chapters 2 through 4** provide icons for units, individuals, organizations, equipment, installations, and activities.
- **Chapter 5** introduces control measure symbols.
- **Chapter 6** discusses tactical mission tasks.
- **Chapter 7** discusses the COA sketch.

ATP 1-02.1, MULTI-SERVICE TTP FOR MULTI-SERVICE BREVITY CODES

A-16. ATP 1-02.1 standardizes air-to-air, air-to-surface, surface-to-air, and surface-to-surface brevity codes regardless of communications medium (voice/chat), as well as brevity codes (abbreviations) specific for use in tactical chat. The scope is limited to those brevity codes used in multi-Service operations and does not include words unique to single-Service operations.

A-17. ATP 1-02.1 establishes TTP for the use of multi-Service brevity codes. A brevity code is a code which provides no security but which has as its sole purpose the shortening of messages rather than the concealment of their content. ATP 1-02.1 has three chapters:

- **Chapter I** lists the multi-Service brevity codes.
- **Chapter II** lists multi-Service tactical chat abbreviations.
- **Chapter III** provides assigned categories of operations for multi-Service brevity codes.

ADP 3-0, OPERATIONS

A-18. ADP 3-0 discusses the foundations, tenets, and doctrine of unified land operations, which serves as a common reference for solving military problems in multiple domains and the framework for the range of military operations across the competition continuum. It is the core of Army doctrine, and it guides how Army forces contribute to unified action. ADP 3-0 contains five chapters and one appendix:

- **Chapter 1** defines military operations, in context, for the Army and describes the variables that shape the nature of an OE and affect outcomes. It explains unified action and joint operations as well as land operations and the Army's four strategic roles. Finally, it discusses the importance of training to gain skill in land warfare.
- **Chapter 2** discusses the application of operational art and details how commanders should consider defeat and stability mechanisms when developing an operational approach. It presents the elements of operational art and describes their meaning.
- **Chapter 3** addresses the Army's operational concept of unified land operations. It describes how commanders will likely apply landpower as part of unified action to defeat enemy forces on land and establish conditions that accomplish the JFC's objectives. Chapter 3 defines the principles and tenets of unified land operations.
- **Chapter 4** provides the operations structure commanders use to array forces and conduct operations. It also includes the operational framework used in the conduct of unified land operations.
- **Chapter 5** defines combat power, discusses the elements of combat power, and describes the six warfighting functions used to generate combat power. Lastly, it discusses how Army forces organize combat power through force tailoring, task organization, and mutual support.
- **Appendix A** addresses command and support relationships and describes them as the basis for unity of command and unity of effort in operations. It details how command relationships and authorities affect Army force generation, force tailoring, and task organization, and discusses how commanders use Army support relationships when task-organizing Army forces.

FM 3-0, OPERATIONS

A-19. FM 3-0 provides a doctrinal approach for Army theater armies, corps, divisions, and brigades to address the challenges of shaping OEs, preventing conflict, prevailing during large-scale ground combat, and consolidating gains through on tactical success. It discusses how the Nation deters adversaries and fights a peer

threat, with today's forces and capabilities. It addresses operations to counter threats in three broad contexts that account for what the Nation asks its Army to do. FM 3-0 contains eight chapters and two appendixes:

- **Chapter 1** describes large-scale combat operations and associated challenges Army forces face today. It addresses anticipated OEs, threats, joint operations, and the Army's strategic roles in support of joint operations. The chapter also discusses unified land operations and associated topics, including decisive action, operational art, and the operational framework.
- **Chapter 2** has four sections: Section I overviews Army echelons, capabilities, and training; section II discusses Army forces in a theater; section III describes Army capabilities by warfighting function; and section IV addresses training for large-scale ground combat.
- **Chapter 3** overviews operations to shape the OE. It discusses operations assessments, describes threat activities before armed conflict, and discusses shaping activities performed by Army forces. The chapter also describes Army organizations and their roles as they shape the OE.
- **Chapter 4** overviews operations to prevent conflict. It addresses assessing OEs in which Army forces conduct activities to prevent war during crisis action, and it provides a description of threats. The chapter continues with a discussion of the major activities within operations to prevent, including planning considerations. The chapter concludes with a description of the roles of the theater army, corps, divisions, and brigades.
- **Chapter 5** has four sections: Section I overviews large-scale combat operations, section II addresses tactical enabling tasks that apply to both the defense and the offense, section III discusses forcible entry operations from which Army forces may defend or continue the offense, and section IV discusses the transition to consolidation of gains.
- **Chapter 6** discusses the defense and how an enemy may attack. It continues with how corps and divisions plan and prepare for the defenses and then addresses defensive operations tasks.
- **Chapter 7** discusses the offense and how an enemy may defend. It continues with how corps and divisions plan for the offense. This chapter discusses forms of maneuver, offensive operations tasks, and subordinate forms of attack.
- **Chapter 8** expands on operations to consolidate gains discussed in previous chapters. It describes how Army forces transition from large-scale ground combat operations to operations that translate tactical and operational success into lasting gains. It describes threats to the consolidation of gains, the operational framework, and the consolidation area. It also describes consolidation activities and the roles of the theater army, corps, division, and BCTs in consolidating gains.
- **Appendix A** provides doctrine on command and support relationships that form the basis for unity of command and unity of effort.
- **Appendix B** provides commanders with a listing of risk considerations for the planning and execution of large-scale ground combat.

ADP 2-0, INTELLIGENCE

A-20. ADP 2-0 was deliberately revised to nest with FM 3-0 and help focus the Army on the new challenges associated with joint large-scale combat operations and Army large-scale ground combat operations. Despite the change in focus, the intelligence fundamental concepts remain but with some modifications. This version of ADP 2-0 also incorporates terminology changes driven by updates to ADP 3-0, ADP 5-0, and ADP 6-0.

A-21. This summary highlights the most important aspects of each chapter and the most significant changes from the last version. Additionally, each bullet includes the page number (in parenthesis) where that topic is discussed in this publication. ADP 2-0 contains five chapters:

- **Chapter 1** discusses how intelligence nests with the most fundamental operational doctrinal concepts. To understand Army intelligence, it is important to understand intelligence within the larger context of FM 3-0. From national and DOD levels down to the Army battalion level, intelligence is an activity that is never at rest. Army forces are globally engaged, always executing operations and preparing for future operations as part of a joint team. This chapter—
  - Overviews—
    - *Large-scale combat operations*. (1-1)
    - *Unified action* and *joint operations*. (1-5)

  - The *Army's strategic roles*. (1-6)
  - *Unified land operations*. (1-7)
  - *Decisive action* with subordinate discussions on the offense, defense, stability, and DSCA. (1-7)
- Updates discussion of the *OE*. (1-2)
- Updates the discussion of the *threat*. (1-4)
- Discusses intelligence support within *multi-domain operations*. (1-10)

- **Chapter 2** discusses the most fundamental intelligence doctrinal concepts. Intelligence support is critical to operations and occurs at each echelon, from theater army down to the battalion level. To drive intelligence, the commander and staff must understand the intelligence warfighting function, the intelligence core competencies, national to tactical intelligence, setting the theater, and establishing the intelligence architecture. This chapter—
  - Discusses the *purpose of intelligence*. (2-1)
  - Updates the discussion of the *intelligence warfighting function*. (2-2)
  - Updates the description of the *intelligence core competencies* and introduces *intelligence PED* as a fourth intelligence core competency. (2-5)
  - Introduces PED as a term and updates the PED discussion to include intelligence PED. (2-6)
  - Introduces *national to tactical intelligence*, which replaces the discussion of intelligence enterprise. (2-7)
  - Introduces and discusses *regionally aligned forces* and *setting the theater* for intelligence in Army forces. (2-8)
  - Introduces and discusses *establishing the intelligence architecture* as a capability. (2-9)
- **Chapter 3** discusses the most important intelligence doctrinal construct—the intelligence process. The intelligence process is a model that describes how the intelligence warfighting function facilitates situational understanding and supports decision making. This process provides a common framework for Army professionals to guide their thoughts, discussions, plans, and assessments. This chapter—
  - Discusses how the *operations process* and *intelligence process* nest. (3-1)
  - Discusses the *plan and direct* step. (3-3)
  - Modifies the *collect* step to the *collect and process* step, and includes a new figure depicting the revision of the intelligence process. (3-5)
  - Discusses the *produce* step. (3-6)
  - Discusses the *disseminate* step. (3-6)
  - Discusses the *analyze* continuing activity. (3-8)
  - Discusses the *assess* continuing activity. (3-8)
- **Chapter 4** discusses the key capabilities by which the intelligence warfighting function facilitates situational understanding and supports decision making. The intelligence warfighting function executes the intelligence process by employing intelligence capabilities. These key capabilities (building blocks) are all-source intelligence and single-source intelligence. Single-source intelligence comprises the intelligence disciplines, complementary intelligence capabilities, and PED capabilities. This chapter—
  - Updates the discussion of *all-source intelligence* and introduces identity activities as an all-source effort. (4-1)
  - Updates the discussion of the *intelligence disciplines*. (4-3)
  - Updates the discussion of the *complementary intelligence capabilities*. (4-10)
  - Replaces the discussion of *PED* with new material found in chapter 2. (2-6)
  - Discusses *intelligence PED capabilities* that support information collection. (4-13)
- **Chapter 5** culminates this publication with an important discussion of fighting for intelligence. Intelligence is never perfect, information collection is never easy, and a single collection capability is never persistent and accurate enough to provide all of the answers. The fluid and chaotic nature

of large-scale ground combat operations will cause the greatest degree of fog, friction, and stress on the intelligence warfighting function. Units must be prepared to fight for intelligence against enemy formations, a range of sophisticated threat capabilities, and many unknown conditions within the OE. This chapter—

- Discusses *fighting for intelligence* during large-scale ground combat operations, with emphasis on the intelligence challenge. (5-1)
- Updates the description of the *commander's role in intelligence*, including *intelligence* and the *integrating processes*. (5-2)
- Discusses *planning considerations* and *information requirements* to support the defense and offense, reconnaissance, security operations, and deep operations. (5-5)
- Discusses unique aspects of developing a *flexible information collection plan* and *establishing an effective intelligence architecture*. (5-8)
- Updates the discussion on the *continuous nature of information collection*. (5-9)

FM 2-0, INTELLIGENCE

A-22. FM 2-0 provides doctrine for how Army forces, as a part of a joint team and in conjunction with unified action partners, develop intelligence to support operations. It describes intelligence and intelligence operations using current Army capabilities and formations in today's OE, as well as the tactics all echelons use to conduct intelligence operations. FM 2-0 contains six chapters and three appendixes:

- **Chapter 1** presents the fundamentals of Army intelligence doctrinal constructs and describes the roles of the commander and staff in intelligence.
- **Chapter 2** provides the G-2/S-2 responsibilities that support the conduct of operations across all echelons and describes how the intelligence staff supports the commander.
- **Chapter 3** addresses intelligence operations, emphasizing the C2 of MI units. Intelligence operations conducted by MI units follow the Army's framework for exercising C2—the operations process, which describes the activities performed by any military unit to accomplish a mission. The same activities describe what MI unit do to accomplish assigned tasks to support the commander. Chapter 3 also provides intelligence operations guidelines and task-organizing considerations.
- **Chapter 4** discusses intelligence staffs and units from theater army to battalion levels, as well as their intelligence collection and all-source intelligence capabilities.
- **Chapter 5** discusses intelligence within the Army's strategic roles.
- **Chapter 6** discusses fighting for intelligence during large-scale ground combat operations. The chapter emphasizes the intelligence challenge, intelligence analysis support, different information requirements, how to overcome some of the challenges of information collection, and the continuous nature of information collection.
- **Appendix A** discusses employing national- to battalion-level intelligence collection capabilities.
- **Appendix B** lists the Army tactical tasks associated with the intelligence warfighting function. Task descriptions have been revised to incorporate doctrine on information collection and other changes made by ADRP 1-03.
- **Appendix C** addresses considerations that G-2/S-2s must address when operating as part of a JTF or multinational force.
- **Appendix D** describes force projection operations and the required intelligence support to address specific mobilization, deployment, employment, sustaining intelligence capabilities, and redeployment nuances.
- **Appendix E** discusses intelligence provisions and authorities.
- **Appendix F** discusses considerations for language support.

ATP 2-01, COLLECTION MANAGEMENT

A-23. ATP 2-01 establishes doctrine for the specific functions under collection management. It expands on the principles in FM 3-55. ATP 2-01 should be used in conjunction with FM 3-55 and FM 2-0. It provides details on the four continuing tasks of collection management. It includes techniques for developing

collection management tools and updating them throughout an operation. It addresses factors to consider when supporting offensive, defensive, and stability operations and discusses considerations when operating in urban and nontemperate environments. ATP 2-01 has eight chapters and two appendixes:

- **Chapter 1** discusses information collection and its tasks—collection management, task and direct collection, and execute collection—across the echelons and the vital role of the commander and staff. It also addresses the linkage between collection management, the MDMP, IPB, and targeting.
- **Chapter 2** describes how the commander provides the staff with inputs necessary to perform collection management and how the staff develops respective running estimates, RFIs, and requirements. It also outlines collection management tasks.
- **Chapter 3** discusses requirements development—the identification, prioritization, and refining of gaps in data and relevant information—and knowledge concerning the OE that must be resolved for the commander to achieve situational understanding.
- **Chapter 4** describes the development of collection management tools by the intelligence staff in order to begin the process of synchronizing the information collection plan with the scheme of maneuver. The tools are updated as the scheme of maneuver changes.
- **Chapter 5** discusses assessing the information collection plan, providing feedback to information collection assets, and retasking of assets.
- **Chapter 6** discusses the updating collection management tools and updating or revising the information collection plan to remain synchronized with operations.
- **Chapter 7** discusses considerations for collection management when conducting offensive, defensive, and stability operations.
- **Chapter 8** discusses considerations for collection management for urban, mountain and cold weather, jungle, and desert environments.
- **Appendix A** discusses joint, national, and multinational ISR planning considerations.
- **Appendix B** provides TTP for requesting aerial collection.

ATP 2-01.3, INTELLIGENCE PREPARATION OF THE BATTLEFIELD

A-24. ATP 2-01.3 constitutes current doctrine on how to systematically evaluate the effects of significant characteristics of the OE for specific missions. It describes how the commander and staff examine mission variables (METT-TC) to understand how they may affect operations. ATP 2-01.3 discusses IPB as a critical component of the MDMP, how IPB supports decision making, and how IPB is integral to the other integrating processes. ATP 2-01.3 contains eight chapters and four appendixes:

- **Chapter 1** provides the fundamentals of IPB and introduces topics such as the operational framework, peer threats, multi-domain operations, and identifying windows of opportunity.
- **Chapter 2** discusses IPB support to decision making and the relationship between IPB and the MDMP.
- **Chapter 3** discusses step 1 of the IPB process—analyzing the significant characteristics of or activities within the OE that may influence friendly and threat COAs and command decisions, as well as the physical space the mission will occupy.
- **Chapter 4** discusses step 2 of the IPB process—discussing how the significant characteristics of the OE can affect friendly and threat operations.
- **Chapter 5** discusses step 3 of the IPB process—discussing threat force capabilities and the doctrinal principles and TTP threat forces prefer to employ.
- **Chapter 6** discusses step 4 of the IPB process—identifying and describing how threat COAs can influence friendly operations.
- **Chapter 7** discusses IPB support to offensive, defensive, and stability operations and the unique characteristics of littoral, urban, and subterranean environments.
- **Chapter 8** discusses unique aspects of each domain, the information environment, and the EMS.
- **Appendix A** provides a checklist for the S-2 on the *how to* of IPB.
- **Appendix B** provides analysts with tools for performing IPB.

- **Appendix C** describes threat characteristics for regular, irregular, and hybrid threats.
- **Appendix D** discusses the cyberspace domain and how to integrate cyberspace considerations into the IPB process.

ATP 2-19.3, CORPS AND DIVISION INTELLIGENCE TECHNIQUES

A-25. ATP 2-19.3 provides nonprescriptive intelligence techniques for supporting corps and divisions conducting offensive, defensive, and stability operations. It describes the roles and functions of the corps and division G-2s and cells, describes how to execute corps and division intelligence-related tasks within a unit's battle rhythm, and illustrates how the intelligence warfighting function supports decisive action. ATP 2-19.3 contains nine chapters and six appendixes:

- **Chapter 1** overviews the role of intelligence in corps and division operations.
- **Chapter 2** describes the role, organization, and responsibilities of corps and division intelligence cells, and the responsibilities of those intelligence personnel assigned to other cells and CPs.
- **Chapter 3** discusses how, during planning, the G-2 supports the commander's decision making during generate intelligence knowledge and the IPB process. It also discusses the Army's planning methodologies—the Army design methodology and the MDMP.
- **Chapter 4** discusses ways the intelligence cell prepares to receive and distribute information to support the commander's decision making.
- **Chapter 5** discusses CP functions, battle rhythm, and the rapid decision-making and synchronization process.
- **Chapter 6** discusses activities of decisive action vignettes.
- **Chapter 7** discusses a division-level intelligence cell's participation in planning, preparing, executing, and assessing defensive operations.
- **Chapter 8** describes a division-level intelligence cell's actions to support offensive operations.
- **Chapter 9** describes a division-level intelligence cell's actions to support planning for stability operations.
- **Appendix A** describes corps and division support to the Army's expeditionary capability.
- **Appendix B** discusses the intelligence efforts of the U.S. intelligence community.
- **Appendix C** discusses how corps and division G-2s establish and maintain intelligence architectures.
- **Appendix D** discusses the role, organization, and capabilities of the E-MIB as part of corps and division intelligence operations.
- **Appendix E** discusses G-2 considerations when the theater, corps, or division headquarters act as a joint or multinational force headquarters.
- **Appendix F** discusses how corps and division intelligence cells support targeting, to include developing high-value targets and intelligence target packages and participating in targeting working groups.

ATP 2-19.4, BCT INTELLIGENCE TECHNIQUES

A-26. ATP 2-19.4 provides techniques for intelligence support to BCT operations. The techniques apply to the range of military operations and all echelons of the infantry, armored, and Stryker BCTs. ATP 2-19.4 describes the roles and function of the BCT S-2 and cell, describes how to execute BCT intelligence-related tasks within a unit's battle rhythm, and illustrates how the intelligence warfighting function supports decisive action. ATP 2-19.4 has six chapters and six appendixes:

- **Chapter 1** overviews the BCT; the Army's operational concept of unified land operations, including the OE and threats; the purpose of intelligence for the BCT; the Army's intelligence process; and support to the operations process.
- **Chapter 2** describes the intelligence structures organic to the BCT and subordinate battalions. It also addresses the BISE and subordinate battalion staff and MI company capabilities.
- **Chapter 3** discusses intelligence techniques that support collaborative and parallel planning, the MDMP, and information collection.

- **Chapter 4** discusses activities performed by the BCT intelligence cell and MI company to prepare for operations, as well as methods for establishing the BCT intelligence architecture.
- **Chapter 5** discusses techniques that support the BCT's conduct of offensive, defensive, and stability operations.
- **Chapter 6** applies the techniques in this manual to a decisive training scenario.
- **Appendix A** describes techniques for predeployment preparation and training of intelligence Soldiers.
- **Appendix B** describes techniques to assist the BCT intelligence cell in analyzing operational and mission variables (METT-TC).
- **Appendix C** discusses considerations for BCT information collection planning.
- **Appendix D** describes intelligence support to the BCT and battalion targeting process.
- **Appendix E** provides examples of activities in an AO and describes possible indicators of the activities.
- **Appendix F** discusses the intelligence architecture and communications networks.

ATP 2-22.2-1, COUNTERINTELLIGENCE VOLUME I: INVESTIGATIONS, ANALYSIS AND PRODUCTION, AND TECHNICAL SERVICES AND SUPPORT ACTIVITIES

A-27. ATP 2-22.2-1, Volume I, is the Army's doctrinal publication for CI investigations, analysis and production, and technical services and support activities. It provides techniques for, and examples of, using Army CI assets at all echelons and in all OEs.

A-28. ATP 2-22.2-1 outlines the CI mission areas and CI specific functions. It discusses the roles and responsibilities of Army, joint, and national CI elements and the U.S. intelligence community. The ATP outlines specific techniques and procedures for conducting CI investigations, analysis, technical services, and support activities to support Army operations and programs. It discusses the considerations for CI support in specific operations, missions, and environments. ATP 2-22.2-1 has nine chapters and six appendixes:

- **Chapter 1** addresses the four CI mission areas defined in Army policy and the key issues facing Army CI in terms of its overall mission.
- **Chapter 2** discusses the Army CI structure, organization, and employment within tactical, operational, and strategic echelons. It also identifies the Army, joint, and national CI community and the U.S. intelligence community.
- **Chapter 3** discusses the Army CI function of investigations, the authority to conduct CI investigations, how to identify CI investigative leads, and how to identify the basics to CI investigation procedures. It also addresses CI authorities and jurisdiction and overviews the CI investigative process. It discusses the CI incident report, which replaces the initial subversion and espionage directed against U.S. Army message (also called ISM), and the Threat Awareness and Reporting Program, which replaces the subversion and espionage directed against U.S. Army program (also called SAEDA).
- **Chapter 4** discusses the Army CI function of CI analysis and production, analytic tools, and analytic products as well as the types of CI analysis (operations, threat, CI targeting, and support to the targeting process).
- **Chapter 5** discusses Army CI technical services, including technical surveillance countermeasures, polygraph activities, and credibility assessment screening. It also discusses other Army CI support activities and support to Army programs.
- **Chapter 6** focuses on jurisdiction, criminal law, types of evidence, rights advisement, methodology, investigative authority, constitutional protection, apprehension and detention authority, oath administration, and crimes and incidents within CI investigative jurisdiction. It also discusses legal parameters to conduct CI investigations and reporting requirements for questionable intelligence activities and Federal crimes.
- **Chapter 7** discusses the role of CI in supporting and protecting military technology and system research, development, and acquisition to ensure Army forces maintain a technology advantage over adversaries.

- **Chapter 8** focuses on CI support to base defense operations in garrison or in a deployed environment. It also focuses on roles and responsibilities, foreign intelligence entity threats, cueing and collaboration, integration into base defense planning, crisis and emergency response, and support to operational contracting.
- **Chapter 9** focuses on CI-cyber support to CI functions, cyber indicators of CI interest, recognizing potential CI evidence, search and seizure, and cyber threat briefings.
- **Appendix A** discusses CI reporting.
- **Appendix B** discusses CI support to antiterrorism.
- **Appendix C** discusses specific considerations for CI-cyber activities.
- **Appendix D** discusses the joint CI threat assessment format.
- **Appendix E** discusses the defense critical infrastructure program and CI coverage plan.
- **Appendix F** discusses automation, communication, and equipment used in CI operations.

FM 2-22.3, HUMAN INTELLIGENCE COLLECTOR OPERATIONS

A-29. FM 2-22.3 provides doctrinal guidance, techniques, and procedures governing the employment of HUMINT collection and analytical assets to support commanders' intelligence needs. It outlines HUMINT operations, HUMINT collectors' role in the intelligence warfighting function, HUMINT collectors' roles and responsibilities, and the roles of those providing C2 and technical support of HUMINT collection operations. FM 2-22.3 has thirteen chapters and thirteen appendixes:

- **Chapter 1** overviews key intelligence and HUMINT constructs.
- **Chapter 2** describes the HUMINT structure.
- **Chapter 3** discusses HUMINT in support of Army operations.
- **Chapter 4** describes HUMINT operations planning and management.
- **Chapter 5** discusses HUMINT collection as it pertains to military source operations.
- **Chapter 6** discusses HUMINT screening.
- **Chapter 7** discusses HUMINT planning and preparation.
- **Chapter 8** describes HUMINT approach techniques and termination strategies.
- **Chapter 9** discusses HUMINT questioning.
- **Chapter 10** discusses HUMINT reporting.
- **Chapter 11** discusses HUMINT collection and the use of interpreters.
- **Chapter 12** discusses HUMINT analysis and production.
- **Chapter 13** discusses automation and communications used in HUMINT operations.
- **Appendix A** provides an extract of key Geneva Conventions that apply to HUMINT.
- **Appendix B** discusses techniques for determining source and information reliability.
- **Appendix C** outlines predeployment planning for HUMINT.
- **Appendix D** is an S-2 guide for handling detainees, captured enemy documents, and captured enemy equipment.
- **Appendix E** provides extracts from AJP 2.5.
- **Appendix F** discusses the NATO System of allocating interrogation serial numbers.
- **Appendix G** offers a quick reference for trained HUMINT collectors and lays out frequently used requirements grouped logically.
- **Appendix H** outlines the size, activity, location, unit, time, and equipment (also called SALUTE) report.
- **Appendix I** discusses document exploitation and handling.
- **Appendix J** provides references to support the conduct of HUMINT collection.
- **Appendix K** discusses the use of contract interrogators.
- **Appendix L** provides a sample list of equipment necessary for HCTs.
- **Appendix M** provides doctrinal guidance for using separation as an interrogation technique.

ATP 2-22.4, TECHNICAL INTELLIGENCE

A-30. ATP 2.22-4 provides doctrinal guidance and techniques related to the planning and directing, collection, production, and dissemination of foreign equipment and materiel. It also provides doctrinal guidance for activities conducted within TECHINT aspects of national to tactical intelligence as well as doctrine for TECHINT activities as part of Army intelligence operations. It also discusses how theater to battalion intelligence staffs assist commanders in leveraging national TECHINT organizations to provide the exploitation necessary to support intelligence analysis. ATP 2-22.4 has eight chapters and two appendixes:

- **Chapter 1** discusses the TECHINT fundamentals.
- **Chapter 2** describes the TECHINT organizational structure.
- **Chapter 3** discusses planning and directing TECHINT collection.
- **Chapter 4** discusses TECHINT collection.
- **Chapter 5** discusses TECHINT production, processing, and exploitation.
- **Chapter 6** discusses TECHINT dissemination.
- **Chapter 7** discusses TECHINT considerations in an improvised explosive device (IED) environment.
- **Chapter 8** discusses TECHINT considerations to unique activities.
- **Appendix A** discusses specialized technical collectors.
- **Appendix B** discusses weapons intelligence technical training.

ATP 2-22.6-2, SIGNALS INTELLIGENCE VOLUME II: REFERENCE GUIDE

A-31. ATP 2-22.6-2 provides doctrinal guidance concerning SIGINT. Primarily, it outlines the fundamentals of SIGINT to identify authorities, policies, and regulations governing SIGINT activities, and describes how SIGINT supports commanders' missions. This ATP also provides scientific theories and practical examples for MI personnel performing SIGINT activities. ATP 2-22.6-2 contains three chapters and eleven appendixes:

- **Chapter 1** defines SIGINT, its subdisciplines, and related intelligence disciplines and domains. It identifies directives, policies, and regulations governing SIGINT activities.
- **Chapter 2** describes the SIGINT enterprise from national and global to Army-level elements.
- **Chapter 3** identifies intelligence warfighting function tasks that support commanders. It briefly discusses basic tactics, operational areas, operations, and offensive and defensive actions, and provides practical examples of SIGINT operations within established operations.
- **Appendix A** discusses the EMS and environmental factors.
- **Appendix B** discusses the electrical theory focused on scientific theories of power and electricity.
- **Appendix C** discusses antenna fundamentals and provides practical applications.
- **Appendix D** provides practical examples for direction finding fundamentals.
- **Appendix E** discusses site selection considerations for various types of collection sites.
- **Appendix F** provides the technological background on the characteristics of communications.
- **Appendix G** provides guidance for managing SIGINT operations within the intelligence process.
- **Appendix H** explains the content for Appendix 3 (SIGINT) to Annex B (Intelligence) of an OPORD.
- **Appendix I** explains the types of reports produced.
- **Appendix J** explains the requirement for securing compartmented information.
- **Appendix K** lists SIGINT training opportunities for career enhancement.

ATP 2-22.7, GEOSPATIAL INTELLIGENCE

A-32. ATP 2-22.7 provides GEOINT doctrinal guidance. It complements guidance provided in ATP 3-34.80, *Geospatial Engineering*. ATP 2-22.7 focuses on the fundamentals of GEOINT as well as specific tasks and techniques for performing GEOINT activities. It outlines and describes GEOINT applications to support Army forces conducting operations. ATP 2-22.7 has 10 chapters and seven appendixes:

- **Chapter 1** discusses the fundamentals of GEOINT.
- **Chapter 2** discusses the roles, responsibilities, functions, and activities of the GEOINT cell.
- **Chapter 3** discusses how the Army GEOINT structure complements the NGA and joint operations. It also discusses the flow of GEOINT requirements for systems, data, and products throughout the Army GEOINT structure and national agencies.
- **Chapter 4** discusses imagery, imagery intelligence, and geospatial information.
- **Chapters 5 through 8** discuss techniques for the GEOINT plan and direct, collection, production, and dissemination activities.
- **Chapter 9** discusses GEOINT techniques that support the offense, defense, and stability or DSCA.
- **Chapter 10** discusses GEOINT considerations for physical environments.
- **Appendix A** describes and depicts the Army GEOINT integrated architecture and the processing systems and software applications that assist in creating GEOINT products.
- **Appendix B** describes and depicts GEOINT collection manned/unmanned aircraft systems.
- **Appendix C** describes sensor/platform characteristics.
- **Appendix D** describes image quality considerations.
- **Appendix E** provides information on GEOINT training.
- **Appendix F** provides information on the National System for GEOINT.
- **Appendix G** provides information on GEOINT policy considerations.

ATP 2-22.82, BIOMETRICS-ENABLED INTELLIGENCE

A-33. ATP 2-22.82 provides guidance on the use of biometric information by intelligence professionals, protection operations personnel, and personnel involved in detainee screening and/or targeting operations. It concerns biometrics-enabled intelligence (BEI), the fundamentals of biometrics, biometric systems, and biometric tools used in current operations. ATP 2-22.82 includes biometric processes that support the intelligence process during military operations. It outlines the roles and responsibilities of intelligence units and individuals using biometrics in current operations, discusses intelligence considerations for using biometrically enabled watch lists, includes examples of activities MI Soldiers will likely encounter in operations, and incorporates lessons learned from various operations, including the technical and operational experiences of subject matter experts (SMEs) in biometrics and MI. ATP 2-22.82 has nine chapters and three appendixes:

- **Chapter 1** overviews the fundamentals of BEI, including BEI support to operations.
- **Chapter 2** describes automated and manual biometric processes that enable analysis and discusses how biometric data is processed in biometric systems. It addresses the steps to develop BEI.
- **Chapter 3** discusses planning and directing BEI activities, personnel, equipment.
- **Chapter 4** discusses BEI collection and integration into information collection.
- **Chapter 5** discusses biometric products and their categories and processing biometric modalities.
- **Chapter 6** discusses the biometric enterprise and architecture and the biometric data flow.
- **Chapter 7** discusses analyzing and assessing BEI.
- **Chapter 8** discusses biometric and BEI support to the offense, defense, stability, and DSCA.
- **Chapter 9** provides supporting vignettes of BEI in various types of Army operations.
- **Appendix A** lists some starting points for obtaining biometric and BEI information.
- **Appendix B** describes considerations during biometric collection and factors that affect the reliability and accuracy of biometric samples.
- **Appendix C** discusses the tiers and DOD-level categories and subcategories of biometrically enabled watch lists.

ATP 2-22.9, OPEN-SOURCE INTELLIGENCE

A-34. ATP 2-22.9 establishes a common framework, foundational concepts, and methods of use for Army OSINT activities. It highlights the fundamentals of OSINT as an intelligence discipline and discusses the role it plays in the intelligence process. This publication addresses only open-source information. ATP 2-22.9

establishes a common foundation for understanding OSINT. It provides fundamental principles and terminology for Army elements conducting OSINT activities. The ATP emphasizes the value of open-source information. It describes systematic approaches to plan, prepare, collect, and produce intelligence from open-source information. ATP 2-22.9 has eight chapters and three appendixes:

- **Chapter 1** incorporates the definition of OSINT, as established by Public Law 109-163, and discusses the definitions of open-source information, publicly available information, and collection.
- **Chapter 2** provides information concerning organizations that conduct OSINT.
- **Chapter 3** discusses OSINT within the plan and direct step.
- **Chapter 4** discusses OSINT within the collect and process step.
- **Chapter 5** discusses OSINT within the produce step.
- **Chapter 6** discusses OSINT within the disseminate step.
- **Chapter 7** discusses internet search techniques.
- **Chapter 8** depicts a scenario to provide specific context for OSINT within the intelligence process.
- **Appendix A** provides OSINT considerations for intelligence oversight law, policy, and regulation.
- **Appendix B** provides information on the internet layers.
- **Appendix C** provides lists of open-source resources for obtaining information.

ATP 2-91.7, INTELLIGENCE SUPPORT TO DEFENSE SUPPORT OF CIVIL AUTHORITIES

A-35. ATP 2-91.7, a companion to ADP 3-28, *DSCA*, explains how intelligence personnel adapt MI skills and techniques to provide support to civil authorities during operations in the homeland. It discusses sensitivities, laws, and regulations related to collecting information and producing intelligence in the homeland. The ATP also discusses techniques intelligence staffs at all echelons use to support commanders' situation development and situational awareness when conducting DSCA; describes the homeland security framework and the missions and functions of Federal, state and territorial, local, tribal, and private sector organizations that comprise that framework; and discusses Federal policies, DOD directives, and Army regulations that govern MI support to DSCA. ATP 2-91.7 has five chapters and two appendixes:

- **Chapter 1** overviews the civil-military domestic response framework and the DSCA components.
- **Chapter 2** overviews the authorities, laws, regulations, and sensitivities that govern the actions of MI personnel and intelligence activities during DSCA.
- **Chapter 3** discusses the intelligence process in support of DSCA and MI tasks related to DSCA.
- **Chapter 4** describes techniques available to the intelligence staff to support commanders and other staff sections conducting DSCA.
- **Chapter 5** describes the capabilities of Army organizations with core competencies associated with DSCA support to domestic CBRN incidents and overviews tasks associated with Army support to civilian law enforcement. It also addresses considerations for cyberspace operations in the homeland, including the responsibilities of Federal agencies associated with cybersecurity.
- **Appendix A** lists information and intelligence for planning support to civil authorities during natural or man-made disasters and for controlling DSCA operations during a disaster.
- **Appendix B** provides an example Army units can use when building Annex B (Intelligence) to an OPORD for DSCA.

ATP 2-91.8, TECHNIQUES FOR DOCUMENT AND MEDIA EXPLOITATION

A-36. ATP 2-91.8 discusses intelligence support to document and media exploitation (DOMEX) at all echelons. It provides doctrinal guidance to Army professionals in a tactical, operational, or strategic environment who conduct and support DOMEX. ATP 2-91.8 is an integral component in supporting overseas contingency operations. It provides commanders and staffs the tools to integrate and synchronize DOMEX activities and techniques for Soldiers conducting those activities. The ATP informs small-unit leaders and commanders about the missions, requirements, and capabilities of DOMEX and provides essential information to effectively employ and use DOMEX. ATP 2-91.8 has thirteen chapters and five appendixes:

- **Chapter 1** discusses the fundamentals of DOMEX.
- **Chapter 2** describes DOMEX requirements and tactical, operational, and strategic organizations or elements involved in DOMEX.
- **Chapter 3** discusses the staff coordination and support required for DOMEX, and DOMEX team coordination with the supported unit.
- **Chapter 4** discusses handling techniques for captured enemy documents and media (CEDM) and includes detailed handling guides for most items processed through DOMEX.
- **Chapter 5** discusses accountability documentation, to include capture tags, transmittal sheets, and inventory logs and ledgers. It also discusses unique accountability control numbers (such as serial numbers, unit-specific administrative numbers, and batch and Harmony numbers) that assist in tracking CEDM, associated sources, and DOMEX-derived reporting and other products.
- **Chapter 6** discusses evacuation techniques and destinations for various captured materials.
- **Chapter 7** discusses the proper collection and handling of CEDM; describes DOMEX collection team duties, roles, and responsibilities; and discusses planning for DOMEX collection.
- **Chapter 8** discusses PED techniques for Army maneuver and intelligence organizations to use for CEDM, discusses DOMEX support teams provided in response to requests for forces, and addresses national-level agencies possessing specialized knowledge and equipment necessary for in-depth exploitation.
- **Chapter 9** discusses DOMEX analysis and production techniques.
- **Chapter 10** discusses how personnel assigned to DOMEX may organize, edit, and forward extracted information (or derived intelligence) into coherent, properly formatted, and standardized reports, usable by all-source analysts and commanders.
- **Chapter 11** discusses DOMEX as a complementary intelligence capability and describes how it supports offensive, defensive, and stability operations; targeting; protection; HUMINT; judicial proceedings; and CEMA.
- **Chapter 12** addresses the importance of maintaining the evidentiary integrity of CEDM and how personnel involved in DOMEX can contribute to that objective, while cautioning against dismissing the intelligence value of unattributed CEDM.
- **Chapter 13** addresses how those involved in DOMEX collection and processing may support the collection and preservation of forensic and biometric information.
- **Appendix A** describes the construction of a media exploitation report through the processing of several types of media, including the documents that accompany a media exploitation report.
- **Appendix B** describes DOMEX capabilities and responsibilities.
- **Appendix C** describes DOMEX-related training provided by the National Ground Intelligence Center, USAICOE, and through the Foundry Program.
- **Appendix D** overviews DOMEX-related tools, such as the deployable Harmony suite of tools and the tactical site exploitation toolkit.
- **Appendix E** includes a portion of the ATP's superseded chapter 6 that addresses DOMEX capabilities that exist or are present at DOD organizations, joint facilities and organizations, and national-level organizations.

ATP 3-01.81, COUNTER-UNMANNED AIRCRAFT SYSTEM TECHNIQUES

A-37. ATP 3-01.81 provides planning considerations for defending against low, slow, small unmanned air threats during operations: guidance on planning and incorporating counter-UAS Soldier tasks into unit training events and planning guidance for brigade- and below-level forces when regional threat estimates include smaller UAS platforms.

A-38. ATP 3-01.81 focuses on training and educating the force while assisting maneuver units in developing counter-UAS TTP. It addresses the exploitation of low, slow, small UASs as unconventional air threats and modifiers to surveillance and targeting actions. Defending against UASs is a difficult task, and no single solution exists to defeat all categories of low, slow, small threats. ATP 3-01.81 has four chapters and one appendix:

- **Chapter 1** describes an OE and discusses current force capabilities to detect, identify, and defeat threat low, slow, small UAS capabilities.
- **Chapter 2** discusses brigade-level planning and the MDMP to support battalion- and company-level counter-UAS efforts.
- **Chapter 3** discusses battalion-level planning as it pertains to potential UAS threats.
- **Chapter 4** provides guidelines to assist company-level commanders in developing counter-UAS techniques, and discusses actions when anticipating or encountering possible UAS threats on the battlefield.
- **Appendix A** provides brigade and below training strategies for counter-UASs.

ATP 3-04.64, MULTI-SERVICE TTP FOR THE TACTICAL EMPLOYMENT OF UNMANNED AIRCRAFT SYSTEMS

A-39. ATP 3-04.64 establishes TTP for tactically employing UASs; addresses operational considerations, system capabilities, payloads, mission planning, and multi-Service employment; and establishes a framework for employing UASs in a multi-Service environment. ATP 3-04.64 has three chapters and two appendixes:

- **Chapter I** describes the UAS group system, general components, missions, and organizations.
- **Chapter II** provides planning considerations for UAS employment and the various C2 and tasking structures that exist for their execution.
- **Chapter III** defines UAS mission phases and describes general execution considerations and TTP related to UAS missions and the information exchange between supporting and supported units.
- **Appendix A** describes UAS EMS use, information on the one system remote video transceiver, and remotely operated video-enhanced receiver systems.
- **Appendix B** provides tables with specific platform and payload information for current UASs.

ATP 3-06/MCTP 12-10B, URBAN OPERATIONS

A-40. ATP 3-06/MCTP 12-10B provides commanders and staffs specific information for conducting urban operations and multiple product templates and examples routinely used to conduct urban operations. The ATP has six chapters:

- **Chapter 1** discusses an urban environment's basic characteristics and describes the urban environment based on terrain, population, and infrastructure.
- **Chapter 2** discusses the necessity of understanding urban operations, highlighting foundations, risk considerations, and fundamental tasks in urban operations.
- **Chapter 3** discusses each warfighting function with key tactical considerations.
- **Chapter 4** discusses the purpose, characteristics, and considerations of urban offensive operations, and discusses offensive battlefield organizations and forms and types of urban offense.
- **Chapter 5** discusses the purpose, characteristics, and considerations of urban defensive operations, and discusses defensive battlefield organizations and types of urban defense.
- **Chapter 6** discusses the purpose, characteristics, and considerations of stability operations, and discusses stability activities in urban terrain.

FM 3-07, STABILITY

A-41. FM 3-07, expanding on concepts in ADP 3-0 and ADP 3-07, provides tactical guidance to Army and joint communities on stability operations and addresses the employment of forces during stability operations. Stability ultimately aims to establish conditions the local populace regards as legitimate, acceptable, and predictable. Therefore, stability operations focus on identifying and targeting the root causes of instability and building the capacity of local institutions. Army forces accomplish stability missions and perform tasks across military operations and in coordination with other instruments of national power. Stability operations are part of broader efforts to establish and maintain conditions for stability in unstable areas before or during hostilities, or to reestablish enduring peace and stability after open hostilities cease. FM 3-07 expands on stability operations tasks, their role in unified land operations, and considerations specific to stability. It contains four chapters:

- **Chapter 1** expands the discussion of stability operations tasks introduced in ADP 3-07, contextualizing them based on Army operations.
- **Chapter 2** discusses transitions, an essential part of stability, including how to perform the tasks of changing the focus of the operation.
- **Chapter 3** addresses the whole-of-government and comprehensive approaches to unity of effort. It elaborates considerations that assist commanders and staffs in focusing collaboration and cooperation with partners toward a common goal.
- **Chapter** 4 looks at assessment, identifying and prioritizing local sources of instability as an essential first step in understanding how to apply military resources and determine what is working.

FM 3-11, CHEMICAL, BIOLOGICAL, RADIOLOGICAL, AND NUCLEAR OPERATIONS

A-42. FM 3-11 provides commanders and staffs with overarching chemical doctrine for operations to assess, protect, and mitigate the entire range of CBRN threats and hazards, including support to countering weapons of mass destruction activities in all OEs. It addresses principles, fundamentals, planning, operational considerations, and training and support functions; provides a common framework and language for CBRN operations; and constitutes the doctrinal foundation for developing other fundamentals and TTP detailed in subordinate doctrine manuals. FM 3-11 provides the professional language that guides how CBRN Soldiers perform tasks related to the Army's role in employing landpower to support joint operations. FM 3-11 has three chapters and five appendixes:

- **Chapter 1** provides a framework for core concepts and the CBRN corps. It discusses core functions, operational framework, and the OE.
- **Chapter 2** discusses CBRN organizations, capabilities, and training.
- **Chapter 3** discusses the contributions of CBRN forces and their core functions, which are tied directly to supporting the offense, defense and stability. It illustrates examples of how CBRN forces provide support to maneuver in and/or anticipated CBRN environments to maximize the effectiveness of combined arms operations and achieve freedom of action.
- **Appendix A** describes command and support relationships.
- **Appendix B** describes warfighting function considerations.
- **Appendix C** describes domestic and international CBRN response.
- **Appendix D** describes the CBRN staff.
- **Appendix E** describes CBRN training.

FM 3-12, CYBERSPACE AND ELECTRONIC WARFARE OPERATIONS

A-43. FM 3-12 provides doctrinal guidance and direction to Army forces conducting cyberspace and electronic warfare operations using CEMA in unified land operations. FM 3-12 defines Army cyberspace operations, electronic warfare, title authorities, roles, relationships, responsibilities, and capabilities to support Army and joint operations. It expands on those methods by which Army forces approach the defense of Army networks and data, and addresses opportunities for commanders to integrate tailored cyberspace and electronic warfare capabilities across the range of military operations.

A-44. Cyberspace and electronic warfare operations are integrated into operations using already established joint and Army processes, such as the intelligence process, targeting, and the MDMP. FM 3-12 explains the fundamentals of Army cyberspace and electronic warfare operations, including staff responsibilities, contributions to the MDMP, targeting in cyberspace and the EMS, and reliance on intelligence and operational preparation of the environment in cyberspace. It describes cyberspace operations, missions, actions, electronic warfare, the EMS, and the interrelation of these activities among each other and all Army operations. This includes CEMA as the planning, integrating, and synchronizing activities for echelons corps and below. FM 3-12 has three chapters and four appendixes:

- **Chapter 1** discusses the cyberspace domain and cyberspace operations, missions, actions, and effects. It describes cyberspace and situational understanding and awareness, threats, risks,

vulnerabilities and its relationship with the information environment and OE; describes the layers and characteristics of cyberspace; and identifies the legal authorities that apply to cyberspace and cyberspace operations. Chapter 1 also includes the fundamental information of electronic warfare and spectrum management functions as they relate to cyberspace and electronic warfare operations.

- **Chapter 2** provides information on operations and missions that use cyberspace for more than daily business; how information operations, intelligence, space operations, and targeting may affect cyberspace, the EMS, cyberspace operations, and electronic warfare operations; and how commanders and staffs integrate and synchronize cyberspace and electronic warfare operations during all phases of operations.
- **Chapter 3** describes Army CEMA and mission command, the commander's role, cyberspace, and electronic warfare operations with the warfighting functions and the commander's resources that have effects on, in, and through cyberspace and the EMS. It discusses cyberspace and electronic warfare operations within the operations process, including planning, preparing, executing, assessing, and targeting factors. Chapter 3 also discusses the OE within the MDMP and overviews preparation requirements, execution tactics, and how to assess cyberspace and electronic warfare operations.
- **Appendix A** discusses cyberspace operations and the various unified action partners.
- **Appendix B** highlights the location of cyberspace operations information in OPORDs and Appendix 12 (CEMA) to Annex C (Operations).
- **Appendix C** includes procedures for processing cyberspace effects requests at echelons corps and below and echelons above corps, preparing the cyber effects request format.
- **Appendix D** includes examples of the electronic attack request format.

ATP 3-12.3, ELECTRONIC WARFARE TECHNIQUES

A-45. ATP 3-12.3 provides doctrinal guidance and direction, including fundamentals and guiding principles, to Army forces for conducting electronic warfare during unified land operations; describes electronic warfare, roles, relationships, responsibilities, and capabilities to support Army and joint operations; and details techniques and procedures for Army electronic warfare. It provides a cohesive and coherent description of how electronic warfare supports and enables operations and other mission tasks and functions at each echelon. ATP 3-12.3 has seven chapters and four appendixes:

- **Chapter 1** overviews electronic warfare, including electronic attack, electronic protection, and electronic warfare support.
- **Chapter 2** describes the roles of key personnel for conducting electronic warfare at all echelons.
- **Chapter 3** discusses electronic warfare planning considerations and describes electronic warfare equipment in manpack, vehicle-mounted, fixed-site, and airborne configurations. It also discusses the staff's reliance on products and processes, including IBP, electromagnetic environment surveys, and targeting.
- **Chapter 4** includes electronic warfare preparation, execution, and assessment. It describes EMS resources, discusses the joint restricted frequency list, and provides techniques for integrating SIGINT and electronic warfare resources to increase operational flexibility.
- **Chapter 5** provides techniques for planning and executing electronic warfare support to operations, including direction finding techniques.
- **Chapter 6** includes electronic warfare planning and coordination techniques to support large-scale combat operations, discusses electromagnetic deception, and provides vignettes about electronic attack.
- **Chapter 7** discusses electronic protection techniques, including the integration of electronic warfare and signal planning to conduct electronic protection, and provides techniques for radio users and staffs to prevent threat radio interception and detection and targeting of friendly forces.
- **Appendix A** describes radio propagation characteristics and the bands within the EMS.
- **Appendix B** includes formulas for determining transmission power requirements for jamming radio receivers.

- **Appendix C** discusses friendly electronic warfare equipment and associated characteristics including ground and airborne electronic warfare platforms.
- **Appendix D** provides forms, reports, and messages for planning and executing electronic warfare, and provides EMS management identities.

FM 3-50, ARMY PERSONNEL RECOVERY

A-46. FM 3-50 presents doctrinal guidance and direction for Army personnel recovery operations and is the foundation for developing tactics and techniques, handbooks, and unit SOPs. It provides operational direction for commanders, staffs, and trainers from theater army to company levels, ensuring the Army is organized, trained, and equipped to conduct personnel recovery and prevent isolating events. It articulates the importance of the commander in successful personnel recovery operations, and expands the scope of Army personnel recovery doctrine for stability and DSCA tasks. FM 3-50 has six chapters:

- **Chapter 1** defines Army personnel recovery and discusses the foundations, components, and proficiencies of personnel recovery.
- **Chapter 2** describes personnel recovery responsibilities and supporting tools of commanders at all echelons and staffs at battalion and above. The discussion also applies to headquarters from battalion and brigade to theater army.
- **Chapter 3** discusses planning for personnel recovery, how the staff uses the MDMP, the personnel recovery appendix format, isolated Soldier guidance, and the evasion plan of action.
- **Chapter 4** discusses personnel recovery considerations for major combat operations, emphasizing personnel recovery in the context of offensive and defensive operations, and the characteristics of major combat operations, the cause of isolation incidents, and conducting the operations process.
- **Chapter 5** discusses personnel recovery considerations for stability, characteristics of stability applicable to personnel recovery, and isolation risks in stability reduction strategies. It discusses Department of State, DOD, and other partner interactions.
- **Chapter 6** discusses personnel recovery considerations for and characteristics of DSCA, personnel recovery capability phases, and the commander and staff's focus during DSCA.

FM 3-52, AIRSPACE CONTROL

A-47. FM 3-52 provides commanders, staff officers, and airspace element personnel those tactics essential for airspace control. Using the Army air-ground system, the Army component of the theater air-ground system, and the operations process, this FM addresses the roles and responsibilities, by echelon, of the Army's and other Services' air-support organizations in the planning, preparation, execution, and assessment of airspace use.

A-48. FM 3-52 provides the doctrinal framework for the Army's use of airspace within the joint force command's theater air-ground system. This framework leverages detailed airspace planning and focuses on the dynamic integration of all airspace users during execution; ensures users follow joint force and combined arms commanders' (battalion through theater army) intent, priorities, and risk guidance; and describes how Army capabilities—resident down to the brigade level—expand airspace control options for the airspace control authority and the joint force command. FM 3-52 has four chapters and seven appendices:

- **Chapter 1** discusses unified land operations and unified action, airspace in OEs with joint airspace control, discusses the theater air-ground system and methods of control, and airspace control through mission command and the operations process.
- **Chapter 2** describes the Army's approach to airspace control; addresses exercising airspace control, describes the principles of effective airspace control, and delineates key roles and responsibilities, by echelon, of the Army air-ground system.
- **Chapter 3** discusses airspace control planning and the documents necessary for planning, and preparation activities, which are continuous and underpin successful unified land operations.
- **Chapter 4** discusses airspace control execution and assessment.
- **Appendix A** discusses risk collaboration in airspace control, the types of risk, risk effects have on airspace operations, risk conditions in airspace control, and steps used to manage risk.

- **Appendix B** discusses the types and usages of airspace coordinating measures and the common reference systems for airspace coordinating measures.
- **Appendix C** discusses airspace control in a C2 system, the equipment used for communications systems, networks and applications, and airspace control in a degraded network environment.
- **Appendix D** discusses the types of digital message, airspace coordinating measure and system peculiarities, and information displays.
- **Appendix E** discusses general Army collective tasks and specific airspace element collective tasks.
- **Appendix F** provides an example airspace control appendix and format.
- **Appendix G** overviews DSCA, discusses coordinating airspace during DSCA and joint airspace control, and addresses UAS employment considerations.

ATP 3-52.1, MULTI-SERVICE TTP FOR AIRSPACE CONTROL

A-49. ATP 3-52.1 is a single-source, descriptive reference guide to facilitate multi-Service coordination, integration, and control of airspace during exercises, contingencies, and other operations in which Service components must share airspace. It supports planners and warfighters by establishing TTP for planning, coordinating, and executing airspace control in a multi-Service environment. ATP 3-52.1 has three chapters and thirteen appendixes:

- **Chapter I** overviews airspace control concepts and command authorities and responsibilities.
- **Chapter II** describes the documents and orders commanders use to control airspace and lists items the airspace control authority should include in the airspace control plan.
- **Chapter III** provides multi-Service TTP for integrating various airspace users.
- **Appendix A** provides multi-Service TTP for integrating UASs in joint airspace.
- **Appendix B** provides multi-Service TTP for integrating cruise missiles in joint airspace.
- **Appendix C** provides multi-Service TTP for clearing missile fires above the coordinating altitude.
- **Appendix D** provides multi-Service TTP for integrating air defense assets in joint airspace.
- **Appendix E** provides technique for commanders to describe operational risks about airspace use.
- **Appendix F** describes how digital airspace and fires systems display and use coordination measures.
- **Appendix G** describes airspace coordinating measures and briefly discusses common airspace measure terms.
- **Appendix H** describes fire support coordination measures affecting airspace.
- **Appendix I** describes select maneuver control measures affecting airspace.
- **Appendix J** describes select air reference measures.
- **Appendix K** describes air defense measures.
- **Appendix L** describes maritime defense measures.
- **Appendix M** describes air traffic control measures.

ATP 3-52.4, MULTI-SERVICE TTP FOR AIR CONTROL COMMUNICATION

A-50. ATP 3-52.4 establishes communications TTP for tactical C2 to manage air operations and control airspace and aircraft and TTP for force packaging and direct air support coordination, air-to-air communication, air-to-air intercept, threat air-to-air warning, threat surface-to-air warning, and air-to-surface communication. It applies to all tactical C2 airspace control elements and warfighters that conduct air operations in AORs managed by the JFC and overseen by the airspace control authority according to the JFC-signed airspace control plan and airspace control order. ATP 3-52.4 has six chapters:

- **Chapter I** overviews airspace control, describes tactical C2, and provides a list of assumptions for the warfighter to understand appropriate times to apply these TTP.
- **Chapter II** defines tactical administration and describes procedures for network transmissions, check ins, WORDS, HAVE QUICK, in-flight reports, returning force accountability, and procedural control.

- **Chapter III** describes TTP for roll calls, LOWDOWN, mission timing changes, CHATTERMARK procedures, battlespace handover procedures, and YELLOW/RED communication contracts.
- **Chapter IV** provides ways for fighters and tactical C2 agencies to communicate about air entities as this lexicon and format for communication are critical for executing air-to-air intercepts.
- **Chapter V** establishes a communication format for air-to-air employment and air intercept control, and governs communication fundamentals, format, and integration between fighters and controllers, independent of mission design series or type, model, and/or series. This chapter is the baseline for all air-to-air communication in training and combat.
- **Chapter VI** describes aircraft as any air assets executing an air-to-surface mission under tactical C2, establishes a communication format for air-to-surface employment, and governs communication fundamentals, format, and integration between aircraft and controllers, independent of mission design series or type, model, and/or series.

FM 3-94, THEATER ARMY, CORPS, AND DIVISION OPERATIONS

A-51. FM 3-94 examines the employment of Army forces in a geographic combatant command and describes how the Army supports the combatant commander across the range of military operations in that AOR. Together the theater army, corps, and division give the combatant commander several options for employing landpower in an interdependent joint force. Winning in this environment requires the theater army to set the theater and assist Army forces in the fight, the corps to integrate landpower throughout each phase of a campaign, and divisions to outmaneuver the enemy, destroy enemy ground forces, seize and exploit operationally significant objectives, and match decisive action to ground conditions.

A-52. FM 3-94 provides Army doctrine for the theater army, corps, and division, explains the organization of the theater army, corps, and division headquarters and their respective CPs; establishes the roles for each headquarters, including their respective contributions to joint operations; and discusses subordinate units and each headquarters' organization of its units, establishment of command and support relationships, and conduct of operations. FM 3-94 has seven chapters organized under three parts.

- **Part One** describes the Army hierarchy within a geographic combatant command:
  - *Chapter 1* overviews the Army's higher echelons, introduces the Army's three senior echelons in a geographic combatant command and describes their roles and tasks, presents the Army concept of sustainment and support provided by theater army, discusses operational and administrative chains of command, and provides a brief review of operational areas.
  - *Chapter 2* describes the roles and tasks of the theater army, discusses the theater army's staff organization, and discusses the theater army's main and contingency CPs and their employment by the theater army commander.
  - *Chapter 3* summarizes the theater-level commands and supporting organizations that allow the theater army to fulfill its roles and enable the corps and division to accomplish their roles.
- **Part Two** discusses the corps:
  - *Chapter 4* explains the roles and tasks of the corps, including operational and administrative responsibilities; summarizes the subordinate units typically in the corps echelon; and discusses the corps' internal organization and the CPs available to the corps commander.
  - *Chapter 5* examines corps-level operations, including how the corps arranges its combat power, organizes the AO, and conducts decisive action.
- **Part Three** discusses the division:
  - *Chapter 6* explains the roles and tasks of the division headquarters, including its operational and administrative responsibilities; summarizes the subordinate units normally under the division's OPCON or tactical control (TACON); and discusses the division's internal organization and the CPs available to the division commander.
  - *Chapter 7* examines division-level operations, including how the division arranges its combat power, organizes the AO, and conducts decisive action.

FM 3-96, BCT

A-53. FM 3-96, which applies to the infantry, Stryker, and armored BCTs, focuses on the employment and ordered arrangement of forces within the BCT during the conduct of decisive action across the range of military operations. The tactics addressed in this manual include the ordered arrangement and maneuver of units in relation to each other, the terrain, and the enemy. Tactics vary with terrain and other circumstances; they change frequently as the enemy reacts and friendly forces explore new approaches. Applying tactics usually entails acting under time constraints with incomplete information. Tactics always require judgment in application; they are always descriptive, not prescriptive. FM 3-96 addresses the tactical application of tasks associated with the offense, the defense, and operations focused on stability. FM 3-96 does not discuss DSCA. The FM has nine chapters:

- **Chapter 1** addresses the deployability, role, and organizational characteristics of the BCT as optimized and trained to conduct offensive, defensive, and stability operations, and describes the organization and mission of the infantry, Stryker, and armored BCTs.
- **Chapter 2** discusses the threat as part of the OE and—
  - Understanding the threat.
  - Potential threat groups.
  - Threat characteristics and organization.
  - Threat capabilities, tactics, and techniques.
  - Countering adaptations and retaining the initiative.
- **Chapter 3** addresses the fundamental nature and philosophy of mission command. The philosophy requires the commander to lead from a position that allows timely decisions based on an assessment of the OE and application of judgment. Chapter 3—
  - Addresses the C2 warfighting function.
  - Emphasizes the human aspects of mission command.
  - Discusses BCT command and staff operations.
  - Describes how commanders cross-functionally organizes staffs into cells and working groups.
  - Describes the establishment of centers to assist with coordinating operations.
  - Describes CP types and composition at the brigade level.
- **Chapter 4** discusses reconnaissance and security as continuous and essential to support the conduct of offense, defense, and stability. Chapter 4—
  - Provides the doctrinal basis for reconnaissance and security forces.
  - Overviews the fundamentals and forms of reconnaissance.
  - Discusses information collection and reconnaissance handover.
  - Overviews security fundamentals and security operations tasks.
- **Chapter 5** addresses the missions and efforts required to shape and influence the OE through understanding. Chapter 5 discussions include—
  - Actions that clarify intentions.
  - Activities that modify behavior.
  - Attaining outcomes through actions.
- **Chapter 6** discusses offensive actions to destroy, defeat, or neutralize the enemy, addresses the characteristics of a BCT offense, and describes the four offensive operations tasks: movement to contact, attack, exploitation, and pursuit. Chapter 6 also discusses—
  - Common offensive planning considerations.
  - Forms of maneuver.
  - Planning considerations when transitioning to other tactical operations.
- **Chapter 7** discusses defensive actions to defeat enemy attacks, gain time, control key terrain, protect critical infrastructure, secure the population, and economize forces; addresses BCT defense characteristics; and describes the three defensive operations tasks: area defense, mobile defense, and retrograde. Chapter 7 also discusses—

- Common defensive planning considerations.
- Forms of the defense and forms of defensive maneuver.
- Planning considerations when transitioning to other tactical operations.

- **Chapter 8** addresses BCT support to operations focused on stability operations, including military missions, tasks, and activities conducted outside the United States in coordination with other instruments of national power. Chapter 8—
  - Addresses the foundation (principles and framework) and environment during stabilization.
  - Discusses the BCT's responsibilities and roles when supporting stability operations.
  - Discusses the transition from stability to other tactical operations.
- **Chapter 9** discusses the process at every echelon that sustainment planners and operators use to anticipate the needs of the maneuver units. Chapter 9 also discusses—
  - Fundamentals of sustainment.
  - Sustaining the BCT.
  - Staff and unit responsibilities and relationships.
  - Echelon support.
  - Brigade support area.

FM 4-0, SUSTAINMENT OPERATIONS

A-54. FM 4-0 augments ADP 4-0. It describes how Army sustainment forces, as part of a joint team, provide support to Army and other forces with particular emphasis on support to large-scale combat operations. Sustainment must be planned, integrated, and synchronized with operations at every level of warfare. Sustainment depends on joint and strategic integration and should be meticulously coordinated to ensure resources are delivered to the point of employment—making sustainment inherently joint. The Army's sustainment capabilities assist in providing crucial operational area opening functions, enabling joint forces to achieve strategic and operational reach.

A-55. FM 4-0 is the Army's doctrine for sustainment operations at the strategic, operational, and tactical levels of warfare. It describes sustainment tactics (logistics, financial management, personnel services, and health service support) required to support Army's strategic roles during operations described in FM 3-0. FM 4-0 contains eight chapters and seven appendices:

- **Chapter 1** overviews Army sustainment, principles, and support to unified land operations.
- **Chapter 2** describes strategic-level support organizations and sustainment unit roles and capabilities at echelon, and discusses the importance of command and support relationships and training for large-scale combat operations.
- **Chapter 3** overviews sustaining operations to shape, including setting the theater, sustainment planning considerations, and organizational roles and responsibilities at echelon.
- **Chapter 4** overviews sustaining operations to prevent, to include refining plans informed by sustainment preparation of the OE and sustainment planning considerations.
- **Chapter 5** overviews large-scale combat operations, including sustainment fundamentals, planning considerations, and reconstitution.
- **Chapter 6** overviews sustainment of large-scale defensive operations, including fundamental principles, additional planning considerations; and support to defensive operations.
- **Chapter 7** overviews sustainment of large-scale offensive operations, including fundamental principles, additional planning considerations, and support to offensive operations.
- **Chapter 8** describes sustaining operations to consolidate gains, including planning considerations.
- **Appendix A** discusses sustainment principles and sustainment warfighting function elements.
- **Appendix B** discusses Army sustainment information systems and linking them to C2 systems.
- **Appendix C** discusses reconstitution operations—extraordinary actions commanders plan and implement to restore degraded units' combat effectiveness—commensurate with mission requirements and available resources.

- **Appendix D** discusses mobility ratings and planning considerations for units operating in corps and division areas.
- **Appendix E** provides logistics status (LOGSTAT) and personnel status (PERSTAT) reports.
- **Appendix F** describes sustainment symbols in FM 4-0.
- **Appendix G** discusses the rules of allocation for select Army units in corps and divisions areas during offensive and defensive operations.

ATP 4-02.2, MEDICAL EVACUATION

A-56. ATP 4-02.2 provides doctrine and techniques for conducting MEDEVAC and medical regulating operations. MEDEVAC encompasses (1) the evacuation of Soldiers from the point of injury/wounding to a medical treatment facility (MTF) staffed and equipped to provide essential care in theater and further evacuation from the theater to provide definitive, rehabilitative, and convalescent care in the continental United States; and (2) the movement of patients between MTFs/ staging facilities. ATP 4-02.2 contains six chapters and four appendices:

- **Chapter 1** overviews the Army Health System (AHS) and how MEDEVAC relates to AHS principles; discusses the purpose, primary tasks, and attributes of the Army MEDEVAC system; and defines the differences between MEDEVAC and CASEVAC.
- **Chapter 2** discusses the employment of MEDEVAC resources and the coordination and synchronization required to effectively execute MEDEVAC operations. This includes the MEDEVAC request process, considerations for evacuation missions, support planning considerations, and evacuation in specific environments.
- **Chapter 3** describes the mission, function and capabilities of MEDEVAC units and elements, as specified in the unit's table of organization and equipment, and discusses the mission command headquarters to which they are assigned.
- **Chapter 4** discusses factors that establish the evacuation policy and its impact on AHS support.
- **Chapter 5** provides insight and considerations into developing the operational and tactical MEDEVAC plan that supports the combatant commander's mission.
- **Chapter 6** describes the medical regulating system designed to ensure the efficient and safe movement of regulated patients to the appropriate MTF and discusses the multi-Service responsibility and assets used to conduct this mission.
- **Appendix A** summarizes the Geneva Conventions and the Law of War.
- **Appendix B** provides an example of a MEDEVAC plan as part of an OPORD.
- **Appendix C** provides an example of the nine-line MEDEVAC request format.
- **Appendix D** provides examples of MEDEVAC during operations to shape and prevent, large-scale combat operations, and operations to consolidate gains.

ATP 4-16, MOVEMENT CONTROL

A-57. ATP 4-16 addresses Army movement control as a process that is not confined to a single unit but executed by a tiered network of organizations that provide a tool for commanders to influence movement over lines of communications in their AOR. It focuses on the theater sustainment command and its subordinate expeditionary sustainment commands, sustainment brigades, movement control battalions, and movement control teams. The ATP also defines a template for movement control operations in other organizations, such as a division or BCT. It has seven chapters and seven appendixes:

- **Chapter 1** discusses the fundamentals of movement control.
- **Chapter 2** discusses the strategic and joint organizations involved with movement.
- **Chapter 3** describes Army movement control in the theater distribution network supporting unified land operations.
- **Chapter 4** describes the roles and responsibilities of the movement control battalion and its subordinate movement control teams.
- **Chapter 5** discusses movement control within a division.
- **Chapter 6** describes route synchronization, planning to sustain movements according to the commander's priorities, and effectively using road networks.
- **Chapter 7** explains how to develop an integrated movement program that matches transportation movement requirements against transportation capabilities supporting distribution, deployment, and redeployment operations.
- **Appendix A** outlines a transportation movement release.
- **Appendix B** describes the tools for road movement planning.
- **Appendix C** provides an example of a route synchronization plan.
- **Appendix D** describes automated systems used in movement control.
- **Appendix E** describes the Automatic Identification Technology equipment, hardware, and technology pertaining to transportation.
- **Appendix F** provides an example route status table.
- **Appendix G** provides an example of a distribution network design.

ATP 4-25.12, UNIT FIELD SANITATION TEAMS

A-58. ATP 4-25.12 provides guidance for establishing, training, and employing unit field sanitation teams. Techniques in this publication will enable commanders to maintain a fit and healthy force capable of accomplishing the mission in any environment. This ATP contains 10 chapters:

- **Chapter 1** includes a brief history of the unit field sanitation team and highlights its success, contributions, and importance as a force health protection asset.
- **Chapter 2** identifies health threats to Soldiers in the field or deployed and articulates individual and leader responsibilities for implementing and enforcing preventive medicine measures.
- **Chapter 3** identifies the importance of potable water to Soldiers, identifies sources of water in the field, and outlines disinfecting methods for safe water consumption.
- **Chapter 4** discusses techniques and procedures for properly preparing, safely transporting, and serving meals in the field.
- **Chapter 5** addresses the importance of properly disposing of human waste and wastewater generated by shower and food preparation facilities.
- **Chapter 6** identifies pests commonly encountered by Soldiers in the field and identifies techniques and procedures for pest avoidance and management.
- **Chapter 7** identifies types of heat injury, their causes, and prevention techniques to protect Soldiers in the field.
- **Chapter 8** identifies types of cold injury, their causes, and prevention techniques to protect Soldiers in the field.
- **Chapter 9** identifies toxic industrial material hazards commonly associated with military operations.

- **Chapter 10** identifies noise hazards associated with military operations and provides proven protection measures to protect Soldiers' hearing.

ATP 4-25.13, CASUALTY EVACUATION

A-59. ATP 4-25.13 provides doctrine for conducting CASEVAC, which encompasses the evacuation of Soldiers from the point of injury/wounding to a MTF and the coordination requirements for using nonmedical transportation assets to accomplish the CASEVAC mission. The ATP has five chapters and three appendixes:

- **Chapter 1** describes manual evacuation methods.
- **Chapter 2** describes litter evacuation.
- **Chapter 3** describes recommended loading solutions for common nonmedical vehicles.
- **Chapter 4** discusses CASEVAC in a mass casualty situation.
- **Chapter 5** addresses CASEVAC in specific environments or under special circumstances.
- **Appendix A** provides a sample of a mass casualty plan for a brigade-size unit.
- **Appendix B** describes training, techniques, and procedures to accomplish litter evacuation.
- **Appendix C** explains the MEDEVAC request.

ATP 4-31, RECOVERY AND BATTLE DAMAGE ASSESSMENT AND REPAIR

A-60. ATP 4-31 overviews battlefield recovery and BDA and repair for quickly returning combat assets to the battlefield, explains the difference between recovery operations and BDAs and repairs, and reviews rigging procedures and using the mechanical advantage to accomplish the mission. This ATP comprises four chapters and three appendixes:

- **Chapter 1** discusses battlefield recovery, including types and BDAs and repairs; the types of recovery; and owning units' responsibilities.
- **Chapter 2** explains rigging methods and techniques and how to use the mechanical advantage during various rigging configurations with readily available equipment.
- **Chapter 3** presents several recovery techniques for different obstacles and overturned and mired situations and emphasizes safety during recovery operations.
- **Chapter 4** presents several improvised repair procedures to quickly return disabled equipment to operational condition in wartime by repairing, bypassing, and restoring minimum function to essential systems.
- **Appendix A** provides guidance for coordinating and executing multinational recovery and BDA and repair operations, and discusses BDA and repair operations about captured or abandoned enemy equipment.
- **Appendix B** describes hand and arm signals used in recovery operations.
- **Appendix C** discusses recovery guidelines for operators and leaders.

ATP 5-19, RISK MANAGEMENT

A-61. ATP 5-19 provides doctrinal guidance on managing risk during the conduct of operations. Integrating RM into maintaining combat power ensures efficient mission accomplishment. This ATP focuses on applying RM to TLP and the MDMP. Administrative RM guidance and techniques are in DA PAM 385-30, which complements this ATP; together, they provide guidance on implementing RM Army wide. The ATP has four chapters and one appendix:

- **Chapter 1** emphasizes RM principles, levels, and steps applicable to the TLP and MDMP.
- **Chapter 2** outlines general RM responsibilities of Army organizations, leaders, Soldiers, and Civilians.
- **Chapter 3** explains RM techniques in the context of TLP.
- **Chapter 4** explains RM techniques in the context of the MDMP.
- **Appendix A** illustrates the use of DD Form 2977 (*Deliberate Risk Assessment Worksheet*).

ADP 6-0, MISSION COMMAND: COMMAND AND CONTROL OF ARMY FORCES

A-62. ADP 6-0 represents an evolution of mission command doctrine based on lessons learned since 2012. Differentiating mission command from C2 provides clarity, allows leaders to focus on mission command in the context of the missions they execute, and aligns the Army with joint and multinational partners, all of whom use the term C2.

A-63. Through C2, commanders provide purpose and direction to integrate all military activities towards a common goal—mission accomplishment. Military operations are inherently human endeavors characterized by violence and continuous adaptation by all participants. Successful execution requires Army forces to make and implement effective decisions faster than enemy forces. Therefore, the Army has adopted mission command as its approach to C2 that empowers subordinate decision making and decentralized execution appropriate to the situation. ADP 6-0 contains 4 chapters:

- **Chapter 1** describes the nature of operations and the Army's operational concept, which is enabled by the mission command; discusses the function of C2 and how commanders create conditions for mission command to flourish; and discusses the C2 warfighting function.
- **Chapter 2** discusses the command elements and guides to effective command and describes the commander's role in operations.
- **Chapter 3** discusses the control elements and guides to effective control and discusses the importance of knowledge management and information management as they relate to control.
- **Chapter 4** discusses the C2 system that performs the functions necessary to exercise C2, including discussions of the people, processes, networks, and CPs as components of the C2 system, as well as CP design and organization considerations.

ATP 6-02.53, TECHNIQUES FOR TACTICAL RADIO OPERATIONS

A-64. ATP 6-02.53, as the primary doctrine for tactical radios and networks, describes nonprescriptive methods to perform the missions, functions, and tasks for employing tactical radio networks to support the warfighting functions and enable C2 of Army forces. It addresses employing interdependent and interoperable enterprise and tactical systems in tactical networks. This ATP has 10 chapters and 11 appendixes:

- **Chapter 1** overviews tactical radios and networks, capabilities, and network management.
- **Chapter 2** addresses the employment of tactical radios at all Army echelons.
- **Chapter 3** addresses tactical radio platforms and associated waveforms employed by Army forces at all echelons across all phases of operations.
- **Chapter 4** discusses the waveform and the waveform application functional component of the tactical networking environment.
- **Chapter 5** describes commercial off-the-shelf VHF radios that support tactical radio operations.
- **Chapter 6** addresses ultrahigh frequency (UHF) radios and systems in network-centric warfare.
- **Chapter 7** addresses the airborne radios employed to provide communications for ground-to-air operations and air-to-air and air-to-sea missions.
- **Chapter 8** addresses antenna techniques, concepts, terms, types, effects, and provides examples of antenna field repairs.
- **Chapter 9** addresses key management techniques when protecting voice, data, and video information over tactical radio networks.
- **Chapter 10** addresses electronic warfare and the electronic protection techniques to prevent enemy jamming and intrusion into friendly communications systems.
- **Appendix A** describes frequency modulation networks.
- **Appendix B** identifies radio sets, essential components, characteristics, radio wave properties, wave modulation, and site considerations for single-channel radios.
- **Appendix C** addresses high frequency, very high frequency, UHF antennas.
- **Appendix D** addresses radio operations in unusual environments.

- **Appendix E** addresses the Julian date, synchronization time, and Zulu time, and provides a time zone conversion chart.
- **Appendix F** provides procedures for preventing a network compromise and addresses recovery options available to commanders and staffs.
- **Appendix G** addresses data communications elements as binary data, baud rate, modems, and forward error correction.
- **Appendix H** addresses single-channel ground airborne radio system implications and co-site interference mitigation.
- **Appendix I** addresses the proper way to pronounce letters and numbers when sending messages over the radio and the proper procedures for opening and closing a radio net.
- **Appendix J** provides recommendations on repairing antennas and antenna supports.
- **Appendix K** comprises tactical satellites, communications planning considerations, UHF terminals, fire support networks, and airborne and air assault units.

ADP 6-22, ARMY LEADERSHIP AND THE PROFESSION

A-65. ADP 6-22 establishes and describes the Army profession and the associated ethic that serve as the basis for a shared professional identity. It establishes and describes what leaders should be and do. Having a standard set of leader attributes and core leader competencies facilitates focused feedback, education, training, and development across all leadership levels.

A-66. Every member of the Army profession, military or civilian, is part of a team and functions as a leader and/or subordinate. Being a good subordinate is part of being an effective leader. Leaders do not just lead subordinates—they also lead other leaders. Leaders are not limited to just those designated by position, rank, or authority. ADP 6-22 describes the attributes and core competencies required of contemporary leaders and addresses topics for Army members to become skilled, agile, and highly proficient leaders. ADP 6-22 comprises three parts with 10 chapters that describe the Army's approach to leadership:

- **Part One** describes leader attribute categories of character, presence, and intellect:
  - *Chapter 1* describes the Army profession: discusses the characteristics of the Army profession and expectations of all Army professionals, defines leadership, describes the foundations of Army leadership, introduces the Army leadership requirements model, and addresses the various roles of Army leaders and the echelons of leadership.
  - *Chapter 2* discusses the attribute category of character: Army values and Army ethic, empathy, Warrior Ethos/Service Ethos, discipline, and humility.
  - *Chapter 3* discusses the attribute category of presence: military and professional bearing, fitness, confidence, and resilience.
  - *Chapter 4* discusses the attribute category of intellect: mental agility, sound judgment, innovation, interpersonal tact, and expertise.
- **Part Two** describes core leader competencies and their applications:
  - *Chapter 5* addresses the competency category of leads: leads others, builds trust, extends influence beyond the chain of command, leads by example, and communicates.
  - *Chapter 6* describes the competency category of develops: prepares self, creates a positive environment, develops others, and stewards the profession.
  - *Chapter 7* describes the competency category of achieves and the supporting actions of providing guidance, and managing and monitoring duties and missions.
  - *Chapter 8* discusses the challenges of the OE, stress, and change.
- **Part Three** describes leading at the organizational and strategic levels:
  - *Chapter 9* addresses the roles and responsibilities of organizational leaders.
  - *Chapter 10* addresses the roles and responsibilities of strategic leaders.

FM 6-22, LEADER DEVELOPMENT

A-67. FM 6-22 provides a doctrinal framework that includes methods for leaders to develop other leaders, improve their organizations, build teams, and develop themselves. Leader development involves multiple practices that ensure people have opportunities to fulfill their goals and the Army has capable leaders in position and ready for the future. The practices include recruiting, accessions, training, education, assigning, promoting, broadening, and retaining the best leaders, while challenging them over time with greater responsibility, authority, and accountability.

A-68. FM 6-22 integrates doctrine, experience, and best practices through applicable Army doctrine and regulations, successful Army commander and NCO input, recent Army leadership studies, and research on effective practices from private and public sectors. The references section includes pertinent links to recommended leader development readings and websites. FM 6-22 contains seven chapters:

- **Chapter 1** discusses the tenets of Army leader development, the purpose of developing leaders to practice the mission command philosophy, building teams, and development transitions across organizational levels.
- **Chapter 2** discusses the creation of unit leader development programs.
- **Chapter 3** addresses fundamentals for developing leaders in units by setting conditions, providing feedback, and enhancing learning while creating opportunities.
- **Chapter 4** provides information on the self-development process, including strengths and developmental needs determination and goal setting.
- **Chapter 5** discusses character, judgment and problem solving, and adaptability as situational leader demands.
- **Chapter 6** provides information on leader performance indicators to enable observations and feedback.
- **Chapter 7** provides recommended learning and developmental activities.

ATP 6-22.1, THE COUNSELING PROCESS

A-69. ATP 6-22.1 provides doctrinal guidance and framework for all leaders, military and civilian, responsible for planning, preparing, executing, and assessing counseling actions. It contains two chapters:

- **Chapter 1** addresses the types of developmental counseling: event, performance, and professional growth.
- **Chapter 2** addresses counseling fundamentals supporting effective counseling: counselor qualities, counseling skills, counseling practices, accepting limitations, addressing resistance, the four-stage counseling process, and counseling approaches and techniques.

ATP 6-22.6, ARMY TEAM BUILDING

A-70. ATP 6-22.6 offers fundamentals of team building and specific techniques for building and maintaining effective teams. It provides a method for team assessments; helps commanders, staffs, and all Army leaders to understand team dynamics; and provides techniques for building cohesive and effective teams. This ATP has four chapters and two appendixes:

- **Chapter 1** discusses the fundamentals of team building, including team descriptions, teamwork, and team building; discusses the stages of team building and the characteristics of effective teams; and describes the team categories and team leader and member responsibilities.
- **Chapter 2** discusses the formation stage of team building, the importance of building trust, how communication contributes to team effectiveness.
- **Chapter 3** discusses building commitment during the enrichment stage of team building; describes shared competence, confidence, and accountability, and how they contribute to the effectiveness of teams; discusses techniques to motivate teams, and discusses developing cohesion to enhance team performance.
- **Chapter 4** discusses adapting to change, describes how teams manage conflict, and discusses building resilient teams.

- **Appendix A** introduces a team assessment, discusses the team leader assessment, and summarizes the team assessment.
- **Appendix B** provides techniques for building external teams.

FM 6-99, U.S. ARMY REPORT AND MESSAGE FORMATS

A-71. FM 6-99, as the Army keystone manual for report and message formats, provides a standardized reference for Army forces to extract common reports and message templates. It includes a collection of reports used by units and forms the base of Army information exchange in a degraded network environment. FM 6-99 facilitates a common understanding of reporting and communicating by Army elements.

A-72. As a user's manual, FM 6-99 influences future Army information systems, reports and messages, graphics, and user interfaces, and is the means through which the Army will adapt multiple reporting sources into a user-friendly and standardized message format library. FM 6-99 enables Army units to synchronize with joint and multinational communications structures without modifying their normal mode of operation with similar reports. Chapters 1 and 2 contain instructions on transmitting written and voice reports and messages, and appendix A contains message formats.

ADP 7-0, TRAINING

A-73. ADP 7-0 describes how the Army trains to conduct operations as a unified action partner, employing the Army's operational concept—unified land operations. Developing and sustaining readiness is the Army's number one priority. Training represents the most important activity units do daily to achieve readiness. The Army does this by conducting tough, realistic, standards-based, and performance-oriented training.

A-74. ADP 7-0 is founded on the concept that unit training is a logical extension of the Army's operations process—planning, preparing, executing, and assessing operations is fundamentally the same whether the unit trains to achieve readiness at home station or trains to operate when deployed. Learning and applying the operations process as units train make the transition from training to operations more seamless for leaders and their units—and improves the overall readiness of the force. ADP 7-0 establishes training principles and concepts and introduces training procedures detailed in FM 7-0. It contains four chapters:

- **Chapter 1** introduces the Army's concepts of training Soldiers and units to conduct operations, discusses the links between unit training and the Army's fulfillment of its strategic roles, explains the foundations of the Army task hierarchy, introduces the concept of multiechelon training to replicate how units operate when employed for operations, and discusses the commander's responsibility for developing subordinate leaders.
- **Chapter 2** discusses the commander's role in training the unit; discusses the activities of understand, visualize, describe, direct, lead, and assess as the mechanisms commanders employ to drive unit training; reinforces the necessity of the commander as the unit's primary trainer; and emphasizes the shared and mutual understanding that must exists between the commander and subordinate leaders for effective unit training.
- **Chapter 3** discusses the Army's principles of training and provides leaders with a base understanding of the most effective concepts of training, which are elemental to developing skills to conduct successful operations.
- **Chapter 4** describes the major actions and procedures units perform as training is conducted. It discusses measures of training proficiency and transitions into the concept of battle-focused training; discusses how units plan, prepare, execute, and assess each training event through planning horizons; discusses how training performance is objectively evaluated, and how the commander's training assessments become the basis of training readiness reporting.

FM 7-0, TRAIN TO WIN IN A COMPLEX WORLD

A-75. FM 7-0 describes how the Army trains to win by developing training readiness and the capabilities that support Army commanders and JFCs. FM 7-0 applies to all leaders at all organizational levels as all leaders are trainers. Leaders include officers, warrant officers, NCOs, and Army Civilians in leadership positions. FM 7-0 guides leaders to develop realistic training, to include changing conditions and various OEs.

A-76. FM 7-0 supports the idea that training a unit does not fundamentally differ from preparing a unit for an operation. Reinforcing the concepts, ideas, and terminology of the operations process while training as a unit makes a more seamless transition from training to operations. This publication focuses on effective training given limitations in time and resources and aims to ensure leaders incorporate ethical aspects (such as moral-ethical decision points and personal actions) into training scenarios or routinely discuss ethics during post-training AARs. FM 7-0 contains three chapters and nine appendixes:

- **Chapter 1** introduces the Army's concepts of training and how units attain and maintain training readiness over time. It also reiterates the Army's principles of training outlined in ADP 7-0.
- **Chapter 2** details processes for units to determine training collective tasks and the development of the unit training plan, which progressively trains the unit over time to collective task proficiency and sustainment of training readiness.
- **Chapter 3** discusses how units plan, prepare, execute, and assess each training event to maximize the outcome of each event to support training readiness.
- **Appendix A** discusses realistic training.
- **Appendix B** discusses training and evaluation outlines.
- **Appendix C** discusses company training meetings.
- **Appendix D** discusses AARs.
- **Appendix E** discusses lane training.
- **Appendix F** discusses the unit training plan.
- **Appendix G** discusses the types of training briefings and the general formats.
- **Appendix H** discusses the T-week concept.
- **Appendix I** provides a training management inspector with the basic overarching program and focuses on the specifics for training management.

Appendix B
Training Resources

FOUNDRY INTELLIGENCE TRAINING PROGRAM

B-1. The Foundry Intelligence Training Program is critical to Army global readiness. Foundry provides commanders necessary resources to enhance the training of MI Soldiers and Civilians supporting tactical-, operational-, and strategic-level operations by providing access to national to tactical intelligence.

B-2. The Foundry Intelligence Training Program supports MITS certification; therefore, senior intelligence officers should coordinate, prioritize, and use Foundry training resources and sites. To support MITS certification, the Foundry Intelligence Training Program—

- Supports exercise control, which synchronizes and manages the stimulation of training units during the execution of MITS certification. Exercise control—
  - Ensures supporting element nonprimary training units (high command, response cells) are properly trained and rehearsed in preparation for the exercise.
  - Manages the synchronization and timing of exercise master-scenario events list injects.
  - Ensures training units can meet their stated training objectives and outcomes based on guidance from exercise directors, chief controllers, and operations group chiefs.
- Provides advanced-level intelligence training, making Soldiers proficient in MITS tasks.
- Supports unit trainers in MITS preparation by providing access to MI equipment, networks, systems, and training space.
- Enables MITS events through scenario selection, scripting, and intelligence system simulation/stimulation.
- Leverages the MI program of record for simulation to deliver MITS scenarios for the exercise.
- Provides support to exercise development and execution.

MISSION TRAINING COMPLEX

B-3. MTCs provide individual operator training on C2 systems and support collective simulation and gaming based training exercises. MTCs provide commanders and staff members the capability to sustain individual digital skills and unit C2 collective training to maintain warfighting function competencies. MTC facilities include—

- Classrooms.
- Reconfigurable tactical operations centers furnished with C2 systems that replicate battalions to echelons above corps.
- Physical spaces for conducting constructive simulation exercises that stimulate C2 systems.

INTELLIGENCE AND ELECTRONIC WARFARE TACTICAL PROFICIENCY TRAINER

B-4. The IEWTPT is a program of record training device that supports MI individual and collective task training using virtual and constructive capabilities. Assigned contract technical support specialists assist commanders, staffs, and trainers in developing and implementing METL-focused training. IEWTPT operators reside at MTCs and coordinate closely with the Foundry. IEWTPT is the digital range for and can support MITS certification through access to scenarios and simulations. IEWTPT provides cost-effective virtual and constructive simulations using operational concepts and software tools to conduct training that might not be possible in live environments. IEWTPT components include the—

- Technical Control Cell, which creates the virtual data environment for SIGINT, GEOINT, and all-source analysis (Prophet, TGS, DCGS-A).
- System training interface, which is developed by MI system program managers. The interface is embedded or networked with IEWTPT to provide MI capabilities to simulate unique system software for payloads/sensors.
- Intelligence Low-Overhead Driver, which provides simulation and stimulation to DCGS-A and other MI systems. Using this force-on-force driver, trainers can quickly develop a data rich training exercise that challenges MI Soldiers with realistic and layered scenarios, including high-intensity conflicts and asymmetric and hybrid threats. Each scenario can be tailored to a unit's needs and range from team/section training to large-scale exercises (Tiers 1 and 4).

SIGNALS INTELLIGENCE SUPPORT OFFICES

B-5. The Army Cryptologic Operations (also known as ACO) provides cryptologic support, leadership, and guidance to Army forces and intelligence community members. The Army Technical Control and Analysis Element (also known as ATCAE) is an element of the 742d MI Battalion that provides SIGINT analysis, training, and mission guidance and integration. The Army Cryptologic Operations and Army Technical Control and Analysis Element assist BCTs in navigating through the extensive requirements, coordination, and planning required for using SIGINT systems. This includes obtaining National Security Agency accounts, creating a site profile, completing SIGINT exercise requests, and accrediting a sensitive compartmented information facility/temporary-sensitive compartmented information facility.

UNITED STATES ARMY INTELLIGENCE CENTER OF EXCELLENCE RESOURCES

B-6. USAICOE hosts several robust online tools that expand the center's reach, support MI Soldiers after they complete institutional training, and provide Soldiers with on-demand training opportunities worldwide. Distributed, distributive, and distance learning through interactive multimedia instruction offers Soldiers cost-free, self-development opportunities outside of their units. Resources are made available to Soldiers via the internet or compact discs upon request. Professional forums and social media tools enable Soldiers to self-develop by sharing knowledge across the force. MI professionals primarily use the Intelligence Knowledge Network and Warfighter Forum for researching, sharing, and self-development. They host discussion forums, serve as a single point of entry to get to USAICOE and other intelligence community websites, and host a variety of public and private web applications that support the intelligence community.

QUARTERLY MI PROFESSIONAL AND WARRANT OFFICER FORUMS

B-7. Quarterly MI professional and warrant officer forums provide collaboration and knowledge-sharing opportunities. While the forums are designed to provide information on various topics of interest to the MI community, participants are encouraged to share their experiences and knowledge. Participants can also ask questions and engage SMEs and the USAICOE command staff. MI forums are open to all MI professionals through the Intelligence Knowledge Network on the NIPRNET. Warrant officer forums can be found through Defense Collaboration Services on the NIPRNET.

MI LESSONS LEARNED FORUM

B-8. The MI Lessons Learned Forum is a monthly, hour-long, online, unclassified forum that provides an unfiltered venue for MI leaders to discuss and share lessons and best practices from operations and major training events. The forum presents briefing graphics and a chat function using Defense Collaboration Services on NIPRNET. This forum meets the USAICOE commanding general's initial guidance to the USAICOE lessons learned team. The end state is staying abreast of intelligence and operations activities to discover, validate, and integrate relevant lessons and best practices into MI force modernization and branch proponent efforts. The forum also allows the Active and Reserve Components to share information directly by posing questions and offering comments during the session. The forum also receives and presents intelligence products and useful guides/checklists validated by MI personnel in the field.

MILITARY INTELLIGENCE TRAINING STRATEGY TRAINING CIRCULARS

B-9. MITS is an intelligence-centric certification event designed to train individuals, crews, and platforms to accurately answer intelligence requirements for the commander and certify respective intelligence disciplines in field environments. (See chapter 3 of this publication.) MITS is covered in six TCs.

TC 2-19.400, MILITARY INTELLIGENCE TRAINING STRATEGY

B-10. This publication provides the fundamentals of the MITS certification program. It guides MI company commanders and brigade and division staffs on how to prepare, and plan for, coordinate, and execute MITS certification at all tier levels (Tiers 4 through 1). TC 2-19.400 comprises four chapters:

- **Chapter 1** discusses preparation guidance for MITS certification.
- **Chapter 2** provides planning guidance for MITS certification.
- **Chapter 3** discusses pre-MITS certification requirements.
- **Chapter 4** discusses MITS execution for the four tiers.

TC 2-19.401, MILITARY INTELLIGENCE TRAINING STRATEGY FOR THE BCT TIER 1

B-11. Tier 1 requires a communications rehearsal before execution of Tables II-VI. All intelligence disciplines must participate in the communications rehearsal, which is the IEW Maintenance/Integration Tier 1 certification and Table I for the intelligence warfighting function. BCT S-2s manage Tier 1; they are evaluated on their ability to C2 intelligence warfighting function inputs/outputs to support BCT operations. BCT S-2s/MI company commanders/battalion S-2s are evaluated on their ability to synchronize/communicate/direct intelligence operations. The Tier 1 scenario aligns with the BCT exercise scenario and the certification timeline is the BCT exercise timeline. Tier 1 focuses on the intelligence process. An integral part of the intelligence process is how intelligence supports current and future operations to support staff working groups (targeting, collection, fires, sustainment).

B-12. BCT commanders certify Tier 1 with input/feedback from division G-2s, who oversee the execution and evaluation of the intelligence warfighting function. Tier 1 must be completed before any combat training center rotation. Upon successful completion of Tiers 4 through 1, the intelligence warfighting function will be fully certified and better prepared for combat training center rotations and deployments. TC 2-19.401 comprises three chapters:

- **Chapter 1** provides planning and execution guidance for Tier 1 certification.
- **Chapter 2** discusses IEW maintenance certification tables.
- **Chapter 3** discusses intelligence warfighting function certification tables.

TC 2-19.402, MILITARY INTELLIGENCE TRAINING STRATEGY FOR THE BCT TIER 2

B-13. Tier 2 requires a communications rehearsal before execution of Tables II-VI. All intelligence disciplines must participate in the communications rehearsal, which is the IEW Maintenance/Integration Tier 2 certification and Table I for the other intelligence disciplines. BCT S-2s manage Tier 2, which is a five-day certification event. The Tier 3 scenario continues through Tier 2 in order to build on the intelligence process to answer PIRs. Tier 2 focuses on intelligence platforms. In Tier 2, MI companies and BCT intelligence personnel collaborate to create intelligence platforms. Tier 2 combines platform integration and platform management. The following platforms work in isolation for Tables I-III and collaborate for Tables IV-VI:

- All-Source Platform (production, collection management, targeting, and current operations crews).
- CI and HUMINT Platform (collection teams, OMTs, S-2Xs).
- GEOINT Platform (includes BCT S-2 geospatial engineers).
- SIGINT Platform (SIGINT collection teams and cryptologic support teams).
- IEW Maintenance/Integration Platform.

B-14. Tier 2 is the first time CI is integrated into the intelligence warfighting function as part of the CI and HUMINT Platform. This platform comprises the organic BCT S-2X and MI company. The 35L MOS in the BCT S-2X performs CI tasks inherent to the S-2X. BCT commanders certify Tier 2; however, higher headquarters oversee the execution and evaluation of five separate platforms. Tier 2 must be completed before moving to Tier 1 and should be conducted in field environments. The platforms must comprise the minimum amount of personnel and the required essential individuals as delineated in TC 2-19.403 for the crews. Critical deficiencies may arise during Tier 2 MITS if platforms are not filled to the modified table of organization and equipment (MTOE). TC 2-19.402 comprises six chapters:

- **Chapter 1** provides planning and execution guidance for Tier 2.
- **Chapter 2** discusses IEW maintenance certification tables.
- **Chapter 3** discusses all-source certification tables.
- **Chapter 4** discusses CI and HUMINT certification tables.
- **Chapter 5** discusses SIGINT certification tables.
- **Chapter 6** discusses GEOINT certification tables.

TC 2-19.403, MILITARY INTELLIGENCE TRAINING STRATEGY FOR THE BCT TIER 3

B-15. Tier 3 requires a communications rehearsal before execution of Tables II-VI. All intelligence disciplines must participate in the communications rehearsal, which is the IEW Maintenance/Integration Tier 3 certification and Table I for the other intelligence disciplines. MI company commanders manage Tier 3, which is a five-day certification event. However, higher headquarters oversee the execution and evaluation of nine separate MI company crews in isolation. Tier 3 must be completed before moving to Tier 2 and should be conducted in field environments. The crews are—

- All-source: Production.
- All-source: Collection Management.
- All-source: Targeting.
- Intelligence Processing Crew (GEOINT).
- SIGINT: SIGINT Collection Team.
- SIGINT: Cryptologic Support Team.
- HUMINT: HCT.
- HUMINT: OMT.
- IEW Maintenance/Integration.

B-16. Tier 3 outlines specific tasks for each crew in their intelligence discipline. Tier 3 is prescriptive to each MI company and mandates the accomplishment of every task. Essential to planning and preparing for Tier 3 is the T-week checklist, which includes a communications rehearsal that must be completed for certification. Tier 3 outlines the minimum requirements to certify MI company crews. The crews must complete Tier 4 certification before conducting Tier 3 certification. Additionally, the crews must comprise the minimum number of personnel and the required essential individuals as delineated in TC 2-19.403. If a crew loses an essential individual or drops below the minimum manning of certified personnel, recertification is required once the crew achieves minimum personnel requirements. MITS is not a reiteration of the Soldier's manual and training guide or a repeat of initial entry training. Units should review individual critical task lists and the Soldier's manual and training guide for each MOS to determine additional mission-specific requirements. BEB commanders certify MI company intelligence crews in Tier 3. TC 2-19.403 comprises 10 chapters:

- **Chapter 1** provides planning and execution guidance for Tier 3.
- **Chapter 2** discusses IEW systems integration evaluation tables.
- **Chapter 3** discusses all-source production evaluation tables.
- **Chapter 4** discusses collection management evaluation tables.
- **Chapter 5** discusses targeting evaluation tables.
- **Chapter 6** discusses operational management evaluation tables.
- **Chapter 7** discusses HUMINT collection evaluation tables.
- **Chapter 8** discusses cryptologic support evaluation tables.
- **Chapter 9** discusses SIGINT collection evaluation tables.
- **Chapter 10** discusses intelligence processing evaluation tables.
- **Chapter 11** discusses certification tables.

TC 2-19.404, Military Intelligence Training Strategy for the BCT Tier 4

B-17. Tier 4 focuses on individual intelligence MOS annual certification; certifying units should leverage training calendar *white space* to conduct Tier 4 in preparation for a future Tier 3 certification event. MI company commanders manage Tier 4 certification and may choose to conduct MITS at any location, but must leverage local Foundry training sites and/or MTC support capabilities if available. Additionally, all required unit equipment must be operational, users must have appropriate accounts, and all software/credentials/certificates must be current.

B-18. Tier 4 outlines the minimum requirements to certify individual MI Soldiers. MITS is not a reiteration of the Soldier's manual and training guide or a repeat of initial entry training. Units should review individual critical task lists and the Soldier's manual and training guide for each MOS to determine additional mission-specific requirements. Tier 4 comprises individual critical task lists applicable to MI companies. MI company commanders certify Tier 4. At the end of Tier 4, MI company Soldiers will be competent in fundamental MI skills and ready to begin training on crew drills and certifications outlined in Tier 3. TC 2-19.404 comprises six chapters:

- **Chapter 1** provides planning and execution guidance for Tier 4.
- **Chapter 2** discusses all-source certification tables.
- **Chapter 3** discusses GEOINT certification tables.
- **Chapter 4** discusses HUMINT certification tables.
- **Chapter 5** discusses SIGINT certification tables.
- **Chapter 6** discusses maintenance certification tables.

TC 2-19.405, Military Intelligence Training Strategy for the BCT Evaluator Handbook

B-19. This TC summarizes key aspects of MITS requirements for Army MI leaders, planners, and evaluators. The goal of the MITS certification process is to obtain objective evaluation results that identify intelligence warfighting function readiness for each BCT S-2 and MI company. All MITS evaluators must be familiar with the mission areas, core capabilities, plans, policies, and procedures during the certification. Subject matter expertise and experience in the assigned functional area for evaluation are beneficial in maintaining objectivity.

B-20. MITS planning leaders (BCT S-2/assistant BCT S-2 in coordination with division G-2 MITS planner) must coordinate with Foundry, MTC, and IEWTPT representatives, as applicable, to synchronize efforts for a MITS certification event. MITS planning leaders must coordinate with the local Foundry training site to receive MITS-related certification products (Intelligence Low-Overhead Driver scenario, crew and platform folder structure).

B-21. The MITS lead planner selects one MITS validator for each intelligence discipline and intelligence-specific evaluator teams as early as possible (no later than two weeks from the start of a MITS event). Validators and evaluators must be Soldiers qualified in the discipline they will evaluate, and have the appropriate rank in accordance with recommendations outlined in TCs 2-19.402, 2-19.403, and 2-19.404. Validators certify evaluators during the evaluator academy. Evaluators oversee all facets of MITS certification; therefore, the MITS lead planner should avoid last-minute validator or evaluator changes. The MITS lead planner manages the evaluator academy, but validators should facilitate their respective intelligence discipline during evaluator academy. Validators should be the senior members of each intelligence discipline evaluation team in order to maintain grading and evaluation consistency. TC 2-19.405 comprises five chapters:

- **Chapter 1** discusses all-source evaluation.
- **Chapter 2** discusses GEOINT evaluation.
- **Chapter 3** discusses HUMINT evaluation.
- **Chapter 4** discusses SIGINT evaluation.
- **Chapter 5** discusses maintenance evaluation.

This page intentionally left blank.

Appendix C
Unmanned Aircraft System Operations

ARMY AVIATION TACTICAL EMPLOYMENT

C-1. The BCT uses assigned UASs primarily for information collection and communications relay to support operations. (See ATP 3-04.1.) However, in a combat aviation brigade, the RQ-7B Shadow V2 UAS is capable of executing reconnaissance and security missions as part of manned unmanned teaming (MUM-T) or alone.

RECONNAISSANCE

C-2. Army aviation conducts reconnaissance to support the commander's situational awareness and decision-making process by providing accurate and timely information about the enemy and the AO. The forms of reconnaissance include route, zone, and area reconnaissance. The RQ-7B Shadow V2 UAS endurance offers continuous or near continuous aerial reconnaissance compared to manned aircraft.

C-3. There are seven fundamentals that govern reconnaissance forces in the execution of information collection:

- Gain and maintain enemy contact.
- Orient on the reconnaissance objective.
- Report all information rapidly and accurately.
- Retain the freedom of maneuver.
- Do not keep reconnaissance assets in reserve.
- Develop the situation rapidly.
- Ensure continuous reconnaissance.

Route Reconnaissance

C-4. *Route reconnaissance* is a directed effort to obtain detailed information of a specified route and all terrain from which the enemy could influence movement along that route (ADP 3-90). The reconnaissance may be oriented on a road, air route, railway, mobility corridor, or general direction of an advance or attack within the time available.

Zone Reconnaissance

C-5. *Zone reconnaissance* is a type 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 (ADP 3-90). The boundaries of a zone are restrictive, unlike those of an area reconnaissance, which are permissive.

Area Reconnaissance

C-6. *Area reconnaissance* is a type of reconnaissance operations that focuses on obtaining detailed information about the terrain or enemy activity within a prescribed area (ADP 3-90). The area may include a town, a ridgeline, woods, an airhead, or any other critical operational feature. The area may consist of a single point, such as a bridge or an installation. The primary difference between a zone and an area reconnaissance is the nature of the boundaries (restrictive versus permissive). (See figure C-1 on page C-2.)

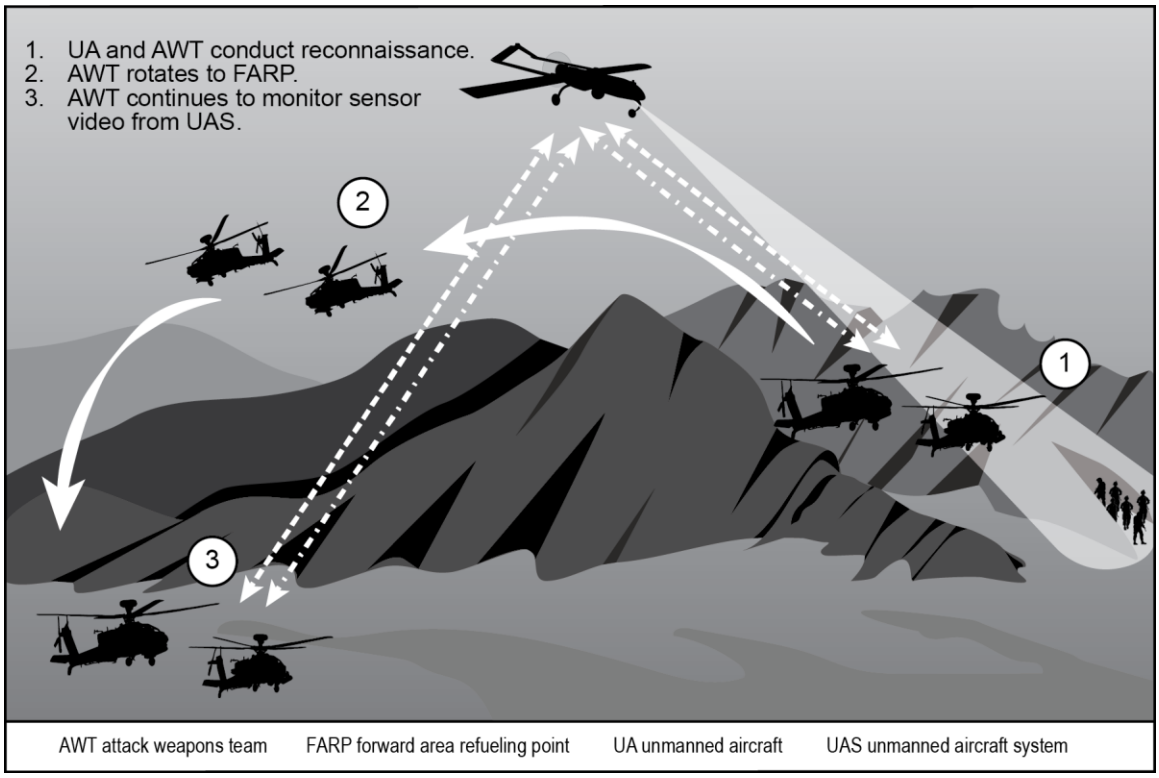


Figure C-1. Unmanned aircraft system area reconnaissance example

SECURITY OPERATIONS

C-7. *Security operations* are those operations performed by commanders to provide early and accurate warning of enemy operations, to provide the forces being protected with time and maneuver space within which to react to the enemy, and to develop the situation to allow commanders to effectively use their protected forces (ADP 3-90).

C-8. There are five fundamentals used during planning an execution of security operations:

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

ATTACK (LASER DESIGNATION)

C-9. An *attack* is a type of offensive operation that destroys or defeats enemy forces, seizes and secures terrain, or both (ADP 3-90). An attack differs from movement to contact; in an attack, the commander knows part of the enemy disposition.

C-10. Army aviation attacks are executed to support friendly forces in close enemy contact or against enemy forces out of contact with friendly forces. Both can be executed as either hasty or deliberate attacks and are typically supported with integrated joint fires.

C-11. The RQ-7B Shadow V2 UAS is capable of laser designating for all Hellfire II AGM 114 missiles. The Shadow's laser designator is considered a weapon, and can be used in an attack. However, the Shadow is unarmed, meaning attacks will involve the armed Gray Eagle UAS, or MUM-T with the AH-64. The Shadow can also operate with other Service fixed-wing or rotary-wing aircraft to deliver laser-guided weapons.

MANNED UNMANNED TEAMING

C-12. *Manned unmanned teaming* is the integrated maneuver of Army Aviation rotary wing and unmanned aircraft system to conduct movement to contact, attack, reconnaissance, and security tasks (FM 3-04). The objective of MUM-T is to leverage the combined capabilities of manned and unmanned aircraft while minimizing their individual limitations to create an asymmetric advantage. (See figure C-2.) MUM-T provides the rotary-wing aviator the ability to employ UAS sensors to identify specific targets from much greater ranges to determine the safest way in and out of the weapons engagement zone, and to assist in engaging the target, either autonomously or via a cooperative engagement. The integration of MUM-T provides—

- Reliable and timely combat information collection.
- Extended range of C2.
- Enhanced situational awareness.
- Persistent presence in an AO.
- Increased survivability of manned platforms.
- Target engagements at longer ranges.

C-13. At the BCT level, unlike the RQ-7B at the combat aviation brigade, there are no gunnery requirements for the Shadow to conduct MUM-T. However, it is a useful skill for operators to possess. Training opportunities should be coordinated with a combat aviation brigade wherever possible to facilitate interoperability and flexibility with higher level assets.

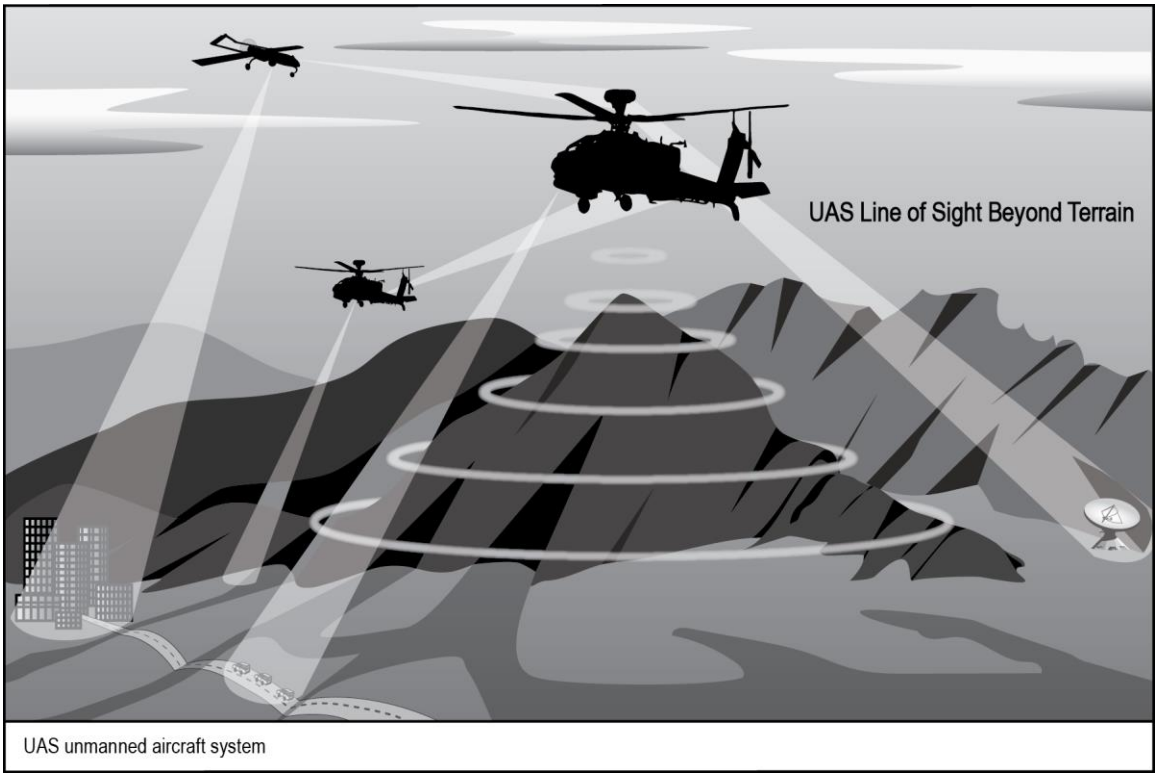


Figure C-2. Manned unmanned teaming example

COMMAND AND CONTROL SUPPORT (COMMUNICATIONS RELAY)

C-14. The RQ-7B Shadow V2 UAS is capable of single channel and frequency hop radio communications relay at a maximum distance of 85 kilometers from the ground control station (GCS) and 10 kilometers from a man-portable radio. (See figure C-3.) Radio frequencies must be loaded into the aircraft before launch, and cannot be changed while in the air. This capacity is useful to ensure communication with forward ground reconnaissance units or relay command nets for maximum C2 on the battlefield.

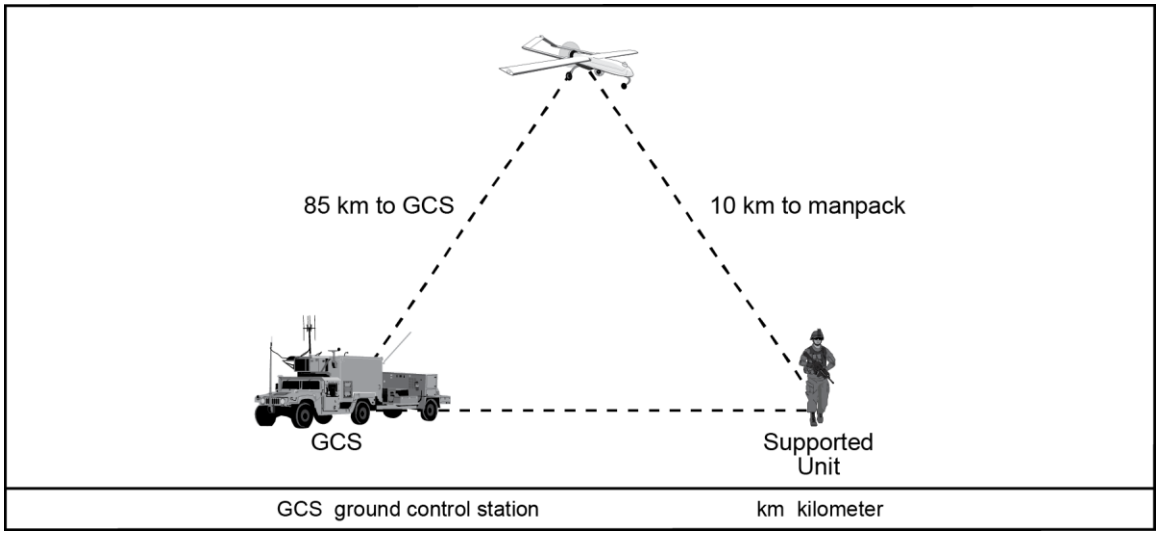


Figure C-3. Communications relay example

OTHER COMMON UNMANNED AIRCRAFT SYSTEM TASKS

C-15. The Shadow is also capable of conducting the following tasks, mostly in conjunction with the targeting process:

- Cross-cueing with other assets, such as other UAS, rotary-wing, ground reconnaissance, multi-intelligence collection assets.
- Target acquisition.
- Indirect fire support through observed fires.
- Supporting BDA via electro-optical/infrared observation.
- Deterrence through noise. The RQ-7B has a loud engine, especially at low altitudes, letting the local area know there is UAS overhead. This can be used to deter movement or an attack depending on the enemy situation.

UNMANNED AIRCRAFT SYSTEM GENERAL STRUCTURE

C-16. The BCT TUAS platoon is organic to the BEB, falling under the MI company. It comprises a mission plan and control section and a launch and recovery section. The platoon is equipped with four RQ-7B Shadow UASs, able to provide 24-hour FMV collection with fully trained operators. (See figure 2-2 on page 2-3.)

UNMANNED AIRCRAFT SYSTEM EQUIPMENT

C-17. The RQ-7B Shadow V2 UAS comprises (see figure C-4)—

- Four unmanned aircraft (UA).
- Two universal GCSs with universal ground data terminals (GDTs).
- One portable GCS with the optional capability of a dual human machine interface (also known as HMI) (EXP configuration).
- Portable ground data system.

C-18. The UA, a small, high-winged light aircraft, is flown remotely from a universal or portable GCS. The UA takes off using a hydraulic/pneumatic launcher and lands on a runway using the tactical automatic landing system (TALS), an arresting gear system for shortened necessary runway length. The UA carries multiple payloads, including an infrared/optical sensor payload equipped with a laser pointer or a laser designator/range finder. Payloads send data back to any ground stations capable of receiving (universal/portable GCS, one system remote video terminal). Video data provides commanders with battlefield information in near real time, day and night.

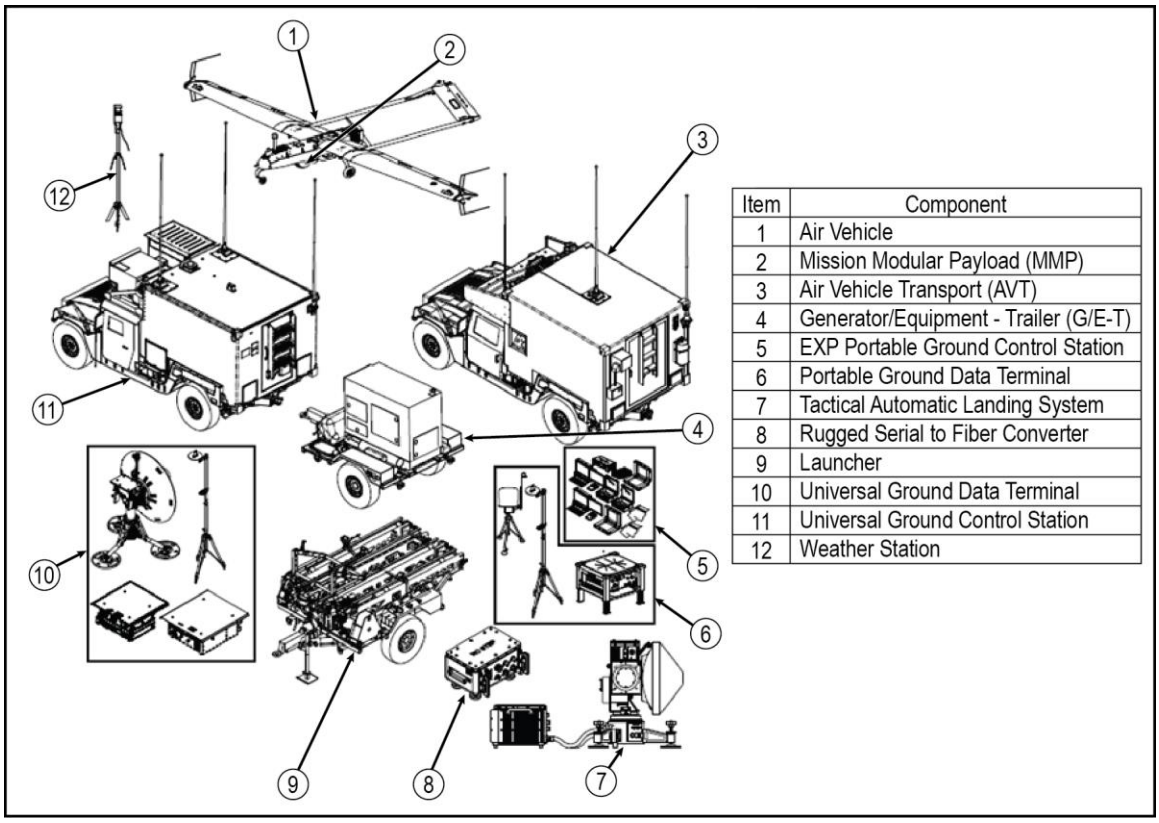


Figure C-4. Unmanned aircraft system equipment

Note. Figure C-4 is meant to give readers a visual representation of UAS equipment although some of the equipment has since been updated.

SYSTEM CAPABILITIES

C-19. The UA is capable of flight at a maximum service ceiling of 16,000 feet above mean sea level. The onboard avionics equipment provides less than 15 feet of spherical error probability for en route navigation, provides and centimeter accuracy for takeoffs and landings. An operator can select up to 100 geographic waypoints; the UA is capable of automatically navigating and flying to each waypoint. Avionics allow the UA to conduct automatic loiter on command, and execution of lost-link procedures to reacquire a link. In addition, the UA can return to a preplanned recovery area if there is a failure reacquiring both data links. The selective availability antispoofing module-capable Global Positioning System (GPS) and TALS provide precise navigation and automatic hands-off landings. The universal/portable GCS provides UA C2. During flight operations, communications with the UA is through the universal GDT. (See figure C-5 on page C-6.)



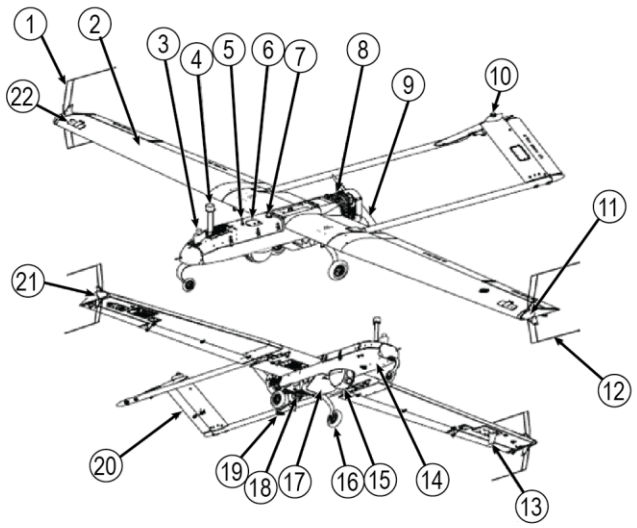
Item	Component
1	Air Vehicle
2	Mission Modular Payload (MMP)
3	Air Vehicle Transport (AVT)
4	Generator/Equipment - Trailer (G/E-T)
5	EXP Portable Ground Control Station
6	Portable Ground Data Terminal
7	Tactical Automatic Landing System
8	Rugged Serial to Fiber Converter
9	Launcher
10	Universal Ground Data Terminal
11	Universal Ground Control Station
12	Weather Station

Figure C-5. Unmanned aircraft system capabilities

UNMANNED AIRCRAFT COMPONENTS

C-20. The following are UA components (see figure C-6):

- The UA fuselage is a fiberglass-epoxy skin over plywood structural member that carries the engine, payload and various electrical components.
- The wing assembly construction consists of carbon fiber around a honeycomb core. It provides aerodynamic lift and turn control using UA flight control surfaces. The wing consists of three sections:
  - The center wing section (located over the fuselage) houses a 3.1-liter oil bladder.
  - Left and right outer wing sections are removable for ground transportation; each outer wing contains flaps, ailerons, position lights, and a 29-liter fuel bladder.
- The communications relay system is integrated into the wingtips, which allow personnel to use tactical voice radios to talk to other units at great distances. The right side of the center wing contains the mini-C and the left side of the center wing houses the mini-T. Antennas are mounted on the mission module of both wings. The left wing houses the secondary antenna (UHF). A primary antenna (omni) is mounted under the mission module. The TALS; radio frequency equipment; GPS; and identification, friend or foe (also called IFF) antennas are mounted on the upper mission module, forward of the center wing.
- The empennage assembly controls stability and enables the UA to maneuver using the tail flight control surfaces. The empennage assembly has two rudders to achieve stability, and configuration eliminates the need for a vertical fin.



Item	Component
1	Upper CRS Antenna
2	Wing Assembly
3	TALS Antenna
4	RFE Antenna
5	IFF Transponder Antenna
6	GPS Antenna
7	Strobe Light
8	Engine Assembly
9	Propeller Assembly
10	Tall Light Assembly
11	Wing Tip Assembly (Left)
12	Lower CRS Antenna
13	Secondary Antenna
14	Fuselage
15	(POP Payload Shown) EO/IR POP 300, or POP 300D, LDHD, or DRHD Payloads
16	Landing Gear System
17	Flight Termination System
18	AFT Antenna
19	Arresting Hook
20	Empennage Assembly
21	Wing Tip Assembly (Right)
22	Wing Tip Interface Panel

Unmanned Aircraft Dimensions and Weights Assembled

Length	12 feet/3.66 meters
Width	20 feet, 5 inches/5.22 meters
Height	3 feet, 2 inches/.97 meters
Weight Without Fuel (including oil and payload)	338 to 376 pounds/153 to 170 kilograms
Fuel	15.3 gallons/58 liters/89.32 pounds/40.5 kilograms
Oil	3.3 quarts/3.1 liters/6 pounds/2.72 kilograms
POP 300 Payload	35.7 pounds/16.2 kilograms (with plate)
POP 300D Payload	45.35 pounds/20.57 kilograms (with plate)
DRHD	43.0 pounds/19.5 kilograms (DRHD + interface brackets)
LDHD	41.5 pounds/18.9 kilograms (LDHD + interface brackets)
Fully Fueled	426 to 462 pounds (467 pounds in GTOW limit)

Figure C-6. Unmanned aircraft components

PORTABLE GROUND CONTROL STATION

C-21. The portable GCS is a fully ruggedized and environmentally sealed UA support system, designed to operate in extreme environments. The primary functions of the portable GCS are preflight, launch, recovery, and maintenance of the RQ-7B Shadow V2 UAs. The portable GCS also provides a redundant control platform if a GCS failure occurs. The potential range for controlling the UA/payload and receiving video/telemetry from the UA is determined by the GDT connected to the GCS. The portable GCS hosts software common with the universal GCS and provides interface with the GDT. Communications to the TALS and weather station is provided through the rugged serial to fiber (RS2F) box. A generator (2kW) supplies power to the portable GCS, allowing it to operate as a standalone unit. An uninterruptable power supply ensures the portable GCS continues to operate up to 15 minutes if a generator fails. Alternating current (also known as AC) power is provided to both the interface control unit and the human machine interface through the power junction box, via a split table with dual connectors. (See figure C-7 on page C-8.)

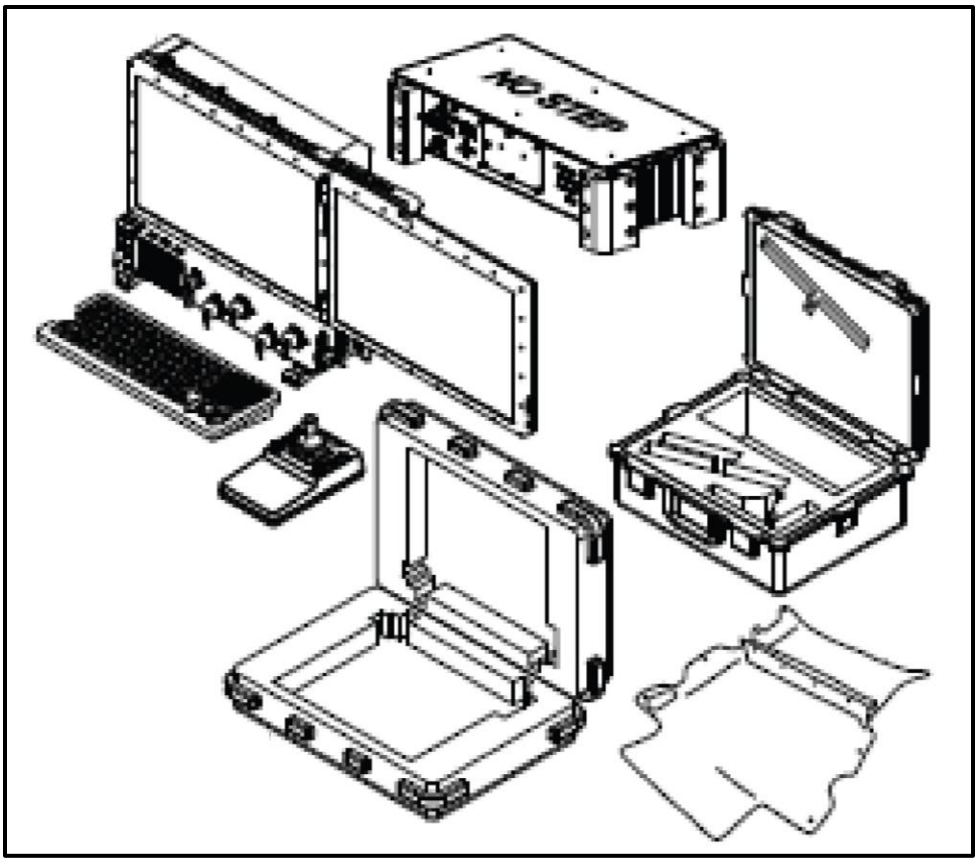
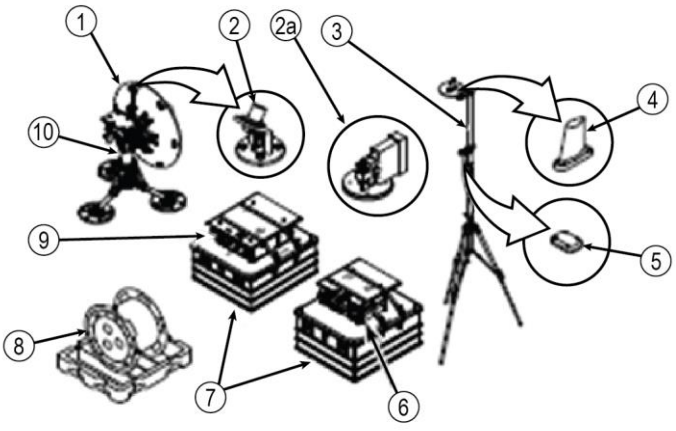


Figure C-7. Portable ground control system

GROUND DATA TERMINAL

C-22. When the GDT is emplaced and functioning, it serves as the communications and interface center for the portable GCS and UA. Uplink commands from the portable GCS are routed to the GDT, where they are fed to the appropriate transceiver and transmitted to the UA. Downlink telemetry and video are routed from the appropriate transceiver or receiver to the portable GCS for use in accomplishing mission goals, flight operations, or data recording. (See figure C-8.)



Item	Component
1	Directional Antenna with RFE
2	Omni Antenna
2a	Horn Antenna
3	Mast/Tripod antenna Assembly
4	UHF Antenna
5	GPS Antenna
6	LEA
7	Transit Cases
8	FO Cable Reel
9	REA
10	LOS Antenna Assembly
	All Required Cables
Note. The UHF and GPS antennas share a tripod.	

Figure C-8. Ground data terminal

C-23. The GDT is split into two major equipment groups:

- **Local equipment group.** This is located outside of and connected to the portable GCS by multimode fiber-optic cable for data and control signals and a copper power cable. It comprises a local equipment assembly and associated cables. It provides user interfaces and accomplishes encryption and decryption, multiplexing and de-multiplexing of user data, and signal conversion for transmission via fiber-optic cable to the second group (remote equipment group). The local equipment assembly is powered by the uninterruptable power supply in the portable GCS. (See figure C-9.)
- **Remote equipment group.** This is generally located at some distance from the portable GCS (up to 500 meters away). It is connected to the local equipment assembly by a single-mode fiber-optic cable for the primary link and a multimode fiber-optic cable for the secondary link. The remote equipment group consists of the remote equipment assembly and integrated antenna groups (directional antenna with radio frequency equipment and directional antennas [omni] for the GPS receiver and the UHF modem). An uninterruptable power supply provides both the alternating and direct current power required to operate the GDT. The remote equipment assembly uses prime power from the uninterruptable power supply. (See figure C-10.)

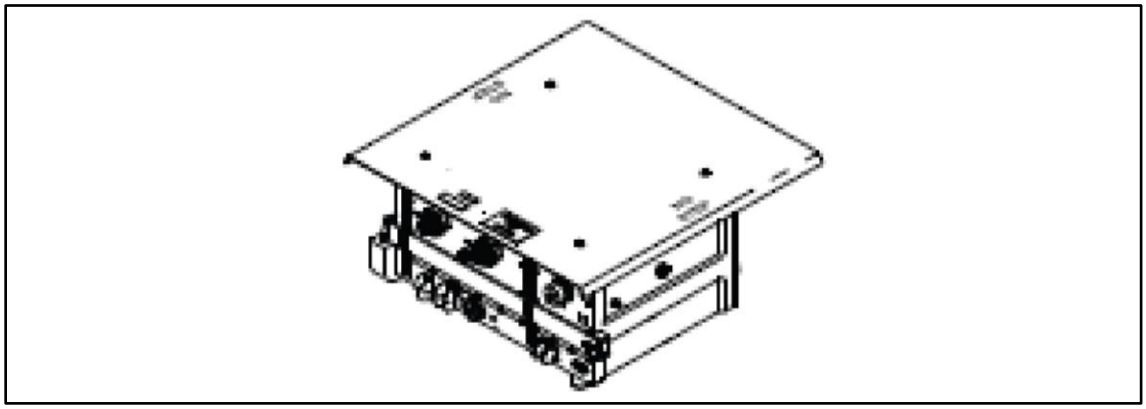
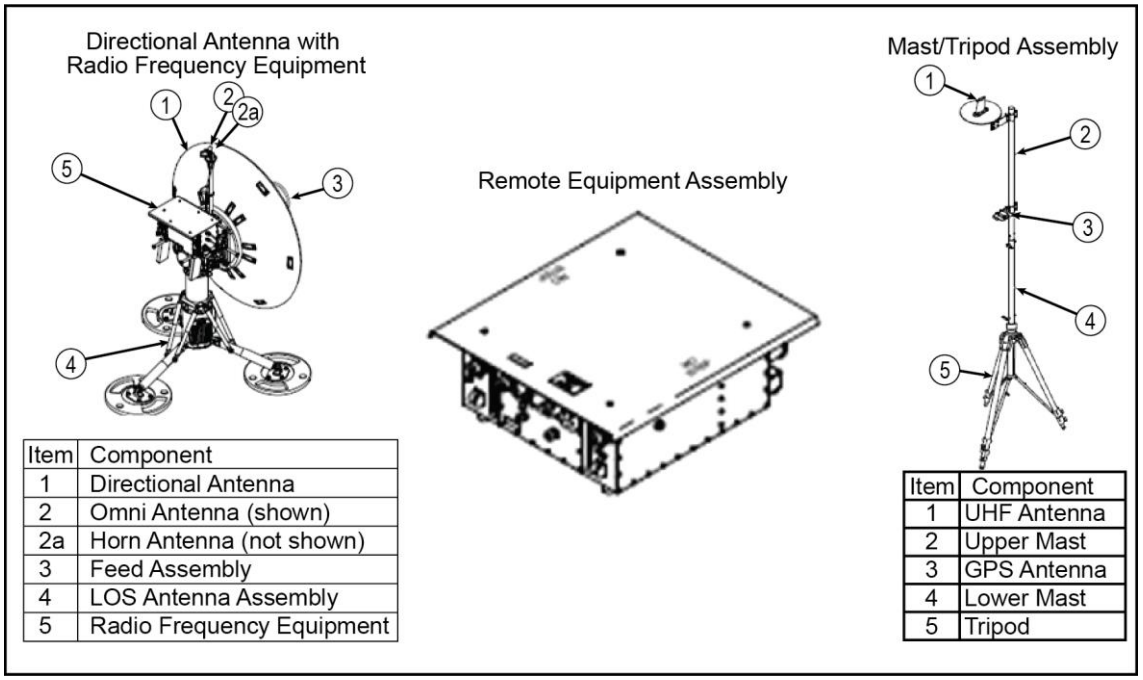


Figure C-9. Local equipment assembly



Item	Component
1	Directional Antenna
2	Omni Antenna (shown)
2a	Horn Antenna (not shown)
3	Feed Assembly
4	LOS Antenna Assembly
5	Radio Frequency Equipment

Item	Component
1	UHF Antenna
2	Upper Mast
3	GPS Antenna
4	Lower Mast
5	Tripod

Figure C-10. Remote equipment assembly

PLATOON COMMAND AND CONTROL

C-24. Generally, the UAS platoon comprises three groups by role: the headquarters element (platoon leader, platoon sergeant, and warrant officers), the maintainers (15E), and the aircraft operators (15W). Within each group, there are further hierarchal roles. (See figure C-11.)

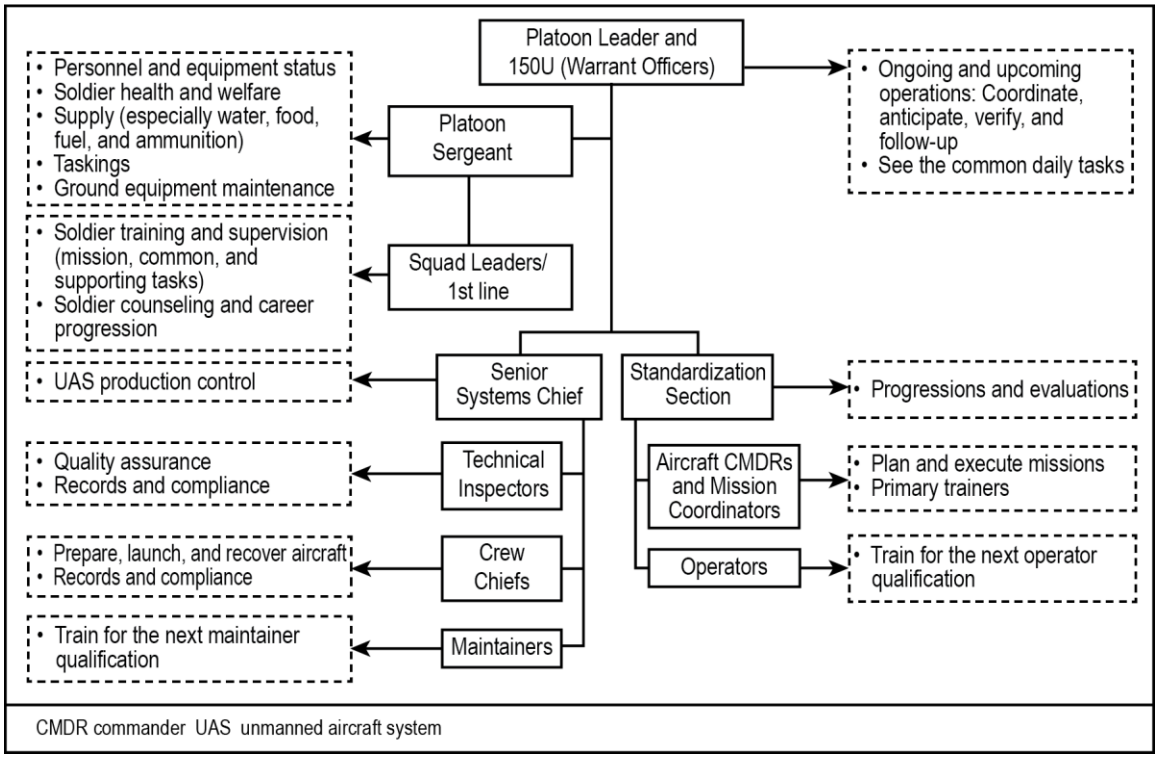


Figure C-11. Platoon command and control

HEADQUARTERS ELEMENT

C-25. The headquarters element comprises the following:

- The **UAS platoon leader** is a branch immaterial slot in the MI company where MI officers are often in charge; however, the BCT can choose another MOS lieutenant to emphasize a discipline within the UAS platoon, such as maneuver or fires. Although the MI company commander officially owns the aircrew training program, much of the RQ-7B Shadow V2 training is delineated with clear progressions. The platoon leader organizes, resources, coordinates, and supervises training execution for the platoon.
- The **UAS platoon sergeant** (E7 15W aircraft operator) has the same roles and responsibilities of any other MI company platoon sergeant. The platoon sergeant slot is a flight activity category (also known as FAC) 2 duty position, meaning the platoon sergeant has fewer flying requirements and more time to perform primary duties. The platoon sergeant manages all MOS Soldiers in the platoon.
- The **150U UAS operations technicians** (warrant officers) are key advisors and SMEs for all UAS-related issues. They run day-to-day flight operations, including the three-step mission approval process. These technicians are key resources for platoon leaders without aviation backgrounds. They also supervise UAS standardization and safety programs according to applicable guidance.

UNMANNED AIRCRAFT SYSTEM REPAIRER/MAINTENANCE (MOS 15W)

C-26. The maintainers group comprises the following:

- The **senior systems chief** (E7), as the SME in all maintenance tasks, supervises aircraft maintenance Army personnel. The senior systems chief directs production control, outlining daily maintenance tasks and ensuring they are completed timely and correctly.
- The **technical inspector** is responsible for quality assurance and quality control through direct supervision of and assistance to personnel preforming maintenance tasks. Technical inspectors complete all maintenance records daily. Typically, technical inspectors are senior Soldiers; however, any maintainer can be certified as a technical inspector with proper training.
- The **crew chief** is a ground crewmember who performs duties essential to UAS flight operations. The crew chief coordinates the actions of all ground crewmembers and those actions directed by the aircraft commander. Crew chiefs prepare aircraft for flight, launch aircraft via the hydraulic launcher, recover the aircraft on the runway, and conduct post-flight maintenance. They also serve as primary trainers for 10-level tasks and are certified at the unit level. All maintainers can be trained as crew chiefs based on demonstrated knowledge, competency, and responsibility.
- **Maintainers** without a crew chief certification are generally newly arrived 10-level Soldiers. They train under crew chiefs, technical inspectors, and systems chiefs to progress in their technical knowledge and capability. Maintainers are ground crewmembers who assist crew chiefs in preparing, launching, recovering, and conducting post-flight maintenance of UASs.

C-27. In addition to military personnel, Shadow field service representatives (Textron Systems representatives) perform higher-level maintenance, assist in ordering parts, and act as liaisons with Textron Systems. Although they are not part of the platoon, these field service representatives support all Shadow platoons on the installation.

UNMANNED AIRCRAFT SYSTEM OPERATOR (MOS 15E)

C-28. The aircraft operators group comprises the following:

- The **standardization instructor operator** (SO) is a qualified instructor operator (IO), designated by the commander in writing, to supervise unit standardization programs. The SO primarily trains and evaluates other SOs and IOs. Generally an E6, this is the senior 15E in the platoon, other than the platoon sergeant. The SO runs the progression and evaluation program, ensuring all 15E personnel are trained.
- The **IO** is a UAS crewmember who trains and evaluates UA crewmembers and designated UAS unit trainers and promotes safety among crewmembers. Training and evaluation include UA operations, qualification, unit employment, visual flight, and crew performance. The IO falls under the SO as a hands-on trainer. There can be multiple IOs in the platoon, but there must be at least one SO or IO for a viable training program. IOs certify personnel in different readiness levels (RLs) and roles, such as aircraft commander or payload operator. Soldiers must attend the course at Fort Huachuca to be certified.
- The **unit trainer** is a UAS crewmember designated to instruct in areas of special training to assist in unit training programs and achieve established training standards. Unit trainers train Soldiers at the lowest level before they are tested by IOs. Multiple Soldiers can be designated as unit trainers at the unit level.
- The **aircraft commander** is responsible for safe and effective aircraft operations. They are unit first-level trainers and proficient in all aspects of the unit METL. Aircraft commanders are selected according to AR 95-1 at the unit level. They are often also unit trainers.
- The **aircraft operator** controls and/or monitors the actual UAS flight within the GCS.
- The **payload operator** controls the payload movement from within the GCS.

AIRCREW TRAINING PROGRAM

C-29. Army aviation has strict guidelines and requirements that aircraft operators must meet to fly and have greater levels of responsibility. The unit aircrew training program is a comprehensive plan developed by commanders that outlines unit training goals: qualification, refresher training, mission training, and continuation training. The end state for successful aircrew training is producing and maintaining qualified and proficient combat ready operators and maintainers. A thorough aircrew training program should be developed in conjunction with the unit METL. (See TC 3-04.11, AR 95-1, and FM 7-0.)

RECEPTION

C-30. Commanders receive newly assigned Service members and review their records to determine past experience and proficiency. Service members have 14 calendar days to provide records (individual aircrew training folder and individual flight records).

C-31. Individual flight records track crewmember aviation-related events and training. Commanders maintain, close out, and distribute records for personnel assigned to their organization using the Centralized Aviation Flight Records System (also known as CAFRS).

INTEGRATION

C-32. Commanders screen and review records with their SMEs' (150U, SO, IO) assistance to determine initial RL designation within 45 calendar days from arrival. If commanders are unable to determine RLs after reviewing records, the SO or IO must conduct a proficiency flight evaluation. The aircrew training program commander initiates a contract (DA Form 7120 [*Commander's Task List*]) that specifies tasks, iterations, semiannual flying hour requirements, and authorized crew duty positions. Both the commander and Service member sign the contract, acknowledging agreed-upon requirements.

C-33. The following must be considered during integration:

- Personnel on their first assignment following graduation from AIT must receive a proficiency flight evaluation for initial RL designations other than RL3.
- Personnel that have not flown in the last 180 days in the mission, type, and design aircraft must be designated RL3 and complete refresher training before progressing to the next phase.

C-34. To be designated RL1, based solely on reviewing records, Service members must meet the following requirements:

- Satisfactorily completed all Annual Proficiency and Readiness Testing (APART) requirements within previous aircrew training program year.
- Current DD Form 2992 (*Medical Recommendation for Flying or Special Operational Duty*).
- Completed a local area orientation according to local SOPs.
- Met aircrew coordination training sustainment requirements.

TRAINING

C-35. Commanders emphasize RL progression training, academic training, and gunnery qualification.

Sustainment/Continuation

C-36. In order to conduct sustainment/continuation training, crewmembers must meet currency requirements, conduct APART, and meet their semiannual training requirements. Additionally, units must develop a viable academic training program to reinforce crewmember aviation skills and knowledge to attain and sustain technical and tactical proficiency.

Readiness Levels

C-37. RL training begins with the development of proficiency at the individual level and progresses through crew to collective proficiency. RLs identify the training phase in which the operator is participating and measures readiness to perform assigned missions. RLs also provide a logical progression of individual and crew training based on task and mission proficiency.

C-38. Commanders must afford Service members 90 consecutive days to progress from one RL to the next, excluding days lost to—

- Temporary duty or deployment to a location where the Service member is unable to fly.
- Medical or nonmedical suspension from flight.
- Grounding of aircraft by Headquarters, Department of the Army.
- Leave approved by the unit.
- Aircraft nonavailability due to movement to deployment/redeployment and aircraft preset/reset if less than 50 percent of unit aircraft are available.
- Documented flight cancelations due to weather and/or maintenance that significantly impact flight operations as well as restrictions to flight operations due to no-fly times in the host nation where the unit operates.

Readiness Level 3 (Qualification/Refresher Training)

C-39. An operator is RL3 while undergoing qualification or refresher training. Refresher training is for an operator to regain proficiency in academics and all base tasks for the duty position, An operator progresses from RL3 to RL2 by demonstrating proficiency in all mandatory base tasks, those optional base tasks designated by the commander, and appropriate academic subject areas to a SO/IO. RL3 crewmembers are only authorized to preform actual flight with an SO/IO. Service members must also satisfactorily complete an operator's manual written exam during this phase of training before progression to RL2.

Readiness Level 2 (Mission Training)

C-40. An operator designated RL2 begins training on mission and additional tasks as designated by the unit commander. Mission training programs assist RL2 operators in verifying and developing their ability to perform specific tasks that support the unit's METL. Operators progress from RL2 to RL1 by demonstrating proficiency to an SO/IO in all selected tactical, mission, and additional tasks; applicable academic subjects; and in each flight mode and condition specified on their DA Form 7120-1 (*Crew Member Task Performance and Evaluation Requirements*). There are no task or iteration minimums or APART requirements while operators are designated RL2. Operators must complete a local area orientation before progressing to RL1.

Readiness Level 1 (Continuation Training)

C-41. An operator who has completed RL2 training is considered mission ready and designated RL1. The operator must perform those tasks designated by the unit commander for the operator's MTOE position. Once designated RL1, the Service member must complete APART, flying-hour and task-iteration minimums, and additional aircrew training program requirements as directed by the commander. A Service member is fully qualified and proficient in base, aircrew training program-required mission and additional tasks, and all applicable academics. Service members must maintain proficiency in those tasks. RL1 crewmembers sustain and improve proficiency in these tasks as they accomplish the continuation training requirements established by the appropriate appendix.

FLIGHT-HOUR MINIMUMS

C-42. Aircraft operators are required to maintain the semiannual flight-hour minimums in table C-1 on page C-14. Unit trainers, SOs, and IOs may credit hours they fly while performing assigned duties at any crew position towards their semiannual flying-hour requirements. The Shadow Aircrew Task Module outlines flying-hour requirements.

Table C-1. Flight-hour minimums

Flight activities category (FAC)	*Semiannual flying-hour requirements*	*Semiannual simulation flying-hour requirements*
FAC 1	12 hours, 4 hours of which must be flown in each crew station	24 hours, 8 hours of which must be flown in each crew station
FAC 2	6 hours, 2 hours of which must be flown in each crew station	12 hours, 4 hours of which must be flown in each crew station
FAC 3	No crew duties authorized with Army unmanned aircraft system	6 hours, 2 hours of which must be flown in each crew station

CURRENCY REQUIREMENTS

C-43. Currency is not considered an aircrew training program requirement, but a means of maintaining crewmember proficiency in critical takeoff and landing tasks. To be considered current, an operator must—

- Perform a takeoff and landing every 60 consecutive days while operating the RQ-7B or an approved simulator.
- Perform a takeoff and landing every 120 consecutive days while operating the RQ-7B aircraft.
- IOs/SOs are not authorized to count flights while not physically on the controls to meet currency requirements.

C-44. Operators whose currency lapses must complete a proficiency flight evaluation according to TC 3-04.11. Additionally, currency cannot be reestablished on a simulator. Units who have deployed for contingency operations, the first O-6 commander may waive launch and recovery requirements for forward site personnel when conducting split base operations. Before resuming launch and recovery duties, forward site personnel must demonstrate proficiency to an IO.

ANNUAL PROFICIENCY AND READINESS TRAINING

C-45. APART is a mandatory process that measures a crewmember's individual and crew proficiency and readiness. A Service member's APART window is a three-month period ending on the last day of the Service member's birth month every year. During the period, the Service member is required to complete a written examination and hands-on performance evaluations according to AR 95-1:

- **Written exam:** The UA operator's written examination is open-book, prepared at the local level, and comprises 50 objective questions.
- **Hands-on performance evaluation:** The UA operator's hands-on performance evaluation consists of oral and flight tests as outlined in AR 95-1. The hands-on performance evaluation requires proficiency in several areas and may be separated into different flights. However, crewmembers must successfully complete all requirements during their APART period.

AEROMEDICAL REQUIREMENTS

C-46. Personnel with a UAS operator MOS must meet the annual medical requirements documented in AR 40-501 and AR 95-1, regardless of assignment. Personnel will undergo and successfully satisfy the requirements for at least a Class IV Flight Duty Medical Examination as prescribed in AR 40-501. Failure to meet medical standards is grounds for disqualification from flying duties. Although not part of their actual APART requirements, Service members must complete their annual flight physical during their respective APART period, or upon arrival to a new unit. They must also complete annual aeromedical training according to AR 95-1 and the Shadow Aircrew Task Module.

NO-NOTICE EVALUATIONS

C-47. Aircraft operators must receive at least one no-notice evaluation during the aircrew training program training year once designated RL1. Each commander must establish a no-notice evaluation program in the unit SOPs. No-notice proficiency evaluations may be written, academic, hands-on flight evaluation in aircraft /compatible simulator or a combination of both.

C-48. This program measures the effectiveness of individual, crew, and collective training. Commanders use the results of no-notice proficiency evaluations to ensure unit standardization and readiness, and to tailor the unit's individual, crew, and collective training programs.

FIGHTER MANAGEMENT/CREW ENDURANCE

C-49. Fatigue, stress, physical activity, and circadian rhythm disruption can all negatively affect crew duty performance when conducted in close proximity to flight. Leaders must be prepared to implement countermeasures to safeguard Army personnel and equipment, and set conditions for mission success. Large scheduling shifts or four or more hours require a transition period in order to allow biological adjustment to circadian disruption.

C-50. Duty day, rest period, and maximum flight tables are determined at the local level through collaboration with the flight surgeon—with approval from the first O-5. Extensions are designed to follow the graduated low-, medium-, and high-risk final mission approval authority chain. Categories to consider should be duty day, both in garrison (see table C-2) and in the field; rest period (see table C-3); and maximum flight time allowed (see table C-4). Aircraft operators must fill out DA Form 2408-12 (*Army Aviator's Flight Record*), which is used as a permanent historical record for aircraft operators to show flying hours.

Table C-2. Duty day during flight training (garrison)

Time period	*Duty period (hours)*	*Extension*	*Extension authority*
24 hours	≤ 12		Not applicable
	≥ 12 and ≤ 14	2 hours	Training commander
	≥ 14 and ≤ 16	Two additional hours	Battalion commander
	≥ 16	End of mission	Brigade commander
14 days	≥ 168	To be determined by flight surgeon	Brigade commander
30 days	≥ 288		

Table C-3. Rest period reductions

Time period	*Duty period (hours)*	*Reduction*	*Extension authority*
24 hours	≥ 8	Not applicable	Not applicable
	Less than 8 and ≥ 6	≤ 2 hours	Battalion commander

Table C-4. Maximum flight time allowed

Time period	*Flight time allowed (12 hours maximum)*
24 hours	8 hours
14 days	74 hours
30 days	90 hours (garrison)/140 hours (tactical)

MISSION APPROVAL AUTHORITY (AR 95-1)

C-51. Mission-approval process commanders (O-5 and above) will develop and publish policies and procedures for the mission approval process for those units under their command. When there is no O-5 and above commander in the chain of command, Army commands, Army Service components commands (ASCCs), direct reporting units, or the Army National Guard may adjust the requirement. Adjustment authorities will not be delegated below the general officer level. Approval authorities and procedures established for tactical and combat operations may differ from those used for garrison operations.

C-52. Commanders will establish a training and certification program to ensure standardization and understanding of the mission approval and RM process for personnel defined in paragraph 2-14a:

- **Initial mission approval authority:** Unit commanders or their designated representatives (for example, operations officer) determine the mission feasibility and accept or reject the mission.
- **Mission briefing officer:** Commanders or their designated representatives that interact with the mission crew or air mission commander to identify, assess, and mitigate risk for the specific mission. Commanders will select briefing officers based on their experience, maturity, judgment, and ability to effectively mitigate risk to the aircrew and designate them by name and in writing. Mission briefers are authorized to brief regardless of risk level. (Manned) Briefing officers must

be a qualified and current production control in the mission profile as determined and designated by the commander. (Unmanned) Briefing officers are leaders designated by the commander. If designated individuals are UAS operators, they will be a qualified and current aircraft commander.

- **Final mission approval authority:** Members of the chain of command who are responsible for accepting the risk and approving all aviation operations (ground and air) within their unit. They approve missions for a specific risk level. Final mission approval authorities may only approve those missions whose assessed risk level is commensurate with their command level. Commanders (O-5 and above) will select final mission approval authorities from the chain of command and designate them in writing along with the level of risk (low, moderate, high, extremely high) they are authorized to approve. At a minimum, company-level commanders and below are the final mission approval authority for low-risk missions, battalion-level commanders and above for moderate-risk missions, brigade-level commanders and above for high-risk missions, and the first general officer in the chain of command for extremely high-risk missions. Approval authorities are based upon levels of command authority and not rank.

MISSION APPROVAL PROCESS

C-53. The following three-step mission approval process must be completed before mission execution.

STEP 1—INITIAL MISSION APPROVAL

C-54. The initial mission approval authority approves the mission in accordance with the commander's policies and procedures by considering some of the following factors (not all-inclusive): alignment with the unit's METL, aircraft required and availability, availability of required special mission equipment, trained aircrew availability, other training and mission impacts, tactical and threat considerations. This step is not a detailed hazard and risk analysis for specific flight operations, but rather an assessment of the unit's capability to accomplish the mission. Initial approval may occur at different levels of command, depending on how the mission is generated. For example, a mission generated at the brigade level might be accepted by the battalion operations officer while the company commander might approve a platoon training mission.

STEP 2—MISSION PLANNING AND BRIEFING

C-55. This step involves detailed planning, risk assessment and risk mitigation by the aircrew, and review by the mission briefing officer review. Briefers are authorized to brief missions regardless of the level of mitigated risk. Self-briefing is not permitted unless approved by the first officer (O-5 or above) in the chain of command. The interaction between the crew and briefer is paramount to identify, assess, and mitigate risk for the specific flight or mission. Mission briefing officers are responsible for ensuring key mission elements are evaluated, briefed, and understood by the production control/aircraft commander and air mission commander as appropriate. Mission briefing officers will, at a minimum, review and assess the following key areas in the mission planning process:

- The flight is in support of an operational unit mission and has obtained initial mission approval (see paragraph 2-14b(1)).
- The crew thoroughly understands all tactical, technical, and administrative mission details.
- Assigned crews are allocated adequate premission planning time. The mission is adequately planned to include performance planning, notices to airmen (NOTAMs), instrument flight procedures according to paragraph 5-1b, and coordination with supported units.
- Crews are qualified and current for the mission according to this regulation and the commander's flight crew qualification and selection program according to paragraphs 4 through 18, to include current aviation life support equipment, aircrew reading file currency, and crew experience appropriate for the mission.
- Forecast weather conditions for the mission, including departure, route, and arrival weather, meet the requirements of this regulation and local directives outlined in paragraph 5-2c.
- Crews meet unit crew endurance requirements.
- Complete commander's RM program procedures and risk mitigated to the lowest level possible.
- Required special mission equipment is operational.

- Review ground and/or strip alert mission analyses and risk reduction procedures.
- Mitigate operations security risks for sensitive or classified aviation operations when the aircraft is assigned a unique address code and/or the location is broadcast by Automatic Dependent Surveillance-Broadcast (also known as ADS-B), Mode S transponders, or personal electronic devices.

STEP 3—FINAL MISSION APPROVAL

C-56. Based on the resulting mitigated risk, the appropriate final approval authority reviews the mission validity, planning, risk mitigation, and authorizes the flight/operation by the commander's policy. Initialing, signing, and documenting verbal approval on DA Form 5484 (*Mission Schedule/Brief*) and/or DD Form 2977 are all acceptable methods of recording approval of the appropriate authority in the mission approval process. If a crewmember or a mission parameter change increases the resultant risk, the production control/aircraft commander or air mission commander is re-briefed, and the mission reapproved as required.

COMMAND AND CONTROL RELATIONSHIPS

C-57. The TUAS platoon is a BCT-level asset owned by the BCT S-3, although generally directed by the collection manager in the BCT intelligence cell. As an aviation asset in the MI company, BEB, or the infantry brigade it is important that all units BCT and below understand that they do not have tasking authority over UASs unless explicitly stated by the BCT. It is also vital to have clear resupply relationships since the airfield is unlikely to be collocated with any of the above mentioned higher headquarters.

RELATIONSHIP WITH THE MI COMPANY

C-58. The TUAS platoon is generally located at the airfield, regularly separated from the rest of the MI company. This creates a strain for resupply and vehicle maintenance at the company level due to distance. UAS Soldiers should be training and conducting activities with the company without compromising the UAS mission: flight.

RELATIONSHIPS WITH OTHER UNITS

C-59. The TUAS platoon has many customers within the BCT; therefore, it must have good working relationships with all battalions as well as the BCT headquarters. The best way to ensure good communications and UAS product dissemination is to conduct one system remote video terminal training with the MI company and all battalions and to support their FMV training. This ensures practiced functionality for FMV dissemination across the BCT and ensures Soldiers are practiced at communicating with their customers.

BASIC LEADERSHIP: PLATOON LEADER TASKS

C-60. Platoon leader perform common daily and weekly tasks.

COMMON DAILY TASKS

C-61. The following 19 activities are the most common UAS platoon leader daily tasks; they are sequentially listed, generally meaning they should be completed in sequential order. Several of the tasks pertain to following up on deliverables from the platoon sergeant, the senior UAS systems chief or production control NCO, and the SO. Table C-5 on page C-19 is a common daily task checklist:

1. **Verify accountability of your personnel:** This is paramount. Relying solely on the platoon sergeant can result in a vulnerable system.
2. **Review equipment status:** Equipment readiness is directly linked to the platoon's ability to accomplish its mission. Pay close attention to the rolling stock and have the Soldiers drive their assigned vehicles regularly. As soon as there is an equipment issue, address it with the Army's management tool—problem, plan, parts, people, time, training, and tools (also known as P4T3). Verify that that this process has been performed.

3. **Verify availability of class I and III supplies:** This applies mainly in a field environment. The platoon sergeant should be making requisitions for these supplies to higher. Verify that requisitions have been submitted and supplies have been delivered. Adjust/Curtail operations if they have not been received.
4. **Situation update:** Be the most situational aware individual in the formation. In addition to personnel and equipment, understand what is going on with the enemy, weather, airspace/NOTAMs, friendly units, and the UAS mission/tasking. This enables platoon leaders to anticipate problems, provide subordinates with guidance on how to best accomplish the mission, select the right crews, identify training needs, and coordinate with the right organizations.
5. **Mitigate risks in air and ground activities:** Always ask "What can hurt my people and civilians, and break my stuff today?" Other 150Us, the platoon sergeant, SO, and senior UAS systems chief can assist in identifying risks and possible control measures.
6. **Verify the mission approval process:** Verify that the production control/aircraft commander followed appropriate mission approval procedures and that the final mission approval authority has assumed the risk for the mission.
7. **Supervise UAS mission planning and execution:** Unmanned aero-scout missions require in depth mission planning. Ensure crews have adequate time to plan their mission according to the unit's tactical SOPs or operator pack and participate in the air mission brief. Observe the crewmembers brief the products they developed while working in their assigned planning cells. Promote the unmanned aero-scout mentality through mission planning and execution.
8. **TLP for upcoming operations:** This deals with implied or specified tasks derived from the training plan developed/updated weekly (see paragraph C-62), or from short suspense orders from the commander or S-3.
9. **Verify that the information exchange with the customer takes place:** Call-signs, frequencies, and grid locations may be the minimum required information for dynamic retaskings, but it is not quite enough for deliberate missions. The customer should be able to talk to the unmanned aero-scout on a frequency hopping and encrypted net, receive FMV in the customer's one system remote video terminal, and understand what the UAS can do for the customer. Conversely, the aircrew should know the supported unit's scheme of maneuver and the intent for UAS employment. Ensure the customer has the means to receive the desired products during the mission, and the operators can obtain what is needed to provide the products.
10. **Review the troops to task tracker (also known as T2T):** Back up the platoon sergeant with the manning of taskings and confirm that the planned flight schedule is still viable.
11. **Update/Draft the flight schedule:** Account for all personnel necessary to accomplish the mission—not just the aircraft commander and aircraft operator. Consider recent changes to the troops to task tracker, medical/discipline issues, mission, and aircrew training program when making changes to the flight schedule. At a minimum, ask the platoon sergeant, SO, and chief to scrub the flight schedule during the weekly training meeting before publishing it. Unless otherwise specified, expect a 72-hour air tasking order cycle during combat operations—meaning, furnish the S-3/brigade aviation element with the necessary information in advance.
12. **Verify land and airspace availability:** Follow-up on previously submitted requests and submit new ones through the S-3/brigade aviation element. If processed correctly, a NOTAM for airspace request should be visible on the Defense Internet NOTAM Service (also known as DINS), and a range reservation in the Range Facility Management Support System (also known as RFMSS) if applicable. During combat, request airspace control measures via the S-3/brigade aviation element. This is usually submitted in conjunction with the flight schedule information and published via the air control order and/or special instructions.
13. **Verify coordination with external parties:** Follow-up on previously submitted requests (for medics during field problems, S-6s to deal with connectivity issues/secret systems, SMEs to train personnel).
14. **Check for safety of flight, maintenance, messages, and accident reports:** Back up the quality control section in the receipt of and compliance with these messages. Researching the latest accidents may assist in identifying possible unsafe behaviors or processes in the organization.
15. **Review/Update the aircrew training program management tracker with the latest information:** Back up the SO in updating the tracker at the completion of the day's flights. This assists in making sound decisions when creating the flight schedule.

16. **Review/Update the fighter management tracker with the latest information:** Pay special attention to this task during field exercises. Ensure to plan the sequence and timing of events well in advance to validate and adjust the plan.
17. **AAR products, plans, flights, training events, processes, and risk control measures:** This is probably the most underrated task. The organization should always strive to improve; therefore, direct influence on training plans, products, and risk mitigation techniques. Conduct daily AARs with subordinates and follow through with the observations.
18. **Provide subordinates with guidance (recognize great performance, and articulate how to improve):** This is directly linked to the step above and may be the most important task. It involves the art of mentorship and is very much a two-way relationship between the platoon leader and the rest of the platoon. Be a servant-leader, be confident and clear in instructions, and earn the platoon's respect.
19. **Verify the mission approval process:** While common daily task 6 deals with the current mission approval, this task focuses on the future mission. Follow up with the air mission commander and aircraft commander to ensure they are working on this requirement.

Table C-5. Platoon leader common daily tasks

#	*Daily tasks*	*Time focus*	*Resource*
1	Verify accountability of your personnel	D+0	Platoon SGT
2	Review equipment status, P4T3	T+0	Platoon SGT/PC
3	Verify availability of class I and III supplies:	T+0	Platoon/First SGT
4	Situation update		
	Enemy (combat)	D+0	S-2
	Weather	D+0, T+0	USAF/S-2
	NOTAMs	D+0	DINS
	Friendly (combat)	D+0	S-3
	UAS mission (combat)	D+0	CMD/S-3
5	Mitigate risks in air and ground activities	D+0	ATP 5-19
6	Verify the mission approval process	D+0	AR 95-1
7	Supervise UAS mission planning and execution	D+0	AC/AMC
8	Troop leading procedures for upcoming operations	As far as practical	
9	Verify that the information exchange with the customer takes place	As far as possible	
10	Review the troops to task tracker	T+0, T+1, T+2	Platoon SGT
11	Update/Draft the flight schedule	T+0, T+1, T+2	CMD guidance
	Be included in the air tasking order (combat)	D+3 (72 hours)	S-3/BAE
12	Verify land and airspace availability		
	Reserve the range	Varies	S-3/Range control
	Reserve the airspace and publish a NOTAM	Varies	S-3/Range control
	Request air control measures to be published in ACO (combat)	D+3 (72 hours)	S-3/BAE
13	Verify coordination with external parties	T+0, T+1	
14	Check for safety of flight, maintenance, messages, and accident reports	D+0	JTD
15	Review/Update the ATP management tracker with the latest information	D+0	SO/IO
16	Review/Update the fighter management tracker with latest information	D+0	
17	After action review products, plans, flights, training events, processes, risk control measures	D+0	AC/All
18	Provide subordinates with guidance (recognize great performance and articulate how to improve)	D+0	
19	Verify the mission approval process	D+1	AR 95-1

AC	aircraft commander	JTD	joint technical data
ACO	air control order	P4T3	problem, plan, parts, people, time, training, and tools
AMC	air mission commander	PC	production control
ATP	aircrew training program	S-2	battalion or brigade intelligence staff officer
BAE	brigade aviation element	S-3	battalion or brigade operations staff officer
CMD	command	SGT	sergeant
DINS	Defense Internet NOTAM Service	SO	standardization instructor operator
IO	instructor order	UAS	unmanned aircraft system
NOTAM	notice to airmen	USAF	United States Air Force

COMMON WEEKLY TASKS

C-62. The following nine activities are the most common weekly tasks that allow platoon leaders to make the most positive impact on the organization because they bridge the gap between the commander's vision for the aircrew training program and the UAS platoon's training plan to support the mission. Table C-6 is a common weekly task checklist:

1. **Platoon training meeting:** Although training meetings are typically conducted at the troop/company level, commanders and/or first sergeants do not often understand the intricacies of UAS operations. Therefore, conduct a platoon training meeting in preparation for the company-/troop-level meeting. Arrive to the latter with a well-developed training plan that covers the platoon for the next eight-plus weeks, and include flights, academics, and hands-on training. The meeting should follow a logical pattern, starting from a factual assessment of current crew manning status (what operations can be supported now with the current people and skillsets and for how long). Next, articulate the training plan so the platoon meets the commander's expectation or objectives. (This typically includes sustaining 24-hour flight operations while executing METL tasks.) In other words, present a training plan/training meeting product that the combat team can *cut and paste* into their plan. Emphasize that executing a robust UAS training plan will result in the platoon's ability to truly support the troop/company, squadron, or brigade during a field problem or combat.

   A tentative training plan is as follows:

   a. Each week features flights, simulation sessions, operator academics, maintainer academics, and hands-on training.
   b. Operator academics, including but not limited to airspace, local procedures, exogenous factors, aero-med, weather, performance planning, systems, terms and graphics, engagement area development, METL doctrine, operations and intelligence briefs, mission planning, actions on contact, vehicle identification and threat capabilities, fratricide prevention, gunnery skills test prep, air-to-surface and surface-to-surface munitions, call for fire, close combat attack and close air support, friendly maneuver doctrine, air assault, opposing force doctrine, CBRN defense, electronic warfare, survivability, fallen angel, and downed aircraft recovery team.
   c. Maintainer academics, including but not limited to Army aviation maintenance, the system's theory of operation, UA assembly and troubleshooting, GCS troubleshooting, GDT and associated equipment troubleshooting, portable GCS and associated equipment troubleshooting, TALS maintenance, and technical inspector training.
   d. Hands-on training, including but not limited to setting up communications, setting up the one system remote video terminal, over the horizon communications like satellite communications, convoy operations, site security, setting up a CP tent, medical training or combat lifesaver (CLS), and platoon situation training lanes.

2. **Forecast key vacancies and submit school requests for replacements:** Back up the platoon sergeant in identifying individuals to send to schools, and following up on their school reservations (local school reservation or Army Training Requirements and Resources System [also known as ATRRS] reservation).
3. **Submit recommendations for air mission commander, aircraft commander, crew chief, technical inspector, and mission briefing officer:** The unit should have a process to train, nominate, and evaluate personnel for these positions. In addition to motivating individuals to earn these qualifications, manage talent and submit recommendations to the commander once requirements are met.
4. **Develop CONOPS/mission scenarios for UAS continuation training (garrison):** Do not get away with simply saying "Go fly, do not break airspace, and do not crash the aircraft." Train unmanned aero-scouts with realistic and demanding scenarios. Combat or a combat training center rotation should not be the first time that operators are receiving a decent operations and intelligence brief and UAS mission tasking. Develop the CONOPS, be the S-2 and S-3, and mentor operators through the mission planning process.
5. **Improve products, plans, flights, training events, and procedures according to AARs:** Although common daily task 17 required conducting daily AARs, for this weekly task implement those AAR observations.

6. **Review the MTOE, equipment shortages, and orders:** Know what equipment the unit is supposed to have, what it actually has, and what the equipment looks like. Research line numbers, download training manuals and pictures. Make phone calls, receive updates directly from tech-supply/program managers/field service representatives, the motor pool, and the supply section. Exercise the command channels to apply pressure if necessary.
7. **Aviation resource management survey (also known as ARMS) maintenance:** The unit will be inspected by a group that manages aviation-related programs. ATP 3-04.7 provides information on the aviation resource management survey program, which provides guidance units can use to audit each section cyclically in order to fix issues as they are identified.
8. **Review the accuracy of the alert roster:** This task facilitates accountability. Back up the platoon sergeant.
9. **Write awards if merited:** Common daily task 18 called for Soldier recognition in the platoon. However, the commander and first sergeant are probably not going to be around the launch and recovery site every single day to notice their high-performing UAS operators and maintainers. Therefore, write or ask first-line supervisors to submit award requests. UAS platoons can assist in bringing good deeds to the commander's attention.

Table C-6. Platoon leader common weekly tasks

#	*Weekly tasks*	*Time focus*	*Resource*
1	Platoon training meeting		
	METL assessment		
	Unit manning report	As far as possible	S-1/First sergeant
	Crew status/Battle roster	T-1	SO/PC
	Chronic personnel and equipment issues		
	Equipment services	As far as practical	Support company
	Flight schedule	T+1, T+2	
	Troops to tasks	As far as practical	Platoon sergeant
	Short/Long range training calendars	As far as practical	S-3
	Platoon's academic and hand-on training plan	As far as possible	CMD guidance
2	Forecast key vacancies and submit school requests for replacements	As far as possible	Platoon sergeant
3	Submit recommendations for AMC, AC, CE, TI, and MBO	T-1	
4	Develop CONOPS/mission scenarios for UAS continuation training (garrison)	T+1	
5	Improve products, plans, flights, training, events, and processes IAW AARs	T+1	
6	Review MTOE, equipment shortages, and orders	As far as practical	
7	ARMS maintenance		
8	Review accuracy of the alert roster	T-1	Platoon sergeant
9	Write awards if merited	T-1	

AAR	after action review	METL	mission essential task list
AC	aircraft commander	MTOE	modified table of organization and equipment
AMC	air mission commander	PC	production control
ARMS	aviation resource management survey	S-1	battalion or brigade personnel staff officer
CE	crew chief	S-3	battalion or brigade operations staff officer
CMD	command	SO	standardization instructor operator
CONOPS	concept of operations	TI	technical inspector
IAW	in accordance with	UAS	unmanned aircraft system
MBO	mission briefing officer		

This page intentionally left blank.

Appendix D

Call for Fire Considerations

OVERVIEW

D-1. While not a task normally associated with MI company or platoon operations, there may be instances in the defense or as a part of a security operation that the company or platoon may have to either call for fire or adjust fires on a preplanned target reference point. This appendix outlines the considerations for calling for fire and adjusting fires.

INITIAL CALL FOR FIRE

D-2. The standard call for fire consists of three basic transmissions comprising a total of six elements:

- **First transmission**—Observer identification and WARNORD.
- **Second transmission**—Target location.
- **Third transmission**—Description of target, method of engagement, and method of fire and control.

OBSERVER IDENTIFICATION AND WARNING ORDER

D-3. The observer identification informs the fire direction center (FDC) who is calling. The observer also clears the net for the rest of the call. The WARNORD informs the FDC the type of mission and the method of locating the target. The types of missions are—

- **Adjust fire.** The observer uses adjust fire when uncertain of the exact target location. The observer says, "ADJUST FIRE."
- **Fire for effect.** The observer should always try first-round fire for effect if certain the target location is correct. The observer should also be certain that the rounds of the first volley have the desired effect on the target so that little or no adjustment is required. The observer says, "FIRE FOR EFFECT."
- **Suppress.** The word *suppress* is used to quickly bring fire on a preplanned target only. This is a simplified call for fire and is sent in one transmission, for example, "G-24-THIS IS G59-SUPPRESS AF2401-OVER." The target description is not announced.
- **Immediate suppression.** This is used to quickly bring fire on a planned target or on a target of opportunity firing at a friendly unit or aircraft, for example, "G-24-THIS IS G59-SUPPRESS AF2402-OVER." The target description is not announced.

TARGET LOCATION

D-4. Following the type of mission, the method of target location is announced. This prepares the FDC to receive the data sent by the observer and apply it to locate the target. The three methods for locating targets are grid, polar, and shift from a known location. Only the polar method and shift methods are announced to the FDC. If the observer does not specify either polar or shift, the FDC knows the grid method is being used, for example, "G-24-THIS IS G59-FIRE FOR EFFECT-POLAR-OVER."

D-5. When using the grid method, the target location is normally sent in six digits. The direction from the observer to the target, in mils if possible, must be given to the FDC after the call for fire, but before the first adjusting rounds are shot. The polar method requires the observer's exact location. The observer determines the direction, to the nearest 10 mils, of the observer target (OT) line and the distance, to the nearest 100 meters, from its position to the target. (See figure D-1 on page D-2.)

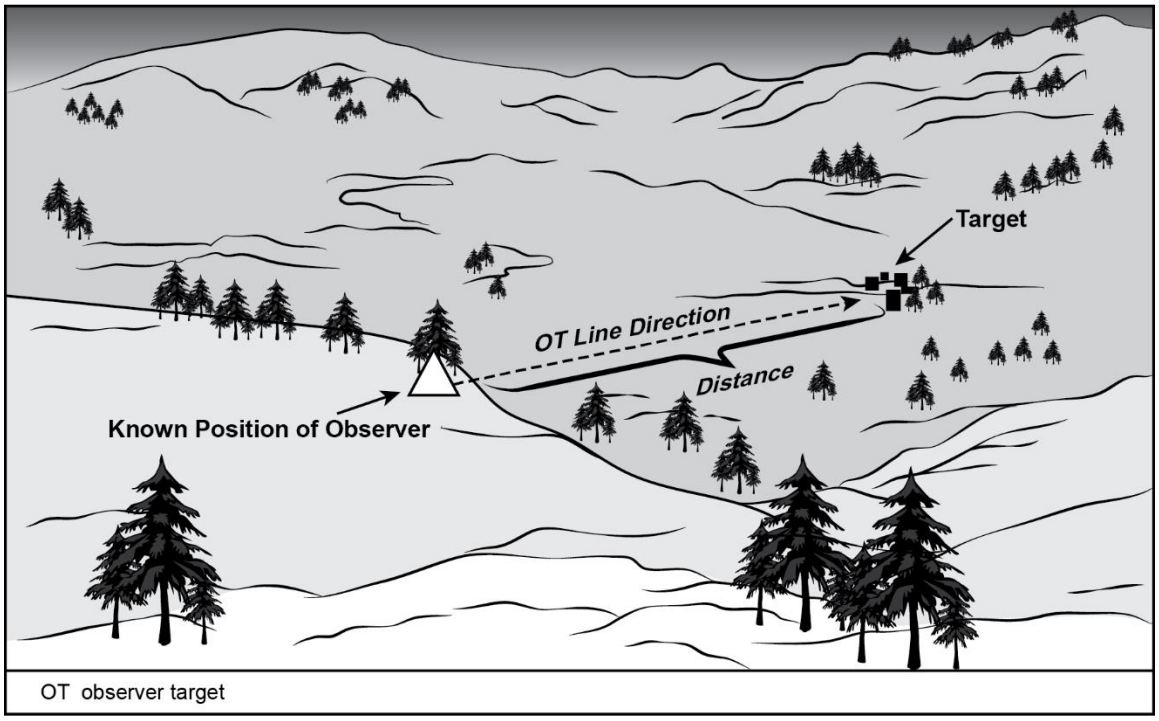


Figure D-1. Polar plot example

D-6. The shift-from-a-known point method can be used if the observer and the FDC have a common known point. This point must have been previously established as an artillery target. To locate the target, the observer must determine the direction by using a map and protractor or by using a binocular reticle pattern and a known direction to the known point. The observer must apply the *right add, left subtract* rule in determining the direction to the target. (See figure D-2.)

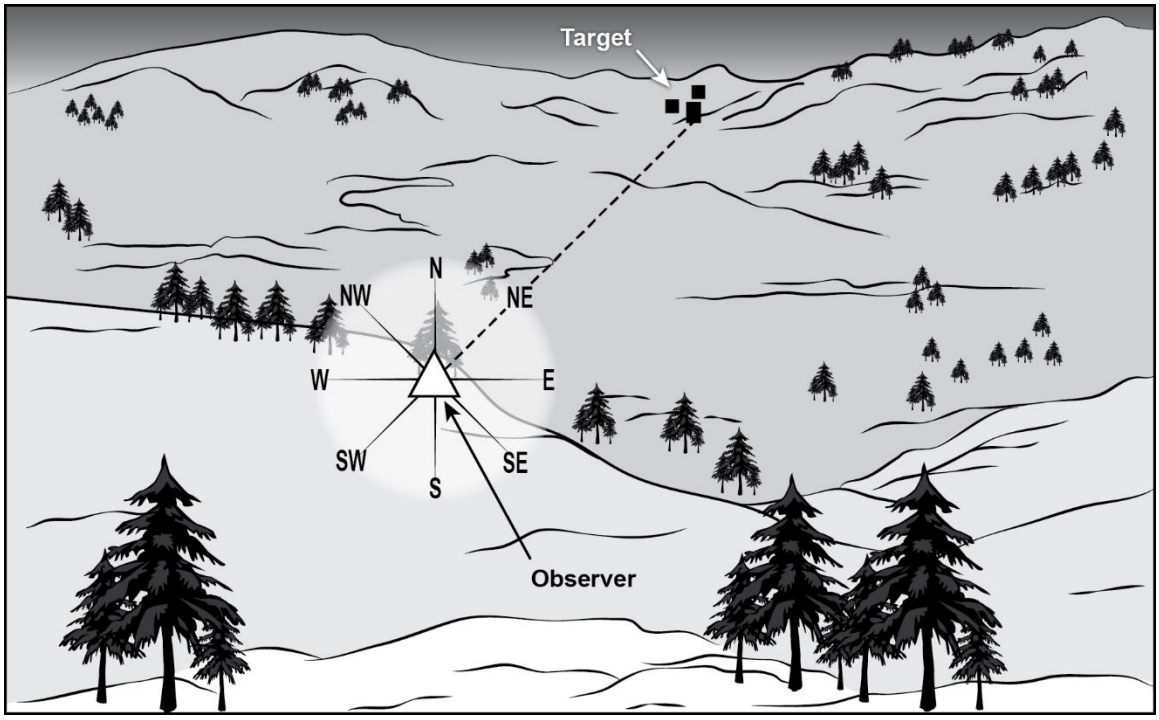


Figure D-2. Shift-from-a-known point using cardinal direction example

D-7. The observer then determines the lateral and range shifts. (ATP 3-60 explains how to determine lateral and range shifts.) Lateral shifts are left or right from the known point to the OT line and are given to the nearest 10 meters. Range shifts are given as "ADD" when the target is beyond the known point or as "DROP" when the target is closer than the known point. Range shifts are given to the nearest 100 meters. (See figure D-3.)

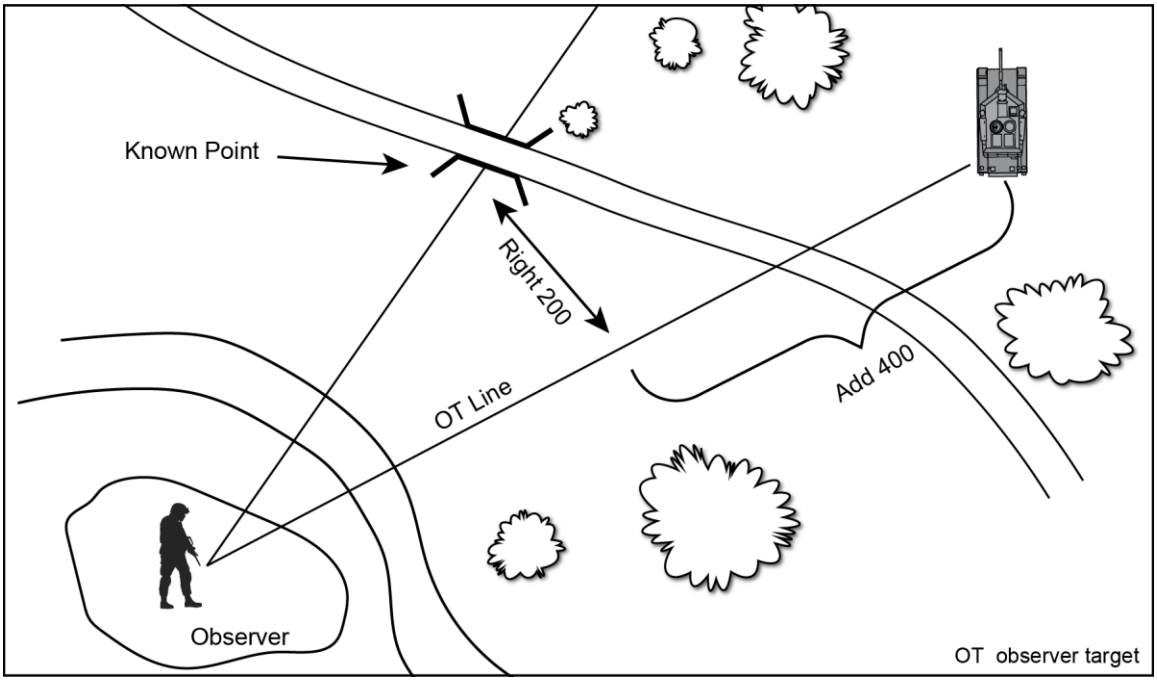


Figure D-3. Lateral and range shifts example

DESCRIPTION OF TARGET, METHOD OF ENGAGEMENT, AND METHOD OF FIRE AND CONTROL

D-8. The observer includes these elements in the call for fire using the following guidelines.

Description of Target

D-9. The observer describes the target to the FDC. The FDC then determines the type and amount of ammunition needed. The target description should be brief yet accurate. This is the last required element in the call for fire. (See figures D-4.)

Description of Target	*Examples*				
What the target is:	Tanks and dismounted infantry, truck convoy, or artillery battery				
What the target is doing:	Attacking, digging in, moving on route 45, or firing				
Strength of the target:	Company or infantry with 10 tanks, 20 trucks, or 6 guns				
Degree of protection:	In the open, dug in, or in bunkers with overhead cover				
Target shape and size:	Generally used for linear (trench lines or roads), circular (assembly areas (strongpoints), or rectangular targets. **Examples:**				
Shape	***Size***	***Shape***	***Size***	***Shape***	***Size***
Linear	• Grid 186278 • Length 800 meters • Attitude 2,150 (azimuth of target's long axis)	**Circular**	• Grid 186278 to 192284 • Radius 200	**Rectangular**	• 400 by 200 • Attitude 3,450 (azimuth of target's long axis)

Figure D-4. Target description example

Method of Engagement

D-10. The observer states how it wants to attack the target (type of ammunition, fuse, and distance from friendly troops). Ammunition type and fuse may be altered by the FDC based on ammunition constraints. If the target is within 600 meters of friendly troops, the observer announces "DANGER CLOSE" to supporting mortars and artillery. When "DANGER CLOSE" is called, the initial rounds in adjustment should use a delay fuse.

Method of Fire and Control

D-11. The observer states who gives the command for fire to begin. If the observer wants to control the time of firing, it says, "AT MY COMMAND." The FDC informs the observer when the unit is read to fire. At the proper time, the observer says, "FIRE." If the observer does not say "AT MY COMMAND," the FDC fires as soon as the platoon/battery is ready.

ADJUST INDIRECT FIRE

D-12. Once the call for fire has been made, the observer's next concern is getting the fire on the target. When the observer can locate the target accurately, it requests fire for effect in the call for fire. If the observer cannot accurately locate the target (due to deceptive terrain, lack of identifiable terrain features, poor visibility, or inaccurate map), it must conduct an adjustment to get the fire on target. The observer must first pick an adjusting point. For a destruction mission, the target is the adjusting point. For an area target, the observer must pick a well-defined adjusting point at the center of the area or close to it. The observer must spot the first adjusting round and each successive round and send range and deviation corrections, as required, back to the FDC until the fire hits the target. The observer spots by relating the burst or group of bursts to the adjusting point.

DEVIATION SPOTTING

D-13. Deviation spotting involves measuring the horizontal angle in mils between the burst and the adjusting point. A burst to the right (or left) of the target is spotted as number of mils right (or left). (See figure D-5.)

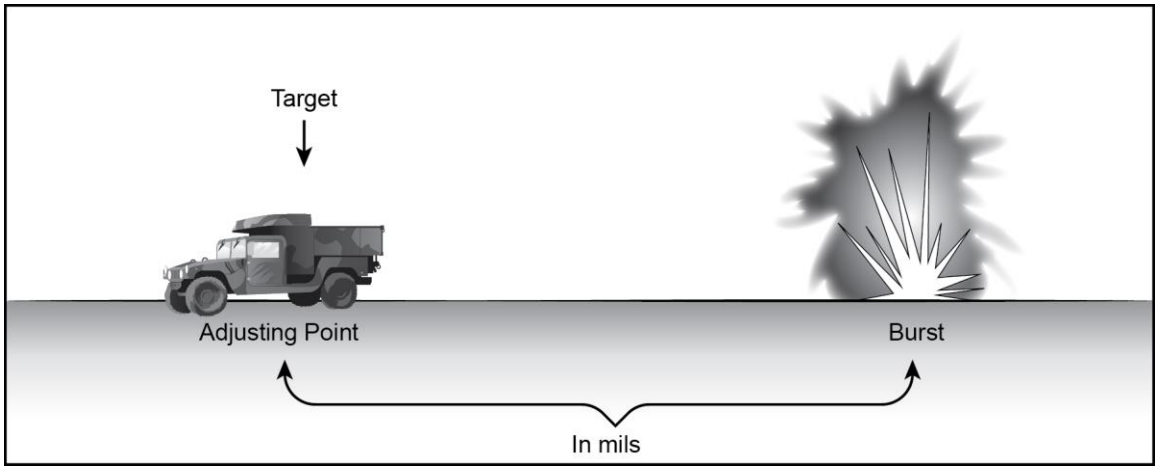


Figure D-5. Deviation spotting example

D-14. An angle measuring device or technique, such as the mils scale on military binoculars or the hand and fingers method, is required to determine deviation. Figure D-6 illustrates the reticle in binoculars. The horizontal scale, divided into 10-mil increments, is used for measuring horizontal angles; the vertical scales, measured in 5-mil increments in the center and left side of the reticle, are used for measuring vertical angles. The *hand and fingers* technique may be used, as shown in figure D-7. Deviation to the left or right should be measured to the nearest five mils for area targets, with measurements taken from the center of the burst. Deviation for a destruction mission is estimated to the nearest mil.

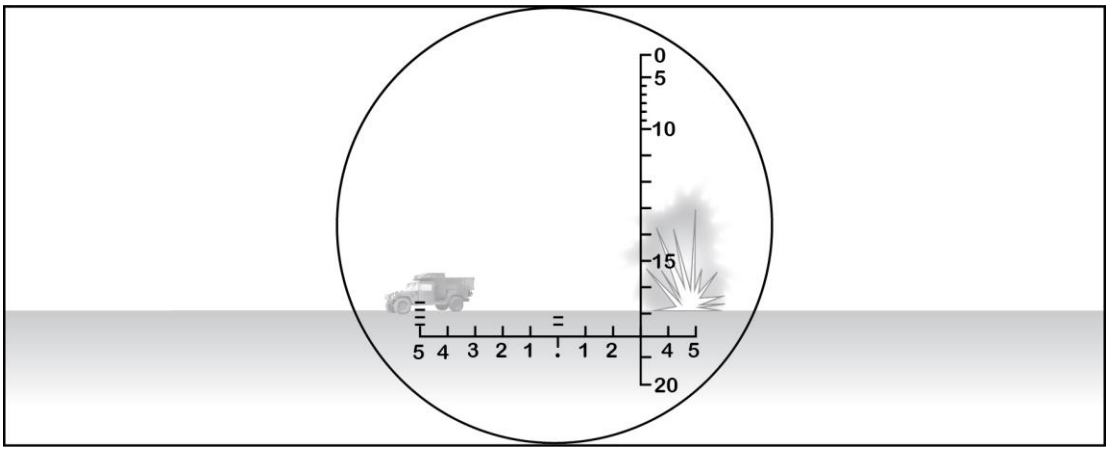


Figure D-6. Mil scale on binoculars example

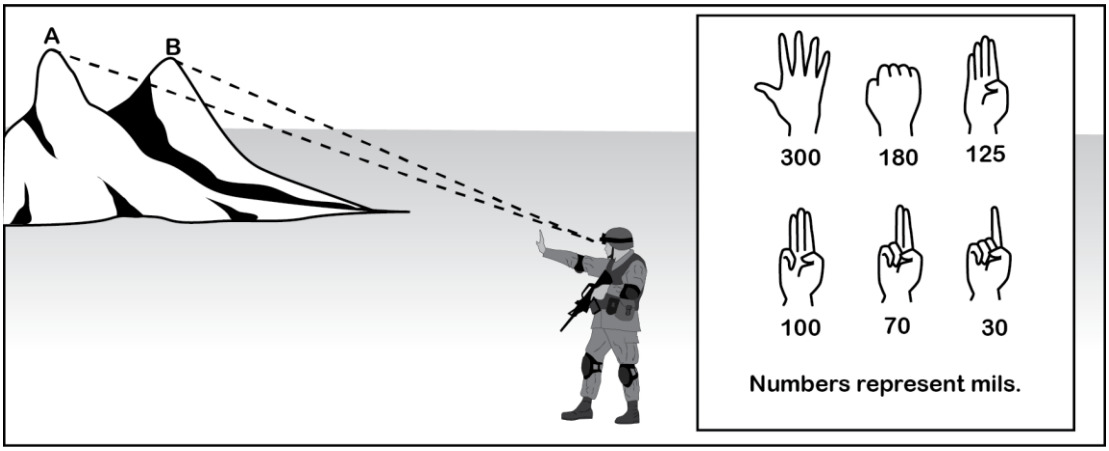


Figure D-7. Using the hand and fingers technique to determine deviation

D-15. A burst on the OT line is spotted as "LINE." Deviation to the left or right should be measured to the nearest five mils for area targets, with measurements taken from the center of the burst. Deviation for a destruction mission is estimated to the nearest mil. Figure D-8 illustrates the adjusting point at the center of the binocular's horizontal scale.

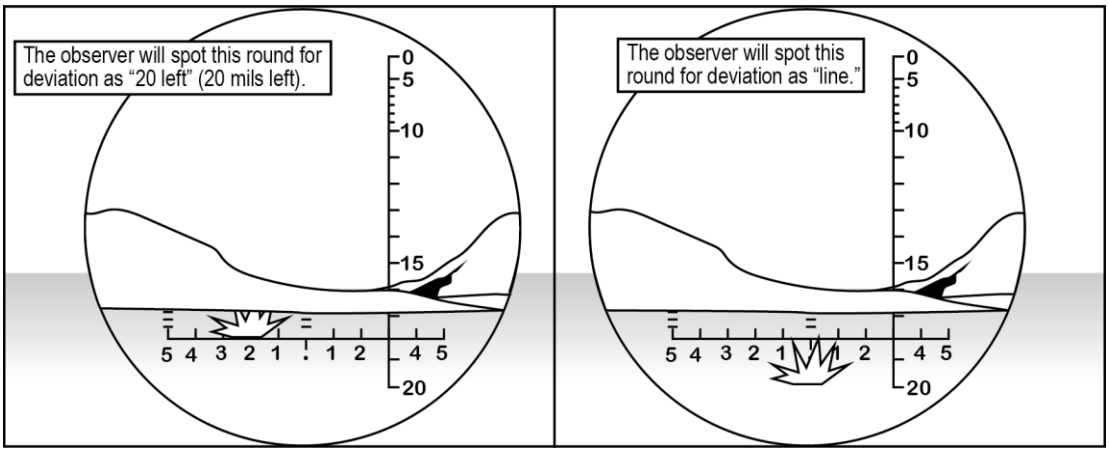


Figure D-8. Deviation spotting with binoculars example

DEVIATION CORRECTION

D-16. Once the mil deviation has been determined, the observer must convert it to a deviation correction in meters. Deviation correction is the distance in meters the burst must be moved to be the between the observer and the target. The deviation correction is sent with the range correction to the FDC for the next adjusting round or when calling for fire for effect. Deviation correction is determined by multiplying the observed deviation in mils by the distance and is expressed as the OT factor. (See figure D-9.) The correction is expressed to the nearest 10 meters. (See figure D-10.)

Guide for Determining the Observer Target (OT) Factor	OT distance greater than 1,000 meters: Round to the nearest thousand and express in thousands of meters. Examples: OT distance = 4,200 meters—OT factor = 4.0 OT distance = 2,700 meters—OT factor = 3.0
	OT distance less than 1,000 meters: Round to the nearest 100 meters and express in thousands of meters. Example: OT distance = 800 meters—OT factor = 0.8

Figure D-9. Determining the observer target factor

D-17. Minor deviation corrections (10 to 20 meters) are necessary in adjustment of precision fire. In adjustment of area fire, small deviation corrections (20 meters or less) should be ignored except when such a small change is necessary to determine a definite range spotting. Throughout the adjustment, the observer should move the adjusting rounds close enough to the OT line so range spotting can be made accurately.

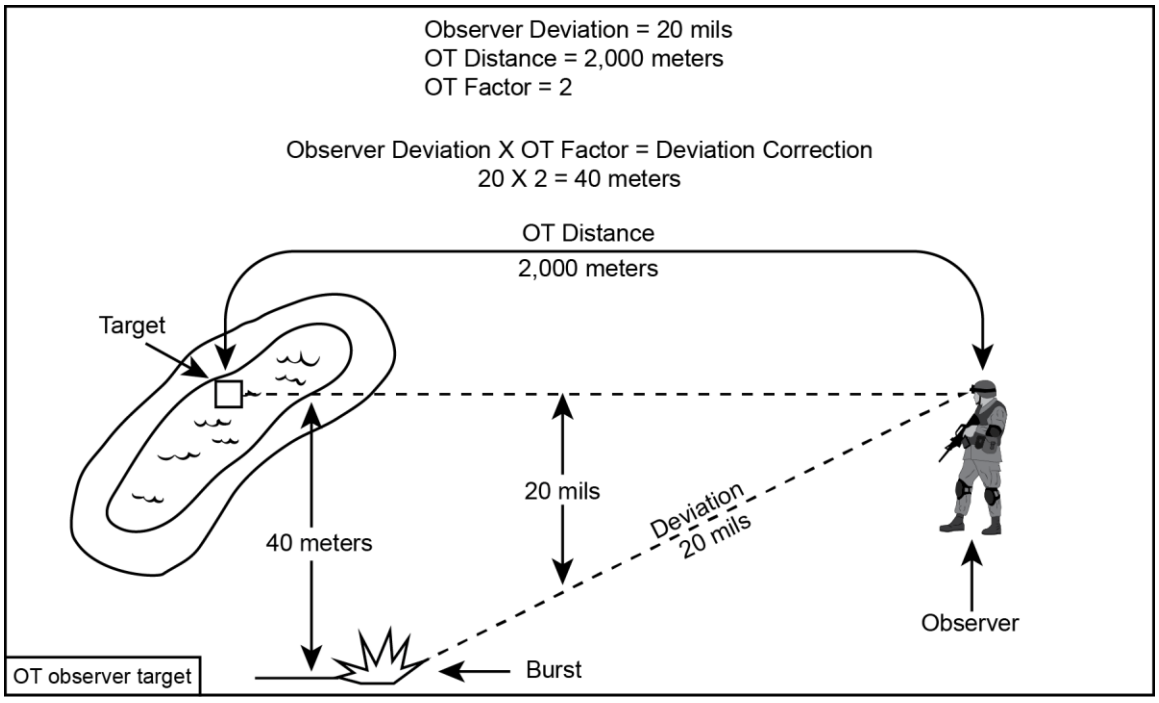


Figure D-10. Converting mil deviation to deviation correction example

RANGE SPOTTING

D-18. As applied to range (short or over), spotting is required to make adjustments to get fire on the target. Any range spotting other than "DOUBTFUL" or "LOST" is definite. Usually, an adjusting round's burst on or near the OT line gives a definite range spotting. The observer can make a definite range spotting even when the burst is not on or near the OT line. The observer uses it knowledge of the terrain or wind and observes debris scattered around by the explosion. However, if the observer is not sure ("DOUBTFUL"), the correction sent to the FDC should be used for deviation ("LEFT" or "RIGHT") only. This brings the burst on line to get a definite range spotting ("OVER," "SHORT," or "TARGET"). (See figure D-11.)

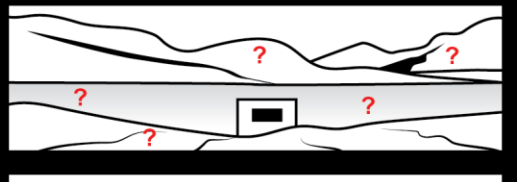
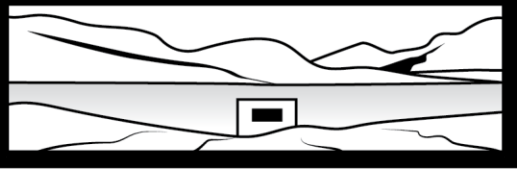
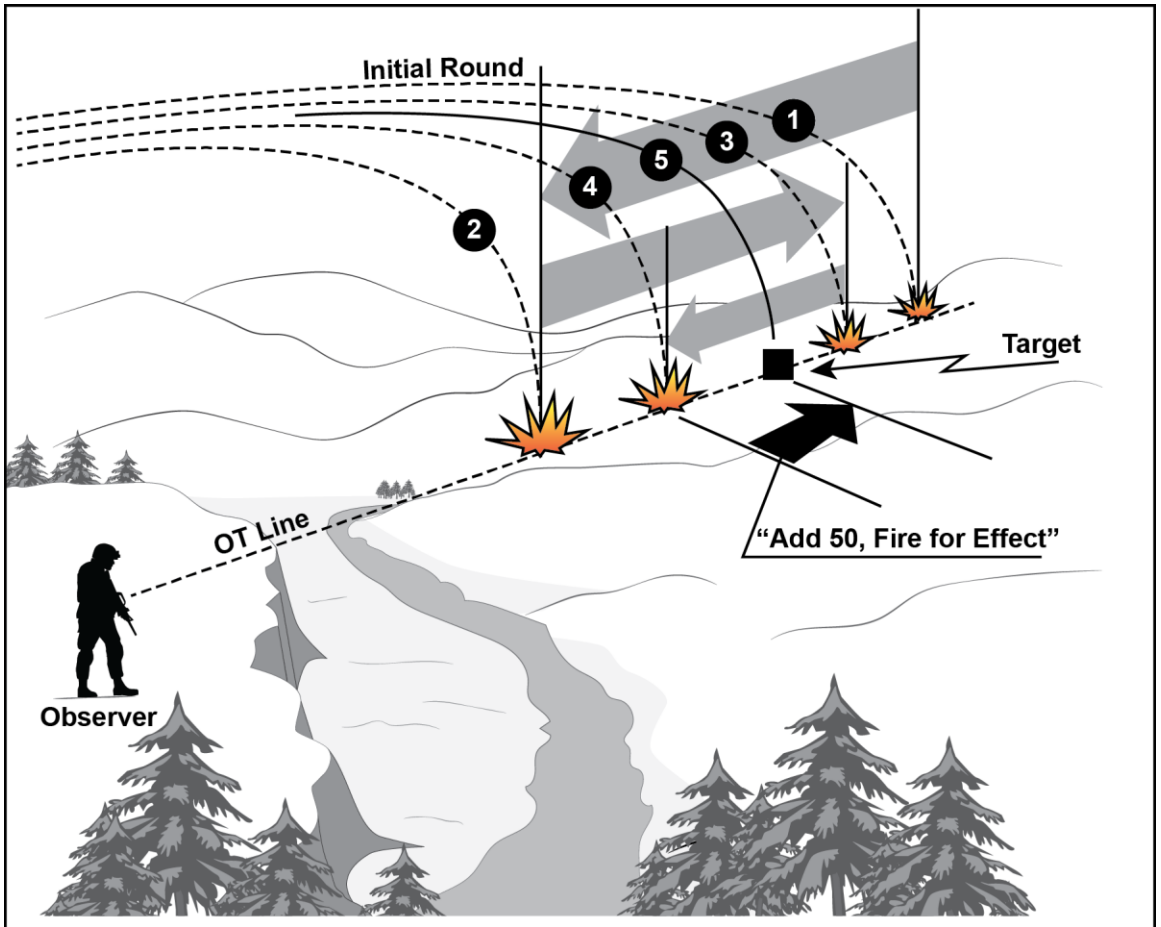
Transmission/Explanation	Sight Picture
"Over" A burst that appears beyond the adjusting point.	
"Short" A burst that appears between the observer and the adjusting point.	
"Target" A burst that hits the target. This spotting is used only in precision fire (destruction missions).	
"Range Correct" A burst that appears to be at the correct range.	
"Doubtful" A burst that can be observed but cannot be spotted as Over, Short, Target, or Range Correct.	
"Lost" A burst whose location cannot be determined.	
"Lost Over" or **"Lost Short"** A burst that is not observed but is definitely known to be beyond or short of the adjusting point.	

Figure D-11. Range spotting examples

RANGE CORRECTION

D-19. The observer gives range corrections, so that with each successive correction, the adjusting round intentionally lands over or short of the adjusting point, closing in on the target. Fire for effect is called when a range correction brings the next round within 50 meters of the adjusting point. This technique is called bracketing. (See figure D-12.)



When bracketing, the observer should use the following guide to determine the first range correction.

If OT range is—	Add or drop a minimum of—
1,000 to 2,000 meters	200 meters
Over 2,000 meters	400 meters

The observer should call for fire for effect when a 100-meter bracket has been split, for example,

"drop 50, fire for effect."

OT observer target

Figure D-12. Bracketing example

D-20. Bracketing is a safe technique as it brings fire on the target. Time is critical, especially when targets are moving or may move to seek cover when they find fire coming their way. Accurate, initial location data speed adjustment and make the requested fire more effective. To shorten adjustment times, the observer should try to bracket the target quickly and adjust on the target with as few subsequent rounds as possible. The effectiveness on the target decreases as the number of rounds used in the adjustment increases.

D-21. An alternative to successive bracketing is hasty bracketing. Therefore if the nature of the target dictates that effective fires are needed faster than successive bracketing can provide, hasty bracketing should be used. The success of hasty bracketing depends on a thorough terrain analysis that gives the observer an accurate initial target location. The observer obtains a bracket on its first correction similarly to that used in successive bracketing. Once the observer has this initial bracket, the observer uses it as a yardstick to determine subsequent correction. The observer then sends to the FDC the correction to move the rounds to the target and fire for effect. Hasty bracketing improves as the observer gains experience and judgement. (See figure D-13.)

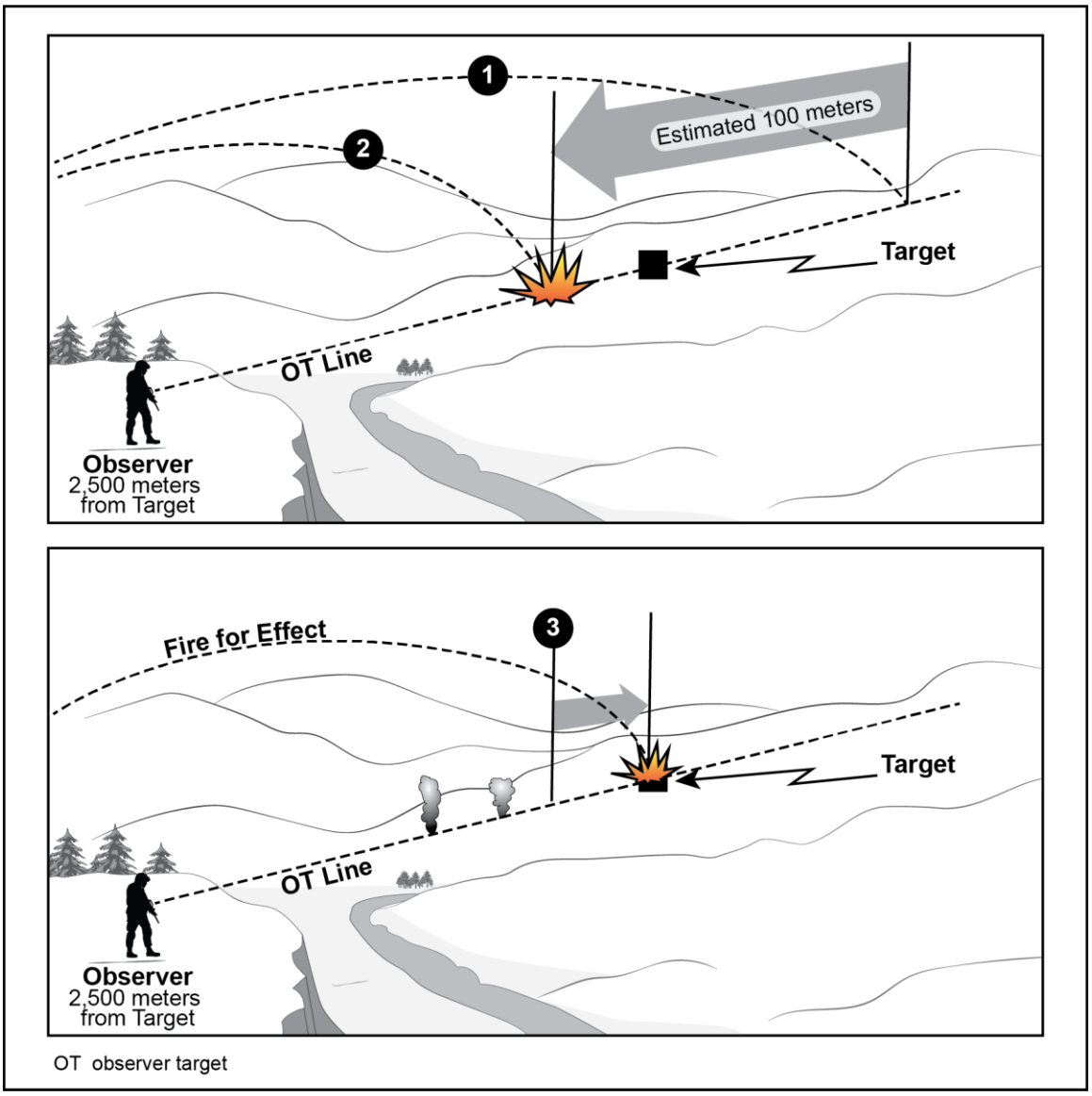


Figure D-13. Hasty bracketing example

D-22. The creeping method of adjustment is used in "DANGER CLOSE" situations for which the initial round is fired beyond the target. Adjusting rounds are brought in 100 meters or less until the target is engaged (See figure D-14). This method is slow and tends to use more ammunition than other adjustments. Therefore, it should be used only when Soldiers' safety is a major concern.

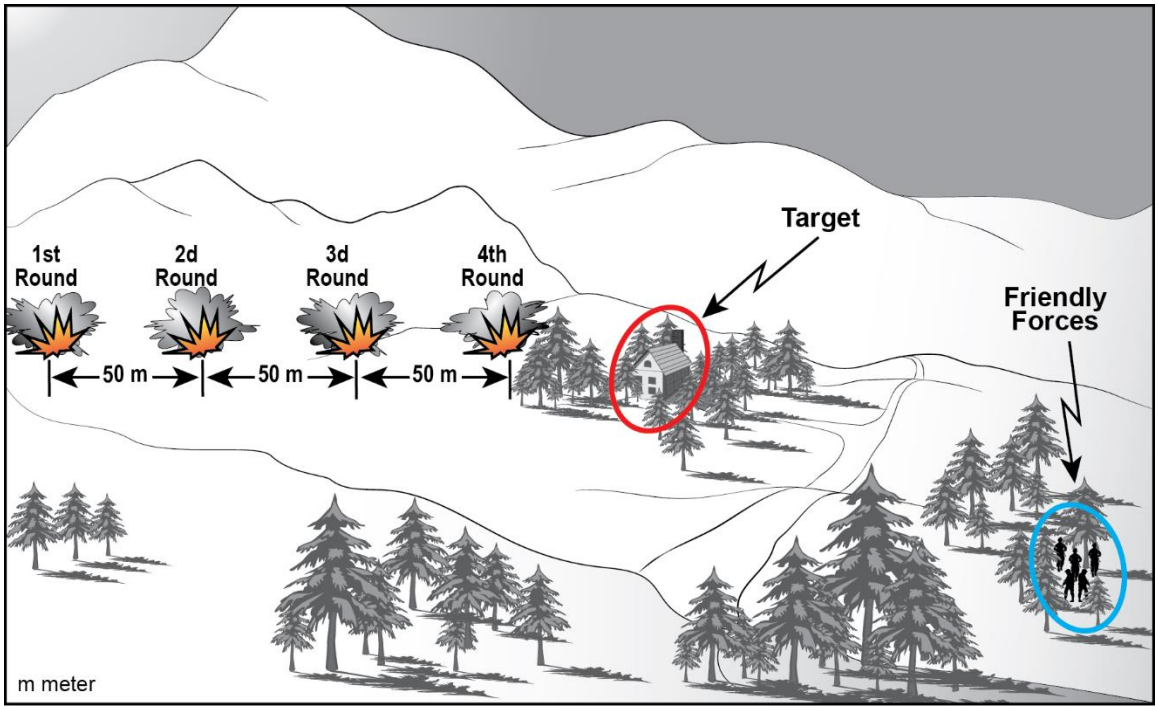


Figure D-14. Creeping example

REFINEMENT

D-23. The observer should note the results of the fire for effect and take whatever action is necessary to complete the mission. Figure D-15 shows the observer's actions after fire for effect rounds have been fired.

Results of Fire for Effect	Observer's Actions (Radio Transmissions in Parentheses)
Accurate and sufficient	End of mission, surveillance **("END OF MISSION, RPG SILENCED, OVER")**
Accurate, sufficient, target replot desired	Request replot, end of mission, surveillance **("RECORD AS TARGET, END OF MISSION, BMP NEUTRALIZED, OVER")**
Inaccurate and sufficient	Refinement, end of mission, surveillance **("RIGHT 20, ADD 20, END OF MISSION, RPG SILENCED, OVER")**
Inaccurate, sufficient, target replot desired	Refinement, request replot, end of mission, surveillance **("RIGHT 10, RECORD AS TARGET, END OF MISSION, BMP NEUTRALIZED, OVER")**
Inaccurate and sufficient	Refinement, repeat and reenter, adjust fire **("RIGHT 10, ADD 50, REPEAT, OR RIGHT 10, ADD 100, ADJUST FIRE, OVER")**
Accurate and sufficient	Repeat **("REPEAT, OVER")**

RPG rocket-propelled grenade

Figure D-15. Observer's actions after fire for effect

Appendix E

Movement and Maneuver

OVERVIEW

E-1. While an MI company or platoon rarely moves as a unit in a tactical environment, MI Soldiers and teams will be expected to understand how to move as part of a unit especially one they are attached to. MI teams integrated into movement and maneuver units are critical for the success of higher headquarters. It is crucial for MI teams to understand scheme of maneuver, combat formations, and movement techniques so they can integrate seamlessly into movement and maneuver formations. Understanding the concepts below will help build rapport and increase the MI team's ability to safely conduct operations with movement and maneuver units.

SCHEME OF MANEUVER

E-2. The scheme of maneuver describes the employment of units, such as platoon, company, battalion, brigade, or division in accordance with the CONOPS for the higher headquarters. The scheme of maneuver must be consistent with the operation overlay in Appendix 2 (Operation Overlay) to Annex C (Operations) and the higher headquarters' commander's intent. It must also describe how the actions of subordinate maneuver units fit together to accomplish the mission. The scheme of maneuver expands the commander's selected COA and expresses how each maneuver element of the force will cooperate.

E-3. As the commander's intent focuses on the end state, the scheme of maneuver focuses on the maneuver tactics and techniques employed during the operation and synchronizes the actions of each maneuver element. The scheme of maneuver must address the terrain, enemy, and all friendly requirements by clearly describing task, purpose, location, and effect to subordinate elements in time and space including but not limited to timing of advance, rate of movement, and possible passage of lines. *Scheme of maneuver* is the central expression of the commander's concept for operations that governs the design of supporting plans or annexes of how arrayed forces will accomplish the mission (JP 5-0). (See FM 6-0, FM 3-0, FM 3-96, ATP 3-20.98, ATP 3-21.8.)

E-4. The scheme of maneuver covers the actions from prior to line of departure to consolidation and reorganization. The BCT OPORD scheme of maneuver paragraph addresses the following (see FM 3-96):

- Task and purpose of subordinate elements.
- Actions at known or likely enemy contact locations.
- Scheme of fires.
- Direct fire control measures.
- Fire support coordination measures and airspace coordinating measures.
- CCIRs.
- Methods for moving through and crossing dangerous areas.
- Combat formation and known locations where the formation changes.
- Actions and array of forces at the final objective or limit of advance.
- Decision points and criteria for execution of maneuver options (attack, report and bypass, defend and retrograde), that may develop during execution.

GENERAL CONSIDERATIONS FOR THE MARCH

E-5. In addition to enemy ground and air activities, many other considerations greatly influence the conduct of marches. Contact with the local populace should always be expected, as should the consequences of not aligning actions, words, and images in support of the commander's intent. Visibility, climate, weather, and terrain characteristics to a degree determine actual arrangement and location of personnel, equipment, and vehicles within a given march formation. Additional considerations common to the conduct of marches include march discipline, water discipline, acclimatization, non-U.S. military participation, morale, individual load, and risk tolerance.

CONTACT WITH THE LOCAL POPULACE

E-6. Marches create effects in the operational and information environments. While these effects may be intended for the enemy, they will also send a message to the local populace and audiences external to the local populace. Therefore, they must be planned and executed so that these effects fully support the commander's intent.

E-7. Effectively supporting the commander's intent requires that Soldier actions during a foot march align with the unit's overall narrative: the sum of all it does, says, and conveys. A misspoken word, an uncontrolled action, or an offensive image can ultimately work against the commander's objective.

VISIBILITY

E-8. In the absence of enemy threats, marches during daylight hours are preferred as they permit faster movement and are less tiring for Soldiers. Marches during daylight hours are characterized by dispersed formations, ease of control, extended lines of reconnaissance and security, and increased vulnerability to enemy observation and air attack.

E-9. Marches during limited visibility are characterized by closed formations, difficult mission command, reconnaissance and security, and slow rate of march, but enable concealment from observation. Marches during limited visibility exploit darkness or weather factors to gain surprise and help units avoid extreme heat common to marches during daylight hours. March control, especially during conditions of limited visibility, requires detailed planning; stringent control measures; and thorough march training, signals, and communication disciplines.

E-10. If concealment is required, movement before dark is restricted to small detachments. Marches should be completed by daybreak with Soldiers in concealed positions. When movement is near the enemy, security, noise, and light discipline are strictly enforced. To conceal operations from the enemy, preventing it from gaining information about the march, security must be enforced. Navigational aids, mission command systems, thermal sights, and night vision devices can prevent many mission command problems encountered during limited visibility movements.

E-11. Marches during limited visibility must be planned carefully. This includes reconnoitering routes and assembly areas. Special precautions ensure direction and contact within the column. Therefore, guides and file formations are needed.

CLIMATE, WEATHER, AND TERRAIN

E-12. When conducting a foot march, climate, weather, and terrain have the greatest impact on off road or cross-country movement. Restrictions imposed by climate and weather extremes and terrain constitute major changes from operations in temperate areas. These restrictions can present major obstacles to operations unless proper provisions are established.

Climate and Weather

E-13. Climate conditions, produced by temperature, humidity, precipitation, wind, and light in an area over an extended period, influence long-range plans within an AO. Weather, the local, day-to-day condition of the atmosphere, impacts daily operations and is always a key planning consideration. Foot marches in adverse climatic and weather conditions follow the same principles as normal conditions. Differences depend on physical limitations imposed by adverse conditions and use of special equipment required to overcome them.

E-14. Cold climates reduce efficiency of personnel and vehicles especially their batteries. Bulky clothing limits movement in performing maintenance and operational duties. Hot, humid climates reduce energy and increase physical discomfort and likelihood of disease. Over time, heat and high humidity reduce life expectancy of all equipment adding to maintenance, repair, and replacement problems. Rust and corrosion are accelerated. Mildew rapidly attacks unprotected clothing and leather products.

E-15. Climate and weather extremes affect the daily maintenance and operation of vehicles. Low temperatures require protecting cooling systems to prevent freezing, fuel additives to prevent frozen fuel lines, and protection to make starting easier. Tire life may be reduced; metals may become brittle and break. Batteries lose their efficiency and may freeze or crack. Severe freezing may require extensive road repairs after each thaw, particularly in early spring. Extremely high temperatures may increase the number of breakdowns due to overheating.

Terrain

E-16. Terrain evaluation is the study of how soils, vegetation, climate, and landforms help or hinder employment of military units and equipment. Movement planners evaluate terrain to determine the ability to move Soldiers, vehicles, equipment without interruption with minimum exposure to observation and direct fire.

E-17. Terrain evaluation considers all factors of OE in relation to capabilities and limitations of tasked equipment. Sources of information, techniques, and results of terrain evaluation vary with the OE. Terrain evaluation at unit level is conducted to select the most suitable route to accomplish the mission under prevailing circumstances.

E-18. Varying types of terrain over which Soldiers must march present different problems for commanders, depending on specific AO. Weather conditions combined with terrain affect mobility of marching Soldiers. Movement must be calculated in terms of time and distance to determine the total amount of time Soldiers need to move from one place to another. This applies mainly in arctic, mountain, or jungle environments where trails are either limited or nonexistent and where cross-country movement can be arduous and slow.

E-19. Rise and fall of the ground is known as slope or gradient (grade). Slopes of seven percent or greater affect movement speed along routes and are considered an obstruction. Percentage of slope is used to describe effects inclines have on movement rates. It is ratio of change in elevation (vertical distance to horizontal ground distance) multiplied by 100.

Note. When planning routes, commanders should factor elevation gain and loss, as much as distance, into their movement timelines as effects of slope on dismounted movement is significant. (Refer to ATP 3-34.80 for additional information.)

E-20. As percentage of slope increases, movement rates decrease due to increase in energy and physical demands needed for movement. Moving to the same exact location using an indirect route can help reduce the amount of strenuous energy needed but increases time needed due to total amount of terrain traversed. Movement rates are decreased whether units are moving uphill or downhill.

E-21. Slopes covered in talus, more stable slope formed by large rocks, often proves to be a relatively easy ascent route. On the other hand, climbing a scree slope—a slope formed by landslides consisting primarily of loose dirt and small rocks—can be extremely difficult, as small rocks tend to loosen easily and give way. This characteristic often makes scree fields excellent descent routes. Before attempting to descend scree slopes, commanders should carefully analyze the potential for creating dangerous rock falls and take necessary avoidance measures.

MARCH DISCIPLINE

E-22. March discipline includes observing and enforcing march instructions including formation, distances between elements, speed, and using cover and concealment. It must include specific controls and restrictions such as water, light, noise, and communication disciplines. March discipline is the culmination of training, which results in effective teamwork between all Soldiers of the unit.

E-23. Maintaining discipline is especially important. All commanders must ensure Soldiers understand and follow established rules of engagement. The principle of proportionality requires that the anticipated loss of life and damage to property incidental to attacks must not be excessive in relation to the concrete and direct military advantage to be gained. This principle, as well as the principle of unnecessary suffering, may restrict the use of certain weapons, munitions, or techniques during operations.

E-24. March discipline is a command and individual responsibility stemming from organizational control and training. It is essential for march columns to prevent conflict with other movements in the area. It is attained by thorough training, supervision of operations by technically and tactically proficient, competent leaders, and attention to detail. March discipline demands—

- Using qualified Soldiers and drivers who operate their equipment safely under variety of conditions.
- Adhering to unit SOPs specifying TTP for movement, battle drills, and communications techniques.
- Strictly following traffic regulations.
- Meeting start point, en route checkpoints, and release point times.
- Following prescribed routes at prescribed march rates.
- Halting at rest stops for the required amount of time.
- Using protective measures, including maintaining prescribed intervals, radio discipline, and blackout driving at night.
- Maintaining proper care of equipment.
- Maintaining correct weapon posture.
- Observing safety policies and regulations at all times.
- Ensuring Soldiers and drivers obey rules of the road, traffic laws or regulations, speed limits, and time and distance gaps.

Note. When referring to drivers, Soldiers, U.S. Government contractors, or host-nation contractors may be implied.

WATER DISCIPLINE

E-25. Water discipline must be observed by all Soldiers to maintain effectiveness and minimize fatigue while conducting operations. Several rules must be followed:

- Water or electrolyte and carbohydrates fluids should be consumed before, during, and after foot marches. Do not overhydrate.
- Drink treated water or electrolyte and carbohydrate fluids from approved sources.
- Drink small quantities of water or electrolyte and carbohydrate fluids rather than gulping or rapid intake. Drink water or electrolyte and carbohydrates fluids when not thirsty.
- Drink water or electrolyte and carbohydrates fluids slowly to prevent cramps or nausea.
- Refill canteens with water only or replenish electrolyte and carbohydrates fluids at every opportunity.

Note. Electrolyte and carbohydrates fluids should never be poured into water canteens or hydrating systems. Mold and mildew tends to grow within causing sickness or health issues. Use bleach to clean canteens or hydrating systems which appear to have mold and mildew. Never force hydrate with water alone. The body needs the proper amount of nutrients and electrolytes to operate efficiently. Force hydrating with water alone can flush electrolytes and nutrients, causing over-hydration and impairing performance.

E-26. The human body does not operate efficiently without adequate liquid intake. When Soldiers are engaged in strenuous activities, excessive amounts of water and electrolytes are lost through perspiration. Water is lost through normal body functions such as respiration and urination, which can create liquid imbalances in the body. As a result, dehydration could occur unless the loss is replaced immediately and Soldiers rest before continuing their activities. Insufficient liquid and salt intake during hot weather can result in heat injuries.

E-27. Danger of dehydration is as prevalent in cold regions as it is in hot, dry areas. The difference is, in hot weather, the Soldier's body loses liquids and salt through perspiration. In cold weather, when Soldiers are wearing many layers of clothing, they have difficulty realizing this condition exists since perspiration is absorbed rapidly by heavy clothing or evaporated by air. Salt in food compensates for daily salt requirements. Additional salt intake should be under direct supervision of a physician or physician's assistant. If pure water is not available, water in canteens can be treated by adding water purification tablets. (See TC 4-02.3.)

E-28. If units are forced to traverse CBRN contaminated area due to the tactical situation, water consumption increases and forced hydration becomes necessary. Commanders and subordinate leaders at all levels must prevent heat injuries brought on by physical activity in CBRN environments by adjusting march rates or loads.

ACCLIMATIZATION

E-29. Soldiers must be physically and mentally conditioned to participate in foot marches. Many types of terrain and climate throughout the world require different acclimatization for operations. Ideally, Soldiers should be trained to operate in all areas with minimal preparation; however, each area has specific preparation requirements. For example, Soldiers scheduled for operations in mountains normally participate in high altitude training for 10 to 14 days before engaging in full-scale mountain foot marches.

Altitude Acclimatization

E-30. Soldiers may be deployed to theaters of operation at altitudes in excess of 2,439 meters (8,002 feet) above sea level. Altitude acclimatization allows Soldiers to decrease their susceptibility to altitude illness and achieve optimal physical and cognitive performance for the altitude to which they are acclimatized. Altitude acclimatization has no negative side effects and does not harm health or physical performance upon return to low altitude. However, Soldiers with good aerobic endurance may acclimatize faster and perform better than those with low fitness levels.

E-31. High mountain environments are dangerous and unforgiving for those without adequate knowledge, training, equipment, and acclimatization. Commanders and subordinate leaders and medical support personnel must understand interaction of environments, individuals, and unit characteristics. Adequate planning and preparedness can reduce or prevent significant problems. Leadership is vital to safe operations in high altitude environments.

Cold Weather Acclimatization

E-32. Psychological adjustments eliminate preconceived notions and fears about specific cold weather locations and climates. Training conducted logically and realistically causes most Soldiers to lose previously held fears of cold or isolation. Adjustments are facilitated by educational and training programs which gradually introduce Soldiers to unfamiliar terrain features or cold climates. During these programs, Soldiers are encouraged to develop confidence until they can operate in cold weather environments with ease and assurance.

E-33. Self-confidence in each Soldier is a direct result of psychological adjustments. Self-confidence in foot marching under any environment is developed by strong leadership and progressive training. As Soldiers become stronger and marching techniques are learned and applied, their self-confidence, morale, and pride increases. Commanders stimulate pride by building unit spirit and by instilling determination to succeed. A well-planned and conducted march is an excellent way to develop and demonstrate many attributes of good soldiering.

Heat Acclimatization

E-34. Physical work and training programs for Soldiers not acclimatized to the heat should be limited in intensity and time. About two weeks of progressive heat exposure and physical work should be allowed for heat acclimatization, which is necessary for all Soldiers. However, fit Soldiers may acclimatize to heat faster than less fit Soldiers. Full effects of heat acclimatization are relative to initial physical fitness level and total heat stress encountered by Soldiers. Soldiers who perform light physical work achieve the level of acclimatization needed to perform certain tasks relatively quickly. If Soldiers conduct strenuous work, they may need additional acclimatization.

E-35. Less fit Soldiers have reduced work capabilities in heat. For example, middle-aged Soldiers often have lower work capabilities than young adult Soldiers and female Soldiers often have lower physical capabilities than male Soldiers within the same categories of either fit or less fit. However, if their physical fitness is sufficient and they are heat acclimatized, less fit Soldiers should have similar work capabilities.

E-36. When conditions allow, heat acclimatization requires minimum exposure of two hours per day, which can be broken into one-hour exposures with some activity requiring cardiovascular endurance. For example, marching can replace pushups and resistance training. Gradually increase activity intensity each day, working up to an appropriate conditioning schedule adapted to the present environment. Resting in heat with activity limited to minimum requirements results in partial acclimatization. Physical activity in heat must be performed to accomplish optimal acclimatization for work at the intensity level in given hot environments. (Refer to Technical Bulletin Medical 507 for additional information.)

NON-UNITED STATES MILITARY PARTICIPATION

E-37. March commanders are responsible for all non-U.S. military supporting assets associated with the march. These supporting elements can be broken down into multinational partners, U.S. Civilian contractors, third country national contractors, and local national contractors.

MORALE

E-38. Morale can greatly affect Soldiers during foot marches. Low morale can be contagious and magnify any discomfort Soldiers might experience. Commanders and subordinate leaders improve morale by applying leadership and emphasizing proper foot march techniques, such as—

- Providing advance warning of an upcoming march so Soldiers can prepare adequately.
- Holding formations early enough to allow time for inspecting Soldiers and performing last-minute checks.
- During foot marches, avoiding delays keeping Soldiers standing for extended periods. Delays can increase fatigue, causing legs to stiffen, making it difficult to resume the march. Route reconnaissance before the march provides information on conditions which can cause delays. Advance action can prevent conditions which can cause delays.
- Maintaining a steady rate of march. Too rapid or too slow rates induce fatigue.
- During marching, holding passing vehicles to reasonable speeds to promote safety and to prevent dust, rocks, or mud from being thrown on Soldiers. If dust conditions are severe, moving Soldiers to the upwind side of the road.
- Not allowing trucks used to transport stragglers or foot march casualties to overtake columns unless it is unavoidable.
- Ensuring Soldiers in rear formations receive full break times.
- Ensuring leaders at all echelons march with their Soldiers throughout the entire foot march. Soldiers quickly detect presence or absence of their leaders in foot marches.
- Encouraging unit leaderships to walk the entire march, periodically spot checking Soldier performance and well-being, to ensure command presence is observed.
- Ensuring availability of adequate water at rest stops throughout the foot march.

E-39. MEDEVAC and CASEVAC have positive impacts on morale. *Medical evacuation* is the timely and effective movement of the wounded, injured, or ill to and between medical treatment facilities on dedicated and properly marked medical platforms with en route care provided by medical personnel (ATP 4-02.2). *Casualty evacuation* is the unregulated movement of casualties than can include movement both to and between medical treatment facilities (JP 4 02). Casualties are cared for at point of injury or under nearby cover and concealment receiving self- or buddy-aid, advanced first aid from a CLS, or emergency medical treatment from a trauma specialist or unit medic.

E-40. During planning, commanders and subordinate leaders outline procedures for MEDEVAC and CASEVAC. Key MEDEVAC considerations include—

- Organic medical personnel accompanying each march element.
- Coordinating for air and ground medical evacuation support.
- Rehearsing MEDEVAC operations with air ambulance flight crews.
- Rehearsing MEDEVAC operations with ground ambulance crews.
- Strategically placing ground ambulances in direct support of each march element.
- Identifying ambulance exchange points along march routes.

E-41. In situations where MEDEVAC assets are either limited in number or unavailable, commanders must plan to conduct CASEVAC operations. This is usually accomplished through the use of organic vehicle platforms. In situations where organic vehicles are not available, it may be necessary to request vehicles from supporting units. Additional CASEVAC planning considerations may include—

- Rehearsing CASEVAC operations with designated CASEVAC platform crews.
- Identifying equipment to be carried by designated Soldiers in each march element including:
  - Compact and lightweight casualty transport systems.
  - VS-17 panels or other marking equipment including night marking devices.
  - Mobility equipment such as rope and carabineers when applicable.

INDIVIDUAL LOAD

E-42. To prevent an individual load from hindering a marching Soldier's mobility and combat readiness, the commander identifies the minimum mission essential equipment to fight and survive in the immediate combat operation. The primary consideration is not how much Soldiers can carry, but rather how much they can carry without reduced combat effectiveness.

E-43. A unit's combat strength cannot be based solely on number of Soldiers; it must be based on number of Soldiers who are willing and physically able to perform their duties. Soldiers become exhausted quickly when under combat stress. Soldiers must have the capability to carry heavy loads and quickly adjust to a tailored fighting load that allows agile movement in combat.

E-44. Individual load must not be based on equipment and supplies needed to meet every possible contingency. The commander should not expect Soldiers to carry equipment for all possible combat situations. Instead, items contained in loads must be based on realistic expectations. Unit SOPs may be used to provide a standardized fighting load and approach march load based on common mission requirements.

E-45. The commander is responsible for tailoring fighting and approach march loads based on specific mission requirements and obtaining means to carry additional gear. Usually a rifle company or smaller-size unit requires one truck and one trailer to carry additional gear. In cold weather or during other conditions where personal gear requirements increase, this requirement increases.

E-46. The commander ensures the supply system provides a balance of essential supplies and equipment not carried by the unit. Soldiers must feel confident their mission-essential needs are being met. When operating under austere conditions, the commander sets proper standards regarding Soldier field-craft techniques in the use of caches and other field-expedient measures to sustain the force.

RISK TOLERANCE

E-47. Commanders must ensure a thorough understanding of the operation, including the senior commander's intent and the risk tolerance. A commander receiving a mission will analyze it and assign subordinate missions. The combined risks identified for these additional missions and tasks may modify the overall residual risk for the mission, possibly to a higher level than the risk tolerance. *Risk management*, the process to identify, assess, and control risks and make decisions that balance risk cost with mission benefits (JP 3-0), is addressed in ATP 3-21.18.

COMBAT FORMATIONS

E-48. This section discusses infantry fire team, squad, platoon, and mounted platoon combat formations. The platoon leader uses formations for several purposes: to relate one squad to another on the ground, to position firepower to support the direct-fire plan, to establish responsibilities for AO security among squads, or to aid in the execution of battle drills. The platoon leader plans formations based on expected locations of enemy contact, and on the company commander's plans to react to contact. The platoon leader evaluates the situation and decides which formation best suits the mission and situation.

E-49. Every squad and Soldier has a standard position. Soldiers can see their team leaders. Fire team leaders can see their squad leaders. Leaders control their units using arm-and-hand signals and intra-squad/team communications.

E-50. Formations also provide 360-degree security and allow units to give the majority of their firepower to the flanks or front in anticipation of enemy contact.

E-51. Formations do not demand parade ground precision. Platoons and squads must retain the flexibility needed to vary their formations to the situation. Using formations allows Soldiers to execute battle drills quickly and gives them the assurance their leaders and buddy team members are in the expected positions and performing the right tasks.

E-52. Sometimes platoon and company formations differ due to the mission variables (METT-TC). For example, the platoons could move in wedge formations within a company vee. It is not necessary for platoon formations to be the same as the company formation unless directed by the company commander. However, the platoon leader coordinates his formation with other elements moving in the main body team's formation.

Note. Formation illustrations shown in this appendix are examples only. They might not depict actual situation or circumstances based on mission variables (METT-TC). Leaders must be prepared to adapt their choice of formation to the specific situation. Leaders should always position themselves where they can best control their formations.

PRIMARY FORMATIONS

E-53. Combat formations are composed of two variables—lateral frontage, represented by the line formation, and depth, represented by the column formation. The advantages attributed to one of these variables are disadvantages to the other. Leaders combine the elements of lateral frontage and depth to determine the best formation for their situation. In addition to the line and column/file, the other five types of formations—box, vee, wedge, diamond, and echelon—combine these elements into varying degrees. Each does so with different degrees of emphasis resulting in unique advantages and disadvantages.

E-54. The seven combat formations can be grouped into two categories: formations with one lead element and formations with more than one lead element. The formations with more than one lead element, as a general rule, are better for achieving fire superiority to the front, but are more difficult to control. Conversely, the formations with only one lead element are easier to control but are not as useful for achieving fire superiority to the front.

E-55. Leaders attempt to maintain flexibility in their formations. Doing so enables them to react when unexpected enemy actions occur. The line, echelon, and column formations are the least flexible of the seven formations. The line mass to the front formation has vulnerable flanks. The echelon formation is optimized

for a flank threat, something units want to avoid. The column formation has difficulty reinforcing an element in contact. Leaders using these formations should consider ways to reduce the risks associated with their general lack of flexibility. (See table E-1.)

Table E-1. Primary formations

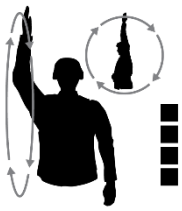
Name/Formation/Signal (if applicable)	*Characteristics*	*Advantages*	*Disadvantages*
Line formation 	• All elements arranged in a row. • Majority of observation and direct fires oriented forward; minimal to the flanks. • Each subordinate unit on the line must clear its own path forward. • One subordinate designated as base on which the other subordinates cue their movement.	Ability to— • Generate fire superiority to the front. • Clear a large area. • Disperse. • Transition to bounding overwatch, base of fire, or assault.	• Control difficulty increases during limited visibility and in restrictive or close terrain. • Difficult to designate a maneuver element. • Vulnerable assailable flanks. • Potentially slow. • Large signature.
Column/File formation 	• One lead element. • Majority of observation and direct fires oriented forward; minimal to the flanks. • One route means unit only influenced by obstacles on that one route.	• Easiest formation to control (as long as leader can communicate with lead element). • Ability to generate a maneuver element. • Secure flanks. • Speed.	• Reduced ability to achieve fire superiority to the front. • Clears a limited area and concentrates the unit. • Transitions poorly to bounding overwatch, base of fire, and assault. • Column's depth makes it a good target for close air attacks and machine gun beaten zone.
Vee formation 	• Two lead elements. • Trail elements move between the two lead elements. • Used when contact to the front is expected. • "Reverse wedge." • Unit required to two lanes/routes forward.	Ability to— • Generate fire superiority to the front. • Generate a maneuver element. • Secure flanks. • Disperse. • Transition to bounding overwatch, base of fire, or assault.	• Control difficulty increases during limited visibility and in restrictive or close terrain. • Potentially slow.
Box formation 	• Two lead elements. • Trail elements follow lead elements. • All-around security.	Same as vee formation advantages.	Same as vee formation disadvantages.
Wedge formation 	• One lead element. • Trail elements paired off abreast of each other on the flanks. • Used when the situation is uncertain.	Ability to— • Control, even during limited visibility, in restrictive terrain, or in close terrain. • Transition trail elements to base of fire or assault. • Secure the front and flanks. • Easy transition to line and column.	• Trail elements are required to clear their path forward. • Frequent need to transition to column in restrictive, close terrain.
Diamond formation 	• Similar to the wedge formation. • Fourth element follows the lead element.	Same as wedge formation advantages.	Same as wedge formation disadvantages.

Table E-1. Primary formations *(continued)*

Name/Formation/Signal (if applicable)	*Characteristics*	*Advantages*	*Disadvantages*
Echelon formation 	• Elements deployed diagonally left and right. • Observation and fire to both the front and one flank. • Each subordinate unit on the line clears its own path forward.	Ability to assign sectors that encompass both the front and flank.	• Difficult to maintain proper relationship between subordinates. • Vulnerable to the opposite flanks.

FIRE TEAM FORMATIONS

E-56. The term fire team formation refers to the Soldiers' relative positions within the fire team. Fire team formations include the fire team wedge and fire team file. (See table E-2.) Both formations have advantages and disadvantages. Regardless of which formation the team employs, each Soldier must know his location in the formation relative to the other fire team members and team leader. Each Soldier covers a set AOR for observation and direct fire as the team is moving. To provide the unit with all-around protection, these areas interlock. Team leaders are constantly aware of their teams' sectors of fire and correct them as required. (See table E-2.)

Table E-2. Comparison of fire team formations

Movement formation	*When most often used*	*Movement characteristics*			
		Control	*Flexibility*	*Fire capabilities and restrictions*	*Security*
Fire team wedge	Basic fire team formation	Easy	Good	Allows immediate fires in all directions	All-around
Fire team file	Close terrain, limited visibility, dense vegetation	Easiest	Less flexible than the wedge	Allows immediate fires to the flanks, masks most fires to the rear	Least

E-57. The team leader adjusts the team's formation as necessary while the team is moving. The distance between Soldiers will be determined by the mission, the nature of the threat, the closeness of the terrain, and by the visibility. As a general rule, the unit should be dispersed up to the limit of control. This allows for a wide area to be covered, makes the team's movement difficult to detect, and makes it less vulnerable to enemy ground and air attack. Fire teams rarely act independently. However, in the event they do, when halted, they use a perimeter defense to ensure all-around security.

Fire Team Wedge

E-58. The wedge is the basic formation of the fire team. (See figure E-1.) The interval between Soldiers in the wedge formation is normally 10 meters. The wedge expands and contracts depending on the terrain. Fire teams modify the wedge when rough terrain, poor visibility, or other factors make control of the wedge difficult. The normal interval is reduced so all team members still can see their team leader and all team leaders still can see their squad leader. The sides of the wedge can contract to the point where the wedge resembles a single file. Soldiers expand or resume their original positions when moving in less rugged terrain where control is easier.

E-59. In this formation the fire team leader is in the lead position with his men echeloned to the right and left behind him. The positions for all but the leader may vary. This simple formation permits the fire team leader to lead by example. The leader's standing order to his Soldiers is, "Follow me and do as I do." When he moves to the right, his Soldiers should move to the right. When he fires, his Soldiers fire. When using the lead-by-example technique, it is essential for all Soldiers to maintain visual contact with their leader.

Fire Team File

E-60. Team leaders use the file when employing the wedge is impractical. This formation is most often used in severely restrictive terrain, like inside a building, dense vegetation, limited visibility, and so forth. The distance between Soldiers in the column changes due to constraints of the situation, particularly when in urban operations. (See figure E-1.)

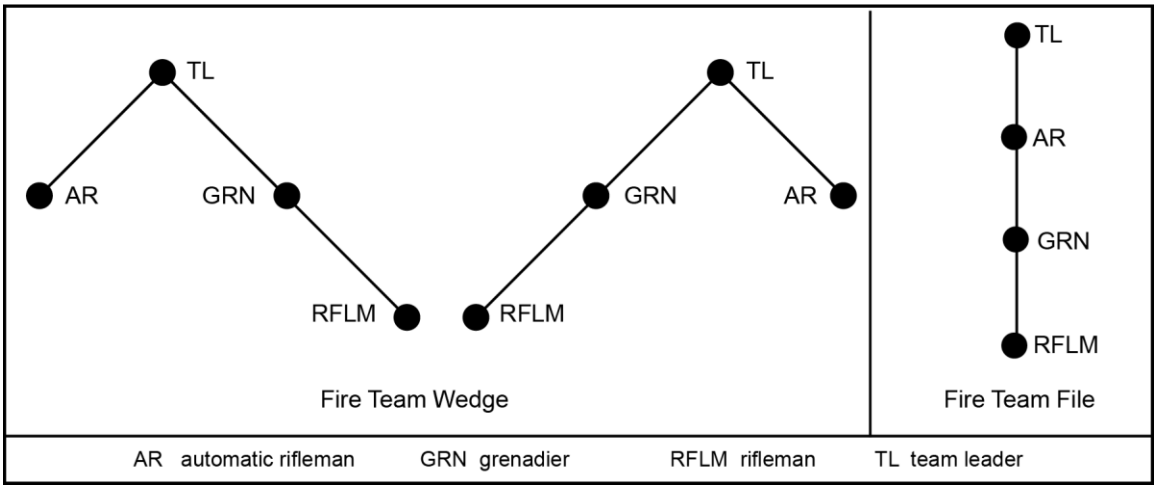


Figure E-1. Fire team wedge and fire team file

SQUAD FORMATIONS

E-61. The term squad formation refers to the relative locations of the fire teams. Squad formations include the squad column, the squad line, and squad file. Table E-3 compares squad formations.

Table E-3. Comparison of squad formations

Movement formation	*When most often used*	*Movement characteristics*			
		Control	*Flexibility*	*Fire capabilities and restrictions*	*Security*
Squad column	The main squad formation	Good	Aids maneuver, good dispersion laterally and in depth	Allows large volume of fire to the flanks but only limited volume to the front	All-around
Squad line	For maximum firepower to the front	Not as good as the column	Limited maneuver capability (both fire teams committed)	Allows maximum immediate fire to the front	Good to the front, little to the flank and rear
Squad file	Close terrain, dense vegetation, limited visibility conditions	Easiest	Most difficult formation from which to maneuver	Allows immediate fire to the flanks, masks most fire to the front and rear	Least

E-62. The squad leader adjusts the squad's formation as necessary while moving, primarily through the three movement techniques (see paragraph E-95). The squad leader exercises command and control primarily through the two team leaders and moves in the formation where he can best achieve this. The squad leader is responsible for 360-degree security, for ensuring the team's sectors of fire are mutually supporting, and for being able to rapidly transition the squad upon contact.

E-63. The squad leader designates one of the fire teams as the base fire team. The squad leader controls the squad's speed and direction of movement through the base fire team while the other team and attachments cue their movement off the base fire team. This concept applies when not in contact and when in contact with the enemy.

E-64. Weapons from the weapons squad may be attached to the squad for movement or throughout the operation. These high-value assets must be positioned so they are protected and can be quickly brought into the engagement when required. Ideally, these weapons should be positioned between the two fire teams.

Squad Column

E-65. The squad column is the squad's main formation for movement unless preparing for an assault. (See figure E-2.) It provides good dispersion both laterally and in-depth without sacrificing control. It also facilitates maneuver. The lead fire team is the base fire team. Squads can move in either a column wedge or a modified column wedge. Rough terrain, poor visibility, and other factors can require the squad to modify the wedge into a file for control purposes. As the terrain becomes less rugged and control becomes easier, the Soldiers resume their original positions.

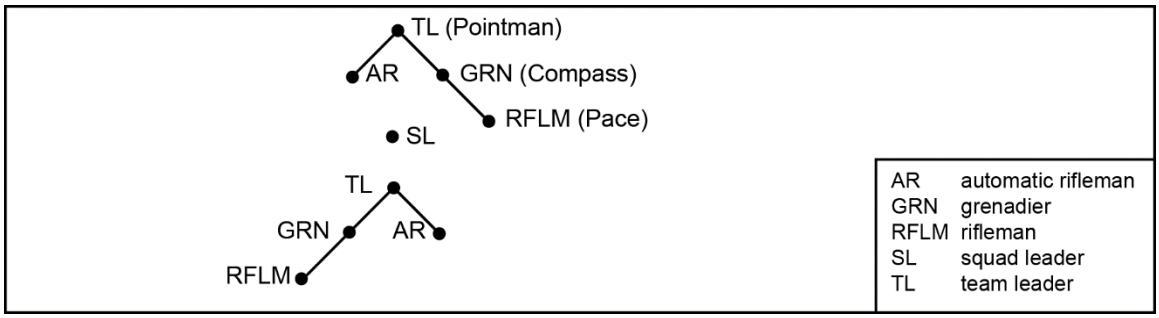


Figure E-2. Squad column, fire team in wedge

Squad Line

E-66. The squad line provides maximum firepower to the front and is used to assault or as a pre-assault formation. (See figure E-3.) To execute the squad line, the squad leader designates one team as the base team. The other team cues its movement from the base team. This applies when the squad is in close combat as well. From this formation, the squad leader can employ any of the three movement techniques (see paragraph E-95) or conduct fire and movement.

Squad File

E-67. The squad file has the same characteristics as the fire team file. (See figure E-3.) In the event the terrain is severely restrictive or extremely close, teams within the squad file also may be in file. This disposition is not optimal for enemy contact, but provides the squad leader with maximum control. He increases control over the formation moving forward to the first or second position. Moving forward enables him to exert greater morale presence by leading from the front, and to be immediately available to make vital decisions. Moving a team leader to the last position can provide additional control over the rear of the formation.

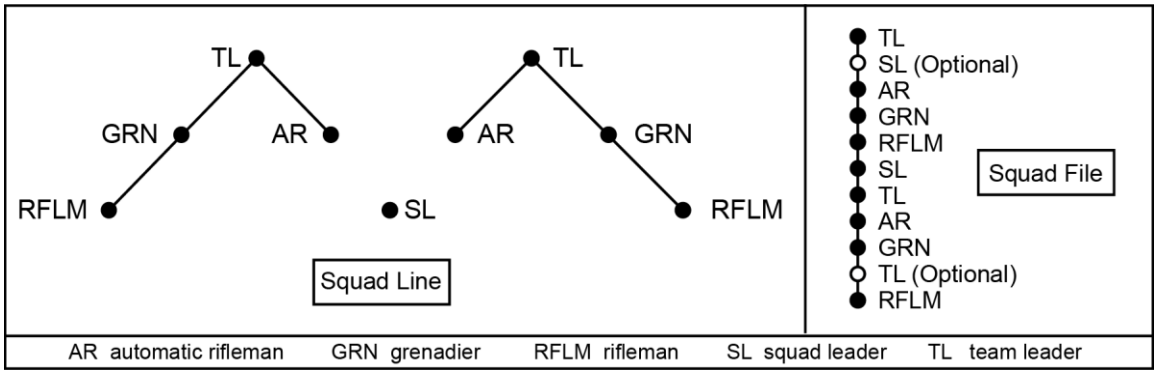


Figure E-3. Squad file

WEAPONS SQUAD FORMATIONS

E-68. The weapons squad is not a rifle squad and should not be treated as such. During tactical movement, the platoon leader has two options when it comes to positioning the weapons squad. The weapons squad can either travel as a separate entity or it can be broken up and distributed throughout the formation. The advantage to keeping the weapons squad together is the ability to quickly generate support by fire and gain fire superiority under the direction of the weapons squad leader. The disadvantage to this approach is the lack of redundancy throughout the formation. The advantage to distributing the weapons squad throughout the rifle squads is the coverage afforded to the entire formation. The disadvantage is losing the weapons squad leader as a single command and control element and the time required to reassemble the weapons squad if needed.

E-69. When the weapons squad travels dispersed, it can either be attached to squads or attached to the essential leaders like the platoon leader, platoon sergeant, and weapons squad leader. There is no standard method for its employment. Rather, the platoon leader places the weapons using two criteria: ability to quickly generate fire superiority and protection for high-value assets.

E-70. Like the rifle squad, the weapon squad, when traveling as a squad, uses either a column or line formation. Within these formations, the two sections can be in column or line formation.

PLATOON FORMATIONS

E-71. There are numerous useful combinations of squad and fire team combat formations within the platoon combat formations, creating a significant training requirement for the unit. Add the requirement to modify formations with movement techniques, immediate action drills, and other techniques, and it is readily apparent that the platoon leader needs a few simple methods. These methods should be detailed in the unit SOPs.

Platoon Leader Responsibilities

E-72. Like the squad leader, the platoon leader exercises command and control primarily through his subordinates and moves in the formation where he can best achieve this. The squad leader and team leader execute the combat formations and movement techniques within their capabilities based on the platoon leader’s guidance.

E-73. The platoon leader is responsible for 360-degree security, for ensuring each subordinate unit's sectors of fire are mutually supporting, and for being able to rapidly transition the platoon upon contact. He adjusts the platoon's formation as necessary while moving, primarily through the three movement techniques (see paragraph E-95). Like the squad and team, this determination is a result of the task, the nature of the threat, the closeness of terrain, and visibility.

E-74. The platoon leader also is responsible for ensuring his squads can perform their required actions. He does this through training before combat and rehearsals during combat. Well-trained squads are able to employ combat formations, movement techniques, actions on contact, and stationary formations.

Platoon Headquarters

E-75. The platoon leader also has to decide how to disperse the platoon headquarters elements (himself, his radio-telephone operator, his interpreter, forward observer, platoon sergeant, and medic). These elements do not have fixed positions in the formations. Rather, they should be positioned where they can best accomplish their tasks. The platoon leader's element should be where he conducts actions on contact, where he can supervise navigation, and where he can communicate with higher. The forward observer's element should be where he can best see the battlefield and where he can communicate with the platoon leader and battalion fire support officer. This is normally in close proximity to the platoon leader. The platoon sergeant's element should be wherever the platoon leader is not. Typically, this means the platoon leader is toward the front of the formation, while the platoon sergeant is toward the rear of the formation. Because of the platoon sergeant's experience, he should be given the freedom to assess the situation and advise the platoon leader accordingly.

Base Squad

E-76. The platoon leader designates one of the squads as the base squad. He controls the platoon's speed and direction of movement through the base squad, while the other squads and attachments cue their movement off of the base squad.

Moving as a Part of a Larger Unit

E-77. Infantry platoons and squads often move as part of a larger unit's movement. The next higher commander assigns the platoon a position within the formation. The platoon leader assigns his subordinates an appropriate formation based on the situation, and uses the appropriate movement technique. Regardless of the platoon's position within the formation, it must be ready to make contact or to support the other elements by movement, fire, or both.

E-78. When moving in a company formation, the company commander normally designates a base platoon to facilitate control. The other platoons cue their speed and direction on the base platoon. This permits quick changes and lets the commander control the movement of the entire company by controlling only the base platoon. The company commander normally locates himself within the formation where he can best see and direct the movement of the base platoon. The base platoon's center squad is usually its base squad. When the platoon is not acting as the base platoon, its base squad is its flank squad nearest the base platoon.

PRIMARY PLATOON FORMATIONS

E-79. Platoon formations include the column, the line (squads on line or in column), the vee, the wedge, and the file. The leader should weigh these carefully to select the best formation based on his mission and on METT-TC analysis. Table E-4 compares the different formations. The figures below are examples and do not dictate the location of the platoon leader or platoon sergeant.

Table E-4. Comparison of platoon formations

Movement formation	*When most often used*	*Movement characteristics*				
		Control	*Flexibility*	*Fire capabilities and restrictions*	*Security*	*Movement*
Platoon column	Platoon primary movement formation	Good for maneuver (fire and movement)	Provides good dispersion laterally and in depth	Allows limited firepower to the front and rear, but high volume to the flanks	Extremely limited overall security	Good
Platoon line, squads on line	When leaders want all Soldiers forward for maximum firepower to the front and the enemy situation is known	Difficult	Minimal	Allows maximum firepower to the front, little to flanks and rear	Less secure than other formations due to lack of depth, but provides excellent security for higher formations in echelon direction	Slow
Platoon line, squads in column	May be used when leaders do not want everyone on line but want to be prepared for contact; when crossing a line of departure near an objective	Easier than platoon column, squads on line, but less than platoon line, squads on line	Greater than platoon column, squads on line, but less than platoon line, squads on one	Good firepower to the front and rear, minimum fires to the flanks; not as good as platoon column, better than platoon line	Good security all around	Slower than platoon column, faster than platoon line, squads on line

Table E-4. Comparison of platoon formations (*continued*)

Movement formation	*When most often used*	*Movement characteristics*				
		Control	*Flexibility*	*Fire capabilities and restrictions*	*Security*	*Movement*
Platoon vee	When the enemy situation is vague, but contact is expected from the front	Difficult	Provides two squads up front for immediate firepower and one squad to the rear for fire and movement upon contact from the flank	Immediate heavy volume of firepower to the front or flanks, but minimum fires to the rear	Good security to the front	Slow
Platoon wedge	When the enemy situation is vague, but contact is not expected	Difficult but better than platoon vee and platoon line, squads in line	Enables leader to make small element and still have two squads to maneuver	Provides heavy volume of firepower to the front or flanks	Good security to the flanks	Slow, but faster than platoon vee
Platoon file	When visibility is poor due to terrain, vegetation, or light	Easiest	Most difficult formation from which to maneuver	Allows immediate fires to the flanks, masks most fire to the front and rear	Extremely limited overall security	Fastest for dismounted movement

Platoon Column

E-80. In the platoon column formation, the lead squad is the base squad. (See figure E-4 on page E-16.) It normally is used for traveling only. METT-TC considerations determine where the weapons squad or medium machine gun teams locate in the platoon formation.

Platoon Line, Squads on Line

E-81. In the platoon line, squads on line formation, or when two or more platoons are attacking, the company commander chooses one of them as the base platoon. The base platoon's center squad is its base squad. When the platoon is not acting as the base platoon, its base squad is its flank squad nearest the base platoon. The weapons squad may move with the platoon or it can provide the support-by-fire position. This is the basic platoon assault formation. (See figure E-5 on page E-16.)

E-82. The platoon line with squads on line is the most difficult formation from which to make the transition to other formations. It may be used in the assault to maximize the firepower and shock effect of the platoon. This normally is done when there is no intervening terrain between the unit and the enemy when antitank systems are suppressed, or when the unit is exposed to artillery fire and must move rapidly.

Platoon Line, Squads in Column

E-83. When two or more platoons are moving, the company commander chooses one of them as the base platoon. The base platoon's center squad is its base squad. When the platoon is not the base platoon, its base squad is its flank squad nearest the base platoon. (See figure E-6 on page E-17.) The platoon line with squads in column formation is difficult to transition to other formations.

Platoon Vee

E-84. This formation has two squads up front to provide a heavy volume of fire on contact. (See figure E-7 on page E-17.) It also has one squad in the rear either overwatching or trailing the other squads. The platoon leader designates one of the front squads as the platoon's base squad.

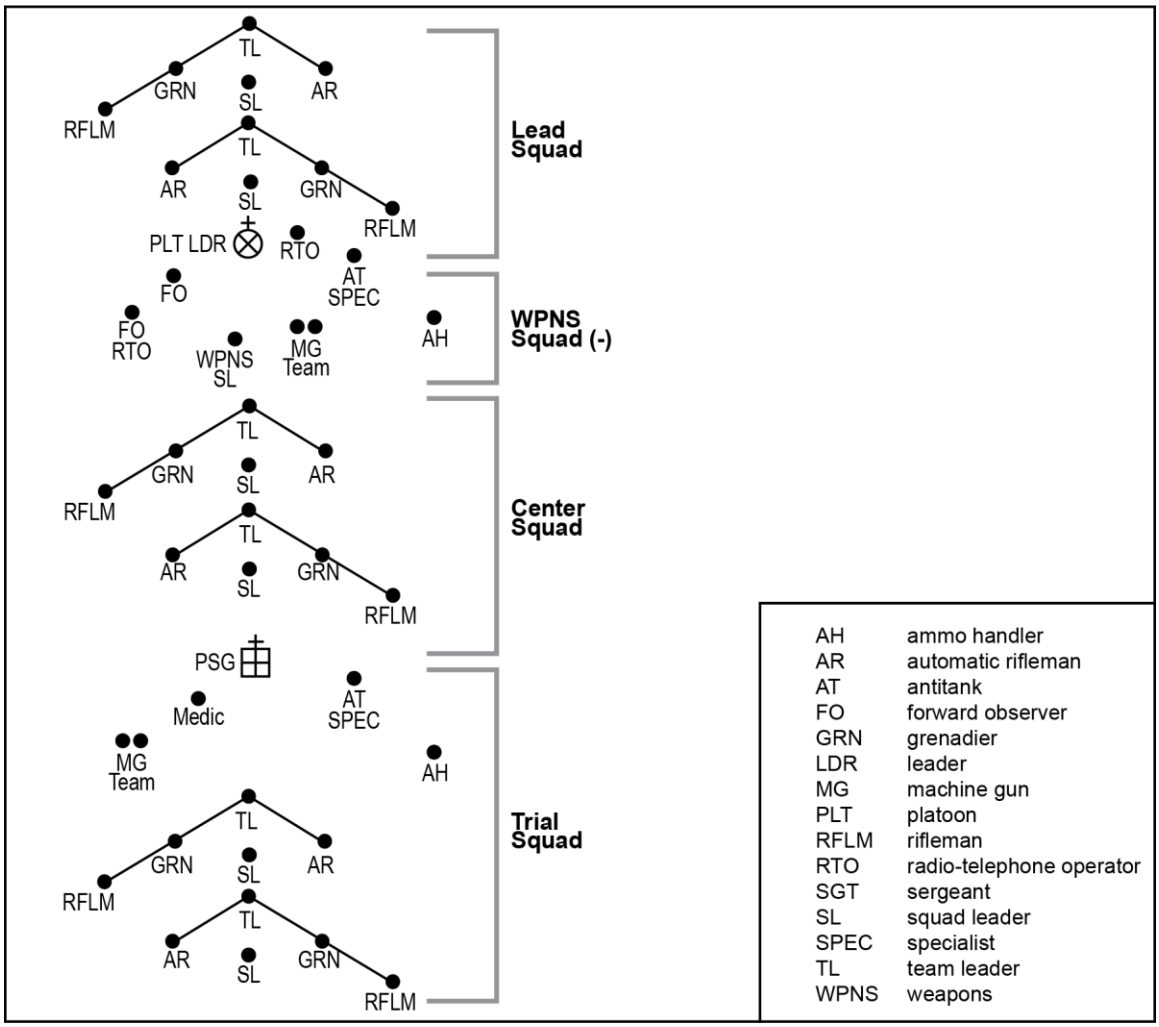


Figure E-4. Platoon column

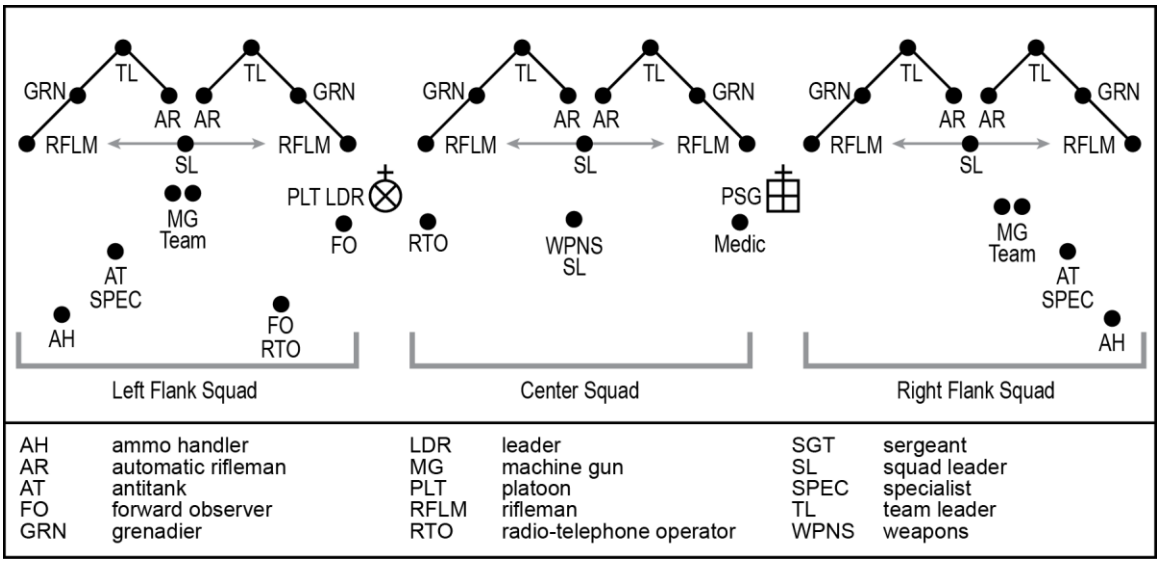
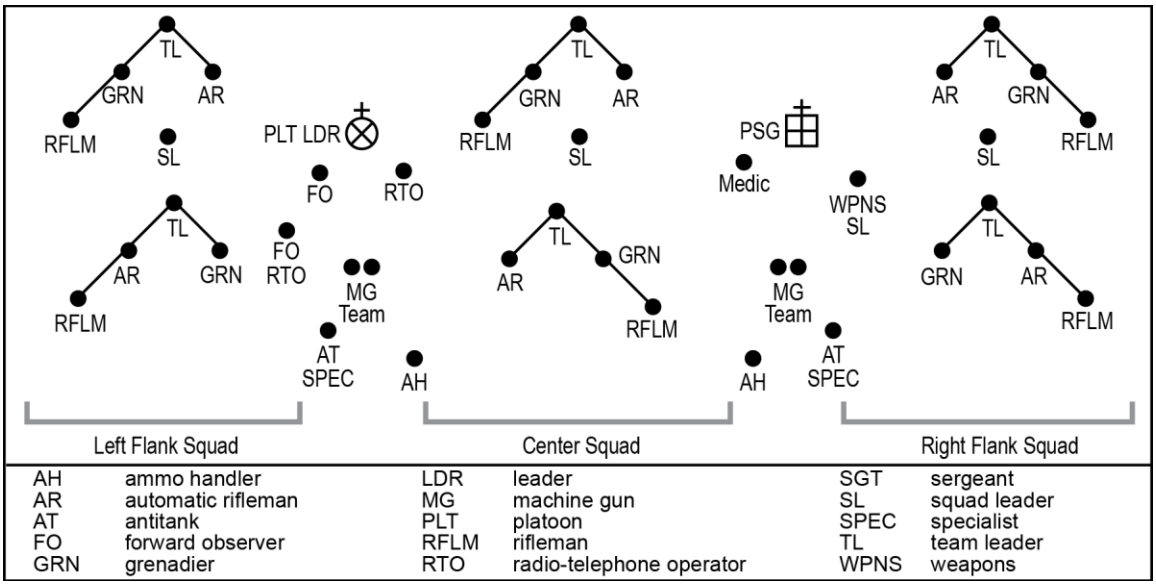
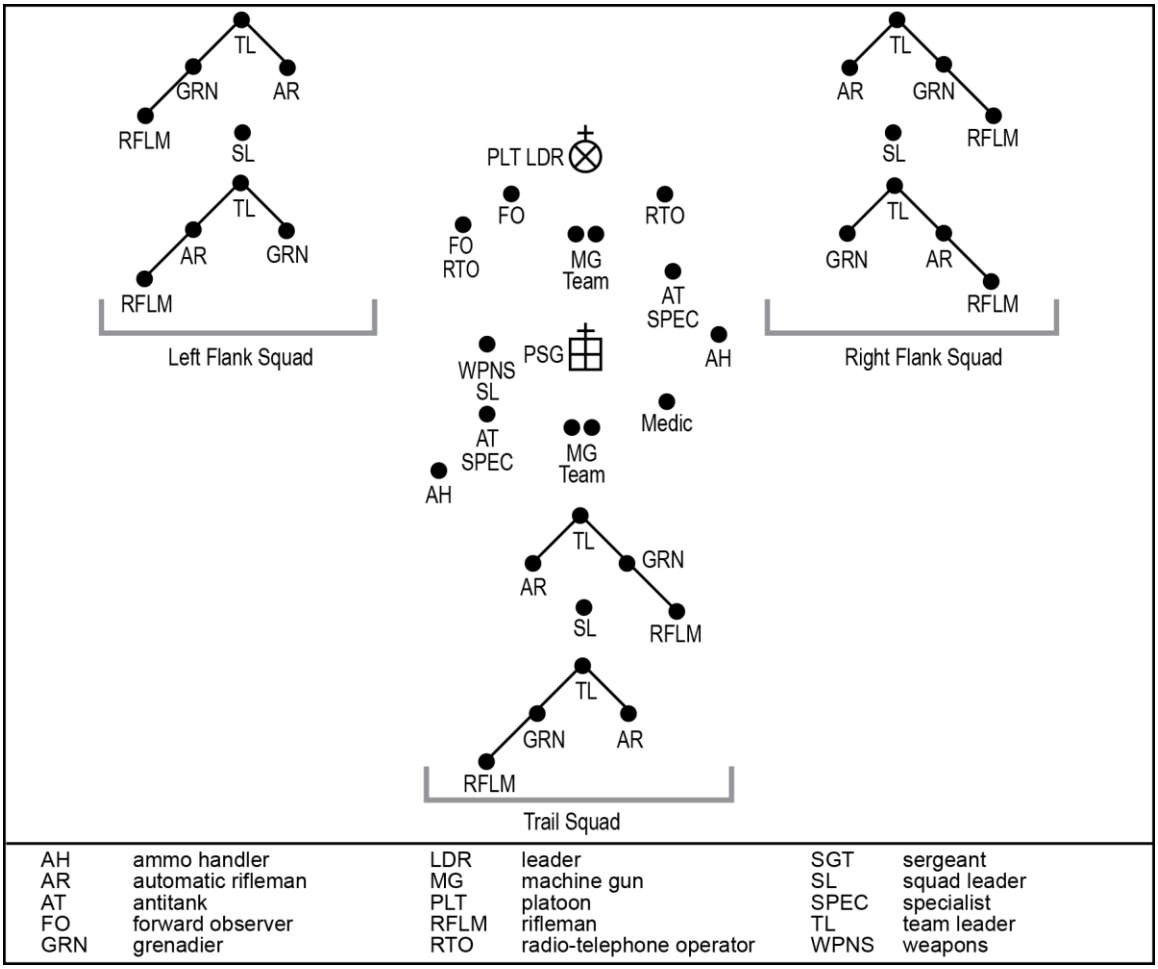


Figure E-5. Platoon line, squads on line



AH	ammo handler	LDR	leader	SGT	sergeant
AR	automatic rifleman	MG	machine gun	SL	squad leader
AT	antitank	PLT	platoon	SPEC	specialist
FO	forward observer	RFLM	rifleman	TL	team leader
GRN	grenadier	RTO	radio-telephone operator	WPNS	weapons

Figure E-6. Platoon line, squads in column



AH	ammo handler	LDR	leader	SGT	sergeant
AR	automatic rifleman	MG	machine gun	SL	squad leader
AT	antitank	PLT	platoon	SPEC	specialist
FO	forward observer	RFLM	rifleman	TL	team leader
GRN	grenadier	RTO	radio-telephone operator	WPNS	weapons

Figure E-7. Platoon vee

Platoon Wedge

E-85. This formation has two squads in the rear overwatching or trailing the lead squad. (See figure E-8.) The lead squad is the base squad. The wedge formation can be used with the traveling and traveling overwatch techniques. It also allows rapid transition to bounding overwatch.

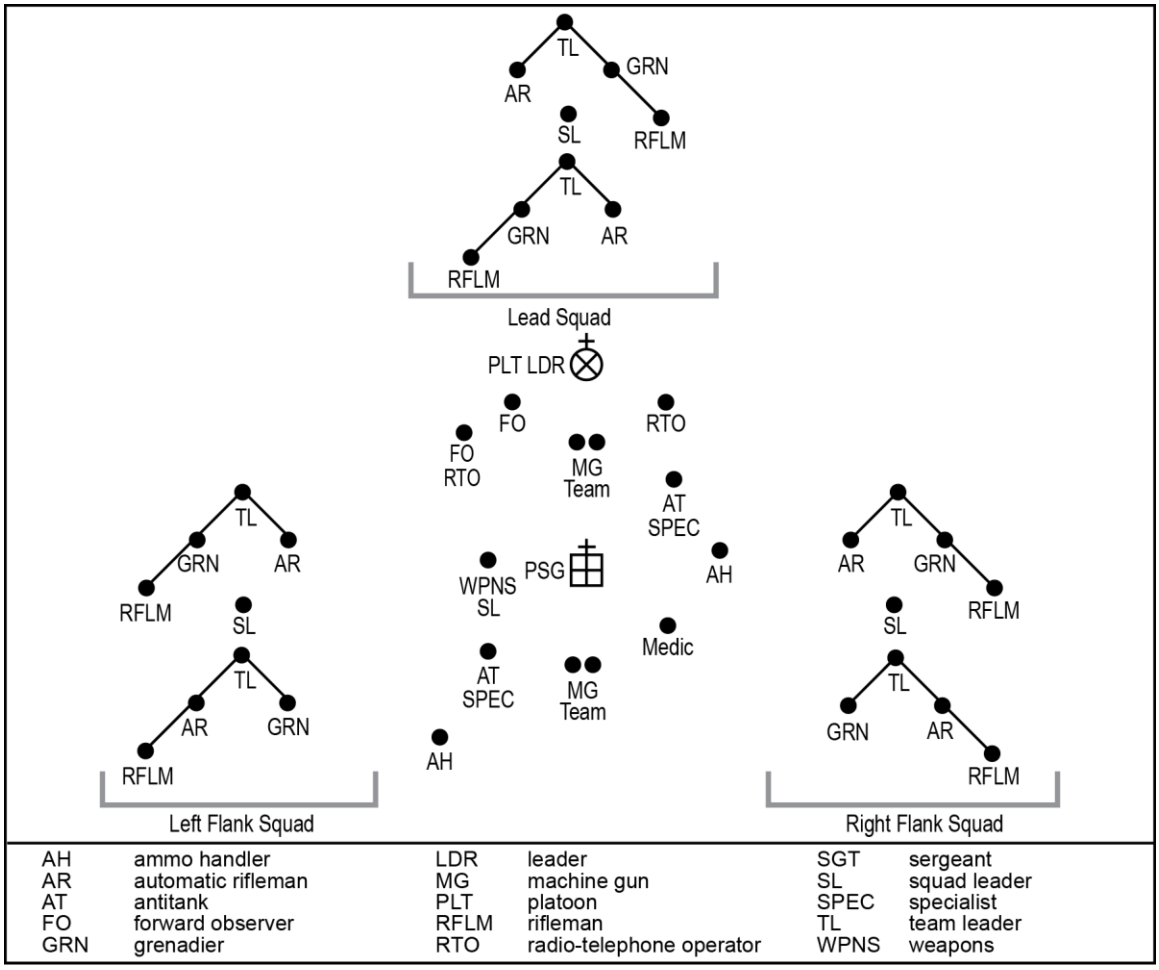


Figure E-8. Platoon wedge

Platoon File

E-86. This formation may be set up in several methods. (See figure E-9.) One method is to have three squad files follow one another using one of the movement techniques. Another method is to have a single platoon file with a front security element (point) and flank security elements. The distance between Soldiers is less than normal to allow communication by passing messages up and down the file. The platoon file has the same characteristics as the fire team and squad files. It normally is used for traveling only.

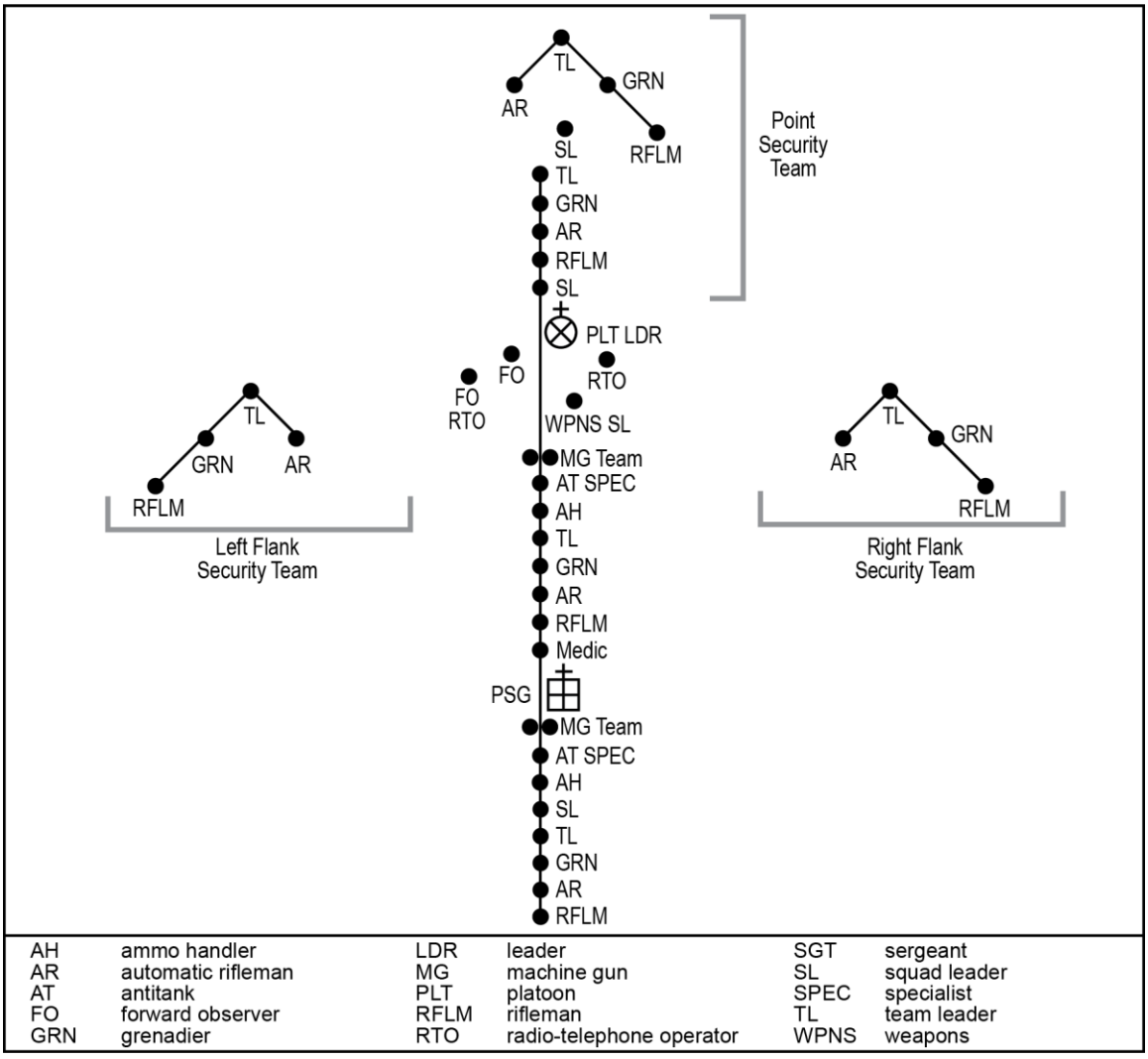


Figure E-9. Platoon file

MOUNTED PLATOON MOVEMENT FORMATIONS

E-87. The platoon leader uses formations to relate one vehicle or squad to another on the ground and to position firepower to support the direct fire plan. He uses them to establish responsibilities for security between vehicles or squads and to aid in the execution of battle drills and directed COA.

E-88. When mounted, the platoon uses the column, wedge, line, echelon, coil, and herringbone formations (based on mission variables [METT-TC]). The platoon leader tracks his platoon's formation and movement in conjunction with the company's formation. Table E-5 on page E-20 shows characteristics, advantages, and disadvantages of each type of standard mounted formations.

Table E-5. Mounted formation characteristics

Formation	*Control*	*Fires*		*Security*
		Front/Rear	*Flank*	
Column	Easy	Limited	Excellent	Overall limited
Staggered column	Easy	Good	Good	Overall good
Wedge	Easy	Excellent	Good	Good, especially for flanks
Line	Difficult	Excellent	Poor	Least secure
Echelon	Difficult	Excellent	Excellent for echeloned side	Good for echeloned side

Column

E-89. The platoon uses the column when moving fast, when moving through restricted terrain on a specific route, or when not expecting enemy contact. Each vehicle normally follows directly behind the vehicle in front of it. However, if the situation dictates, vehicles can disperse laterally to enhance security. This is sometimes referred to as a staggered column.

Staggered Column

E-90. The staggered column formation is a modified column formation with one section leading, and one section trailing to provide overwatch. The staggered column permits good fire to the front and flanks. It is used when speed is critical, when there is a limited area for lateral dispersion, or when enemy contact is possible. Figure E-10 shows this type of column movement.

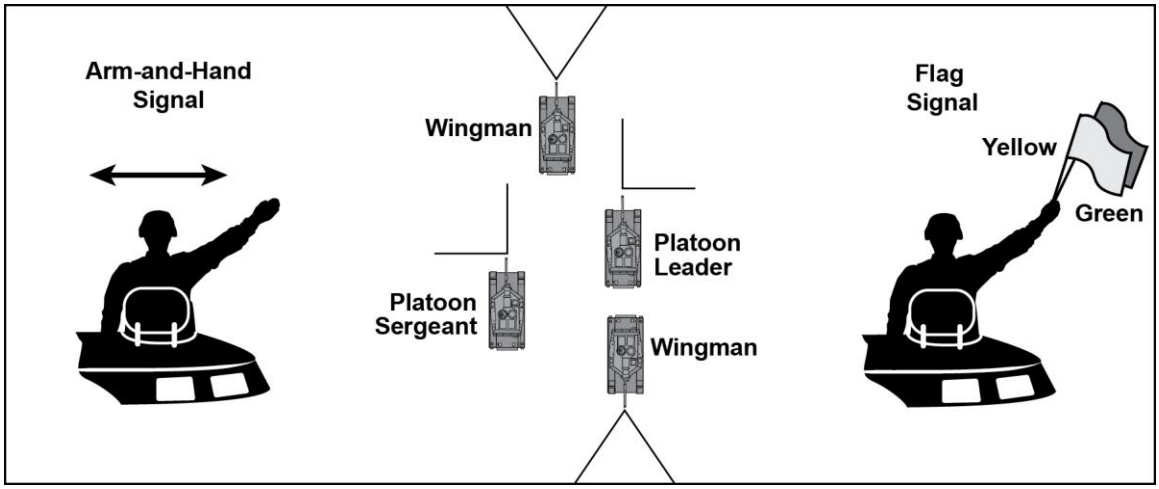


Figure E-10. Staggered column formation with dispersal for added security

Wedge

E-91. The wedge formation (see figure E-11) permits excellent firepower to the front and good fire to each flank. The platoon leader can easily control all vehicles and deploy rapidly into other formations. The wedge formation is often used when the enemy situation is vague. The orientation of the pairs is left and right. The platoon leader and platoon sergeant control the other vehicle (wingman) of their pair by directing it to follow to the outside and to orient its weapons toward the flanks. When the platoon leader's vehicle is slightly forward one flank has more firepower. Depending on the mission variables (METT-TC), the platoon leader makes the adjustment to which side needs the most firepower.

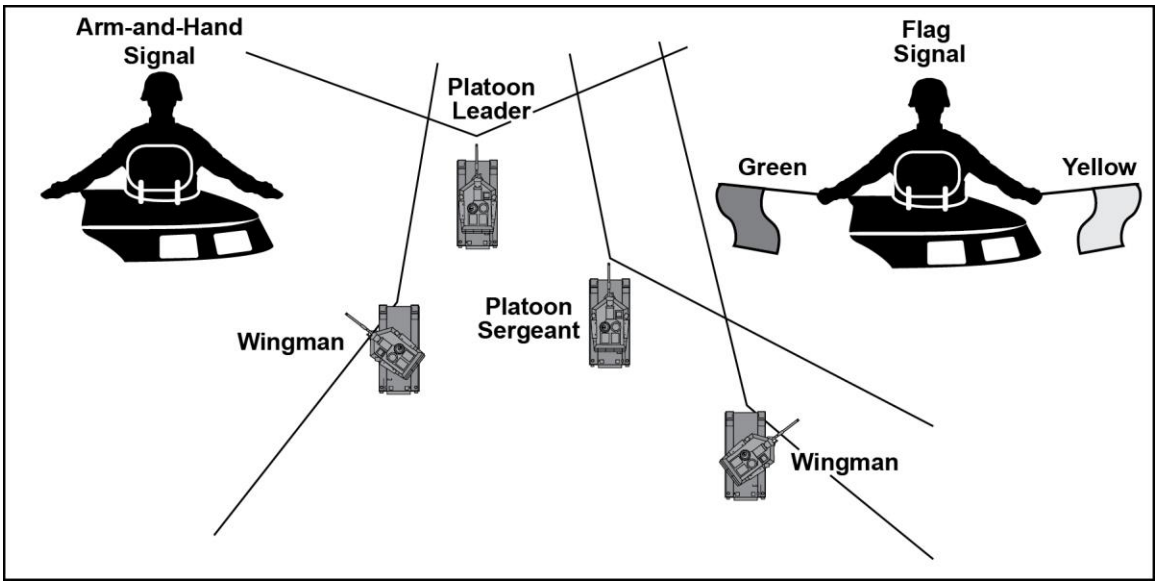


Figure E-11. Wedge formation

Line

E-92. When assaulting a weakly defended objective, crossing open areas, or occupying a support-by-fire position, the platoon mainly uses the line formation shown in figure E-12. The platoon can use the line formation in the assault to maximize the platoon's firepower and shock effect. The platoon normally uses the line formation when no terrain remains between it and the enemy, when the platoon has suppressed the enemy's antitank weapons, or when the platoon is vulnerable to artillery fire and must move fast.

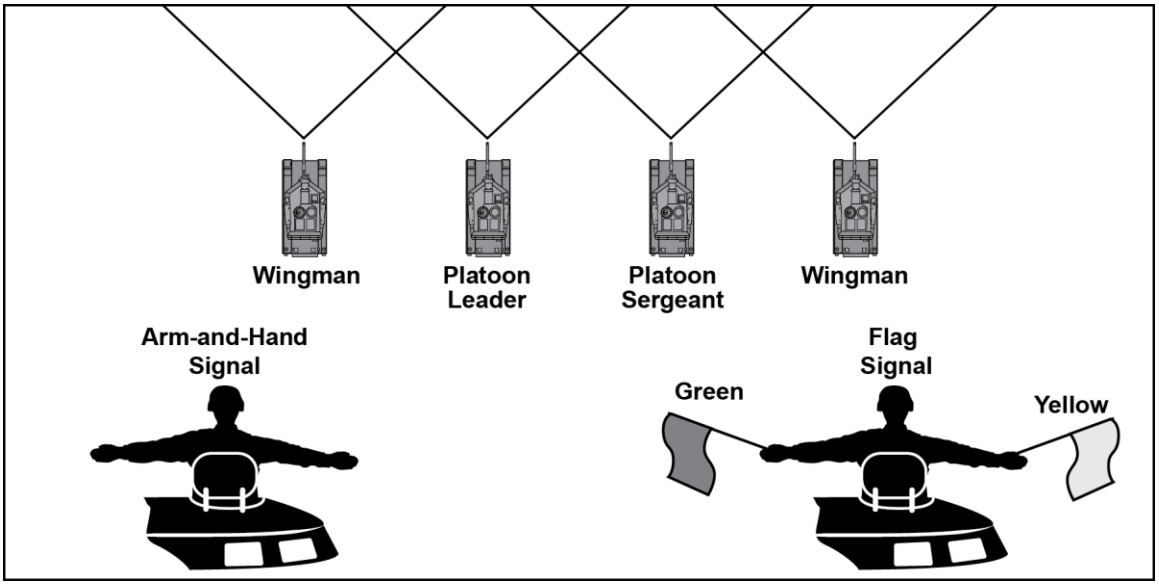


Figure E-12. Line formation

Echelon

E-93. When the company team wants to maintain security or observation of one flank and when the platoon does not expect enemy contact, the platoon uses the echelon formation (shown in figure E-13 on page E-22), which can be used either left or right.

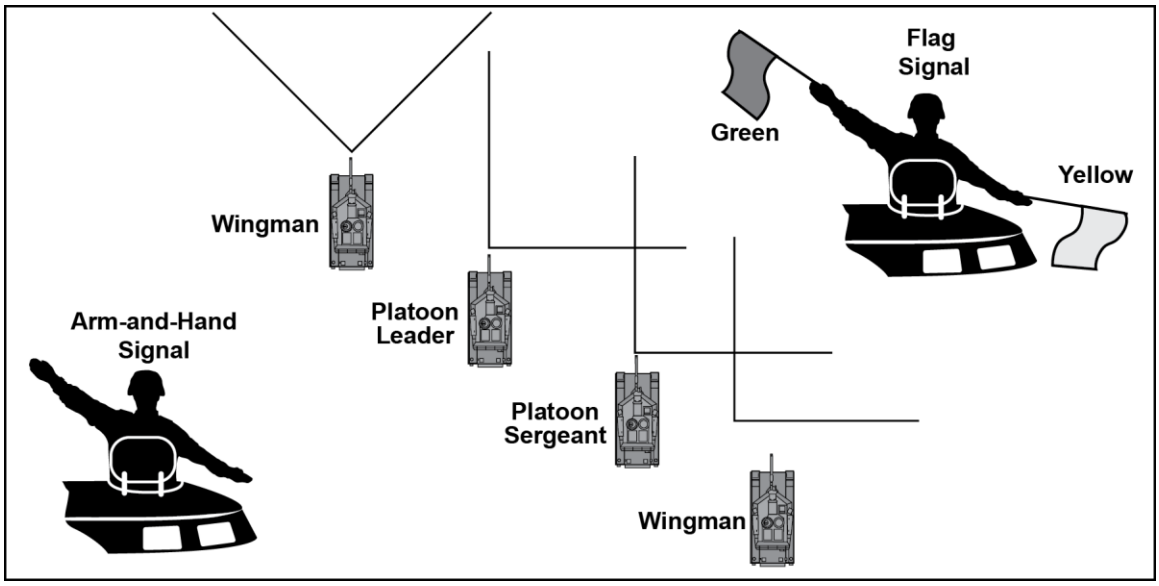


Figure E-13. Echelon right formation

Coil and Herringbone

E-94. The coil and herringbone are platoon-level formations employed when elements of the company team are stationary and must maintain 360-degree security:

- **Coil.** The coil provides all-around security and observation when the platoon is stationary. (See figure E-14.) It is useful for tactical refueling, resupply, and issuing platoon orders. Security is posted to include air guards and dismounted fire teams. The vehicle turrets are manned.
- **Herringbone.** The platoon uses the herringbone to disperse when traveling in column formation. (See figure E-15.) They can use it during air attacks or when they must stop during movement. It lets them move to covered and concealed positions off a road or from an open area and set up all-round security without detailed instructions. They reposition the vehicles as needed to take advantage of the best cover, concealment, and fields of fire. Fire team members dismount and establish security.

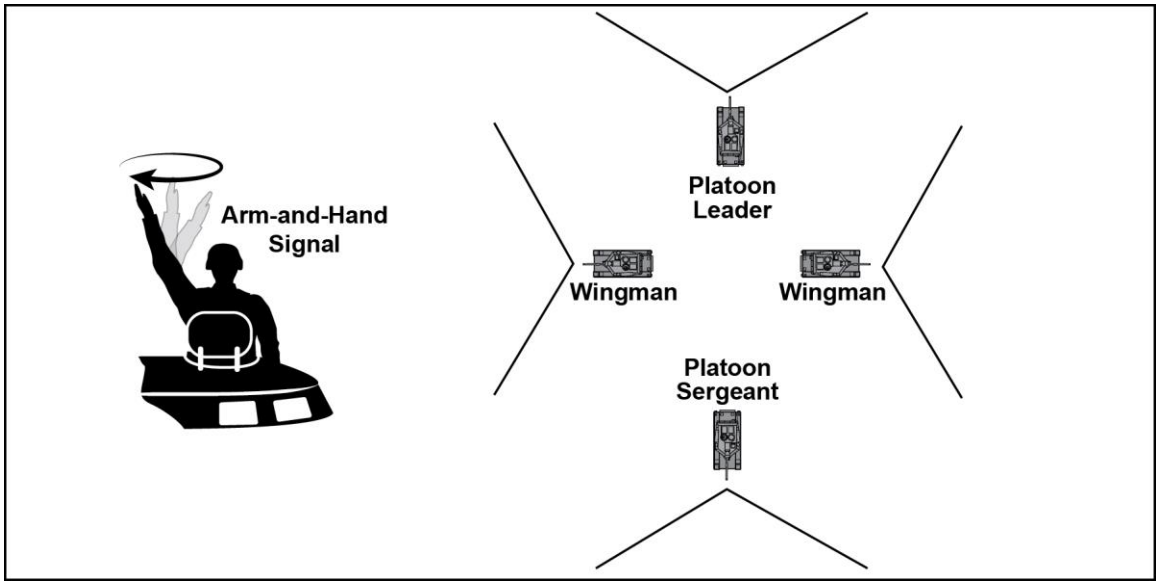


Figure E-14. Coil formation

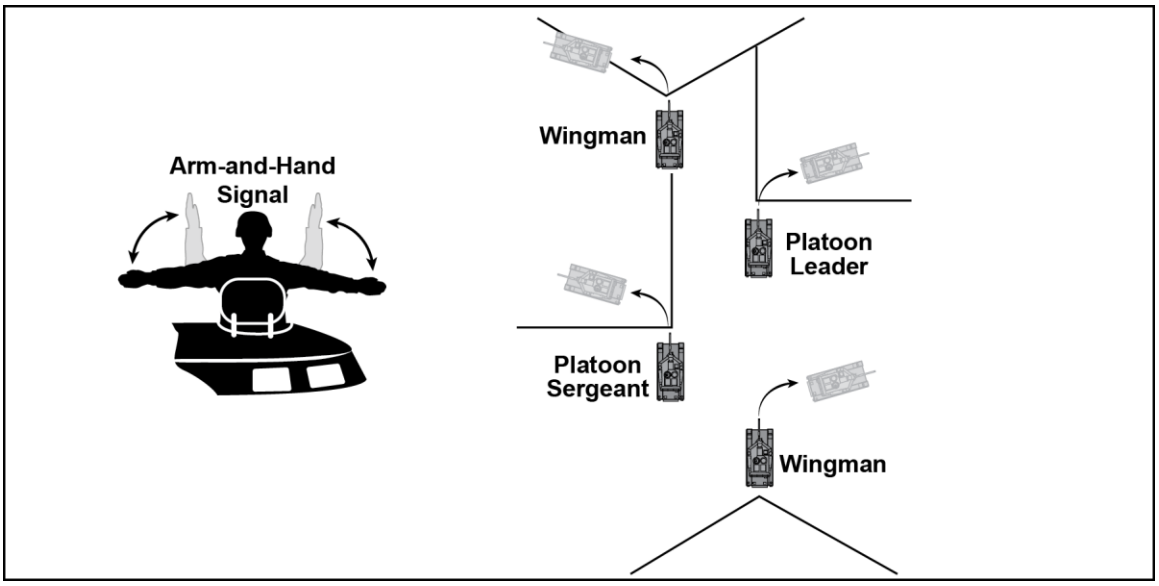


Figure E-15. Herringbone formation

MOVEMENT TECHNIQUES

E-95. Movement techniques are not fixed formations. They refer to the distances between Soldiers, teams, and squads and vary based on mission, enemy, terrain, visibility, and other factors affecting control. There are three movement techniques: traveling; traveling overwatch; and bounding overwatch. The selection of a movement technique is based on the likelihood of enemy contact and need for speed. Factors to consider for each technique are control, dispersion, speed, and security. (See table E-6.) Individual movement techniques include high and low crawl, and three to five second rushes from one covered position to another.

Table E-6. Movement techniques and characteristics

Movement formation	*When normally used*	*Characteristics*			
		Control	*Dispersion*	*Speed*	*Security*
Traveling	Contact not likely	More	Less	Fastest	Least
Traveling overwatch	Contact possible	Less	More	Slower	More
Bounding overwatch	Contact expected	Most	Most	Slowest	Most

SQUAD MOVEMENT TECHNIQUES

E-96. The platoon leader determines and directs which movement technique the squad will use:

- **Squad t raveling.** Traveling is used when contact with the enemy is not likely and speed is needed. (See figure E-16 on page E-24.)
- **Squad traveling overwatch.** Traveling overwatch is used when contact is possible. Attached weapons move near and under the control of the squad leader so they can employ quickly. Rifle squads normally move in column or wedge formation. (See figure E-16.) Ideally, the lead team moves at least 50 meters in front of the rest of the element.
- **Squad bounding overwatch.** Bounding overwatch is used when contact is expected, the squad leader feels the enemy is near (based upon movement, noise, reflection, trash, fresh tracks, or even a hunch), or a large open danger area must be crossed.
  - The lead fire team overwatches first. Soldiers in the overwatch team scan for enemy positions. The squad leader usually stays with the overwatch team.
  - The trail fire team bounds and signals the squad leader when the team completes its bound and is prepared to overwatch the movement of the other team.

- Both team leaders must know which team the squad leader will be with. The overwatching team leader must know the route and destination of the bounding team. The bounding team leader must know the team's destination and route, possible enemy locations, and actions to take when he arrives there. He also must know where the overwatching team will be and how he will receive his instructions. (See figure E-17.)

- **Squad successive and alternate bounds.** The cover and concealment on the bounding team's route dictates how its Soldiers move. Teams can bound successively or alternately. Successive bounds are easier to control, alternate bounds can be faster. (See figure E-18.)

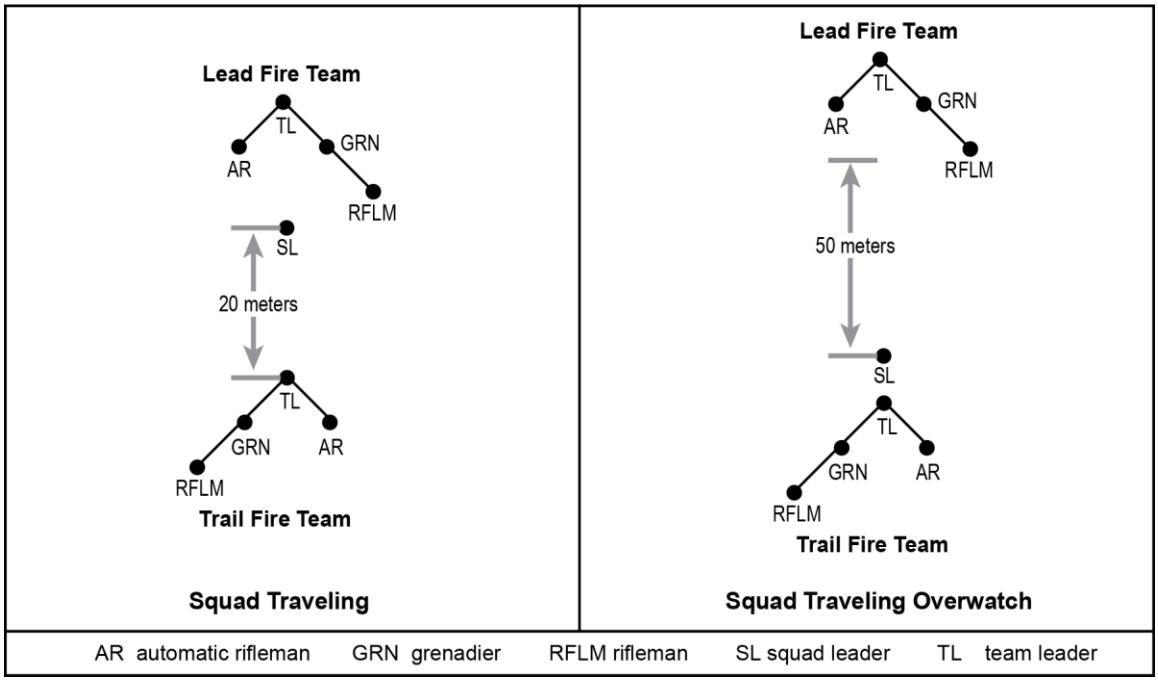


Figure E-16. Squad traveling and squad traveling overwatch

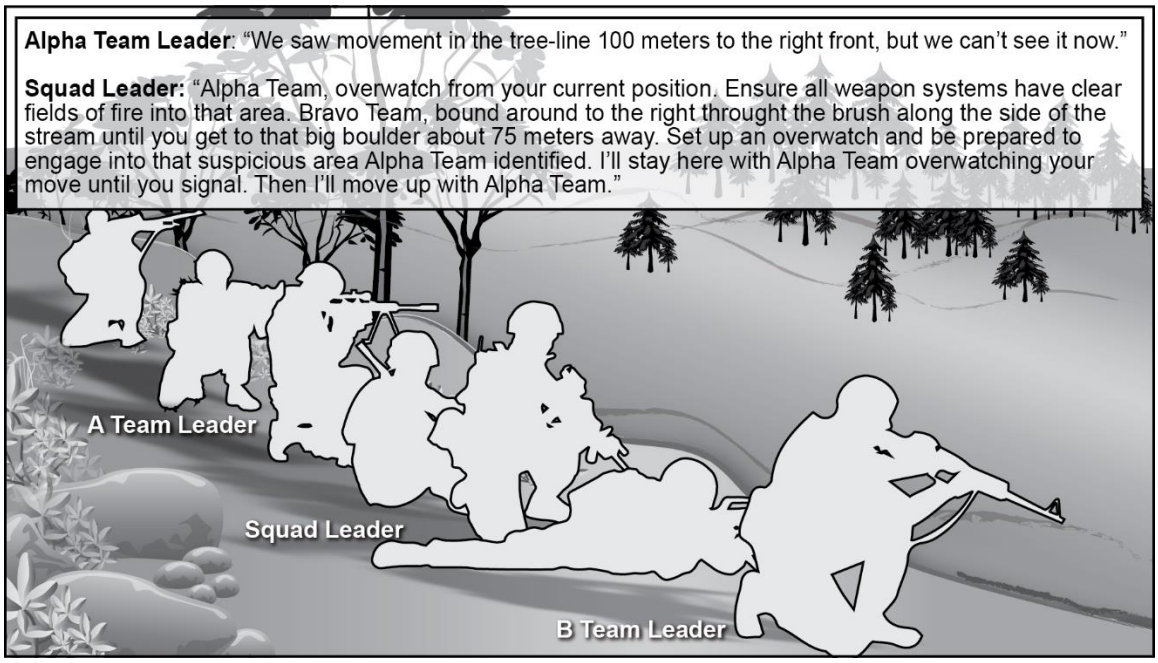


Figure E-17. Squad bounding overwatch

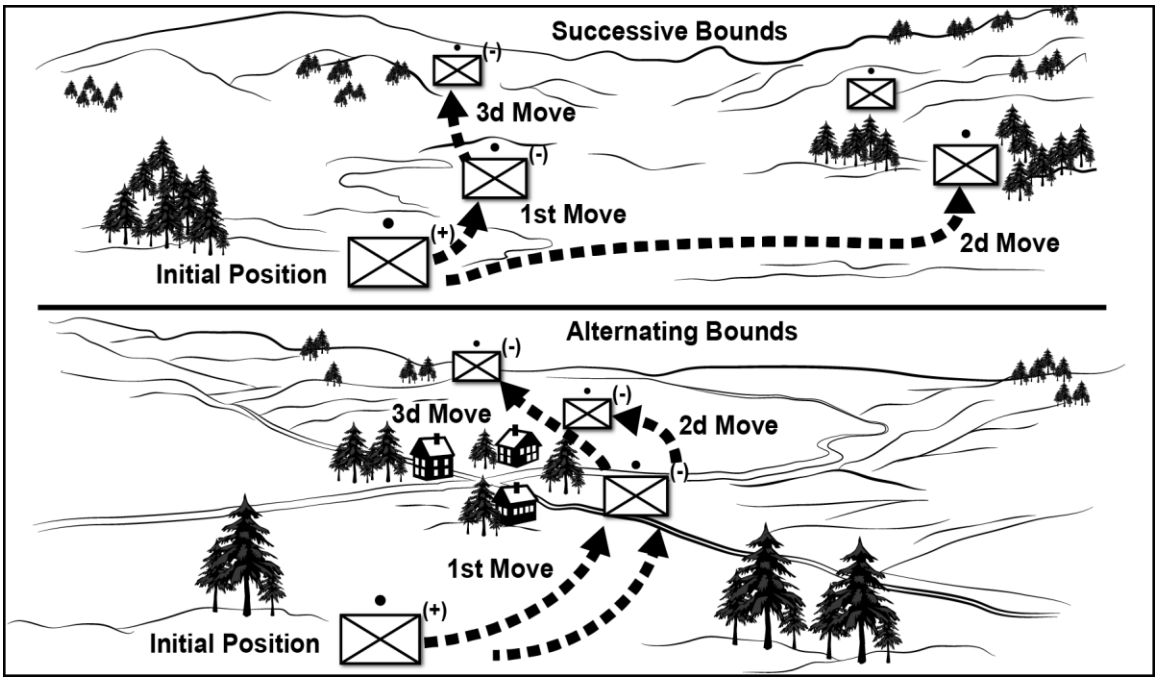


Figure E-18. Squad successive and alternate bounds

PLATOON MOVEMENT TECHNIQUES

E-97. The platoon leader determines and directs which movement technique the platoon uses. While moving, leaders typically separate their unit into two groups: a security element and main body. In most scenarios, the infantry platoon and squad are not large enough to separate its forces into separate security forces and main body forces. However, it is able to accomplish these security functions by employing movement techniques.

E-98. As the probability of enemy contact increases, the platoon leader adjusts the movement technique to provide greater security. The essential factor to consider is the trail unit's ability to provide mutual support to the lead element. Soldiers must be able to see their fire team leader. The squad leader must be able to see his fire team leaders. The platoon leader should be able to see his lead squad leader.

Traveling

E-99. The platoons often use the traveling technique when contact is unlikely and speed is needed. (See figure E-19 on page E-26.) When using the traveling technique, all unit elements move continuously. In continuous movement, all Soldiers travel at a moderate rate of speed, with all personnel alert. During traveling, formations are essentially not altered except for effects of terrain.

Traveling Overwatch

E-100. Traveling overwatch is an extended form of traveling in which the lead element moves continuously but trailing elements move at varying speeds, sometimes pausing to overwatch movement of the lead element. (See figure E-19.) Traveling overwatch is used when enemy contact is possible, but not expected. Caution is justified, but speed is desirable.

E-101. The trail element maintains dispersion based on its ability to provide immediate suppressive fires in support of the lead element. The intent is to maintain depth, provide flexibility, and sustain movement in case the lead element is engaged. The trailing elements cue their movement to the terrain, overwatching from a position where they can support the lead element if needed. Trailing elements overwatch from positions and at distances that do not prevent them from firing or moving to support the lead element. The idea is to put enough distance between the lead units and trail units so that if the lead unit comes into contact, the trail units will be out of contact but have the ability to maneuver on the enemy.

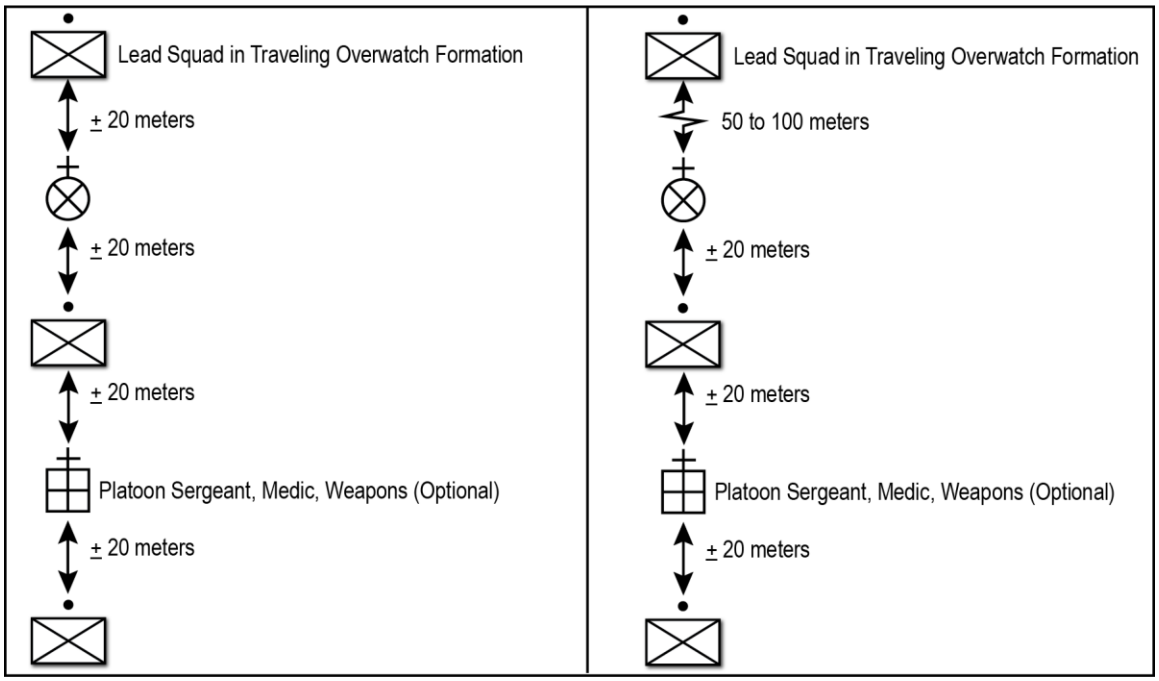


Figure E-19. Platoon traveling and platoon traveling overwatch

E-102. Traveling overwatch requires the leader to control his subordinate's spacing to ensure mutual support. This involves a constant process of concentrating (close it up) and dispersing (spread it out). The primary factor is mutual support, with its two critical variables being weapon ranges and terrain. Infantry platoons' and squads' weapon range limitations dictate units generally should not get separated by more than 300 meters. In compartmentalized terrain, this distance is closer, but in open terrain this distance is greater.

Bounding Overwatch

E-103. Bounding overwatch is similar to fire and movement in which one unit overwatches the movement of another. (See figure E-20.) The difference is there is no actual enemy contact. Bounding overwatch is used when the leader expects contact. The key to this technique is the proper use of terrain.

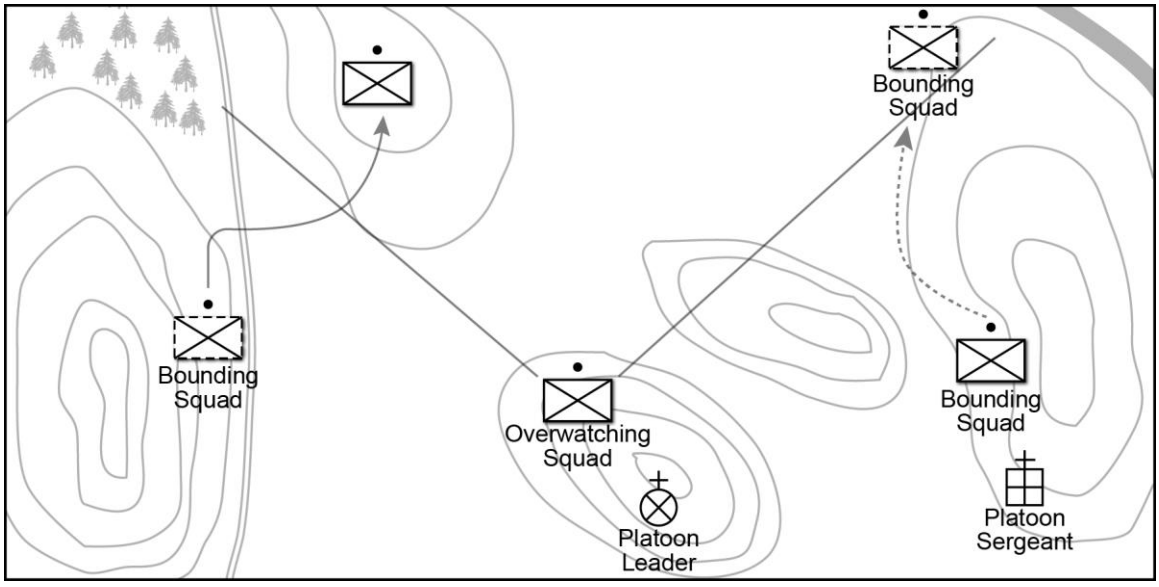


Figure E-20. Platoon bounding overwatch

One Squad Bounding

E-104. One squad bounds forward to a chosen position, then becomes the overwatching element unless contact is made en route. The bounding squad can use traveling overwatch, bounding overwatch, or individual movement techniques (low and high crawl, and three- to five-second rushes by the fire team or buddy teams).

E-105. Mission variables (METT-TC) dictate the length of the bounds. However, the bounding squads should never move beyond the range at which the base-of-fire squads can suppress known, likely, or suspected enemy positions. In severely restrictive terrain, the bounding squad makes shorter bounds than it would in more open areas. The destination of the bounding element is based on the suitability of the next location as an overwatch position. When deciding where to send bounding squads, platoon leaders consider—

- Mission requirements.
- The enemy's likely location.
- The overwatching element weapons' ability to cover the bound.
- The rest of the platoon's responsiveness.

One Squad Overwatching

E-106. One squad overwatches the bounding squad from covered positions and from where it can see and suppress likely enemy positions. The platoon leader remains with the overwatching squad. Normally, the platoon's medium machine guns are located with the overwatching squad.

One Squad Awaiting Orders

E-107. Based on the situation, one squad is uncommitted and ready for employment as directed by the platoon leader. The platoon sergeant and leader of the squad awaiting orders position themselves close to the platoon leader. On contact, this unit should be prepared to support the overwatching element, move to assist the bounding squad, or move to another location based on the platoon leader's assessment.

Weapons Squad

E-108. Medium machine guns normally are employed in one of two ways:

- Attached to the overwatch squad or the weapons squad supporting the overwatching element.
- Awaiting orders to move (with the platoon sergeant) or as part of a bounding element.

Command and Control of the Bounding Element

E-109. Ideally, the overwatch element maintains visual contact with the bounding element. However, the leader of the overwatch element may have the ability to digitally track the location of the bounding element without maintaining visual contact. This provides the bounding element further freedom in selecting covered and concealed routes to its next location. Before a bound, the platoon leader gives an order to his squad leaders from the overwatch position. (See figure E-21 on page E-28.) He tells and shows them the following:

- The direction or location of the enemy (if known).
- The positions of the overwatching squad.
- The next overwatch position.
- The route of the bounding squad.
- What to do after the bounding squad reaches the next position.
- What signal the bounding squad will use to announce it is prepared to overwatch.
- How the squad will receive its next orders.

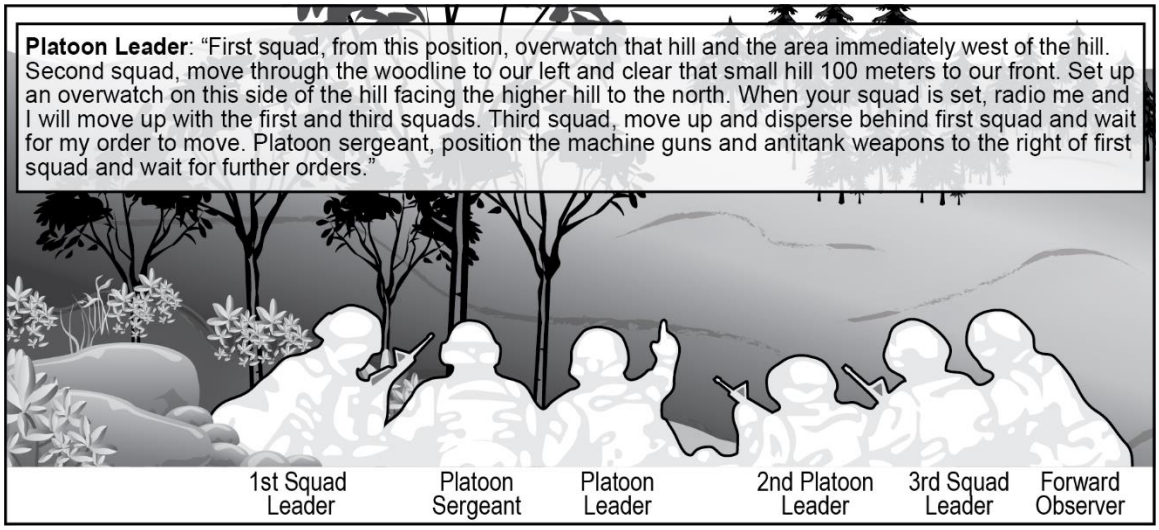


Figure E-21. Platoon leader order for bounding overwatch example

MOUNTED MOVEMENT TECHNIQUES

E-110. The mounted movement techniques are traveling, traveling overwatch, and bounding overwatch.

Traveling

E-111. The platoon travels mounted when contact with the enemy is not likely and speed is desired. (See figure E-22.) The leader analyzes the latest intelligence on the enemy and determines if contact with the enemy is unlikely. Because units generally move faster when traveling mounted, leaders must remember the increased potential for a break in contact. Should a break in contact occur—

- The leader or detached element uses GPS aids to reestablish contact with the main body.
- The platoon's main body can use an infrared or thermal source to regain visual contact with the element and link it back to the main body.

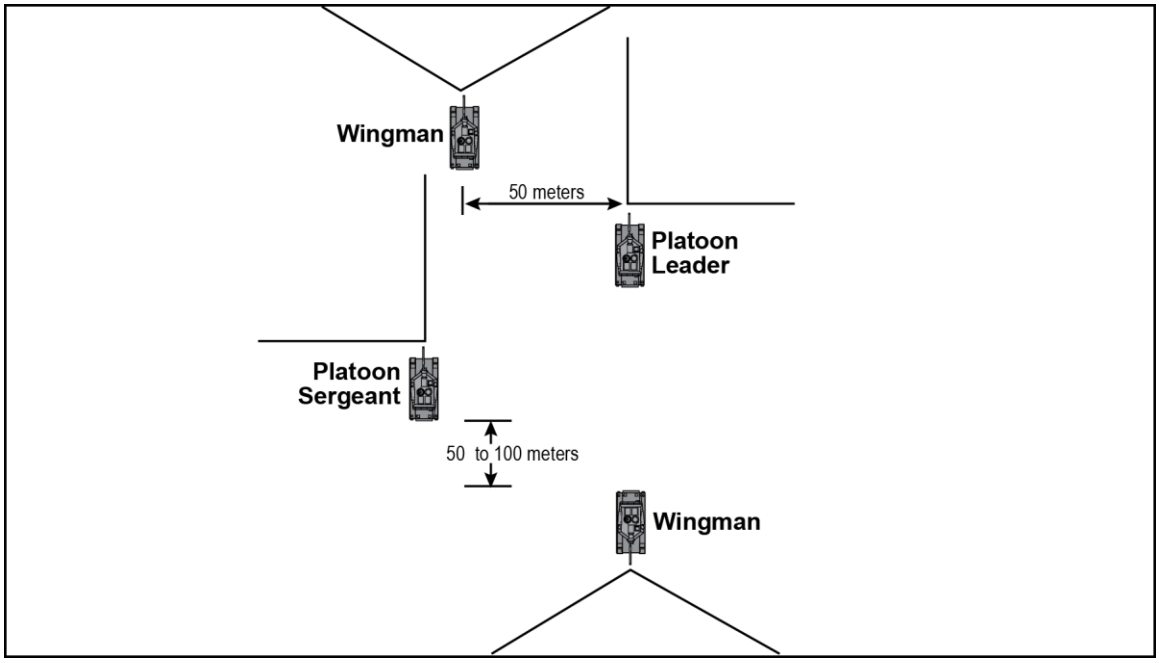


Figure E-22. Traveling, platoon mounted

Traveling Overwatch

E-112. The platoon leader uses traveling overwatch when he thinks contact could occur. (See figure E-23.) He designates one of his subordinate elements to provide security forward of the main body. In some cases, the improved awareness might prompt the security element to increase these distances. Leaders track the movement of forward security elements. They get position updates to ensure the forward security element remains on azimuth and within range of supporting direct fires.

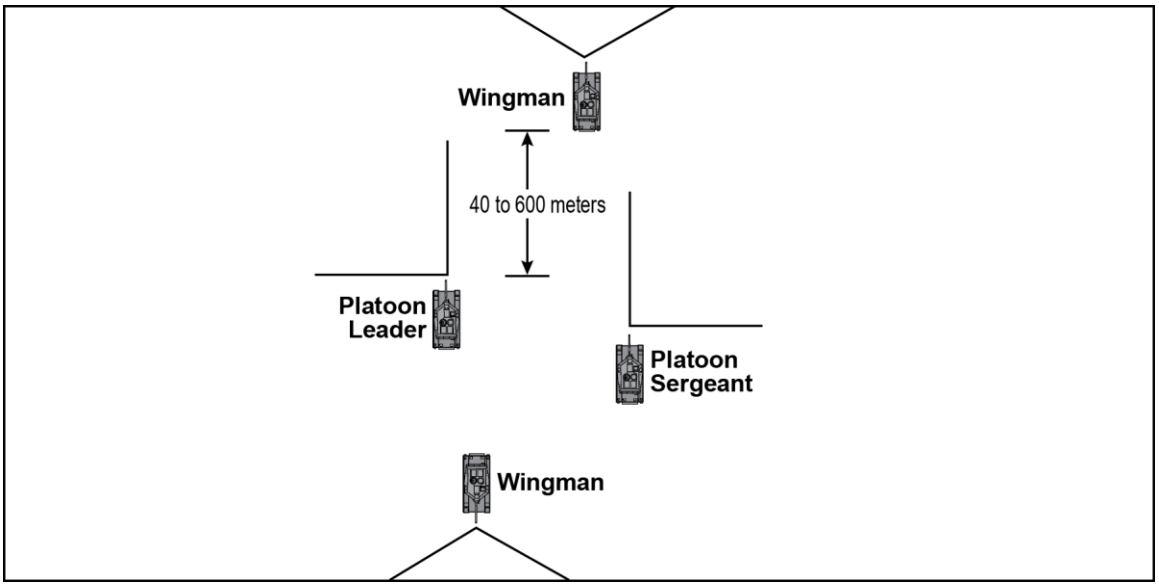


Figure E-23. Traveling overwatch

Bounding Overwatch

E-113. When the platoon leader expects enemy contact, he uses bounding overwatch. He initiates it based on planning reports received earlier about the enemy situation and on situation reports received during movement. He bounds elements using successive or alternate bounds. (See figure E-24.)

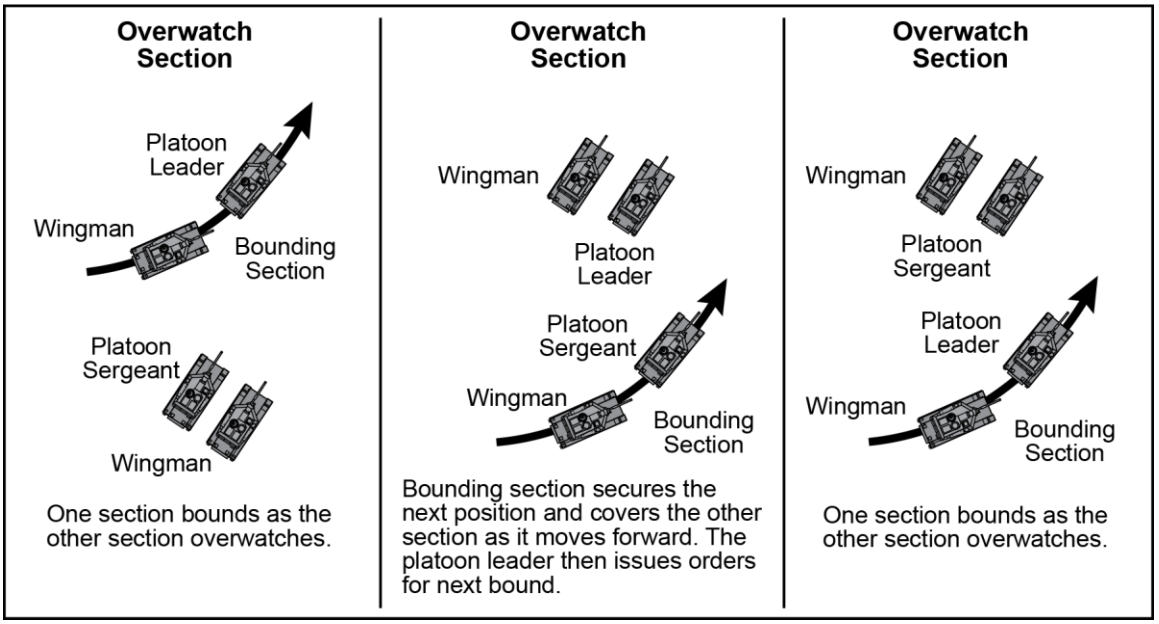


Figure E-24. Bounding overwatch

E-114. Before bounding, the leader shows the bounding element the location of the next overwatch position. Ideally, the overwatch element keeps the bounding element in sight. Once the bounding element reaches its overwatch position, it signals ready by voice or visual means to the element that overwatched its bound. (See figure E-25.) The platoon leader makes sure the bounding element stays within two-thirds of the weapons range of the overwatch element.

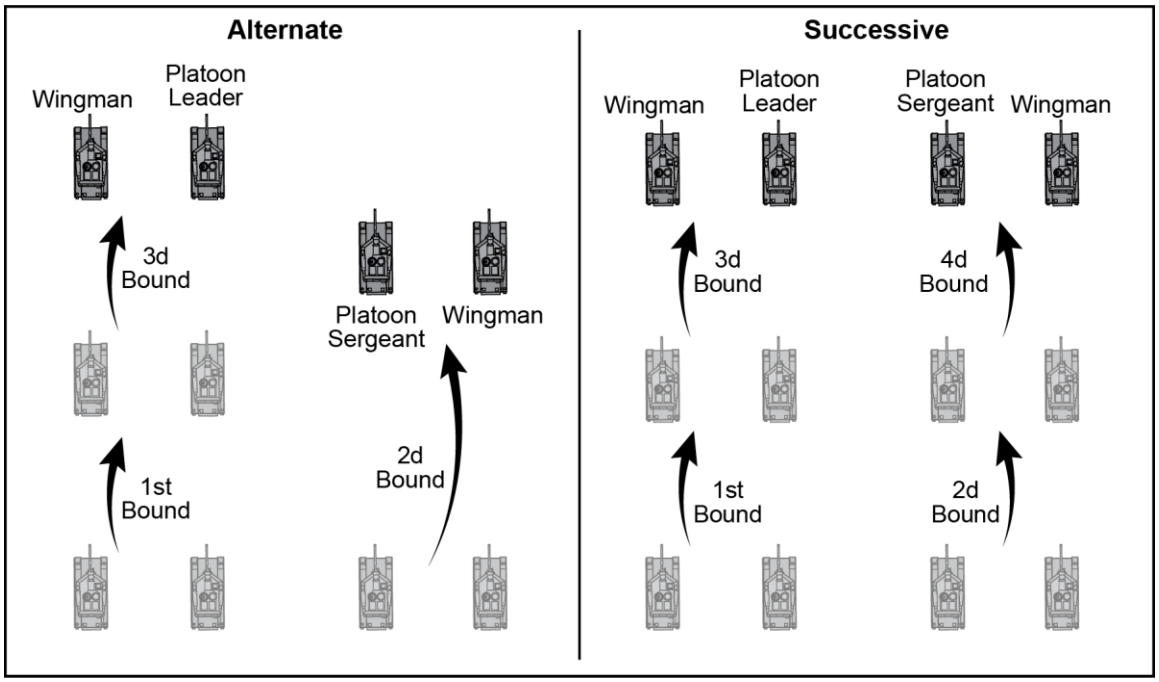


Figure E-25. Methods of bounding overwatch

Appendix F
Obstacle Considerations

OVERVIEW

F-1. This appendix describes the markings that MI forces should understand regarding obstacles and CBRN contaminated areas. Understanding these markings is critical to freedom of movement and maneuver. Additionally, it assists in preventing MI forces from sustaining casualties.

OBSTACLE MARKINGS

F-2. There two critical components to any lane-marking system:

- **Lane-marking device** is the type of hardware emplaced to mark the entrance, lane, and exit.
- **Lane-marking pattern** is the location of markers indicating the entrance, lane, and exit.

LANE-MARKING DEVICES

F-3. Lane marking relies on a recognizable set of markers to indicate the viewer's position relative to the obstacle:

- **Entrance funnel markers** augment entrance markings. The V formed by the funnel markers forces approaching platoons into a column formation and assists drivers and vehicle commanders in making last-minute adjustments before entering the lane.
- **Entrance markers** indicate the start of a lane through an obstacle. They signify the friendly side boundary of the obstacle and the point where movement is restricted by the lane width and path. Entrance markers also indicate the lane width.
- **Exit markers** indicate the far side limit of a lane through an obstacle. For a passing force, the exit marker signifies the point at which movement is no longer confined to the lane path. Like entrance markers, exit markers must be distinguishably different from hand rail markers; however, the exit may be marked the same as the entrance. Exit markers are placed to the left and right of an exit point and spaced the width of the reduced lane. This visual reference is critical when only a left handrail is marked. The combination of entrance, left-handrail, and exit markers gives the driver and the vehicle commander visual cues (entrance and exit points, lane width, and path) to pass safely along a lane.
- **Far-recognition markers** are highly visible markers located between the final-approach marker and the friendly unit. They are primarily used when passing battalion-size forces through a lane where direct observation of the final-approach marker is denied due to distance, visibility, or terrain. Far-recognition markers should be different from the final-approach marker. Far-recognition markers indicate the point at which forces begin changing their formation to posture for the passage. A single far-recognition marker may serve up to two lanes when located 650 to 1,300 feet apart. Once lanes are upgraded to two-way traffic, far-recognition markers are required for each two-way lane. Far-recognition markers should be visually alterable so that they can be distinguished from the far-recognition marker of an adjacent lane. This assists the C2 of large formations when passing on several adjacent lanes. When a far-recognition marker serves more than one lane, a guide or a tactical CP is collocated with the far-recognition marker nearest the obstacle.

- **Final-approach markers** are highly visible, robust markers that augment the visual signature of entrance funnel markers. Units must be able to see the entrance funnel or the entrance funnel markers from the final-approach marker. The final-approach marker—
  - Provides the assault force commander with a highly visible reference point toward which to maneuver their formation.
  - Signals the company team commanders to begin changing to a column formation.
- **Handrail markers** define the lane path through an obstacle and indicate the limits of the lane width. At a minimum, mounted and dismounted lanes have a left handrail. Mounted and dismounted forces moving through a lane should keep the left handrail immediately to the left of the vehicle or person. The left handrail is considered on the left of the vehicle direction of travel through the initial breach. The lane width is defined by the entrance markers. Therefore, when only the left handrail is marked, drivers use entrance and handrail markers to gauge the lane width and path. As the phases of the operation progress, lane marking may be upgraded to include right handrails.

LANE-MARKING PATTERNS

F-4. Each lane-marking level provides an increase in lane signature and capability. Lane requirements change as a breach matures from the passage of the assault force to the passage of larger follow-on forces. There are three levels of lane marking:

- Initial lane-marking pattern.
- Intermediate lane-marking pattern.
- Full lane-marking pattern (two way).

Initial Lane-Marking Pattern

F-5. Figure F-1 shows the initial lane-marking pattern. Entrance, left-handrail, and exit markers are the first markers that the breach force emplaces since these markers define the location and limits of the lane. These markers should be emplaced as follows:

- Entrance markers are placed to the left and right of the reduced lane entrance point. They are spaced the width of the lane (at least 15 feet for mounted and 3 feet for dismounted lanes).
- Left-handrail markers are placed at the left limit of the lane along the entire path. They are placed at 50-foot intervals for mounted forces and 15-foot intervals for dismounted forces. Commanders can modify the intervals based on the terrain, the visibility, the lane length, and the lane path. Additionally, commanders may choose to mark left and right handrails when the lane path is lengthy or unclear (through a complex obstacle).
- Exit markers are placed to the left and right of the lane at the far side of the obstacle (at least 15 feet for mounted and 3 feet for dismounted lanes).
- Entrance funnel markers are placed at 50-foot intervals for mounted forces and 15-foot intervals for dismounted forces. They are placed diagonal to the lane entrance to form a 45-degree V-shape.
- The final-approach marker is centered on the lane and placed at least 650 feet from the lane entrance for mounted forces. For dismounted forces, the nature of the attack may preclude using a final-approach marker initially. A final-approach marker should be placed 100 feet from the entrance as soon as the mission allows. Commanders modify the recommended distance for the final-approach marker based on the terrain and the visibility.

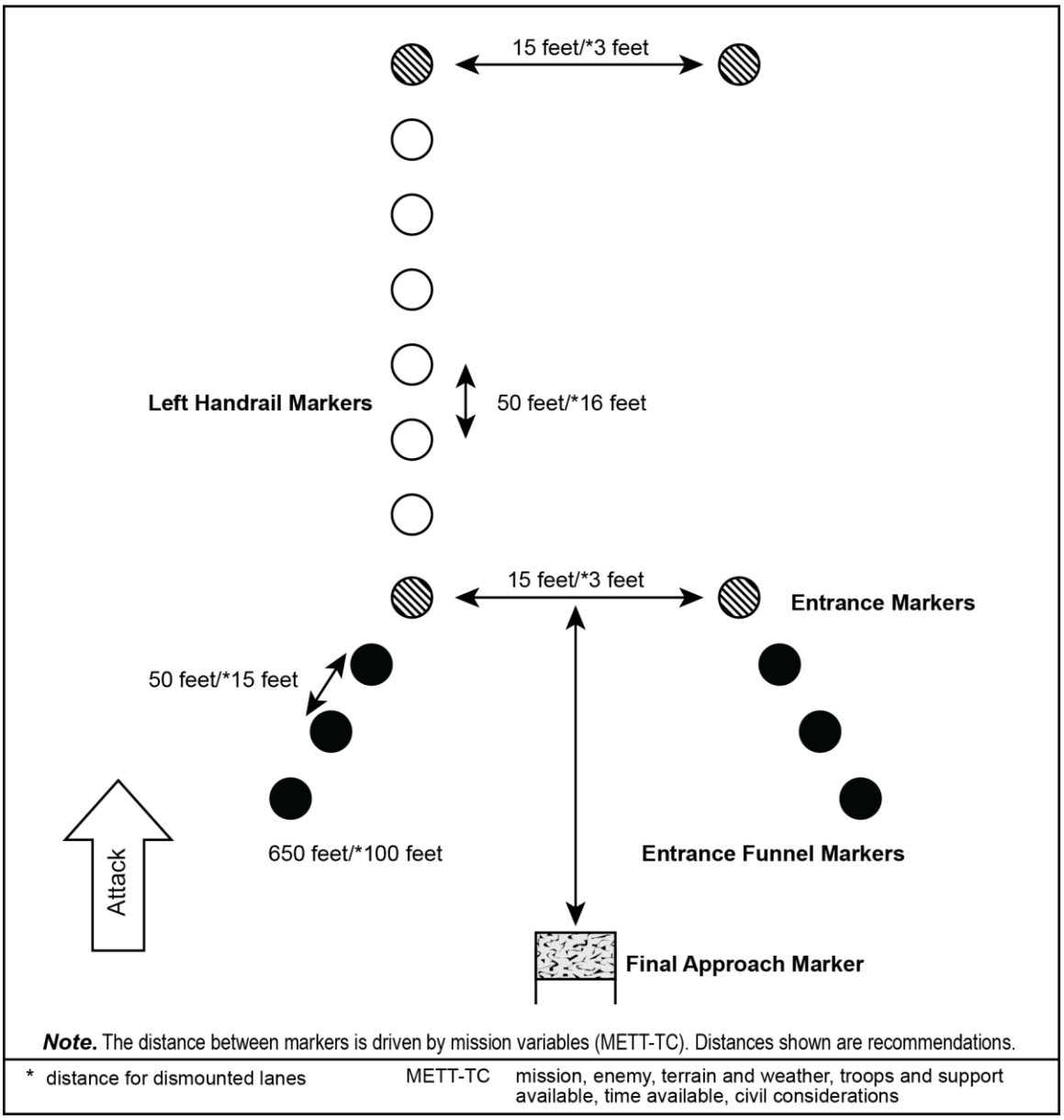


Figure F-1. Initial lane-marking pattern

Intermediate Lane-Marking Pattern

F-6. Intermediate lane markings build on the initial lane-marking pattern by adding right-handrail markers, exit funnel markers, far-recognition markers, and a far side final-approach marker. Figure F-2 on page F-4, shows an intermediate lane-marking pattern. Intermediate lane marking has two goals. Increase the lane signature to assist in the passage of larger combat forces and to provide sufficient marking for two-way, single-lane traffic. Upgrading initial lane marking to intermediate lane marking is triggered by one of the following two events:

- Commitment of larger combat forces unable to directly observe the obstacle as it is reduced.
- Rearward passage of sustainment/combat service support traffic (CASEVAC and vehicle recovery).

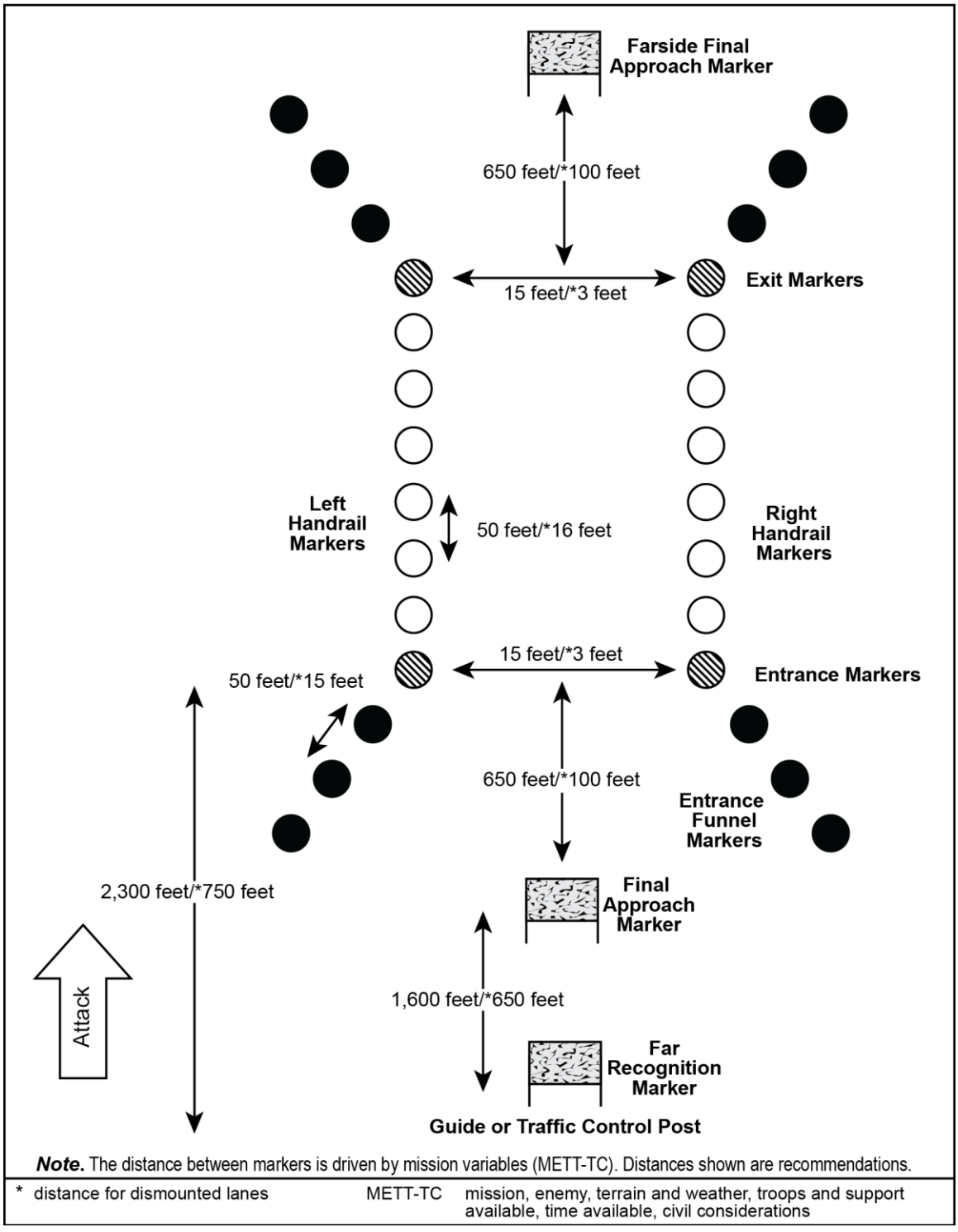


Figure F-2. Intermediate lane-marking pattern

Full Lane-Marking Pattern (Two Way)

F-7. Lane marking is upgraded to a full lane-marking pattern when the commander desires uninterrupted two-way traffic flow. Expanding lanes to full lane marking is resource intensive and not part of a breach. A full lane supports uninterrupted two-way traffic. The marking pattern is modified to give forces passing forward or rearward the same visual signature. Figure F-3 provides an example of a full lane marking pattern.

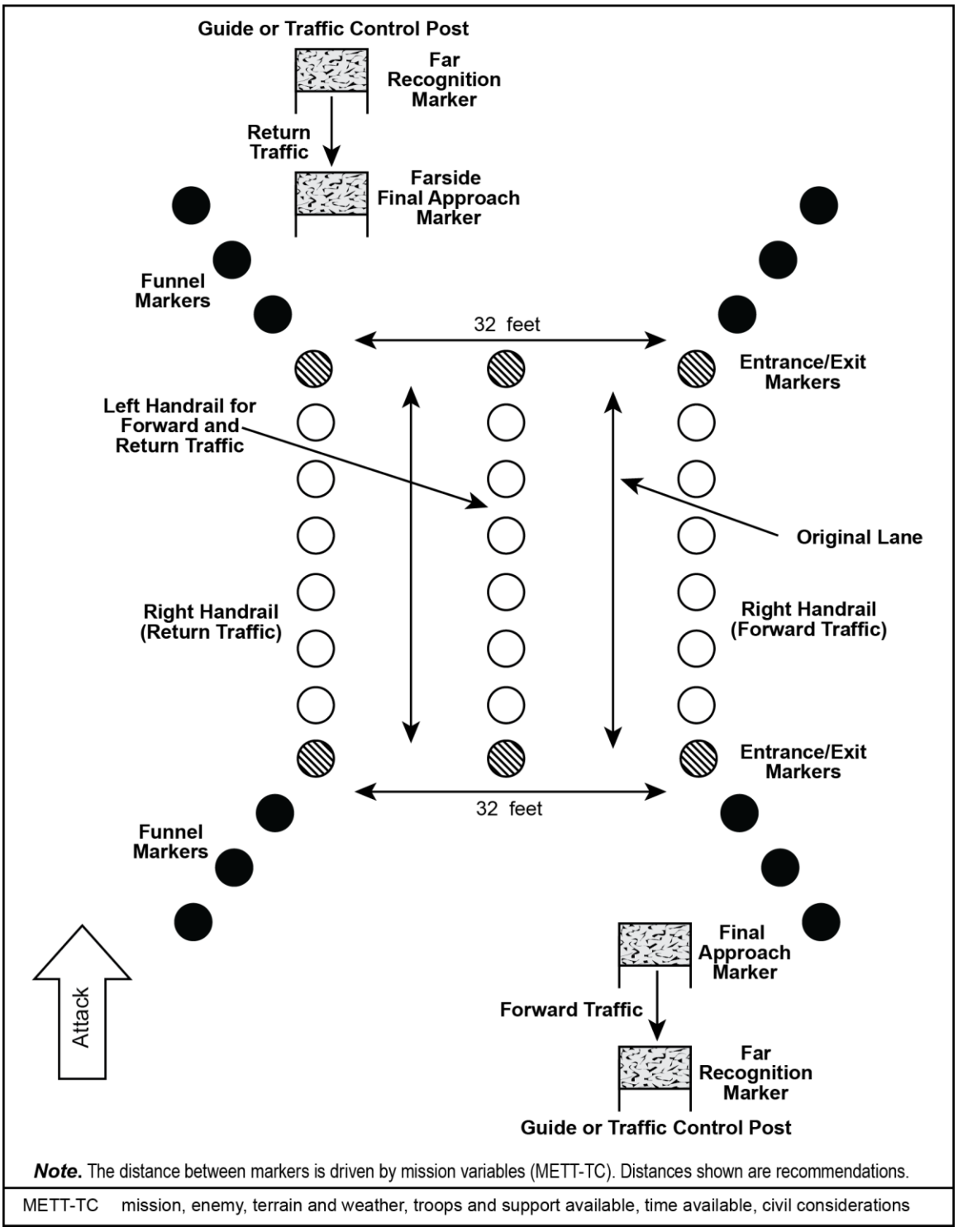


Figure F-3. Full lane-marking pattern

CONTAMINATED AREA MARKINGS

F-8. Once an area is searched and contamination is located, the area is surveyed (if required) and marked and a report is submitted to the requesting headquarters. Marking a contaminated area or equipment designates a hazard. A more detailed survey determines the extent and intensity of the contamination. Markings warn individuals and units visually, identify routes through or around contamination to maximize operational maneuverability, and identify equipment that is hazardous to operators and maintenance personnel.

F-9. Contamination marking signs are standardized in color, shape, and size. (See table F-1.) The primary (background) color of the marking sign indicates the general type of contamination. The secondary (foreground) color identifies the specific hazard. Contamination marking signs are annotated with important information that includes the following data fields:

- **Chemical.** Post the name of the agent, if known, and the date and time of detection.
- **Biological.** Post the name of the agent, if known, and the date and time of detection.
- **Radiological.** Post the dose rate, the date and time of the reading, and the date and time of the burst, if known.

F-10. The contamination markers are emplaced where they are most likely to be seen by approaching individuals and units. Individuals who locate the contamination will place markers at the point of detection. To prevent forces from missing posted markers and inadvertently entering contaminated areas, markers are placed at intervals of 10 to 50 meters, depending on the terrain. Ensure signs are clearly visible at a distance of approximately 50 meters in most conditions of visibility. Figure F-4 illustrates a sample contamination bypass marker.

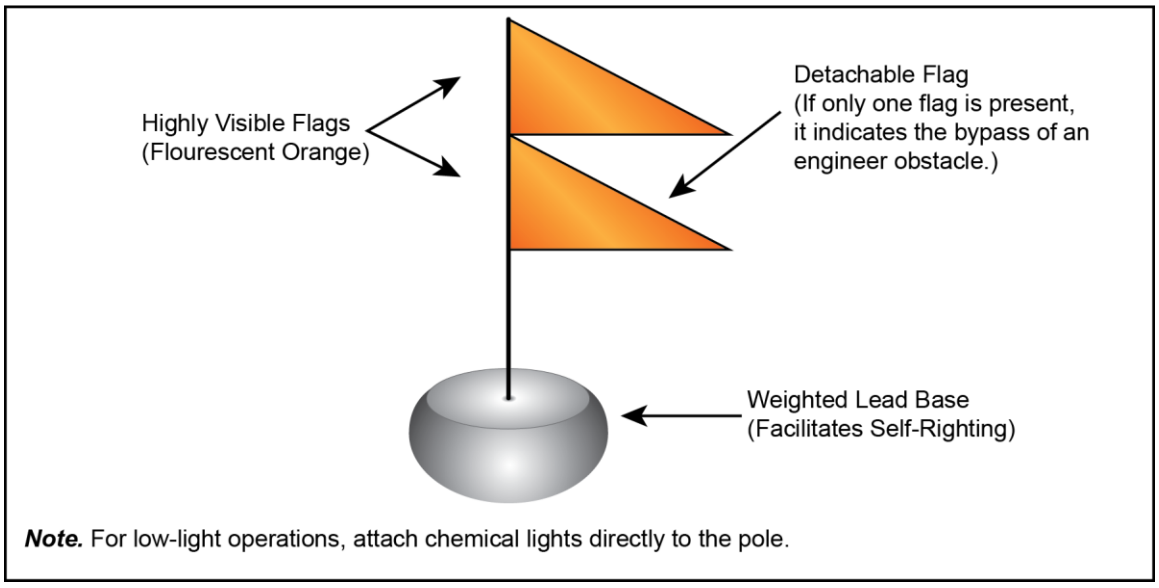
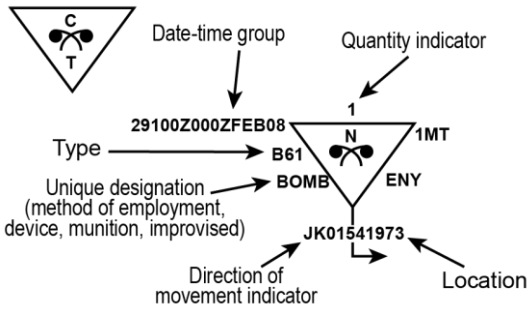
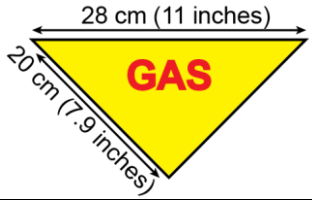
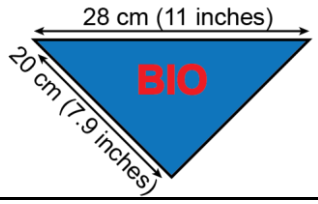
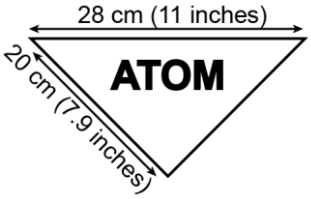
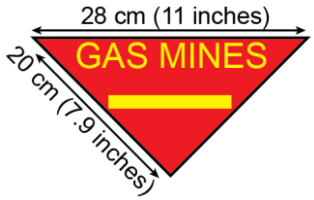
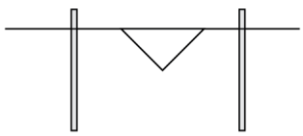


Figure F-4. Sample bypass marking

Table F-1. Standard contamination marking signs

Symbol or sign	*Definition*
	CBRN contaminated are or CBRN event. This symbol can be placed on the map in conjunction with a shape to mark the contaminated area. The **T** can be added to indicate toxic industrial material. The CBRN event is a graphic control measure for marking CBRN hazard areas. Other information may be added according to FM 1-02.2 or MIL-STD 2525D. C—chemical B—biological R—radiological N—nuclear
	Yellow background with red lettering: • Name of agent (if known). • Date and time of detection. • Date and time of detonation/release (if known). • Concentration (if known).
	Blue background with red lettering: • Name of agent (if known). • Date and time of detection. • Date and time of detonation/release (if known). • Concentration (if known).
	White background with black lettering: • Dose rate. • Date and time of reading. • Date and time of detonation/release (if known).
	Red background with yellow lettering and stripe: • Chemical agent in mine. • Date. • Surface of marker facing away from minefield.
	The perimeter of contaminated area should be marked by a fence placed on all probable routes leading into the contaminated area at about 20 meters (66 feet) before the point where the presence of contamination was detected. Based on the terrain, there may be 10 to 50 meters between signs. In the case of toxic industrial chemicals, mark the boundaries of the exclusion or isolation zones. (See TM 3-11.91/MCRP 10-10E.4/NTRP 3-11.32/ AFTTP 3-2.55.)

cm centimeter

This page intentionally left blank.

Appendix G

Reaction Drills

OVERVIEW

G-1. Battle drills are initiated on a cue, such as an enemy action or the leader's order, and are a trained response to that stimulus. They require minimal leader orders to accomplish, and are vital to success in combat and critical to preserving life. This appendix identifies essential reaction drills that an MI company and platoon must train on to ensure success.

REACT TO DIRECT FIRE CONTACT (BATTLE DRILL 1)

React to Direct Fire Contact (Battle Drill 1)

CONDITIONS: The unit is moving or halted. The enemy initiates direct fire contact on the unit.
CUE: This drill begins when the enemy initiates direct fire contact.
STANDARDS: The element in contact returns fire immediately and seeks cover. Element in contact locates the enemy and places well-aimed fire on known enemy position(s). The leader can point out at least one-half of the enemy positions and identify the types of weapons (such as small arms, and light machine guns). Unit leader reports the contact to higher headquarters.
TASK STEPS AND PERFORMANCE MEASURES:
1. The element in contact immediately returns well-aimed fire on known enemy position(s). Vehicles move out of the beaten zone.
2. Soldiers and vehicles assume the nearest covered and concealed position. Mounted Soldiers dismount the vehicle, provide local security, and add its suppressive fire against the enemy position. (See figure G-1.)

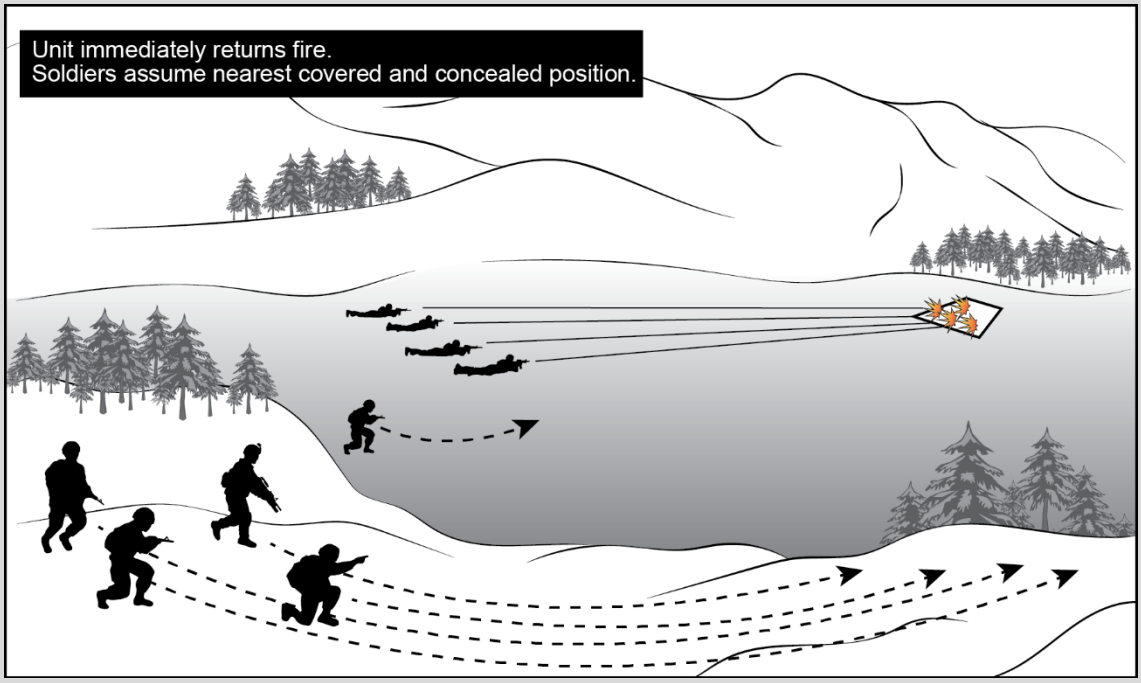


Figure G-1. Assuming nearest covered position

React to Direct Fire Contact (Battle Drill 1) (*continued*)

3. Element leaders locate and engage known enemy positions with well-aimed fire or battle sight fire command, and pass information to the unit leader and Soldiers.
4. Element leaders control the fire of their Soldiers by using standard fire commands (initial and supplemental) containing the following elements:
   a. Alert.
   b. Weapon or ammunition (optional).
   c. Target description.
   d. Direction.
   e. Range.
   f. Method.
   g. Control (optional).
   h. Execution.
   g. Termination.
5. Soldiers and vehicle commanders maintain contact (visual or oral) with the leader, other Soldiers, and vehicles on their left or right.
6. Soldiers maintain contact with the team leader and indicate the location of the enemy positions. Vehicle commanders relay all commands to the mounted infantry squads.
7. Unit leaders (visually or orally) check the status of their personnel.
8. Element leaders maintain visual contact with the unit leader.
9. The unit leader moves up to the element in contact and links up with its leader.
   a. Unit leader brings the radio-telephone operator, forward observer, element leader of the nearest element, one crew-served weapon team (machine gun team if available).
   b. Element leaders of the elements not in contact move to the front of their element.
   c. The platoon sergeant moves forward with the remaining crew-served weapons and links up with the unit leader and assumes control of the support element. (See figure G-2.)

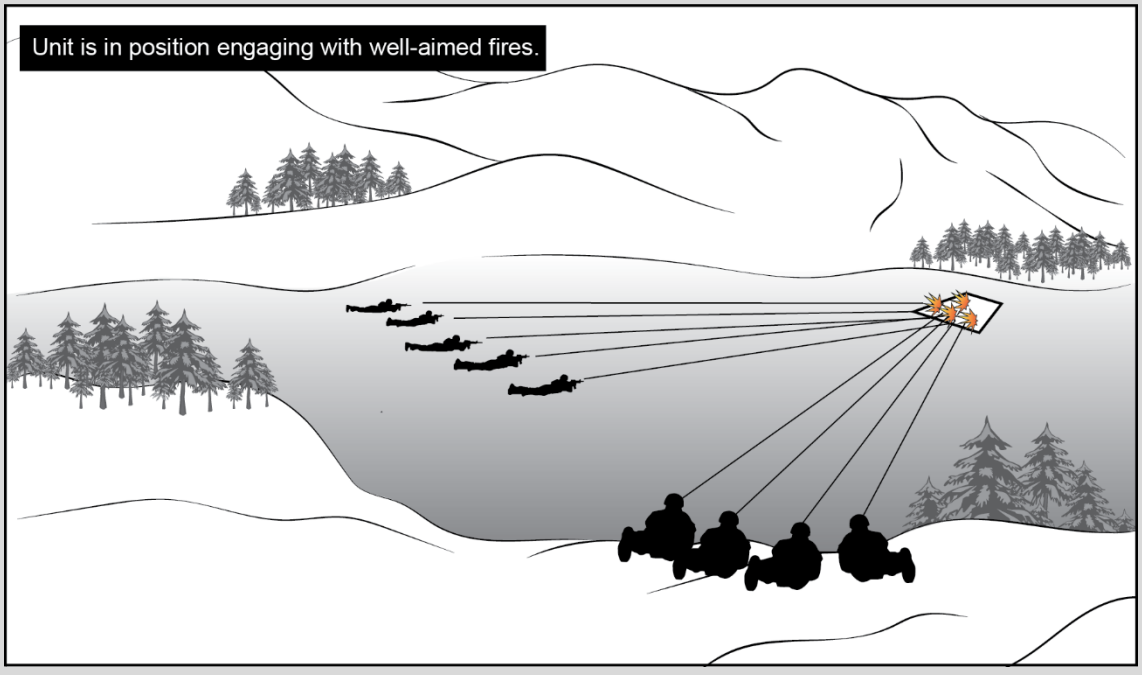


Figure G-2. Control of the support element

10. The unit leader determines whether or not the unit must move out of the engagement area.
11. The unit leader determines whether or not the unit can gain and maintain suppressive fires with the element already in contact (based on the volume and accuracy of enemy fires against the element in contact).

React to Direct Fire Contact (Battle Drill 1) (*continued*)

12. The unit leader assesses the situation and identifies—
    a. The location of the enemy position and obstacles.
    b. The size of the enemy force engaging the unit in contact. (The number of enemy automatic weapons, the presence of any vehicles, and the employment of indirect fires are indicators of enemy strength.)
    c. Vulnerable flanks.
    d. Covered and concealed flanking routes to the enemy positions.
13. The unit leader decides whether to conduct an assault, bypass (if authorized by company commander), or break contact.
14. The unit leader reports the situation to higher headquarters and begins to maneuver the unit.

REACT TO AMBUSH (NEAR) (BATTLE DRILL 4)

React to Ambush (Near) (Battle Drill 4)

CONDITIONS: (Dismounted/mounted) The unit is moving tactically, conducting operations. The enemy initiates contact with direct fire within hand grenade range. All or part of the unit is receiving accurate enemy direct fire.
CUE: This drill begins when the enemy initiates ambush within hand grenade range.
STANDARDS: Dismounted, Soldiers in the kill zone immediately return fire on known or suspected enemy positions and assault through the kill zone. Soldiers not in the kill zone locate and place well-aimed suppressive fire on the enemy. The unit assaults through the kill zone and destroys the enemy.
Mounted, vehicle gunners immediately return fire on known or suspected enemy positions as the unit continues to move out of the kill zone. Soldiers on disabled vehicles in the kill zone dismount, occupy covered positions and engage the enemy with accurate fire. Vehicle gunners and Soldiers outside the kill zone suppress the enemy. The unit assaults through the kill zone and destroys the enemy. The unit leader reports the contact to higher headquarters.
TASK STEPS AND PERFORMANCE MEASURES:
1. **Dismounted.** The unit takes the following actions (see figure G-3 on page G-4):
    a. Soldiers in the kill zone execute one of the following two actions:
        (1) Return fire immediately. If cover is not available, immediately and without order or signal, assault through the kill zone.
        (2) Return fire immediately. If cover is not available, without order or signal, occupy the nearest covered position and throw smoke grenades. (See figure G-4 on page G-4.)
    b. Soldiers in the kill zone assault through the ambush using fire and movement.
    c. Soldiers not in the kill zone identify the enemy location, place well-aimed suppressive fire on the enemy's position and shift fire as Soldiers assault the objective.
    d. Soldiers assault through and destroy the enemy position. (See figure G-5 on page G-5.)
    e. The unit leader reports the contact to higher headquarters.
2. **Mounted.** The unit takes the following actions:
    a. Vehicle gunners in the kill zone immediately return fire and deploy vehicle smoke, while moving out of the kill zone.
    b. Soldiers in disabled vehicles in the kill zone immediately obscure themselves from the enemy with smoke, dismount if possible, seek covered positions, and return fire.
    c. Vehicle gunners and Soldiers outside of the kill zone identify the enemy positions, place well-aimed suppressive fire on the enemy, and shift fire as Soldiers assault the objective.
    d. The unit leader calls for and adjusts indirect fire and request close air support according to the mission variables (METT-TC).
    e. Soldiers in the kill zone assault through the ambush and destroy the enemy.
    f. The unit leader reports the contact to higher headquarters.

React to Ambush (Near) (Battle Drill 4) (*continued*)

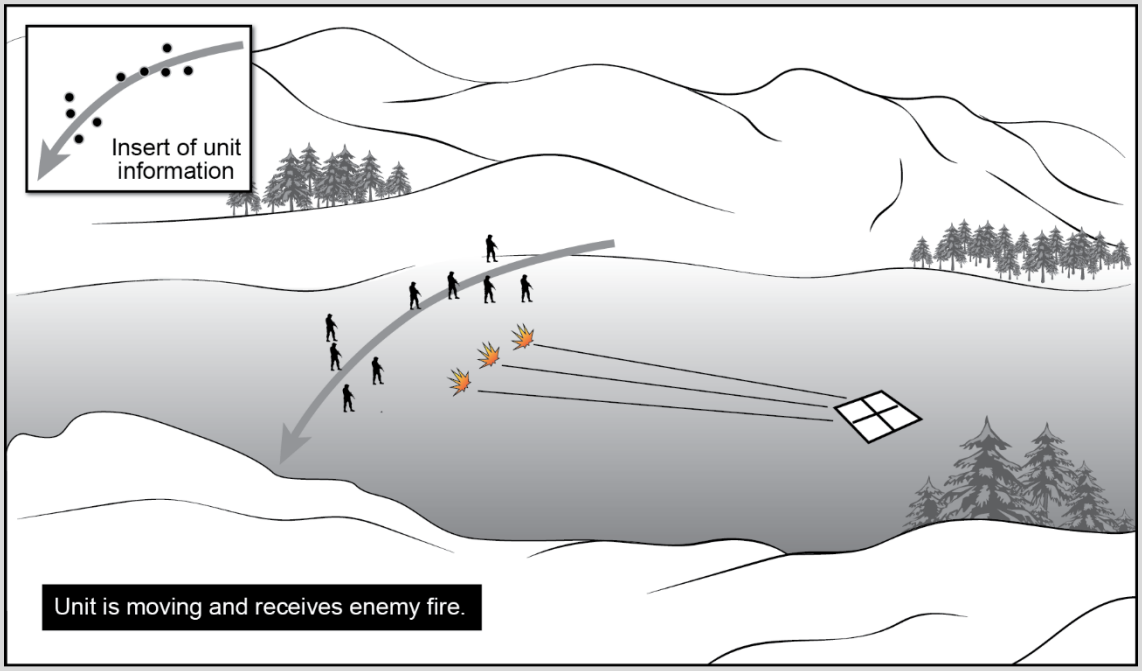


Figure G-3. React to ambush (near) (dismounted)

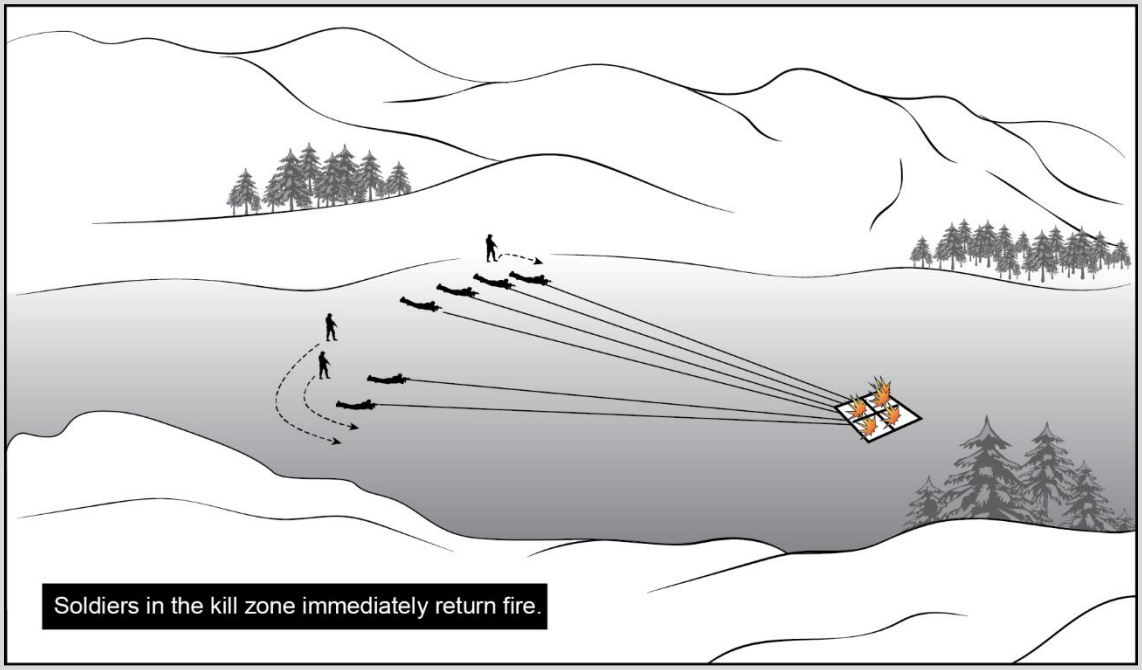


Figure G-4. Return fire immediately

React to Ambush (Near) (Battle Drill 4) (*continued*)

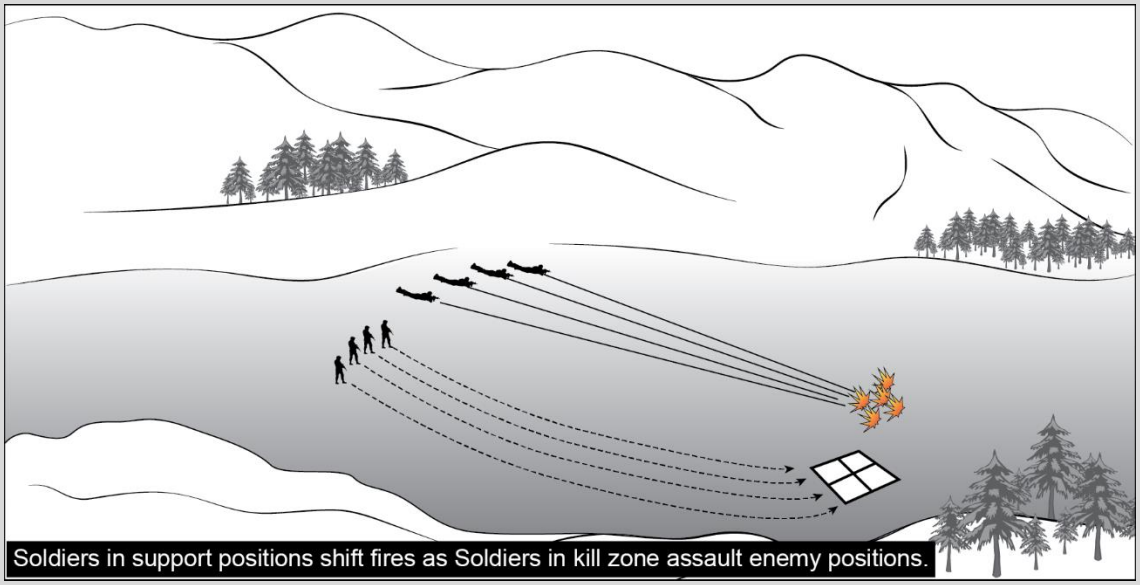


Figure G-5. Assaulting through enemy positions

REACT TO INDIRECT FIRE (BATTLE DRILL 9)

React to Indirect Fire (Battle Drill 9)

CONDITIONS: Dismounted, the unit is moving, conducting operations. Any Soldier gives the alert, "INCOMING," or a round impacts nearby. Mounted, the unit is stationary or moving, conducting operations. The alert, "INCOMING," comes over the radio or intercom or rounds impact nearby.
CUE: This drill begins when any member alerts, "INCOMING," or a round impacts.
STANDARDS: Dismounted, Soldiers immediately seek the best available cover. The unit moves out of the area to the designated rally point after the impacts. Mounted, when moving, drivers immediately move their vehicles out of the impact area in the direction and distance ordered. If stationary, drivers start their vehicles and move in the direction and distance ordered. Unit leaders report the contact to higher headquarters.
TASK STEPS AND PERFORMANCE MEASURES:
1. **Dismounted.** Unit personnel take the following actions:
   a. Any Soldier announces, "INCOMING!"
   b. Soldiers immediately assume the prone position or move to immediate available cover during initial impacts.
   c. The unit leader orders the unit to move to a rally point by giving a direction and distance.
   d. Soldiers move rapidly in the direction and distance to the designated rally point, after the impacts.
   e. The unit leaders report the contact to higher headquarters.
2. **Mounted.** Unit personnel take the following actions:
   a. Any Soldier announces, "INCOMING!"
   b. Vehicle commanders repeat the alert over the radio.
   c. The leaders give the direction and linkup location over the radio.
   d. Soldiers close all hatches, if applicable to the vehicle type; gunners stay below turret shields or get down into the vehicle.
   e. Drivers move rapidly out of the impact area in the direction ordered by the leader.
   f. Unit leaders report the contact to higher headquarters.

REACT TO A CHEMICAL ATTACK (BATTLE DRILL 10)

React to a Chemical Attack (Battle Drill 10)

CONDITIONS: The element is moving or stationary, conducting operations. The unit is attacked with a chemical or biological agent. Soldiers hear a chemical alarm, observe an unknown gas or liquid, or are ordered to don their protective mask.

Note. The mission-oriented protective posture (MOPP) on this drill equates to MOPP4.

CUE: Any Soldier gives an oral or visual signal for a chemical attack, or a chemical alarm activates. Standard MOPP conditions do not exist for this task. See the MOPP statement for specific conditions.

STANDARDS: All Soldiers don their protective mask within nine seconds (or fifteen seconds for masks with a hood). Soldiers assume MOPP4 within eight minutes. The element identifies the chemical agent using M8 chemical detector paper and the M256 kit. The squad or platoon leader reports that the unit is under a chemical attack and submits a CBRN 1 report to higher headquarters.

TASK STEPS AND PERFORMANCE MEASURES:

1. Element wears the protective mask.

Note. The mask gives immediate protection against traditional warfare agents. The mask may not completely protect from certain toxic industrial chemicals, but it provides the best available protection for evacuating the hazard area. Element may be required to evacuate to a minimum safe distance at least 300 meters upwind from the contamination (if possible), or as directed by the commander.

2. Element gives verbal or nonverbal alarm.
3. Element uses the appropriate skin decontamination kit within one minute for individual decontamination, as necessary.
4. Element assumes MOPP4 within 15 minutes.
5. Element initiates self-aid or buddy-aid, as necessary.
6. Element identifies the chemical agent using M8 chemical detector paper and the M256 detector kit.
7. Element leader reports the chemical attack to higher headquarters using the CBRN 1 report.
8. Element leader determines if decontamination is required and requests support, if necessary.
9. Element marks the contaminated area if contamination is present.
10. Element leader requests guidance for higher headquarters for follow-on missions.

REACT TO AN IMPROVISED EXPLOSIVE DEVICE (BATTLE DRILL 11)

React to an IED (Battle Drill 11)

CONDITIONS: The element is performing a military operation when a suspected IED is found. Some iterations of this task should be performed in MOPP.
CUE: An element encounters a suspected IED.
STANDARDS: React to the suspected IED. Any Soldier reports the IED to the remainder of the element by using the 3-Ds (distance, direction, and description). The element performs the 5-Cs (check, confirm, clear, cordon, and control).
TASK STEPS AND PERFORMANCE MEASURES:
1. The first Soldier to realize there is a possible IED communicates the 3-Ds (distance, direction, and description):
   a. **Distance:** The distance from the Soldier(s) that initially found the possible IED.
   b. **Direction:** The direction to which the possible IED is located from the Soldier(s) who initially found it.
   c. **Description:** The initial description of the possible IED. Soldiers should not move closer to the possible IED to retrieve a better description.
2. The element performs the 5-Cs:
   a. **Check:** All personnel should check their immediate area for secondary/tertiary devices by conducting 5/25/200 meter checks from their positions. If Soldiers suspect an IED while performing the 5/25/200 meter checks, they should assume it could detonate at any moment, even if the suspected IED turns out to be a false alarm.
   b. **Confirm:** The unit MUST confirm the existence of a suspected IED from a safe distance using any available standoff means (robot, Buffalo, optics, or other means). Once confirmed, the unit calls in an explosive ordnance disposal 9-line explosive hazard spot report.
      (1) Line 1, date-time group (DTG): Complete this line with the date and time the item was discovered.
      (2) Line 2, reporting activity and location: Complete this line with the unit and the 8-digit grid location of the explosive hazard.
      (3) Line 3, contact method: Enter the radio frequency, call sign, point of contact, and telephone number.
      (4) Line 4, type of ordnance: Document whether it was dropped, projected, placed, or thrown; or whether it was a possible IED. Give the number of items, if more than one. Include as detailed of a description as possible of the item in question, to include the size, shape, and physical condition.
      (5) Line 5, CBRN contaminations: Be as specific as possible.
      (6) Line 6, resources threatened: Document equipment, facilities, or other assets that were threatened.
      (7) Line 7, impact on mission: Provide a short description of the current tactical situation and how the explosive hazard affected the status of the mission.
      (8) Line 8, protective measures: Document any measures taken to protect personnel and equipment.
      (9) Line 9, recommended priority: Indicate whether it was immediate, indirect, minor, or no threat:
         (a) **Immediate:** Stops the unit maneuver and mission capability or threatens critical assets vital to the mission.
         (b) **Indirect:** Stops the unit maneuver and mission capability or threatens critical assets important to the mission.
         (c) **Minor:** Reduces the unit maneuver and mission capability or threatens noncritical assets.
         (d) **No threat:** Has little or no effect on the capabilities or assets of the unit.

React to an IED (Battle Drill 11) (*continued*)

WARNING

Be alert for suspicious personnel exiting the cordon.

c. **Clear:** The unit clears the area around the device of all personnel, working from the device outwards. If an IED has been confirmed, the unit must clear the area. The safe distance is determined by several factors: the tactical situation, avoiding predictability, and moving several hundred meters away from the IED.

Note. In the event of larger elements, personnel who are deemed nonessential for the purpose of cordoning the area can use an alternate route of movement and continue the mission or return to the nearest safe area. Theater-specific guidance or mission necessities may require the unit to react to the IED in a different manner, such as reporting and bypassing.

DANGER

The element varies the minimum safe distance when moving away from the IED to avoid establishing predictability because of possible secondary/tertiary IEDs. Avoid using any communication or electronic equipment (other than crew devices) within the secured exclusion area.

d. **Cordon:** Establish a security cordon around the danger area by setting up blocking positions to prevent foot and vehicle traffic from approaching the IED. An effective cordon will deny the enemy observation of friendly TTP, along with denying them IED effectiveness. Continue to check for secondary/tertiary IEDs, make use of available cover, and establish an incident CP.

Note. Minimum safe distance for exposed personnel is considered to be 300 meters.

WARNING

To reduce exposure of personnel, the patrol leader should minimize the number of dismounted Soldiers used in performing the 25-meter search.

e. **Control:** The unit must control the area inside the cordon to ensure authorized access. Since the distance of all personnel from the IED directly affects their safety, Soldiers should control the site to prevent someone from straying dangerously close until the threat has been neutralized.

(1) **5-meter check:** Identify a position to halt. Search five meters out from your vehicle through the window before opening the door. Conduct a systematic visual check using binoculars or other optics. Check for abnormalities such as disturbed earth, suspicious objects, or loose bricks in walls and security ties. Work from the ground up and continue above head height. Take your time, search methodically, and use a white flashlight during hours of reduced visibility.

React to an IED (Battle Drill 11) (*continued*)

(2) **25-Meter check:** Once a 5-meter check is completed and if deemed necessary by the patrol leader; exit the vehicle and close the door in order to protect occupants from the potential blast and sniper threats. Immediately perform a visual search under the vehicle and continue visually clear the area out to 25 meters, while simultaneously checking for potential IED indicators or anything out of the ordinary. During the 5/25/200 meter checks, the patrol (including Soldiers remaining inside the vehicle), must remain outwardly focused while searching from far-to-near looking for suspected enemy activity such as a triggerman, cameraman, or sniper.

(3) The driver and the gunner should remain inside the vehicle for security purposes.

This page intentionally left blank.

Appendix H
Sustainment Procedures

SUSTAINMENT WARFIGHTING FUNCTION

H-1. *Sustainment* is the provision of logistics, financial management, personnel services, and health service support necessary to maintain operations until successful mission completion (ADP 4-0). The *sustainment warfighting function* is the related tasks and systems that provide support and services to ensure freedom of action, extend operational reach, and prolong endurance (ADP 3-0). Systems consist of personnel, networks, information systems, processes and procedures, and facilities and equipment that enable sustainment commanders to support operations. The sustainment warfighting function consists of four elements, each of which must be integrated and synchronized across all warfighting functions to ensure the appropriate level of support. The four elements are—

- **Logistics.** The elements of logistics include maintenance, transportation, supply, field services, distribution, operational contract support, and general engineering. (See JP 4-0.)
- **Financial management.** Financial management leverages fiscal policy and economic power across the range of military operations. Financial management encompasses finance operations and resource management. (See FM 1-06.)
- **Personnel services.** *Personnel services* are sustainment functions that man the force, maintain Soldier and Family readiness, promote the moral and ethical values of the nation, and enable the fighting qualities of the Army (ADP 4-0). (See FM 1-0, FM 1-04, FM 1-05, and ATP 1-19.) Personnel services include—
  - Planning, coordination, and sustaining personnel efforts at the operational and tactical levels.
  - Human resources support, legal support, religious support, and band support.
- **Health service support.** Health service support encompasses all support and services performed, provided, and arranged by the AHS to promote, improve, conserve, or restore the behavioral and physical well-being of Army personnel and, as directed, unified action partners. Health service support includes casualty care, which encompasses a number of medical functions, including—
  - Medical treatment (organic and area medical support).
  - Hospitalization.
  - MEDEVAC (including medical regulating).
  - Medical logistics (including blood management).

Note. AHS support also includes force health protection, which falls under the protection warfighting function. (See ADP 3-37.) (See FM 4-02 for a complete description of AHS support and the 10 medical functions.)

PRINCIPLES OF SUSTAINMENT

H-2. All sustainment operations are guided by fundamental principles that apply in large-scale combat operations as well as any other operation along the conflict continuum. The principles of sustainment are essential to enabling freedom of action, creating strategic and operational reach and providing the joint force with prolonged endurance. The principles are integration, anticipation, responsiveness, simplicity, economy, survivability, continuity, and improvisation. (See figure H-1 on page H-2.)

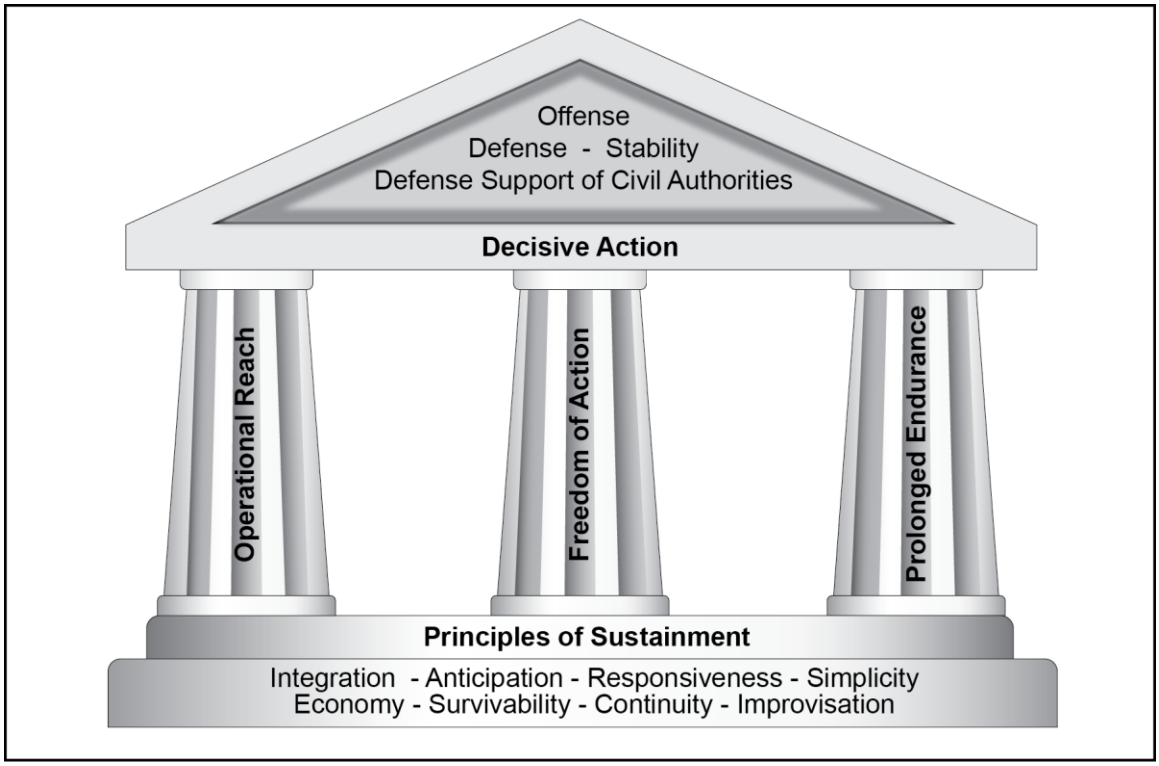


Figure H-1. Principles of sustainment

LARGE-SCALE COMBAT OPERATIONS SUSTAINMENT

H-3. Large-scale combat operations are characterized by simultaneous, geographically dispersed operations that occur in multiple domains. In large-scale combat operations against a peer threat, maneuver commanders conduct decisive action to seize, retain, and exploit the initiative. Maneuver commanders strive to achieve superiority across multiple domains (air, maritime, land, space, and cyberspace) early to allow the Army forces to conduct land operations without prohibitive enemy interference. This involves the orchestration of many simultaneous unit actions in the most demanding of OEs. (See JP 3-0 and FM 3-0.)

H-4. Large-scale combat operations are characterized by simultaneous, geographically dispersed operations that occur in various OEs and are challenged across multiple domains. It requires greater sustainment than other types of operations because of the higher operating tempo, greater lethality, and significantly increased consumption of supplies, and equipment. The lethal nature of large-scale combat operations increases the propensity for mass casualties, requirements for mortuary affairs, increased requirements for a robust medical architecture, and large-scale personnel and equipment replacements. Large-scale combat operations will require the distribution system to move a greater volume of personnel and equipment than in other types of operations. Increased velocity and precision will be required to sustain operations.

SUSTAINMENT INFORMATION SYSTEMS

H-5. Sustainment operations and C2 of sustainment forces are enabled by sustainment information systems. Large-scale combat operations require sustainment forces to be more effective and efficient than in any other type of operation. Sustainment headquarters require the capability to anticipate requirements and build combat power using information systems. The supported sustainment automation support management office is responsible for ensuring these information systems are fully functional (see ATP 4-0.6).

H-6. The Army Enterprise Systems Integration Program is a key enterprise resource planning system that bridges between the Global Combat Support System-Army and the Logistics Modernization Program for logistics information and business information. Sustainment information systems are enterprise resource planning systems. These systems function across all levels of warfare in the sustainment warfighting function.

Enterprise resource planning systems are a type of software with integrated applications that have a common database to facilitate an integrated and near real-time view of sustainment information. Army enterprise resource planning systems include the—

- Global Combat Support System-Army.
- General Fund Enterprise Business System.
- Logistics Modernization Program.
- Integrated Personnel and Pay System-Army.

H-7. Additionally, the Aviation Sustainment Enterprise initiative has started the fielding of Aircraft Notebook (also known as ACN) to all three components—Active Army, Army National Guard, and Army Reserve. The Aircraft Notebook implements the Army Maintenance Management System-Aviation digital logbook functionality. The Aircraft Notebook reduces the information technology footprint within an aviation unit by integrating multiple software applications such as aircraft interactive electronic technical manuals and condition based maintenance plus tools onto one hardware platform.

H-8. Enterprise resource planning systems enhance support of large-scale combat operations by providing high levels of visibility to drive timely decision making. These systems provide the foundation necessary for total asset and inventory visibility and total cost of ownership directly related to readiness. This visibility allows both maneuver commanders and sustainers to have more accurate and timely visibility of sustainment assets. This enables sustainment planners to more accurately forecast future requirements. Not only does this support large-scale combat operations through more accurate fulfillment of warfighter needs, but it also enhances force protection by reducing stockpiles and eliminates duplicative ordering of commodities.

H-9. Enterprise resource planning systems enable predictive analytics for sustainment. These systems also provide insight to questions about what is likely to happen, what can be done to make things happen, and how sustainment leaders can take advantage of opportunities and/or mitigate risks on a multi-domain extended battlefield.

H-10. The unprecedented visibility of sustainment operations through enterprise resource planning systems depends on a higher availability of communications and digital information transmission in the cyber domains than previous sustainment information systems. Commanders and staff must plan for the impacts of physical attack, cyber-attack, and displacement operations on their ability to access these systems in order to execute real-time support and timely decision making.

SUSTAINMENT REPORTING

H-11. Until the Army Readiness COP is fully operational, the tools used as a basis to track and assess readiness of systems, personnel, and equipment are the LOGSTAT and PERSTAT reports, which are executed by all types of units and originate at the lowest echelon, teams and squads. The reports flow from the lower echelons and are compiled at each subsequently higher echelon for assessment and analysis. At the company echelon the information is compiled by the command element: company commander, executive officer, and first sergeant. At battalion and higher echelons, the information is received and analyzed by the G-1/S-1 and the G-4/S-4. The PERSTAT is received and processed through the G-1 chain.

H-12. LOGSTAT and PERSTAT reports must flow through both operational headquarters and sustainment headquarters in parallel to provide a COP. As an example, a maneuver company within a BCT should submit a LOGSTAT to the battalion headquarters and to the supporting forward support company. This provides the battalion headquarters with information to assess the company's readiness status and identifies critical shortages to the battalion staff. It also provides the forward support company with the same information that identifies requirements and allows the leadership to plan support.

H-13. LOGSTAT and PERSTAT reports should provide commanders with enough information to support decision-making reports and should not contain superfluous information that makes compiling the report too difficult or time consuming. Information submitted on LOGSTAT and PERSTAT reports includes but is not limited to critical military occupational skill shortages, status of critical supplies, status of major weapon systems, and status of critical support equipment. Examples include transportation assets, materials handling equipment, water treatment resources, maintenance test sets, and funding authorities. Timing depends on command requirements and unit rhythm of military operations. Typically, these reports are submitted at least once daily as well as whenever a significant change occurs.

FORECASTING

H-14. Forecasting support requirements begins in mission analysis and is the most important mental process for the logistics planner. Mission analysis for logistics planners should be a focused means to define the current OE in terms of capabilities, requirements, assessment and mitigation. In short, what do I have, what don't I have, what do I need and how do I get what I need? With that understanding, the foundation for accurate forecasting is the use of standard logistics-estimation tools that analyze distances and usage hours, derived from the scheme of maneuver, with calculated consumption rates to task-organized equipment densities. This produces a logistics estimate that mitigates shortfalls and eliminates unnecessary backhaul.

H-15. Historical data is a good starting point or guide, but it should not be the primary forecasting method when conducting an estimate for a new operation. Historical data is valuable only when an operation has matured enough to be applicable to the situation. For example, consumption rates for an attack in a forested, temperate environment will differ vastly from one in an arid desert. In addition, training data, while historical, will not completely mimic deployed combat operations.

CLASSES OF SUPPLY

H-16. Supplies are essential for enhancing the quality of Soldiers' lives. They provide the materiel required to accomplish the mission. Table H-1 lists Army supply classes by number and their descriptions.

Table H-1. Classes of supply

Class	*Descriptions*
I	Subsistence, including water
II	Clothing, individual equipment, tentage, organizational tool sets and kits, hand tools, unclassified maps, administrative and housekeeping supplies, and equipment
III	Petroleum, oil and lubricants (package and bulk): petroleum, fuels, lubricants, hydraulic and insulating oils, preservatives, liquids and gases, bulk chemical products, coolants, deicers, antifreeze compounds, components, additives of petroleum and chemical products, and coal
IV	Construction materials, including installed equipment and all fortification and barrier materials
V	Ammunition of all types: bombs, explosives, mines, fuses, detonators, pyrotechnics, missiles, rockets, propellants, and associated items
VI	Personal demand items (such as health and hygiene products, soaps and toothpaste, writing material, snack food, beverages, cigarettes, batteries, and cameras—nonmilitary sales items)
VII	Major end items such as launchers, tanks, mobile machine shops, and vehicles
VIII	Medical materiel, including repair parts peculiar to medical equipment
IX	Repair parts and components to include kits, assemblies, and subassemblies (repairable or nonrepairable) required for maintenance support of all equipment
X	Material to support nonmilitary programs such as agriculture and economic development (not included in classes I through IX) reparable
Miscellaneous	Water, salvage, and captured material

CLASS I—SUBSISTENCE

H-17. Forecasting Class I meals and water is crucial for sustainment planning. Since it is primarily population-based, Class I is not as influenced by the maneuver operation, as are most other supply classes. This provides more consistency to planners.

Meals

H-18. Logistics planners forecast meals to sustain the force based on headcount (how many Soldiers) multiplied by the ration cycle (what type of meal) multiplied by the issue cycle (how often bulk rations are delivered). There are three categories of meals: meals, ready to eat (also called MREs); unitized group ration-A; and unitized group ration-heat and serve. When multiple ration types are used, planners account for each type individually, with the forecasted rations being the final sum.

Water

H-19. When forecasting requirements, water is categorized into bulk, ice, and decontamination planning. Bulk water planning follows the same MDMP in terms of identifying capabilities, requirements, and shortfalls. It is similar to Class I meals in that it is calculated on a per-person, per-day cycle. (See tables H-2 and H-3.) The brigade-support operations section and brigade/battalion S-4s can calculate available water capabilities at echelon based on on-hand asset availability to understand the maximum water capability at each unit.

Table H-2. Bulk water storage and requirements

Modes of movement (capacity in gallons)					*Bulk fixed storage (capacity in gallons)*			
Buffalo	Blivot	Hippo	Camel	3K SMFT	5K SMFT	Onion skin	20K	50K
400	500	2,000	900	3,000	5,000	500	20,000	50,000

Table H-3. Water consumption factors in gallons/persons/day

Use	*Temperate*	*Tropical*	*Arid*	*Artic*
Drinking water	1.5	3.0	3.0	2.0
Personal hygiene	1.7	1.7	1.7	1.7
Field feeding	2.8	2.8	2.8	2.8
Heat injury treatment	.1	.2	.2	.1
Vehicle maintenance	--	--	.2	--
Standard planning factor	6.1	7.7	7.9	6.6

CLASS III—PETROLEUM, OILS, AND LUBRICANTS

H-20. Class III can affect the success or failure of any unit conducting combat operations. Class III is categorized into—

- Bulk fuel (Class III [B]): Gasoline, diesel and aviation fuel.
- Packaged (Class III [P]): Greases, oils and lubricants.

H-21. Bulk Class III is difficult to forecast due to the large variety of vehicle types, consumption rates, varied terrain and hours of use. Generators and aviation fuel must also be considered in this calculation. (See table H-4.)

Table H-4. Vehicle consumption rates in gallons/hour

Vehicle	*Idle*	*Cross-country*	*Road*
M1	17.3	56.6	44.6
M2/3	1.4	18.0	8.6
M113	1.0	10.5	8.9
M88	2.0	42.0	31.0
M9 ACE	1.4	12.6	9.3
M109A6	2.2	16.0	11.8
Multiple launch rocket system	1.3	15.0	8.6

H-22. Determining bulk fuel-carrying capability (see table H-5 on page H-6) is the same as bulk water: multiply available assets by their capacity amounts. Determining Class III requirements necessitates detailed analysis of the maneuver CONOPS. Forecasters determine estimated fuel usage for each vehicle using the following formula:

Number of vehicles × gallons per hour consumption × time in operation.

Note. Never fill storage assets to maximum capacity; consider temperature-based expansion to avoid damage to personnel and equipment.

Table H-5. Bulk fuel storage capability

Fuel planning factors							
	Bulk tanks	***M1062 7.5K***	***M969 5K***	***M978 HEMTT***	***500-gallon blivot***	***TPU pods***	***MFS***
Usable capacity		7,425	4,800	2,250	500	500	2,500
Bulk-fill rate (gpm)	600	300	600	300	125	125	
Self-load rate (gpm)	600	300	300	300			
Retail flow per nozzle	50		60	50		25	
Number of nozzles	2		2	2	1	2	

CLASS IV—CONSTRUCTION MATERIALS

H-23. Class IV planning is conducted when preparing for a phased defensive operation and for sustained unit defense. Every echelon participates in materials planning and resourcing. Division echelons determine each module configuration for their subordinate units. Each module will dictate the national stock number (see paragraph J-32), nomenclature, quantity and unit of issue for a given defensive combat-configured load (CCL).

H-24. Logistics planners must coordinate closely with the brigade engineer planner to forecast Class IV at the brigade and below level. The brigade engineer planner determines the number of CCLs based on the brigade's defensive operation. He or she tasks the number of modules needed for each battalion and where in the brigade's AO to initially place the CCLs. The CCLs are built on container roll-in/roll-out platforms or on flat racks using a brigade-tasked detail supervised by the BEB. Echelons-above-brigade units can build the CCLs if multiple brigades are operating within the same area.

H-25. The brigade support battalion operations officer coordinates transportation of CCLs to supported units based on the brigade engineer planner's tasking. Each CCL should arrive at the supporting forward support company no later than 48 hours before defensive operations start to give maneuver units time to establish and improve defensive positions.

H-26. Aside from planning phased defensive operations, Class IV helps sustain unit defense for force protection. Unfortunately, units training at the National Training Center consistently fail to plan adequate Class IV resources when building a triple-strand concertina wire defense. This happens because units lack understanding of Class IV resources needed for defense.

H-27. Planning for a sustained unit defense is a collaborative effort between the battalion executive officer and the S-4 (logistics) officer when three primary defensive methods are integrated:

- The first method is the use of engineer assets to construct berms and hasty fighting positions. This is the preferred method due to the increased protection, lower use of unit resources and decreased transportation assets.
- The second method is the construction of triple-strand concertina wire around the unit's perimeter (see table H-6). Planners should ensure they request adequate materials.
- The third method is a combination of the previous two that integrates each strength against the terrain defended. types of resupply.

Table H-6. Requirements for 300-meter sections of various wire obstacles

Entanglement type	*Pickets*			*Reels of barbed wire*[1]	*Number of GPBTO*	*Number of concertinas*	*Staples*	*Man-hours to erect*[2]	*Kilogram of materials per linear meter of entanglement*[3]
	Long	*Medium*	*Short*						
Double apron, 4 and 2 pace	100	-	200	15-16 (19)[4]	-	-	-	71	4.6 (3.5)[5]
Double apron, 6 and 3 pace	66	-	132	15-17 (18)[4]	-	-	-	59	3.6 (2.6)[5]
High wire (less guy wires)	198	-	-	19-21 (24)[4]	-	-	-	95	5.3 (4.0)[5]
Low wires, 4 and 2 pace	-	100	200	11	-	-	-	59	3.6 (2.8)[5]
4-strand cattle fence	100	-	2[7]	6-7 (7)[4]	-	-	-	24	2.2 (1.8)[5]
Triple-standard concertina	160	-	4[8]	3 (4)[4]	-	59	317	30	8.2 (7.3)[5]
GPBTO	-	-	-	-	(8)[6]	-	-	(1)[6]	2.7

Note.
A hyphen (-) indicates there is no current requirement.
[1]The lower number of reels applies when U-shaped pickets used; the higher number applies if wooden pickets used. If there is only one number, use it for both pickets.
[2]Man-hours are based on the use of driven pickets. Multiply these figure by 0.67 if experienced troops are being used, and by 1.5 for night work.
[3]Average weight when any-issue metal pickets used (1 truckload = 2,268 kilograms).
[4]Number of barbed-tape carrying cases required if barbed tape is used instead of barbed wire.
[5]Kilograms of material required per linear meter of entanglement if barbed tape is used instead of barbed wire, and barbed-tape concertina is used instead of standard barded-tape wire concertina.
[6]Based on vehicular emplaced obstacles placed in triple belts.
[7]Only two required for one belt.
[8]Only four required for one belt.

GPBTO general purpose barbed tape obstacle

H-28. Through the eyes of the MI company, a large portion of the company will be located in the BISE at the brigade tactical operations center so defensive methods will be primarily coordinated by the brigade headquarters. However, the UAS platoon is likely to be located at the nearest airfield, potentially with no other unit nearby. Robust security and defensive methods will need to be applied to harden this location as early as possible.

CLASS V—AMMUNITION

H-29. Forecast ammunition requirements through the Total Ammunition Management Information System (also known as TAMIS) operated by the brigade ammunition office (also known as BAO). Weapon density, number of personnel and specific mission requirements determine the requirement—unit basic loads—that can vary with each operation. There is no *one size fits all* unit basic load for an entire operation. Each combat phase may require unique ammunition. For example, a unit may require high-explosive grenades for an attack and need field artillery scatterable munitions for a defense.

H-30. The brigade ammunition office, brigade master gunner and brigade S-4 determine the unit basic loads and validate them through the Total Ammunition Management Information System. Then, the ammunition supply point issues the unit basic loads as mission-configured loads, which are reconfigured into combat loads for each subordinate unit.

H-31. The final forecasting consideration is how to replenish ammunition beyond the first two basic loads. Unit replenishment from the ammunition transfer holding point to battalion units happens through expenditure reports. The exact process for these report is determined by unit SOPs. However, expenditure reports are the only method to bring unit basic loads back to 100 percent after each combat engagement. Companies should incorporate an expenditure-reporting process through their platoon sergeants to ensure accurate replenishment. Battalion S-4s must ensure each LOGSTAT report captures the amount of expended ammunition. The expenditure reports allow the brigade ammunition office time to request more ammunition (as needed) prior to subordinate units turning in their requests. The expenditure report itself is not an ammunition request; unit S-4s must still request replenishment on a DA Form 581 (*Request for Issue and Turn-In of Ammunition*).

CLASS VIII—MEDICAL MATERIAL

H-32. Medical elements typically deploy with three days of Class VIII in support of their battalion. When forecasting Class VIII requirements for medical operations, planners should consider the mission, location, projected causality rates and available medical assets. Determining multiple COAs and methods of execution will ensure accessibility of supplies. It also ensures the frequency of their delivery. Also, understanding projected battle casualty rates is crucial when forecasting unit requirements. Other considerations, such as disease and accidents, should also be included in estimates.

CLASS IX—REPAIR PARTS AND COMPONENTS

H-33. Class IX is extremely difficult to forecast during an operation due to the unknowns involved with equipment wear and tear. Planners must work in coordination with their supply support activity and maintenance-support elements to predict the type and quantity of Class IX needed for an operation. The time of year and OE will also factor into Class IX requirements.

H-34. For example, winter operations require more batteries, whereas mountainous terrain requires more tires. Units deploy with the supply support activity's authorized stockage list that contains common-use items for the unit. Coordination with the warrant-officer supply support activity technician will help determine the transportation assets needed to transport Class IX to subordinate units

METHODS OF SUPPLY

H-35. Resupply can be routine, logistics package (LOGPAC), emergency, cached, or mobile pre-positioned:

- Routine resupply is the regular resupply of Classes I, III, V, and IX. It occurs at least daily and preferably in times of limited visibility.
- Supply cache is the placement and concealment of supplies on the battlefield. It is mainly used in the defense when subsequent battle positions are to be occupied.
- Mobile pre-positioning is like prestocking except supplies stay on the vehicles.

H-36. The company covers each in its SOPs and training. Direct support resupply details, less Classes VIII and IX, are in ATP 4-42.

LOGISTICS PACKAGES

H-37. A LOGPAC is a centrally organized resupply convoy originating at battalion field trains. A LOGPAC is the standard, preferred, simplest, and most efficient type of routine forward resupply. The battalion should use this method whenever possible to resupply forward companies. The S-4 must plan and coordinate a LOGPAC so that it fully supports the commander's tactical plans. The company and battalion SOPs should specify its composition and march order. A LOGPAC should contain all supplies needed to sustain the company for a specified period. This is usually 24 hours or until the next LOGPAC. Normally a company LOGPAC includes unit supply; petroleum, oils, and lubricants; and ammunition. Unit supply trucks should have Class I. The number of personnel determines the amount of Class I to be pulled forward. LOGPACs also have requisitioned Class II, mail, replacement personnel, water in cans, and a towed water trailer. Petroleum, oils, and lubricants trucks have Class III bulk and packaged. Ammunition trucks have a standard load of Class V for organic weapons systems.

Organization

H-38. The HHC supply sergeant coordinates and supervises resupply of the main CP, scout and mortar platoons, combat trains, and attached units. The platoon sergeants of these elements or the senior NCO present reports the requirements to the HHC first sergeant or to the combat trains CP. LOGPACs for platoon-sized elements are usually loaded on a single truck. The platoon sergeant picks up items at the logistics release point (LRP). Elements larger than a platoon use their own combat service support vehicles for their LOGPACs. The HHC first sergeant delivers the LOGPAC to the main CP, combat trains, and scout and mortar platoons. Elements resupply from these locations or as previously coordinated. Alternatively, elements can be resupplied from a nearby company LOGPAC. The S-4 coordinates this before the LOGPACs are dispatched. Special procedures may be needed to resupply the scout platoon. Each truck pulls back to a resupply site. Resupply is near the combat trains as the platoon repositions. One combat trains Class III truck refuels the platoon on short notice.

Movement

H-39. Company supply sergeants assemble the LOGPAC under the supervision of the support platoon leader or HHC commander in the battalion field trains. LOGPAC vehicles also bring forward replacements and Soldiers released from MTFs. When possible, all LOGPACs move forward together in a march unit with the supply sergeants and the support platoon leader. The LOGPAC convoy may include other vehicles moving forward. Designated Soldiers from the combat trains and unit maintenance collection points, company first sergeants, and platoon sergeants from specialized separate platoons meet the LOGPAC at the battalion. At least one combat trains senior representative (S-1, S-4, or senior NCO) should meet the unit first sergeant and support platoon leader for logistical coordination. The first sergeant submits routine personnel and logistics reports, requisitions, and the deadline status to the unit maintenance collection point representative. The first sergeant receives mail and routine unit correspondence. Either he or his representative meets and guides the LOGPAC to the resupply point. He informs each driver which method the commander or executive officer has decided to use, service station or tailgate. Variations can be used for emergency resupply. When the LOGPAC arrives, the first sergeant informs the commander, who orders the platoons to resupply based on the tactical situation. (See figure H-2.)

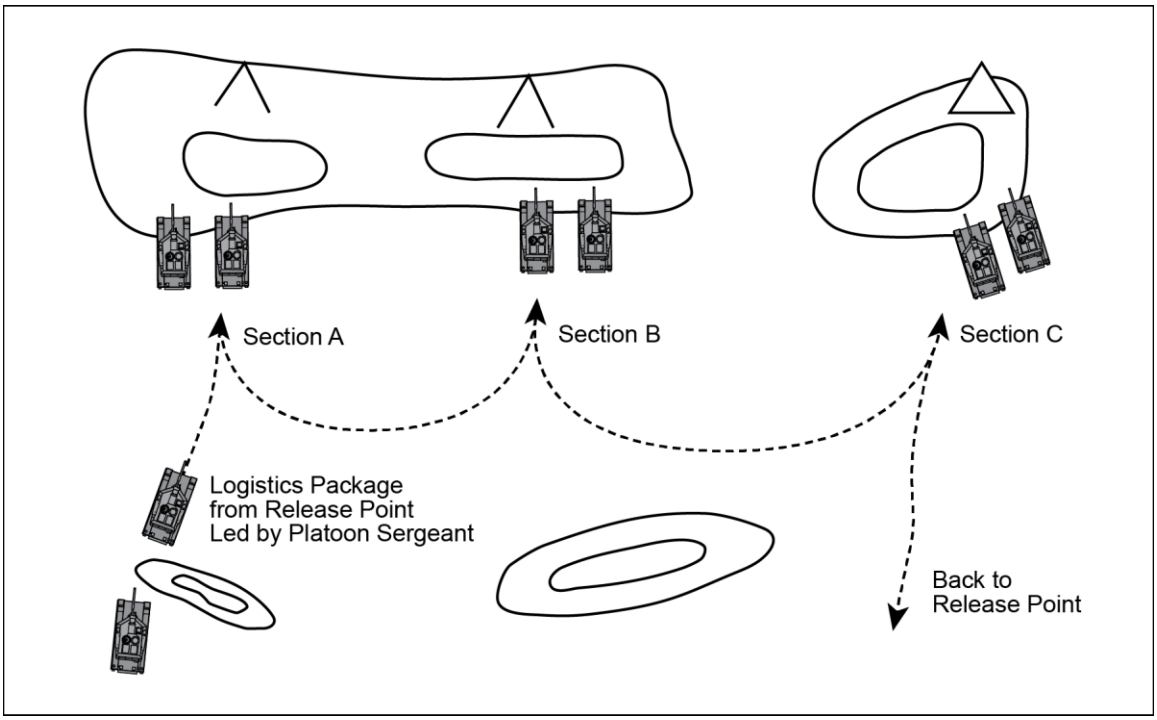


Figure H-2. Movement of logistics packages

Service Station Resupply

H-40. In the service station method, individual vehicles move back to a centrally located rearm and refuel point. Depending on the tactical situation, from one vehicle per platoon up to the whole platoon goes by in relays in a one-way traffic flow to resupply. This continues until the entire company is resupplied. Only vehicles requiring immediate unit or higher level maintenance stop in the maintenance holding area before taking on supplies. Any wounded in action (WIA), killed in action (KIA), or EPWs are transported back to this point to await transportation. KIA must be segregated from WIA and EPWs. WIA and EPWs should not be transported together. Crews rotate to eat, receive mail and supplies, and refill or exchange water cans. When each platoon finishes, if possible, the platoon leader or his sergeant conducts a PCI in the holding area.

Tailgate Resupply

H-41. Combat vehicles remain in place, or they back up to keep the resupply vehicle covered. Petroleum, oils, and lubricants and ammunition trucks go to each position. Crewmen rotate through feeding areas and pick up supplies, water, and mail. Armored ambulances evacuate critically WIA while others are carried or walk to ambulances. KIA are brought to the holding area, and EPW are escorted to the rear. Vehicles needing maintenance are brought to the maintenance area.

Refuel on the Move

H-42. An alternative supply method for bulk fuel is refuel on the move (ROM). The primary purpose of ROM is to ensure that the fuel tanks on all combat and fuel-servicing vehicles are topped off before they arrive in the unit's tactical assembly area. A ROM system consists of enough hose connections, fittings, valves, and nozzles to operate a four to eight point refueling operation using the 5,000-gallon tanker, heavy expanded mobile tactical truck, or other mobile bulk fuel sources. ROM operations normally will be conducted from behind the division rear boundary to the rear of the brigade rear boundary. Although ROM may be configured in many ways, a ROM kit has been developed from existing hardware that will allow eight-point refueling from a 5,000-gallon tanker.

Return

H-43. After resupply, LOGPAC vehicles are prepared for their return. Vehicles requiring recovery for maintenance or salvage are prepared for towing and kept in dispersed positions until moved out. KIA are put in mortuary bags, blankets, or ponchos. They are placed on fuel or cargo trucks or towed disabled vehicles. Medical personnel determine which WIA are put on cargo trucks or disabled vehicles for transportation to the LOGPAC release point. KIA and WIA should never be transported in the same vehicle. Always segregate by condition. EPWs are consolidated on damaged combat vehicles or empty cargo trucks. Walking wounded sometimes guard EPWs. The morale and physical condition of the EPWs must be considered when determining guard requirements. The first sergeant tells his supply sergeant the requirements for the next LOGPAC. The supply sergeant collects mail, personnel, and equipment for transport to the rear. The first sergeant or supply sergeant returns the LOGPAC to the support platoon leader at the field trains or LRP. For greater security, return should be as a reunited LOGPAC convoy. The S-4, based on the tactical situation, sites two to four LRPs well forward and where they are easily found. The operations overlay should include the LRPs, main supply routes, and combat and field trains. The combat trains CP notifies subordinates and the field trains well in advance which LRPs will be used. The SOPs cover the LOGPAC convoy LRP arrival time and the time it stays. If the tactical situation requires a change, the S4 notifies the units. Subordinates must ensure the return of resupply vehicles as soon as possible. Class III and V vehicles never sit empty. If the schedule cannot be met, the combat trains support operations officer CP must be notified. (More information on conducting LOGPAC operations is contained in ATP 3-90.5.)

EMERGENCY RESUPPLY

H-44. Emergency tactical and logistical needs may require special LOGPACs. The combat trains have a limited amount of Class III and V for emergency resupply. In emergencies, a company LOGPAC may meet the first sergeant at a rendezvous point. By itself, a LOGPAC is very vulnerable to attack, loss of communications, and disorientation. Emergency resupply may involve Classes III and V; nuclear, biological,

and chemical equipment; and possibly Class I and water. It usually comes from the support platoon and company teams. Limited resupply can be made to platoons under fire at the closest concealed position using the tailgate method. Fighting vehicles can also drop back to resupply as the platoon leader directs. The service-station method is appropriate in combat lulls. The S-4 coordinates emergency resupply from the combat trains and then refills or replaces the combat trains assets. The unit leader may need to request immediate airdrop resupply due to unanticipated, urgent, or priority requirements.

PRE-POSITIONED SUPPLIES

H-45. Most defensive operations require pre-positioned supplies, primarily Classes III, IV, and V. All element leaders down to vehicle commander and squad leaders verify the sites during reconnaissance and rehearsals. There are two methods of pre-positioning supplies for a platoon. In one method, Classes III and V are in one central location in the assembly area or battle position. Each vehicle pulls into the area for Class V. Class III should also be positioned in the same location. A pre-positioned tanker refuels by the service station method at the rear of the position. In the other method, Class V is pre-positioned near each vehicle position. The tanker is pre-positioned in the rear of the platoon position. When the platoon arrives, three vehicles move into their fighting positions and start rearming. The fourth vehicle stops at the tanker and refuels. Then, it moves to its fighting position, and the other vehicles take turns refueling. Consider the following when pre-positioning Class V:

- Covered and protected positions should be used.
- Pre-positioning frees transportation assets for resupply.
- The company lacks site guards, so it risks loss of the supplies.
- Pre-position fuel far enough away so that its destruction will not harm unit assets.
- Pre-positioning fuel is difficult. It requires extra equipment including transfer pumps, drums, or five-gallon cans.

DISTRIBUTION METHODS

H-46. As a rule, combat service support elements provide support on an area basis. They use a varying combination of two distribution methods:

- **Supply point distribution.** The supporting unit issues supplies to the supported unit at a supply point. The supported unit draws supplies and transports them back to the unit with its own transportation.
- **Unit distribution.** The supporting unit issues the supplies and arranges transportation. The supporting unit delivers them to the receiving unit. Unit distribution is preferred, but it is not always possible due to resource constraints of the support unit. The preferred method of transportation in unit distribution is throughput distribution. In throughput distribution, supplying units avoid unnecessary handling by bypassing one or more intermediate supply units or installations. They ship supplies directly to a supply support activity or the using unit as far forward as possible. The corps support command or even the theater sustainment command may directly deliver some supplies, especially Classes III and V, but normally not forward of the field trains.

H-47. Distribution factors to consider in determining the type of distribution to use include—

- The requirements for and availability of personnel and equipment to deliver and pick up supplies. (This includes trucks, helicopters, and materials handling equipment.)
- The mission and location of the supported forces.
- Support priorities.
- The adequacy of road networks and the ability to travel off-road.
- Competing road priorities.
- Distances involved.
- Threat level.

This page intentionally left blank.

Appendix I

Intelligence and Electronic Warfare Maintenance

OVERVIEW

I-1. The IEW systems integration and maintenance section is responsible for providing direct support/field-level maintenance to all organic intelligence systems within the BCT. These systems include but are not limited to the DCGS-A family of systems, the Prophet-Enhanced SIGINT Collection system, and the Trojan or Trojan-enabled satellite communications systems. DCGS-A is a system that ingests, collates, and depicts intelligence spanning all echelons. The intelligence program enables operational visualization and situational awareness for all MI operations.

MAINTAINERS

I-2. The MI systems maintainer/integrator (35T) is the job skill responsible for ensuring that all intelligence assets organic to the BCT are operational and fully mission-capable prior to exercise and/or deployment. They complete this task by conducting daily, weekly, monthly, or quarterly scheduled maintenance services and providing unscheduled, onsite repair of equipment with deficiencies. These tasks are conducted during regular maintenance activities (Motorpool Mondays) or during equipment operation (exercise), where faults are identified during an operator PMCS and elevated to the 35T for immediate action or evacuation for repair.

INTEGRATOR

I-3. Maintenance tasks not only include hardware fault identification and replacement but also software issues that will keep the system performing as it was intended to as well as cybersecurity requirements to keep the system compliant with all DOD and partner network policies. This requires not only a physical inspection of a system subcomponent (such as a laptop or router) but also a review of the current software and information assurance and vulnerability assessment (also called IAVA) patches installed on the system. It also includes the functionality of all mission software to ensure that it is performing the operations required by the scope of the mission.

I-4. All tasks performed by 35Ts will be recorded as a part of routine or unscheduled maintenance IAW AR 750-1 and through the use of the Global Combat Support System-Army, which is the program of record system for maintenance and must be utilized by the IEW systems integration and maintenance section to account for maintenance man-hours, parts tracking, and readiness reporting.

INTELLIGENCE AND ELECTRONIC WARFARE MAINTENANCE TRAINING

I-5. The MI systems maintainer/integrator (35T) is must ensure that the Intelligence systems and support equipment within the BCT can communicate with each other as well as with the C2 intelligence architecture from the BCT to echelons above corps and the greater intelligence community. This requires prior planning and coordination with the local S-6 and any outside entities (such as MIB-T, U.S. Army Intelligence and Security Command [also called INSCOM], partner nations). It also requires 35Ts to be involved in the planning process, not brought into it after a plan has been developed.

INITIAL TRAINING

I-6. AIT for MOS 35T is approximately 42 weeks in length. Training focuses on three main areas of concentration: Basic Electronic Theory, Computer Systems and Network Administration, and System Troubleshooting Procedures and Techniques. An in-depth knowledge of basic electronic concepts and computer systems training are the foundation to building a competent and skillful 35T. These teachings are reinforced during the troubleshooting block of training and rounds out the educational curriculum. Initial training for MI systems maintainer/integrators include initial training and certification testing to meet the DODD 8140.01 cybersecurity requirement that a 35T must possess in order to conduct system and network administration and integration tasks on all MI systems.

CONTINUATION TRAINING

I-7. Prior to connecting systems to the network, the maintainers must work out the kinks independently. This is required before any of the other intelligence Soldiers can perform their duties. Constant training of the maintainers section, especially in the latest software updates and capabilities, benefits the maintainers from doing their job, day in and day out. The systems are complex and, without training and hands-on experience, it is easy to lose the knowledge. Institutional maintenance training on many IEW systems is cost-prohibitive due to their extremely low density within the force. Even so, the IEW maintainer must possess the skills required to maintain all of the current systems, ensuring them as to the force, wherever they are assigned. Soldiers deal with everything from computers to servers, laptops, specialty equipment, radios, receivers and satellite communications. The MI community could not complete its mission and become mission capable, without the work of the IEW maintainers. If it is an intelligence system with electrons flowing through it, MI Systems Maintainers responsible for it. If the systems do not work, (MI Soldiers) cannot complete their mission.

MILITARY INTELLIGENCE TRAINING STRATEGY

I-8. The IEW systems integration and maintenance section MITS is a four-tiered certification strategy that was developed to validate individual, crew, platform architecture, and intelligence warfighting function architecture to improve operational capabilities. Soldiers must complete these tasks by tier in order to move to the next echelon and achieve certification each year. As an evaluator, you must have a proficient understanding of IEW integration and maintenance tasks at all levels. It is also the evaluator's responsibility to ensure the unit has provided the required materials outlined in the *conditions*, *planning*, and *resources* paragraphs in each task. Evaluators will need to understand all references for each table within each TC.

I-9. All evaluators must hold the MOS of 35T or 353T in order to certify the IEW maintenance section or the Trojan team. The evaluators should have an understanding of the Trojan system, the DCGS-A, MI system architecture, and maintenance procedures. It is advised that evaluators for Tier 2 and Tier 1 have completed the Digital Intelligence System Master Gunners Course, but not mandatory. It is advised that the evaluators must have worked in a MI company within a BCT or a supporting division.

I-10. In order for 35Ts to be MITS Tiers I through IV certified, they must possess the appropriate certification and training to be DODD 8140.01-compliant, be on appointment orders and have a privileged access acceptable use policy on record in the Army Training and Certification Tracking System (also known as ATCTS), have an adjudicated top secret/sensitive compartmented information security clearance with a current CI polygraph, and privileged access for NSANET.

I-11. MITS Tier III and IV tasks can be conducted in isolation or as part of the greater MI company Tier III evaluation. These tasks focus on individual training and certification, proper emplacement and operation of the Trojan system, and the configuration and operation of the DCGS-A Intelligence Fusion Server. Soldiers' failure to complete the previous tier may result in complications completing certification in subsequent tiers. (For more on MITS for the IEW systems integration and maintenance section, see TC 2-19.400.)

Appendix J
Casualty Response

OVERVIEW

J-1. Appendix J discusses proper conduct at the initial encounter of the casualty coupled with appropriate movement and transport is important in the successful provision of casualty response. Appropriate decisions and casualty response task execution helps to determine the health and well-being of the casualty.

CASUALTY MANAGEMENT

J-2. The management of CASEVAC using non-MEDEVAC assets is difficult to control. Prior to moving a casualty, it is important to know where the casualty needs to go, this may be determined by the severity of injuries, number of casualties, and availability of the MTF. Because en route medical care is not provided, the duration of travel that the casualty can withstand without their condition deteriorating must be a consideration. Determining the severity of a casualty's injuries and patient category can be a difficult task for nonmedical personnel, therefore, medical personnel should always be utilized for this task when available.

J-3. Casualties should always be transported to the nearest MTF, casualty collection point, or other sites where medical personnel are located. Over evacuation occurs routinely unless controls are implemented to manage the casualty by patient category. Responsive evacuation is extremely important; however, if en route patient care and management by patient category are ignored, the end result will be an increase in the mortality rate and an over evacuation of Soldiers that may be returned to duty.

J-4. The more severe casualties, the URGENT and URGENT-SURG precedence casualties should be evacuated before PRIORITY or ROUTINE precedence casualties. (See table J-1 on page J-2 for categories of evacuation precedence.) Care must be taken to ensure lower precedence casualties are evacuated before their medical condition begins to deteriorate resulting in upgrading their precedence to URGENT or URGENT-SURG. URGENT and URGENT-SURG precedence patients should be moved by an ambulance providing en route medical care. The URGENT and URGENT-SURG casualty that is being transported by a nonmedical asset needs to be transferred to an air or ground ambulance at the first opportunity or delivered to a supporting MTF as quickly as possible.

J-5. Planners should consider and incorporate into the OPLAN the use of nonmedical air assets and dedicated ground ambulances to move the PRIORITY precedence casualties, and nonmedical ground vehicles to move the ROUTINE precedence patients when dedicated medical vehicles are not available. Every effort should be made to staff and equip nonmedical vehicles used for CASEVAC with medical personnel, even if only to move the ROUTINE patient precedence category.

Table J-1. Categories of evacuation precedence

Priority I—URGENT	Is assigned to emergency cases that should be evacuated as soon as possible and within a maximum of one hour in order to save life, limb, or eyesight, to prevent complications of serious illness, or to avoid permanent disability.
Priority IA—URGENT-SURG	Is assigned to patients who must receive far forward surgical intervention to save life and to stabilize them for further evacuation.
Priority II—PRIORITY	Is assigned to sick and wounded personnel requiring prompt medical care. This precedence is used when the individual should be evacuated within four hours or his medical condition could deteriorate to such a degree that he will become an URGENT precedence, or whose requirements for special treatment are not available locally, or who will suffer unnecessary pain or disability.
Priority III—ROUTINE	Is assigned to sick and wounded personnel requiring evacuation but whose condition is not expected to deteriorate significantly. The sick and wounded in this category should be evacuated within 24 hours.
Priority IV—CONVENIENCE	Is assigned to patients for whom evacuation by medical platform is a matter of medical convenience rather than necessity.
The NATO STANAG 3204 has deleted the category of Priority IV—CONVENIENCE; however, it will still be included in the U.S. Army evacuation priorities as there is a requirement for it on the battlefield.	

EVALUATE A CASUALTY

J-6. When a casualty is first encountered it is imperative that the responder quickly and accurately assess what has occurred, determine the nature and extent of injuries, and determine what (if any) casualty response measures are appropriate and necessary. Accurately assessing the situation is as important for the safety and well-being of the responder as it is for the casualty. For example, if the casualty is in the open and under direct machine gun fire, the responder must resist rushing into the open area to the casualty or he too may become a casualty. Evaluation of a casualty is necessary to identify and treat all life-threatening conditions and other serious wounds. Rapid and accurate evaluation of the casualty is the key to providing effective casualty response.

Note. Unless otherwise specified, the tasks identified in paragraphs J-7 through J-9 of this publication can be found on the designated page numbers of TC 4-02.1, *First Aid*.

CARE UNDER FIRE

J-7. Performing care under fire includes—

- Returning fire as directed or required before providing casualty response.
- Determining if the casualty is alive or dead. ***Note.*** In combat, the most likely threat to the casualty's life is from bleeding. Attempts to check for airway and breathing will expose the rescuer to enemy fire. DO NOT attempt to provide casualty response when your own life is in imminent danger. In a combat situation, if you find a casualty with no signs of life, no pulse, no breathing, DO NOT attempt to restore the airway. DO NOT continue casualty response measures.
- Providing care to the living casualty. Directing the casualty to return fire, move to cover, and administer self-aid (stop bleeding), if possible. ***Note.*** Reducing or eliminating enemy fire may be more important to the casualty's survival than the treatment you can provide. If the casualty is unable to move and you are unable to move the casualty to cover and the casualty is still under direct enemy fire, have the casualty play dead.
- Once enemy fire has been suppressed, conducting the following:
  - In a battle-buddy team, approach the casualty (use smoke or other concealment if available) using the most direct route possible.
  - Administer lifesaving hemorrhage control.
  - Determine the relative threat of enemy fire versus the risk of the casualty bleeding to death.
  - If the casualty has severe, life-threatening bleeding from an extremity or has an amputation of an extremity, administer lifesaving hemorrhage control by applying a tourniquet from the casualty's individual first aid kit before moving the casualty. (See Task 081-COM-1032,

page 6-1.) ***Note.*** The only treatment that should be given at the point of injury is a tourniquet to control life threatening extremity bleeding.

- Move the casualty, his weapon, and mission-essential equipment when the tactical situation permits.
- Recheck bleeding control measures (tourniquet) as soon as behind cover and not under enemy fire.

TACTICAL FIELD CARE

J-8. Once under cover and not under hostile fire, perform tactical field care as follows (***Note.*** When evaluating and/or treating a casualty, seek medical aid as soon as possible. DO NOT stop casualty response. If the situation allows, send another person to find medical aid.):

- Form a general impression of the casualty as you approach (extent of injuries, chance of survival). ***Note.*** If a casualty is being burned, take steps to remove the casualty from the source of the burns before continuing evaluation and casualty response. (See Task 081-COM-1007, page 7-1.)
- Ask in a loud, but calm, voice: Are you okay? Gently shake or tap the casualty on the shoulder.
- Determine the level of consciousness by using the mnemonic AVPU: A = Alert; V = responds to Voice; P = responds to Pain; U = Unresponsive. ***Note.*** To check a casualty's response to pain, rub the breastbone briskly with a knuckle or squeeze the first or second toe over the toenail. If casualty is wearing individual body armor, pinch his nose or his earlobe for responsiveness.
- If the casualty is conscious, ask where his body feels different than usual, or where it hurts. ***Note.*** If the casualty is conscious but is choking and cannot talk, stop the evaluation and begin appropriate casualty response. (See Task 081-COM-1003, page 4-1.)
- Identify and control bleeding—
  - Reassess any tourniquets placed during the care under fire phase to ensure they are still effective.
  - Perform a blood sweep of the extremities, neck, axillary, inguinal, and extremity areas. Exposure is only necessary if bleeding is detected.
  - Place your hands behind the casualty's neck and pass them upward toward the top of the head.
  - Note whether there is blood or brain tissue on your hands from the casualty's wounds.
  - Place your hands behind the casualty's shoulders and pass them downward behind the back, the thighs, and the legs. ***Note.*** Look to see if there is blood on your hands from the casualty's wounds. If life-threatening bleeding is present, stop the evaluation and control the bleeding. (See Task 081-COM-1032, page 6-1.)
- Once bleeding has been controlled, position the casualty and open the airway. (See Task 081-COM-1023, page 3-1.)
- Assess for breathing and chest injuries as follows:
  - Expose the chest and check for equal rise and fall and for any wounds.
  - Look, listen, and feel for respiration. (See Task 081-COM-1023, page 3-1.) ***Note.*** If the casualty is breathing, insert a nasopharyngeal airway (see Task 081-COM-1023, page 3-1) and place the casualty in the recovery position. Only in the case of nontraumatic injuries such as hypothermia, near drowning, or electrocution should cardiopulmonary resuscitation (also known as CPR) be considered when in a tactical environment prior to the tactical evacuation phase.
  - If in a nontactical environment, begin rescue breathing as necessary to restore breathing and or pulse. (See Task 081-COM-1023, page 3-1.)
  - If the casualty has a penetrating chest wound and is breathing or attempting to breathe, stop the evaluation to apply an occlusive dressing and position or transport with the affected side down, if possible. (See Task 081-COM-0069, page 5-1.)
  - Check for an exit wound. If found, apply an occlusive dressing.
  - Dress all nonlife-threatening injuries and any bleeding that has not been addressed earlier with appropriate dressings. (See Task 081-COM-1032, page 6-1.)
  - Determine the need to evacuate the casualty and supply information for lines 3 to 5 of the 9-line MEDEVAC request to your tactical leader. (See STP 21-1-SMCT, Task 081-COM-0101.)

- Check the casualty for burns as follows:
  - Look carefully for reddened, blistered, or charred skin. Also check for singed clothes.
  - If burns are found, stop the evaluation and begin treatment. (See Task 081-COM-1007, page 7-1.)
  - Administer pain medications and antibiotics (casualty's combat pill pack) if available. ***Note.*** Each Soldier will be issued a combat pill pack before deploying on tactical missions.
- Document the injuries and the treatment given on the casualty's own DD Form 1380 (*Tactical Combat Casualty Care [TCCC] Card*) (found in the individual first aid kit), if applicable.

TACTICAL EVACUATION

J-9. Once the casualty is provided appropriate casualty response, initiate the tactical evacuation phase:

- Transport the casualty to the evacuation site. (See STP 21-1-SMCT, Task 081-COM-1046.)
- Monitor the patient for shock and treat as appropriate. (See Task 081-COM-1005, page 8-1.)
- Continually reassess casualty until a medical person arrives or the patient arrives at a MTF.

TRANSPORT A CASUALTY

J-10. For the Army, CASEVAC involves the unregulated movement of casualties using predesignated or opportune tactical or logistic aircraft and vehicles. These vehicles/rotary-wing aircraft are not staffed with medical personnel for en route care (unless augmentation is planned for in the OPLAN). These vehicles/aircraft do not have organic medical equipment. If the combat medic is not available to provide care en route, the CLS may accompany the casualties to monitor their conditions. CASEVAC is oftentimes the first step in a process that moves a wounded or injured Soldier from the point of wounding into the multifaceted AHS. CASEVAC can be accomplished by a variety of transportation platforms. These methods must be trained and practiced and include manual carries, litter evacuation, and the use of nonmedical vehicles. In order to determine the appropriate evacuation method, the Soldier executing the movement of the casualty must be able to determine the most effective mode of movement available to them to best meet their operational needs and the needs of the casualty. The movement of a casualty begins the evacuation chain which clears the operational area of casualties and moves the casualty through successively enhanced roles of medical care. Once the casualty is in the MEDEVAC system, they receive en route medical care and emergency medical intervention, if required; this enhances the Soldier's prognosis and can reduce long-term disability. Upon arrival at an MTF, the patient continues through the AHS until he is treated and released or continues through the AHS for more definitive care in the continental United States.

MANUAL CARRIES

J-11. Casualties evacuated by manual means must be carefully handled. Rough or improper handling may cause further injury to the casualty. The movement effort should be organized and performed methodically. Each movement made in lifting or moving a casualty should be performed as deliberately and as gently as possible. Taking the tactical situation into consideration, casualties should not be moved before the type and extent of their injuries are evaluated and the required casualty response (self-aid, buddy aid, or enhanced casualty response [CLS]) or tactical combat casualty care (combat medic or ambulance crew) is administered.

J-12. Manual carries are tiring for the bearers and involve the risk of increasing the severity of the casualty's injuries. In some instances, however, they are essential to save the casualty's life. When a litter is not available or when the terrain or the tactical situation makes other forms of casualty transport impractical, a manual carry may be the only means to transport a casualty to where a combat medic can treat him. The distance a casualty can be transported by a manual carry depends upon strength and endurance of the bearers, weight of the casualty, nature of the injuries, and obstacles encountered during transport.

J-13. Carries can be used to move both a conscious and an unconscious casualty by one or two bearers. Carries, when performed correctly, provide the casualty more protection from further injury than drags and are used to move a casualty a greater distance (from 50 to 300 meters depending on the carry).

One-Man Carries

J-14. There are three types of one-man carries: fireman’s carry, supporting carry, and Arms carry.

Fireman's Carry

J-15. The fireman's carry one of the easiest ways for one individual to carry another. After an unconscious or disabled casualty has been properly positioned, they are raised from the ground, then supported and placed in the carrying position. (See figure J-1.) When possible, the bearer should transport the casualty so that the bearer's dominant (firing) hand is free. This can be accomplished by performing the following:

- After rolling the casualty onto his abdomen, straddle him. Extend your hands under his chest and lock them together.
- Lift the patient to his knees as you move backward.
- Continue to move backward, thus straightening the casualty's legs and locking his knees.
- Walk forward, bringing the casualty to a standing position; tilt him slightly backward to prevent his knees from buckling.
- As you maintain constant support of the casualty with one arm, free your other arm and quickly grasp his wrist, and raise his arm high. Instantly pass your head under his raised arm, releasing it as you pass under it.
- Move swiftly to face the casualty and secure your arms around his waist. Immediately place your foot between his feet and spread them apart (approximately six to eight inches).
- Grasp the casualty's wrist and raise his arm high over your head.
- Bend down and pull the casualty's arm over and down on your shoulder, bringing his body across your shoulders. At the same time, pass your arm between his legs.
- Grasp the casualty's wrist with one hand and place your other hand on your knee for support.
- Rise with the casualty positioned correctly. Your free hand may be used to grasp your weapon.

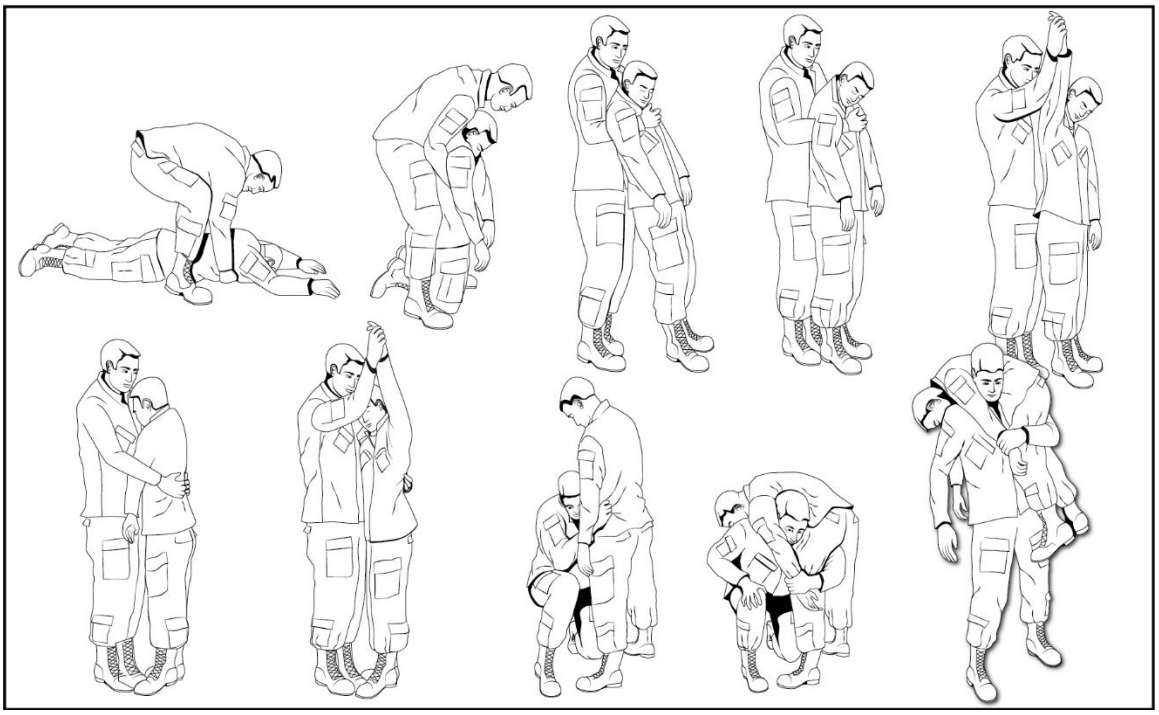


Figure J-1. Fireman's carry

Supporting Carry

J-16. In the supporting carry, the casualty must be able to walk, or at least hop, on one leg, using the bearer as a crutch. This carry can be used to transport a casualty as far as he is able to walk or hop. (See figure J-2.) To use this technique—

- Raise the casualty from the ground to a standing position by using the process described above for getting him positioned for the fireman's carry.
- Grasp the casualty's wrist and draw his arm around your neck.
- Place your arm around his wrist. The casualty is now able to walk or hop, using you as a support.



Figure J-2. Supporting carry

Arms Carry

J-17. The arms carry is useful in carrying a casualty for a short distance (up to 50 meters) and for placing a casualty on a litter. (See figure J-3.) This carry requires greater upper body strength than other carries and can cause the carrier to quickly become fatigued. To use this technique—

- Raise or lift the casualty from the ground to a standing position, as in preparing for the fireman's carry.
- Place one arm under the casualty's knees and your other arm around his back.
- Lift the casualty and carry the casualty high to lessen fatigue.

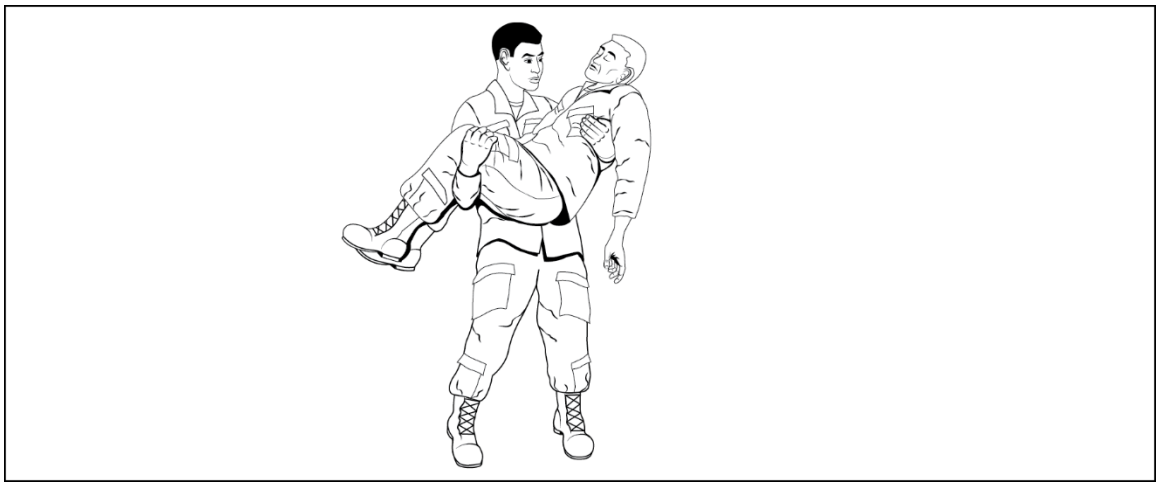


Figure J-3. Arms carry

Two-Man Carries

J-18. Two-man carries should be used whenever possible. Two-man carries provide more comfort for the casualty, are less likely to aggravate injuries, and are less tiring for the bearers. Three different two-man carries can be used—

- Two-man supporting carry.
- Two-man arms carry.
- Four-hand seat carry.

Two-Man Supporting Carry

J-19. The two-man supporting carry can be used in transporting both conscious and unconscious casualties. (See figure J-4.) If the casualty is taller than the bearers, it may be necessary for the bearers to lift the casualty's legs and let them rest on their forearms. The bearers—

- Help the casualty to his feet and support him with their arms around his waist.
- Grasp the casualty's wrists and draw his arms around their necks.

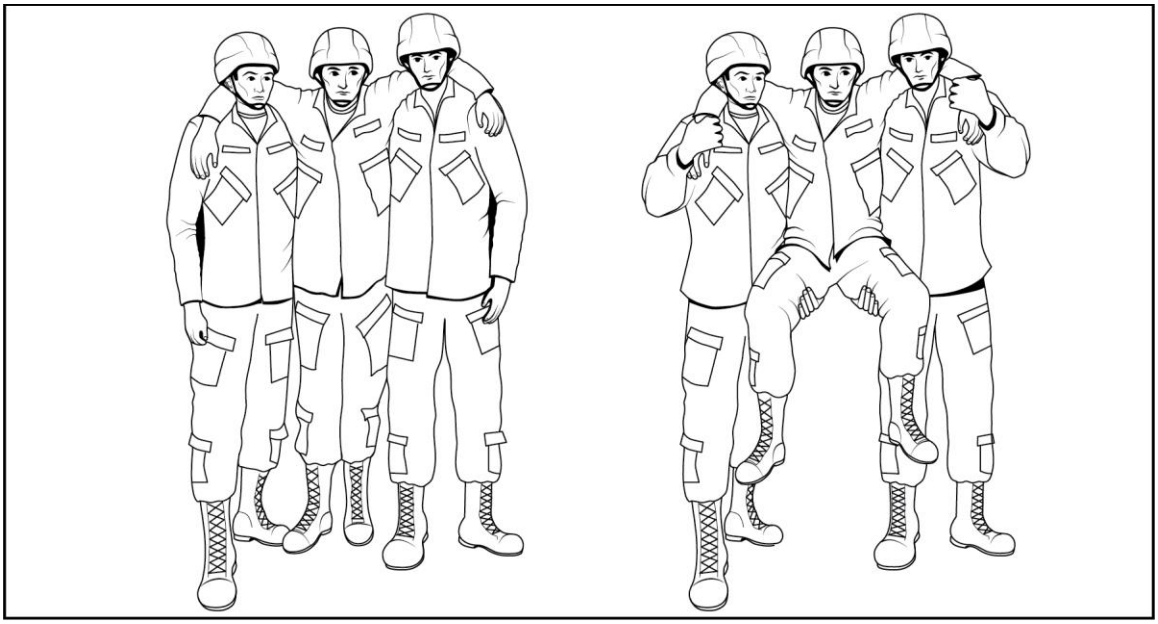


Figure J-4. Two-man supporting carry

Two-Man Arms Carry

J-20. The two-man arms carry is useful in carrying a casualty for a moderate distance (50 to 300 meters) and placing him on a litter. To lessen fatigue, the bearers should carry the casualty high and as close to their chests as possible. (See figure J-5 on page J-8.) In extreme emergencies when there is not time to obtain a spine board, this carry is the safest one for transporting a casualty with a back injury. If possible, two additional bearers should be used to keep the casualty's head and legs in alignment with his body. The bearers—

- Kneel at one side of the casualty and place their arms beneath the casualty's back, waist, hips, and knees.
- Lift the casualty while rising to their knees.
- Turn the casualty toward their chests, while rising to a standing position.
- Carry the casualty high to lessen fatigue.

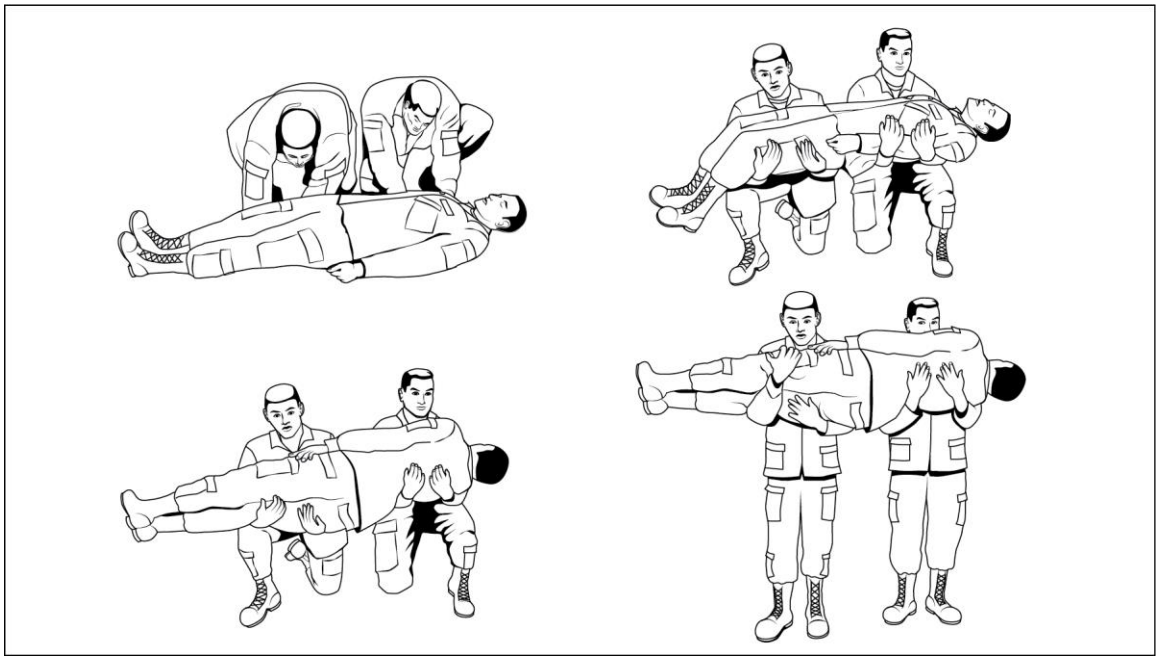


Figure J-5. Two-man arms carry

Four-Hand Seat Carry

J-21. Only a conscious casualty can be transported with the four-hand seat carry since they must help support him by placing his arms around the bearers' shoulders. (See figure J-6.) This carry is especially useful in transporting a casualty with a head or foot injury for a moderate distance (50 to 300 meters). It is also useful in placing a casualty on a litter. To use this technique, each bearer grasps one of his wrists and one of the other bearer's wrists, thus forming a packsaddle. The two bearers lower themselves sufficiently for the casualty to sit on the packsaddle; then, they have the casualty place his arms around their shoulders for support. The bearers then rise to an upright position.

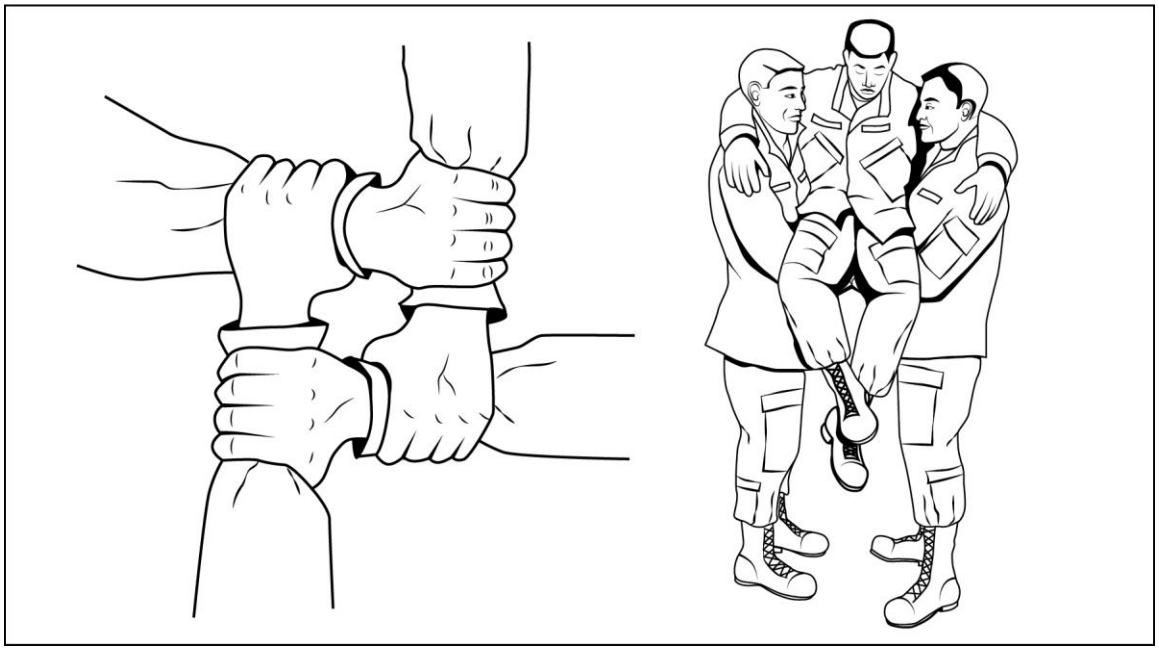


Figure J-6. Four-hand seat carry

Drags

J-22. Drags are used to move a casualty when the situation dictates that an expedient removal from dangerous situations or hostile environments is required. Drags allow the bearer and the casualty to stay low and use cover and concealment to move out of hazardous areas when the use of upright manual carries or litters would put the bearers and casualty in greater danger. Drags are generally used for short distances of up to 50 meters.

Personnel Drag

J-23. A conscious or unconscious casualty can be readily grasped by their equipment (clothing, equipment harness, or body armor drag strap) and dragged to an area of safety where they can be treated and further evacuated by other means. This drag can be accomplished by one or two bearers and provides one of the fastest means to move a casualty. As with most drags it provides a minimum amount of protection for the casualty's injuries and is only used to move the casualty out of imminent danger. The bearer or bearers grasp the casualty by his equipment and pull him backwards to safety. (See figure J-7.) Another variation for moving a conscious casualty is to have the casualty assist by grasping the bearer's hands or forearms over his shoulders; the bearer also grasps the casualty by his hands or forearms and pulls the casualty backwards to safety.

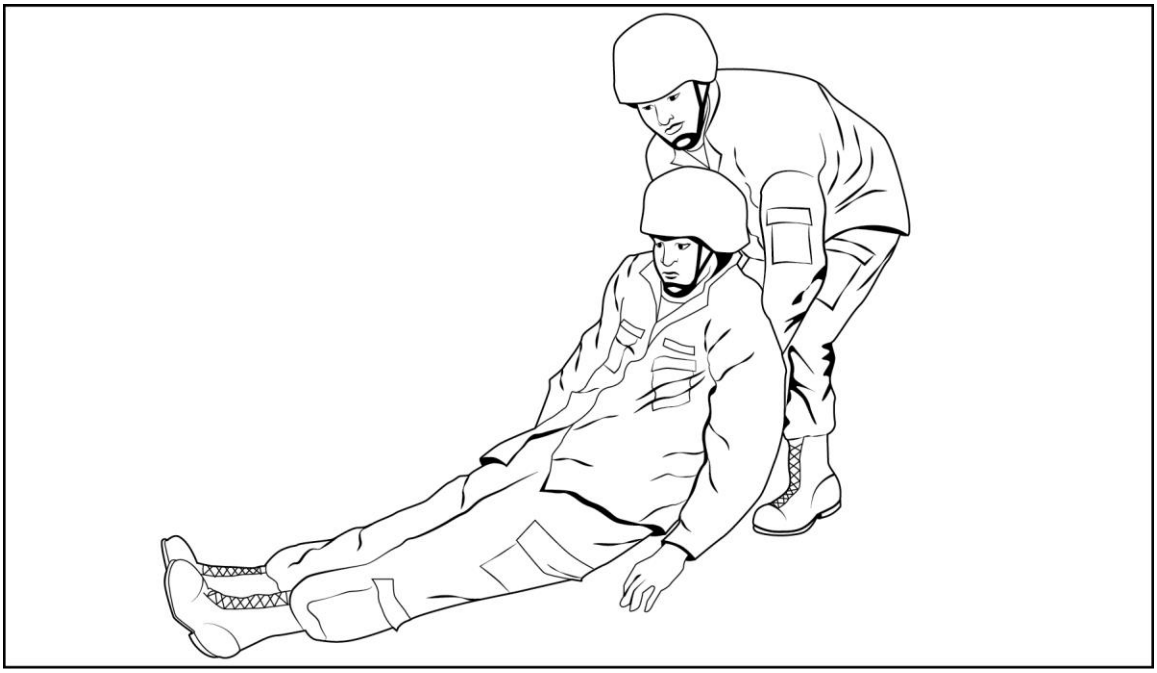


Figure J-7. Personnel drag

Neck Drag

J-24. The neck drag is useful in combat because the bearer can transport the casualty as he creeps behind concealment or under obstacles. (See figure J-8 on page J-10.) The neck drag cannot be used if the casualty has a broken arm. To use this technique, perform the following:

- Tie the casualty's hands together at the wrists.
- Straddle the casualty in a kneeling face-to-face position.
- Loop the casualty's tied hands over and around your neck.
- Crawl forward dragging the casualty with you.

Note. If the casualty is conscious, he may clasp his hands together around the bearer's neck. If the casualty is unconscious, his head must be protected from the ground.

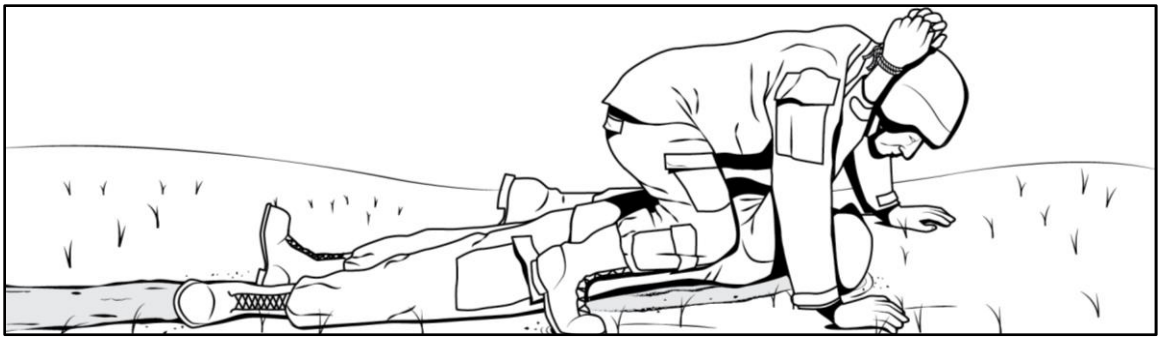


Figure J-8. Neck drag

Cradle-Drop Drag

J-25. The cradle-drop drag is effective in moving a casualty up or down stairs, steps, or to maintain a low profile. (See figure J-9.) To use this technique, perform the following:

- Kneel at the casualty's head (with him lying on his back). Slide your hands, with palms up, under the casualty's shoulders and get a firm hold under his armpits.
- Rise (partially), supporting the casualty's head on one of your forearms. (You may bring your elbows together and let the casualty's head rest on both of your forearms.)
- Rise and drag the casualty backward. (The casualty is in a semi sitting position.)
- Back down the steps, supporting the casualty's head and body and letting his hips and legs drop from step to step.

Note. If the casualty needs to be moved up steps, you should back up the steps, using the same procedure.

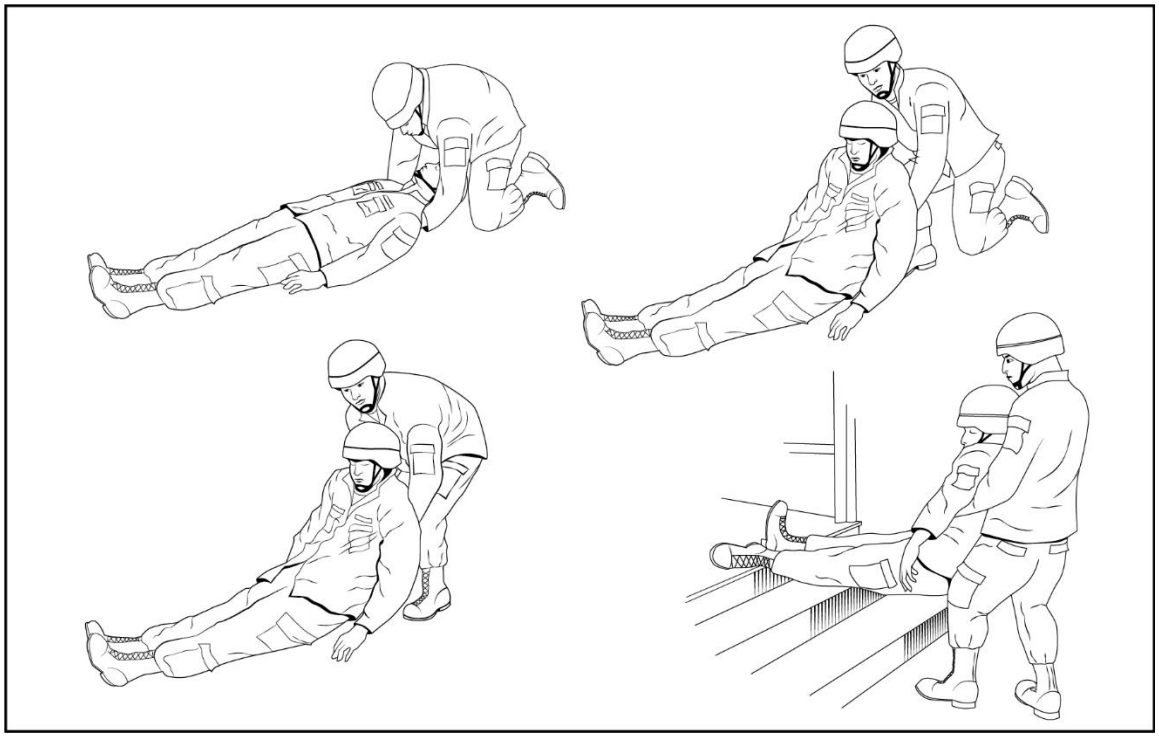


Figure J-9. Cradle-drop drag

LITTER EVACUATION

J-26. When possible, a casualty should be transported on a litter rather than using a manual carry. A litter is more comfortable for the casualty and less likely to aggravate his injuries. The use of a litter makes evacuation easier and quicker. It also allows the casualty to be carried much farther than with manual carries. A standard litter should be used when available. If no standard litter is available, an improvised litter can be used as a suitable replacement until the casualty can be transferred to a standard litter. Standard litters should always be in a serviceable condition. The Army uses several types of standard litters.

Standard Collapsible Litter

J-27. The standard collapsible litter is the most widely used. (See figure J-10.) It only folds along the long axis. The basic components of the litter are—

- Two straight, rigid, lightweight aluminum poles.
- A cover (bed) of cotton duck or other durable fabric.
- Four wooden or plastic material handles attached to the poles.
- Four stirrups (one bolted near the end of each pole). The stirrups support the litter when it is placed on the ground.
- Two spreader bars (one near each end of the litter). These bars are extended crosswise at the stirrups to hold the cover taut when the litter is open.
- Two litter securing straps (one attached to each pole at the stirrup bolts). These straps are used to secure the litter when it is closed.
- Accessories such as patient securing straps.

J-28. Dimensions of the standard collapsible litter is as follows:

- Overall length is 90 inches.
- Overall width is 22⅞ inches.
- Bed length is 72 inches.
- Bed width is 22⅞ inches.
- Weight is 15 pounds.

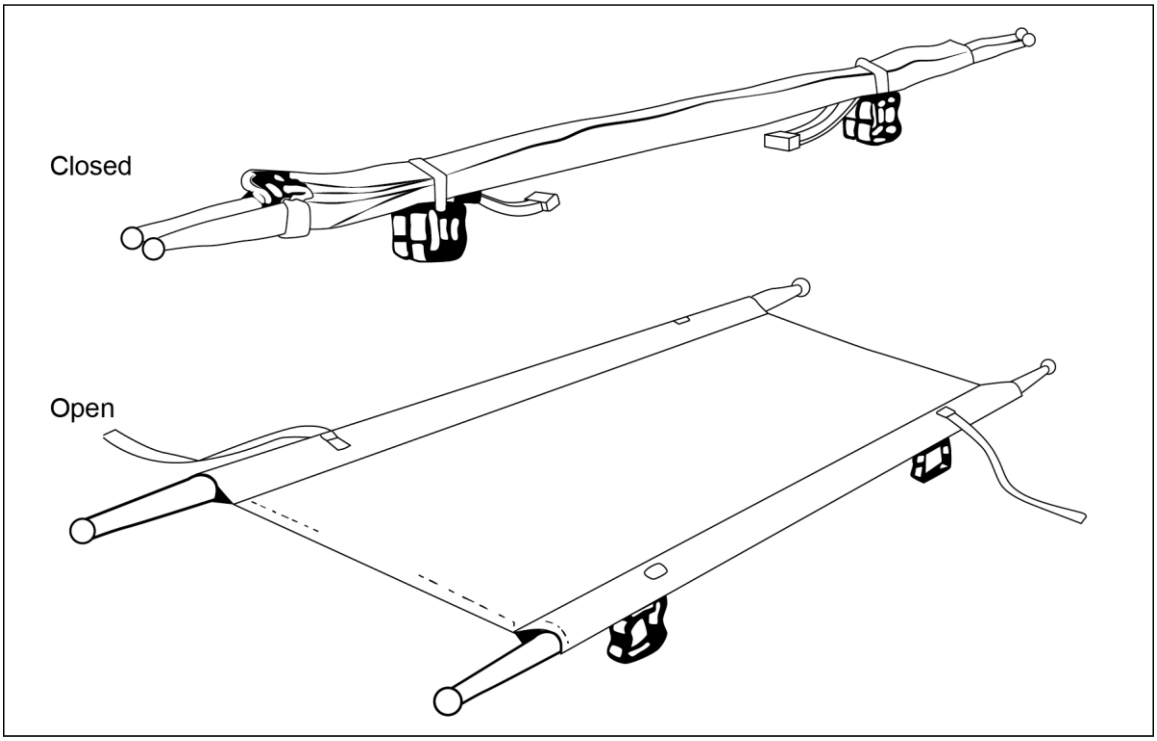


Figure J-10. Standard collapsible litter

Rigid Pole Folding Litter

J-29. The legacy standard collapsible litter with a bed made from cotton is being replaced by the ridge pole folding litter. (See figure J-11.) The new litter is 91⅝ inches long with nominal adjustable handles (from 90 inches to 94⅜ inches). (See figure J-11.) It has a spreader bar and stirrup assemblies with interlocking securing buckle. It also has aluminum poles, nylon handles, and a plastic polypropylene cover. This litter can be decontaminated and is painted with a chemical agent-resistant material. It is assembled in the folded position and weighs 25 pounds.

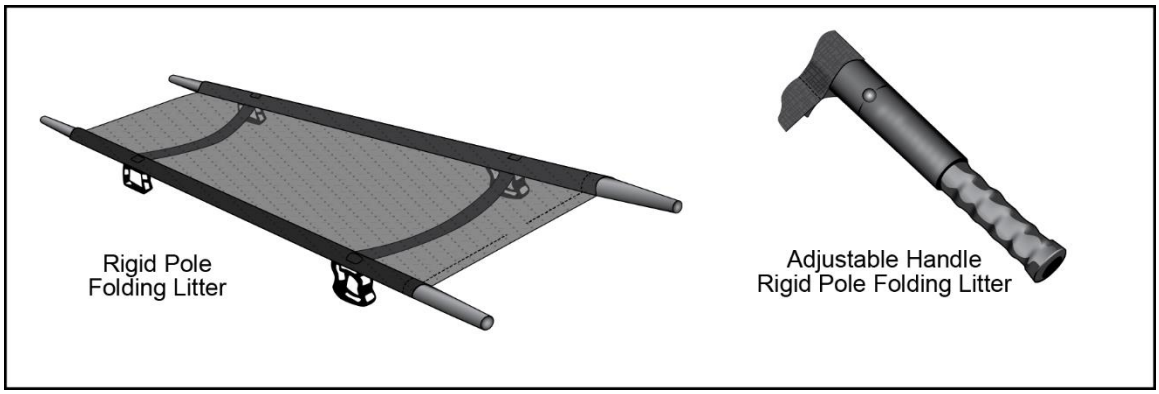


Figure J-11. Rigid pole folding litter and adjustable handle rigid pole folding litter

Folding Litter

J-30. The folding litter is often used in tactical operations where its smaller size allows it to be carried inside of military vehicles or carried by Soldiers while patrolling or doing airborne operations. The folding aluminum litter when opened is very similar to the standard collapsible litter. The folding litter poles are hinged in the middle which allows the litter to be folded lengthwise. To reduce the overall folded size, the stirrups also fold flat against the poles. The folding aluminum litter usually comes with two or four patient securing straps. There are two basic variants of folding litters, one version folds in half (bifold) and the other version has multiple hinges that allows it to be even more compact. (See figure J-12.)

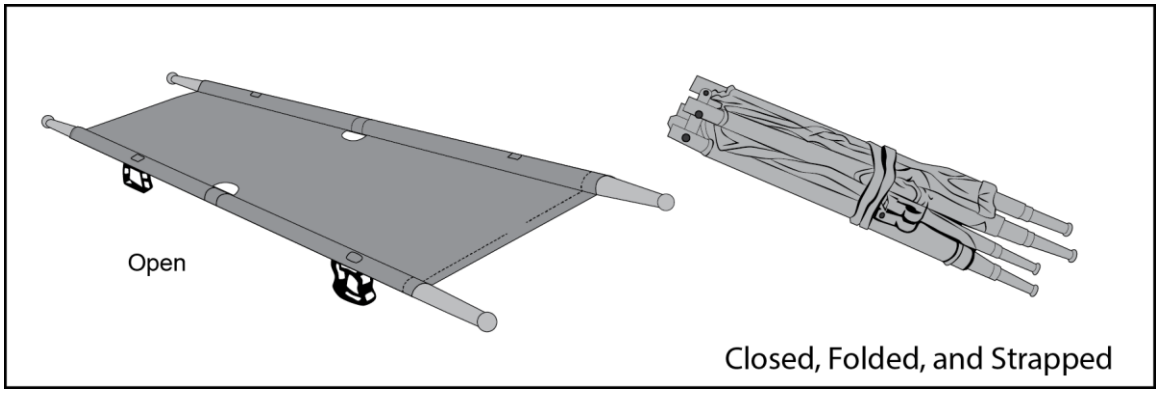


Figure J-12. Folding litter

Bifold Folding Litter

J-31. The dimensions of the bifold folding litter are—

- The length of a litter is 90 inches when open, but is about 45½ inches when the litter is folded lengthwise depending on the model.
- When open, the litter bed measures 72 inches in length and slightly more than 22 inches across.
- The litter weight about 15 to 25 pounds depending on the model.

Multihinged Folding Litter

J-32. Another type of folding litter, with the same general dimensions as the standard litter when open, is the multihinged folding litter (National Stock Number 6530-01-504-9051). (See figure J-13.) It has folding lightweight poles with two hinges that further reduces its overall size when folded. The litter can be folded to a compact size of 22½ x 7 x 6 inches when not in use. In its extended configuration the multihinged folding litter is 90 inches long (78 inches long with the handles collapsed).

Note. *National stock number* is the 13-digit number that identifies a stock item consisting of the 4-digit federal supply classification code plus the 9-digit national item identification number and arranged as follows: 9999-00-999-9999 (JP 4-09).

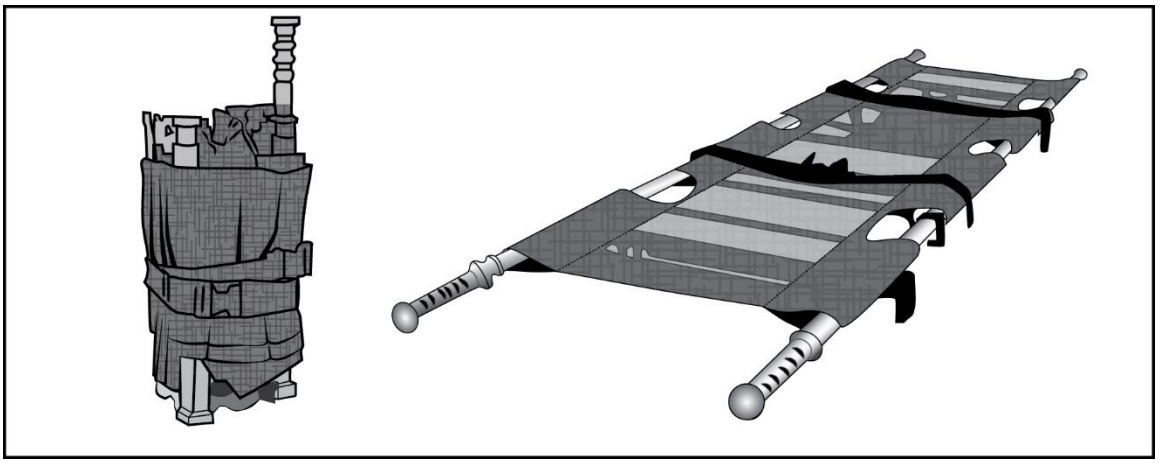


Figure J-13. Multihinged folding litter

Polymer Flexible Litter

J-33. The polymer flexible litter is a commercial off-the-shelf evacuation litter system that functions in a traditional land-based application. (See figure J-14.) It is a compact, lightweight, and versatile litter system used to evacuate a casualty from confined spaces, rough and difficult terrain, water rescues with attached floatation devices, and is the primary litter used by the Army in helicopter hoist missions. When the casualty is packaged the stretcher becomes rigid. The durable plastic provides protection for the patient/casualty while allowing extrication from austere areas.

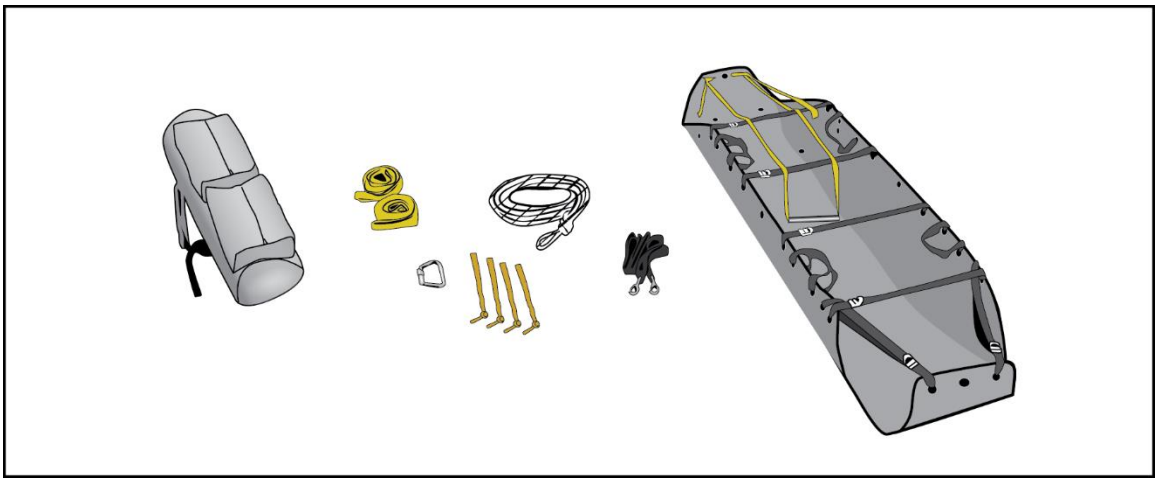


Figure J-14. Polymer flexible litter

Improvised Litters

J-34. There are times when a casualty may have to be moved and a standard litter is not available. The distance may be too great for manual carries or the casualty may have an injury (such as a fractured neck, back, hip, or thigh) that would be aggravated by manual transportation. In these situations, litters can be improvised from materials at hand. Improvised litters must be as well constructed as possible to avoid the risk of dropping or further injuring the casualty. Improvised litters are emergency measures and must be replaced by standard litters at the first opportunity.

J-35. Many different types of litters can be improvised, depending upon the materials available. A satisfactory litter can be made by securing poles inside such items as a blanket, poncho, shelter half, tarpaulin, mattress cover, jackets, shirts, or bags and sacks.

J-36. Poles can be improvised from strong branches, tent poles, skis, lengths of pipe, and other objects. If objects for improvising poles are not available, a blanket, poncho, or similar item can be rolled from both sides toward the center so the rolls can be gripped for carrying a casualty. Most flat-surface objects of suitable size can be used as a litter. Such objects include doors, boards, window shutters, benches, ladders, cots, and chairs. If possible, these objects should be padded for the casualty's comfort.

Improvised Litter Using Blankets and Poles

J-37. To improvise a litter using a blanket and poles, the following steps should be used:

- Open the blanket and lay one pole lengthwise across the center; then fold the blanket over the pole.
- Place the second pole across the center of the folded blanket.
- Fold the free edges of the blanket over the second pole and across to the first pole. (See figure J-15.)

Improvised Litter from Shirts or Jackets and Poles

J-38. To improvise a litter using shirts or jackets, button or zip the shirt or jacket and turn it inside out, leaving the sleeves inside, then pass the pole through the sleeves. (See figure J-15.)

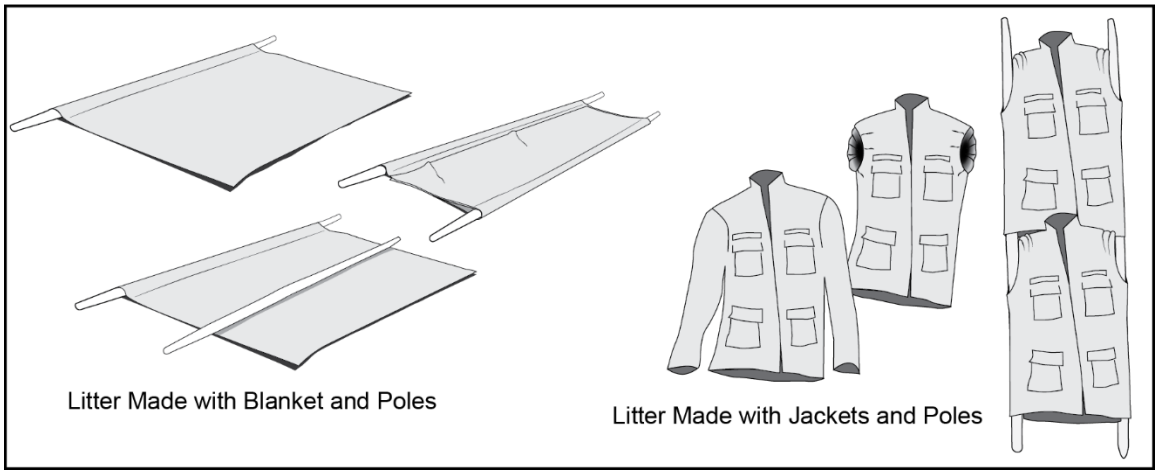


Figure J-15. Litter made with blankets and poles and jackets and poles

NONMEDICAL CASUALTY EVACUATION PLATFORMS

J-39. In combat areas, ambulances may not be available, they may be either too few in number or incapable of evacuating patients over certain types of terrain. In these instances, many vehicles available to most units can be used to transport casualties with little or no change in their configuration. Units should plan and train on how their organic vehicles, both air and ground, can be used to move casualties both on and off litters. Nonmedical vehicles both air and ground can be used for CASEVAC. Organizations need to assess the organic nonmedical vehicles available and determine how they can be used to evacuate casualties. Casualties can be ambulatory or litter, and the casualties that need to be transported on a litter present the greatest

challenge as planning and training are required to successfully meet the requirements of loading and moving them to casualty collection points, ambulance exchange points, or to an MTF. When loading casualties onto a vehicles or aircraft, the most critical casualties should be loaded last or positioned so that they can be unloaded first or be more accessible for en route care.

J-40. This section describes recommended loading solutions for some of the more common vehicles. While this section only covers the most common Army platforms, planners should not only consider their organic platforms but all platforms that may be available including civilian, other services, and coalition. For platforms not listed, organizations can use these examples to develop their own safe-loading configurations and add them to their operational plans and unit SOPs.

M998 Truck, Cargo/Troop Carrier, High Mobility Multipurpose Wheeled Vehicle (Four-Man Configuration)

J-41. The M998 high mobility multipurpose wheeled vehicle (HMMWV), 1¼-ton cargo truck in the four-man configuration can be easily adapted for transporting three litters. (See figure J-16.) To convert this vehicle for carrying litters, follow these procedures:

- Remove the cargo cover and metal bows. Secure them in place. Lower the tailgate.
- Place two litters side by side across the back of the truck with the litter handles resting on the sides of the truck.
- Secure the litters to the vehicle.
- Place one litter lengthwise, head first, in the bed of the truck. Secure it in place.
- Leave tailgate open. It is supported by the two tailgate chain hooks.

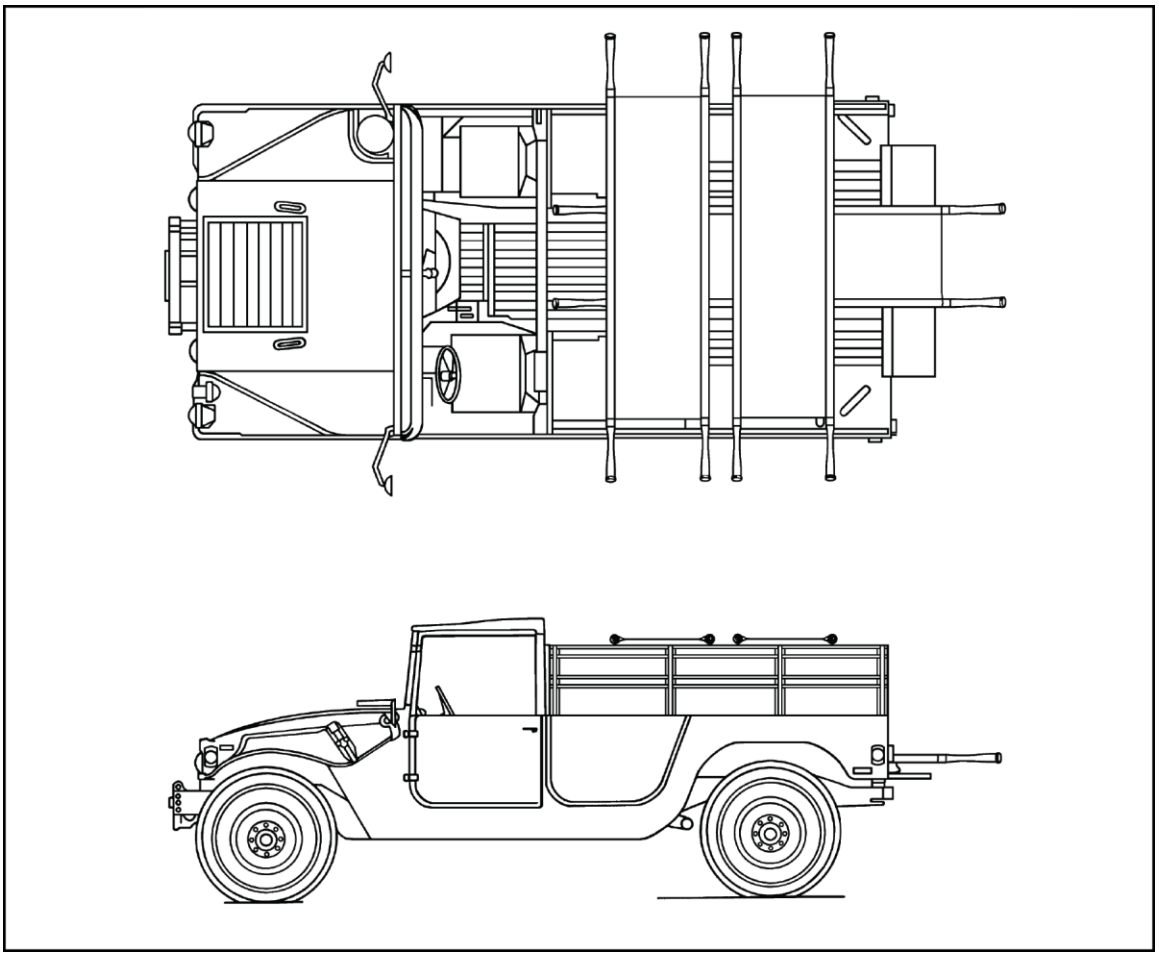


Figure J-16. M998 truck, cargo/troop carrier, HMMWV (four-man configuration)

M998 Truck, Cargo/Troop Carrier, High Mobility Multipurpose Wheeled Vehicle (Two-Man Configuration)

J-42. The M998 HMMWV, 1¼-ton cargo truck in the two-man configuration, can be easily adapted for transporting five litters. (See figure J-17.) To convert this vehicle to carry patients/casualties, the procedures listed below should be followed:

- Fold the fabric cover and metal bows forward and together as an assembly. Secure them in place. Lower the tailgate.
- Place three litters side by side across the sideboards. Secure them in place with cargo tie-downs, cravats, or other suitable sturdy material.
- Place two litters lengthwise, head first, in the bed of the truck. Secure them in place.
- Leave tailgate open. It is supported by the two tailgate chain hooks.

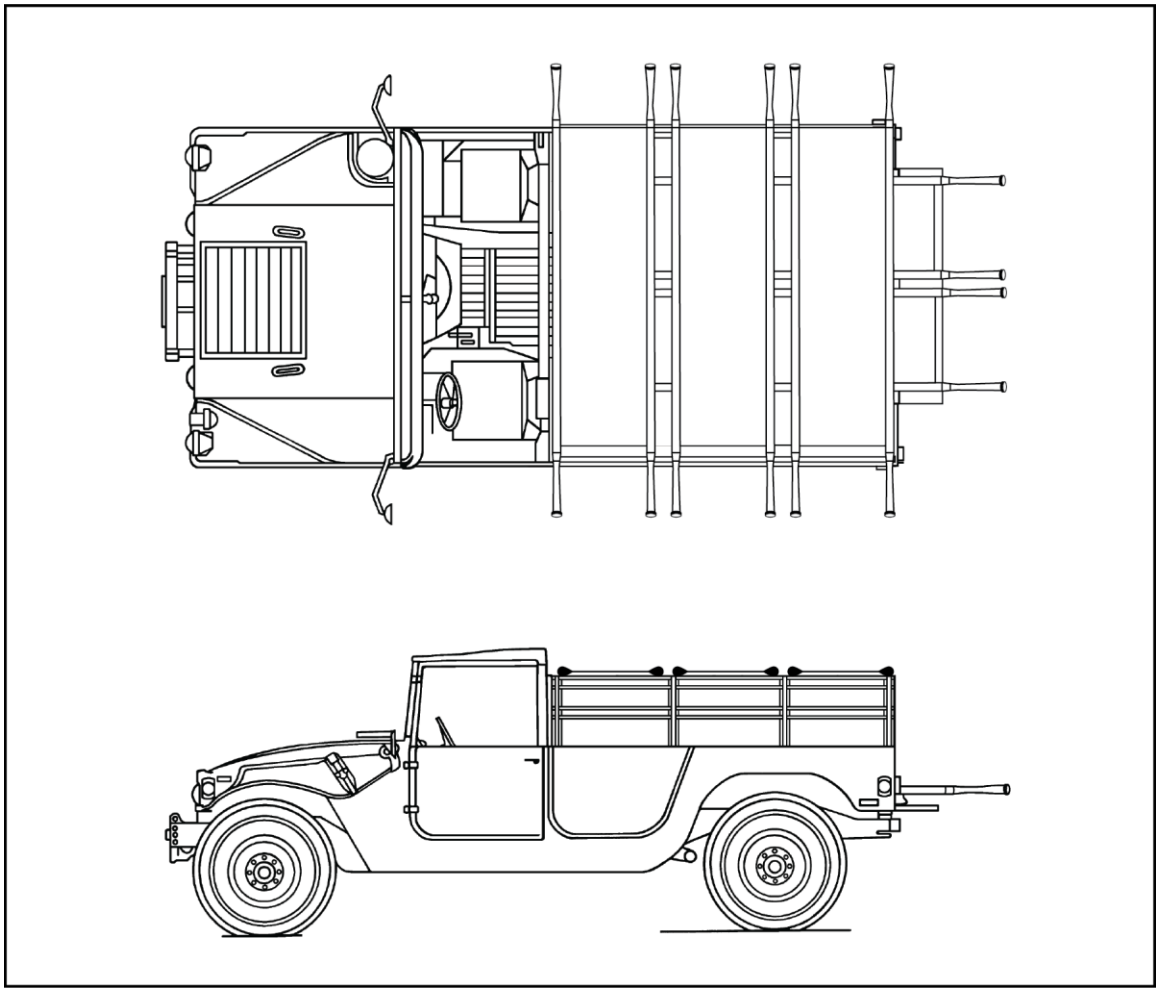


Figure J-17. M998 truck, cargo/troop carrier, HMMWV (two-man configuration)

M1093 Truck, Cargo, Medium Tactical Vehicle

J-43. The M1093 medium tactical vehicle, 5-ton truck is normally used to transport general cargo as well as personnel. It has a canvas cover, removable tarpaulin braces, and hinged sideboards. (See figure J-18.) The canvas cover and braces need not be removed for patient loading and unloading. This vehicle has a maximum capacity of 8 litters and 14 ambulatory patients/casualties.

J-44. Use the following steps to load patients into this vehicle:

- Lower the seats and secure the vertical support bracket in place.
- Place three litters (litter numbers 1 through 3) crosswise on the seats, forward, next to the cab. Secure the litters individually to the seats.
- Place two litters (litter numbers 4 and 5) lengthwise on the floor, forward toward the cab, feet first. Secure the litters together and to the vertical seat support.
- Place litter number 6 crosswise on the seats near the rear of the vehicle. Slide the litter as far forward as possible. Do not secure the litter at this time.
- Place litter number 7 crosswise on the seats near the rear of the vehicle and slide it forward as in step above. Secure the litter to the seats.
- Place litter number 8 crosswise on the seats as far rearward as possible. Secure the litter to the seats.
- Glide litter numbers 6 and 7 rearward next to litter number 8. Secure the litters to the seats.
- Raise and secure the tailgate.
- If available the combat medic/CLS rides in the center of the vehicle to monitor the patients or casualties.

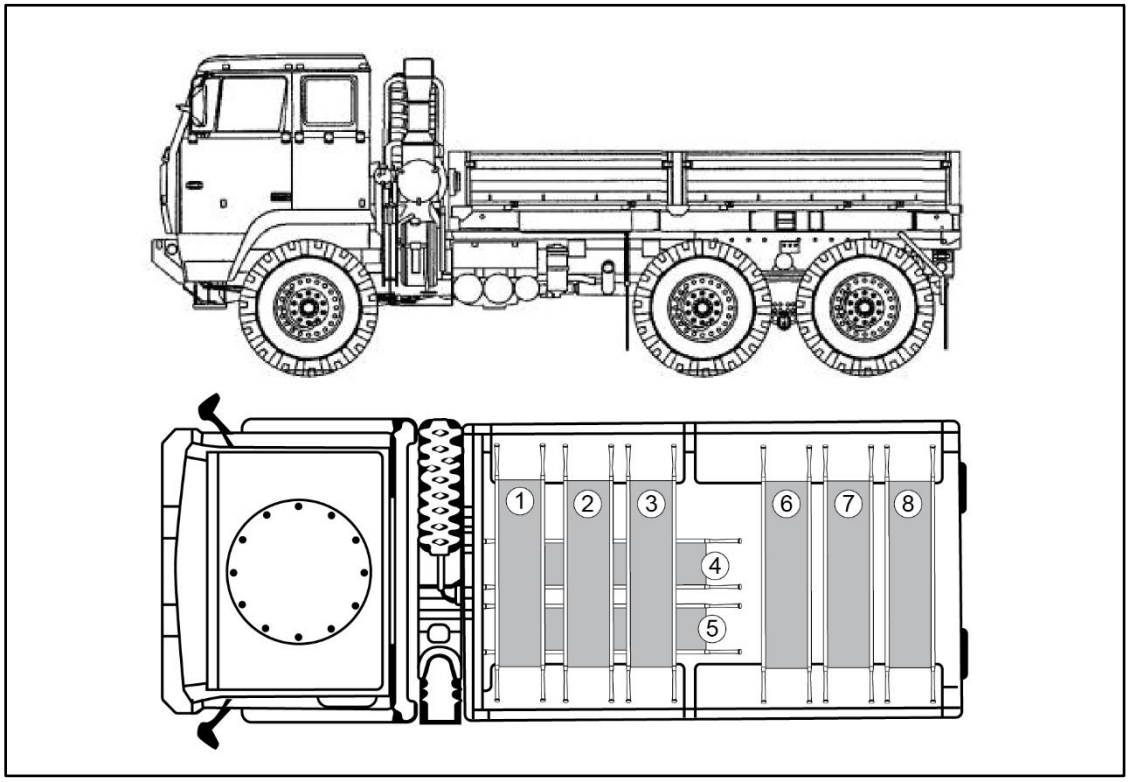


Figure J-18. Loading the M1093, medium tactical vehicle

M1081 Truck, Cargo, Light Medium Tactical Vehicle

J-45. The M1081 light medium tactical vehicle, 2½-ton truck is normally used to transport general cargo and personnel. (See figure J-19.) It has a canvas cover, removable tarpaulin braces, and hinged sideboards. The canvas cover and braces need not be removed for patient loading and unloading. This vehicle has a maximum capacity of seven litters and 12 ambulatory patients or casualties.

J-46. Use the following steps to load patients into this vehicle:

- Lower the seats and secure the vertical support bracket in place.
- Place three litters (litter numbers 1 through 3) crosswise on the seats, forward, next to the cab. Secure the litters individually to the seats.
- Place two litters (litter numbers 4 and 5) lengthwise on the floor, forward toward the cab, feet first. Secure the litters together and to the vertical seat support.
- Place litter number 6 crosswise on the seats near the rear of the vehicle. Slide the litter as far forward as possible. Do not secure the litter at this time.
- Place litter number 7 crosswise on the seats as far rearward as possible. Secure the litter to the seats.
- Slide litter number 6 rearward next to litter number 7. Secure the litter to the seats.
- Raise and secure the tailgate.
- If available, the combat medic/CLS rides in the center of the vehicle to monitor the patients/casualties.

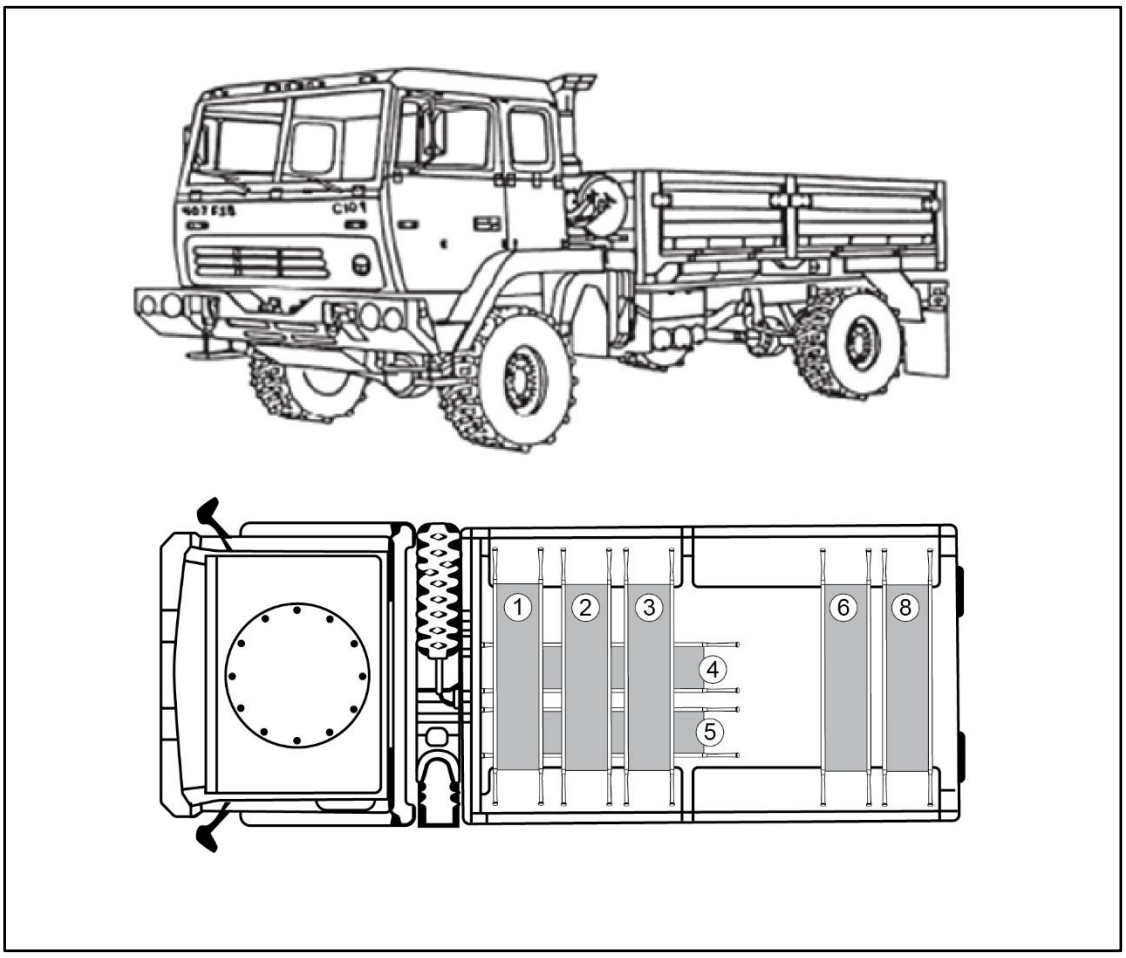


Figure J-19. Loading the M1081, light medium tactical vehicle

REQUEST MEDICAL EVACUATION

J-47. Procedures for requesting MEDEVAC support must be institutionalized down to the unit level. Procedural guidance and standardization of request procedures are provided below. The same format is used to request both air and ground MEDEVAC. (See table J-2.) The MEDEVAC request should always be transmitted by a secure means. (See ATP 4-02.2 for more information on MEDEVAC.)

Table J-2. Medical evacuation request

Line	*Title*	*Explanation*	*Reason*
1	Location of pickup site	The 8- or 10-digit grid coordinates of the pickup site.	Required so evacuation vehicle knows where to pick up patient. Also, so that the unit coordinating the evacuation mission can plan the route for the evacuation vehicle (if the evacuation vehicle must pick up from more than one location).
2	Radio frequency, call sign, and suffix	The frequency of the radio at the pickup site (not a relay frequency). The call sign (and suffix if used) of person to be contacted at the pickup site.	Required so that evacuation vehicle can contact requesting unit while en route (obtain additional information or change in situation or directions).
3	Number of patients by precedence	Report only applicable information and encrypt the brevity codes. A—URGENT B—URGENT-SURG C—PRIORITY D—ROUTINE E—CONVENIENCE If two or more categories must be reported in the same request, insert the word *BREAK* between each category.	Required by unit controlling evacuation vehicles to assist in prioritizing missions.
4	Special equipment required	Encrypt the application brevity codes. A—None B—Hoist C—Extraction equipment D—Ventilator	Required so that the equipment can be placed on board the evacuation vehicle prior to the start of the mission.
5	Number of patients by type	Report only applicable information and encrypt the brevity code. If requesting medical evacuation for both types, insert the word *BREAK* between the litter entry and ambulatory entry. L+# of patients—Litter A+#of patients—Ambulatory (sitting)	Required so that the appropriate number of evacuation vehicles may be dispatched to the pickup site. They should be configured to carry the patients requiring evacuation.
6	Security of pickup site (wartime)	N—No enemy troops in area P—Possibly enemy troops in area (approach with caution) E—Enemy troops in area (approach with caution) X—Enemy troops in area (armed escort required)	Required to assist the evacuation crew in assessing the situation and determining if assistance is required. More definitive guidance can be furnished to the evacuation vehicle while it is en route (specific location of enemy to assist an aircraft in planning its approach).
9	Terrain description (peacetime)	Includes details of terrain features in and around proposed landing site. If possible, describe relationship of site to prominent terrain features (lake, mountain, tower).	Required to allow evacuation personnel to assess route/avenue of approach into area. Of particular importance if hoist operation is required.

REPORT CASUALTIES

J-48. Timely and accurate casualty reporting is the unit commander's responsibility. DA Form 1156 (*Casualty Feeder Card*) provides a template for collecting data required for the initial casualty report and may be used in contingencies or during peacetime. To ensure accuracy, persons with firsthand knowledge of the incident should complete DA Form 1156 and confirm the following:

- Data elements on DA Form 1156 marked with an asterisk (*) are required to transmit an initial casualty report via Defense Casualty Information Processing System.
- Data must be entered in the format specified by Defense Casualty Information Processing System.
- Accuracy of casualty data must be verified by a field-grade officer.

J-49. Field exercises provide an opportunity to test casualty-reporting procedures. Casualty reporting also adds depth and realism to command exercises. Prior to the training exercise, the maneuver director or designated Army representative will coordinate with the Casualty Assistance Center and Casualty and Mortuary Affairs Operations Division to establish a central casualty-reporting agency to accept casualty reports during the training event. This central agency will prepare and process reports for the responsible Casualty Assistance Center on actual casualties incurred during the exercise on DA Form 1156 and forward to the nearest Casualty Assistance Center.

J-50. For simulated casualties, the reporting agency will use DA Form 1156 marked FOR EXCERISE ONLY at the top and bottom of the simulated report to ensure that exercise messages remain within exercise channels. Training event casualty reporting is available using Defense Casualty Information Processing System training applications. Access to training applications must be coordinated with Casualty and Mortuary Affairs Operations Division Defense Casualty Information Processing System help desk.

COMMON TYPES OF INJURIES

J-51. Factors affecting the risk of injury can be associated with the activity, the individual, and the environment. Environmental factors, such as cold or hot weather or rugged terrain, can increase risks; therefore, they should be balanced with training and mission performance goals. Unit SOPs should specify a bead color for placement on the boot laces of those Soldiers susceptible to cold, heat, and bite or sting injuries. A single color for each type of injury should be used. Commanders should develop a discrete method of identifying sickle cell trait positive Service members, similar to that used in identifying Service members who have sustained cold- and or heat-related injuries, and add the sickle cell trait marking to unit tactical SOPs. Not all injuries can be avoided, but many common injuries can be prevented.

CASUALTY RESPONSE FOR HEAT ILLNESS

J-52. Exertional heat illness refers to a spectrum of disorders (for example- cramps, heat exhaustion, heat injury, heat stroke) resulting from total body heat stress. (See ATP 4-25.12 and TC 4-02.3 for more information on heat illness.) While there is a range of adverse effects that can result from the body overheating, the two major kinds of heat illnesses that are referred to as heat casualties are—

- Heat exhaustion (can be mild or more severe).
- Heat stroke (most severe form of heat illness and possibly fatal).

Heat Exhaustion

J-53. Heat exhaustion is often preceded by heat cramps, muscle cramps of the arms, legs, or abdomen. Heat cramps and heat exhaustion often act as canaries in the coal mine. These conditions need to be identified and treated before they get to a more extreme case of heat stroke. Catch these conditions early as casualty needs rest, water, shade, evaluation, and possible medical care.

Signs and Symptoms of Heat Exhaustion

J-54. Signs and symptoms of heat exhaustion include—

- Dizziness.
- Headache.
- Loss of appetite.
- Nausea.
- Weakness.
- Clumsy/Unsteady walk.
- Profuse sweating and pale (or gray), moist cool skin.
- Normal to slightly elevated body temperature.
- Muscle cramps.
- Heat cramps.

Casualty Response for Heat Exhaustion

J-55. Casualty response measures for heat exhaustion include—

- Rest Soldier in shade.
- Loosen uniform and remove head gear.
- Have Soldier drink two quarts of water over one hour.
- Seek medical aid.
- Evacuate if no improvement in 30 minutes, or if Soldier's condition worsens.

J-56. Casualty response for heat cramps is the same for heat exhaustion; the goal is to prevent the heat cramps from progressing into heat exhaustion with further complications.

Heat Stroke

J-57. Heat stroke is a medical emergency and can be fatal if not immediately addressed. The casualty must be evacuated to the nearest MTF as soon as possible.

Signs and Symptoms of Heat Stroke

J-58. Signs and symptoms for heat stroke include—

- Hot dry skin.
- Headache.
- Convulsions and chills.
- Dizziness.
- Nausea.
- Weakness.
- Pulse and respirations are weak and rapid.
- Vomiting.
- Confusion, mumbling (do mental check questions to see if brain is working correctly).
- Combative.
- Passing out (unconsciousness).

Note. In the early progression of heat stroke, the skin may be moist or wet.

Casualty Response for Heat Stroke

J-59. Immediately begin cooling the Soldier off (the faster the body is cooled, the less damage to the brain and organs) as follows:

- Cool the casualty with any means available, even before removing clothes.
- Strip (if possible, ensure a same gender helper is present).
- Rapidly cool by immersing the casualty in cold water.
- Rapidly cool with ice sheets as follows:
  - Cover all but face with iced sheets.
  - Ensure the iced sheet is soaked prior to applying to the casualty.
- Place ice packs, if available, in groin, axillae (armpits) and around the neck.
- Fan the entire body.
- Stop cooling if casualty starts shivering.
- Seek medical aid.
- Evacuate immediately, and continue cooling during transport.
- Give nothing by mouth.

Note. The same person should observe the Soldier during cooling and evacuation in order to spot symptom changes.

PREVENT OR CONTROL SHOCK

J-60. Shock may be caused by severe or minor trauma to the body. It usually is the result of—

- Significant loss of blood.
- Heart failure.
- Dehydration.
- Severe and painful blows to the body.
- Severe burns of the body.
- Severe wound infections.
- Severe allergic reactions to drugs, foods, insect stings, and snakebites.

J-61. Shock stuns and weakens the body. When the normal blood flow in the body is upset, death can result. Early identification and proper treatment may save the casualty's life.

Signs and Symptoms of Shock

J-62. Check the casualty for signs and symptoms of shock:

- Sweaty but cool skin.
- Pale skin.
- Restlessness or nervousness.
- Thirst.
- Severe bleeding.
- Confusion.
- Rapid breathing.
- Blotchy blue skin.
- Nausea and/or vomiting.

Treatment and Prevention of Shock

J-63. In the field, the procedures to treat shock are identical to procedures that would be performed to prevent shock. When treating a casualty, assume that shock is present or will occur shortly. By waiting until actual signs/symptoms of shock are noticeable, the rescuer may jeopardize the casualty's life.

Note. A casualty in shock after suffering a heart attack, chest wound, or breathing difficulty, may breathe easier in a sitting position. If this is the case, allow him to sit upright, but monitor carefully in case his condition worsens.

Position the Casualty

J-64. Procedures for positioning the casualty include—

- Move the casualty under a permanent or improvised shelter to shade him from direct sunlight. ***Note.*** DO NOT move the casualty or his limbs if suspected fractures have not been splinted.
- Lay the casualty on his back unless a sitting position will allow the casualty to breathe easier. ***Note.*** A casualty in shock after suffering a heart attack, chest wound, or breathing difficulty, may breathe easier in a sitting position. If this is the case, allow him to sit upright, but monitor carefully in case his condition worsens.
- Elevate the casualty's feet higher than the heart using a stable object so the feet will not fall.

WARNING

DO NOT elevate legs if the casualty has an unsplinted broken leg, head injury, or abdominal injury. For a casualty with an abdominal wound, place knees in an upright (flexed) position.

- Loosen clothing at the neck, waist, or anywhere it is binding. (See figure J-20.)

CAUTION

DO NOT LOOSEN OR REMOVE protective clothing in a chemical environment.

- Prevent the casualty from getting chilled or overheated. Using a blanket or clothing, cover the casualty to avoid loss of body heat by wrapping completely around the casualty. (See figure J-21.) However, if a tourniquet has been applied, leave it exposed (if possible). In hot weather, place the casualty in the shade and avoid excessive covering. ***Note.*** Ensure no part of the casualty is touching the ground, as this increases loss of body heat.

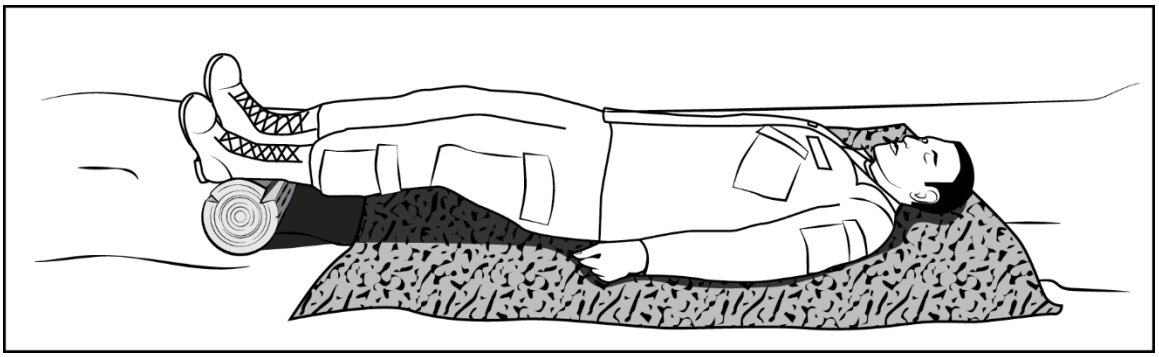


Figure J-20. Clothing loosened and feet elevated

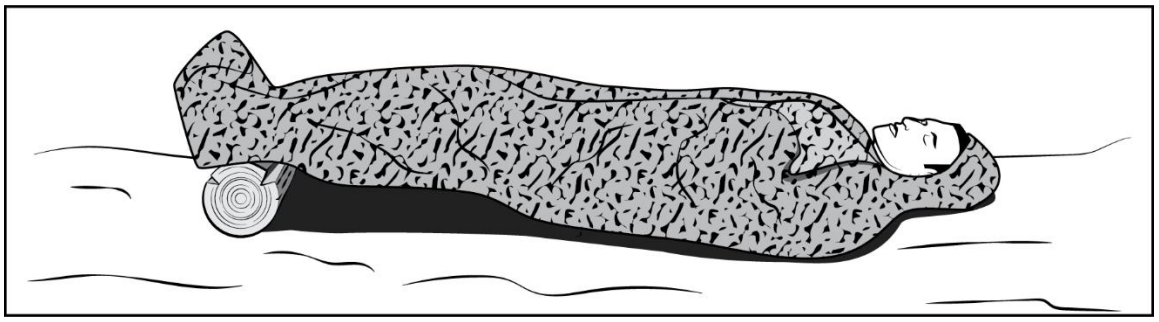


Figure J-21. Body temperature maintained

Calm and Reassure the Casualty

J-65. Throughout the entire procedure of treating and caring for a casualty, the rescuer should reassure the casualty and keep him calm. This can be done by being authoritative (taking charge) and by showing self-confidence. Assure the casualty that you are there to help him. Calm and reassure the casualty by taking charge and showing self-confidence, assuring the casualty that he is being taken care of, watching the casualty closely for life-threatening conditions and checking for other injuries if necessary, and seeking medical aid.

CASUALTY RESPONSE FOR COLD WEATHER INJURIES

J-66. Cold weather-related injuries include injuries due to decreased temperature (hypothermia, frostbite, and nonfreezing cold injury); injuries due to heaters; carbon monoxide poisoning; and accidents due to impaired physical and/or mental function resulting from cold stress. Cold weather injuries can also occur in warmer ambient temperatures when an individual is wet due to rain or water immersion. (More information concerning cold weather injuries can also be found in ATP 4-25.12 and TC 4-02.3.)

Hypothermia

J-67. Hypothermia is defined as a body core temperature below 95 degree Fahrenheit (°F). Hypothermia is usually characterized as mild, moderate, or severe, based on body core temperature. In order to properly diagnose hypothermia, core temperature must be measured rectally with a thermometer with an extended low range scale. Oral and tympanic temperatures will not yield accurate results in a cold environment, even when care is taken to use the best technique.

J-68. Hypothermia occurs when heat loss is greater than heat production. This can occur suddenly, such as during partial or total immersion in cold water, or over hours or days, such as during extended operations or survival situations. Hypothermia may occur at temperatures above freezing, especially when a person's skin or clothing is wet.

Signs and Symptoms of Hypothermia

J-69. Signs and symptoms of hypothermia include the following:

- Vigorous shivering which may decrease or cease as core temperature continues to fall.
- Conscious, but usually apathetic or lethargic.
- Confusion.
- Sleepiness.
- Slurred speech.
- Shallow breathing.
- Very slow respirations.
- Weak pulse.
- Low or unattainable blood pressure.
- Change in behavior with or without poor control over body movements with or without slow reactions.
- With severe hypothermia, the casualty may be unconscious or stuporous.

Casualty Response for Hypothermia

J-70. The goals for field management of hypothermia are to rescue, examine, insulate, and rapidly transport. If untreated, hypothermia is a true medical emergency and requires evacuation. The following include rewarming techniques:

- Remove the casualty from the cold environment.
- Replace wet clothing with dry clothing.
- Cover the casualty with insulating material or blanket.
- Wrap the casualty from head to toe.
- Avoid unnecessary movement.
- If casualty is conscious, slowly give high-caloric sweet warm fluids.
- Seek medical aid.
- Evacuate as soon as possible with the casualty lying down.

Frostbite

J-71. Frostbite accounts for the largest number of cold weather injuries each year and occurs when tissue is exposed to temperatures that are usually below 32 °F depending upon wind chill factor, length of exposure, and adequacy of protection. It can occur suddenly due to contact to cold metal or super-cooled liquids such as alcohol, fuel, or antifreeze or can develop over time due to prolonged cold exposure. Frostbite is most common in exposed skin such as the nose, ears, cheeks, but can also occur in the hands and feet due to reduced skin blood flow.

Note. The onset is signaled by a sudden blanching of the skin of the nose, ears, cheeks, fingers, or toes followed by a momentary tingling sensation. Frostbite is indicated when the face, hands, or feet stops hurting.

Signs and Symptoms of Frostbite

J-72. Signs and symptoms of frostbite include—

- Numbness in affected area.
- Tingling, blistered, swollen, or tender areas.
- Pale, yellowish, waxy-looking skin (grayish in dark-skinned Soldiers).
- Frozen tissue that feels wooden to the touch.
- Significant pain after rewarming.

J-73. The most significant frostbite injury involves—

- Frozen tissue involving full thickness of skin with muscle and bone involvement.
- Necrotic (dead) tissue developing, sloughing of tissue, and autoamputation of nonviable tissue.
- Those casualties will have permanent disability.

Casualty Response for Frostbite

J-74. Casualty response measures for frostbite include the following:

- Local rewarming at room temperature or using body heat.
- Loosen or remove constricting clothing and remove jewelry.
- Move the casualty to a sheltered area, if possible.
- Protect the affected area from further cold or trauma.
- Once a tissue is thawed, it must not freeze again. If there is the possibility of tissue refreezing, it is better not to thaw it in order to avoid damaging tissue further.
- Avoid exposure to excessive heat (open flame, stove top, steam, heat pack) or rubbing affected tissue.
- All Soldiers with a peripheral freezing injury must be suspected of being hypothermic and treated appropriately. During field management, it is more important to prevent hypothermia than to rewarm frostbite rapidly.
- Seek medical aid.
- Evacuate the casualty.

NONFREEZING COLD INJURIES

J-75. Nonfreezing cold injuries can be caused by a variety of means:

- Exposure to temperatures from 32 °F to 60 °F may cause nonfreezing cold injuries of skin, fingers, toes, ears, and facial parts.
- Exposure of skin to cold metal; super cold fuel, petroleum, oil, and lubricants; wind chill; and the wear of tight, circulation restricting clothing (particularly boots).
- Riding in open vehicles, exposure to propeller/rotor-generated wind, running or skiing, and altitude exposure where there is little tree cover can all contribute to greater wind chill.

J-76. Nonfreezing cold injuries are chilblain, snow blindness, and immersion syndrome (immersion foot, trench foot and hand). Trench foot occurs when tissues are exposed to temperatures from 32 °F to 60 °F for prolonged periods of time (>12 hours), whereas chilblains, which is a more superficial injury, can occur after repeated prolonged exposure of bare skin to low temperatures from 60 °F down to 32 °F. Snow blindness is caused by unprotected exposure to ultraviolet rays. Snow blindness can be prevented by the use of appropriate eye protection (sunglasses). Snow blindness can be painful as late as three to five hours later.

Chilblain

J-77. Chilblain is a nonfreezing cold weather injury that can occur after one to five hours in cold, wet conditions at temperatures from about 50 °F down to 32 °F. The most commonly affected areas are the fingernail-side of the fingers, but the ears, face, and other exposed skin are also areas of occurrence. There are no lasting effects from chilblain.

Signs and Symptoms of Chilblain

J-78. The following are signs and symptoms of chilblain: chilblain lesions are swollen, tender, itchy, and painful; skin becomes swollen, red (or darkening of the skin in dark-skinned Soldiers), and hot to the touch with rewarming; an itching or burning sensation may continue for several hours after exposure.

Note. Early diagnosis of chilblain becomes evident when symptoms do not resolve with rewarming.

Casualty Response for Chilblain

J-79. The treatments for chilblain are rewarming the affected area and keeping warm and dry.

Immersion Foot (Trench Foot)

J-80. Like chilblain, immersion syndrome of the feet is a nonfreezing cold-weather injury that can occur in damp, wet conditions. The most commonly affected area is the feet and occasionally involves the hands. If left untreated, or allowed to fester (to become septic), loss of tissue to include loss of limbs and gangrene can result. Permanent disability may result from severe immersion syndrome of the feet or hands.

Signs and Symptoms of Immersion Foot

J-81. Signs and symptoms of immersion foot include—

- Cold, numb feet that may progress to hot with shooting pains.
- Slight sensory change for two to three days.
- Swelling, redness, and bleeding may become pale and blue.
- Accompanied by aches, increased pain sensitivity and infection.
- Loss of sensation.
- Severe edema and gangrene.
- Loss of tissue.

Casualty Response for Immersion Foot

J-82. Casualty response measures for immersion foot include—

- Remove wet or constrictive clothing, gently wash and dry affected extremities.
- Elevate affected limbs and cover with layers of loose, warm, dry clothing.
- Do not pop blisters, apply lotions or creams, massage, expose to extreme heat or permit Soldiers to walk, which can increase tissue damage and worsen the injury.
- Seek medical attention.
- Evacuate for medical treatment.

Snow Blindness

J-83. Snow blindness in the field is usually caused by Soldiers being exposed to high levels of ultraviolet rays over a period of time without wearing appropriate eye protection such as sunglasses. Pain results after a few hours of exposure and resolves over a period of a day or two. Pain may also be caused by exposure to ultraviolet rays from artificial sources (for example welding machine) in much shorter time.

Signs and Symptoms of Snow Blindness

J-84. Signs and symptoms of snow blindness include—

- Scratchy feeling in eyes, as if from sand/dirt.
- Watery eyes.
- Pain, possibly as three to five hours later.
- Reluctant or unable to open eyes.

Casualty Response for Snow Blindness

J-85. Casualty response measures for snow blindness include—

- Cover the eyes with a dark cloth.
- Evacuate the casualty to a MTF.

Appendix K

CBRN Considerations

OVERVIEW

K-1. *Chemical, biological, radiological, and nuclear operations* include the employment of capabilities that assess, protect against, and mitigate the entire range of chemical, biological, radiological, and nuclear incidents to enable freedom of action (FM 3-11). Many state and nonstate actors (to include terrorists and criminals) possess or have the capability to possess, develop, or proliferate CBRN weapons. U.S. policy prohibits the use of chemical or biological weapons under any circumstances, but it reserves the right to employ nuclear weapons. Many potential enemies are under no such constraint. (See FM 3-11 for more information.)

PROTECTIVE POSTURE ANALYSIS

K-2. Protecting the force from CBRN incidents includes hardening systems and facilities, preventing or reducing individual and collective exposures, or applying medical prophylaxes. CBRN and medical conduct threat and vulnerability analysis to provide recommendations on protection requirements that are reflected in the MOPP level.

K-3. Leader involvement is necessary to ensure safe and sustained operations under various climatic conditions. Leaders should develop standard responses and COAs for each projected mission. If the probability of CBRN threats exists all Soldiers will carry a protective mask and ensure that individual protective gear is available within two hours. Second set available in six hours. Unit SOPs should standardize methods used to ensure consistent use and understanding. The standard MOPP are—

- **MOPP0.** Carry a protective mask and ensure that individual protective gear is within arm's reach.
- **MOPP1.** Suit worn. Mask, gloves and boots carried.
- **MOPP2.** Suit and boots worn. Gloves and mask carried.
- **MOPP3.** Suit, boots and mask worn. Gloves carried.
- **MOPP4.** All protection worn.

K-4. Leaders know that they cannot expect the same work rates in MOPP4 as they achieved in MOPP0. They reevaluate the ability to meet mission requirements and communicate changes to the force. MOPP reduction decisions are between the most difficult to make because of the many considerations that affect the final decision. Commanders must evaluate the situation from the Soldier and mission perspectives. Factors include the criticality of the current mission, potential effects of personnel exposure, and the impact on the casualty care system.

K-5. Leaders determine the appropriate MOPP level by assessing mission variables (METT-TC) and weighing the impact of increased protection levels. Higher headquarters provide MOPP level directives to subordinate elements.

K-6. When a CBRN attack is recognized, everyone in the company team must receive the warning and assume the appropriate MOPP level. Soldiers in immediate danger need warnings they can see or hear. The alarm or signal must be simple and unmistakable if it is to produce a quick and correct reaction.

K-7. If a CBRN hazard is located, the contaminated area should be marked. The CBRN warning and reporting system and standardized contamination markers contribute to orderly warning procedures. Warning methods include automatic alarms, vocal alarms (a shout of GAS is the most frequently used alarm), nonverbal alarms (horn blasts or banging of metal-to-metal objects), and visual alarms, most commonly the appropriate hand-and-arm signals.

UNMASKING PROCEDURES

K-8. Unmasking is a command decision. CBRN and medical personnel analyze the situation to determine if it is safe to unmask after the detection equipment indicates negative results.

Note. While the M256A1/A2 detector kit is currently the most widely available, other detectors do exist. Realize that all chemical detectors do not detect all agents. Therefore, consider using the unmasking procedures for without a detector kit even if a detector is available.

UNMASKING WITH DETECTOR KIT

K-9. Consider using the unmasking procedures listed next, if the chemical detector (such as M256A1/A2) shows no presence of agent. These procedures take approximately 15 minutes and include the following:

- The senior person should select one or two individuals to start the unmasking procedures.
- If possible, move to a shady place (bright, direct sunlight can cause pupils in the eyes to constrict, giving false signs of nerve agent exposure).
- Have the selected individuals unmask for five minutes and then reseal and clear their masks.
- Observe the selected individuals for 10 minutes (if no symptoms appear, the commander or leader considers issuing the all-clear signal for unmasking).
- Continue to watch the personnel for possible delayed symptoms (always have casualty response treatment immediately available in case it is needed).

UNMASKING WITHOUT DETECTOR KIT

K-10. Consider using the unmasking procedures listed next, if the chemical detector is unavailable. These procedures take approximately 35 minutes and include the following:

- The senior person should select one or two individuals to start the unmasking procedures.
- If possible, move to a shady place (bright, direct sunlight can cause pupils in the eyes to constrict, giving false signs of nerve agent exposure).
- Have the selected individuals unmask-take a deep breath, hold it, and break the seal for 15 seconds, keeping their eyes wide open.
- Have the selected individuals clear and reseal their masks.
- Observe the selected individuals for 10 minutes.
- If no symptoms appear, the commander or leader has the selected individuals break the seal of their mask, take two or three breaths keeping their eyes wide open, and clear and reseal their masks.
- Observe selected individuals for 10 minutes (if no symptoms appear, have the selected individuals unmask for five minutes and then remask).
- If no symptoms appear in 10 minutes after remasking, the commander considers issuing a directive for an all-clear.
- Continue to watch personnel for possible delayed symptoms (always have first aid treatment immediately available in case it is needed).

CBRN SUPPORT TO THE INTELLIGENCE WARFIGHTING FUNCTION

K-11. CBRN forces make a critical contribution to this warfighting function through the core function of assessing CBRN threats and hazards and the integrating activity of hazard awareness and understanding. CBRN staff and planners provide a predictive and deductive analysis of enemy CBRN capabilities to intelligence.

K-12. CBRN staffs contribute the knowledge and understanding of CBRN threats and hazards. They assist the G-2/S-2 in developing an understanding of enemy CBRN capabilities. They work with G-2/S-2 during planning to analyze potential threats and to evaluate how the enemy might use CBRN hazards to impact operations. They collaborate with the G-2/S-2 to provide estimates for the unconventional use of TIM to create hazards for U.S. forces. They advise the commander on the influences that terrain and weather have on CBRN hazards.

K-13. CBRN reconnaissance provides data and information that contributes to answering PIRs. CBRN reconnaissance elements contribute information about CBRN hazards through their information collection efforts. Specialized CBRN assets may need to be available to collect the information needed to answer these requirements. Reconnaissance teams are focused on the collection of tactical and technical information to support the BCT freedom of maneuver and the survivability of friendly forces and facilities.

K-14. CBRN staffs at the division, corps, and theater army echelon and in-theater CBRN headquarters determine CBRN-related intelligence requirements in a potential AO. They collect and analyze CBRN related intelligence data in coordination with the respective G-2.

K-15. Effective offensive and defensive actions capitalize on accurate, predictive, and timely intelligence. IPB is an integrating process of the operations process. IPB results in the creation of intelligence products that are used during MDMP to aid in developing friendly COAs and decision points for the commander. The G-2/S-2 leads the IPB process. The CBRN officer is the staff SME on CBRN and assists the G-2/S-2 in determining the locations of threat CBRN assets and potential areas of employment. Conclusions reached during IPB are critical to planning information collection and targeting operations.

K-16. The G-2/S-2 staff provides the most likely (and the most dangerous) COAs based on threat intent and capabilities. CBRN staffs are involved in the IPB process with intelligence sections, providing input into enemy CBRN capabilities, release authorities, terrain effects on CBRN use, enemy doctrine, and COAs. CBRN input into countering weapons of mass destruction-specific intelligence, information operations, civil military operations, and civil affairs operations. This input feeds operational variables (PMESII-PT); areas, structures, capabilities, organizations, people, and events (also called ASCOPE) analysis; and sewage, water, electricity, academics, trash, medical, safety, other considerations (also called SWEAT-MSO), which provides a holistic approach to understanding a complex environment by analyzing the factors and systems that influence such environments. These intelligence products are then added to the existing targeting packets. By doing so, the staff establishes an effective process to integrate and fuse all sources of available threat information to provide for a continuous analysis of threat information that identifies the full range of known or estimated terrorist threat capabilities, intentions, and current activities.

K-17. The CBRN staff lends insight to this process from a CBRN perspective. The CBRN staff provides insight into the development of CCIRs, which shapes information collection activities, including CBRN reconnaissance and surveillance tasks and purposes.

This page intentionally left blank.

Appendix L

Cover and Concealment

OVERVIEW

L-1. Survivability operations are a supporting task of the protection warfighting function and a critical part of military operations. MI leaders must take special care to incorporate the survivability into mission planning in order to ensure mission success and preserve the force. All personnel and physical assets have some degree of inherent survivability that is affected by various threats and factors. Survivability activities enhance the inherent survivability of a unit through various active and passive measures that shape the OE. This section defines and describes survivability and the threats and factors affecting it (See ADP 3-37 and ATP 3-37.34 for in-depth information on the subject matter.):

- *Survivability* is a quality or capability of military forces which permits them to avoid or withstand hostile actions or environmental conditions while retaining the ability to fulfill their primary mission (ATP 3-37.34).
- *Survivability operations* are those military activities that alter the physical environment to provide or improve cover, camouflage, and concealment (ATP 3-37.34).
- *Cover* is protection from the effects of fires (FM 3-96). It includes anything made of natural or man-made materials that provide protection from bullets, fragments of exploding rounds, flame, nuclear effects, biological and chemical agents, and enemy observation.
- *Concealment* is protection from observation or surveillance (FM 3-96). It includes anything that hides personnel, personal equipment and/or vehicles from enemy observation. ***Note.*** Concealment does not protect from enemy fire.
- *Camouflage* is anything used to keep Soldiers, equipment and positions from identification by enemy observation.

COVER

L-2. When existing cover is insufficient, commanders can use survivability operations to provide or improve cover by altering the physical environment. Of the four activities of survivability operations, three involve providing or improving cover, which protects personnel and physical assets from fires by mitigating their effects. The establishment of fighting positions is the best means of increasing survivability and mitigating the effects of direct and indirect attacks.

L-3. When planning the construction of fighting and protective positions or the hardening of existing facilities, many items must be taken into consideration. The terrain, weather, material availability, and the type or level of threat dictate many of the designs that are used. For instance, the use of existing buildings in built-up areas may enhance survivability based on the location and construction materials. In other circumstances, new construction that requires the integration of survivability measures is undertaken. There are several common areas that must be considered in the design of survivability construction.

DIRECT FIRE MITIGATION

L-4. Direct fire weapons aim projectiles directly at the position or structure. These projectiles include various kinetic-energy projectiles and chemical-energy projectiles. Good position location and camouflage and concealment measures help to prevent position detection and effective engagement. (See ATP 3-37.34.) If the position does become a target, proper survivability construction mitigates the damage. The goal of direct fire survivability construction is to provide a target surface that is thick enough (and therefore strong enough) for the given material or that provides for an oblique impact of projectiles to the structure. An oblique impact surface increases the apparent thickness of the structure and decreases the possibility of penetration.

The potential for ricochet off a structure increases as the angle of impact from the perpendicular increases. Designers of protective structures should select the proper material and design exposed surfaces with the maximum angle from the perpendicular to the direction of fire. Also, a low-structure silhouette design makes the structure harder to engage with direct fire. Providing *projectile resistant construction* is a high level of protection in common security engineering practice (UFC 4-020-01). Hypervelocity projectiles pose significant challenges in survivability position design. The materials used must dissipate the projectile energy and thus prevent total penetration. Shielding against direct fire projectiles should initially stop or deform the projectiles to prevent or limit penetration.

L-5. Another technique used to mitigate direct fire weapons effects is the use of pre-detonation screens, which can provide effective protection from rocket-propelled grenades. These are solid screens placed between potential vantage points and the target that incoming rounds impact before striking the target. In doing so, the rounds detonate, dissipating their effects between the screen and the target. Predetonation screens are commonly constructed of wood slat or plywood. They may also serve as obscuration screens. (See ATP 3-37.34 for more information on obscuration screens.)

INDIRECT FIRE MITIGATION

L-6. Indirect fire weapons include mortars, rockets, missiles, artillery, and grenade launchers (in an indirect fire role). In indirect fire, survivability from fragmentation requires measures similar to those needed to protect from direct fire penetration. Protection against fragments from airburst artillery is provided by a thickness of shielding required to defeat a certain size shell fragment, supported by a roof structure adequate for the dead load of the shielding. Survivability construction may also be conducted to mitigate the effects of direct hits from various sizes of artillery mortar rounds and rockets.

L-7. Protection against direct impacts from indirect fire weapons usually requires a significant amount of effort. These measures generally include some form of soil cover on the structure and may be supplemented by a bursting layer of harder material, such as stone or masonry rubble.

EXPLOSIVE HAZARD MITIGATION

L-8. The effect of explosive hazards may be mitigated by several means. Proper training in the recognition of, and reaction to, explosive hazards is the first line of defense against them. Reconnaissance and site selection to avoid potentially hazardous areas help to reduce the chances of encountering explosive hazards. The proper use of personal protective equipment (including the wearing of body armor and eye protection) and the use of armored vehicles reduce the impact against personnel and equipment. Employing enemy control points and using explosive detection devices and military working dogs reduce the chances that an IED or vehicle-borne IED attack can occur on a base camp. If an IED is employed, proper protective construction and standoff distances from facilities mitigate the effects. Maintaining a situational understanding of the threat; hardening structures, equipment, and personnel against attack; and employing security and route clearance techniques are essential to defeat the IED threat. (See ATP 3-90.37 for more information on doctrine on IED defeat operations.)

L-9. Mines and unexploded explosive ordnance can be countered by many of the measures employed against IEDs. In addition, good information and intelligence about past conflicts in the AO and a reconnaissance of possible hazard sites reduce the chances that personnel may encounter mines and unexploded explosive ordnance. Good planning in the selection of basecamps also helps avoid sites that may present significant mine and unexploded explosive ordnance hazards.

MATERIALS

L-10. Deployed forces rely on the most abundant local materials and the materials that are usually available through routine supply channels. Materials such as soil, steel, concrete, rock, wood, bricks, and masonry provide shielding and protection against the penetration of projectiles, fragments and radiation. Tables L-1 through L-5 contain the shielding requirements of various materials to protect against direct hits by direct fire projectiles and indirect fire fragmentation and blasts.

Table L-1. Material thickness required to protect against direct fire projectiles

Material	*Small-caliber (5.56 mm) fire at 100 yards)*	*Small-caliber and machine gun (7.62 mm) fire[1] at 100 Yards*	*Small-caliber and machine gun (12.7 mm) fire[1] at 100 Yards*	*AT rifle (76 mm) fire at 100 yards*	*20 mm AT fire at 200 yards*	*37 mm AT fire at 400 yards*	*50 mm AT fire at 400 yards*	*75 mm direct fire at 500 to 1,000 yards*	*Remarks*
Solid walls									
Solid clay brick masonry	9	16	NR	24	30	60	NR	NR	None
Concrete masonry unit (grout filled)	9	16	NR	NR	NR	NR	NR	NR	None
Steel	7/16	5/8	1 3/8	NR	NR	NR	NR	NR	None
Concrete, reinforced	8	12	22	12	18	36	42	48	Structurally reinforced with steel.
Stone masonry	8	12	22	18	30	42	54	60	Values are guides only.
Timber	NR	NR	36	60	NR	NR	NR	NR	Values are guides only.
Wood	NR	NR	24	36	48	NR	NR	NR	Values are guides only.
Walls of loose material between boards									
Brick rubble	NR	NR	12	24	30	60	72	NR	None
Clay, dry	NR	NR	36	48	NR	NR	NR	NR	Add 100% to thickness if wet.
Gravel/small crushed rock	NR	NR	12	24	30	60	72	NR	None
Loam, dry	NR	NR	24	36	48	NR	NR	NR	Add 50% to thickness if wet.
Sand, dry	NR	NR	12	24	30	60	72	NR	Add 100% to thickness if wet.
Sandbags filled with—									
Brick rubble	NR	NR	20	30	30	60	70	NR	None
Clay, dry	NR	NR	40	60	NR	NR	NR	NR	Add 100% to thickness if wet.
Gravel/small crushed rock	NR	NR	20	30	30	60	70	NR	None
Loam, dry	NR	NR	30	50	60	NR	NR	NR	Add 50% to thickness if wet.
Sand, dry	NR	NR	20	30	30	60	70	NR	Add 100% to thickness if wet.

Table L-1. Material thickness required to protect against direct fire projectiles *(continued)*

Material	*Small-caliber (5.56 mm) fire at 100 yards)*	*Small-caliber and machine gun (7.62 mm) fire[1] at 100 yards*	*Small-caliber and machine gun (12.7 mm) fire[1] at 100 yards*	*AT rifle (76 mm) fire at 100 yards*	*20 mm AT fire at 200 yards*	*37 mm AT fire at 400 yards*	*50 mm AT fire at 400 yards*	*75 mm direct fire at 500 to 1,000 yards*	*Remarks*
Loose parapets of—									
Clay	NR	NR	42	60	NR	NR	NR	NR	Add 100% to thickness if wet.
Loam	NR	NR	36	48	60	NR	NR	NR	Add 50% to thickness if wet.
Sand	NR	NR	24	36	48	NR	NR	NR	Add 100% to thickness if wet.
Snow and ice									
Frozen snow	NR	NR	80	80	NR	NR	NR	NR	None
Frozen soil	NR	NR	24	24	NR	NR	NR	NR	None
Icecrete (ice + aggregate)	NR	NR	18	18	NR	NR	NR	NR	None
Tamped snow	NR	NR	72	72	NR	NR	NR	NR	None
Unpacked snow	NR	NR	180	180	NR	NR	NR	NR	None
Notes. Except where indicated, protective thicknesses are for a single shot only. Where weapons place five or six fire projectiles in the same area, the required protective thickness is about twice the amount indicated. Material thickness is in inches. [1] One burst of five shots.									
AT antitank mm millimeter NR not recommended									

Table L-2. Small-arms protection characteristics of various materials

	Small-arms projectile (at range of)								
Material[1]	*9 mm M882 ball[2]*	*5.56 mm x 45 M855 ball[2]*	*7.62 mm x 39 M67 ball*	*7.62 mm x 54R type LPS ball*	*7.62 mm x 51 M80 ball[2]*	*7.62 mm x 51 M61 AP*	*.50 cal M2 & M33 ball*	*.50 cal AP M2 & API-T M20s*	*14.5 mm API*
A36 mild steel plate thickness (in inches)	-	1/2 (0 m)	3/8 (0 m)	5/8 (0 m)	1/2 (0 m)	13/16 (0 m)	15/16 (0 m)	1-7/8 (0 m)	-
Armor steel plate MIL-A-12560 thickness (in inches)	1/16 (0 m)	5/16 (0 m)	1/4 (0 m)	3/8 (0 m)	7/16 (0 m)	1/2 (0 m)	3/4 (0 m)	1-1/4 (0 m)	1-5/8 (0 m)
Concrete thickness (in inches)	2 (50 m)	4 (10.5 m)	4-3/8 (0 m)	-	6-5/16 (0 m)	6-1/2 (-)	10-5/8 (200 m)	10 (6 m)	15-3/8 (200 m)
Wythes of nominal 4 in thick brick	1 (50 m)	2 (100 m)	1 (23 m)	2 (23 m)	2 (-)	2 (-)	6 (100 m)	-	-
Layers of nominal 9/16 in thick e-glass, ballistic grade[3]	1 (muzzle velocity)	3 (muzzle velocity)	2 (muzzle velocity)	-	3 (muzzle velocity)	7 (muzzle velocity)	12 (muzzle velocity)	14 (muzzle velocity)	-

Table L-2. Small-arms protection characteristics of various materials *(continued)*

	Small-arms projectile (at range of)								
Material[1]	***9 mm M882 ball[2]***	***5.56 mm x 45 M855 ball[2]***	***7.62 mm x 39 M67 ball***	***7.62 mm x 54R type LPS ball***	***7.62 mm x 51 M80 ball[2]***	***7.62 mm x 51 M61 AP***	***.50 cal M2 & M33 ball***	***.50 cal AP M2 & API-T M20s***	***14.5 mm API***
Layers of nominal 8-10 in thick sandbags	1 (50 m)	2 (100 m)	2* (100 m)	2* (100 m)	2 (100 m)	2 (100 m)	3 (100 m)	3 (200 m)	3 (200 m)
8 in thick hollow CMU	Protects (-)	Fails (19 m)	Fails (19 m)	Fails * (19 m)	Fails (100 m)	Fails* (-)	Fails (19 m)	Fails* (19 m)	Fails* (19 m)
8 in thick grout-filled CMU	Protects* (-)	Protects (100 m)	Protects (23 m)	Protects (23 m)	Protects (-)	Protects (-)	Fails* (100 m)	Fails* (200 m)	Fails* (200 m)
4 in brick/2 in air/8 in hollow CMU	Protects* (-)	Protects* (23 m)	Protects (23 m)	Protects (32 m)	Protects (23 m)	Protects (23 m)	Fails* (100 m)	Fails* (200 m)	Fails* (200 m)
Sand and steel plates[4]	-	-	-	10 in of sand + 0.4 in mild steel (30 m)	-	10 in of sand + 0.4 in mild steel (30 m)	-	10 in of sand + 0.8 in mild steel	20 in of sand + 0.4 in mild steel

Notes. Table taken from GTA 90-01-011, revised and with additional information provided by the ERDC. Table data based on single shots. Multiple shots in or near the same area may penetrate. A dash indicates no data.
[1] All thicknesses are in inches and all ranges are in meters.
[2] NATO small-arms projectile.
[3] National Stock Number 9340-01-533-3758. (See paragraph J-32 of this publication.)
[4] Other sand-filled containers of equal thickness can be used. Data is for dry sand. For wet sand, use twice the indicated thickness.
* Inferred from other data.

AP	armor piercing	GTA	graphic training aid
API	armor piercing incendiary	in	inch
API-T	armor-piercing incendiary-tracer	m	meter
cal	caliber	mm	millimeter
CMU	concrete masonry unit	NATO	North Atlantic Treaty Organization
ERDC	Engineer Research and Development Center	U.S.	United States

Table L-3. Material thickness required to protect against direct fire HE-shaped charges

Material	***73 mm RCLR***	***82 mm RCLR***	***85 mm RPG-7***	***107 mm RCLR***	***120 mm Sagger (ATGM)***
Aluminum	36	24	30	36	36
Concrete	36	24	30	36	36
Granite	30	18	24	30	30
Rock	36	24	24	36	36
Snow, packed	156	156	156	-	-
Soil	100	66	78	96	96
Soil, frozen	50	33	39	48	48
Steel	24	14	18	24	24
Wood, dry	100	72	90	108	108
Wood, green	60	36	48	60	66

Note. Thicknesses assume perpendicular impact. A dash indicates no data. Material thickness is in inches.

ATGM	antitank guided missile	RPG	rocket-propelled grenade
HE	high explosives	RCLR	recoilless rifle
mm	millimeter		

Table L-4. Material thickness required to protect against an RPG-direct hit with HEAT/thermobaric warhead

Material[1]	*Required thickness for protection in inches (millimeters)*[1, 2]	
	Minimum	*Recommended*
Armored steel	26.1 (663)	33.1 (840)
Mild steel	32.6 (828.75)	41.3 (1050)
Aluminum	45.7 (1160.25)	57.9 (1470)
Lead	23.0 (583.44)	29.1 (739.2)
Copper	24.5 (623.22)	31.1 (789.6)
Concrete	47.5 (1206.66)	60.2 (1528.8)
Earth	64.5 (1637.61)	81.7 (2074.8)
Granite	43.9 (1113.84)	55.6 (1411.2)
rock	45.7 (1160.25)	57.9 (1470)
Water	73.1 (1856.4)	92.6 (2352)
Green wood	77.5 (1969.11)	98.2 (2494.8)

Notes. Table was developed using information provided by UFC 3-340-01, the U.S. Army Research and Development Center, and the National Ground Intelligence Center. Calculations assume an RPG-7 with an 85-millimter shaped charge warhead detonating in direct contact with protective material.
[1] Thicknesses listed in the minimum column provide protection against lethal injury but may not protect against nonlethal injury. To achieve maximum protection for personnel, use thickness listed in the recommended column.
[2] The use of predetonation screens at an appropriate standoff distance can enable smaller thicknesses to provide the same level of protection. For assistance with determining appropriate predetonation screen designs and standoff distances, contact the UROC.

HEAT	high-explosives antitank	UROC	U.S. Army Corps of Engineers Reachback Operation Center
RPG	rocket-propelled grenade	U.S.	United States
UFC	United Facilities Criteria		

Table L-5. Material thickness required to protect against indirect fire fragmentation and blast exploding 50 feet away

Material[1]	*Mortars 82 mm*	*Mortars 120 mm*	*Rockets 122 mm*	*HE shells 122 mm*	*HE shells 152 mm*	*Bombs 100 lb*	*Bombs 250 lb*	*Bombs 500 lb*	*Bombs 1,000 lb*
Solid walls									
Brick masonry	4	6	6	6	8	8	10	13	17
Concrete	4	5	5	5	6	8	10	15	18
Concrete, reinforced	3	4	4	4	5	7	9	12	15
Timber	8	12	12	12	14	15	18	24	30
Walls of loose material between boards									
Brick rubble	9	12	12	12	12	18	24	28	30
Soil[1]	12	12	12	12	16	24	30	NR	NR
Gravel, small stones	9	12	12	12	12	18	24	28	30
Sandbags filled with—									
Brick rubble	10	18	18	18	20	20	20	30	40
Clay[1]	10	18	18	18	20	30	40	40	50
Gravel, small stones, soil	10	18	18	18	20	20	20	30	40
Sand[1]	8	16	16	16	18	30	30	40	40
Loose parapets of—									
Clay[1]	12	20	20	20	30	36	48	60	NR
Sand[1]	10	18	18	18	24	24	36	36	48
Snow									
Tamped	60	60	60	60	60	NR	NR	NR	NR
Unpacked	60	60	60	60	60	NR	NR	NR	NR

Note. [1] Double the values if material is saturated. Material thickness is in inches.

HE	high explosives	mm	millimeter
lb	pound		

CONCEALMENT

L-11. Camouflage and concealment are essential parts of tactical operations. Integrate them into mission variable analyses for consideration during the IPB process at all echelons. Camouflage and concealment are primary considerations when planning for survivability. The skillful use of camouflage and concealment techniques is necessary if a unit is to conceal itself and survive. A general knowledge of camouflage and concealment methods and techniques also allows friendly troops to better recognize camouflage and concealment when the enemy uses them. Table L-6 lists the five general techniques of employing camouflage and concealment—hiding, blending, disguising, disrupting, and decoying.

Table L-6. Camouflage and concealment techniques

Techniques	*Sensor systems*		
	Optical	*Thermal*	*Radar*
Hiding	Earth cover Earth embankments Vegetation ULCANS Screens Obscurants	Earth cover Earth embankments Vegetation ULCANS Screens Obscurants	Chaff Earth cover Earth embankments Vegetation Nets Radar-absorbing material ULCANS
Blending	Paint foam Lights Vegetation ULCANS Textured mats	Thermal pain foam Air conditioning/heating Vegetation ULCANS Textured mats Water Insulation	Vegetation ULCANS Radar-absorbing material Reshaping Textured mats
Disguising	Reshaping Paint ULCANS	Reshaping Paint	Corner reflectors
Disrupting	Camouflage sails False operating surface Pyrotechnics Smudge pots Balloons Strobe lights Tracer simulators Obscurants	Flares Obscurants	Chaff Corner reflectors
Decoying	Decoy target (pneumatic or rigid structures) Lights Obscurants	Decoy target Flares Air conditioning/heating obscurants	Decoy target Corner reflectors Signal generators

ULCANS Ultra Lightweight Camouflage Net System

VEHICLE FIGHTING POSITIONS

L-12. Vehicle fighting positions include fighting and protective positions for major weapons systems vehicles and their support equipment. Initially, vehicles use the natural cover and concealment in hide positions to increase survivability. As time, assets, and the situation permit, positions are prepared using engineer support. Priority is given to those vehicles containing essential critical equipment or supplies. Drivers and crews should also use these fighting positions for individual protection.

L-13. Berms and revetments positioned at the front of or around major weapons systems provide improved protection from direct fire and from blast and fragments of indirect fire artillery, mortar, and rocket shells. At its base, a berm has a thickness of at least 8 feet. Further, the berm or revetment functions as a standoff barrier for impact-detonating, direct fire high-explosives antitank (HEAT), and antitank guided missile projectiles. It should cause the fuses to activate, thereby increasing survivability for the protected vehicles. If the expected enemy uses kinetic energy direct fire armor piercing or hypervelocity projectiles, it is impossible to construct berms thick enough for protection. To protect against these projectiles, prepare deep-cut, hull defilade, or turret defilade positions. Construct fighting and protective positions that are no larger than operationally necessary.

L-14. Success on the battlefield requires maneuver between hide and fighting positions when the main gun is not engaging enemy targets. The maximum use of wadis or draws, reversed slope hills, and natural concealment is required to conceal fighting vehicles maneuvering among fighting positions. When a major weapon system fires its main gun, the vehicle and gun may make a concealed maneuver to another position before firing again. If the major weapon system immediately reappears in the old position, the enemy will know where to fire the next round. Table L-7 provides a summary of the dimensions of the hasty and deliberate vehicle positions previously discussed (see the respective vehicle operator manuals for more detailed vehicle dimensions). It also contains construction planning factors for vehicle fighting positions.

Table L-7. Dimensions of vehicle positions

Vehicle types		*Position dimension (feet)[2]*			*Equipment team hours[4, 6]*	*Equipment hours[4, 6] D6K*	*Minimum berm thickness at base (feet)[5]*
		Length	*Width*	*Depth[3]*	*D7 Dozer/M9 ACE/MCT*		
Hasty[1]	Stryker vehicle (all variants) with slat armor	32	19	9	1.6	2.2	8
	M113 series carrier	22	14	6	0.6	0.8	8
	M577 CP vehicle	22	14	9	0.8	1.3	8
	M106 and M125 mortar carrier	22	16	7	0.7	1.1	8
	AAV with armor kit	33	19	11	2.0	3.1	8
	LAV with armor kit	27	15	9	1.7	2.6	8
Deliberate	Hull defilade						
	M113 series carrier	22	14	6	0.6	0.8	NA
	M477 CP vehicle	22	14	9	0.8	1.3	NA
	M106 and M125 mortar carrier	22	16	7	0.7	1.1	NA
	M2 and M3 fighting vehicle	26	16	7	0.8	1.2	NA
	M1 main battle tank	32	18	5.5	0.9	1.1	NA
	AAV with armor kit	33	19	11	2.0	3.1	NA
	LAV with armor kit	27	15	9	1.7	2.6	NA
	Access route	Each access route between positions or hide locations must have the same width as the hull defilade. Clearing times are planned using TM 3-34.85/MCRP 3-17A. Production time is determined by calculating the volume of soil needed to be moved (in cubic yards) and dividing by 100 bank cubic yards per 0.75 hour.					
	Hide location	Hide locations are made using natural terrain and concealment. Ground clearing times are planned with the use of TM 3-34.85/MCRP 3-17A. The minimum width of the hide location is the same as the deliberate hull defilade. The hide position depth requirement is calculated by increasing the depth given in the deliberate turret defilade position by 15 percent.					
	Turret defilade						
	Stryker vehicle (all variants) with slat armor	32	19	9	1.6	2.3	NA
	M113 series carrier	22	14	7.5	0.7	1.0	NA
	M2 and M3 fighting vehicle	26	16	10	1.2	1.9	NA
	M1 main battle tank	32	18	9	1.5	2.1	NA
	AAV with armor kit	33	19	13	2.3	3.8	NA
	LAV with armor kit	27	15	12	2.3	4.0	NA

Table L-7. Dimensions of vehicle positions *(continued)*

Note.
[1] Hasty positions for tanks and infantry fighting vehicles not recommended.
[2] Position dimensions provide an approximate 3-foot clearance around the vehicle for movement and maintenance and do not include access ramps.
[3] Total depth includes berm height. Depths are approximate and need adjustment for surrounding terrain and fields of fire.
[4] This column provides rules of thumb, which are useful (in the absence of actual production rate data) as a starting point to estimate the time required to prepare fighting positions. These equipment hours are based on a production rate of 100 bank cubic yards per 0.75 hour. Divide construction time by 0.85 for rocky or hard soil or closed hatch operations (M9). The use of natural terrain features reduces construction time. (See TM 3-34.62/MCRP 3-17.71 for more information about estimating production rates.)
[5] Berms are not recommended for hull and turret defilade positions.
[6] Divide by 0.75 for an average operator in daylight conditions or night operations of an excellent operator. Divide by 0.56 for an average operator in night conditions. (See TM 3-34.62/MCRP 3-17.71 for additional information.)

AAV	assault amphibious vehicle	MCRP	Marine Corps reference publication
ACE	armored combat earthmover	MCT	medium crawler tractor
CP	command post	NA	not applicable
LAV	light armored vehicle	TM	technical manual

L-15. With an increase in coalition operations, U.S. forces are training and partnering with other nations. If constructing vehicle positions for coalition vehicles, conduct planning estimates by using similarly sized U.S. vehicle planning factors. The leader of the blade asset digging the fighting position verifies the position usability by having the occupying vehicle, or an identical vehicle, proof the fighting position before moving on to construct the next position. (See ATP 3-37.34 for more information about the camouflage and concealment of fighting positions.)

Hasty Positions

L-16. Hasty fighting positions for combat vehicles take advantage of natural terrain features or are prepared with a minimum of construction effort. A frontal berm, constructed as high as practical without interfering with the vehicle's weapon systems, shields from frontal attack and provides limited concealment if properly camouflaged. Protection is improved if the position is made deeper and the berm is extended around the vehicle sides. Because of the false sense of security against kinetic energy and hypervelocity projectiles provided by berms, hasty vehicle fighting positions with berms are not recommended for tanks, infantry fighting vehicles, or Stryker mobile gun systems. Hasty fighting positions do offer protection from HEAT projectiles and provide limited concealment if properly camouflaged. As the tactical situation permits, hasty positions for combat vehicles are improved to deliberate positions.

Deliberate Positions

L-17. Deliberate fighting positions are required to protect a vehicle from kinetic energy and hypervelocity projectiles. Deliberate vehicle fighting positions are holes in the ground that provide cover and concealment, reducing the target signature. The position is constructed in four parts: hull defilade, turret defilade, hide location, and concealed access ramp or route. Positions formed by natural terrain are best because of easy modification; however, if preparation is necessary, extensive engineer support is required. Each position is camouflaged with natural vegetation or a camouflage net, and the spoil is flattened out or hauled away. Fighting positions for fighting vehicles (tanks, infantry fighting vehicles, and Stryker mobile gun systems) are planned as deliberate positions. The maneuver commander directs engineer earthmoving assets to construct the following types of fighting positions:

- **Hull defilade.** This position leaves the vehicle turret above ground, allowing for the observation and engagement of targets. (See figure L-1 on page L-10.)
- **Turret defilade.** The entire vehicle is below ground level. A hull defilade position is required in front of the vehicle to allow it to move forward and elevate in the position to engage targets.
- **Hide location.** The hide location allows the vehicle to be concealed away from the fighting position and includes overhead concealment, when possible. (See figure L-1 on page L-10.)
- **Concealed access ramp or route.** A concealed route (natural or constructed) allows the vehicle to move from its hide position to its fighting positions.

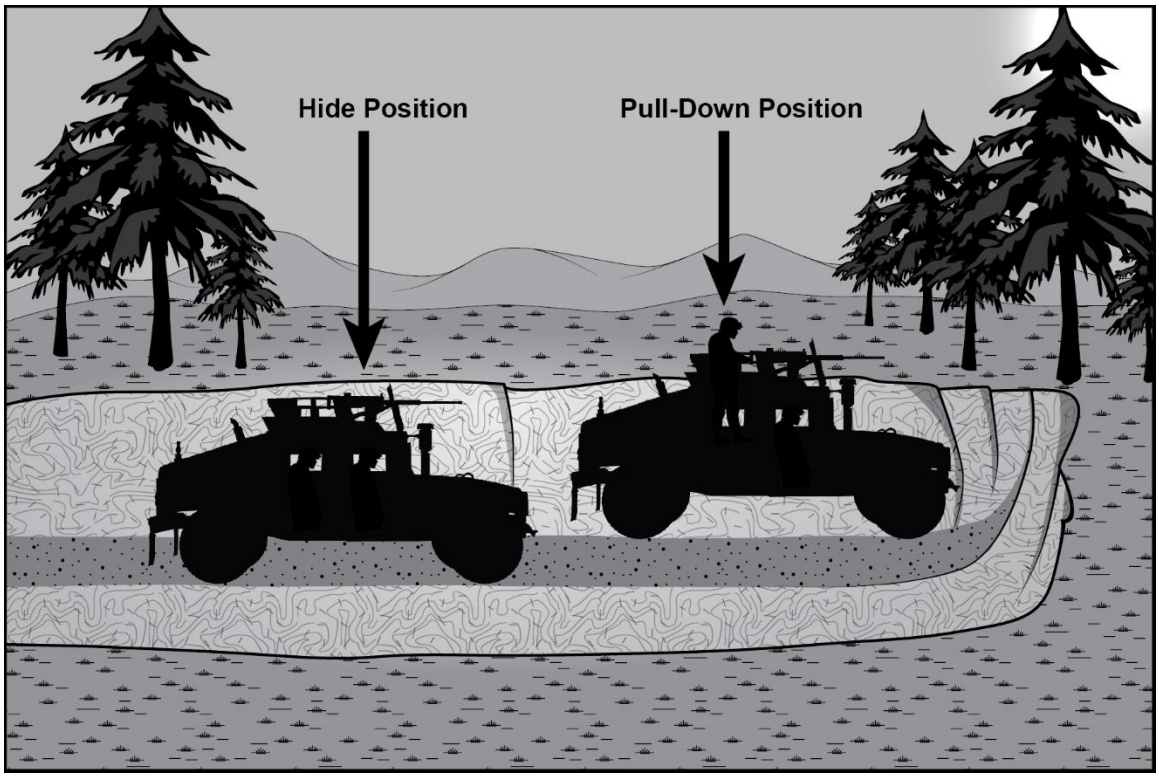


Figure L-1. Hide position/hull defilade position

L-18. When developing deliberate positions, the construction of hide locations and a concealed route between positions is only carried out when time and engineer assets are available. When limited time is available, engineer assets should be prioritized to concentrate on hull and turret defilade positions. Once the commander's priorities are complete, hide positions and concealed routes can begin. The ramps and concealed routes should require only partial clearing and leveling with engineer equipment because natural concealed routes and hide positions are used. In terrain where natural concealed routes and hide positions are not available, commanders must consider employing organic obscuration equipment when vehicles are occupying primary fighting positions or repositioning. Artillery or mortar-delivered smoke and smoke generators may provide this obscuration. The use of smoke may be a double-edged sword because it alerts the enemy to activity that may be occurring.

L-19. The terrain, the type of soil, and the water table influence the construction of vehicle fighting positions. In many cases, the depth of soil to bedrock or to the water table prevents or hinders the construction of positions. This concern may impact a specific vehicle position or an entire unit battle position. Commanders must sometimes consider the competing requirements of vehicle positions against the ability to excavate the desired fighting positions. For units remaining in place for extended periods of time, measures must be taken to prevent or mitigate erosion and drainage problems.

CAMOUFLAGE

L-20. Other camouflage considerations include the Ultra Lightweight Camouflage Net System (ULCANS), individual camouflage and concealment, standard camouflage materials, and the camouflage of medical facilities. See TM 3-34.85/MCRP 3-17A, TM 5-1080-200-13&P, and TM 5-1080-250-12&P for more information on camouflage—

- Characteristics and capabilities.
- Erecting procedures.
- Maintenance.

- Procedures for determining the number of modules needed for camouflaging a given area.
- Common vehicle dimensions.

Ultra Lightweight Camouflage Net System

L-21. The ULCANS is a modular system that consists of a hexagonal screen, a rhombic-shaped screen, a screen carrying case, and a repair kit. (See figure L-2 on page L-12.) The ULCANS support system consists of a carrying case, a stake bag, anchor stakes, support poles, and shape disrupters. Any number of screens can be joined to cover a designated target or area.

L-22. The ULCANS protects targets in four different ways. It—

- Casts patterned shadows that break up the characteristic outlines of a target.
- Scatters radar returns (except when radar-transparent nets are used).
- Traps target heat and allows it to disperse.
- Simulates color and shadow patterns that are commonly found in a particular region.

Note. The section on standard camouflage materials includes ordering information for ULCANS.

Supplemental Camouflage

L-23. ULCANS are often employed in conjunction with supplemental camouflage because nets alone do not make assets invisible to threat multispectral sensors. Use other camouflage and concealment techniques to achieve effective concealment. Cover or remove reflective surfaces (mirrors, windshields, lights). Also ensure that the target shadow is disrupted or disguised. Use native vegetation because placing a target in dense foliage provides natural concealment and a smoother transition between the edges of the camouflage net and the target background. Cover exposed edges of the net with dirt or cut vegetation to enhance the transition.

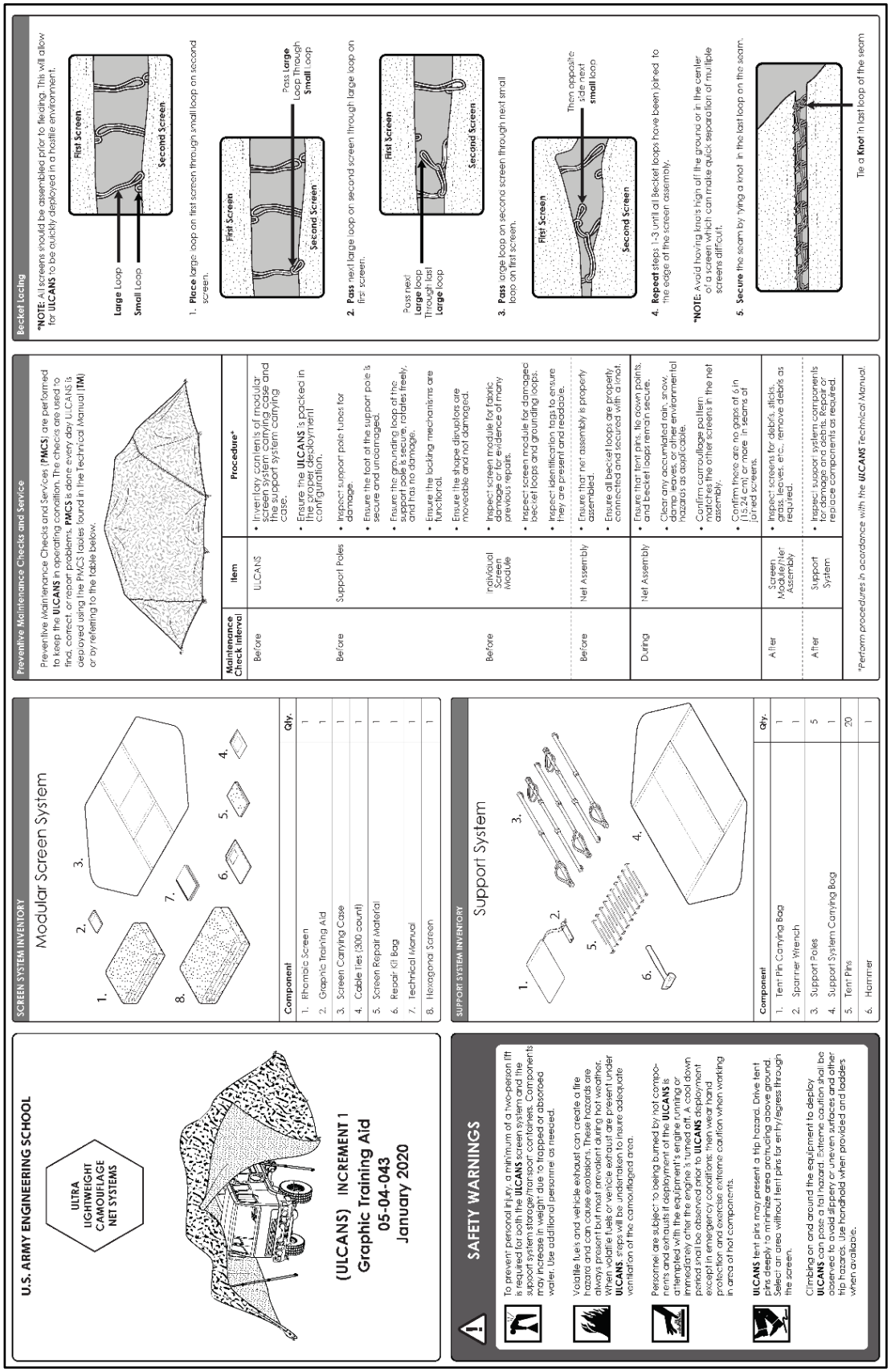


Figure L-2. Ultra Lightweight Camouflage Net System (GTA 05-04-043)

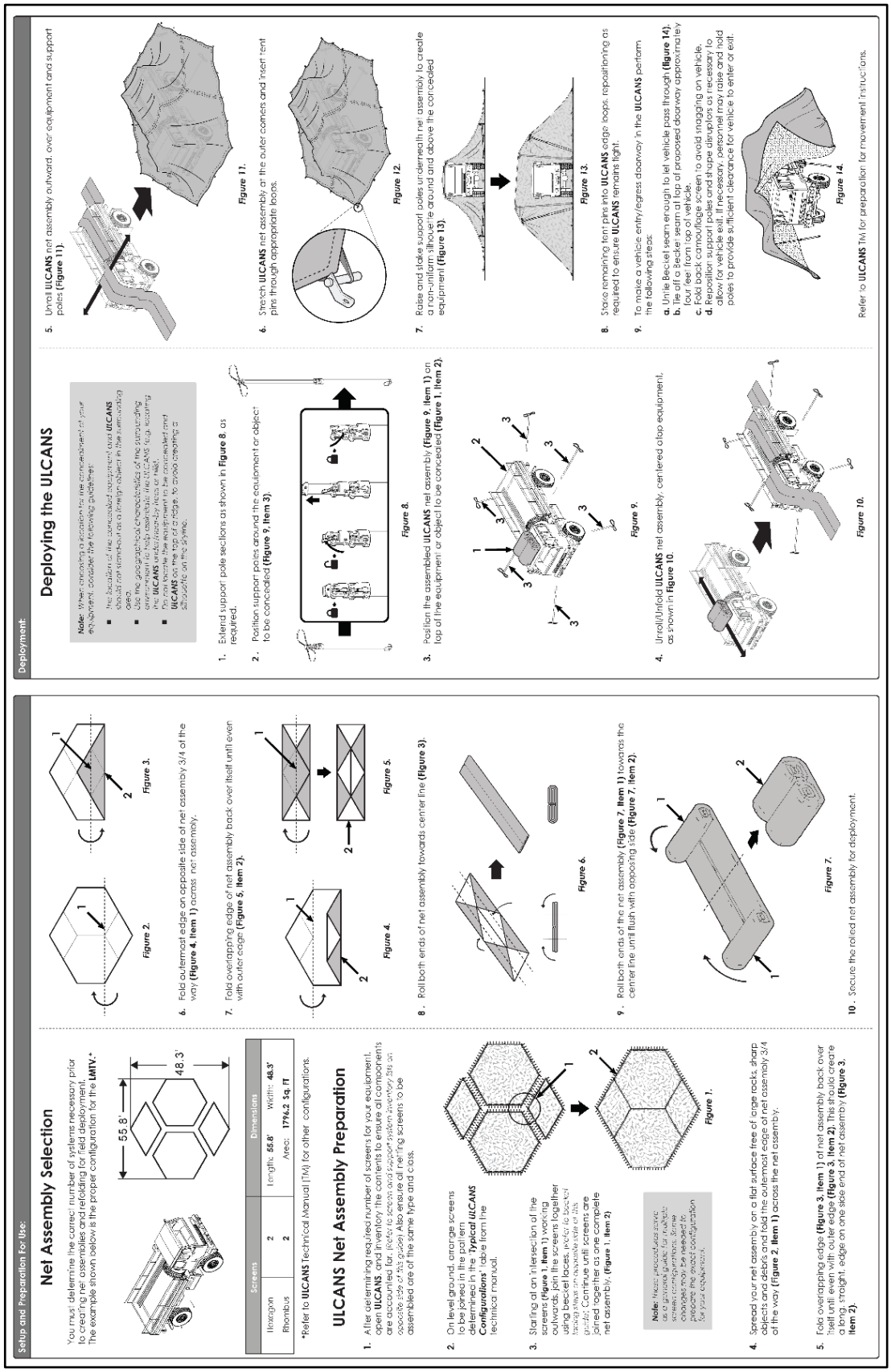


Figure L-2. Ultra Lightweight Camouflage Net System (GTA 05-04-043) (*continued*)

This page intentionally left blank.

Appendix M
Reporting

OVERVIEW

M-1. Commanders at all echelons require effective and accurate communication in order to remain situationally aware of their formations and make informed decisions FM 6-99 is the Army's doctrinal library for report and message voice templates. It aims to prevent units from wasting time and resources developing internal formats or SOPs. This section guides users into finding the most common formats, by providing an introduction and uses for each. During large-scale combat operations or time sensitive operations, echelons must share information accurately and fast. Targeting opportunity windows could close as analyst or operators scramble to understand unfamiliar formats.

REPORT AND MESSAGE FORMATS

M-2. The report and message formats in FM 6-99 help users prepare and transmit reports. Each format provides an organized template to record, pass, and store information. To send a formatted voice message, operators fill in the appropriate blanks on the required message template and read the message over the radio, telephone or electronic mail. The receiver knows the received message type and can easily record/report the information into the proper format or system.

M-3. FM 6-99 enables standardization of battlefield reporting across all levels of command and throughout different types of units. Every format listed in FM 6-99 operates as a voice message format. Standardized voice formats permit all units to exchange information regardless of the unit's level of communication infrastructure. Future digital formats will evolve from those found in FM 6-99.

INTELLIGENCE AND INFORMATION REPORTS

M-4. Intelligence and information reports include but are not limited to—

- Intelligence report.
- Intelligence information report.
- Intelligence summary.
- Spot report.

INTELLIGENCE REPORT

M-5. The intelligence report is used for the exchange of information obtained through tactical collection efforts. (See ADP 2-0, ATP 2-01, ATP 2-22.4, and FM 2-0.) An intelligence report normally includes the following (FM 6-99 provides a report format):

- Date and time—DTG.
- Unit—unit making the report.
- Size—enemy strength, size, or number.
- Activity—enemy activity description, including direction and speed if moving.
- Location—universal transverse mercator (UTM) or six-digit grid coordinate with a military grid reference system (MGRS) grid-zone designator.
- Unit—enemy nationality, unit designator, name, or type.
- Time—DTG of activity.
- Equipment—major enemy equipment.
- Sources—reliability rating of source and credibility rating of information.

- Evaluation—evaluation of source, information, and BDA.
- Conclusion—reporter's analysis of what the reported information means.
- Narrative—free text for additional information required for report clarification.
- Authentication—report authentication.

INTELLIGENCE INFORMATION REPORT

M-6. The intelligence information report is the principal report generated by MI professionals. The intelligence information report is used to report all intelligence information in response to collection requirements. It is used to expand on information previously reported by spot reports or to report information that is either too extensive or not critical enough for spot reporting. Intelligence information reports are written at any echelon and released by the appropriate authority before they are broadly disseminated. Normally the G-2X will be the releasing authority for intelligence information reports. (See DHE-M 3301.001 for more on the intelligence information reports and formats.)

INTELLIGENCE SUMMARY

M-7. The intelligence summary is used to summarize significant enemy activities, report analysis of the current situation, and assess probable enemy COAs in an AO. An intelligence summary normally includes the following (FM 6-99 provides a summary format):

- Date and time—DTG.
- Unit—unit making the report.
- Situation—general enemy situation since last report (deep, close, rear, adjacent units).
- Enemy front line trace—current enemy front line trace.
- Enemy unit size—enemy ground maneuver unit location (grid), activity, and status by echelon or size (strength).
- Enemy artillery—enemy artillery activity and estimated strength.
- Enemy CBRN—enemy CBRN activity type and location.
- Enemy air—enemy air and air activity.
- Enemy engineer—enemy engineer activity.
- Rear area threat—enemy rear area threat.
- Enemy's estimated COA—enemy's most probable COA.
- PIR—current PIR in order of priority and phase of operations.
- Enemy combat support—location and activity of enemy combat support units.
- Enemy combat service support—location and activity of enemy combat service support units.
- Vulnerabilities—analysis of enemy's current or emerging vulnerabilities.
- Weather and terrain—analysis of effects of weather and terrain.
- Enemy BDA—summary of enemy BDA during period.
- Narrative—free text for additional information required for report clarification.
- Authentication—report authentication.

SPOT REPORT

M-8. A *spot report* is a concise narrative report of essential information covering events or conditions that may have an immediate and significant effect on current planning and operations that is afforded the most expeditious means of transmission consistent with requisite security (JP 3-09.3). Spot reports are used to report time-sensitive information including force protection and warning intelligence to the chain of command. While unit SOPs may provide written formats, spot reports should be reported by the most expeditious means possible, usually by voice first and then in a follow-up written report. Spot reports are reported simultaneously through command, protected, and intelligence reporting channels. Spot reports are generated and disseminated to the appropriate commanders as rapidly as possible and followed up with intelligence information reports as appropriate. Given the wide variety of uses and service formats for spot

reports, there is no established DOD-wide format; however, they follow the standard Army size, activity, location, unit, time, and equipment (also called SALUTE) format (see FM 6-99):

- Date and time—DTG.
- Unit—unit making the report.
- Size—size of detected element.
- Activity—detected element activity at DTG or report.
- Location—UTM or grid coordinate with an MGRS grid-zone designator of detected element activity or event.
- Unit—detected element unit, organization, or facility.
- Time—DTG of observation.
- Equipment—equipment of element observed.
- Assessment—apparent reason or purpose of the activity observed.
- Narrative—free text for additional information required for report clarification.
- Authentication—report authentication.

ADMINISTRATIVE REPORTS

M-9. Administrative reports include but are not limited to—

- Accident report/Serious incident report.
- Commander's situation report.
- Casualty summary.
- MEDEVAC request.

ACCIDENT REPORT/SERIOUS INCIDENT REPORT

M-10. An accident/serious incident report is used to convey flash traffic to the commander and CPs relating to an accident or serious incident within the command. (See AR 190-45.) This report normally includes the following (FM 6-99 provides a report format):

- Date and time—DTG of report.
- Unit—unit making the report.
- Category—category 1 or 2.
- Type—type of incident.
- Time of incident—DTG of incident.
- Weekend/Holiday—yes or no and include holiday name.
- Location—UTM or six-digit grid coordinate with an MGRS grid-zone designator.
- Personnel—personnel involved (include both the subject and victim's name, injury, fatality; pay grade; social security number; race; gender; age; position (commander, platoon sergeant, gunner); security clearance; unit, station, and Army command assigned; duty status (leave).
- Summary—summary of incident.
- Publicity—adverse or anticipated publicity.
- Commander—commander reporting.
- Point of contact—unit point of contact and duty station.
- Downgrade—downgrading instructions.
- Narrative—free text for additional information required for report clarification.
- Authentication—report authentication.
- Accident supplement (ground/aircraft):
  - Point of contact—email, phone, Defense Switched Network (also called DSN).
  - Army command.
  - Accident class—ground or aircraft.
  - Weather—visibility, light level, precipitation, wind.

- Night vision device—yes (type and nomenclature) or no.
- Military installation—nearest site.
- Explosive, hazardous material—involved: yes or not, secured: yes or no.
- Accident site secured according to AR 385-10—yes or no.
- Accident site disturbed—yes or no.
- Photos of disturbing scene—yes or no.
- Flight data recorder installed—yes or no.
- Local accident investigation board appointment—yes or no.
- Nearest airfield—4000 feet minimum runway.
- Nearest commercial airfield—name, town, state.
- Type of equipment—equipment involved.
- Aircraft serial number—serial, tail number.
- Type of mission—training, service.
- Nap-of-the-Earth (also called NOE)—yes or no.
- Flight rules—instrument flight rules and visual flight rules.

COMMANDER'S SITUATION REPORT

M-11. A commander's situation report is used to report on an event to higher headquarters, providing commanders and their staffs with sufficient information for the receiving mission command facility to act on the report. (See FM 3-96.) This report normally includes the following (FM 6-99 provides a report format):

- Date and time—DTG.
- Unit—unit making the report.
- Reported unit—unit identification code of the reported unit.
- Home location—UTM or six-digit grid coordinate with an MGRS grid-zone designator for the home location of the reported unit.
- Present location—UTM or six-digit grid coordinate with an MGRS grid-zone designator for the present location of the reported unit.
- Activity—brief description of reported unit's current activity.
- Effective—commander's evaluation of the reported unit's combat effectiveness.
- Own situation disposition/status—summary updating changes to or not previously reported major combatant and support force locations, significant mission readiness degradation on units, current deployments, proposed deployments, changes in task-force designations, organization or change of OPCON procedures, and projected requirements for additional forces.
- Situation overview—brief overall assessment of the situation, including circumstances or conditions that increase or materially detract from the capability and readiness of forces assigned or under OPCON of the command or Service.
- Operations—brief description and results of offensive and defensive operations carried out by major combatant elements during the period of the report; information on allied forces' operations, summary of plans for combat operations during the next 24 hours, including objectives and probable enemy reaction; deviations or variations from previously reported intentions or plans.
- Intelligence/Reconnaissance—brief overview of the situation, including operations, threat characteristics, capabilities, and threat changes; reference: any significant signification spot or intelligence reports submitted in the previous 24 hours.
- Logistics—significant deficiencies affecting support for planned operations or problem areas beyond the commander or Service's capability to timely overcome or alleviate.
- Communications/Connectivity—significant outages, traffic volume, incompatibilities, and quantitative equipment deficiencies; assessment of the mission impact caused by communications outages and degradations.

- Personnel—factors affecting force or unit readiness; mobilization status; daily battle casualties aggregated by service and impact of all casualties sustained (battle/nonbattle, critical skills, key personnel on the commands' mission capability).
- Political/Military/Diplomatic events—events not reported that could result in U.S., local, and international public reaction; results or decisions of key allied or other foreign government meetings; civil unrest indications of civil defense measures contemplated or implemented; large-scale military exercises; events emphasizing interests of key segments of the society.
- Commander's evaluation—summary of key points from the situation overview through political/military/diplomatic events, highlighting areas requiring Joint Chiefs of Staff and national command authority actions or decisions; continuity of operations implementation intentions on execution.
- Narrative—free text for additional information required for report clarification.
- Authentication—report authentication.

CASUALTY REPORT

M-12. A casualty report is used to report casualty information. (See FM 1-0.) This report normally includes the following (FM 6-99 provides a report format):

- Date and time—DTG.
- Unit—unit making the report.
- Location—UTM or six-digit grid coordinate with an MGRS grid-zone designator.
- Casualty type—designated by letter:
  - A = KIA, hostile action.
  - B = KIA, nonhostile action.
  - C = body recovered.
  - D = body nonrecovered.
  - E = body identified.
  - F = body not identified.
  - G = missing in action.
  - H = captured.
  - I = WIA, slight hostile action.
  - J = WIA, serious hostile action.
  - K = WIA, slight nonhostile action.
  - L = WIA, serious nonhostile action.
  - M = accident.
- Status—status of evacuation and location to which casualty was evacuated.
- Narrative—free text for additional information required for report clarification.
- Authentication—report authentication.

MEDICAL EVACUATION REQUEST

M-13. A MEDEVAC request is used it to request evacuation of sick and wounded personnel by other than USAF fixed-wing assets. (See ATP 4-02.2.) This request normally includes the following (FM 6-99 provides a request format):

- Location—UTM or six-digit grid coordinate with an MGRS grid-zone designator of pickup site location.
- Radio frequency and call sign—radio frequency at call site; call sign and suffix.
- Number of patients—number of patients by precedence:
  - A = urgent.
  - B = urgent-surg.
  - C = priority.
  - D = routine.
  - E = convenience.
- Special equipment—UTM or six-digit grid coordinate with an MGRS grid-zone designator of pickup site location:
  - A = none.
  - B = hoist.
  - C = extraction equipment.
- Number of patients—total number of patients by type:
  - L+ number of patients = litter.
  - A+ number of patients = ambulatory.

- Security of pickup site—wartime:
  - N = number of enemy troops in area.
  - P = possibly enemy troops in area (approach with caution).
  - X = enemy troops in area (armed escort required).
  - E = enemy troops in area (approach with caution).
- Type of wound, injury, or illness—peacetime: specific information regarding patient wounds by type.
- Method of marking at pickup zone:
  - A = panels.
  - B = pyrotechnic signal.
  - C = smoke signal.
  - D = none.
  - E = other.
- Patient nationality:
  - A = U.S. or coalition military.
  - B = U.S. or coalition civilian.
  - C = non-U.S. or coalition military.
  - D = non-U.S. or coalition civilian.
- CBRN contamination—wartime:
  - C = chemical.
  - B = biological.
  - R = radiological.
  - N = nuclear.
  - U = unknown.
  - A = all clear.
- Terrain description—peacetime: description of terrain features at the proposed pickup site.
- Authentication—report authentication.

OPERATIONAL REPORTS

M-14. Operational reports include but are not limited to—

- Operations report.
- OPORD.
- Operations summary.
- FRAGORD.

OPERATION REPORT

M-15. An operation report is used to report operational situations, problems, recommended or intended COAs, and other items not reported elsewhere. (See ADP 5-0, ATP 5-0.1, and FM 71-100.) This report normally includes the following (FM 6-99 provides a request format):

- Date and time—DTG.
- Unit—unit making the report.
- CP—CP or landing zone locations for main CP and tactical CP.
- Forward line of own troops (also called FLOT)—for at least three grids.
- Forward edge of the battle area (also called FEBA)—for at least three grids.
- Operations summary—brief summary of reporting unit's activity and task organization.
- Enemy—enemy activity in reporting unit's AOI and AO.
- Unit status—unit statistics:
  - Personnel—statistics.
  - Equipment—statistics.
  - Class of supply—supply statistics.
- Evaluation—reporting commander's overall evaluation, including the mission and the commander's overall evaluation of reporting unit's ability to accomplish its mission.
- Narrative—free text for additional information required for report clarification.
- Authentication—report authentication.

OPERATION ORDER

M-16. An OPORD is used to transmit the standard five-paragraph OPORD and OPLAN that provide plans, instructions, and directives to subordinate and supporting military organizations. (See ADP 5-0 and ATP 5-0.1.) The OPORD normally includes the following (FM 6-99 provides a request format):

- Date and time—DTG.
- Unit—unit making the report.
- OPORD/OPLAN number.
- References.
- Time zone—time zone used in OPORD/OPLAN.
- Task organization—of unit.
- Situation:
  - AOI.
  - AO—terrain and weather (aspects that affect operations).
  - Enemy forces.
  - Friendly forces:
    - Higher headquarters two levels up (mission and commander's intent).
    - Higher headquarters: mission, commander's intent, and missions of adjacent units.
  - Interagency, intergovernmental, and nongovernmental organizations—goals or tasks of non-DOD organizations.
  - Civil considerations—aspects that affect operations.
  - Attachments and detachments—units attached or detached.
  - Assumptions—assumptions used in OPORD/OPLAN.
- Mission.
- Execution:
  - Commander's intent.
  - CONOPS.
  - Scheme of movement and maneuver—employment of maneuver units:
    - Scheme of mobility/countermobility.
    - Scheme of battlefield obscuration.
    - Scheme of intelligence collection.
  - Scheme of intelligence, fires, protection.
  - Scheme of stability operations.
  - Assessment—assessment priorities and measures of effectiveness.
  - Tasks assigned to subordinate units.
  - Coordinating instructions:
    - Time or condition OPORD/OPLAN becomes effective.
    - CCIRs and essential elements of friendly information.
    - Fire support coordination or control measures.
    - Airspace coordination or control measures.
    - Rules of engagement.
    - Risk reduction control measures.
    - Personnel recovery coordination measures.
    - Environmental considerations.
    - Themes and messages information.
    - Other coordinating instructions.

- Sustainment:
  - Logistics.
  - Personnel.
  - Health service support.
- C2 and signal:
  - Command—location of commander, succession of command, and liaison requirements.
  - Control—CPs (location and operating times) and reports (reports not covered in SOPs).
  - Signal—concept of signal support.
- Acknowledge.
- Commander's name and rank.
- Annex A (Task Organization).
- Annex B (Intelligence).
- Annex C (Operations).
- Annex D (Fires).
- Annex E (Protection).
- Annex F (Sustainment).
- Annex G (Engineer).
- Annex H (Signal).
- Annex I (Not Used).
- Annex J (Public Affairs).
- Annex K (Civil Affairs Operations).
- Annex L (Information Collection).
- Annex M (Assessment).
- Annex N (Space Operations).
- Annex O (Not Used).
- Annex P (Host-Nation Support).
- Annex Q (Knowledge Management).
- Annex R (Reports).
- Annex S (Special Technical Operations).
- Annex T (Spare).
- Annex U (Inspector General).
- Annex V (Interagency Coordination).
- Annex W (Operational Contract Support).
- Annex X (Spare).
- Annex Y (Spare).
- Annex Z (Distribution).
- Narrative—free text for additional information required for report clarification.
- Authentication—report authentication.

OPERATIONS SUMMARY

M-17. An operations summary is used to provide a commander's summary of significant operations to higher headquarters. (See ADP 5-0, ATP 5-0.1, and FM 71-100.) The summary normally includes the following (FM 6-99 provides a request format):

- Date and time—DTG.
- Unit—unit making the report.
- Air—number of sorties tasked, flown, and successful; kills claimed.
- Ground—ground operations summarized.
- Maritime—maritime operations summarized.
- Narrative—free text for additional information required for report clarification.
- Authentication—report authentication.

FRAGMENTARY ORDER

M-18. A FRAGORD is used to send timely changes of existing orders to subordinate and supporting commanders while providing notification to higher and adjacent commands. (See ADP 5-0 and ATP 5-0.1.) The FRAGORD normally includes the following (FM 6-99 provides a request format):

- Date and time—DTG.
- Unit—unit making the report.
- FRAGORD number.
- Time zone—time zone used in FRAGORD.
- References—changes to OPORD only.
- Situation—mandatory, include changes.

- Mission—mandatory.
- Execution—changes to OPORD only:
  - Commander's intent—changes to OPORD only.
  - CONOPS—changes to OPORD only.
  - Scheme of movement and maneuver—changes to OPORD only.
  - Scheme of intelligence, fires, protection—changes to OPORD only.
  - Scheme of stability operations—changes to OPORD only.
  - Assessment—changes to OPORD only.
  - Tasks assigned to subordinate units—changes to OPORD only.
  - Coordinating instructions—changes to OPORD only.
- Sustainment—with changes.
- C2 and signal—with changes.
- Acknowledge—mandatory.
- Commander's name and rank.
- Official—optional.
- Annexes—optional.
- Distribution—optional.
- Narrative—free text for additional information required for report clarification.
- Authentication—report authentication.

This page intentionally left blank.

Appendix N

Communications

OVERVIEW

N-1. Communication is paramount, its effectiveness can change battle outcomes. Communications whether visual or sound have different methods of execution and consideration. This annex seeks to provide examples of each. Soldiers and leaders must not only become familiar with the equipment and hand but also the limitations of each. For example a technically aware leader can increase the effectiveness and range of radio equipment by increasing the height of the antenna. This appendix references TC 9-64, TC 3-21.60, and ATP 6-02.53.

TRAINING CONSIDERATIONS

N-2. Leaders at all levels must understand at minimum the operator level instructions of each piece of issued equipment and the technical limitations that could be encountered. For example, all issued equipment, radios, laptops have their own technical manuals and/or courses designed to teach users how to utilize the machines. Leaders must ensure everyone is aware of the technical aspects of the equipment as well as the hierarchy of recipients, need to receive what information when.

TRAINING CLASSIFICATION/COMMUNICATIONS SECURITY CONSIDERATIONS

N-3. Leaders should know if/when their equipment can handle sensitive information. Someone in each organizing is known as the communications security custodian, their responsibility ensures communications are encrypted correctly and equipment functionality.

RADIO PROCEDURES

N-4. To minimize confusion and ensure uniformity across Army units standard methods are used to open and close conversations. There is also the phonetic alphabet, a list of words used to identify letters in a radio or telephonic message. (See table N-1.)

Table N-1. Phonetic alphabet

Letter	*Word*	*Pronunciation*	*Letter*	*Word*	*Pronunciation*
A	Alpha	Al fah	N	November	No vem ber
B	Bravo	Brah voh	O	Oscar	Oss cah
C	Charlie	Char lee or shar lee	P	Papa	Pah pah
D	Delta	Dell tah	Q	Quebec	Keh beck
E	Echo	Ech oh	R	Romeo	Row me oh
F	Foxtrot	Foks trot	S	Sierra	See air rah
G	Golf	Golf	T	Tango	Tang go
H	Hotel	Hoh tell	U	Uniform	You nee form or oo nee form
I	India	In dee ah	V	Victor	Vic tah
J	Juliett	Jew lee ett	W	Wiskey	Wiss key
K	Kilo	Key loh	X	Xray	Ecks ray
L	Lima	Lee mah	Y	Yankee	Yang key
M	Mike	Mike	Z	Zulu	Zoo loo

N-5. Numbers are pronounced in an irregular matter in order minimize confusion. Radio operators transmit numbers digit by digit. Pronunciation of exact multiples of one thousand uses the phonetic pronunciation 'TOU-SAND' rather than three zeroes. (See table N-2.)

Table N-2. Pronunciation of numerals and exact multiples of one thousand

Numeral pronunciations		*Exact multiples of one thousand pronunciations*	
Numeral	***Pronounced***	***Numeral***	***Pronounced***
0	Ze-ro	44	Fow-er, fow-er
1	Wun	90	Nin-er, ze-ro
2	Too	136	Wun, tree, six
3	Tree	Time 1200	Wun, too, ze-ro, ze-ro
4	Fow-er	1748	Wun, sev-en, fow-er, ait
5	Fife	7000	Sev-en, tou-sand
6	Six	16000	Wun, six, tou-sand
7	Sev-en	812681	Ait, wun, too, six, ait, wun
8	Ait		
9	Nin-er		

N-6. During radio communications the Army and joint partners uses certain words or phrases to condense information. These are known as *procedure words* or *phrases* (see table N-3). (See JP 3-09.3.)

Table N-3. Procedure words or phrases

Proword	***Meaning***
Acknowledge	A directive from the originator requiring the addressee (s) to advise the originator the message is received and understood. This term is normally included in the electronic transmission of orders to ensure the receiving station or person confirms the receipt of the orders.
Break	I hereby indicated the separation of the text from other portions of the message.
Disregard this Transmission-out	This transmission is in error. Disregard it. (The proword not used to cancel any message been completely transmitted and for which receipt or acknowledgement has been received.)
I say again	I am repeating transmission or portion indicated.
More to follow	Transmitting station has additional traffic for the receiving station.
Out	This is the end of my transmission to you and no answer is required or expected. (Since OVER and OUT have opposite meanings, they never used together.)
Over	This is the end of my transmission to you, and a response is necessary. Go ahead; transmit.
Say again	Repeat all of your last transmission. (Followed by identification data means to repeat after the portion indicated.)
WILCO	I have received your signal, understand it and will comply. (To be used only by the addressee. Since the meaning of ROGER is included in that of WILCO, the two prowords are never used together)

PRELIMINARY CALL TRANSMISSION

N-7. Preliminary call transmission occurs when the sending station wishes to know if the receiving station is ready to receive a message. When communication reception is good, and contact has been continuous, a preliminary call is optional. The following is an example of a preliminary call:

- A1D, this is B6T, over.
- B6T, this is A1D, over.
- A1D, this is B6T (sends message), over.
- B6T, this is A1D, roger out.

RADIO CHECKS

N-8. Radio checks are used to ensure the communication between radios are still ongoing between all units in the area or when testing new antenna locations or positions. To minimize transmission time, use radio checks sparingly or by unit standing operating procedures. The following is an example of a radio check with the net control station (NCS):

- NET, this is NCS, radio check, over.
- NCS, this is A1D, roger out.
- NCS, this is A2D, weak readable, over (A2D is receiving the NCS's signal weak).
- NCS, this is A2E, roger out.
- NET, this is NCS, roger out.

N-9. The radio operator is essential to the success of preventive electronic protection techniques. The radio operator ensures that radio transmissions are minimized and protected; thereby preventing the enemy from intercepting and disrupting or destroying communications based on information detected in the pattern or content of transmissions.

N-10. Voice characteristics or overused phrases readily identify many radio operators. The enemy can use these distinguishing characteristics to identify a unit, even though frequencies and network call signs change periodically. Strictly adhering to the proper use of procedure words, or unit standing operating procedures helps keep operator-distinguishing characteristics to a minimum. Minimize using accents and overused phrases to a minimum. The enemy must not be able to associate a radio operator with a unit.

N-11. The enemy can gather information based on the pattern, and the content, of radio communications. Therefore, do not develop patterns through hourly radio checks, daily reports at specific times, or any other periodic transmission. Make periodic reports by alternate means of communication. Take all reasonable measures to deny information to enemy intelligence analysts.

RADIO ANTENNA CONSIDERATIONS

N-12. Leaders should become familiar with the capabilities and limitations of the equipment on hand by reading each technical manuals. Different terrain, weather and even foliage can impact equipment's reliability. All radios require antennas, and each have their particular advantages and challenges.

N-13. The transmitting antenna sends the radio signal into space toward the receiving antenna, which intercepts the signal and sends it through a transmission line to the receiver. The receiver processes the radio signal for supporting an AN/UXC-10 facsimile. Figure N-1 is an example of a typical transmitter and receiver connection.

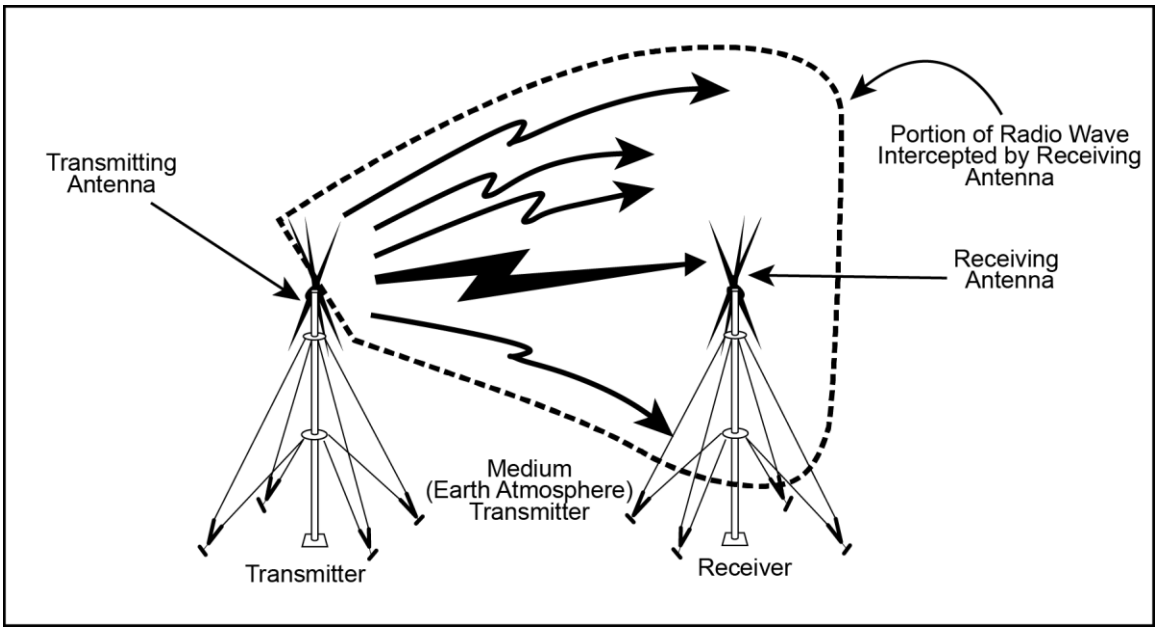


Figure N-1. Transmitter and receiver connection example

N-14. For the complete list of considerations, see ATP 6-02.53. To take advantage of high frequency radio capabilities, leaders must consider several factors, for example—

- Locate the antenna as far from the radio as practical to reduce electromagnetic interference effects between radio and antenna system.
- Place vertical antennas on higher spots if possible, to enhance ground wave communications.

FIELD REPAIRS

N-15. When military equipment brakes on field environment, is not uncommon for Soldiers to find creative means to solve the problem. Broken or damaged antennas may cause poor communications or communications failure. If a spare antenna is available, the operator should replace the damaged antenna. When a spare is not available, the user may have to construct an emergency antenna. (For a detailed guide on field or repair in antennas see ATP-6-02.53.)

Example of Whip Antenna Body Repair When Poles Brake

If a whip antenna is broken into two sections, temporarily repair the antenna by rejoining the sections. Remove the paint and clean the sections to ensure a good electrical connection. Place the sections together, secure them with a pole or branch, and lash them with bare wire or tape above and below the break (see figure N-2, antenna A).

For severely damaged whip antennas, use a length of field wire direct-1/TT the same length as the original antenna. Remove the insulation from the lower end of the field wire antenna, twist the conductors together, insert them in the antenna base connector, and secure with a wooden block. Use either a pole or a tree to support the antenna wire (see figure N-2, antenna B).

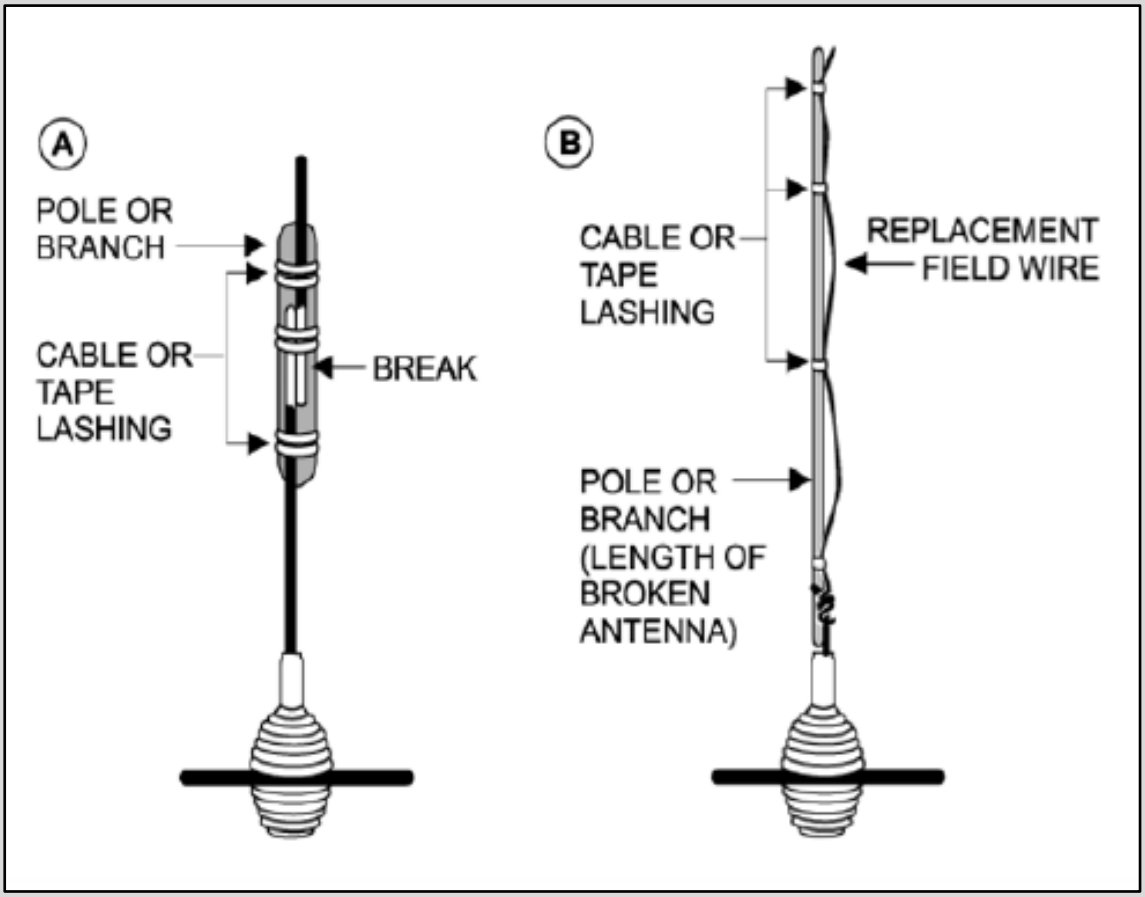


Figure N-2. Whip antenna body repair

ELECTRONIC WARFARE CONSIDERATIONS

N-16. Radios can create a significant vulnerability control of compromising emanations if proper installation guidelines not followed. Radios with embedded cryptographic devices should be installed and operate any applicable operations security doctrine for that device or radio. The countermeasure review for a facility, platform, or system may set additional countermeasure requirements for radios operating in those environments. Compliance with all TEMPEST requirements is critical for the protection of classified information. Refer to AR 380-27 for more information about control of compromising emanations. Supporting technical authorities can provide guidance on countermeasure compliance. (See ATP 6-02.53.)

VISUAL SIGNALS

N-17. The most common types of visual signals are hand-and-arm, flag, pyrotechnic, and ground-to-air signals. However, Soldiers are not limited to the types of signals discussed and may use what is available. Chemical light sticks, flashlights, and other items can be used provided their use is standardized within a unit and understood by Soldiers and units working in the area.

N-18. Visual signals have certain limitations:

- The range and reliability of visual communications are significantly reduced during periods of poor visibility and when terrain restricts observation.
- They may be misunderstood.
- They are vulnerable to enemy interception and may be used for deception purposes.

N-19. Hand to hand and arm signals could be used during dismounted or mounted operations. Leaders of dismounted units use hand and arm signals to control the movement of individuals, teams, and squads. In the examples depicted, the arrows represent the direction of movement. The movement should be repeated or exaggerated until the action is completed or it is acknowledged by recipient:

- **Disperse signal:** To signal disperse, extend either arm horizontally from the shoulder: wave the arm repeatedly to the front and to the side in a sweeping motion with the palm toward ground. (See figure N-3.)
- **Assemble signal:** To signal assemble or rally, raise the arm vertically overhead, palm to the front, and wave in large, horizontal circles. (See figure N-3.)
- **V formation signal:** To signal V formation, raise the arms and extend them 45 degrees above the horizontal. Alternately, use the nonfiring hand and point both the index and pinky finger up. All other fingers will be curled. (See figure N-3.)

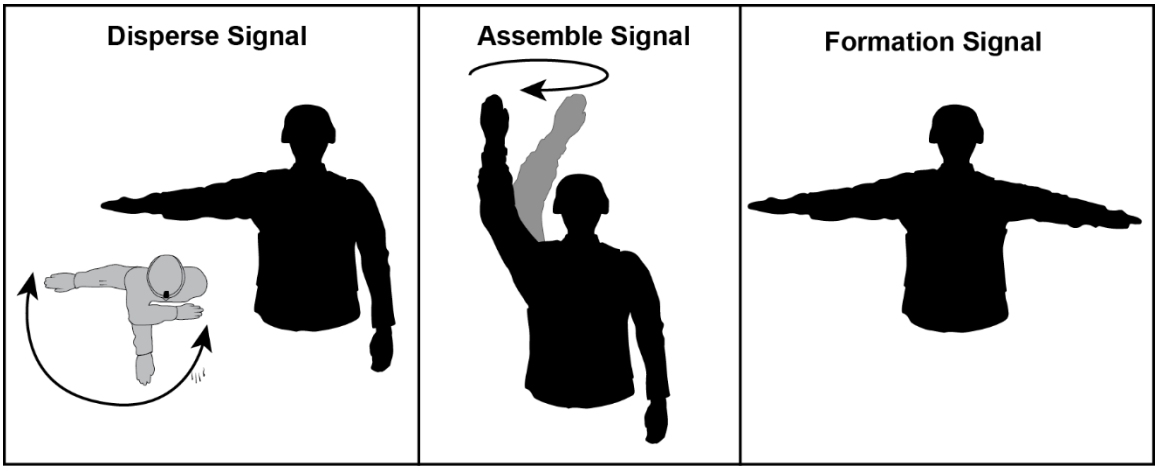


Figure N-3. Disperse, assemble, and V formation signals

N-20. Hand signals can also be used to communicate in a loud environment, for example members of crew-served weapons:

- **Enemy in sight signal.** To signal enemy in sight, hold the rifle in the ready position at shoulder level. Point the rifle in the direction of the enemy. Alternately, use the nonfiring hand, point index finger at the enemy and thumb pointing down. All other fingers will be curled. (See figure N-4.)
- **Change direction/Change elevation signal.** To signal the gunner to change direction or change elevation, the signaler will move his hand and arm in new direction and indicates the amount of change by the number of fingers shown to the gunner. Each finger shown represents a one-mil or one-meter change in direction. The signaler will extended his hand repeatedly to indicate the total amount of change. For example, the signaler represents UP EIGHT meters by moving his arm upward with five fingers showing then moving his arm upward again with three fingers showing. (See figure N-4.)
- **Cease firing signal.** To signal cease firing, raise the hand in front of the forehead, palm to the front, and swing the hand and forearm up and down several times in front of the face. (See figure N-4.)

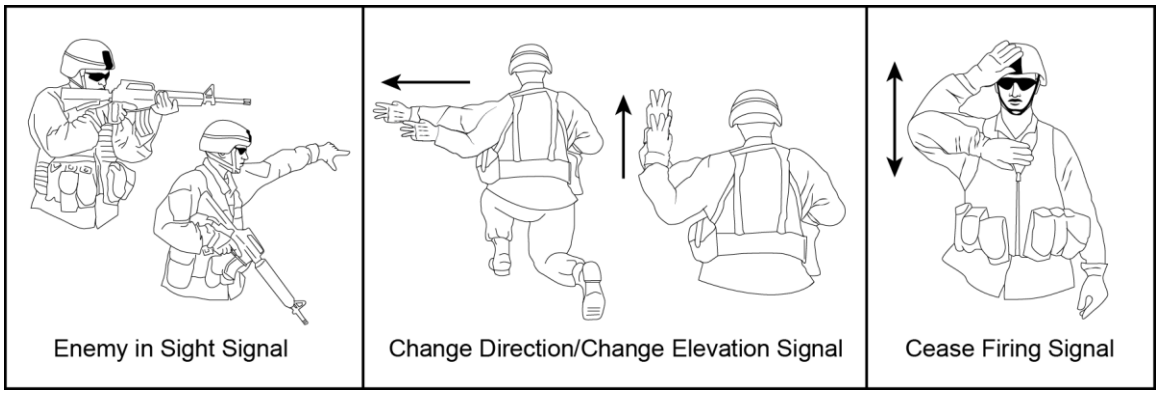


Figure N-4. Enemy in sight, change direction/change elevation, and cease firing signals

GROUND TO AIR PANELS

N-21. The panel system is a method ground troops use to communicate, to a limited degree, with aircraft by displaying panels on the ground. This panels can also be used if units are required to maintain radio silence. There are two types of panels: marking and identifying colored panels, and black and white panels for transmitting messages. The marking and identifying panels are made in fluorescent colors. The panels are used to mark positions and identify friendly units. The black and white panel sets are arranged on light or dark terrain backgrounds. They are used to transmit brief messages or to identify a unit. This is done by using the combined panel system and the panel recognition code in the unit's communications-electronics operating instructions.

N-22. Panels can be ordered through the supply system using the nomenclature *panel marker, aerial, liaison* (see figure N-5). Panels could be constructed/sourced locally but should be large enough to permit easy reading from the air. There should be as much color contrast as possible between the symbols and the background. Panels should be at least six feet long and two feet wide.

N-23. Panels are placed on a relatively flat, clear area of ground about 40 by 130 feet. This area is large enough to display messages and special signs. For message drop and pickup, the area should be clear of obstacles which could prevent aircraft from flying into the wind at reduced airspeed and low altitude.

N-24. When using the panel system, one of the panels is used as a base panel. Place the base panels first and keep them in place as long as panel signaling is in progress. The distance between panels is one panel length throughout, when space is available. Change from one panel figure to another as soon as possible by shifting, adding, or removing panels (other than the base panels). The index panel is the first removed and the last laid out when the display is changed. Remove all panels from view that are not used for a particular display.

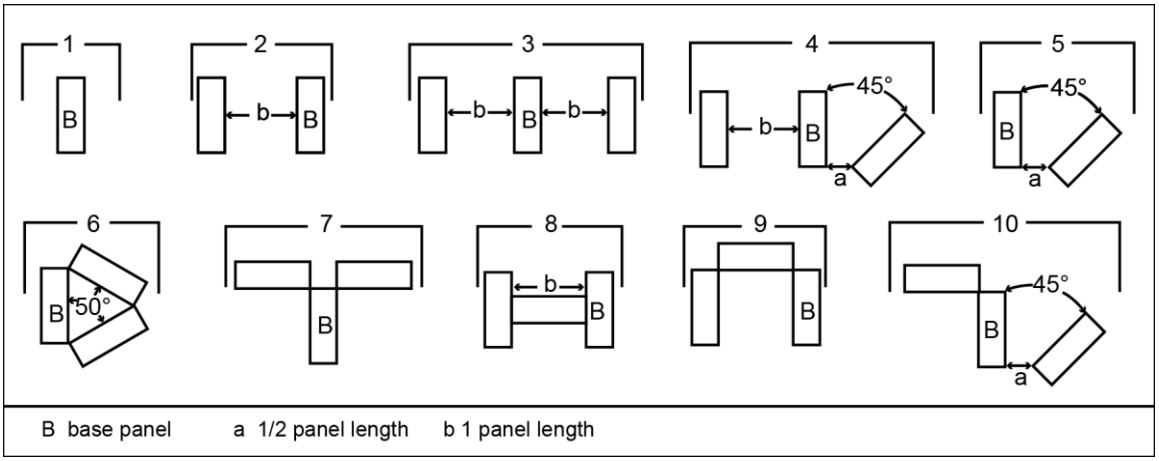


Figure N-5. NATO standard panel code figures for numbers

N-25. The unit's electronic signal operating instructions assign specific vocabulary, receipting, Acknowledging, and identification procedures. Code meanings are normally based on these instructions, with local amplification, while the numbers associated with the meanings are determined by the unit's signal operating instructions. They are changed periodically to prevent compromise.

N-26. An aircraft pilot indicates that ground signals have been understood by rocking the wings laterally, by flashing a green signal lamp, or by any prearranged signal (see figure N-6, A). The pilot indicates that ground signals are not understood by making a 360-degree turn to the right, by flashing a red signal lamp, or by any prearranged signal (see figure N-6, B). Each panel display is acknowledged. A pilot requests a unit to display an identification code by a prearranged signal. In no case does a unit display an identification code until the aircraft has been identified as friendly.

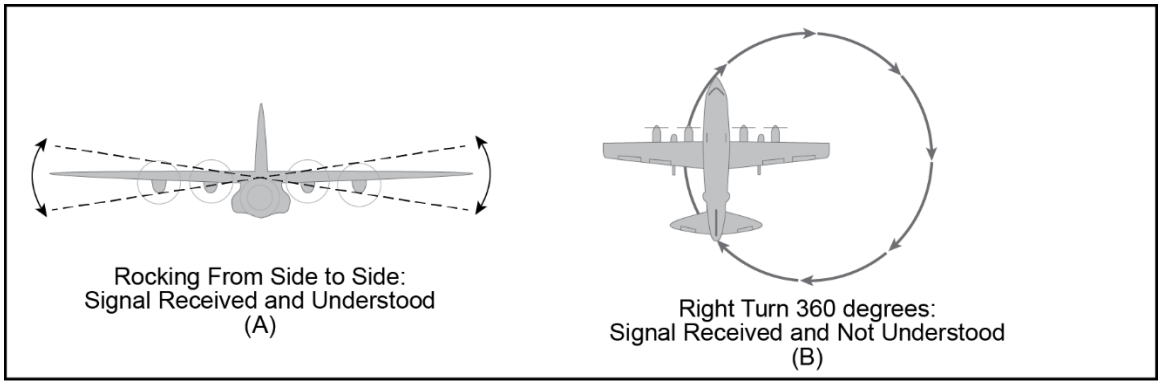


Figure N-6. Understood/Not understood ground signal examples

N-27. Figure N-7 illustrates an example of a special signal using panels. The T is used to indicate wind direction. It represents an aircraft flying into the wind. The wind-T is two panels wide and two panels long.

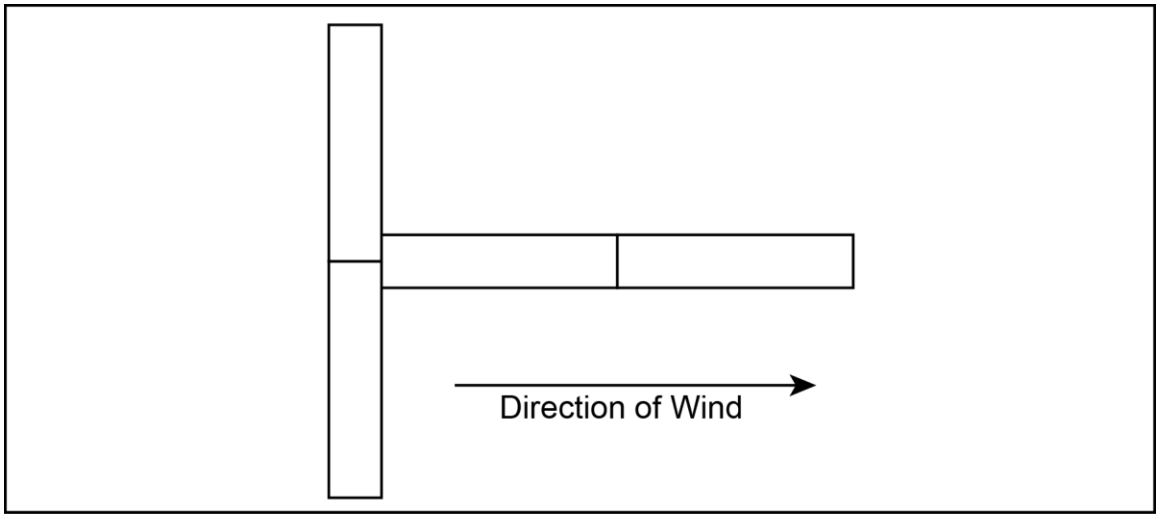


Figure N-7. Special signal using panels example

EMERGENCY CODES

N-28. The symbols for these codes may be constructed from any available material that contrasts with the background; for example, strips of parachute canopy, undershirts torn into wide strips, rocks, sticks, and foliage stripped from trees. Once laid out, these signals (codes) are semipermanent. (See figure N-8.)

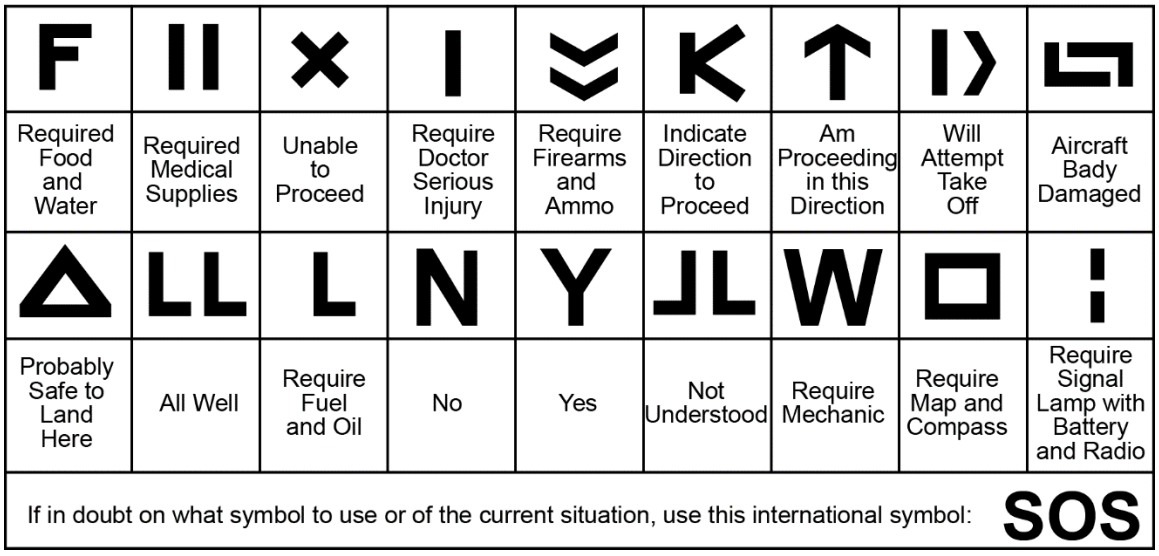


Figure N-8. Emergency code symbols

Appendix O

Land Navigation

OVERVIEW

O-1. Land navigation is a crucial to military operations. Combat operations often incorporate coordinated movements of large elements with precision timing over large areas of land. Military leaders are required to successfully maneuver their units from a staging or consolidation area over varying terrain to a defined target or location on a map. TC 3-25.26 provides a standardized source document for Army wide reference on map reading and land navigation. It applies to every Soldier in the Army regardless of service branch, MOS, or rank. However, this appendix will focus on the basic map reading and mounted land navigation.

MAPS

O-2. Today, due to the complexities of tactical operations and deployment of troops, it is essential for all Soldiers to be able to read and interpret their maps in order to move quickly and effectively on the battlefield. A map is a graphic representation of a portion of the earth's surface as seen from above. It uses colors, symbols, and labels to represent features found on the ground. The ideal representation shows the true shape of every feature in the area being mapped. To be understandable, features are represented by conventional signs and symbols. To be legible, many of these are exaggerated in size, often far beyond the actual ground limits of the feature represented.

O-3. The purpose of a map is to provide information on the existence of the location and the distance between ground features, such as populated places and routes of travel, and communication. It also indicates variations in terrain, heights of natural features, and the extent of vegetation cover. With our military forces dispersed throughout the world, it is necessary to rely on maps that provide information to our combat elements and resolve logistical operations far from our shores. Planning using maps allows units to transport, store, and place Soldiers and materiel into operation at the proper time and location. All operations require maps; however, the finest maps available are worthless unless the map user knows how to read them.

MAP SCALES

O-4. Military maps are produces by the NGA. The NGA's mission is to provide mapping, charting, and all geodesy support to the armed forces, and all other national security operations. NGA produces four categories of products and services: hydrographic, topographic, aeronautical, and digital. Military maps are categorized by scale and type. NGA maps are classified by scale into three categories: small, medium, and large scale maps. (See figure O-1 on page O-2.) The scale terms are confusing. The term small scale represents the largest land area; whereas, large scale represents the smallest. Each scaled map serves a different function in military operations:

- **Small.** Maps with scales of 1:1,000,000 and smaller are used for general planning and for strategic studies (bottom map in figure O-1). The standard small-scale map is 1:1,000,000. This map covers a large land area at the expense of detail.
- **Medium.** Maps with scales between 1:1,000,000 and 1:75,000 are used for operational planning (center map in figure O-1). They contain a moderate amount of detail, but terrain analysis is best done with the large-scale maps. The standard medium-scale map is 1:250,000. Medium-scale maps of 1:100,000 are encountered frequently.
- **Large.** Maps with scales of 1:75,000 and larger are used for tactical, administrative, and logistical planning (top map in figure O-1). These are the maps a Soldier or junior leader are most likely to encounter. The standard large-scale map is 1:50,000; however, many areas have been mapped at a scale of 1:25,000.

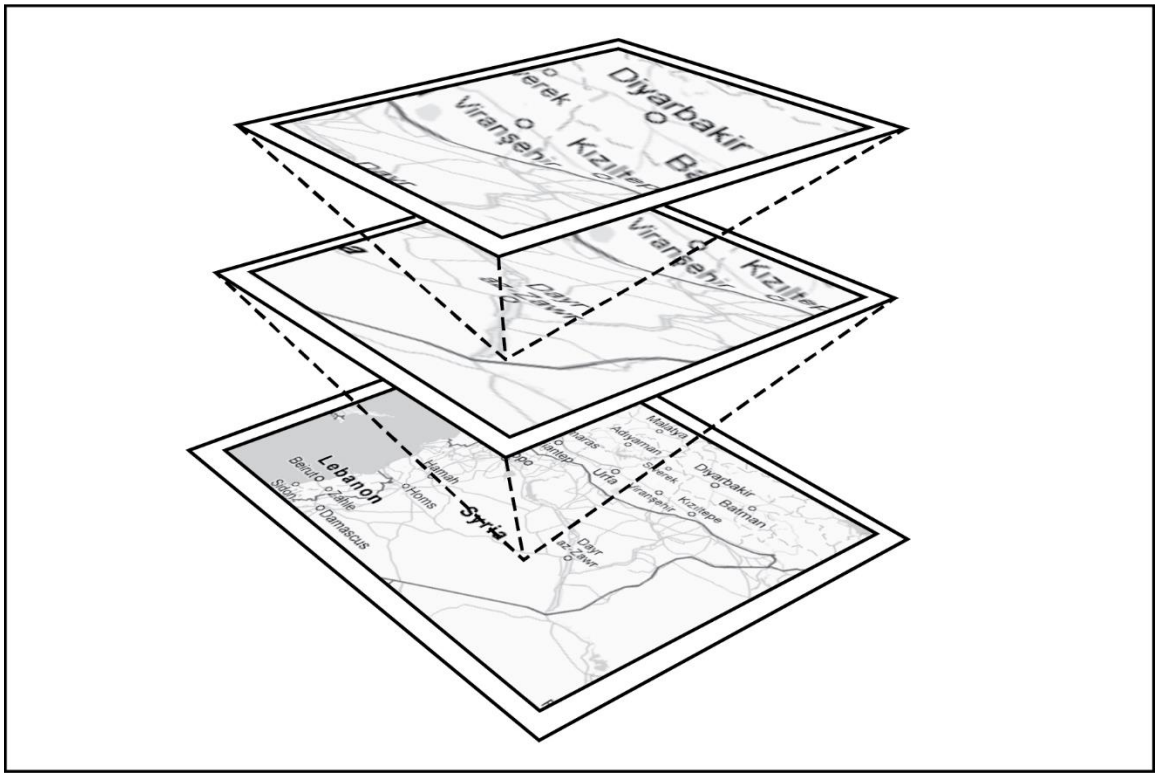


Figure O-1. Scale classifications

MAP TYPES

O-5. The map of choice for land navigators is the 1:50,000-scale military topographic map. When operating in foreign places, some NGA map products may not cover a particular AO due to a lack of production, or may not be available to a unit when required. Therefore, units may find it necessary to use maps produced by foreign governments that may or may not meet the standards for accuracy set by NGA. These maps often use symbols that resemble those found on NGA maps but have completely different meanings. There may be other times units use obtained maps such as tourist maps or other commercially produced maps. (In Grenada, many of our troops used a British tourist map.) It is also important to know how to use the many other products available from the NGA:

- **Topographic map.** A topographic map portrays terrain features in a measurable way, as well as the horizontal positions of the features represented. The vertical positions, or relief, are normally represented by contour lines on military topographic maps. On maps showing relief, the elevations and contours are measured from a specific vertical datum plane, usually mean sea level.
- **Digital map.** A digital map (also called digital cartography) is the visual representation of a point on the earth as depicted by electronic data that is compiled and formatted into a virtual image. In many cases, Soldiers can choose from virtual maps, satellite images, and hybrid views (with or without mission command overlays).
- **Digital city graphic.** The features of a digital city graphic include important buildings, airfields, military installations, industrial complexes, embassies, government buildings, hospitals, schools, utilities, and places of worship. A guide to numbered buildings and an index to street names are provided in the margin. Contour lines are in sufficient detail to identify spurs, draws, saddles, hilltops, and concave/convex slopes.
- **Compressed arc digitized raster graphic.** This is a joint services' standard map background product produced in multiple scales that support systems with map background display, coordinates selection, and provides perspective view generation capabilities.

- **TalonView.** The NGA uses TalonView, a computer based mapping application that displays various types of maps and geographically referenced overlays. Many types of maps and imagery files are supported, but the primary ones of interest to most users are aeronautical, hydrographic, topographic maps and charts, satellite images, and elevation maps. It does not include flight mission planning components and threat analysis capabilities.
- **Vector map.** A vector map (VMap) Level 0 is the low resolution component of the VMap family of products and has a comprehensive 1:1,000,000-scale vector base map of the world. It consists of geographic, attribute, and textual data stored on CD-ROMs. VMap Level 1 contains medium resolution data at the 1:250,000 scale. The data is separated into 10 thematic layers consistent throughout the VMap program. The VMap Level 2 program is designed to provide vector-based geospatial data at high resolution. It is separated into 10 thematic layers, with each layer containing thematically consistent data.
- **Photomap.** A photomap is a reproduction of an aerial photograph upon which grid lines, marginal data, place names, route numbers, important elevations, boundaries, approximate scale, and direction have been added.
- **Joint operations graphic.** Joint operations graphics are typically based upon the format of standard 1:250,000 medium-scale military topographic maps, but they contain additional information needed in joint air-ground operations. Along the north and east edges of the graphic, detail is extended beyond the standard map sheet to provide overlap with adjacent sheets. The map is identified in the lower margin as joint operations graphic (ground) or joint operations graphic (air). The topographic information is identical on both, but the ground version shows elevations and contours in meters and the air version shows them in feet. Layer (elevation) tinting and relief shading are added as an aid to interpolating relief. Both versions emphasize air-landing facilities (shown in purple), but the air version has additional symbols to identify aids and obstructions to air navigation.
- **Terrain model.** A terrain model is a scale model of the terrain showing features. Largescale models also depict industrial and cultural shapes. It provides a means to visualize the terrain for planning or indoctrination purposes, and for briefing on assault landings.
- **Military city map.** A military city map is a topographic map (usually at 1:12,550-scale, and sometimes up to 1:5,000-scale) showing the details of a city. It delineates streets and shows street names, important buildings, and other elements of the landscape significant to navigation and military operations in urban terrain. The scale of a military city map depends upon the importance and size of the city, density of detail, and available intelligence information.

MAP SECURITY

O-6. All maps are considered to be documents that require special handling. If a map falls into unauthorized hands, it could easily endanger military operations by providing information of friendly plans or AOIs to the enemy. Even more important is a map marked which shows the movements or positions of friendly Soldiers. It is possible to determine marking and information on maps even after they have been erased. ***Note.*** Maps are documents that must not fall into unauthorized hands:

- When maps are no longer needed, they are given to the proper authority. Maps that are in danger of being captured are destroyed. The best method of destruction is burning it and scattering the ashes. If burning is not possible, the map can be torn into small pieces and scattered over a wide area.
- Maps of some areas of the world are subject to third party limitations. These are agreements that permit the U.S. to make and use maps of another country provided these maps are not released to a third party without permission of the country concerned. Such maps require special handling.
- Care and handle classified maps according to AR 380-5. If applicable, follow other local security directives.

DIRECTIONS

O-7. As mentioned earlier, being in the right place at the prescribed time is necessary for successfully accomplishing the military missions. Direction plays an important role in a Soldier's daily life. It can be expressed as right, left, straight ahead, and so forth; however, these directions are often confusing and unclear.

TC 3-25.26 defines the word azimuth and the three different norths. It explains in detail how to determine the grid and the magnetic azimuths with the use of the protractor and the compass. It explains the use of some field-expedient methods to find directions. This section will define azimuths and base lines and introduce protractors.

O-8. Military personnel need a way of expressing direction that is accurate, adaptable to any part of the world, and has a common unit of measure. Directions are expressed as units of angular measure:

- **Degree.** The most common unit of measure is the degree (º) with its subdivisions of minutes (') and seconds ("). (See TC 3-25.26.)
- **Mil.** Another unit of measure, the mil (abbreviated m/ in graphics), is used mainly in artillery, tank, and mortar gunnery. The mil expresses the size of an angle formed when a circle is divided into 6400 angles, with the vertex of the angles at the center of the circle. A relationship can be established between degrees and mils. A circle equals 6400 mils divided by 360 degrees, or 17.78 mils per degree. To convert degrees to mils, multiply degrees by 17.78.
- **Grad.** The grad is a metric unit of measure found on some foreign maps. There are 400 grads in a circle (a 90-degree right angle equals 100 grads). The grad is divided into 100 centesimal minutes (centigrads) and the minute into 100 centesimal seconds (milligrads).

AZIMUTHS

O-9. An azimuth is defined as a horizontal angle measured clockwise from a north base line. This north base line could be true north, magnetic north, or grid north. The azimuth is the most common military method to express direction. When using an azimuth, the point where the azimuth originates is the center of an imaginary circle. (See figure O-2.) This circle is divided into 360 degrees, or 6400 mils. Other azimuths are: back azimuth and grid azimuth.

O-10. A back azimuth is the opposite direction of an azimuth. (See figure O-3.) To obtain a back azimuth add 180 degrees if the azimuth is 180 degrees or less; subtract 180 degrees if the azimuth is 180 degrees or more. The back azimuth of 180 degrees may be stated as 0 degrees or 360 degrees. For mils, if the azimuth is less than 3200 mils, add 3200 mils; if the azimuth is more than 3200 mils, subtract 3200 mils.

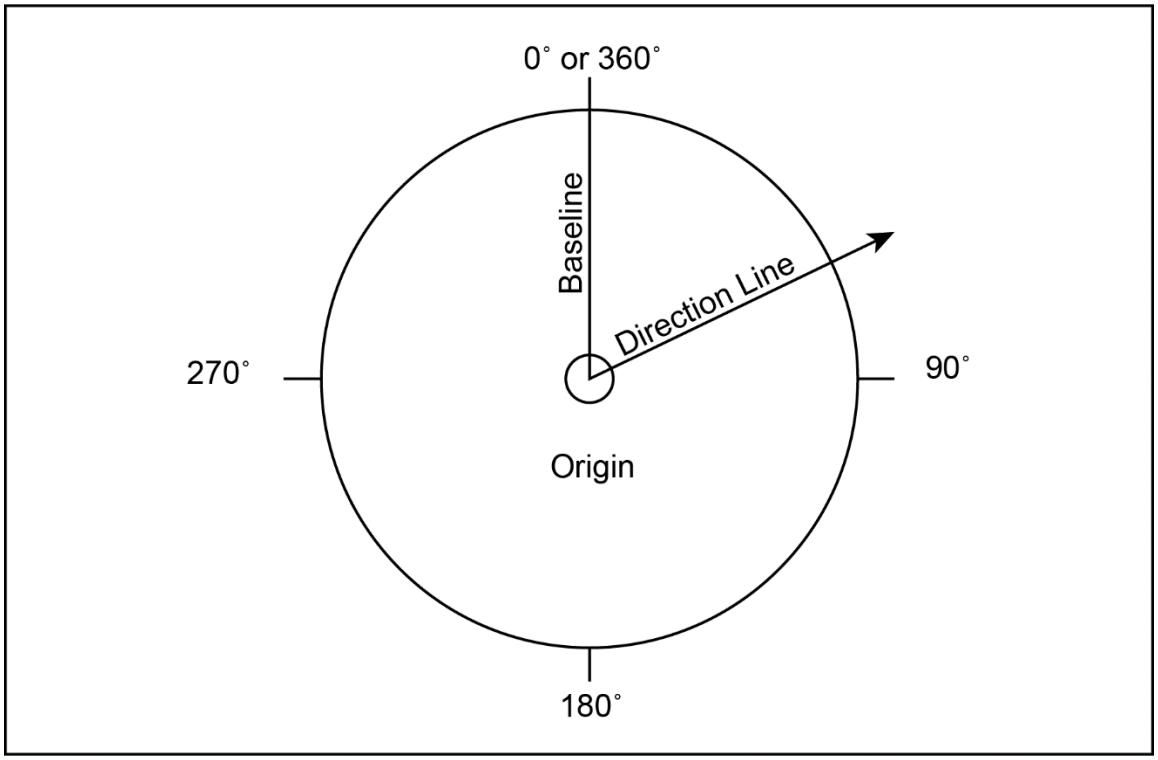


Figure O-2. Origin of azimuth circle

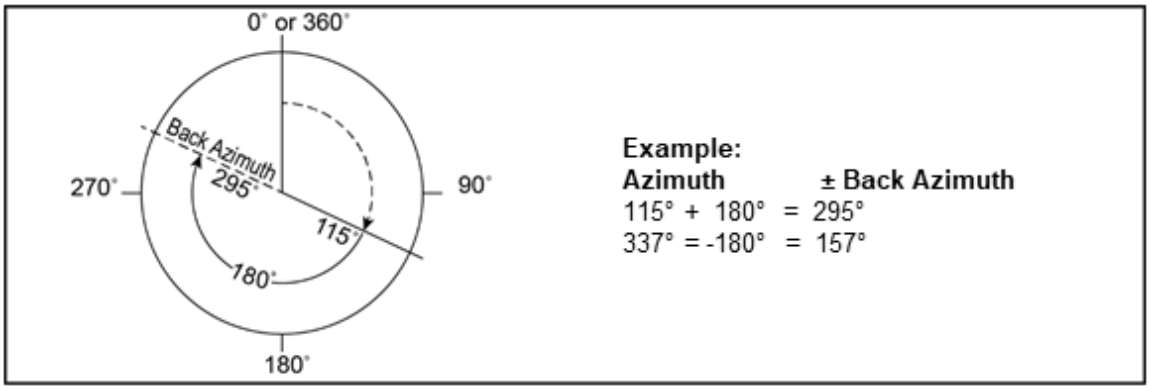


Figure O-3. Back azimuth calculation with azimuth less than 180 degrees

O-11. When an azimuth is plotted on a map between point A (starting point) and point B (ending point), the points are joined by a straight line. A protractor is used to measure the angle between grid north and the drawn line, and this measured azimuth is the grid azimuth. (See figure O-4.)

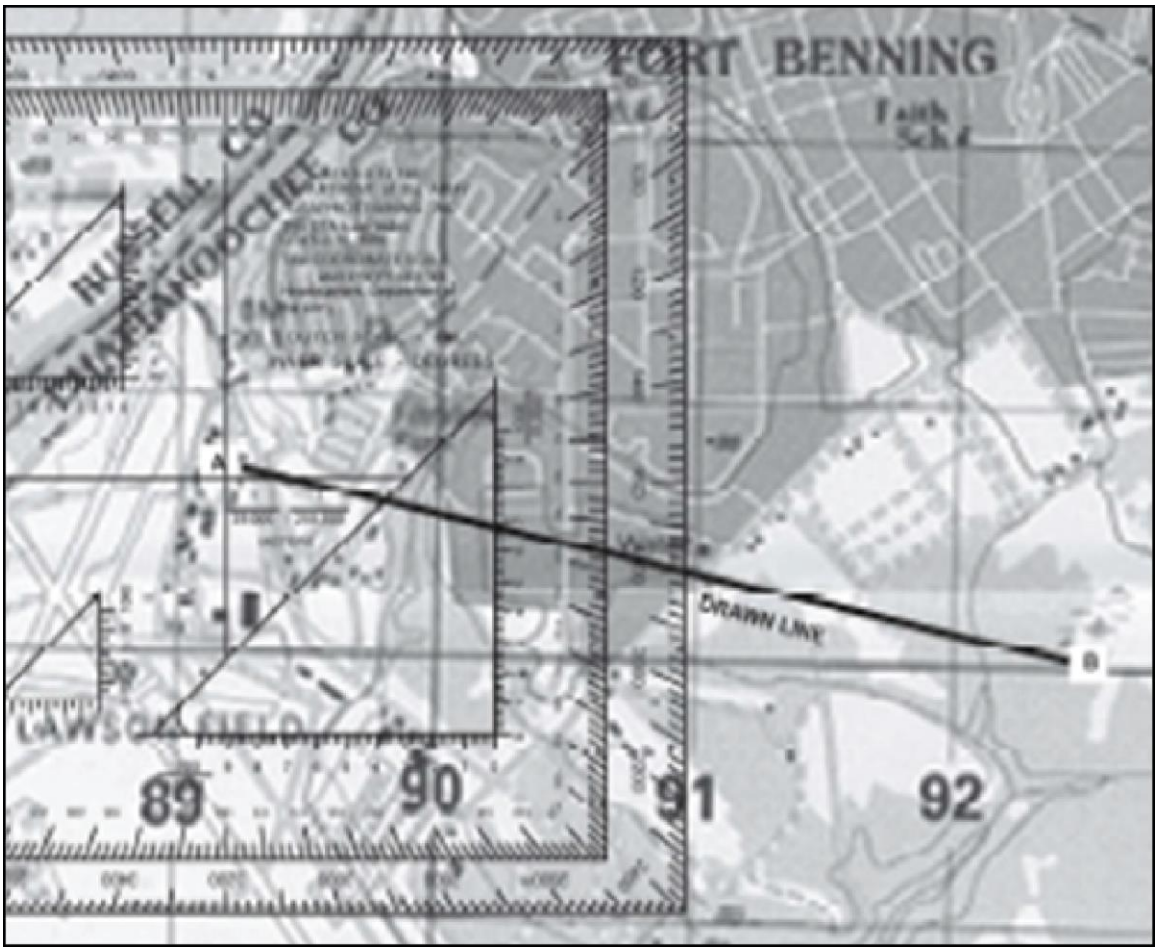


Figure O-4. Measuring a grid azimuth

BASE LINES

O-12. To express direction as a unit of angular measure, there is a starting point or zero measure, and a point of reference. These two points designate the base, or reference line. The three base lines include true north, magnetic north, and grid north. (See figure O-5.) The most commonly used base lines are magnetic and grid:

- **True north** is defined as a line from a point on the earth's surface to the North Pole. All lines of longitude are true north lines. True north is usually represented by a star.
- **Magnetic north** is the direction to the north magnetic pole, as indicated by the north-seeking needle of a magnetic instrument. The magnetic north is usually symbolized by a line ending with half of an arrowhead. Magnetic readings are obtained with instruments such as the lensatic and M2 compasses.
- **Grid north** is established by using the vertical grid lines on the map. Grid north may be symbolized by the letters GN or the letter *y*.

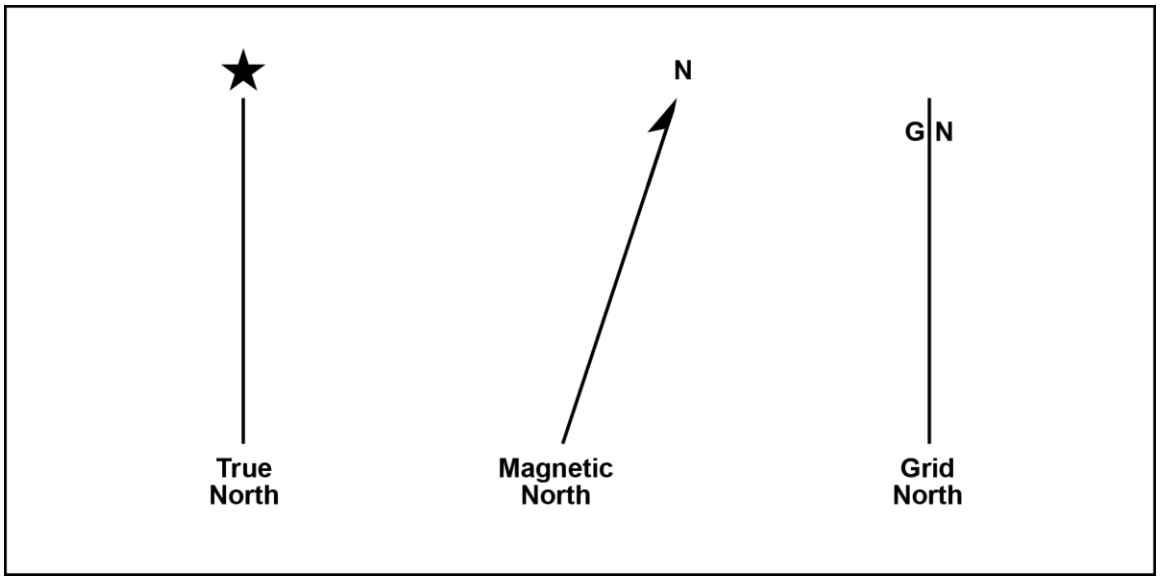


Figure O-5. Three norths

MILITARY PROTRACTOR

O-13. The military protractor, GTA 5-2-12, contains two scales: one in degrees (inner scale) and one in mils (outer scale). This protractor represents the azimuth circle. The degree scale is graduated from 0 to 360 degrees, with each tick mark representing one degree. A line from 0 to 180 degrees is called the base line of the protractor. The index (or center) of the protractor is where the base line intersects the horizontal line, between 90 and 270 degrees. (See figure O-6.)

O-14. When using the protractor, the base line is always oriented parallel to a north-south grid line. The 0-or 360-degree mark is always toward the top or north on the map and the 90-degree mark is to the right. To determine the grid azimuth:

- Draw a line connecting the two points (A and B).
- Place the index of the protractor at the point where the drawn line crosses a vertical (north-south) grid line.
- Keeping the index at this point, align the 0- to 180-degree line of the protractor on the vertical grid line.
- Read the value of the angle from the scale; this is the grid azimuth from point A to point B.

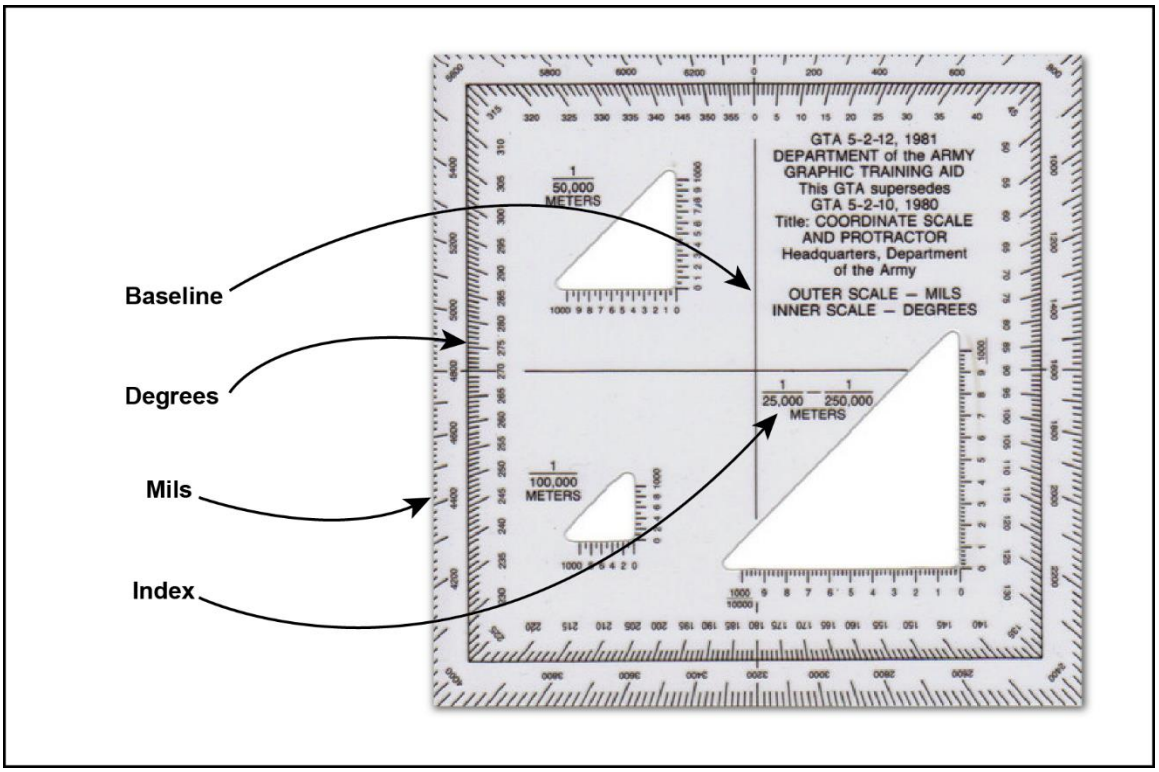


Figure O-6. Military protractor

O-15. Figure O-7 on page O-8 shows how to plot an azimuth from a known point on a map:

- Convert the azimuth from magnetic to grid, if necessary.
- Place the protractor on the map with the index mark at the center of mass of the known point, and the base line parallel to a north-south grid line.
- Make a mark on the map at the desired azimuth.
- Remove the protractor and draw a line connecting the known point and the mark on the map.
- This is the grid direction line (azimuth).

Note. When measuring an azimuth, the reading is always to the nearest degree or 10 mils. Distance does not change an accurately measured azimuth.

O-16. To obtain an accurate reading with the protractor (to the nearest degree or 10 mils), there are two techniques to check that the base line of the protractor is parallel to a north-south grid line:

- Place the protractor index where the azimuth line cuts a north-south grid line, aligning the base line of the protractor directly over the intersection of the azimuth line with the north-south grid line. The user should be able to determine whether the initial azimuth reading was correct. The user should re-read the azimuth between the azimuth and north-south grid line to check the initial azimuth. ***Note*** that the protractor is cut at both the top and bottom by the same north-south grid line.
- Count the number of degrees from the 0-degree mark at the top of the protractor to this north-south grid line and then count the number of degrees from the 180-degree mark at the bottom of the protractor to this same grid line. If the two counts are equal, the protractor is properly aligned.

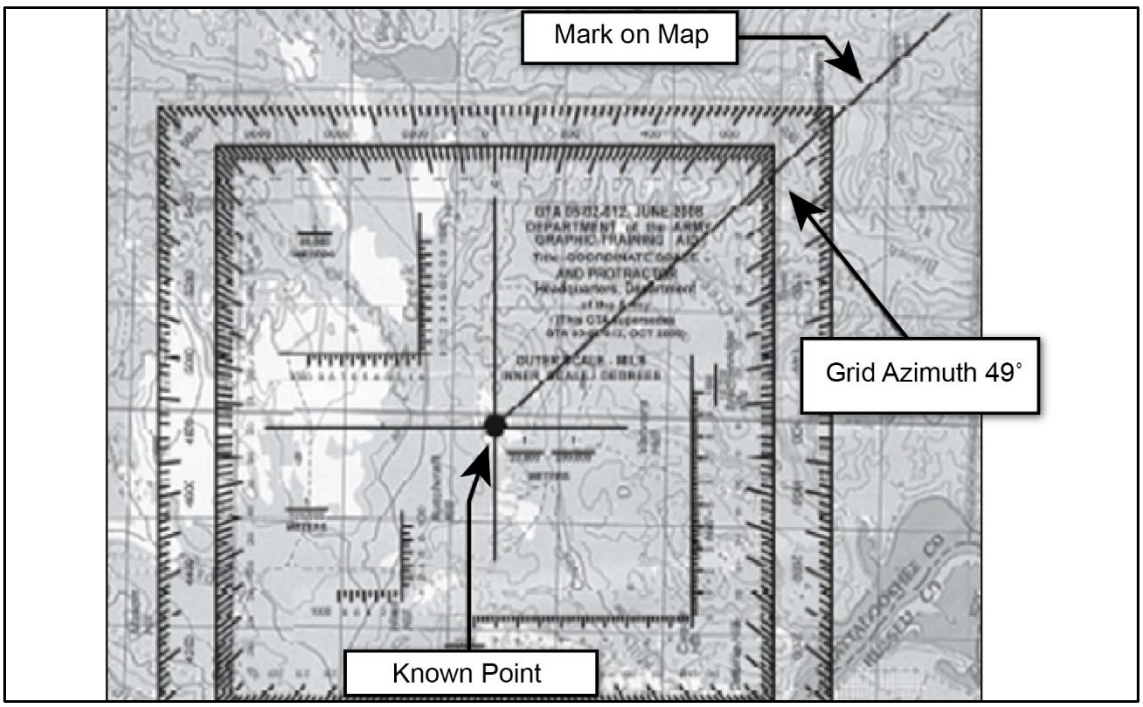


Figure O-7. Plotting an azimuth on a map

MOUNTED LAND NAVIGATION

O-17. This section discusses the principles, navigator's duties, and movement of mounted land navigation.

PRINCIPLES

O-18. The principles of land navigation while mounted are basically the same as while dismounted. The major difference is the speed of travel. Walking between two points may take one hour, but riding the same distance may only take 15 minutes. To be effective at mounted land navigation, travel speed is considered.

NAVIGATOR'S DUTIES

O-19. The duties of a navigator are so important and exacting; the navigator should not be given other duties. The leader should never try to be the navigator since normal responsibilities are heavy and one or the other job would suffer:

- **Assembling equipment.** Before the mission starts, the navigator gathers all the equipment that helps with the job performance (maps, pencils, and other items).
- **Servicing equipment.** The navigator is responsible for making sure that all the equipment used or required is working.
- **Recording data for precise locations.** During movement, the navigator makes sure that the correct direction and distance are recorded and followed. Grid coordinates of locations are recorded and plotted.
- **Supplying data to subordinate leaders.** During movement, a change in direction or distance is given to the subordinate leaders in sufficient time to allow them to react.
- **Maintaining liaison with the commander.** The commander normally selects the route to use. The navigator is responsible for following that route; however, there may be times when the route is changed during a tactical operation. For this reason, the navigator maintains constant communication with the commander. The navigator informs the commander when checkpoints are reached, when a change in direction of movement is required, and how much distance is traveled.

MOVEMENT

O-20. When preparing to move, the effects of terrain on navigating mounted vehicles are determined. Great distances are covered very quickly and it is important to develop the ability to estimate the distance traveled. Remember that 0.1 mile is roughly 160 meters, and 1 mile is about 1600 meters or 1.6 kilometers. Having a mobility advantage helps while navigating, especially when disoriented, as mobility makes it much easier to move to a point where reorientation can take place.

Consider Vehicle Capabilities

O-21. When determining a route to travel when mounted, consider the capabilities of the vehicles being used. Most military vehicles are limited in the degree of slope they can climb and the type of terrain they can negotiate. Swamps, thickly wooded areas, or deep streams may present no problems to dismounted Soldiers, but the same terrain may completely stop mounted Soldiers. Consider this when selecting a route.

O-22. Most vehicles can knock down a tree. The bigger the vehicle, the bigger the tree it can knock down. Vehicles cannot knock down several trees at once. It is best to find paths between trees that are wide enough for the vehicle. Military vehicles are designed to climb 60-percent slopes on a dry, firm surface. (See figure O-8.)

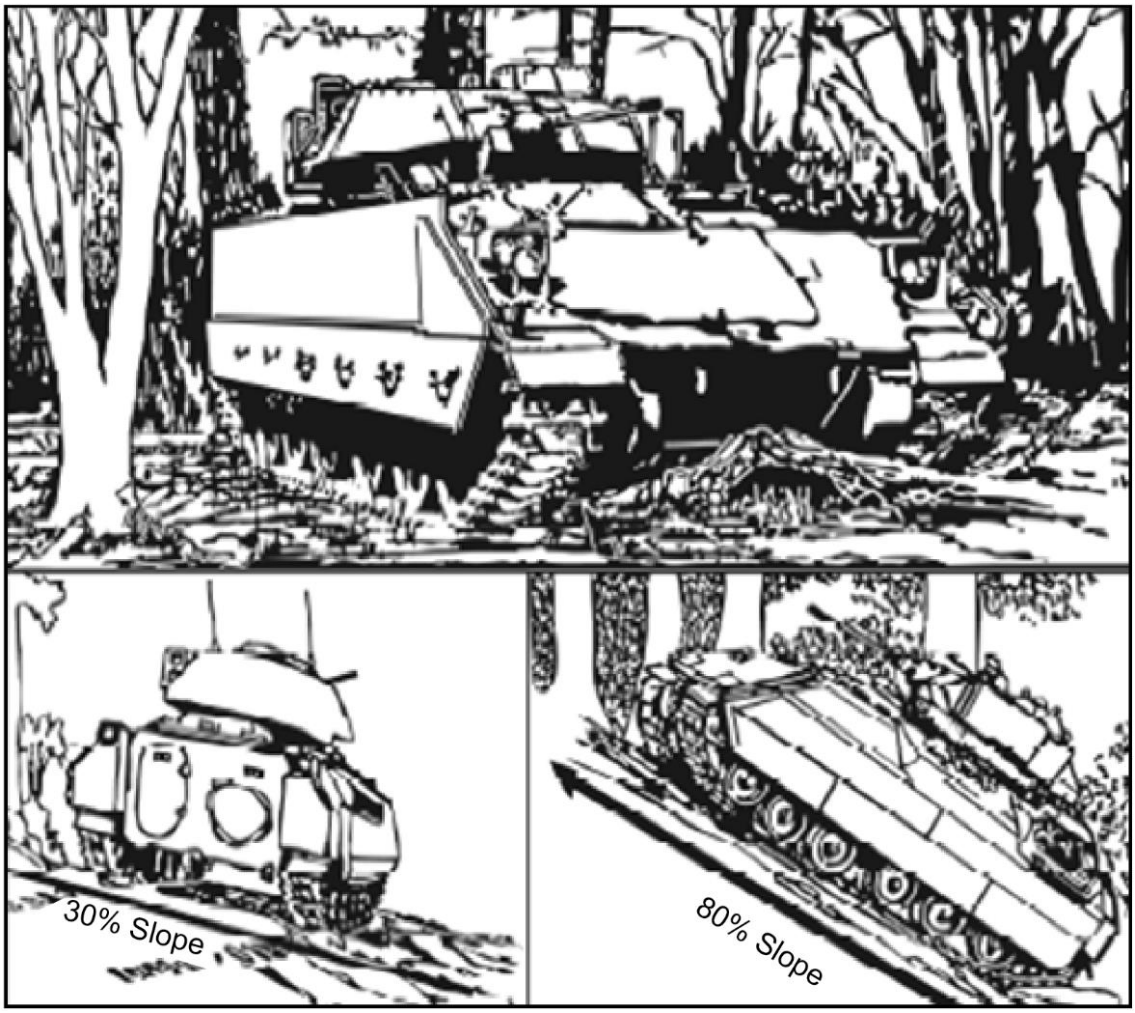


Figure O-8. Tracked vehicle capabilities

O-23. Approximate slope is determined by looking at the route selected on a map. A contour line in 100 meters of map distance on that route indicates a 10-percent slope; two contour lines indicate 20-percent slope, and so forth. If there are four contour lines within 100 meters, look for another route.

O-24. Side slope is even more important than the climbing slope. Normally, a 30-percent slope is the maximum in good weather. When traversing a side slope, progress slowly and without turns. Rocks, stumps, or sharp turns can cause the downhill track to be thrown under the vehicle, which would mean a big recovery task. For tactical reasons, move in draws or valleys because they provide cover. However, side slopes force slow movement.

Note. The above figures are true for a 10-meter or a 20-foot contour interval. If the map has a different contour interval, just adjust the arithmetic. For instance, with one contour line in 100 meters, a 20-meter interval would give a 20-percent slope.

O-25. Weather can halt mounted movement. Snow and ice are obvious dangers, but more significant is the effect of rain and snow on the load-bearing ability of soil. Cross-country vehicles may be restricted to road movement in heavy rain. If it has rained recently, adjust the route to avoid flooded or muddy areas. A mired vehicle only hinders combat capability.

Prepare Before Movement

O-26. Prior to movement, the navigator should plot a route from the start point to the finish on the map. Determine the map's grid azimuth from start point to finish point and convert it to a magnetic azimuth. Determine the distance between the start point and finish point, or intermediate points on the map, and make a thorough map reconnaissance of that area.

Terrain Association Navigation

O-27. Terrain association is currently the most widely used method of navigation. The navigator plans the route from terrain feature to terrain feature. An automobile driver in a city uses this technique while moving along a street or series of streets, guiding on intersections or features such as stores and parks. Like the driver, the navigator selects routes or streets between key points or intersections.

O-28. These routes need to sustain the travel of the vehicle or vehicles, should be relatively direct, and should be easy to follow. In a typical move, the navigator determines the vehicle location and the location of the objective, notes the position of both on the map, and then selects a route between the two. After examining the terrain, the navigator adjusts the route to avoid sky lining, and selects key terrain for over watch positions and concealed routes.

Tactical Aspects and Ease of Movement

O-29. Use the easiest possible route and bypass difficult terrain. Remember that a difficult route is harder to follow, is noisier, causes more wear and tear (and possible recovery problems), and takes more time. Tactical surprise is achieved by doing the unexpected. Try to select an axis or corridor instead of a specific route. Make sure there is enough maneuver room for the vehicles. (See figure O-9.)

Terrain Features as Checkpoints

O-30. Terrain checkpoints are easily recognizable in the light, all weather conditions, and at the speed of movement. Find a terrain feature from the location that can be recognized from almost anywhere to use as a guide. (For example, checkpoint 2 is the church and checkpoint 3 is the orchard in figure O-9.)

O-31. The best checkpoints are linear features that cross the route. Use streams, rivers, hard-top roads, ridges, valleys, and railroads. The next best checkpoints are elevation changes such as hills, depressions, spurs, and draws. Look for two contour lines of change. It is not possible to spot less than two lines of change while mounted. In wooded terrain, try to locate checkpoints at no more than 1000-meter intervals. In open terrain, up to 5000 meters is acceptable. In following terrain features, movement and navigation along a valley floor or near (not necessarily on) the crest of a ridgeline is easiest.

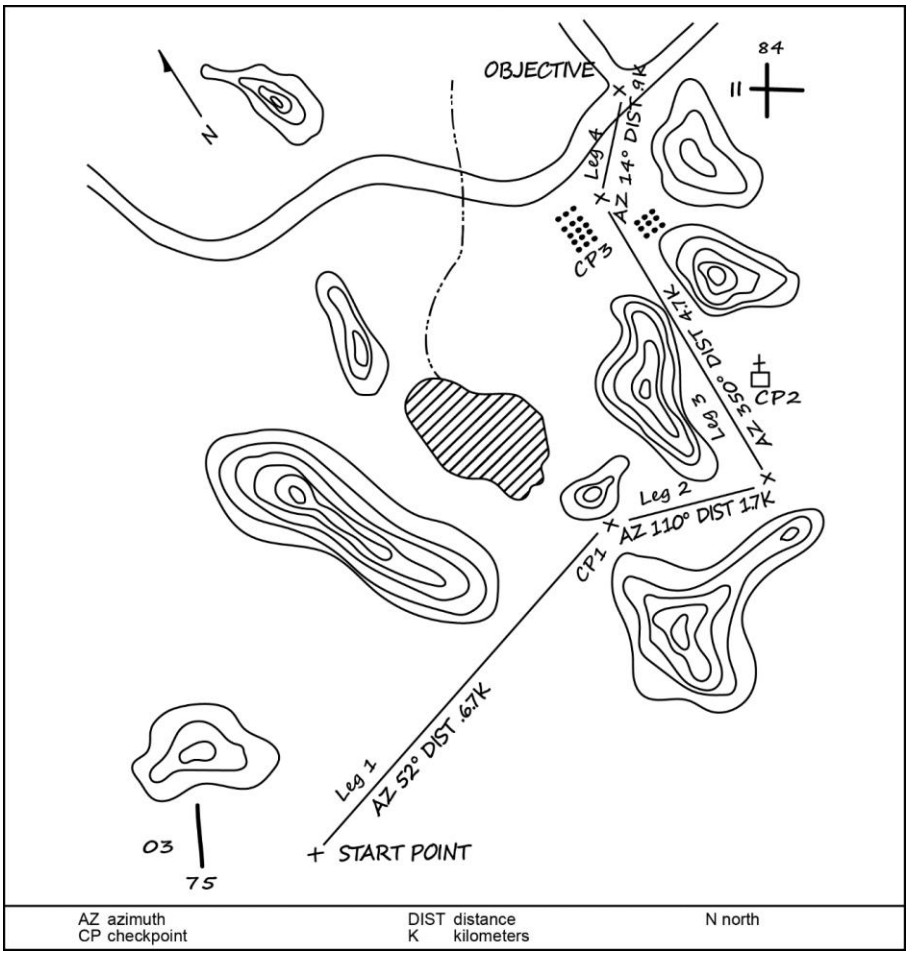


Figure O-9. Primary route

Determine Directions and Distance

O-32. Break the route down into smaller segments and determine the rough directions to be followed. It is not necessary to use the compass; just use the main points of direction (north, northeast, east, and so forth). Before moving, note the location of the sun and locate north. Locate changes of direction at the checkpoints picked.

O-33. Determine the total distance to be traveled and the approximate distance between checkpoints. Plan to use the vehicle odometer to keep track of distance traveled. Use the pace-count method and keep a record of the distance traveled. When using a pace count, convert from map distance to ground distance by adding the conversion factors of 20 percent for cross-country movement.

Dead Reckoning Navigation

O-34. Dead reckoning is moving a set distance along a set line. Generally, it involves moving so many meters along a set line, usually an azimuth in degrees. When moving in a vehicle, a compass direction may be unreliable in determining the direction of travel. A vehicle-mounted GPS is the preferred method for monitoring direction of travel while mounted.

O-35. Dead reckoning with steering marks is the same for vehicle travel as on foot. The navigator dismounts from the vehicle and moves away at least 18 meters. After setting the azimuth on the compass and picking a steering mark (rock, tree, hilltop) in the direction on that azimuth (see figure O-10 on page O-12), the navigator remounts. The driver identifies the steering mark and proceeds to it in as straight a line as possible. On arrival at the steering mark or on changes in direction, the navigator repeats the first three steps for the next leg of travel.

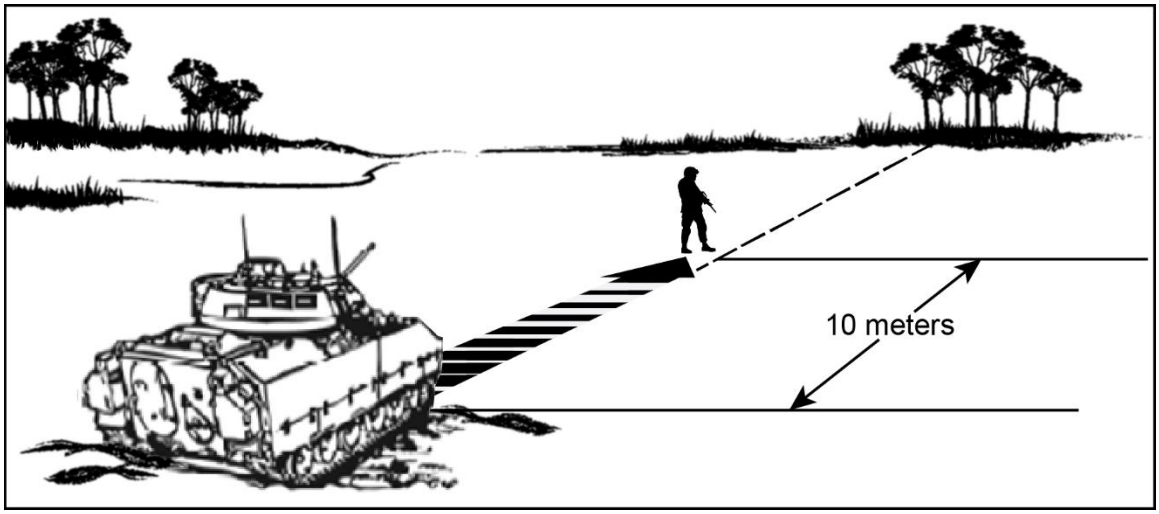


Figure O-10. Determining an azimuth, dismounted

O-36. Dead reckoning without steering marks is used only on flat, featureless terrain. The navigator dismounts from the vehicle, which is oriented in the direction of travel, and moves at least 18 meters to the front of the vehicle. Facing the vehicle, the navigator reads the azimuth to the vehicle. By adding or subtracting 180 degrees, the forward azimuth (direction of travel) is determined. On order from the navigator, the driver drives on a straight line to the navigator. The navigator remounts the vehicle, holds the compass as it is held while the vehicle is moving, and reads the azimuth in the direction of travel.

O-37. The compass swings off the azimuth determined and picks up a constant deviation. For example, the azimuth was 75 degrees when read away from the vehicle but after remounting and driving straight forward, the compass showed 67 degrees. There is a deviation of -8 degrees. All that is needed is to maintain that 67-degree compass heading to travel on a 75-degree magnetic heading.

O-38. At night, the same technique can be used. From the map, determine the azimuth to travel. Convert the grid azimuth to a magnetic azimuth. Line the vehicle up on that azimuth, and then move well in front of it. Be sure it is aligned correctly. Then mount, have the driver move slowly forward, and note the deviation. If the vehicle has a turret, the above procedure works unless the turret is traversed; this changes the deviation.

Note. The distance factor in dead reckoning is easy. Just determine the map distance to travel and add 20 percent to convert to ground distance. Use the vehicle odometer to ensure the proper distance is traveled.

Combination Navigation

O-39. Some mounted situations may call for a combination of both methods. Just remember the characteristics of each:

- Terrain association is fast, error-tolerant, and is best under most circumstances. It can be used day or night for those proficient in it.
- Dead reckoning is accurate if everything is done precisely. It is also slow, but it works on flat terrain.
- Techniques are frequently a combination of both methods. Dead reckoning is used to travel across a large, flat area to a ridge, and terrain association is used for the rest of the move.

O-40. The navigator needs to be able to use both methods. Probable errors, in order of frequency, include determining distances to be traveled, traveling the proper distance, properly plotting or locating the objective, selecting easily recognized checkpoints or landmarks, and considering the ease of movement factor.

Appendix P

Nontactical Movement Considerations

STRATEGIC MOBILITY

P-1. Strategic mobility is the capability to deploy and sustain military forces worldwide in support of national strategy. Beyond the intrinsic capability of some U.S. forces to self-deploy, the bulk of our nation's strategic mobility requirements are met through common-user sealift, common-user airlift, and pre-positioned stocks, known as the strategic mobility triad shown in figure P-1.

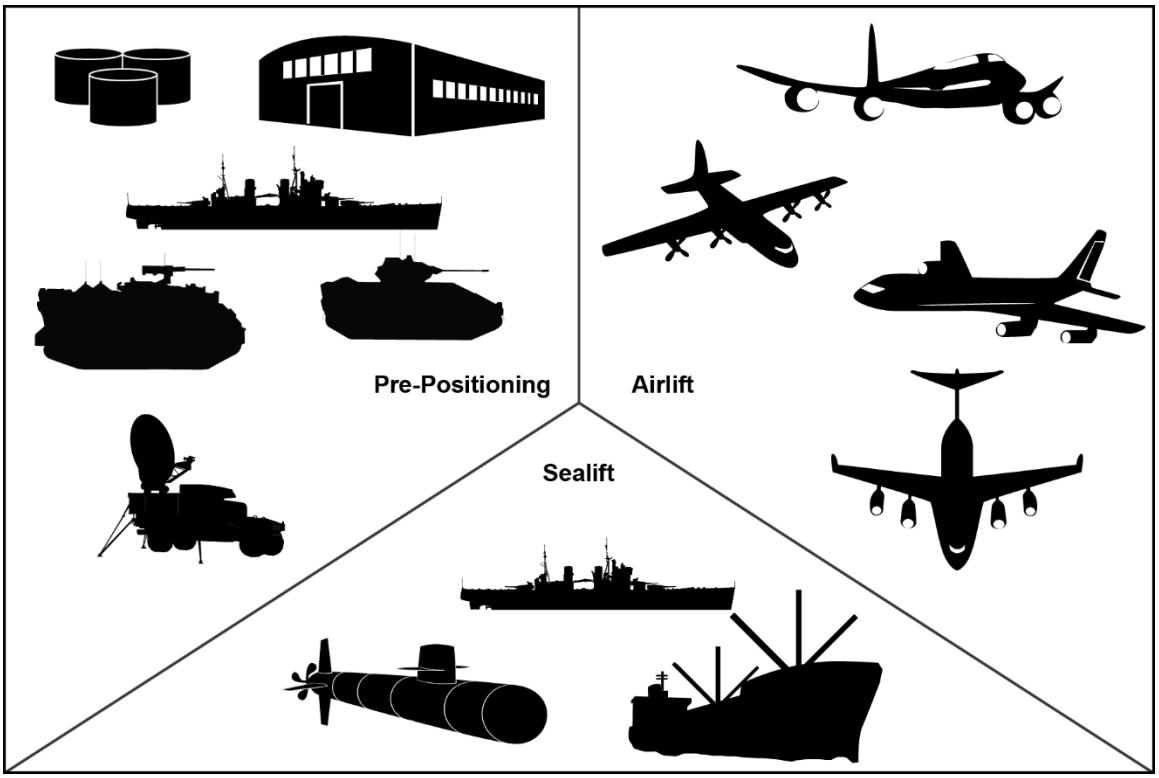


Figure P-1. Strategic mobility triad

P-2. Successful deployment and redeployment of forces and capabilities in military operations depends on sufficient port throughput capacity coupled with the availability of sufficient mobility assets to rapidly deploy operational forces, sustain them as long as necessary to meet U.S. military objectives, and reconstitute and redeploy them to meet changing mission requirements or return to home and/or demobilization stations upon completion of their mission.

P-3. To meet this challenge, the United States Transportation Command's (USTRANSCOM's) transportation component commands (Air Mobility Command, Military Sealift Command, and Military Surface Deployment and Distribution Command) exercise C2 of USTRANSCOM's assigned and allocated forces, coordinates transportation assets for use by all DOD elements and, as authorized, other U.S. Government departments and agencies or other approved users. Deployment operations normally involve a combination of land (road and rail), sea (including inland waterways), and air movement augmented, as necessary, by pre-positioned assets. USTRANSCOM must balance cost-effective options with operational

and strategic viability for the JFC. Transportation solutions must be effective, ensuring on-time delivery of forces and materiel to the right place at the right time.

COMMON-USER AIRLIFT

P-4. *Common-user airlift service* is the airlift service provided on a common basis for all Department of Defense agencies and, as authorized, for other agencies of the United States Government (JP 3-17). The pool of common-user airlift consists of designated airlift assets from some or all of the following sources: Active Component and Reserve Component, the Civil Reserve Air Fleet when activated, contracted commercial assets, and foreign military or civil carriers (either donated or under contract).

COMMON-USER SEALIFT

P-5. *Common-user sealift* is the sealift services provided by the Military Sealift Command on a common basis for all Department of Defense agencies and, as authorized, for other departments and agencies of the United States Government (JP 4-01.2). Sealift forces are those militarily useful ships available to DOD to execute the sealift requirements of the Defense Transportation System across the range of military operations. Also known as common-user shipping, these ships transport cargo for one or more Services and other U.S. Government departments and agencies, as authorized, from one seaport to another, to a sea base, or to a location at sea in the operational area pending a decision to move the embarked cargo ashore. The sealift force comprises vessels from some or all of the following sources:

- Military Sealift Command government-owned or -controlled vessels.
- Government-owned reserve vessels from the Maritime Administration Ready Reserve Force.
- U.S. privately owned and operated commercial vessels.
- U.S. privately owned, foreign flag commercial vessels.
- Foreign-owned and operated commercial vessels, including ships made available through the Voluntary Intermodal Sealift Agreement and through an allied agreement.

P-6. Regarding sealift, Commander, USTRANSCOM, is the delegated authority to procure commercial transportation services and, with the approval of the Secretary of Defense, to activate the Maritime Administration Ready Reserve Force and all three stages of the Voluntary Intermodal Sealift Agreement. (For more information on common-user sealift, see JP 4-01.2.)

PRE-POSITIONED EQUIPMENT AND SUPPLY PROGRAMS

P-7. *Pre-position* is to place military units, equipment, or supplies at or near the point of planned use, or at a designated location, to reduce reaction time and to ensure timely support of a specific force during initial phases of an operation (JP 4-0). Pre-positioned equipment and supply programs are both land- and sea-based. They are critical programs for reducing closure times of combat and support forces needed in the early stages of a contingency. They also contribute significantly to reducing demands on the Defense Transportation System. (For more information on pre-positioned stocks, see JP 4-01 and JP 4-01.2.)

OTHER MOBILITY CONSIDERATIONS

P-8. Other transportation resources may be available to a combatant commander to support deployment operations that do not fit within the context of the strategic mobility triad. As proven in operations in Afghanistan, land transportation may augment traditional strategic mobility capabilities. Land transportation may include road and/or rail modes in areas where there is limited air or seaport infrastructure to meet the combatant commander's requirements. This intratheater mode may be effective in delivering forces and sustainment to support the combatant commander's mission.

UNIT MOVEMENT OFFICER DEPLOYMENT PLANNING COURSE

P-9. In order to move equipment legally and safely, the company must have a unit movement officer appointed and trained. This person is responsible for the mobilization and deployment process of company equipment. The following includes specific considerations for MI company equipment movement:

- Movement by sealift; moisture can destroy electronics. This is especially problematic for UAS equipment, which is not moisture hardy. UASs should ideally be transported by rail, air, convoy, or heavy equipment transport truck.
- The MI company has a large number of items that are SI.
- The MI company has a large number of equipment items that are top secret or secret, which have specific transportation requirements.
- Hazardous material considerations due to hydrogen gas in the pneumatic UAS launcher and oils/fluids required for aircraft maintenance.

P-10. Attendance and completion of the proponent approved Unit Movement Officer Deployment Planning Course (also known as UMODPC) is required to meet the intent of this regulation for unit movement officers. This appendix contains general policies and administrative procedures for teaching the proponent approved unit movement officers deployment planning program of instruction by non-TRADOC schools. The procedures herein are applicable to individual institutional and installation training. Forward exceptions to the operational procedures in this regulation to the Assistant Commandant, U.S. Army Transportation School.

P-11. The Unit Movement Officer Deployment Planning Course addresses the mobilization and deployment processes at various levels of command within the Army. Focus of the course is on legal authorities, mobilization concepts, plans, policies, procedures, and the responsibilities for mobilization and deployment at DOD; Headquarters, Department of the Army; combatant commands; Army commands; ASCCs; joint force headquarters; and installation levels. Mobilization and deployment planning interfaces at various Army command levels and the dependency of mobilization and deployment activities on automated systems are emphasized.

P-12. Personnel eligible for the course are Regular Army and Reserve Component commissioned officers in the rank of lieutenant through lieutenant colonel and warrant officers who are appointed to or under consideration for appointment to a unit and/or staff movement position involving unit strategic deployment or unit movements by surface modes. Also eligible are enlisted personnel in the rank of sergeant and above on unit orders as the unit movement NCO, whose actual or anticipated duties require a working knowledge of unit deployment and/or movement planning, and DOD civilians who are appointed or under consideration for appointment to an installation and/or staff position requiring working knowledge of unit deployment and/or movement planning. International officers and/or NCOs meeting these prerequisites can also attend the course.

P-13. A unit movement officer and an alternate unit movement officer must be appointed in each company- and battalion-level unit as directed in this regulation. These individuals must be trained and thoroughly familiar with—

- Service or Army command and/or ASCC mobility planning, unit movement planning, and DOD transportation regulations.
- Organization structure (for example USAF, Army, and terms pertaining to air and/or surface operations).
- The transportability of the unit's organic equipment and cargo.
- Characteristics and capabilities of the type of lift assets the unit requires (for example, containerized cargo requiring flatcars versus box cars, strategic versus theater aircraft, container ship versus cargo, roll-on, and/or roll-off ships).
- Hazardous materials certification process.
- DTR 4500.9-R, Parts I through VII.

P-14. Tables P-1 and P-2 list company-level deployment readiness and execution tasks, respectively.

Table P-1. Company-level deployment readiness tasks

Number	*Deployment readiness tasks*	*Measure*
	Commander:	
1	Implemented CDDP.	Yes/No/NA
2	Appoint in writing, an officer or NCO (E-6 or above) as a UMO and an alternate (E-5 or above).	Yes/No/NA
3	UMO and alternate have attended or currently scheduled to attend a proponent approved UMODPC as outlined in chapter two of AR 525-93.	Yes/No/NA
4	UMO has at least one year retainability in the unit.	Yes/No/NA
5	UMO has at least a secret security clearance.	Yes/No/NA
6	Appoint in writing, hazardous cargo certifying officials that meet DOD requirements.	Yes/No/NA
7	Appoint a CCO, in writing.	Yes/No/NA
8	CCOs are in compliance with submitting container inventory updates.	Yes/No/NA
9	Established and trained unit loading teams:	Yes/No/NA
a	Rail.	Yes/No/NA
b	Air.	Yes/No/NA
	Unit movement officer:	
10	Prepares and maintains unit movement plan. Regular Army units will develop deployment movement plans from home station and/or installation to POEs. RC units will develop deployment movement plans from home station and/or installation to mobilization station to POEs.	Yes/No/NA
11	Maintains movement binders or continuity books that include appointment orders, training certificates, recall rosters, OEL, transportation requests, and BBPCT requirements.	Yes/No/NA
12	Maintains complete load plans for each loaded vehicle, trailer, container, and 463L pallet.	Yes/No/NA
13	Submit updated OEL through their chain of command to the ITO UMC semiannually and as significant changes occur.	Yes/No/NA
14	Have a valid TC-AIMS II user id, password, and access to their UICs.	Yes/No/NA
15	Can demonstrate the knowledge to make a movement plan for air and surface movements by building segments and legs in TC-AIMS II.	Yes/No/NA
16	Has a convoy standard operating procedure for movement to the POE.	Yes/No/NA
17	Understands local procedures to request commercial and military transportation to support movement to the POE.	Yes/No/NA
18	Understands local procedures to prepare special hauling requests.	Yes/No/NA
19	Understands local procedures to request BBPCT materials from the UMC or other designated source.	Yes/No/NA
20	Understands local procedures to request and receive 463L pallets and containers.	Yes/No/NA
21	Understands local procedures to coordinate MHE requirements between units and MHE sources (commercial or military).	Yes/No/NA
22	Maintains updated copy of this regulation, ATP 3-35, Army command, and/or ASCC deployment regulations, and local movement directives, as appropriate.	Yes/No/NA

Notes. When this table is used for inspection purposes, a pass or fail grading system is used. An organization must receive a *Yes* in at least 18 of the 22 listed measures to receive a passing grade. However, tasks 1, 2, 3, 11, 13, and 14 are extremely critical to the long term success of a unit's deployment readiness and if any one of these tasks are assessed as a *No*, the unit will receive a failing grade until the appropriate deficiencies are corrected.
Task 1. Has the commander implemented CDDP for subordinate units?
Task 2. Appoint in writing, an officer or NCO (E-6 or above) as a UMO and an alternate (E-5 or above).
Task 3. UMO has attended or currently scheduled to attend an approved school.
Task 11. Maintains movement binders or continuity books that include appointment orders, training certificates, recall rosters, OEL, transportation requests, and BBPCT requirements.
Task 13. Submit updated OEL through their chain of command to the installation UMC semiannually and as significant changes occur.
Task 14. Have a valid TC-AIMS II user id, password, and access to their UICs.

ASCC	Army Service component command	NA	not applicable
BBPCT	blocking, bracing, packing, crating, and tie-down	POE	port of embarkation
CCO	container control officer	RC	Reserve Component
CDDP	Command Deployment Discipline Program	TC-AIMS	Transportation Coordinator-Automated Information for Management System
DOD	Department of Defense	UIC	unit identification code
ITO	installation transportation officer	UMC	unit movement coordinator
MHE	materials handling equipment	UMO	unit movement officer
NCO	noncommissioned officer	UMODPC	Unit Movement Officer Deployment Planning Course
OEL	organizational equipment list		

Table P-2. Company-level deployment execution tasks

Number	*Deployment execution tasks*	*Measure*
	Containers:	
1	Unit submitted updated UDL to UMC and/or ITO to reflect actual weights, sensitive equipment, HAZMAT, and any special hauling requirements identified utilizing the correct codes.	Yes/No/NA
2	Containers swept clean and free of any dirt and debris; old DD Forms 1387 (*Military Shipment Label*) are removed.	Yes/No/NA
3	Unit maximized container utilization (75 percent fill) to minimize container requirements; no metal-to-metal contact in accordance with ATP 4-12.	Yes/No/NA
4	Unit used BBPCT material in accordance with TM 38-701.	Yes/No/NA
5	Unit placed a container DD Form 1750 (*Packing List*) in a weatherproof envelope on the inside and outside door of each packed container; UMO obtained a copy of each DD Form 1750 for records in accordance with ATP 4-12.	Yes/No/NA
6	Unit placed HAZMAT placards on container containing HAZMAT; dangerous goods declaration and certificate placed on the inside and outside door of container in accordance with DTR 4500.9-R, Part II; 49 CFR; and TM 38-250. HAZMAT containers are segregated and consolidated for inspection and movement to POE.	Yes/No/NA
7	Unit placed serial number seals and/or bolt son the doors of the containers; unit annotated serial number seals and/or bolts for records in accordance with ATP 4-12 and SDDC Customer Advisory.	Yes/No/NA
8	Military container, triple container, quadruple container have current Convention for Safe Containers inspection sticker on data plate in accordance with MIL-STD 3037 and ATP 4-12.	Yes/No/NA
9	UIC and shipment unit numbers were stenciled on all four upper left sides of containers.	Yes/No/NA
10	Applied DD Forms 1387 and RFID tags using TC-AIMS II and ensure proper placement on container in accordance with MIL-STD 129R.	Yes/No/NA
	463L pallets:	
11	Units submitted updated UDL to UMC and/or ITO to reflect actual weight of loaded pallet, sensitive equipment, HAZMAT, and any special hauling requirements identified utilizing the correct codes.	Yes/No/NA
12	Applied DD Forms 1387 and RFID tags using TC-AIMS II and ensure proper placement on pallet in accordance with MIL-STD 129R.	Yes/No/NA
	Vehicles:	
13	Unit submitted updated UDL to UMC and/or ITO to reflect actual weights, sensitive equipment, HAZMAT, and any special hauling requirements identified utilizing the correct codes.	Yes/No/NA
14	Vehicles are clean; old DD Forms 1387 are removed; loose items (BII, drip pan, chock blocks, fuel cans, weapon mounts, bows, tarps, antennas, and tire hoist) are removed and secured.	Yes/No/NA
15	All equipment is marked front and rear with correct UIC bumper and shipment unit numbers.	Yes/No/NA
16	All vehicles equipped with proper and serviceable lifting devices, shackles, or built-in tie-down points front and rear.	Yes/No/NA
17	All vehicle fuel tanks met requirements in accordance with port call message for POE loading.	Yes/No/NA
18	Applied DD Forms 1387 and RFID tags using TC-AIMS II and ensure proper placement on vehicles in accordance with MIL-STD 129R.	Yes/No/NA
19	Executed unit load plans for secondary loads and reduced vehicles to proper configuration.	Yes/No/NA
	Passengers:	
20	Identify personnel by force packages (Advance Party and Main Body) and chalks; ensure passenger manifests at APOE reflect same data.	Yes/No/NA
21	Identify *To Accompany Troops* requirements.	Yes/No/NA
22	Identify supercargoes.	Yes/No/NA
23	Ensure personnel know the unit line number corresponding to their movement.	Yes/No/NA
24	Transportation requests are prepared and submitted to move personnel and baggage to APOE.	Yes/No/NA

APOE	aerial port of embarkation	RFID	radio frequency identification
BBPCT	blocking, bracing, packing, crating, and tie-down	SDDC	Military Surface Deployment and Distribution Command
BII	basic issue item	TC-AIMS	Transportation Coordinator/Automated Information for Management System
HAZMAT	hazardous materials	UDL	unit deployment list
ITO	installation transportation officer	UIC	unit identification code
NA	not applicable	UMC	unit movement coordinator
POE	port of embarkation	UMO	unit movement officer

This page intentionally left blank.

Appendix Q

The MDMP and Command and Support Relationships

OVERVIEW

Q-1. This appendix discusses the MDMP for Army forces and command and support relationships for joint and Army forces. The MDMP assists leaders in applying thoroughness, clarity, sound judgment, logic, and professional knowledge to understand situations, develop options to solve problems, and reach decisions. This process assists commanders, staffs, and others in thinking critically and creatively while planning. Command and support relationships provide the basis for unityof command and unity of effort in operations.

THE MILITARY DECISION-MAKING PROCESS

Q-2. The *military decision-making process* is an iterative planning methodology to understand the situation and mission, develop a course of action, and produce an operation plan or order (ADP 5-0). The MDMP facilitates collaborative planning. The higher headquarters solicits input and continuously shares information concerning future operations through planning meetings, WARNORDs, and other means. It shares information with subordinate and adjacent units, supporting and supported units, and unified action partners. Commanders encourage active collaboration among all organizations affected by pending operations to build a shared understanding of the situation, participate in COA development and decision-making, and resolve conflicts before publishing the plan or order.

Q-3. During planning, assessment focuses on developing an understanding of the current situation and determining what to assess and how to assess progress using measures of effectiveness and measures of performance. Developing the unit's assessment plan occurs during the MDMP—not after developing the plan or order. (See FM 6-0 for details on assessment plans.) The MDMP also drives preparation. Since time is a factor in all operations, commanders and staffs conduct a time analysis early in the planning process. This analysis assists in determining when to begin certain actions to ensure forces are ready and in position before execution. This may require the commander to direct subordinates to start necessary movements, conduct task organization changes, begin information collection, and execute other preparation activities before completing the plan. As the commander and staff conduct the MDMP, they direct preparation tasks in a series of WARNORDs.

Q-4. Commanders initiate the MDMP upon receipt of, or in anticipation of, a mission. Commanders and staffs often begin planning in the absence of a complete and approved higher headquarters' OPLAN or OPORD. In these instances, the headquarters begins a new planning effort based on a WARNORD and other directives, such as a planning order or an alert order from its higher headquarters. (See paragraphs 4-23 through 4-25.) The MDMP consists of seven steps, as shown in table 4-1 on page 4-8. Each step of the MDMP has various inputs, a step to conduct, and outputs. Each step also has a series of processes that commanders and staffs conduct to produce the outputs. The outputs lead to an increased understanding of the situation, facilitating the next step of the MDMP. Commanders and staffs generally perform these steps sequentially; however, they may revisit several steps in iteratively as they learn more about the situation before producing the plan or order. (See FM 6-0 for information on the MDMP.)

FUNDAMENTAL CONSIDERATIONS

Q-5. Establishing clear command and support relationships is a key aspect of any operation. Large-scale combat operations present unique and complex challenges that demand well defined command and support relationships among units. These relationships establish responsibilities and authorities between subordinate and supporting units. Some command and support relationships limit the commander's authority to prescribe additional relationships. Knowing the inherent responsibilities of each command and support relationship

allows commanders to effectively organize their forces and helps supporting commanders understand their unit's role in the organizational structure.

JOINT COMMAND RELATIONSHIPS

Q-6. As part of a joint force, Army commanders and staffs must understand joint command relationships. JP 1 specifies and details four types of joint command relationships:

- Combatant command (command authority) (COCOM).
- OPCON.
- TACON.
- Support.

COMBATANT COMMAND (COMMAND AUTHORITY)

Q-7. *Combatant command* is a unified or specified command with a broad continuing mission under a single commander established and so designated by the President, through the Secretary of Defense and with the advice and assistance of the Chairman of the Joint Chiefs of Staff (JP 1). Section 164, Title 10, United States Code (10 USC 164) specifies this authority in law. Normally, the combatant commander exercises this authority through subordinate JFCs, Service component commanders, and functional component commanders.

OPERATIONAL CONTROL

Q-8. *Operational control* is the authority to perform those functions of command over subordinate forces involving organizing and employing commands and forces, assigning tasks, designating objectives, and giving authoritative direction necessary to accomplish the mission (JP 1). OPCON normally includes authority over all aspects of operations and joint training necessary to accomplish missions. It does not include directive authority for logistics or matters of administration, discipline, internal organization, or unit training. The combatant commander must specifically delegate these elements of COCOM. OPCON does include the authority to delineate functional responsibilities and operational areas of subordinate JFCs. In two instances, the Secretary of Defense may specify adjustments to accommodate authorities beyond OPCON in an establishing directive: when transferring forces between combatant commanders or when transferring members or organizations from the military departments to a combatant command. Adjustments will be coordinated with the participating combatant commanders.

TACTICAL CONTROL

Q-9. *Tactical control* is the authority over forces that is limited to the detailed direction and control of movements or maneuvers within the operational area necessary to accomplish missions or tasks assigned (JP 1). TACON is inherent in OPCON. It may be delegated to and exercised by commanders at any echelon at or below the level of combatant command. TACON provides sufficient authority for controlling and directing the application of force or tactical use of combat support assets within the assigned mission or task. TACON does not provide organizational authority or authoritative direction for administrative and logistic support; the commander of the parent unit continues to exercise these authorities unless otherwise specified in the establishing directive.

SUPPORT

Q-10. *Support* is the action of a force that aids, protects, complements, or sustains another force in accordance with a directive requiring such action (JP 1). Support is a command authority in joint doctrine. A supported and supporting relationship is established by a superior commander between subordinate commanders when one organization should aid, protect, complement, or sustain another force. Designating supporting relationships is important. It conveys priorities to commanders and staffs planning or executing joint operations. Designating a support relationship does not provide authority to organize and employ commands and forces, nor does it include authoritative direction for administrative and logistic support. Joint doctrine divides support into the categories listed in table Q-1.

Table Q-1. Joint support categories

Category	*Definition*
General support	That support which is given to the supported force as a whole and not to any particular subdivision thereof (JP 3-09.3).
Mutual support	That support which units render each other against an enemy, because of their assigned tasks, their position relative to each other and to the enemy, and their inherent capabilities (JP 3-31).
Direct support	A mission requiring a force to support another specific force and authorizing it to answer directly to the supported force's request for assistance (JP 3-09.3).
Close support	The action of the supporting force against targets or objectives that are sufficiently near the supported force as to require detailed integration or coordination of the supporting action (JP 3-31).

Q-11. Support is, by design, somewhat vague but very flexible. Establishing authorities ensure both supported and supporting commanders understand the authority of supported commanders. JFCs often establish supported and supporting relationships among components. For example, the maritime component commander is normally the supported commander for sea control operations; the air component commander is normally the supported commander for counterair operations. An Army headquarters designated as the land component may be the supporting force during some campaign phases and the supported force in other phases.

Q-12. The JFC may establish a support relationship between functional and Service component commanders. Conducting operations across a large operational area often involves both the land and air component commanders. The JTF commander places the land component in general support of the air component until the latter achieves air superiority. Conversely, within the land AO, the land component commander becomes the supported commander and the air component commander provides close support. A joint support relationship is not used when an Army commander task organizes Army forces in a supporting role. When task-organized to support another Army force, Army forces use one of the four Army support relationships.

OTHER AUTHORITIES

Q-13. Although discussed in joint doctrine, coordinating authority and direct liaison authorized are directly applicable to Army forces. These relationships can assist commanders in facilitating collaboration both within and outside their respective organizations, and they can promote information sharing concerning details of military operations.

Coordinating Authority

Q-14. *Coordinating authority* is a commander or individual who has the authority to require consultation between the specific functions or activities involving forces of two or more Services, joint force components, or forces of the same Service or agencies, but does not have the authority to compel agreement (JP 1). In the event that essential agreement cannot be obtained, the matter shall be referred to the appointing authority. Coordinating authority is a consultation relationship, not an authority through which command may be exercised. Coordinating authority is more applicable to planning and similar activities than to operations. For example, a joint security commander exercises coordinating authority over area security operations within the joint security area. Commanders or leaders at any echelon at or below combatant command may be delegated coordinating authority. These individuals may be assigned responsibilities established through a memorandum of agreement between military and nonmilitary organizations.

Direct Liaison Authorized

Q-15. *Direct liaison authorized* is that authority granted by a commander (any level) to a subordinate to directly consult or coordinate an action with a command or agency within or outside of the granting command (JP 1). Direct liaison authorized is more applicable to planning than operations and always carries with it the requirement of keeping the commander granting direct liaison authorized informed. Direct liaison authorized is a coordination relationship, not an authority through which command may be exercised.

ARMY COMMAND AND SUPPORT RELATIONSHIPS

Q-16. Army command and support relationships are similar but not identical to joint command authorities and relationships. Differences stem from the way Army forces task-organize internally and the need for a system of support relationships between Army forces. Another important difference is the requirement for Army commanders to handle the administrative support requirements that meet the needs of Soldiers. These differences allow for flexible allocation of Army capabilities within various Army echelons. Army command and support relationships are the basis for building Army task organizations. Certain responsibilities are inherent in the Army's command and support relationships.

ARMY COMMAND RELATIONSHIPS

Q-17. Army command relationships define superior and subordinate relationships between unit commanders. (See table Q-2.) By specifying a chain of command, command relationships unify effort and enable commanders to use subordinate forces with maximum flexibility. Army command relationships identify the degree of control of the gaining Army commander. The type of command relationship often relates to the expected longevity of the relationship between the headquarters involved, and it quickly identifies the degree of support that the gaining and losing Army commanders provide. Army command relationships include organic, assigned, attached, OPCON, and TACON.

Table Q-2. Army command relationships

If the relationship is—	***The inherent responsibilities:***							
	Have command relationship with—	May be task-organized by—	Unless modified ADCON responsibility goes through—	Are assigned position or AO by—	Provide liaison to—	Establish and maintain communications with—	Have priorities established by—	Can impose on gained unit further command or support relationship of—
Organic	All organic forces organized with the HQ	Organic HQ	Army HQ specified in organizing document	Organic HQ	N/A	N/A	Organic HQ	Attached; OPCON; TACON; GS, GSR, R, DS
Assigned	Gaining unit	Gaining HQ	Gaining Army HQ	OPCON chain of command	As required by OPCON	As required by OPCON	ASCC or Service-assigned HQ	As required by OPCON HQ
Attached	Gaining unit	Gaining unit	Gaining Army HG	Gaining unit	As required by gaining unit	Unit to which attached	Gaining unit	OPCON; TACON; GS; GSR; R; DS
OPCON	Gaining unit	Parent unit and gaining unit; gaining unit may pass OPCON to lower HQ[1]	Parent unit	Gaining unit	As required by gaining unit	As required by gaining unit and parent unit	Gaining unit	OPCON; TACON; GS; GSR; R; DS
TACON	Gaining unit	Parent unit	Parent unit	Gaining unit	As required by gaining unit	As required by gaining unit and parent unit	Gaining unit	TACON; GS; GSR; R; DS

Note.[1] In NATO, the gaining unit may not task-organize a multinational force. (See TACON.)

ADCON	administrative control	HQ	headquarters
AO	area of operations	N/A	not applicable
ASCC	Army Service component command	NATO	North Atlantic Treaty Organization
DS	direct support	OPCON	operational control
GS	general support	R	reinforcing
GSR	general support-reinforcing	TACON	tactical control

Organic

Q-18. *Organic forces* are those assigned to and forming an essential part of a military organization as listed in its table of organization for the Army, Air Force, and Marine Corps, and are assigned to the operating forces for the Navy (JP 1). Joint command relationships do not include organic because a JFC is not responsible for the organizational structure of units. That is a Service responsibility.

Q-19. The Army establishes organic command relationships through organizational documents such as tables of organization and equipment and tables of distribution and allowances. If temporarily task-organized with another headquarters, organic units return to the control of their organic headquarters after completing the mission. To illustrate, within a BCT, the entire brigade is organic. In contrast, within most functional and multifunctional brigades, there is a *base* of organic battalions and companies and a variable mix of assigned and attached battalions and companies

Assigned

Q-20. *Assign* is to place units or personnel in an organization where such placement is relatively permanent, and/or where such organization controls and administers the units or personnel for the primary function, or greater portion of the functions, of the unit or personnel (JP 3-0). Unless specifically stated, this relationship includes administrative control (ADCON).

Attached

Q-21. *Attach* is the placement of units or personnel in an organization where such placement is relatively temporary (JP 3-0). A unit may be temporarily placed into an organization for the purpose of conducting a specific operation of short duration. Attached units return to their parent headquarters (assigned or organic) when the reason for the attachment ends. The Army headquarters that receives another Army unit through assignment or attachment assumes responsibility for the ADCON requirements, and particularly sustainment, that normally extend down to that echelon, unless modified by directives.

ARMY SUPPORT RELATIONSHIPS

Q-22. Table Q-3 on page Q-6 lists Army support relationships. Army support relationships are not a command authority and are more specific than joint support relationships. Commanders establish support relationships when subordination of one unit to another is inappropriate. Army support relationships are—

- Direct support.
- General support.
- Reinforcing.
- General support-reinforcing.

Q-23. Commanders assign a support relationship for several reasons. They include when—

- The support is more effective if a commander with the requisite technical and tactical expertise controls the supporting unit rather than the supported commander.
- The echelon of the supporting unit is the same as or higher than that of the supported unit. For example, the supporting unit may be a brigade, and the supported unit may be a battalion. It would be inappropriate for the brigade to be subordinated to the battalion; hence, the echelon uses an Army support relationship.
- The supporting unit supports several units simultaneously. The requirement to set support priorities to allocate resources to supported units exists. Assigning support relationships is one aspect of mission command.

Table Q-3. Army support relationships

If the relationship is—	*The inherent responsibilities:*							
	Have command relationship with—	May be task-organized by—	Receive sustainment from—	Are assigned position or area of operations by—	Provide liaison to—	Establish and maintain communications with—	Have priorities established by—	Can impose on gained unit further support relationship of—
Direct support[1]	Parent unit	Parent unit	Parent unit	Supported unit	Supported unit	Parent unit; supported unit	Supported unit	See note [1]
Reinforcing	Parent unit	Parent unit	Parent unit	Reinforced unit	Reinforced unit	Parent unit; reinforced unit	Reinforced unit; then parent unit	Not applicable
General support-reinforcing	Parent unit	Parent unit	Parent unit	Parent unit	Reinforced unit and as required by parent unit	Reinforced unit and as required by parent unit	Parent unit; then reinforced unit	Not applicable
General support	Parent unit	Parent unit	Parent unit	Parent unit	As required by parent unit	As required by parent unit	Parent unit	Not applicable
Note.[1] Commanders of units in direct support may further assign support relationships between their subordinate units and elements of the supported unit after coordination with the supported commander.								

Q-24. Army support relationships allow supporting commanders to employ their units' capabilities to achieve results required by supported commanders. Support relationships are graduated from an exclusive supported and supporting relationship between two units—as in direct support—to a broad level of support extended to all units under the control of the higher headquarters—as in general support. Support relationships do not alter ADCON. Commanders specify and change support relationships through task organization.

Q-25. *Direct support* is a support relationship requiring a force to support another specific force and authorizing it to answer directly to the supported force's request for assistance (FM 3-0). A unit assigned a direct support relationship retains its command relationship with its parent unit, but it is positioned by and has priorities of support established by the supported unit. (Joint doctrine considers direct support a mission rather than a support relationship.) A field artillery unit in direct support of a maneuver unit is concerned primarily with the fire support needs of only that unit. The fires cell of the supported maneuver unit plans and coordinates fires to support the maneuver commander's intent. The commander of a unit in direct support recommends position areas and coordinates for movement clearances where the unit can best support the maneuver commander's concept of the operation.

Q-26. General support is that support which is given to the supported force as a whole. It is not given to any particular subdivision of the force. Units assigned a general support relationship are positioned and have priorities established by their parent unit. A field artillery unit assigned in general support of a force has all of its fires under the immediate control of the supported commander or his designated force field artillery headquarters.

Q-27. *Reinforcing* is a support relationship requiring a force to support another supporting unit (FM 3-0). Only like units (for example, artillery to artillery) can be given a reinforcing mission. A unit assigned a reinforcing support relationship retains its command relationship with its parent unit, but it is positioned by the reinforced unit. A unit that is reinforcing has priorities of support established by the reinforced unit, then the parent unit. For example, when a direct support field artillery battalion requires more fires to meet maneuver force requirements, another field artillery battalion may be directed to reinforce the direct support battalion.

Q-28. *General support-reinforcing* is a support relationship assigned to a unit to support the force as a whole and to reinforce another similar-type unit (ADP 5-0). A unit assigned a general support-reinforcing support relationship is positioned and has its priorities established by its parent unit and secondly by the reinforced unit. For example, an artillery unit that has a general-support-reinforcing relationship supports the force as a whole and provides reinforcing fires for other artillery units.

ADMINISTRATIVE CONTROL

Q-29. *Administrative control* is direction or exercise of authority over subordinate or other organizations in respect to administration and support (JP 1). ADCON is not a command or support relationship; it is a Service authority. It is exercised under the authority of and is delegated by the Secretary of the Army. ADCON is synonymous with the Army's Title 10, United States Code (10 USC) authorities and responsibilities.

Q-30. ADCON responsibilities of Army forces involve the entire Army, and they are distributed between the Army institutional force and the operating forces. The institutional force consists of those Army organizations whose primary mission is to generate and sustain the operating force's capabilities for employment by JFCs. Operating forces consist of those forces whose primary missions are to participate in combat and the integral supporting elements thereof. Often, commanders in the operating force and commanders in the institutional force subdivide specific responsibilities. Army institutional force capabilities and organizations are linked to operating forces through collocation and reachback.

Q-31. The ASCC is always the senior Army headquarters assigned to a combatant command. Its commander exercises command authorities as assigned by the combatant commander and ADCON as delegated by the Secretary of the Army. ADCON is the Army's authority to administer and support Army forces even while in a combatant command AOR. COCOM is the basic authority for C2 of the same Army forces. The Army is obligated to meet the combatant commander's requirements for the operating forces. Essentially, ADCON directs the Army's support of operating force requirements.

Q-32. Unless modified by the Secretary of the Army, administrative responsibilities normally flow from Department of the Army through the ASCC to those Army forces assigned or attached to that combatant command. ASCCs usually *share* ADCON for at least some administrative or support functions. *Shared ADCON* refers to the internal allocation of Section 30313(b), Title 10, United States Code (10 USC 30313[b]) responsibilities and functions. This is especially true for Reserve Component forces. Certain administrative functions, such as pay, stay with the Reserve Component headquarters, even after unit mobilization. Shared ADCON also applies to direct reporting units of the Army that typically perform single or unique functions. The direct reporting unit, rather than the ASCC, typically manages individual and unit training for these units. The Secretary of the Army directs shared ADCON.

This page intentionally left blank.

Appendix R

Standard Operating Procedure Considerations

OVERVIEW

R-1. A *standard operating procedure* is a set of instructions applicable to those features of operations that lend themselves to a definite or standardized procedure without loss of effectiveness (JP 3-31). The procedures are applicable unless ordered otherwise. SOPs are both standing and standard: they instruct how to perform a prescribed and accepted process established for completing a task. Features of operations that lend themselves to standardization are common and usually detailed processes performed often and requiring minimal variation each time. Well-written and properly used unit tactical SOPs enhance effective execution of tasks; the benefits of SOPs are numerous. They reduce training time, the loss of unwritten information, the commission of errors, the omission of essential steps or processes, and the time required for completion of tasks. This does not mean, however, that carrying out SOPs never requires thought or that SOPs should never change. Indeed, tactical units must change some operating procedures as rapidly as OEs and missions change.

R-2. An operating procedure is the approved process to complete a complex, recurring task. A procedure consists of a series of detailed steps—or subordinate tasks—and carrying out those steps ensures a desired result. SOP provides the instructions for performing an operating procedure. Writing down instructions for operating procedures is essential for units to achieve the desired result easily and repeatedly. SOP authors use the format required by their command, which must be consistent with appropriate military doctrine and regulations. Unit SOPs normally contain the following categories of information:

- SOP name, activity, unit, and classification.
- SOP subject. (This is the overall topic.)
- References pertinent to the procedure. Citations must be accurate and thorough-title, type, number, and date of publication (for formal publications); online links if appropriate; and identifying information for correspondence or meetings.
- SOP purpose (to ensure result X by giving instructions for performing task Y).
- SOP short summary (a few sentences, placed near the beginning but composed last).
- Scope (to whom the SOPs apply, and possibly under what conditions or circumstances).
- Definitions (sometimes needed to explain terms new to readers or to interpret acronyms).
- Responsibilities (brief, descriptive sentences telling exactly who is responsible to ensure what outcomes or provide what resources).
- Detailed instructions for the procedures, explaining—
  - Who performs exactly what tasks.
  - When to perform the tasks (such as under what conditions, in what sequence, how often or how many times, at what time of day, and before or after what other event or procedure).
  - How to perform the tasks (such as using what equipment or supplies, alone or together with whom, to whom or upon what, according to what security and safety requirements, and in what manner or at what pace).
  - A reason to perform the tasks (if this information aids comprehension, execution, or compliance).
  - What the result will be as each subordinate task is completed (if this information is concrete and factual, and it aids comprehension, execution, or compliance).
  - Alternating actions to take in likely changes of circumstances.
  - How or to whom Soldiers report completion of the procedures.
  - Recordkeeping requirements.
- Enclosures.

R-3. Effective SOPs and training enable platoons to move and accomplish their mission with a minimum of formal orders. Orders or tactical SOPs with clear and simple procedures and control measures enhance a unit's ability to coordinate without experiencing a corresponding loss in momentum. To avoid delay, unit SOPs may provide automatic approval of certain actions. When consistently executed and continually updated after each mission, SOPs can increase the platoon leader's time available to plan and prepare for a particular assigned task. The most effective SOPs are developed with input from all leaders in the platoon.

OUTLINE

R-4. The following is a basic outline that can be used to develop platoon SOPs. The sections are not all inclusive; ensure content covered in company and supported unit SOPs is incorporated into the platoon's SOPs.

GENERAL

R-5. This section provides the SOP purpose, scope, and distribution. If classified, the appropriate cover with classification statements and expiration, headers, and footers on the body should be included.

COMMAND AND CONTROL

R-6. The following entails the C2 part of the SOP outline.

Organization

R-7. Detailed and customized platoon SOPs consider the specific personnel and equipment in the platoon. It should discuss how the sections of the platoon are organized.

Succession of Command

R-8. The platoon should outline the succession of command. It should also cover the duties and responsibilities of essential personnel.

Troop Leading Procedures

R-9. SOPs should list the steps of the TLP with the normal timelines used for each step of the procedures. It should also include duties for other members of the platoon, such as preparing graphics, overlays, briefing sites, or briefing material, rehearsal site and materials.

Orders

R-10. SOPs should outline the orders group, WARNORD format, preferred OPORD format, and preferred FRAGORD type.

Communications

R-11. SOPs should clearly outline how the platoon will communicate and execute PACE/no communications plans in the absence of orders.

Terrain Index Refence System

R-12. SOPs should outline the terrain index reference systems the platoon could utilize based on contingency plans and operations plans in which they are a part of. This facilitates a more stream lined order.

Readiness Conditions

R-13. SOPs should outline the readiness conditions for alerts, recalls, and standards of a, b, and c bag requirements. This includes the timelines for the type of alert, recall, and uniform and equipment necessary for each type.

Attachments and Detachments

R-14. SOPs should outline attachments/detachments based on their designated contingency plans and OPLANs.

Maintenance

R-15. SOPs should outline maintenance requirements for weekly maintenance, post field maintenance and recovery procedures, services procedures and timelines as directed by higher headquarters, redeployment maintenance, and any other maintenance requirements. This requirement includes tentage, camouflage systems, radio, sensitive items, heaters, and other equipment the platoon requires to conduct intelligence operations.

TACTICAL OPERATIONS

R-16. The following entails the tactical operations part of the SOP outline.

Precombat Operations

R-17. SOPs should outline—

- PCIs for Soldiers, equipment, and vehicles.
- Back-brief timelines and key leaders necessary.
- The type and preferred method for rehearsals.
- The type of logistics packages expected to be executed.
- Necessary coordination steps for adjacent, higher, supported units and other attachments.
- Readiness conditions and changes based on time or threat actions/activities.
- Unit readiness requirements reporting timelines.

Quartering Parties

R-18. SOPs should outline platoon members required, specific equipment, priorities of work, and individual duties when the company or supported unit conducts a quartering party. Night time requirements should also be outlined.

Assembly Areas

R-19. SOPs should outline—

- The platoon sector within the company or supported unit assembly area.
- The preferred method of entrance of the assembly area.
- Outline the marking procedures, day time as well as night time, of the platoons sector within the assembly area.
- Security requirements and responsibilities within the assembly area.

Tactical Roadmarches

R-20. SOPs should outline—

- The platoon positioning within the company or supported unit in each type of tactical road march the platoon could execute.
- The platoon duties within each type of road march for security, air defense, and reaction to contact.
- Actions and activities during a halt.
- Other actions or activities outlined in the company or supported unit SOPs.

Intelligence Operations

R-21. SOPs should outline—

- The use of camouflage at collection positions.
- Establishment and improvement of defensive positions associated with the operations.
- Security measures such as trip flares and claymore mines.
- Stand-to-times.
- Noise and light discipline.
- Proper communications procedures and equipment.
- Reporting requirements for operations.
- Reporting requirements for the CCIRs and enemy contact/warnings.
- Limited visibility equipment use procedures/considerations.

Fires

R-22. SOPs should outline supported unit fires procedures and air defense warnings and weapon control status levels.

CBRN

R-23. SOPs should outline—

- CBRN detection equipment the platoon is equipped with.
- Mission-oriented protective posture levels and gear required for each level.
- How CBRN contaminated areas are marked to include the bypass routes/lane markings.
- Individual decontamination procedures, higher level decontamination locations and procedures, and causality evacuation procedures for contaminated personnel.

Passage of Lines

R-24. SOPs should outline the designated key leaders required with the type of details and information that should be exchanged. Additionally it should outline the movement technique for a passage of lines.

ALARMS

R-25. SOPs should outline the alarms the platoon is equipped with and appropriate emplacement requirements.

PRECOMBAT CHECKLIST

R-26. SOPs should outline—

- Individual checks required.
- Vehicle checks required.
- Weapon checks required.
- Communications checks required.
- CBRN checks required.
- Ancillary equipment checks required.
- Class of supply checks required.

REPORTS

R-27. SOPs should outline—

- Operations reports and formats.
- Intelligence reports and formats.
- Logistics reports and formats.
- Personnel reports and formats.
- CBRN reports and formats.

BREVITY CODES

R-28. SOPs should include brevity codes necessary for the conduct of operations. These brevity codes can not only shorten radio transmissions, reduce the amount of message traffic, and provide warnings. The use of brevity codes can make it harder for the enemy to locate friendly units and positions through the use of radios.

CONTINGENCY PLANS

R-29. SOPs should include a five-point contingency plan and procedures for a loss of communications; destruction of material, both friendly and enemy; and for handling of deceased personnel.

COORDINATION CHECKLISTS

R-30. SOPs should include necessary coordination checklists that facilitate the platoon intelligence operations. These should include UAS checklists, supported unit checklists, and any other checklists specified by the company.

CASUALTY AND CASUALTY EVACUATION

R-31. SOPs should include—

- CLS designated personnel.
- Steps and procedures for treating cold/heat injuries or casualties.
- MEDEVAC procedures.
- MEDEVAC request reports.

This page intentionally left blank.

Appendix S
Property Management

OVERVIEW

S-1. Logistics are the most crucial part of warfighting. Maintaining a robust supply chain is one of the Army's top priorities in both peacetime and during military operations. Without the appropriate supplies and equipment, military units all echelons will not perform their assigned tasks effectively. The Army supply system is a large, complicated, and often, confusing network that is best left to SMEs who are trained in this complex machine. This appendix addresses the topics that are most relevant to the MI leaders.

INVENTORIES

S-2. This section discusses chain of command and subhand receipt inventories.

CHAIN OF COMMAND INVENTORIES

S-3. The commander is considered the property owner of all equipment assigned to the company. Prior to assuming command of a unit, the new commander must physically identify and inspect every piece of equipment. Platoon leadership usually place the platoon's equipment in a uniformed systematic lay out. The commander then goes through the equipment verifying every serial number and physically identifying every main component. Most equipment employed by MI professionals has numerous subcomponents that the commander must also identify and account for prior to signing the property book. After the change of command, the new company commander then assigns a subhand receipt holder to sign for the platoon's equipment. This individual is normally the platoon sergeant because officers change more often than the NCO. The NCO provides the commander longevity. The commander is required to inventory 10 percent of his property every month.

Note. *Property book* refers to the equipment assigned to the unit. The Property Book Unit Supply Enhanced (also known as PBUSE) manages the Army's retail equipment inventory. As the Army's first web-based logistics solution, the Property Book Unit Supply Enhanced has aided property book officers, unit level supply sergeants and staff officers worldwide since 2001 with property accountability and real-time asset visibility.

SUBHAND RECEIPT INVENTORIES

S-4. These inventories are conducted when there is a change in platoon leadership which requires a new subhand receipt holder. The new hand receipt holder then conducts an inventory to identify and verify the location of the platoon's equipment in the same manner as the commander's inventory. The subhand receipt holder then distributes the equipment to the end item user or the person who will use the equipment to conduct operations. This individual will be directly responsible the equipment. Generally speaking, responsibility for equipment can only be assigned two levels down. For example, equipment is passed from the commander to the subhand receipt holder; that is one level. Then from subhand receipt holder to end item user is the second level.

HAND RECEIPT

S-5. The subhand receipt holder uses DA Form 2062 (*Hand Receipt/Annex Number*) to track and manage property not directly under his/her control. This form is signed by the user and maintained by the subhand receipt holder. By signing the DA Form 2062, the end item user assumes responsibility for everything on the form and is financially liable for any loss or negligent damage. The form is always used to maintain accountability when property is no longer directly under the control of the primary property holder. Once the equipment is returned to the primary holder, the subhand receipt holder returns the DA Form 2062 to the signer. This relieves the user of all accountability and liability for the equipment.

S-6. As mentioned, the DA Form 2062 is used to temporarily transfer accountability of property from one Soldier to another. The hand receipt catalogs the end item and all subcomponents associated with the equipment. This form can and is sometimes used as a placeholder during various inventories.

S-7. The hand receipt holder must be specific when producing a DA Form 2062. The following information must be recorded in each block:

- **From:** Name of the property owner.
- **To:** The end item user/receiver.
- **End item stock number:** This number is used to identify the item type in the supply system.
- **End item description:** This is the item designation (for example, *Computer, Panasonic CH-74*).
- **Publication number:** If applicable, this is literature that supports the DA Form 2062 such as a technical manual.
- **Stock number:** This column is used to record the stock number for each item and subcomponent if available.
- **Item description:** This column is used to describe the item. It is critical that all pertinent identifying information be accurately recorded. This includes: serial number, description, and any other data that will specify the equipment.
- **Unit of issue (also known as UI):** This is labeled as *each* (also known as EA) or *set*.
- **Quantity authorized (also known as QTY AUTH):** The number of the items issued.
- **Quantity:** These columns are completed by the Soldier signing for the equipment. The receiver will inventory the equipment, verify the serial number and the description. They then place the number of pieces and signs in the same column.

FINANCIAL LIABILITY INVESTIGATION OF PROPERTY LOSS

S-8. A financial liability investigation of property loss is the manner in which the Army accounts for the circumstances surrounding the loss, damage, or destruction of U.S. Government property. The financial liability investigation of property loss serves as documentation allowing for the adjustment of property books. The financial liability investigation of property loss also documents a charge or relief from financial liability.

FINANCIAL LIABILITY INVESTIGATION OF PROPERTY LOSS PROCESS

S-9. The financial liability investigation of property loss process begins once the loss is discovered. A financial liability investigating officer is appointed to conduct an investigation. There are four elements which the investigator must address while conducting the investigation and preparing their findings. All four elements must be proven to hold an individual financially liable:

- **Loss, damage, or destruction.** The item must be lost, damaged, or destroyed in order to hold a person financially liable. If the item was found or was scheduled to be destroyed by the Army, then the Respondent/Soldier may not be held financially liable.
- **Responsibility.** There are many methods of having responsibility over U.S. Government property. (See AR 735-5.) Just because a person has responsibility of the property does not, in itself, make the person financially liable.

- **Culpability.** Before a person can be held financially liable, the findings must show that he or she, through negligence or willful misconduct, violated a particular duty of care for the property. Whether the person's actions or omissions constitute negligence depends on the circumstances of each case. Negligence under some circumstances may not reflect negligence under other circumstances. Therefore, all facts must be fully considered when determining the reasonableness of a person's conduct.
- **Proximate cause.** The cause, which in a natural and continuous sequence of events, unbroken by a new cause, produced the loss or damage. Without this cause, the loss or damage would not have occurred. It is further defined as the primary moving cause, or the predominate cause from which the loss or damage followed as a natural, direct, and immediate consequence.

S-10. Soldiers should take reasonable steps to care for the property that is entrusted to them. Do not let others borrow property in your possession without signing the equipment over to the next person. If you do sign for equipment or sign the equipment over to another person, then keep copies of the hand receipts. Take inventories of the property for which you are responsible. Ensure that the property you have responsibility for is secured properly.

S-11. Once the investigator completes their investigation, they will prepare their finding and recommendations on the DD Form 200 (*Financial Liability Investigation of Property Loss*), in block 15a. The finding reported should be clear and concise statements of fact, readily deduced from evidence in the record. The standard of proof is a preponderance of the evidence, which means *more likely than not*. The finding should answer questions listed in the scope of the investigation. Recommendations must be supported by, and be consistent with the findings. Recommendations should be guided by the Investigator's concept of fairness, both to the Government and to individuals.

S-12. The timeline starts with the discovery of the loss or damage. Time limits are found in AR 735-5. Generally, Active Army financial liability investigation of property losses have 75 days to be completed, while reserve component units have longer time periods. These are flexible time constraints but should be abided by as much as possible. If there is a delay in the process, the person causing the delay should write a *memorandum for record* explaining the delay and attach it to the financial liability investigation of property loss as an exhibit.

NOTIFICATION

S-13. If the investigator recommends that the Soldier be financially liable, the investigator must send notification to the Soldier. The notification memorandum, along with the financial liability investigation of property loss packet and all exhibits, should be hand-delivered to the Soldier. If hand delivery is not possible, then the packet should be forwarded via certified mail. Generally, the Soldier has seven calendar days to submit a rebuttal if the packet was hand-delivered. To properly rebut the investigator's recommendation to hold you financially liable, you must know the basis for that recommendation. It is critical that you carefully read the entire financial liability investigation of property loss and examine all the evidence that is attached (usually in the form of exhibits).

LEGAL REVIEW

S-14. A legal review is required for all financial liability investigation of property losses recommending financial liability. If the legal review finds the investigator's findings and recommendations legally insufficient, the approving authority cannot assess financial liability against the individuals in question.

ACTION BY APPROVING AUTHORITY

S-15. The approval authority approves/disapproves charges of financial liability. The approval authority puts the Soldier on notice that financial liability is assessed. The Soldier may request that the approval authority reconsider if new evidence is discovered. The Soldier may also request remission or cancellation of indebtedness or an extension of the monetary collection period.

SHORT FINANCIAL LIABILITY INVESTIGATION OF PROPERTY LOSS

S-16. A short financial liability investigation of property loss is one in which an investigator is not appointed. This type of financial liability investigation of property loss operates under a different process. However, the Soldier must still be given notice and have the opportunity to submit a rebuttal.

ARMY REGULATION 15-6 INVESTIGATION IN CONJUNCTION WITH A FINANCIAL LIABILITY INVESTIGATION OF PROPERTY LOSS

S-17. There are some cases that require an AR 15-6 investigation to be conducted. In those cases, the AR 15-6 investigation will be completed in its entirety, including getting a legal review, before the Soldier is given notice and an opportunity to rebut. After the Soldier submits a rebuttal (or waives such), the financial liability investigation of property loss gets a second legal review.

AMOUNT OF LIABILITY

S-18. The Government can require you to pay the entire amount of money lost by the Government or some lesser amount. The value of loss is determined using the lost item's current fair market value and depreciation. Generally, no more than one month's pay can be assessed unless you fall into a special category. Base pay is determined at the time of the loss and not when the financial liability investigation of property loss is completed.

LEGAL ASSISTANCE

S-19. Soldiers are entitled to legal assistance to review the financial liability investigation of property loss and assist with their rebuttal. Gather all documents, photos, statements, and other evidence that will support your position. Write a statement that explains why the investigator's recommendation is erroneous and why your evidence supports your position. Do not include extraneous issues or derogatory or emotional comments within your rebuttal. Simply state the facts.

ARMY REGULATION 15-6 INVESTIGATIONS

S-20. MI officers may be appointed to perform an AR 15-6 investigation into the loss of property or disciplinary actions. AR 15-6 sets forth procedures for conducting informal and formal investigations. Only informal investigations will be discussed here. Informal investigations are those that usually have a single investigating officer who conducts interviews and collects evidence. In contrast, formal investigations normally involve due process hearings for a designated respondent. Formal procedures are required whenever a respondent is designated.

S-21. Informal procedures are not intended to provide a hearing for persons who may have an interest in the subject of the investigation. Since no respondents are designated in informal investigations, no one is entitled to the rights of a respondent, such as notice of the proceedings, an opportunity to participate, representation by counsel, or the right to call and cross-examine witnesses. The investigating officer may, however, make any relevant findings or recommendations concerning individuals, even where those findings or recommendations are adverse to the individual or individuals concerned.

S-22. AR 15-6 is used as the basis for many investigations requiring the detailed gathering and analyzing of facts and the making of recommendations based on those facts. AR 15-6 procedures may be used on their own, such as in an investigation to determine facts and circumstances, or the procedures may be incorporated by reference into directives governing specific types of investigations, such as reports of survey and line of duty investigations. If such directives contain guidance that is more specific than that set forth in AR 15-6 or these procedures, the more specific guidance will control. For example, AR 15-6 does not contain time limits for completion of investigations; however, if another directive that incorporates AR 15-6 procedures contains time limits, that requirement will apply.

S-23. Only commissioned officers, warrant officers, or Army Civilian employees paid under the General Schedule, Level 13 (GS-13), or above may be investigating officers. The investigating officers must also be senior to any person that is part of the investigation if the investigation may require the investigating officer to make adverse findings or recommendations against that person. Since the results of any investigation may have a significant impact on policies, procedures, or careers of government personnel, the appointing authority should select the best qualified person for the duty based on their education, training, experience, length of service, and temperament.

Note. Be aware that CI special agents (career management fields 35E, 351L, 35L) are (according to AR 381-20) prohibited from performing duties as AR 15-6 investigating officers.

APPOINTING AUTHORITY

S-24. Under AR 15-6, the following persons may appoint investigating officers for informal investigations:

- Any general court-martial convening authority, including those who have such authority for administrative purposes only.
- Any general officer.
- A commander at any level.
- A principal staff officer or supervisor in the grade of major or above.
- Any state adjutant general.
- Army Civilian supervisor paid under the Executive Schedule, Senior Executive Service, or GS/GM-14 or above, provided the supervisor is the head of an agency or activity or the chief of a division or department.

S-25. Only a general court-martial convening authority may appoint an investigation for incidents resulting in property damage of one-million dollars, the loss or destruction of an Army aircraft or missile, an injury or illness resulting in, or likely to result in, total disability, or the death of one or more persons.

APPOINTMENT PROCEDURES

S-26. Informal investigation appointments may be made orally or in writing. If written, the appointment orders are usually issued as a memorandum signed by the appointing authority or by a subordinate with the appropriate authority line. Whether oral or written, the appointment should specify clearly the purpose and scope of the investigation and the nature of the findings and recommendations required. If the orders are unclear, the investigating officer should seek clarification. The primary purpose of an investigation is to report on matters that the appointing authority has designated for inquiry. The appointment orders may also contain specific guidance from the appointing authority, which, even though not required by AR 15-6, nevertheless must be followed. For example, AR 15-6 does not require that witness statements be sworn for informal investigations; however, if the appointing authority requires this, all witness statements must be sworn.

This page intentionally left blank.

Glossary

The glossary lists acronyms and terms with Army or joint definitions. Where Army and joint definitions differ, (Army) precedes the definition. The proponent publication for other terms is listed in parentheses after the definition.

SECTION I – ACRONYMS AND ABBREVIATIONS

10 USC	Title 10, United States Code
49 CFR	Code of Federal Regulations, Title 49
AAR	after action review
ADCON	administrative control
ADP	Army doctrine publication
ADRP	Army doctrine reference publication
AFI	Air Force instruction
AFTTP	Air Force tactics, techniques, and procedures
AHS	Army Health System
AIT	Advance Individual Training
AJP	Allied joint publication
AO	area of operations
AOI	area of interest
AOR	area of responsibility
APART	Annual Proficiency and Readiness Testing
AR	Army regulation
ASCC	Army Service components command
ATP	Army techniques publication
BCT	brigade combat team
BDA	battle damage assessment
BEB	brigade engineer battalion
BISE	brigade intelligence support element
C2	command and control
CASEVAC	casualty evacuation
CBRN	chemical, biological, radiological, and nuclear
CCIR	commander's critical information requirement
CEMA	cyberspace electromagnetic activities
CI	counterintelligence
CJCSI	Chairman of the Joint Chiefs of Staff instruction
CJCSM	Chairman of the Joint Chiefs of Staff manual

CJTF	combined joint task force
CLS	combat lifesaver
COA	course of action
COCOM	combatant command (command authority)
CONOPS	concept of operations
COP	common operational picture
CP	command post
DA	Department of the Army
DCGS-A	Distributed Common Ground System-Army
DD	Department of Defense form
DHE-M	Defense Human Intelligence Enterprise-manual
DOD	Department of Defense
DODD	Department of Defense directive
DSCA	defense support of civil authorities
DTG	date-time group
DTR	Defense Transportation Regulation
E-MIB	expeditionary-military intelligence brigade
EMS	electromagnetic spectrum
EPW	enemy prisoner of war
°F	degree Fahrenheit
FDC	fire direction center
FM	field manual
FMV	full-motion video
FORSCOM	United States Army Forces Command
FRAGORD	fragmentary order
G-1	assistant chief of staff, personnel
G-2	assistant chief of staff, intelligence
G-2X	counterintelligence and human intelligence staff officer for a general staff
G-3	assistant chief of staff, operations
G-4	assistant chief of staff, logistics
G-6	assistant chief of staff, signal
GCS	ground control station
GDT	ground data terminal
GEOINT	geospatial intelligence
GPS	Global Positioning System
GTA	graphic training aid
HCT	human intelligence collection team
HE	high explosives
HEAT	high-explosives antitank
HHC	headquarters and heaquarters company
HMMWV	high mobility multipurpose wheeled vehicle

HUMINT	human intelligence
IED	improvised explosive device
IEW	intelligence and electronic warfare
IEWTPT	Intelligence and Electronic Warfare Tactical Proficiency Trainer
IO	instructor operator
IPB	intelligence preparation of the battlefield
ISR	intelligence, surveillance, and reconnaissance
JFC	joint force commander
JP	joint publication
JTF	joint task force
LOGPAC	logistics package
LOGSTAT	logistics status
LRP	logistics release point
MCRP	Marine Corps reference publication
MCTP	Marine Corps tactical publication
MDMP	military decision-making process
MEDEVAC	medical evacuation
METL	mission-essential task list
METT-TC	mission, enemy, terrain and weather, troops and support available, time available, civil considerations (mission variables)
MGRS	military grid reference system
MI	military intelligence
MIB-T	military intelligence brigade-theater
MIL-STD	military standard
MITS	Military Intelligence Training Strategy
MOPP	mission-oriented protective posture
MOS	military occupational specialty
MTC	mission training complex
MTF	medical treatment facility
MUM-T	manned unmanned teaming
NATO	North Atlantic Treaty Organization
NCO	noncommissioned officer
NGA	National Geospatial-Intelligence Agency
NIPRNET	Non-classified Internet Protocol Router Network
NOTAM	notice to airmen
NSANET	National Security Agency network
NTRP	Navy tactical reference publication
O-5	lieutenant colonel
OE	operational environment
OMT	operations management team
OPCON	operational control
OPLAN	operation plan

OPORD	operation order
OSINT	open-source intelligence
OT	observer target
PACE	primary, alternate, contingency, and emergency
PAM	pamphlet
PCC	precombat check
PCI	precombat inspection
PED	processing, exploitation, and dissemination
PERSTAT	personnel status
PIR	priority intelligence requirement
PMESII-PT	political, military, economic, social, information, infrastructure, physical environment, and time (operational variables)
RFI	request for information
RL	readiness level
RM	risk management
RPG	rocket-propelled grenade
S-1	battalion or brigade personnel staff officer
S-2	battalion or brigade intelligence staff officer
S-2X	battalion or brigade counterintelligence and human 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
SIGINT	signals intelligence
SIPRNET	SECRET Internet Protocol Router Network
SME	subject matter expert
SO	standardization instructor operator
SOP	standard operating procedure
STANAG	standardization agreement (NATO)
STP	Soldier training publication
SWO	staff weather officer
TACON	tactical control
TALS	tactical automatic landing system
TB MED	technical bulletin medical
TC	training circular
TGS	Tactical Intelligence Ground Station
TLP	troop leading procedures
TM	training manual
TRADOC	United States Army Training and Doctrine Command
TTP	tactics, techniques, and procedures
TUAS	tactical unmanned aircraft system
UA	unmanned aircraft
UFC	Unified Facilities Criteria

UAS	unmanned aircraft system
UHF	ultrahigh frequency
ULCANS	Ultra Lightweight Camouflage Net System
U.S.	United States
USAF	United States Air Force
USAICOE	United States Army Intelligence Center of Excellence
UTM	universal transverse mercator
WARNORD	warning order

SECTION II – TERMS

administrative control

Direction or exercise of authority over subordinate or other organizations in respect to administration and support. (JP 1)

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 type of reconnaissance operations that focuses on obtaining detailed information about the terrain or enemy activity within a prescribed area. (ADP 3-90)

assessment

The determination of the progress toward accomplishing a task, creating a condition, or achieving an objective. (JP 3-0)

assign

Place units or personnel in an organization where such placement is relatively permanent, and/or where such organization controls and administers the units or personnel for the primary function, or greater portion of the functions, of the unit or personnel. (JP 3-0)

attach

the placement of units or personnel in an organization where such placement is relatively temporary. (JP 3-0)

attack

A type of offensive operation that destroys or defeats enemy forces, seizes and secures terrain, or both. (ADP 3-90)

casualty evacuation

The unregulated movement of casualties than can include movement both to and between medical treatment facilities. (JP 4 02)

chemical, biological, radiological, and nuclear operations

Chemical, biological, radiological, and nuclear operations include the employment of capabilities that assess, protect against, and mitigate the entire range of chemical, biological, radiological, and nuclear incidents to enable freedom of action. (FM 3-11)

close support

The action of the supporting force against targets or objectives that are sufficiently near the supported force as to require detailed integration or coordination of the supporting action. (JP 3-31)

collaborative planning

Two or more echelons planning together in real time, sharing information, perceptions, and ideas to develop their respective plans simultaneously. (ADP 5-0)

combatant command

A unified or specified command with a broad continuing mission under a single commander established and so designated by the President, through the Secretary of Defense and with the advice and assistance of the Chairman of the Joint Chiefs of Staff. (JP 1)

common-user airlift service

The airlift service provided on a common basis for all Department of Defense agencies and, as authorized, for other agencies of the United States Government. (JP 3-17)

common-user sealift

The sealift services provided by the Military Sealift Command on a common basis for all Department of Defense agencies and, as authorized, for other departments and agencies of the United States Government. (JP 4-01.2)

concealment

Protection from observation or surveillance. (FM 3-96)

coordinating authority

A commander or individual who has the authority to require consultation between the specific functions or activities involving forces of two or more Services, joint force components, or forces of the same Service or agencies, but does not have the authority to compel agreement. (JP 1)

cover

Protection from the effects of fires. (FM 3-96)

decisive action

The continuous, simultaneous combinations of offensive, defensive, and stability operations or defense support of civil authorities tasks. (ADP 3-0)

defense support of civil authorities

An operation conducted outside of the United States in coordination with other instruments of national power to establish or maintain a secure environment, provide essential government services, emergency infrastructure reconstruction, and humanitarian relief. (ADP 3-0)

defensive operation

An operation to defeat an enemy attack, gain time, economize forces, and develop conditions favorable for offensive or stability operations. (ADP 3-0)

direct liaison authorized

That authority granted by a commander (any level) to a subordinate to directly consult or coordinate an action with a command or agency within or outside of the granting command. (JP 1)

direct support

(Army) A support relationship requiring a force to support another specific force and authorizing it to answer directly to the supported force's request for assistance. (FM 3-0)

direct support

(DOD) A mission requiring a force to support another specific force and authorizing it to answer directly to the supported force's request for assistance. (JP 3-09.3)

enemy

A party identified as hostile against which the use of force is authorized. (ADP 3 0)

execution

The act of putting a plan into action by applying combat power to accomplish the mission and adjusting operations based on changes in the situation. (ADP 5-0)

general support

That support which is given to the supported force as a whole and not to any particular subdivision thereof. (JP 3-09.3)

general support-reinforcing

A support relationship assigned to a unit to support the force as a whole and to reinforce another similar-type unit. (ADP 5-0)

hazard

A condition with the potential to cause injury, illness, or death of personnel; damage to or loss of equipment or property; or mission degradation. (JP 3-33)

information collection

An activity that synchronizes and integrates the planning and employment of sensors and assets as well as the processing, exploitation, and dissemination systems in direct support of current and future operations. (FM 3 55)

institutional training domain

The Army's institutional training and education system, which primarily includes training base centers and schools that provide initial training and subsequent professional military education for Soldiers, military leaders, and Army Civilians. (ADP 7-0)

intelligence

(1) The product resulting from the collection, processing, integration, evaluation, analysis, and interpretation of available information concerning foreign nations, hostile or potentially hostile forces or elements, or areas of actual or potential operations. (2) The activities that result in the product. (3) The organizations engaged in such activities. (JP 2-0)

intelligence community

All departments or agencies of a government that are concerned with intelligence activity, either in an oversight, managerial, support, or participatory role. (JP 2-0)

intelligence preparation of the battlefield

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. (ATP 2-01.3)

intelligence, surveillance, and reconnaissance

An integrated operations and intelligence activity that synchronizes and integrates the planning and operation of sensors, assets, and processing, exploitation, and dissemination systems in direct support of current and future operations. (JP 2-01)

intelligence warfighting function

The related tasks and systems that facilitate understanding the enemy, terrain, weather, civil considerations, and other significant aspects of the operational environment. (ADP 3-0)

joint doctrine

Fundamental principles that guide the employment of U.S. military forces in coordinated action toward a common objective and may include terms, tactics, techniques, and procedures. (CJCSI 5120.02D)

joint operations

Military actions conducted by joint forces and those Service forces employed in specific command relationships with each other, which of themselves, do not establish joint forces. (JP 3-0)

large-scale combat operations

Extensive joint combat operations in terms of scope and size of forces committed, conducted as a campaign aimed at achieving operational and strategic objectives. (ADP 3-0)

large-scale ground combat operations

Sustained combat operations involving multiple corps and divisions. (ADP 3-0)

manned unmanned teaming

The integrated maneuver of Army Aviation rotary wing and unmanned aircraft system to conduct movement to contact, attack, reconnaissance, and security tasks. (FM 3-04)

medical evacuation

The timely and effective movement of the wounded, injured, or ill to and between medical treatment facilities on dedicated and properly marked medical platforms with en route care provided by medical personnel. (ATP 4-02.2)

military decision-making process

An iterative planning methodology to understand the situation and mission, develop a course of action, and produce an operation plan or order. (ADP 5-0)

multinational doctrine

The agreed upon fundamental principles that guide the employment of forces of two or more nations in coordinated action toward a common objective. (JP 3-16)

multi-Service doctrine

A publication containing principles, terms, tactics, techniques, and procedures used and approved by the forces of two or more Services to perform a common military function consistent with approved joint doctrine. (CJCSM 5120.01A)

mutual support

That support which units render each other against an enemy, because of their assigned tasks, their position relative to each other and to the enemy, and their inherent capabilities. (JP 3-31)

national stock number

The 13-digit number that identifies a stock item consisting of the 4-digit federal supply classification code plus the 9-digit national item identification number and arranged as follows: 9999-00-999-9999. (JP 4-09)

offensive operation

An operation to defeat and destroy enemy forces and gain control of terrain, resources, and population centers. (ADP 3-0)

operation

A sequence of tactical actions with a common purpose of unifying theme. (JP 1)

operational control

The authority to perform those functions of command over subordinate forces involving organizing and employing commands and forces, assigning tasks, designating objectives, and giving authoritative direction necessary to accomplish the mission. (JP 1)

operational environment

A composite of the conditions, circumstances, and influences that affect the employment of capabilities and bear on the decisions of the commander. (JP 3-0)

operational training domain

The training activities organizations undertake undertake while at home station, at maneuver combat training centers, during joint exercises, at mobility centers, and while operationally deployed. (ADP 7-0)

operations proces

The major command and control activities performed during operations: planning, preparing, executing, and continuously assessing the operation. (ADP 5-0)

organic forces

Those assigned to and forming an essential part of a military organization as listed in its table of organization for the Army, Air Force, and Marine Corps, and are assigned to the operating forces for the Navy. (JP 1)

parallel planning

Two or more echelons planning for the same operations nearly simultaneously facilitated by the use of warning orders by the higher headquarters. (ADP 5-0)

personnel services

Sustainment functions that man the force, maintain Soldier and Family readiness, promote the moral and ethical values of the nation, and enable the fighting qualities of the Army. (ADP 4-0)

planning

The art and science of understanding a situation, envisioning a desired future, and laying out effective ways of bringing that future about. (ADP 5-0)

preparation

Those activities performed by units and Soldiers to improve their ability to execute an operation. (ADP 5-0)

pre-position

To place military units, equipment, or supplies at or near the point of planned use, or at a designated location, to reduce reaction time and to ensure timely support of a specific force during initial phases of an operation. (JP 4-0)

principle

A comprehensive and fundamental rule or an assumption of central importance that guides how an organization approaches and thinks about the conduct of operations. (ADP 1-01)

projectile resistant construction

A high level of protection in common security engineering practice. (UFC 4-020-01)

regionally aligned forces

Those forces that provide a combatant commander at up to joint task force capable headquarters with scalable, tailorable capabilities to enable the combatant commander to shape the environment. They are those Army units assigned to combatant commands, those Army units allocated to a combatant command, and those Army capabilities distributed and prepared by the Army for combatant command regional missions. (FM 3-22)

rehearsal

A session in which the commander and staff or unit practices expected actions to improve performance during execution. (ADP 5-0)

reinforcing

A support relationship requiring a force to support another supporting unit. (FM 3-0)

risk management

The process to identify, assess, and control risks and make decisions that balance risk cost with mission benefits. (JP 3-0)

route reconnaissance

A directed effort to obtain detailed information of a specified route and all terrain from which the enemy could influence movement along that route. (ADP 3-90)

scheme of maneuver

The central expression of the commander's concept for operations that governs the design of supporting plans or annexes of how arrayed forces will accomplish the mission. (JP 5-0)

security operations

Those operations performed by commanders to provide early and accurate warning of enemy operations, to provide the forces being protected with time and maneuver space within which to react to the enemy, and to develop the situation to allow commanders to effectively use their protected forces. (ADP 3-90)

self-development training domain

The planned, goal-oriented learning that reinforces and expands the depth and breadth of an individual’s knowledge base, self-awareness, and situational awareness; complements institutional and operational learning; enhances professional competence; and meets personal objectives. (ADP 7-0)

Service doctrine

Those publications approved by a single Service for use within that Service. (ADP 1-01)

spot report

A concise narrative report of essential information covering events or conditions that may have an immediate and significant effect on current planning and operations that is afforded the most expeditious means of transmission consistent with requisite security. (JP 3-09.3)

stability operation

An operation conducted outside of the United States in coordination with other instruments of national power to establish or maintain a secure environment, provide essential government services, emergency infrastructure reconstruction, and humanitarian relief. (ADP 3-0)

standard operating procedure

A set of instructions applicable to those features of operations that lend themselves to a definite or standardized procedure without loss of effectiveness. (JP 3-31)

support

The action of a force that aids, protects, complements, or sustains another force in accordance with a directive requiring such action. (JP 1)

survivability

A quality or capability of military forces which permits them to avoid or withstand hostile actions or environmental conditions while retaining the ability to fulfill their primary mission. (ATP 3-37.34)

survivability operations

Those military activities that alter the physical environment to provide or improve cover, camouflage, and concealment. (ATP 3-37.34)

sustainment

The provision of logistics, financial management, personnel services, and health service support necessary to maintain operations until successful mission completion. (ADP 4-0)

sustainment warfighting function

The related tasks and systems that provide support and services to ensure freedom of action, extend operational reach, and prolong endurance. (ADP 3-0)

tactic

The employment and ordered arrangement of forces in relation to each other. (CJCSM 5120.01A)

tactical control

The authority over forces that is limited to the detailed direction and control of movements or maneuvers within the operational area necessary to accomplish missions or tasks assigned. (JP 1)

task organization

A temporary grouping of forces designed to accomplish a particular mission. (ADP 5-0)

task-organizing

The act of designing a force, support staff, or sustainment package of specific size and composition to meet a unique task or mission. (ADP 3-0).

techniques

Non-prescriptive ways or methods used to perform missions, functions, or tasks. (CJCSM 5120.01A)

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)

unified action

the synchronization, coordination, and/or integration of the activities of governmental and nongovernmental entities with military operations to achieve unity of effort. (JP 1)

unified action partners

Those military forces, governmental and nongovernmental organizations, and elements of the private sector with whom Army forces plan, coordinate, synchronize, and integrate during the conduct of operations. (ADP 3-0)

unified land operations

The simultaneous execution of offense, defense, stability, and defense support of civil authorities across multiple domains to shape OEs, prevent conflict, prevail in large-scale ground combat, and consolidate gains as part of unified action. (ADP 3 0)

zone reconnaissance

A type 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. (ADP 3-90)

This page intentionally left blank.

References

All websites accessed on 17 December 2020.

REQUIRED PUBLICATIONS

These documents must be available to intended users of this publication.

DOD Dictionary of Military and Associated Terms. December 2020.

ADP 2-0. *Intelligence*. 31 July 2019.

ADP 3-0. *Operations*. 31 July 2019.

FM 1-02.1. *Operational Terms*. 21 November 2019.

FM 1-02.2. *Military Symbols*. 10 November 2020.

FM 2-0. *Intelligence*. 6 July 2018.

FM 3-0. *Operations*. 6 October 2017.

RELATED PUBLICATIONS

These documents contain relevant supplemental information.

JOINT AND DEPARTMENT OF DEFENSE PUBLICATIONS

Most joint publications are available online: https://www.jcs.mil/doctrine/.

CJCSM 5120.01A. *Joint Doctrine Development Process*. 29 December 2014.

CJCSI 5120.02D. *Joint Doctrine Development System*. 5 January 2015.

DHE-M 3301.001. *(U) Collection Requirements, Reporting, and Evaluations Procedures*. 30 January 2009. The DHE-M is available online on the SIPRNET: https://intelshare.intelink.sgov.gov/sites/g2kcps/humint/SitePages/HUMINT%20References.aspx.

DODD 8140.01. *Cyberspace Workforce Management*. 5 October 2020. Available online: https://www.esd.whs.mil/DD/.

DTR 4500.9-R, Parts I through VII. *Defense Transportation Regulations*. Available online: https://www.ustranscom.mil/dtr/.

JP 1. *Doctrine for the Armed Forces of the United States*. 25 March 2013.

JP 2-0. *Joint Intelligence*. 22 October 2013.

JP 2-01. *Joint and National Intelligence Support to Military Operations*. 6 April 2016.

JP 3-0. *Joint Operations*. 17 January 2017.

JP 3-09.3. *Close Air Support*. 10 June 2019.

JP 3-16. *Multinational Operations*. 1 March 2019.

JP 3-17. *Air Mobility Operations*. 5 February 2019.

JP 3-31. *Joint Land Operations*. 3 October 2019.

JP 3-33. *Joint Task Force Headquarters*. 31 January 2018.

JP 4-0. *Joint Logistics*. 4 February 2019.

JP 4-01. *The Defense Transportation System*. 18 July 2017.

JP 4-01.2. *Sealift Support to Joint Operations*. 29 December 2015.

JP 4-02. *Joint Health Services*. 11 December 2017.

JP 4-09. *Distribution Operations (U//FOUO)*. 14 March 2019.

JP 5-0. *Joint Planning*. 16 June 2017.

ARMY PUBLICATIONS

Most Army doctrinal publications are available online: https://armypubs.army.mil/.

ADP 1-01. *Doctrine Primer*. 31 July 2019.

ADP 3-07. *Stability*. 31 July 2019.

ADP 3-28. *Defense Support of Civil Authorities*. 31 July 2019.

ADP 3-37. *Protection*. 31 July 2019.

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.

ADP 6-22. *Army Leadership and the Profession*. 31 July 2019.

ADP 7-0. *Training*. 31 July 2019.

ADRP 1-03. *The Army Universal Task List*. 2 October 2015.

AR 15-6. *Procedures for Administrative Investigations and Boards of Officers*. 1 April 2016.

AR 40-501. *Standards of Medical Fitness.* 27 June 2019.

AR 95-1. *Flight Regulations*. 22 March 2018.

AR 115-10. *Weather Support and Services for the U.S. Army (AFI 15-157 [IP])*. 17 December 2018.

AR 190-45. *Law Enforcement Reporting*. 27 September 2016.

AR 380-5. *Army Information Security Program*. 22 October 2019.

AR 380-27. *Control of Compromising Emanations*. 22 July 2014.

AR 381-10. *U.S. Army Intelligence Activities*. 3 May 2007.

AR 381 20. *Army Counterintelligence Program*. 25 May 2010.

AR 381-141. *(U) Intelligence Contingency Funds (ICF)*. 29 June 2020.

AR 385-10. *The Army Safety Program*. 24 February 2017.

AR 525-93. *Army Deployment and Redeployment*. 23 October 2019.

AR 735-5. *Property Accountability Policies*. 9 November 2016.

AR 750-1. *Army Materiel Maintenance Policy*. 28 October 2019.

ATP 1-02.1. *Multi-Service Tactics, Techniques, and Procedures for Multi-Service Brevity Codes*. 28 May 2020.

ATP 1-19. *Army Music*. 13 February 2015.

ATP 2-01. *Plan Requirements and Assess Collection.* 19 August 2014.

ATP 2-01.3. *Intelligence Preparation of the Battlefield*. 1 March 2019.

ATP 2-19.3. *Corps and Division Intelligence Techniques*. 26 March 2015.

ATP 2-19.4. *Brigade Combat Team Intelligence Techniques*. 10 February 2015.

ATP 2-22.2-1. *(U) Counterintelligence Volume I: Investigations, Analysis and Production, and Technical Services and Support Activities*. 11 December 2015.

ATP 2-22.4. *Technical Intelligence*. 4 November 2013.

ATP 2-22.6. *(U) Signals Intelligence Techniques (TS)*. 17 December 2015.

ATP 2-22.6-2. *(U) Signals Intelligence Volume II: Reference Guide*. 20 June 2017.

ATP 2-22.9. *Open-Source Intelligence*. 15 August 2019.

ATP 2-22.7. *Geospatial Intelligence*. 26 March 2015.

ATP 2-22.31. *(U) Human Intelligence Military Source Operations Techniques (S//NF)*. 17 March 2015.

ATP 2-22.33. *(U) 2X Operations and Source Validation Techniques (S//NF)*. 9 September 2016.

ATP 2-22.82. *(U) Biometrics-Enabled Intelligence*. 2 November 2015.

ATP 2-33.4. *Intelligence Analysis*. 10 January 2020.

ATP 2-91.7. *Intelligence Support to Defense Support of Civil Authorities*. 29 June 2015.

ATP 2-91.8. *Techniques for Document and Media Exploitation*. 5 May 2015.

ATP 3-01.81. *Counter-Unmanned Aircraft System Techniques*. 13 April 2017.

ATP 3-04.1. *Aviation Tactical Employment*. 7 May 2020.

ATP 3-04.7. *Army Aviation Maintenance*. 20 October 2020.

ATP 3-04.64. *Multi-Service Tactics, Techniques, and Procedures for the Tactical Employment of Unmanned Aircraft Systems*. 22 January 2015.

ATP 3-06. *Urban Operations*. 7 December 2017.

ATP 3-12.3. *Electronic Warfare Techniques*. 16 July 2019.

ATP 3-20.98. *Scout Platoon*. 4 December 2019.

ATP 3-21.8. *Infantry Platoon and Squad*. 12 April 2016.

ATP 3-21.18. *Foot Marches*. 17 April 2017.

ATP 3-34.80. *Geospatial Engineering*. 22 February 2017.

ATP 3-35. *Army Deployment and Redeployment*. 23 March 2015.

ATP 3-37.34. *Survivability Operations*. 16 April 2018.

ATP 3-52.1. *Multi-Service Tactics, Techniques, and Procedures for Airspace Control*. 14 February 2019.

ATP 3-52.4. *Multi-Service Tactics, Techniques, and Procedures for Air Control Communication (ACC)*. 14 February 2020.

ATP 3-55.4. *Techniques for Information Collection During Operations Among Populations*. 5 April 2016.

ATP 3-60. *Targeting*. 7 May 2015.

ATP 3-90.37. *Countering Improvised Explosive Devices*. 29 July 2014.

ATP 3-90.5. *Combined Arms Battalion*. 5 February 2016.

ATP 3-91. *Division Operations*. 17 October 2014.

ATP 4-0.6. *Techniques for Sustainment Information Systems Support*. 5 April 2013.

ATP 4-02.2. *Medical Evacuation*. 11 July 2019.

ATP 4-12. *Army Container Operations*. 10 May 2013.

ATP 4-16. *Movement Control*. 5 April 2013.

ATP 4-25.12. *Unit Field Sanitation Teams*. 30 April 2014.

ATP 4-25.13. *Casualty Evacuation*. 15 February 2013.

ATP 4-31. *Recovery and Battle Damage Assessment and Repair*. 18 November 2020.

ATP 4-42. *Materiel Management, Supply, and Field Services Operations*. 2 November 2020.

ATP 5-0.1. *Army Design Methodology*. 1 July 2015.

ATP 5-19. *Risk Management*. 14 April 2014.

ATP 6-01.1. *Techniques for Effective Knowledge Management*. 6 March 2015.

ATP 6-02.53. *Techniques for Tactical Radio Operations*. 13 February 2020.

ATP 6-22.1. *The Counseling Process*. 1 July 2014.

ATP 6.22.6. *Army Team Building*. 30 October 2015.

DA PAM 385-30. *Risk Management*. 2 December 2014.

FM 1-0. *Human Resources Support*. 1 April 2014.

FM 1-04. *Legal Support to Operations*. 8 June 2020.

FM 1-05. *Religious Support*. 21 January 2019.

FM 1-06. *Financial Management Operations.* 15 April 2014.

FM 2-22.3. *Human Intelligence Collector Operations*. 6 September 2006.

FM 3-04. *Army Aviation*. 6 April 2020.

FM 3-07. *Stability*. 2 June 2014.

FM 3-11. *Chemical, Biological, Radiological, and Nuclear Operations*. 23 May 2019.

FM 3-12. *Cyberspace and Electronic Warfare Operations*. 11 April 2017.

FM 3-22. *Army Support to Security Cooperation*. 22 January 2013.

FM 3-50. *Army Personnel Recovery*. 2 September 2014.

FM 3-52. *Airspace Control*. 20 October 2016.

FM 3-55. *Information Collection*. 3 May 2013.

FM 3-94. *Theater Army, Corps, and Division Operations*. 21 April 2014.

FM 3-96. *Brigade Combat Team*. 8 October 2015.

FM 4-0. *Sustainment Operations*. 31 July 2019.

FM 4-02. *Army Health System*. 17 November 2020.

FM 6-0. *Commander and Staff Organization and Operations*. 5 May 2014.

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*. 19 August 2013.

FM 7-0. *Train to Win in a Complex World*. 5 October 2016.

GTA 05-04-043. *Ultra Lightweight Camouflage Net System Increment I.* January 2020.

GTA 90-01-011. *Deployed Forces Protection Handbook (JFOB Handbook)*. 30 July 2019.

STP 21-1-SMCT. *Soldier's Manual of Common Tasks, Warrior Skills, Level I*. 10 August 2015.

TB MED 507. *Heat Stress Control and Heat Casualty Management (AFPAM 48-152[I])*. 7 March 2003.

TC 2-19.400. *Military Intelligence Training Strategy*. 1 August 2019.

TC 2-19.401. *Military Intelligence Training Strategy for the Brigade Combat Team Tier 1*. 14 May 2019.

TC 2-19.402. *Military Intelligence Training Strategy for the Brigade Combat Team Tier 2*. 20 May 2019.

TC 2-19.403. *Military Intelligence Training Strategy for the Brigade Combat Team Tier 3*. 25 February 2020.

TC 2-19.404. *Military Intelligence Training Strategy for the Brigade Combat Team Tier 4*. 2 March 2020.

TC 2-19.405. *The Military Intelligence Training Strategy Brigade Combat Team Evaluator Handbook*. 5 August 2019.

TC 3-04.11. *Commander's Aviation Training and Standardization Program*. 21 September 2018.

TC 3-21.60. *Visual Signals*. 17 March 2017.

TC 3-25.26. *Map Reading and Land Navigation*. 15 November 2013.

TC 4-02.1. *First Aid*. 21 January 2016.

TC 4-02.3. *Field Hygiene and Sanitation*. 6 May 2015.

TC 9-64. *Communications-Electronics Fundamentals: Wave Propagation, Transmission Lines, and Antennas*. 15 July 2004.

TM 3-11.91. *Chemical, Biological, Radiological, and Nuclear Threats and Hazards*. 13 December 2017.

TM 3-34.62. *Earthmoving Operations (MCRP 3-17.71)*. 29 June 2012.

TM 3-34.85. *Engineer Field Data (MCRP 3-17A).* 17 October 2013.

TM 5-1080-200-13&P. *Operator's, Unit, and Direct Support Maintenance Manual, (Including Repair Parts and Special Tools List) for Lightweight Camouflage Screen Systems and Support Systems*. 29 January 1987.

TM 5-1080-250-12&P. *Operator's and Unit Maintenance Manual (Including Repair Parts and Special Tools List) for Ultralightweight Camouflage Net Systems (ULCANS) Woodland R/S AN/USQ-150 (NSN 1080-01-457-2956) (EIC: N/A) Woodland R/T AN/USQ-160 (1080-01-475-0697) (EIC: N/A) Desert R/S AN/USQ-159 (1080-01-475-0696) (EIC: N/A) Desert R/T AN/USQ-158 (1080-01-475-0694) (EIC: N/A)*. 1 January 2003.

TM 38-250. *Preparing Hazardous Materials for Military Air Shipments*. 13 July 2017.

TM 38-701. *Packaging of Materiel Packing*. 27 October 2015.

OTHER PUBLICATIONS

10 USC. *Armed Forces*. Available online: http://uscode.house.gov/.

49 CFR. *Transportation*. Available online: https://www.ecfr.gov/.

AJP 2.5. *Captured Persons, Materiel, and Documents*. 23 January 2008. Available online at the NATO Standardization Office website: https://nso.nato.int/nso/.

MIL-STD 129R. *Military Marking for Shipment and Storage*. 27 September 2019. Available online: https://assist.dla.mil/.

MIL-STD 3037. *Inspection Criteria for International Organization for Standardization (ISO) Containers and Department of Defense Standard Family of ISO Shelters AMSC*. 27 January 2017. Available online: https://assist.dla.mil/.

MIL-STD 2525D. *Joint Military Symbology*. 10 June 2014. Available online: https://assist.dla.mil/.

STANAG 3204. *Aeromedical Evacuation*. 6 July 2020. Available online: https://nso.nato.int/nso/.

UFC 3-340-01. *Design and Analysis of Hardened Structures to Conventional Weapons Effects*. 30 June 2002. Available online: https://www.wbdg.org/ffc/dod/united-facilities-criteria-ufc/.

UFC 4-020-01. *DOD Security Engineering Facilities Planning Manual*. 11 September 2008. Available online: https://www.wbdg.org/ffc/dod/united-facilities-criteria-ufc/.

WEBSITES

Army Training Network. https://atn.army.mil.

MI Lessons Learned. Available through Defense Collaboration Services: https://conference.apps.mil/webconf/millforum.

MI Professional Forums. Available through the Intelligence Knowledge Network: https://ikn.army.mil.

Warrant Officer Forums. Available through Defense Collaboration Services: https://conference.apps.mil/webconf/MIWarrantOfficerForum.

PRESCRIBED FORMS

This section contains no entries.

REFERENCED FORMS

Unless otherwise indicated, DA forms are available on the Army Publishing Directorate website: https://armypubs.army.mil/. DD forms are available at https://www.esd.whs.mil/Directives/forms/.

DA Form 581. *Request for Issue and Turn-In of Ammunition*.

DA Form 1156. *Casualty Feeder Card*.

DA Form 2028. *Recommended Changes to Publications and Blank Forms*.

DA Form 2062. *Hand Receipt/Annex Number*.

DA Form 2408-12. *Army Aviator's Flight Record*.

DA Form 5484. *Mission Schedule/Brief*.

DA Form 7120. *Commander's Task List*.

DA Form 7120-1. *Crew Member Task Performance and Evaluation Requirements*.

DD Form 200. *Financial Liability Investigation of Property Loss*.

DD Form 1380. *Tactical Combat Casualty Care (TCCC) Card*. (Available through normal supply channels.)

DD Form 1387. *Military Shipment Label*.

DD Form 1750. *Packing List*.

DD Form 2977. *Deliberate Risk Assessment Worksheet*.

DD Form 2992. *Medical Recommendation for Flying or Special Operational Duty*.

TC 2-19.01
09 March 2021

By Order of the Secretary of the Army:

JAMES C. MCCONVILLE
General, United States Army
Chief of Staff

Official:



KATHLEEN S. MILLER
Administrative Assistant
to the Secretary of the Army
2106002

DISTRIBUTION:

Active Army, Army National Guard, and United States Army Reserve: To be distributed in accordance with the initial distrubution number (IDN) 116183, requirements for TC 2-19.01.

This page intentionally left blank.

PIN: 208409-000