FM 6-0

Mission Command: Command and Control of Army Forces

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Mission Command: Command and Control of Army Forces

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Preface

Doctrine provides military organizations with a common philosophy and language. It enhances unity of effort. FM 6-0 establishes and explains the Army's command and control (C2) doctrine principles.

PURPOSE

FM 6-0 is the Army's key integrating manual for C2. It provides the basis for C2 doctrine, tactics, techniques, and procedures in all Army publications. It promotes common understanding of the fundamentals and concepts of C2 in Army operations, and supports joint and Army doctrine. It supercedes chapters 1 through 4, chapter 6, and appendixes G, I, K, and L of FM 101-5.

SCOPE

FM 6-0 provides doctrine on C2 for tactical Army echelons (corps and below). FM 6-0 establishes mission command as the C2 concept for the Army. It focuses on the premise that commanders exercise C2 over forces to accomplish missions. It emphasizes fundamentals and concepts rather than specific equipment or systems, although it discusses the role of equipment and systems in supporting C2. It includes insights from Force XXI initiatives and digitization. Supporting and extending leadership doctrine found in FM 22-100, it defines control within command and control, and covers decisionmaking during execution. FM 6-0 provides doctrine for information management, a contributor to information superiority. (See FM 3-13.) While intelligence is an information product essential in C2, the doctrine addressing information and information management is not intended to change or replace intelligence doctrine in the FM 2 (formerly FM 34) series of field manuals.

APPLICABILITY

FM 6-0 applies to commanders of all Army organizations. However, it focuses on tactical commanders and leaders at corps-level and below. With appropriate modifications, it can apply to other Army commands and to Army elements of joint and multinational headquarters. It applies to digitized, analog, and hybrid (combination digitized/analog) units and organizations. The doctrine in FM 6-0 forms the foundation for Army Education System instruction in C2.

ADMINISTRATIVE INFORMATION

Headquarters, US Army Training and Doctrine Command is the proponent for this publication. The preparing agency is the Combined Arms Doctrine Directorate, US Army Combined Arms Center. Send written comments and recommendations on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to: Commander, US Army Combined Arms Center and Fort Leavenworth, ATTN: ATZL-FD-CD (FM 6-0), 1 Reynolds Avenue (Building 111), Fort Leavenworth, KS 66027-1352. Send comments and recommendations by e-mail to

web-cadd@leavenworth.army.mil. Follow the DA Form 2028 format or submit an electronic DA Form 2028.

The glossary contains referents of acronyms and definitions of terms not defined in JP 1-02 and FM 101-5-1 (1-02). It does not list acronyms and abbreviations that are included for clarity only and appear one time, nor those that appear only in a figure and are listed in the legend for that figure. Some common abbreviations and acronyms are not spelled out; refer to the glossary. Since *ARFOR* is a defined term as well as an acronym, it is not spelled out.

Terms that have joint or Army definitions are identified in both the glossary and the text. *Glossary references*: The glossary lists most terms used in FM 6-0 that have joint or Army definitions. Terms for which FM 6-0 is the proponent manual (the authority) are indicated with an asterisk. *Text references*: Definitions for which FM 6-0 is the proponent manual are printed in boldface in the text. These terms and their definitions will be incorporated into the next revision of FM 101-5-1 (1-02). For other definitions in the text, the term is italicized and the number of the proponent manual follows the definition.

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

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The historical examples used in FM 6-0 were deliberately chosen to illustrate the fact that American tacticians should widen their areas of study of the military profession to include other armies and other times.

ACKNOWLEDGMENTS

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Introduction

Command and control (C2) is an essential element of the art and science of warfare. No single specialized function, either by itself or combined with others, has a purpose without it. Commanders are responsible for C2. However, C2 is also of great concern to staff officers and some staff specialists.

Some understand C2 to be a distinct, specialized function—similar to logistics, intelligence, and information operations. C2 does have its own procedures, considerations, and vocabulary. It operates separately from other functions, yet in coordination with them. Through C2, commanders initiate and integrate all military functions and operations toward a common goal—mission accomplishment.

How one understands C2 depends on the perspective from which one approaches its study. Some study and discuss C2 as technological means and resources. Others see C2 as people only. Still others focus on C2 as an organization. Finally, C2 has been discussed as a set of procedures. In practice, however, C2 is a commander and a C2 system—a combination of people, organization, technological means and resources, and procedures.

Commanders have exercised C2 throughout history. They have performed many of the same C2 functions as long as warfare has existed. For example, Alexander the Great exercised C2 as long ago as 331 BC at the battle of Arbela.

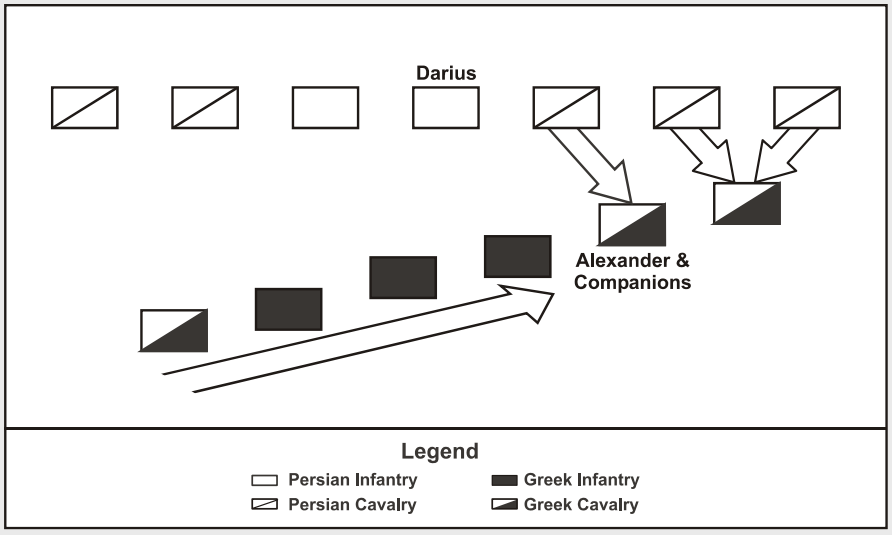
The Battle Of Arbela (331 BC)

The Battle of Arbela (Gaugamela) occurred near the town of Erbil on the upper Euphrates in present-day Iraq. There, the Macedonian army of 40,000 infantry and 7,000 cavalry under Alexander the Great met a Persian army of at least 200,000 infantry and 45,000 cavalry under King Darius. Alexander's superior exercise of command and control allowed him to decisively defeat the larger force.

In *The Anabasis*, Arrian writes of Alexander the Great's generalship: "He was...most brilliant to seize the right course of action, even where all was obscure; and where all was clear, most happy in his conjectures of likelihood; most masterly in marshaling an army and in arming and equipping it; and in uplifting his soldiers' spirits and filling them with good hopes and brushing away anything fearful in dangers by his own want of fear... And all that had to be done in uncertainty he did with utmost daring; he was most skilled in swift anticipation and gripping of his enemy before anyone had time to fear the event..." These traits were clearly exhibited in his brilliant victory over the Persians and King Darius at the Battle of Arbela (Gaugamela).

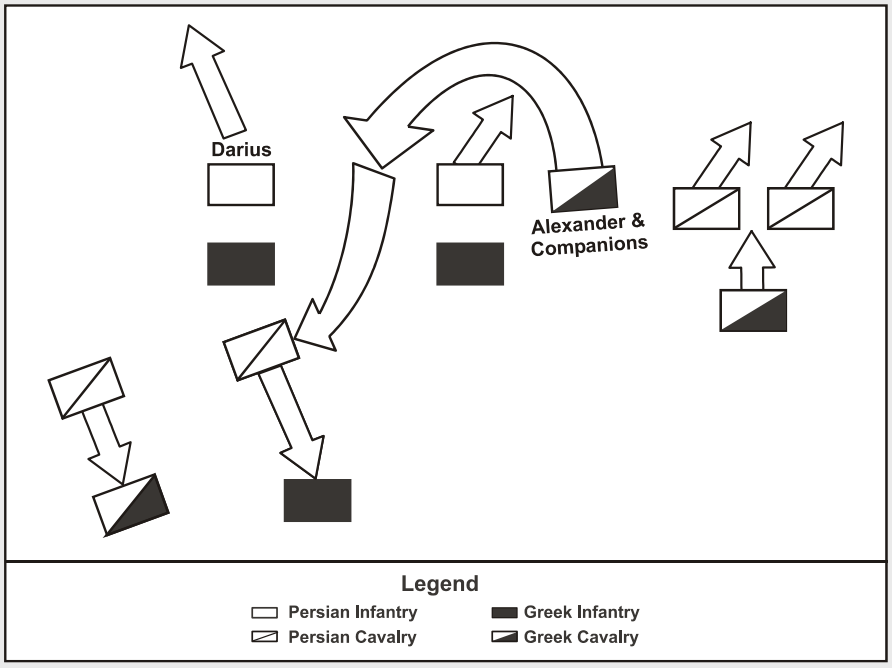
For four days before the battle, Alexander rested and fed his men. He slept soundly the night before the battle, instilling in his men confidence of victory, despite the Persians' outnumbering them by more than five to one. When the two armies lined up opposite each other on the plain near Gaugamela, the Persian lines extended well beyond Alexander's. Alexander assumed (rightly) that Darius

would try to outflank him. He responded by stationing his phalanx in the center and strongly supporting his flanks with deep formations turned at 45 degrees to prevent their encirclement. (See map Introduction-1.) Alexander's order of battle and the tactics emerging from it, arranged in accordance with his foresight into the enemy's intentions, was a major factor in gaining victory.



Map Introduction-1. Arbela—Initial Action

As the battle began, Alexander moved to his right, both to position his infantry opposite Darius' chariots and to reduce the Persian overlap of his flank. Darius attacked Alexander's right and, assuming that Alexander would be fully engaged



Map Introduction-2. Arbela—Alexander's Attack

there, ordered the entire Persian cavalry line to advance in two enveloping attacks. This maneuver, however, created a gap in the Persian front.

Demonstrating superb command instincts, Alexander immediately exploited the opportunity. He wheeled toward the gap and, making a wedge of the Companion Cavalry and part of the phalanx, personally led the charge. (See map Introduction-2 on page xi.) As Alexander closed in on the decisive point—Darius himself—Darius fled the field and the Persian center disintegrated.

Meanwhile, Alexander's advance created its own gap—in the Greek center. The Persian Guard and Indian Cavalry quickly penetrated there. Alexander turned the Companions immediately and led them across to the other side of the battle to aid the left flank—evidence of his extraordinary control. The Persian Guard was defeated. When the Persian force and their allies learned that Darius had fled, most of them quit the battlefield.

Command and control, as opposed to simply command, first entered Army terminology during World War II. Before then, the word *command* included those functions associated with control today. Since 1977, C2 has been considered one of the battlefield operating systems, which the Army uses to address the conduct (planning, preparation, execution, and assessment) of operations in discrete subsets. Until now, FM 3-0 and FM 5-0 (101-5) have addressed C2 doctrine principles. Other field manuals discussed C2 within the context of their subject. FM 7-15 lists the Army tactical tasks associated with the C2 battlefield operating system.

The term *command and control* is well known throughout the Army, but it is not well understood. The Army has struggled to find a definition that accurately portrays what a commander does in battle and in training. The Army has defined *command* as what a commander needs to do to get his force to accomplish the mission. As warfare has become more complex the concept of "command" has evolved into "command and control." But trying to encompass all aspects of this concept in a single description lost the meaning of command and consideration of the art of command. Nevertheless, the term is well established in current and emerging joint doctrine. Army doctrine follows joint doctrine, and Army forces operating as part of a joint force follow joint doctrine; however, the nature of land combat operations has special and specific requirements for C2 that Army C2 doctrine must address.

FM 6-0 gathers the scattered parts of C2 doctrine discussed in multiple sources, such as branch and echelon field manuals, into one field manual that goes beyond them in detail. It provides a common guide for schools and centers in writing C2 doctrine in branch and echelon manuals for which they are proponents. It uses the term *command and control* to identify what commanders do and how they execute the task of leading their units to accomplish missions. Army values and leadership attributes, skills, and actions are vital to exercising C2; however, FM 6-0 goes beyond the discussion of leadership in FM 22-100. Commanders use C2 to plan, prepare for, and execute the other tactical tasks, synchronize functions among them, and continually assess the situation or execution of operations. Without C2, the other tactical tasks cannot commence or be synchronized with one another. FM 6-0 also discusses the C2 system's impact on prioritizing

resources. The most important resource in any army is its people, who must be organized to undertake and complete military activities.

Chapter 1 introduces and discusses the nature, environment, and concept of command and control. It addresses how "command" is related to "control," and how the environment affects the exercise of C2. It establishes mission command as the Army's preferred concept of C2. While FM 6-0 discusses the components of C2—command and control—separately, it emphasizes that exercising C2 is not a phased application of each but a single, continuous application of both. FM 6-0 addresses them separately for analysis only.

The principal aspect of command and control is *command*. Chapter 2 discusses the nature of command and the art of command. Only a properly designated commander may exercise C2; therefore, commanders are the focus of authority for effective C2. They focus their individual C2 systems to support their conduct of military operations. Each commander's practice of C2 reflects an underlying philosophy and style. The tactics, techniques, and procedures associated with C2 in offensive and defensive operations also apply to stability operations and support operations. They apply to all Army organizations in both peace and war. Army C2 doctrine emphasizes the importance of personal command and a strong C2 concept linked to a supporting C2 system and oriented on Army operations doctrine.

The aspect of *control* has always been inherent in the practice of command. At the battle of Arbela, Alexander's use of visual observation, assessment of the meaning of the gap, and direction of his cavalry force to exploit opportunity against the critical weakness in the Persian army illustrate the concept and role of control in C2. Other doctrinal publications have addressed the concept of control their discussions of C2, but those discussions have been inconsistent with one another. FM 6-0 establishes a single definition and concept of control within the overall concept of C2 for the entire Army.

Chapter 3 discusses the nature of control and the science of control. The requirement for control is created by the impediments to mission accomplishment that Clausewitz identified as fog and friction. Singly or in combination, these impediments act against the force before, during, and after operations. Fog and friction always exist because uncertainty—about both enemy and friendly forces—cannot be removed from battle. They often cause the execution of operations to deviate from the commander's intent. Control identifies and counters their effects by alerting commanders to adjust their resources, concept of operations, or objectives. Control also alerts commanders to opportunities to exploit success.

Chapter 4 discusses the role of commanders in C2. Commanders are the key to C2. Their knowledge, experience, and personality—along with how they interact with their units—define command. Commanders must decide what to do, using the decisionmaking technique best for the circumstances, and lead their units to accomplish the mission. Foremost among the commander's roles is combining the art of command and the science of control. Central to their success in this is the process of commander's visualization. Commanders drive C2. Under mission command, however, commanders emphasize influencing actions rather than detailed directions or directives. They normally issue broad guidance and use close personal supervision to intervene in subordinates' actions only in exceptional

cases. They establish a positive command climate for the unit, train subordinates in C2, and use battle command to direct operations.

Chapter 5 addresses the command and control system. All commanders must devote, acquire, or receive the resources needed to create a C2 system that performs the functions needed to exercise C2. At every level of command, the commander's C2 system supports effective exercise of C2. The term "system" is deceptive. It does not solely mean an arrangement of equipment, like a communications system. Rather, it is an organization of all resources used to support the commander's exercise of C2. The art exercised by commanders with respect to the C2 system lies in their expert integration of all C2 system elements to best serve their needs in pursuit of mission accomplishment. Commanders combine the elements of their individual C2 systems into a cohesive whole so that C2 resources are not wasted.

Chapter 6 establishes doctrine for exercising C2. Commanders exercise C2 by placing their individual C2 systems into action. Exercising C2 is a dynamic process that occurs throughout the operations process—assessing, planning, preparing for, and executing military operations. While these activities are cyclical and continuous, they do not necessarily occur sequentially. All units in operations perform varying levels of planning, preparing, and executing; assessing takes place throughout the other three activities and provides feedback for decision-making.

Chapter 1

Command and Control

The essential task of commanders is applying the art and science of war to the command and control of Army forces. The commander's command and control system enables him to use his authority to accomplish the mission and see to the health and welfare of subordinates. Using his command and control system, the commander directs the actions of his forces and imposes his will on the enemy. Through command and control, the commander initiates the actions of, influences, and synchronizes the elements of combat power to impose his will on the situation and defeat the enemy.

NATURE OF COMMAND AND CONTROL

1-1. To exercise effective command and control (C2), commanders must first understand its nature. This includes its definition, its importance and purpose, the relationship between command and control within C2, the components of C2, and how the commander's C2 system supports the commander.

DEFINITION OF COMMAND AND CONTROL

1-2. ***Command and control*** **is the exercise of authority and direction by a properly designated commander over assigned and attached forces in the accomplishment of a mission. Commanders perform command and control functions through a command and control system.** This definition leads to several conclusions (see figure 1-1 on page 1-2):

- The focus of C2 is the commander. Commanders assess the situation, make decisions, and direct actions.
- The goal of C2 is mission accomplishment. The main criterion of success for C2 is how it contributes to achieving that goal. Other criteria may include positioning the force for future operations and using resources effectively.

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- C2 is directed toward forces—combat, combat support, and combat service support. Said another way, forces are the object of C2.
- Commanders exercise authority and direction over forces by establishing command or support relationships. (See FM 3-0.)
- Commanders must dedicate and organize resources for exercising C2. Commanders use these resources to plan and continuously assess operations that the force prepares for and executes.
- The commander's C2 system manages information to produce and disseminate a common operational picture (COP) to the commander, staff, and subordinate forces.
- The C2 system supports the commander in directing forces by transmitting execution information.

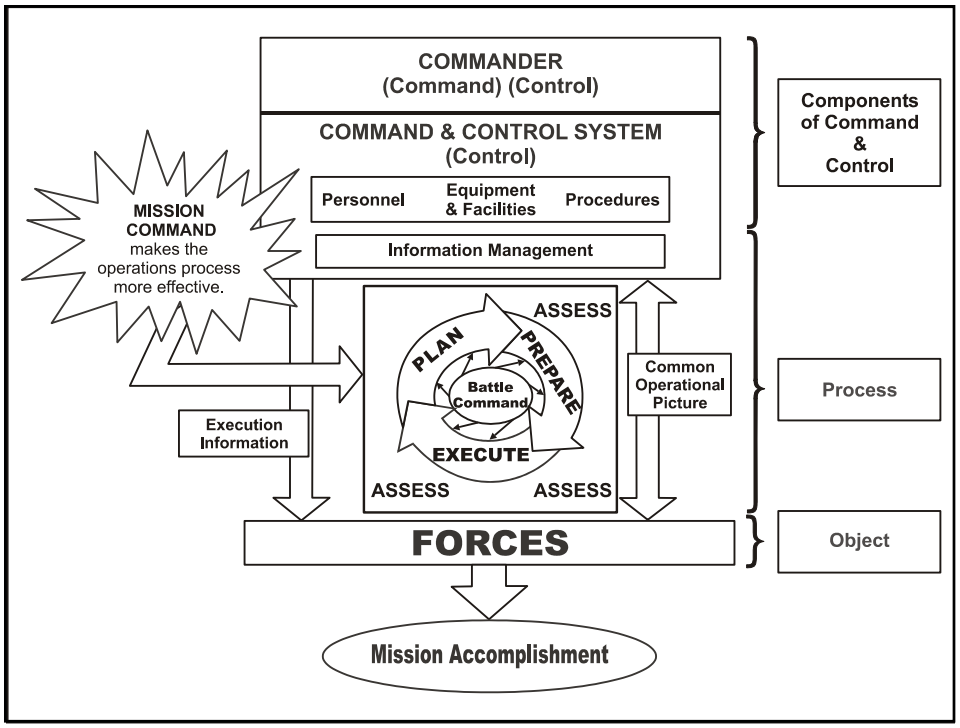


Figure 1-1. Command and Control

1-3. Effective C2 has the following characteristics:

- Ability to identify and react to changes in the situation.
- Ability to provide a continuous, interactive process of reciprocal influence among the commander, staff, and available forces.
- Ability to reduce chaos and lessen uncertainty.

However, even commanders who exercise the most effective C2 cannot eliminate uncertainty and create precise, mechanistic, predictable order.

1-4. Commanders exercise C2 in a dynamic environment, where unexpected opportunities and threats rapidly present themselves. Commanders—through their C2 systems—use the military decisionmaking process to establish their commander's intent and allocate resources. (Commanders at lower echelons use troop leading procedures.) (See FM 5-0.) To implement their decisions,

commanders direct coordinated actions by their forces that together accomplish the mission. Staffs use C2 processes to support their commanders' decisions. They use information management to collect, process, display, store, and disseminate relevant information (RI). They build a COP to provide situational understanding that supports unity of effort throughout the force. (See chapter 3.) Finally, commanders, assisted by their staffs, assess execution and issue orders that adjust their plans to account for changes in the situation.

1-5. C2 is unique among the battlefield operating systems (BOSs): while the other BOSs focus resources against the enemy or environment, C2 focuses resources on integrating the activities of the other BOSs. Even though it involves no killing, detection, or resupply, C2 is a force multiplier and vital to mission accomplishment. C2 accomplishes the following:

- Gives purpose and direction to military operations.
- Integrates the efforts of subordinate and supporting forces, causing separate activities to achieve coordinated effects.
- Determines force responsiveness and allocates resources.

RELATIONSHIP BETWEEN COMMAND AND CONTROL

1-6. Command and control are interrelated. Command resides with commanders. It consists of authority, decisionmaking, and leadership. Command is mostly art but some science. Control is how commanders execute command. It is mostly science but also art.

1-7. Science deals with the study and method of a body of facts and processes based on principles from the physical or material world. Art, as opposed to science, requires expert performance of a specific skill using intuitive faculties that cannot be solely learned by study or education. Doctrine contains a science component that deals with the capabilities and limitations of the physical means used in operations. Knowledge of doctrine's science component is essential. Coupled with experience and training, it forms the basis for the art in human judgment necessary when applying doctrine to a specific situation. However, doctrine cannot be reduced to science; it is inherently art.

1-8. Commanders cannot exercise command effectively without control. Conversely, control has no function without command to focus it. Command is primary, but it is insufficient without control. C2 is not a one-way, top-down process that imposes control on subordinates. C2 is multidirectional, with feedback influencing commanders from below, from above, and laterally.

1-9. Command focuses the practice and organization of the science within control. Control informs the exercise of art within command and regulates the functions of the force. Higher echelon organizations are more complex than lower echelon organizations. Nonetheless, the functions and related requirements of command remain comparatively constant, while control functions increase at each higher echelon. At higher echelons, the impact of commanders is more indirect, while the roles of staffs and other elements of the C2 system are more prominent. This situation requires higher echelon commanders to apply organizational, as well as direct, leadership skills and actions. (FM 22-100 discusses the levels of leadership: direct, organizational, and strategic.)

Command

1-10. *Command* is the authority that a commander in the armed forces lawfully exercises over subordinates by virtue of rank or assignment. Command includes the authority and responsibility for effectively using available resources and for planning the employment of, organizing, directing, coordinating, and controlling military forces for the accomplishment of assigned missions. It also includes responsibility for health, welfare, morale, and discipline of assigned personnel (JP 0-2). The elements of command are authority, decisionmaking, and leadership.

1-11. **Authority. *Authority* is the delegated power to judge, act, or command.** It includes responsibility, accountability, and delegation. Commanders use the art of command in applying authority as they decide (plan how to achieve the end state) and lead (direct their forces during preparation and execution).

1-12. **Decisionmaking. *Decisionmaking* is selecting a course of action as the one most favorable to accomplish the mission.** It translates the products of the commander's visualization (see chapter 4) into action. Decisionmaking includes knowing if to decide, then when and what to decide, and understanding the consequences of decisions. It is both art and science. Commanders use visualizing, describing, and directing to determine and communicate their decisions.

1-13. **Leadership.** *Leadership* is influencing people—by providing purpose, direction, and motivation—while operating to accomplish the mission and improving the organization (FM 22-100). Commanders lead through a combination of example, persuasion, and compulsion. The leadership of commanders ultimately includes force of will. (See FM 22-100.)

1-14. In any command, only one officer commands. This is embodied in the principle of war, unity of command. Commanders may exercise command through others by delegating authority; however, delegation does not absolve commanders of their responsibilities to the higher commander. Commanders initiate action by issuing lawful orders.

Control

1-15. Success in command is impossible without control. Within command and control, *control* is the regulation of forces and battlefield operating systems to accomplish the mission in accordance with the commander's intent. It includes collecting, processing, displaying, storing, and disseminating relevant information for creating the common operational picture, and using information, primarily by the staff, during the operations process. Control allows commanders to disseminate their commander's intent, execute decisions, and adjust their operations to reflect changing reality and enemy actions. It allows commanders to modify their commander's visualization to account for changing circumstances. Control also allows commanders to identify times and points requiring new decisions during preparation and execution. The elements of control are—

- Information.
- Communication.
- Structure.

1-16. **Information.** ***Information*, in the general sense, is the meaning humans assign to data.** It is the most important element of control and is divided into the categories of the cognitive hierarchy, based on the meaning assigned to it. (See appendix B.) *Relevant information* is all information of importance to the commander and staff in the exercise of command and control (FM 3-0). It is a commander's most important C2 resource. Intelligence is an important and distinct subset of relevant information; it exists in all categories of the cognitive hierarchy and is integrated throughout C2.

1-17. Information (including intelligence) from all echelons generates the COP. All users share it. By applying judgment to the COP, commanders achieve situational understanding and make decisions.

1-18. *Situational understanding* is the product of applying analysis and judgment to the COP to determine the relationships among the factors of METT-TC (FM 3-0). It facilitates decisionmaking by identifying opportunities for mission accomplishment, threats to mission accomplishment and the force, and gaps in information.

1-19. At the same time the commander uses his situational understanding for C2, he tries to affect the situational understanding of the enemy (limiting its quantity or quality) and tries to influence the perceptions and actions of others (public or private organizations that influence the success of his operation). These considerations directly relate to information operations, as discussed in FM 3-13.

1-20.***Execution information* is information that communicates a decision and directs, initiates, or governs action, conduct, or procedure.** Commanders direct by disseminating execution information, typically as orders and plans. In the process, they receive feedback from subordinates and supporting forces. This information flow creates the interactive influence between commanders and their subordinate forces characteristic of effective C2.

1-21. **Communication.** To *communicate* means to use any means or method to convey information of any kind from one person or place to another (JP 1-02). Communication allows organizations to disseminate and share information among people, elements, and places. Information for control flows vertically (between echelons) and horizontally (among elements of a single echelon). Effective communication is essential to achieving effective C2.

1-22. **Structure.** Commanders establish and maintain control with a structure. **As an element of control, *structure* is a defined organization that establishes relationships among its elements or a procedure that establishes relationships among its activities.** Structures are both internal (such as a headquarters or command post) and external (such as command and support relationships among subordinate forces). Relationships among activities may likewise be internal (techniques and procedures) or external (tactics and plans).

COMPONENTS OF COMMAND AND CONTROL

1-23. C2 consists of two components: the commander and his C2 system. (See figure 1-1.) Commanders use their command and control systems to exercise C2 over forces to accomplish missions.

The Commander

1-24. In units at all levels, the commander is the key individual in command and control. Commanders combine the art of command and the science of control to exercise C2. They create positive command climates that inculcate and foster trust and mutual understanding. They train their subordinates in C2. Using their C2 systems, commanders exercise C2 to direct operations. In every command, the commander is the focal point for penetrating the fog of war, overcoming its unceasing friction, and instilling in soldiers the will to win.

1-25. Commanders, helped by staffs, visualize operations, describe them in terms of the commander's intent and planning guidance, and direct the actions of subordinates within their commander's intent. (See chapter 4.) Commanders cannot perform these leader actions from a computer screen at the command post. They must directly influence operations by their personal presence at times and places of their choosing, and by skillfully using their C2 systems.

Command and Control System

1-26. Commanders cannot exercise C2 alone except in the simplest and smallest of units. Even at the lowest levels, commanders need support, however little, to exercise C2 effectively. At every echelon of command, each commander has a command and control system to provide that support. **A *command and control system* is the arrangement of personnel, information management, procedures, and equipment and facilities essential for the commander to conduct operations.** Digitized information systems now being fielded will increase the complexity of C2 systems but will provide commanders with more timely and accurate RI.

1-27. **Personnel.** The C2 system begins with people. Since combat involves soldiers, no amount of technology can reduce the importance of the human dimension. (See FM 22-100.) Therefore, commanders base their exercise of C2 on human characteristics more than on equipment and procedures. Trained C2 personnel are essential to effective C2 systems; the best technology cannot support C2 without them.

1-28. **Information Management.** *Information management* is the provision of relevant information to the right person at the right time in a usable form to facilitate situational understanding and decisionmaking. It uses procedures and information systems to collect, process, store, display, and disseminate information (FM 3-0). Information management consists of RI and information systems (INFOSYS). *Information systems* are the equipment and facilities that collect, process, store, display, and disseminate information. These include computers—hardware and software—and communications, as well as policies and procedures for their use (FM 3-0).

1-29. **Procedures.** Procedures are standard and detailed courses of action that describe how to perform a task (FM 3-90). Procedures govern actions within a C2 system to make it more effective and efficient. Adhering to procedures minimizes confusion, misunderstanding, and hesitance as commanders make frequent, rapid decisions to meet operational requirements.

1-30. **Equipment and Facilities.** Equipment and facilities provide sustainment and a work environment for the other elements of a C2 system. Facilities vary in size and complexity. At the lowest echelon, the "facility" may be the commander's bunker or vehicle. At the highest echelons, facilities are large and complex.

1-31. **Digitization's Effects on C2 Systems.** As the Army moves towards more digitized INFOSYS, the manner in which these emerging digital technologies combine has the potential to provide more timely, accurate, and reliable RI to commanders. This RI will allow commanders to make faster and better decisions.

1-32. Digital INFOSYS also support efficient and effective execution by reducing the human labor needed to organize information and put it in a usable form. Used correctly, their capabilities allow commanders and staffs to spend more time and energy on the art and human dimensions of C2. These powerful capabilities support mission command. (See paragraph 1-67.)

1-33. Staffs provide commanders with RI in usable forms that help commanders achieve accurate situational understanding. Timely, relevant, and usable RI enables commanders to make timely decisions and allows staffs to rapidly synchronize, integrate, and fuse actions in accordance with the commander's intent. Staff elements use their respective BOS INFOSYS to manage BOS-specific RI. They apply continuous analysis to improve the quality of RI they give commanders.

EXERCISING COMMAND AND CONTROL

1-34. Commanders must place their C2 system into action to exercise C2. Exercising C2 takes place dynamically throughout the operations process. (See FM 3-0.) The operations-process activities of planning, preparing for, executing, and continuously assessing are cyclical and continuous. They do not necessarily occur sequentially. (See figure 1-2 on page 1-8.) For example, while preparing for or executing one operation, units plan branches and sequels for the next operation. At any time, subordinate units of the same command may be performing different operations-process activities.

1-35. The operations process focuses on executing rather than planning. Modern INFOSYS reduce the time needed to plan. This allows commanders to allocate more time for preparation and to execute sooner. INFOSYS do this in two ways: First, they allow near simultaneous planning—collaborative and parallel—among echelons. This capability compresses the time needed for all echelons to complete their plans. Second, because INFOSYS provide nearly continuous updates to a more accurate COP, forces can execute faster with less detailed plans. High quality COP updates make effective incremental adjustments possible during execution. They also allow commanders to act faster to counter emerging threats or seize opportunities as they identify them rather than continuing to execute a plan that does not fit the new situation. In addition, modern INFOSYS allow staffs to rapidly resynchronize forces and functions. This capability allows commanders to adjust plans with a minimal loss of combat power, making Army forces more agile today than previously.

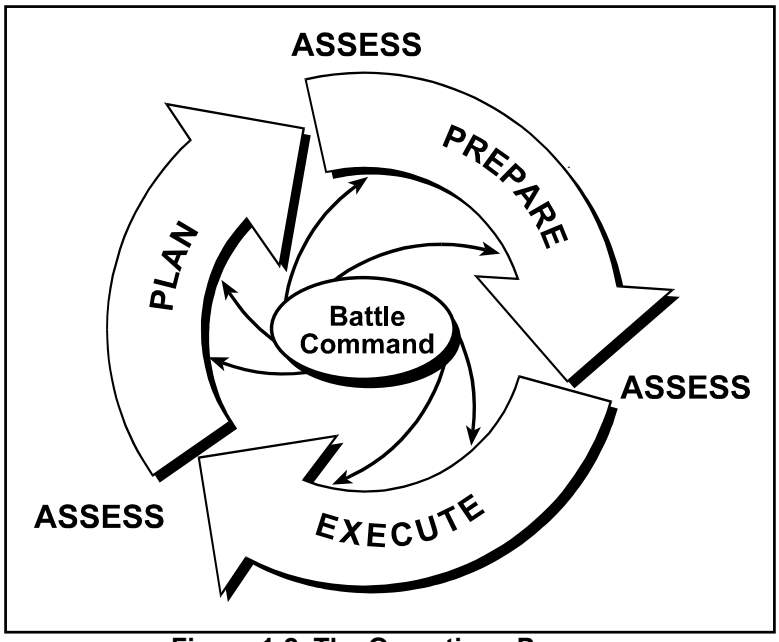


Figure 1-2. The Operations Process

1-36. Commanders follow a continuous cycle of **see first**, **understand first**, **act first**, and **finish decisively** to decrease the options available to the enemy and create or preserve options for their own forces. (See figure 1-3.) Commanders, assisted by their C2 systems, aim to **see first** within the battlespace. Next, collaboration, discussion, and sharing of knowledge related to the COP allow them to **understand first**. Understanding includes discerning the intent of enemies and others who attempt to shape Army force operations to their benefit or to friendly disadvantage. Seeing and understanding first are necessary but not sufficient without **acting first**. Commanders, using their C2 systems, synchronize and integrate their combined arms teams while directing execution within their commander's intent and planning guidance. Finally, Army forces **finish decisively** by applying relentless pressure, following up, and exploiting initial blows. Throughout operations, subordinates exercise subordinates' initiative. (See paragraph 1-68.)

ENVIRONMENT OF COMMAND AND CONTROL

1-37. Military operations are complex—a complex friendly system fiercely competes with a complex enemy system. Each system consists of numerous components that may also be complex systems, each interacting and affecting many other systems. The results of those interactions are complicated, often unpredictable, and perhaps uncontrollable. Thus, military operations may defy orderly, efficient, and precise control. The following four dimensions of the C2 environment help explain the complex nature of military operations:

- Human dimension.
- Uncertainty.
- Time.
- Land combat operations.

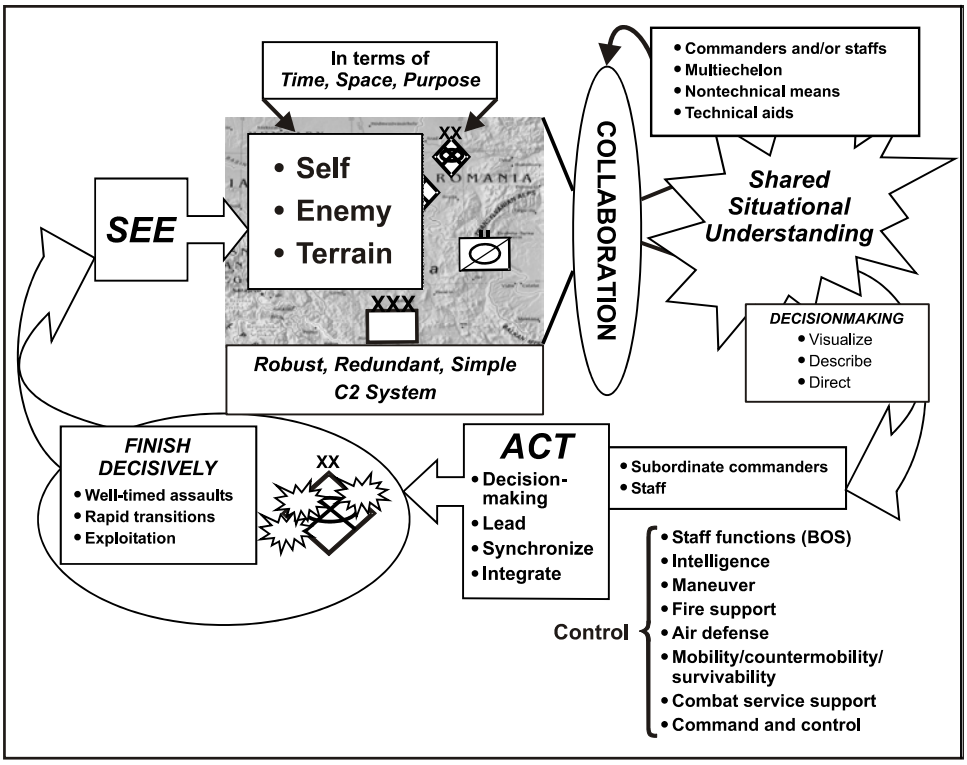


Figure 1-3. The Thought Process

HUMAN DIMENSION

1-38. The most important dimension of the C2 environment is the human dimension. People are the basis of military organizations, and military operations occur as human interactions. Humans are integral to C2 at all levels: commanders, personnel in the C2 system, and forces the commander directs. INFOSYS help soldiers accomplish missions effectively, but do not eliminate or lessen the role of humans. The human mind has a capacity for judgment, intuition, and imagination far superior to the analytic capacity of the most powerful computer. This aspect makes command more an art than a science. Effective C2 accounts for the characteristics and limits of human nature. It exploits and enhances uniquely human skills. No amount of technology or equipment can supplant the human spirit and reasoned judgment, especially those of commanders.

1-39. Battle is chaotic—unexpected problems occur. The most important factor contributing to this chaos is the actions of enemies actively trying to accomplish their missions by defeating friendly forces. This factor alone creates stress. A capable enemy tries to maximize the level of stress on friendly forces. That, combined with the often nonstop tempo of modern operations raises the stress on individuals and systems to levels that may become crippling unless planning includes countermeasures. Even in stability operations and support operations—where there is less potential for the moments of stark terror that exist in battle—constant tension over time can lead to unexpected problems. Effective commanders solve these problems themselves where possible, allowing higher-level commanders to focus on

broader operations. However, they coordinate their solutions with other units or echelons to synchronize them with the actions of those elements.

1-40. Stress affects all soldiers, from commanders on down. The harsh environment of operations produces physiological and psychological effects. Hardened soldiers can persevere physically if their commanders train, prepare, and care for them in such conditions. However, the harsh environment of operations is more likely to have a greater psychological than physical effect on soldiers. Since the mind directly affects the soldier's will to win, soldiers must prepare mentally for the stress of operations, especially combat. If not countered, stress causes human error, increasing uncertainty or increasing time required for actions to take effect. Effective C2 also recognizes and addresses the effects of stress on individual soldiers and units. (FM 6-22.5 discusses stress, its effects, and preventive measures. FM 22-100 discusses leader responsibilities for handling stress in soldiers and units. It also outlines methods to create effective, combat-ready soldier teams.)

UNCERTAINTY

1-41. The defining problem of command and control is the need to deal with uncertainty, another dimension that makes C2 more art than science. In the words of Carl von Clausewitz,

> *War is the realm of uncertainty; three-quarters of the factors on which action in war is based are wrapped in a fog of greater or lesser uncertainty.*

Sources of Uncertainty

1-42. The fundamentally complex and interactive nature of military operations generates uncertainty. Military operations are human endeavors shaped by human nature and subject to the unpredictability of human behavior. Even the behavior of friendly forces is often unpredictable because of the effects of stress on soldiers. Humans sometimes make mistakes as they interact. In addition, each military operation is a complex activity composed of smaller operations, each involving many individuals and systems acting simultaneously in complex environments. Factors such as the urban environment, restrictive rules of engagement, and political considerations produce unanticipated and unintended consequences that result in additional uncertainty.

1-43. Military operations are struggles between independent human wills. Commanders face thinking, uncooperative, and adaptive enemies. They can never predict with certainty how enemies will act and react, or how events will develop. Enemies use methods like denying information to friendly forces, disseminating disinformation, and executing military deception operations to attempt to shape the area of operations and reduce or neutralize friendly force capabilities. Simultaneously, friendly forces use information operations to do the same to the enemy. (See FM 3-13.) These actions interact to create an environment of extraordinary uncertainty.

Information Management and Uncertainty

1-44. C2 systems strive to reduce uncertainty to manageable levels by collecting and processing information, and providing commanders only the information they need to make decisions. However, effective commanders accept that uncertainty can never be eliminated. Therefore, commanders and their C2 systems must be able to function effectively in uncertain environments. The best method of doing this is through decentralized execution of operations. Decentralized execution—based on a common understanding of the commander's intent, mission orders, and sharing available information—allows lower level commanders to cope with uncertainty by exercising subordinates' initiative.

1-45. Well-trained staffs within mature C2 systems use information management to reduce uncertainty. (See chapter 3.) The goal is to provide commanders with knowledge based on RI to which they can apply judgment to reach situational understanding and discern operational advantages. To do this, commanders and staffs balance art and science within information management. Above all, decreased uncertainty depends not only on the quantity or quality of information but also on the analysis of it. These limitations are especially true of intelligence, which is based on information collected from an uncooperative enemy.

1-46. Faulty information management may increase uncertainty. Information only reduces uncertainty if it contributes to knowledge or understanding. Neither humans nor systems can effectively accept any more than a certain amount information. Beyond that point, more information only leads to information overload, a situation in which incoming information—no matter how relevant or accurate—may not be understood.

Solutions to Uncertainty

1-47. There are two basic solutions to the problem of uncertainty: one is information-focused, the other action-focused.

1-48. The information-focused solution reduces uncertainty at the higher echelons by collecting more and better data, and increasing the information-processing capability at the top. This solution results in greater uncertainty at lower echelons because those echelons either do not have the information or receive it later than the higher ones. This approach requires greater control of lower-level commanders and more detailed orders.

1-49. The action-focused solution reduces uncertainty evenly throughout the force. Commanders train their organizations to manage and cope with uncertainty as part of normal operations. They delegate authority for decision-making to those levels that can acquire and process the information adequately. This solution may result in less certainty at higher levels.

1-50. The action-focused solution leads to more general, flexible orders and a more agile force. The information-focused solution may not be as efficient as the action-focused solution because even increased information collection does not provide absolute certainty. Although focusing information processing at the top can produce enough information to execute operations, it may cost the efficiency and time. Commanders use aspects of both

solutions. They do not totally exclude one or the other. Tension arises between the two solutions only when commanders allow the quest for more and better information to delay their decisions.

TIME

1-51. The dimension of time is important only in relation to friendly forces' accomplishing the mission. In combat operations, how fast the enemy can react effectively to friendly actions is the primary aspect of time commanders consider. In stability operations and support operations, other considerations, such as forecasted environmental effects, determine the importance of time.

1-52. Time affects C2 in two major ways: First, friendly forces must be able to conduct (plan, prepare, execute, and assess) operations faster than the enemy. Second, a C2 system can theoretically reduce uncertainty by continuing to gather and process information; however, the value of information about the enemy decreases with age—changes in the situation can make it irrelevant. A rapid tempo (rate of military action) limits the amount of information that can be collected and processed before a decision is required. Delaying decisions beyond that limit allows enemies to act more quickly than friendly forces and may give them the initiative. (See chapter 6.)

1-53. All actions require a certain amount of time to execute. This time can only be reduced to some absolute minimum. If the time friendly forces need to act is less than the enemy reaction time, there is no problem. If it is greater, commanders seek another solution—by adjusting the resources, the concept, or even the mission. (See the discussion of the *observe-orient-decide-act* [OODA] cycle in appendix A.)

1-54. An effective C2 system allows friendly commanders and their forces to use time more effectively than the enemy. The need of commanders to balance reduction of uncertainty with tempo is the essence of the C2 challenge. Enemy commanders have the same goal and face the same problems. The goal is to achieve relative advantage in timeliness over them. Commanders who follow C2 practices that provide information to lower levels of command allow their subordinates to exercise initiative and make better decisions. Their forces operate faster and more effectively than those of the enemy.

LAND COMBAT OPERATIONS

1-55. The Army's primary mission is to organize, train, and equip forces to conduct prompt and sustained land combat operations. (See FM 1.) These forces include Army aviation units as well as ground units. Army C2 doctrine (which applies to the airspace over the land area of operations) is compatible with joint doctrine and takes into account the nature of land operations and land forces.

1-56. Army combat operations usually involve destroying or dislocating enemy forces on land or taking key land objectives that reduce the enemy's ability to conduct operations. Four characteristics distinguish land combat operations:

- **Scope.** Land combat involves *close combat*—combat carried out with direct fire weapons, supported by indirect fire, air-delivered fires, and

nonlethal engagement means. Close combat defeats or destroys enemy forces, or seizes and retains ground (FM 3-0). Land combat contains many more interactions between friendly and enemy forces at lower levels than any other form of combat.

- **Duration.** Land combat is repetitive and continuous. With few exceptions (such as ambushes or raids), Army forces do not strike and return to a base; they remain in contact with enemy forces almost continuously. Doing this allows them to destroy enemies or render them incapable or unwilling to conduct further action. The duration of land combat operations contributes to the large number of interactions between friendly and enemy forces.
- **Terrain.** Land combat takes place in the densest of all combat media—the ground environment. The complex variety of natural and manmade features of the ground environment contrasts significantly with the relative transparency of air, sea, and space. In addition to considering the visibility limits resulting from clutter and other terrain features, effective plans for land combat also account for the effects of weather and climate.
- **Permanence.** Land combat frequently requires seizing or securing terrain. With control of terrain comes control of its population and productive capabilities. Thus, Army forces in land combat make permanent the often temporary effects of other operations.

These characteristics increase the uncertainty of the environment in which Army forces conduct operations. Commanders prepare their forces to persevere through casualties and setbacks. They direct logistic support that anticipates losses and consumption.

1-57. The scope of land combat reaches to the lowest tactical land-force element—its irreducible unit of maneuver and action—the individual soldier. These soldiers number in the thousands for a brigade commander and the tens of thousands for an operational-level commander. Soldiers receive orders passed through multiple echelons of command. They must understand the prescribed limits within which to exercise subordinates initiative. In addition, lower-level commanders have much less experience and professional education than higher-level commanders. However, they must understand the higher-level commander's intent and the effects of their actions on the operations of the entire force. These factors produce an extremely complex situation. A commander's C2 system must communicate execution information in an understandable form to the command's lowest levels and disseminate the COP to all echelons. It must allow commanders at all levels to share a common understanding of the situation and higher commander's intent.

1-58. This situation means that reports transmitted through several layers may result in an inaccurate reception or interpretation. Communications with subordinates may be tenuous, and information about subordinate formations may be vague, as the enemy tries to degrade or disrupt communications and the environment limits their reliability. The fielding of digital INFOSYS has a goal of reducing these effects and providing the capability to produce an accurate COP in spite of them.

1-59. The Army's doctrine of full spectrum operations emphasizes shattering the enemy's ability and will to resist, and destroying the coherence of his operations. Army forces accomplish these things by controlling the nature, scope, and tempo of an operation, and striking simultaneously throughout the area of operations to control, neutralize, and destroy enemy forces and other objectives. The Army's C2 doctrine supports its operations doctrine. It balances coordination, personal leadership, and tactical flexibility. It stresses rapid decisionmaking and execution, including rapid response to changing situations. It emphasizes trust and mutual understanding among superiors and subordinates.

1-60. Commanders seek to conduct operations at a tempo and intensity the enemy cannot match. To achieve this, Army C2 doctrine supports decentralized operations. Decentralized operations contribute to retaining the tactical initiative. They require disseminating information to the lowest possible level so subordinates can exercise subordinates' initiative. Effective C2 that emphasizes subordinates' initiative as the starting point for seizing the tactical initiative. Army C2 doctrine gives commanders the concepts needed to exercise this kind of C2.

CONCEPT OF COMMAND AND CONTROL

1-61. Historically, commanders have employed variations of two basic C2 concepts: mission command and detailed command. (See figure 1-4.) Militaries and commanders have frequently favored detailed command, but an understanding of the nature of war and the patterns of military history point to the advantages of mission command. Mission command is the Army's preferred concept of command and control.

1-62. Two hundred years ago, C2 practices were consistent with the concept of detailed command. C2 focused on searching for accurate information about enemy and friendly forces. A commander could generally see the entire battlefield and most of his army, as well as the enemy's. Battles were often concluded in one day. (Examples include the battles of Arbela [page vii] and Kunersdorf [page 2-27].) This philosophy served well in earlier times; however, the growth of armies in size and complexity required commanders to command in battles that lasted longer than a day on battlefields that extended beyond their direct view. This change began in Napoleon's time. Napoleon developed an organizational method—the *corps d'armee* system—to reduce the uncertainty and complexity while still employing detailed command methods. (See the Austerlitz vignette [page 3-24].)

1-63. However, by the American Civil War, this trend was irreversible. This led American commanders in the latter years of the Civil War to employ techniques similar to mission command. (See the Chancellorsville vignette (page 1-21].) By 1870, armies in Europe recognized the same trend, and the first formulation of a concept of mission command, a German concept later called *Auftragstaktik*, formally emerged. Later developments in technology, such as the telephone, led some commanders to attempt to exercise C2 through detailed command. However, the failure of detailed command—in World War I by all combatants and at the beginning of World War II by the French Army—led the German and American armies to use mission

command throughout World War II. (See the Ruhr vignette [page 2-30].) After World War II, the Israeli army developed into a proficient practitioner of mission command.

Mission Command		Detailed Command
• Probabilistic • Unpredictable	Assumes war is	• Deterministic • Predictable
• Disorder • Uncertainty	Accepts	• Order • Certainty
• Decentralization • Spontaneity • Informality • Loose rein • Self-discipline • Initiative • Cooperation • Acceptable decisions faster • Ability all echelons • Higher tempo	Tends to lead to	• Centralization • Coercion • Formality • Tight rein • Imposed discipline • Obedience • Compliance • Optimal decisions, but later • Ability focused at the top
• Implicit • Vertical and horizontal • Interactive	Communication types used	• Explicit • Vertical • Linear
• Organic • Ad hoc	Organization types fostered	• Hierarchic • Bureaucratic
• Delegating • Transformational	Leadership styles encouraged	• Directing • Transactional
• Art of war • Conduct of operations	Appropriate to	• Science of war • Technical/procedural tasks

Figure 1-4. Concepts of Command and Control

Von Moltke and *Auftragstaktik*

Helmuth von Moltke (1800-1891) was appointed Chief of the Prussian (later German) General Staff in 1857. One of the important concepts he promulgated was *Auftragstaktik* (literally, "mission tactics"); a command method stressing decentralized initiative within an overall strategic design. Moltke understood that, as war progressed, its uncertainties diminished the value of any detailed planning that might have been done beforehand. He believed that, beyond calculating the initial mobilization and concentration of forces, "…no plan of operations extends with any degree of certainty beyond the first encounter with the main enemy force." He believed that, throughout a campaign, commanders had to make decisions based on a fluid, constantly evolving situation. For Moltke, each major encounter had consequences that created a new situation, which became the basis for new measures. *Auftragstaktik* encouraged commanders to

be flexible and react immediately to changes in the situation as they developed. It replaced detailed planning with delegation of decisionmaking authority to subordinate commanders within the context of the higher commander's intent. Moltke realized that tactical decisions had to be made on the spot; therefore, great care was taken to encourage initiative by commanders at all levels.

Moltke believed that commanders should issue only the most essential orders. These would provide only general instructions outlining the principal objective and specific missions. Tactical details were left to subordinates. For Moltke, "The advantage which a commander thinks he can attain through continued personal intervention is largely illusory. By engaging in it he assumes a task that really belongs to others, whose effectiveness he thus destroys. He also multiplies his own tasks to a point where he can no longer fulfill the whole of them." Moltke's thought, summarized in these statements, lies at the heart of mission command.

1-64. As figure 1-4 shows, the concepts of detailed command and mission command represent the theoretical extremes of a C2 spectrum. While the US Army's preferred C2 concept is mission command, in practice no commander relies on purely detailed or purely mission command techniques. The degree to which commanders incorporate detailed command techniques into their practice of mission command depends on a variety of factors. These may include the nature of the environment or task, the qualities of the staff and subordinate commanders, and the nature and capabilities of the enemy.

DETAILED COMMAND

1-65. Detailed command stems from the belief that success in battle comes from imposing order and certainty on the battlefield. A commander who practices detailed command seeks to accomplish this by creating a powerful, efficient C2 system able to process huge amounts of information, and by attempting to reduce nearly all unknowns to certainty. Detailed command centralizes information and decisionmaking authority. Orders and plans are detailed and explicit, and successful execution depends on strict obedience by subordinates, with minimal decisionmaking and initiative on their part. It emphasizes vertical, linear information flow, where information flows up the chain of command and orders flow down. The commander ensures compliance with all details of the plan by imposing discipline and coordination from above. Detailed command achieves unity of effort through detailed, prescriptive techniques.

1-66. Commanders who use this C2 concept command by personal direction or detailed directive. They make many—often too many—decisions personally, not all of which are the important ones. Often, they make these decisions prematurely. Detailed command techniques may result in a high degree of coordination during planning. However, during execution, they leave little room for independent adjustments by subordinates; subordinates must consult the higher commander before deviating from the plan. Detailed command is ill-suited to taking advantage of rapidly changing situations. It does not work well when the communications and information flow is disrupted. It inhibits the judgment, creativity, and initiative required for success in fluid military operations. Because of these disadvantages, mission command is a better C2 concept in almost all cases.

MISSION COMMAND

1-67. ***Mission command*** **is the conduct of military operations through decentralized execution based on mission orders for effective mission accomplishment. Successful mission command results from subordinate leaders at all echelons exercising disciplined initiative within the commander's intent to accomplish missions. It requires an environment of trust and mutual understanding.** Successful mission command rests on the following four elements:

- Commander's intent.
- Subordinates' initiative.
- Mission orders.
- Resource allocation.

Commander's Intent

1-68. The *commander's intent* is a clear, concise statement of what the force must do and the conditions the force must meet to succeed with respect to the enemy, terrain, and desired end state (FM 3-0). It focuses on achieving the desired end state and is nested with the commander's intent of the commander two levels up. Commanders formulate and communicate their commander's intent to describe the boundaries within which subordinates may exercise initiative while maintaining unity of effort. To avoid limiting subordinates' freedom of action, commanders place only minimum constraints for coordination on them.

Subordinates' Initiative

1-69.***Subordinates' initiative*** **is the assumption of responsibility for deciding and initiating independent actions when the concept of operations no longer applies or when an unanticipated opportunity leading to achieving the commander's intent presents itself.** Subordinates decide how to achieve their missions within delegated freedom of action and exercise initiative during execution, but they have an absolute responsibility to fulfill the commander's intent. They are also required, not just permitted, to exercise initiative when an opportunity or threat presents itself.

Mission Orders

1-70. ***Mission orders*** **is a technique for completing combat orders that allows subordinates maximum freedom of planning and action in accomplishing missions and leaves the "how" of mission accomplishment to subordinates.** Mission orders state the task organization, commander's intent and concept of operations, mission of the force, subordinates' missions, and minimum essential coordinating instructions. A mission assigned to a subordinate includes all the normal elements (who, what, when, where, and why), with particular emphasis on the purpose (why). It, along with the commander's intent, guides subordinates' initiative. A properly written mission statement and commander's intent are critical when using mission orders. This technique does not mean commanders do not supervise subordinates' execution; however, they intervene only to direct changes to the concept of operations, coordinate, restore operations, or exploit success. A poorly written mission statement or unclear commander's intent requires the

commander to intervene in subordinate operations more frequently. Such intervention inhibits subordinates' initiative and reduces the force's agility.

Resource Allocation

1-71. Commanders allocate enough resources for subordinates to accomplish their missions. In the context of mission command, commanders consider information a resource—comparable to more traditional ones, such as soldiers and materiel—and share it through all levels of command.

Exercising Mission Command

1-72. Mission command concentrates on the objective of an operation, not on how to achieve it. It emphasizes timely decisionmaking, understanding of the higher commander's intent, and the clear responsibility of subordinates to act within that intent to achieve the desired end state. With the commander's intent to provide unity of effort, mission command relies on decentralized execution and subordinates' initiative. Mission command requires a common understanding of Army doctrine, as well as of the situation and commander's intent.

1-73. The fundamental basis of mission command is creating trust and mutual understanding between superiors and subordinates. This is more than just control: commanders must establish a command climate of trust and mutual understanding that encourages subordinates to exercise initiative. Mission command applies to all operations across the spectrum of conflict.

1-74. Mission command counters the uncertainty of war by reducing the amount of certainty needed to act. Commanders guide unity of effort through the commander's intent, mission orders, and the CCIR. Commanders hold a "loose rein," allowing subordinates freedom of action and requiring them to exercise subordinates' initiative. Commanders make fewer decisions, but this allows them to focus on the most important ones. The command operates more on self-discipline than imposed discipline. Because mission command decentralizes decisionmaking authority and grants subordinates significant freedom of action, it demands more of commanders at all levels and requires rigorous training and education.

1-75. Mission command tends to be decentralized, informal, and flexible. Orders and plans are as brief and simple as possible, relying on implicit communication—subordinates' ability to coordinate and the human capacity to understand with minimal verbal information exchange. By decentralizing decisionmaking authority, mission command increases tempo and improves the subordinates' ability to act in fluid and disorderly situations. Moreover, relying on implicit communication makes mission command less vulnerable to disruption of communications than detailed command.

1-76. On the surface, the characteristics of stability operations and support operations appear to favor detailed command. The aim of these operations is often persuasion rather than destruction of an enemy. Missions are more likely accomplished by preemption, dislocation, and disruption than by combat operations. Available information appears more consistent and clear, if not better, than that received during offensive and defensive operations.

There are normally fewer crises and more time available to make decisions and take action.

1-77. However, the environment of stability operations and support operations is often as complex—if not as deadly—as that encountered during offensive operations and defensive operations. Both occur in dynamic environments that may involve applying doctrine in unfamiliar ways. Both are often time- and manpower-intensive, and both are often conducted in noncontiguous areas of operations. Both, but especially support operations, are often interagency.

1-78. Achieving unity of effort in this environment is difficult but essential. A clear commander's intent that lower-level leaders can understand is key to maintaining unity of effort. Circumstances of remote locations or rapidly changing situations can force commanders to conduct decentralized operations, and soldiers must exercise subordinates' initiative to solve problems as they arise. One isolated, thoughtless action can undo months of patient work, potentially alienate the local populace, and benefit the belligerent's cause in stability operations or diminish the effects of support operations.

1-79. Mission command is appropriate for operations in the often politically charged atmosphere and complex conditions of these operations. Commanders must explain not only the tasks assigned and their immediate purpose, but also prescribe an atmosphere to achieve and maintain throughout the campaign. They must explain what to achieve and communicate the rationale for military action throughout their commands. Doing this allows junior commanders and their soldiers to gain insight into what is expected of them, what constraints apply, and, most important, why the mission is being undertaken.

1-80. Detailed command is ill-suited to the conditions of stability operations and support operations. Commanders using its techniques try to provide guidance or direction for all conceivable contingencies, which is impossible in dynamic and complex environments. Under detailed command, subordinates must refer to their headquarters when they encounter situations not covered by the commander's guidance. Doing this increases the time required for decisions and delays acting. In addition, success in interagency operations often requires unity of effort, even when there is not unity of command. In such an environment, detailed command is impossible. In contrast to the detailed instructions required by detailed command, mission command calls for a clear commander's intent. This commander's intent provides subordinates guidelines within which to obtain unity of effort with agencies not under military command. Subordinates then act within those guidelines to contribute to achieving the desired end state.

DIGITIZATION AND MISSION COMMAND

1-81. Digitization is the Army's program for leveraging information-age technologies. Current and future INFOSYS improvements, such as the Army Battle Command System (ABCS) and Battle Command on the Move (BCOTM), use digitization to enhance commanders' practice of the art of command and facilitate the science of control. The digitized INFOSYS the Army is building actually facilitate and strengthen mission command, even

though they can be used to impose detailed command. Their capabilities have the potential for creating conflict. A commander at almost any level can apparently reach down and control the actions of an individual soldier at any time. Doing this, however, misuses the technology. Effective commanders focus on the overall operations of their force, not the individual actions of its parts. The information that digital INFOSYS make available allows commanders to know what their subordinates are doing faster and in more detail than previously. Commanders can use this information to revisualize the overall operation and take advantage of opportunities that results from their subordinates' actions, in keeping with mission command.

1-82. Commanders have faced this challenge before. In the late 1960s, command doctrine stated that the senior leader on the ground had the best perspective, and that commanders should lead from the front. The helicopter and PRC-25 radio challenged this doctrine. This technology led some commanders to believe they could best control a fight on the ground from a command post overhead. Many succumbed to this temptation. Helicopters gave airborne commanders the illusion of having perfect knowledge of the ground situation. Lightweight radios led them to believe they could reach down and influence the battle directly, rather than allowing their subordinates to do their jobs. The predictable results were erosion of trust and a weakening of the chain of command, along with a decline in junior officer and NCO willingness to initiate action without orders. Although there may have been a short-term increase in apparent combat effectiveness of small units, the long-term effects of that misapplication of technology were devastating.

1-83. The perception of digitization in the Army is that it might reduce the importance of the art of command. Some believe that providing commanders better, more accurate, and timely information and intelligence would allow them to rely less on intuition. With more accurate information, commanders would be better able to visualize the current and future states and dictate the terms, location, and tempo of the battle, even at lower echelons. If digital INFOSYS do provide these capabilities, the concept of mission command could be called into question. However, this line of questioning confuses the art of command with the science of control.

1-84. Information technologies are already affecting the elements of control: information, communication, and structure. However, they do not detract from the elements of command: authority, decisionmaking, and leadership. In fact, commanders can use digital INFOSYS to increase the effectiveness of decisionmaking and leading. Modern INFOSYS allow commanders to devote more time to the art and human sides of command, and to support their achievement and use of visualization. These technologies and capabilities also allow all BOSs across many distributed locations and echelons to share information and collaborate when analyzing that information. Never have commanders had more ability to exercise increased direct control, yet never have they had less reason to do so. Information is the springboard of initiative and independent action. Using information technologies to empower subordinates has the potential to increase the tempo of operations beyond the level at which adversaries can hope to respond.

1-85. Modern information systems (INFOSYS), such as the Army Battle Command System (ABCS), substantially enable mission command. Above all,

they allow commanders to provide a COP to subordinates to guide the exercise of subordinates' initiative. The COP conveys the higher commander's perspective and facilitates subordinates' situational understanding. This situational understanding provides a context for subordinates to use when assessing information obtained at their level. The COP allows subordinates to visualize intuitively the effects of possible decisions on the rest of the higher commander's operation and accept or mitigate the costs of their decision. As subordinates act, ABCS allows them to report the results of their actions to their commander. Higher commanders can monitor subordinates' actions and, with their staffs, resynchronize operations rapidly to exploit opportunities resulting from subordinates' initiative.

1-86. Well-trained staffs with solid procedures can use modern INFOSYS to facilitate understanding of the commander's intent. These INFOSYS provide graphic displays and the means to obtain feedback from subordinates. This feedback becomes a two-way data flow that leads to a shared situational understanding among all participants. This shared understanding forms the context for exercising subordinates' initiative. Commanders can use the same capabilities to confirm or correct subordinates' understanding. This increases opportunities to exercise subordinates' initiative.

1-87. Digitization can substantially support the art of command by providing commanders better, more accurate, and timely information. This information gives commanders better situational understanding. Better situational understanding allows commanders to focus their intuition on fewer unknowns and better visualize the current and future end state. Modern INFOSYS allow commanders to identify the unknowns and either precisely direct information collection or accept the uncertainty in the interests of timeliness. Accurate information allows commanders to dictate the terms, location, and tempo of operations. It enables them to spend more time and energy leading and motivating soldiers.

HISTORICAL VIGNETTE—CHANCELLORSVILLE

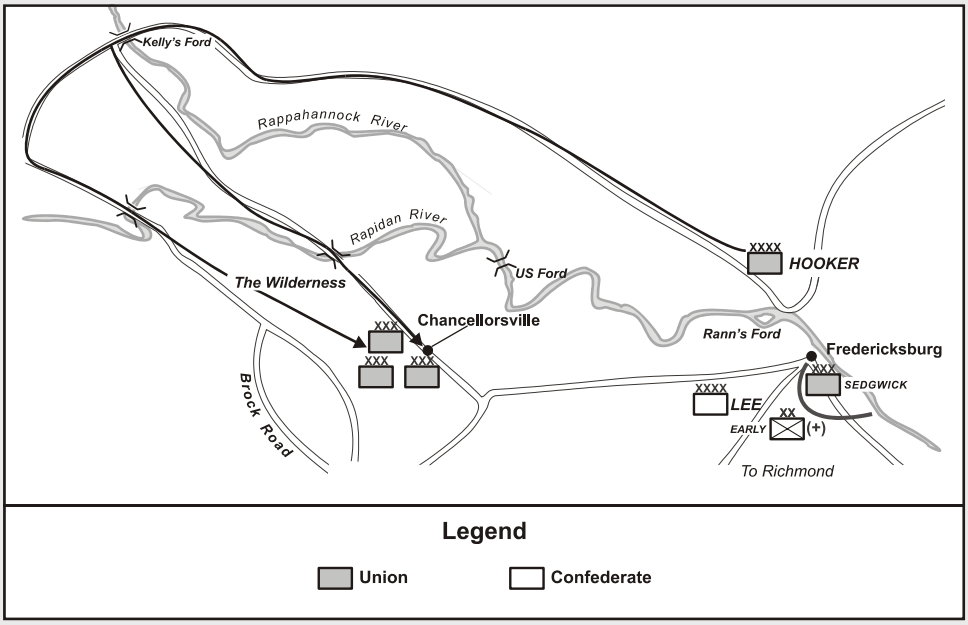
1-88. The following historical vignette illustrates how one commander successfully used all four mission command techniques—commander's intent, subordinates' initiative, mission orders, and resource allocation—to defeat a more powerful opponent who relied on detailed command techniques.

Command and Control at Chancellorsville

In December 1862, the Army of Northern Virginia, under Confederate GEN Robert E. Lee, defeated the Army of the Potomac at Fredericksburg, on the Rappahannock River between Washington, DC and Richmond, Virginia. The Union Army, under its new commander, MG Joseph Hooker, spent the winter of 1863 recovering. By spring, Hooker and his army of 134,000 were prepared to resume the offensive against Lee and his army of 60,000. "I not only expected victory, I expected to get the whole [Confederate] army," said Hooker of the Chancellorsville campaign. Instead, Chancellorsville became one of Lee's greatest victories.

Hooker planned an envelopment to place strong Union forces on Lee's flanks and rear. Three infantry corps would move up the Rappahannock, cross at Kelly's Ford, and move against Lee's rear. Two other corps would move against Lee's right flank. Combined with a Union cavalry corps moving behind Lee to cut off Confederate supplies and reinforcements, these actions would turn Lee out of Fredericksburg. However, fearing that the enemy might learn the details of his plan, Hooker withheld his intent from his subordinates. Instead he relied on detailed command techniques, an approach that prevented his subordinates from taking advantage of opportunities that could have led to victory.

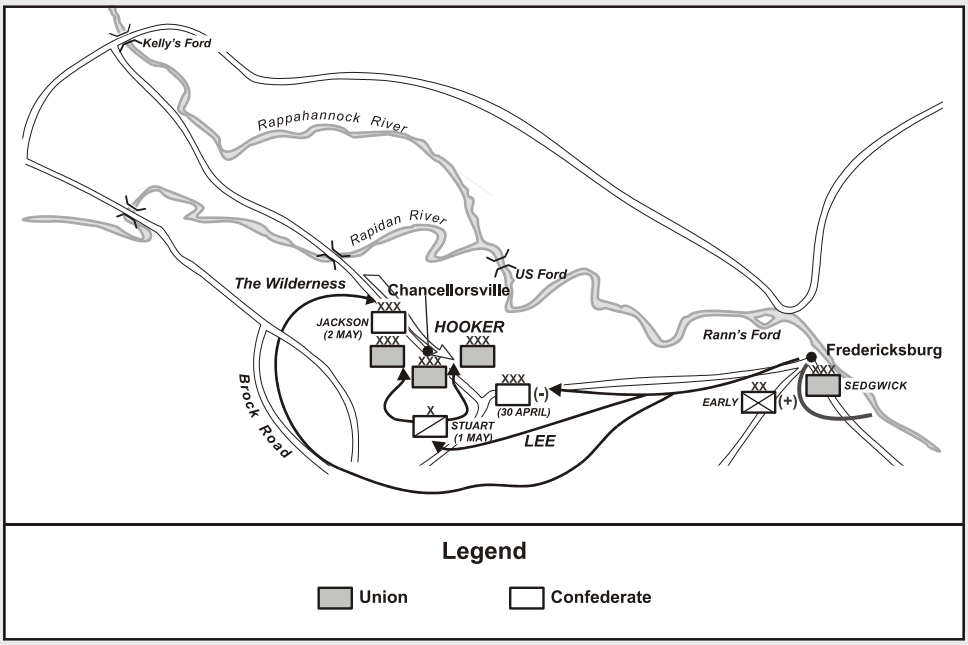
Initially, Union operations went according to plan. (See map 1-1.) Union disinformation, demonstrations, and feints initially misled Lee. By 29 April, Hooker had outmaneuvered him. The enveloping force had advanced to the road junction at Chancellorsville. A bridgehead below Fredericksburg was established, and 24,000 men under MG John Sedgwick were prepared to exploit it. However, events began to diverge from Hooker's commander's visualization, and his plan began to unravel.



Map 1-1. Chancellorsville—Hooker's Envelopment

By 1 May, Lee had recognized that the real threat was the enveloping force at Chancellorsville, not the Union cavalry corps moving to his south. Lee then made a bold decision: apparently violating the principle of mass, he divided his force. Even though outnumbered, Lee left one-third of his force to defend Fredericksburg, sending the rest to join BG "Stonewall" Jackson at Chancellorsville. Lee gave Jackson no specific orders, but made his intent clear: repulse the enemy and drive him back to the Rapidan. (See map 1-2.) Jackson's skirmishers denied the Union corps the ability to communicate, link up with one another, and provide mutual support. Hooker's close hold of his plans and intent was now particularly telling. The irresolute Sedgwick, isolated from the main action, had no idea what he was supposed to do. So, instead of fighting through the weak force facing him to fall on Lee's rear, he waited for clarifying orders. Assessing the situation that

afternoon, Hooker decided to fight a defensive battle, choosing the time and place of the encounter. He ordered the enveloping force to entrench around Chancellorsville and wait for Lee to attack.



Map 1-2. Chancellorsville—Lee's Counter

On 2 May, Lee realized Hooker's center was too entrenched for an assault, but that his right flank corps was open and unsupported. Lee again divided his force, deciding that the advantage of seizing the initiative and attacking merited the risk. Lee sent the bulk of his force with Jackson, who moved to envelop Hooker's right. Lee correctly calculated that Hooker, in his desire for a defensive battle, would do nothing.

Jackson came through the Wilderness, surprising and routing Hooker's right-flank corps. Jackson pushed on that night to prevent the enemy from recovering, but in the confusion was mortally wounded by friendly fire. Hooker, still intending to fight a defensive battle until Sedgwick was in position, ordered Sedgwick to come up on Lee's rear. Sedgwick, overly cautious, did not accomplish this task.

On 3 May, BG J.E.B. Stuart took over for Jackson. Lee's mission to Stuart was clear: drive the Union forces from Chancellorsville and reunite the two Confederate wings. Fierce fighting erupted to drive the Union forces from their positions. Hooker's defense around Chancellorsville was breached (at high cost to both sides), and the Confederate army reunited. Meanwhile, Sedgwick had overrun the Fredericksburg line, but ignorant of Hooker's intent, had not pursued the fleeing enemy.

A dawn reconnaissance on 4 May confirmed that Hooker had withdrawn to new defensive positions north of Chancellorsville. The day before, Hooker had suffered a head injury that may have clouded his judgment. Hooker did not interpret current situational developments accurately. He would not relinquish command and insisted that his defensive plans be carried out. His subordinates, not knowing Hooker's commander's intent, had no basis for acting without orders.

Confident that Hooker would not attack, Lee again divided his force, allocating 25,000 men to fix Hooker and sending the rest to clear the rear of Sedgwick. Sedgwick repelled this force but, thinking he was almost surrounded, retreated across the Rappahannock. Confronted with this, and having no contingency, Hooker abandoned his plan and withdrew his enveloping force.

Hooker believed he had planned well ("My plans are perfect, and when I start to carry them out, may God have mercy on Bobby Lee; for I shall have none"), and his numerical advantage should have compensated for many mistakes. However, his plan was too rigid and relied too much on expected reactions from Lee. Hooker withheld his intent from his subordinates until too late, thus denying them the ability to use their initiative. Lee, however, trusted his subordinates and confided his intent to them. He clearly assessed and adjusted to a situation as it unfolded, weighed the risks, and made bold decisions. Despite being outnumbered two to one, he divided his force three times, accepting the risk of being defeated in detail but allocating as much of his limited resources as possible to his decisive operation. Lee's orders were classic mission orders that allowed subordinates to exercise their initiative. He did not make these decisions recklessly, but only after carefully assessing timely intelligence, interpreting enemy actions, consulting with subordinates, and knowing his enemy's character.

CONCLUSION

1-89. Although the systems commanders use to exercise C2 have evolved throughout history, the fundamental nature of C2 is timeless. Improvements in technology, organization, and procedures may change the sophistication of C2, but they have not changed its importance. While these improvements appear to have increased the span of control, they have barely kept pace with the increasing dispersion of forces and complexity of military operations. Whatever the age or technology, the key to effective C2 is people using information to decide and to act wisely. Whatever the age or technology, the ultimate criterion of C2 success is always the same: acting faster and more effectively than the enemy to accomplish the mission at the least cost to the friendly force before the enemy can effectively act.

1-90. Army C2 doctrine calls for eliminating as much uncertainty as possible within the time available and managing whatever uncertainty remains. Mission command, a major aspect of this doctrine, uses decentralized execution to manage this uncertainty by distributing the handling of uncertainty throughout the force. This doctrine of command and control rests on a supporting doctrine of command and one for control. Chapter 2 discusses Army doctrine for command. The nature and science of control is the subject of chapter 3.

Chapter 2

Command

The criterion by which a commander judges the soundness of his own decision is whether it will further the intentions of the higher commander.

FM 100-5, *Operations*, 1944

Command is personal. In Army regulations and doctrine, an individual, not an institution or group, commands. Only the commander has total responsibility for what the command does or fails to do. **How a commander exercises command varies with the characteristics of that commander**. All officers have strengths and weaknesses, abilities and shortcomings that affect how they command. The basic techniques of command do not change or expand with the increase in complexity of the force. However, direct leadership within command decreases as the level of command increases, and applying organizational leadership as described in FM 22-100 becomes more relevant.

NATURE OF COMMAND

To command is to do more than carry out orders and apply rules and regulations to the ebb and flow of military administration. Command calls for a creative act, spawned by a carefully carved vision of one's mission and professional values. Great commanders have the confidence and courage to interpret rules and orders, and to put their personal stamp on the decisions guiding their force....

Roger Nye, *The Challenge of Command*

2-1. The nature of command includes its definition, its elements, and the principles of command. The definition follows, and the following sub-sections discuss the elements and principles. The definition establishes the commander's authority and states the two great responsibilities of command. Implicit in these responsibilities are the elements of command. The principles of command discuss how to use the elements of command to fulfill the responsibilities.

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2-2. *Command* is the authority that a commander in the military service lawfully exercises over subordinates by virtue of rank or assignment. Command includes the authority and responsibility for effectively using available resources for planning the employment of, organizing, directing, coordinating, and controlling military forces for the accomplishment of assigned missions. It also includes responsibility for health, welfare, morale, and discipline of assigned personnel (JP 0-2).

ELEMENTS OF COMMAND

2-3. The elements of command are authority, decisionmaking, and leadership. The definition of command refers explicitly to *authority*. It implicitly requires *decisionmaking* (effectively using available resources for achieving a future state or mission), and *leadership* (providing for the health, welfare, morale, and discipline responsibilities of command). Decisionmaking and leadership make up the art of command.

2-4. Commanders strive to use their authority with firmness, care, and skill. Commanding at any level is more than simply leading soldiers and units and making decisions. It is the interaction of these elements that characterizes command. Commanders who understand each element conceptually and how it interacts with the others—skillfully balancing them in practice—are much more effective than those who do not.

2-5. Consequently, successful commanders achieve a balance among the elements and develop skill in each one. They delegate authority to subordinates for those functions in which they cannot participate fully; however, they participate enough to assure their successful execution. Officers prepare for higher command by developing and exercising their skills when commanding at lower levels.

Authority

2-6. The Constitution establishes the Armed Forces, designates the President as their Commander-in-Chief, and empowers Congress to provide funding and regulations for them. Public law, such as the *Uniform Code of Military Justice (UCMJ)*, grants further authority, responsibilities, and accountability to commanders in all Services. Army regulations establish the authority, responsibilities, and accountability for Army commanders.

2-7. ***Authority* is the delegated power to judge, act, or command.** It involves the right and freedom to use the power of command and to enforce obedience under criminal law. This authority to enforce orders by law if necessary is one of the key elements of command and distinguishes military commanders from civilian leaders and managers. However, commanders have another source of authority: personal authority. Personal authority reflects influence and charisma. It stems from values, attributes, personality, experience, reputation, character, personal example, and tactical and technical competence. Personal authority, freely granted to a commander by subordinates, ultimately arises from the actions of the commander, and the trust and confidence generated by these actions. It is often more powerful than legal authority. Authority has three components:

- Responsibility.
- Accountability.
- Delegation.

2-8. **Responsibility.** With authority comes *responsibility*, the obligation to carry forward an assigned task to a successful conclusion. With responsibility goes authority to direct and take the necessary action to ensure success (JP 1-02). Commanders assume legally established and moral obligations, both for their decisions and for the actions, accomplishments, and failures of their units. Commanders have three major responsibilities: Above all, commanders are responsible for accomplishing all assigned missions. Second, they are responsible for their soldiers—their health, welfare, morale, and discipline. Finally, they are responsible for maintaining and employing the resources of their force. In most cases, these responsibilities do not conflict; however, the responsibility for mission accomplishment can conflict with responsibility for soldiers. In an irreconcilable conflict between the two, including the welfare of the commander himself, mission accomplishment must come first. Commanders try to keep such conflicts to an absolute minimum.

2-9. **Accountability.** Another corollary of authority is *accountability*: the requirement for commanders to answer to superiors (and finally the American people) for mission accomplishment, for the lives and care of their soldiers, and for effectively and efficiently using Army resources. It also includes the obligation to answer for properly using delegated authority. In turn, the subordinates are accountable to their commander for fulfilling their responsibilities.

2-10. **Delegation.** To accomplish a mission or assist in fulfilling their responsibilities, commanders may *delegate authority* to subordinates, including staff officers. Delegation allows subordinates to decide and act for the commander or in his name in specified areas. While commanders can delegate authority, they cannot delegate responsibility. Subordinates are accountable to their commanders for the use of delegated authority, but commanders remain solely responsible and accountable for the actions over which subordinates exercise delegated authority. There are several ways to delegate authority: among them, authority over a field of interest or technical specialty, a geographic area, or specific kinds of actions. Commanders may limit delegating authority in time, or they may use a standing delegation.

Decisionmaking

2-11. ***Decisionmaking* is the process of selecting a course of action as the one most favorable to accomplish the mission**. This decision can be deliberate, using the military decisionmaking process (MDMP) and a full staff, or it can be done very quickly by the commander alone. During operations, deliberate decisions usually are disseminated as fully developed written orders; less deliberate decisions are disseminated as fragmentary orders (FRAGOs). Deciding includes knowing *if* to decide, then *when* and *what* to decide, and understanding the consequences. Decisions are how commanders translate their vision of the end state into action. There are two ways to make decisions: analytic and intuitive.

2-12. **Analytic Decisionmaking.** The traditional view is that decisionmaking is a structured, analytic process based on generating several alternative solutions, comparing these solutions to a set of criteria, and selecting the best course of action (COA). The analytic approach aims to produce the optimal solution to a problem from among those solutions identified. It emphasizes analytic reasoning processes guided by experience, and it is used when time is available. It serves well for decisionmaking in complex or unfamiliar situations. This approach has the following advantages. It—

- Is methodical and allows the breakdown of tasks into recognizable elements.
- Ensures commanders consider, analyze, and evaluate all relevant factors, employing techniques such as war-gaming.
- Provides a methodology when the decision requires great computational effort.
- Provides a good context for decisions, especially for explanations.
- Helps resolve conflicts among COAs.
- Gives inexperienced personnel a methodology to replace their lack of experience.

Analytic decisionmaking is time-consuming but produces an optimal, more fully coordinated plan. It is not appropriate to all situations, especially decisionmaking during execution. The Army's analytical approach is the MDMP. (See FM 5-0.)

2-13. **Intuitive Decisionmaking.** The other way commanders make decisions is intuitive decisionmaking. ***Intuitive decisionmaking* is the act of reaching a conclusion which emphasizes pattern recognition based on knowledge, judgment, experience, education, intelligence, boldness, perception, and character. This approach focuses on assessment of the situation vice comparison of multiple options** (Army-Marine Corps). It focuses on assessing the situation rather than comparing multiple COAs. It is used when time is short or speed of decision is important. It relies on the experienced commander's (and staff officer's) intuitive ability to recognize the key elements and implications of a particular problem or situation, reject the impractical, and select an adequate COA to solve the problem. Intuitive decisionmaking replaces methodical analysis of options with assessment, obtains a satisfactory solution rather than an optimal one, and uses analysis to refine the decision. It is faster than the analytic decisionmaking and facilitates being the one who decides and acts quicker. The MDMP performed in a time-constrained environment relies heavily on the concepts of intuitive decisionmaking. Finally, it leverages the collaborative capabilities of information technology. Intuitive decisionmaking does not work well when the situation includes inexperienced commanders, complex or unfamiliar situations, or COAs that appear to be equally valid.

2-14. Intuitive decisionmaking substitutes application of the art of command for missing information. It works well when acting in uncertain situations and significantly speed up decisionmaking. Intuition in this context is the insight or immediate understanding that rapidly dismisses impractical solutions and moves to a feasible COA. This "art" comes from a combination of the commander's experience, training, and study.

2-15. In practice, the two approaches rarely exclude each other. In fact, commanders can use MDMP training to develop intuitive skills in themselves and their staffs. Each approach has strengths and weaknesses. Selecting one over the other depends primarily on the experience of the commander and staff, and how much time and information are available. The analytic approach is more appropriate when enough time and information are available to choose among different COAs, or when the staff is inexperienced. The majority of tactical decisions during execution—made in the fluid, changing conditions of war, when time is short and information is lacking or doubtful—will be intuitive. Commanders choose a decisionmaking technique based on the situation. It is a mistake to use intuitive decisionmaking when time and circumstances favor analytic decisionmaking. It is also an error to attempt to use analytic decisionmaking when circumstances do not permit it.

2-16. Commanders may base intuitive decisions during execution on the situational understanding developed during a preceding MDMP. Staffs may use part of the MDMP, such as war-gaming, to verify or refine a commander's intuitive decision, if time permits. When commanders employ the MDMP in a time-constrained environment, many of the techniques used, such as choosing to focus on only one COA, depend on intuitive decisions. Even in the most rigorous analytic decisionmaking, intuitive decisions help set boundaries for the analysis and fill information gaps.

2-17. Even in the best circumstances, commanders are unlikely to have perfect knowledge of the situation. They must often bridge the gap between what they know at the time of the decision with a feel for the battle. Intuition is the ability to understand the important aspects of a situation without evident rational thought and inference. Clausewitz described intuition as "the quick recognition of a truth that the mind would ordinarily miss or would perceive only after long study and reflection." It starts with the range of experiences and reflections on similar occurrences by commanders in the course of their development. It builds on the knowledge of the experiences of others gained through the study of military history. Intuition provides insight that rapidly dismisses impractical solutions and moves to a feasible COA. Intuition allows the commander to "read" the battlefield and do the right thing—faster, more accurately, and more decisively than the enemy. In battle, intuition includes insight into what the enemy is probably going to do and playing that propensity against him.

2-18. Intuition does not automatically reject logical analyses. Commanders can receive too much information and advice, or perceive they have not received enough. Intuition helps commanders select the relevant information (RI) if they have received too much. It allows them to avoid "information paralysis" and make a timely decision by filling in information gaps.

2-19. Decisionmaking involves applying both science and art. Many aspects of military operations—movement rates, fuel consumption, weapons effects—can be reduced to numbers and tables. They belong to the science of war. Other aspects—the impact of leadership, complexity of operations, and uncertainty about the enemy—belong to the art of war. Successful commanders focus the most attention on those decisions belonging to the art of war. They express their decisions as a statement of a goal or end state for the action (an

objective), a way to achieve the goal (a concept), and an allocation of means (resources) to tasks.

Leadership

2-20. *Leadership* is **influencing** people—by providing purpose, direction, and motivation—while **operating** to accomplish the mission and **improving** the organization (FM 22-100). It is the most important element of combat power. As the senior leader of the command, the commander directly applies that element of combat power. Subordinate commanders and small unit leaders reinforce it. (See FM 22-100).

2-21. There are two traditional philosophies of leadership: authoritarian or directing, and persuading or delegating. While authoritarian leadership may produce rapid obedience and even short-term gain, it can also develop subordinates who depend too much on the leader, require continuous supervision, and lack initiative. It can also fail to develop teamwork among subordinates. Persuasive leadership teaches subordinates not only to accept responsibility but also to actively seek it. Over time, it produces subordinates who exhibit a high degree of independence, self-discipline, and initiative. A commander's personality, values, attributes, skills, and actions drive his leadership philosophy and style. The mix of styles may also depend on the situation and the capabilities of subordinate commanders.

2-22. Battle command pits the leadership (decisionmaking, stamina, and willpower) of Army commanders against enemy commanders. (See chapter 4.) Army commanders aim to confront the enemy with three choices: surrender, withdraw, or die. Having the legal authority of command and issuing orders will not suffice in battle. The leadership of commanders ultimately includes their will. As Clausewitz stated:

> *As each man's strength gives out, as it no longer responds to his will, the inertia of the whole gradually comes to rest on the commander's will alone.*

PRINCIPLES OF COMMAND

> *There will be neither time nor opportunity to do more than prescribe the several tasks of…subordinates.... [I]f they are reluctant (afraid) to act because they are accustomed to detailed orders…—if they are not habituated to think, to judge, to decide, and to act for themselves in... their several echelons of command—we shall be in sorry case when the time of "active operations" arrives.*
>
> Fleet Admiral Ernest J. King
> CINCLANT Serial 053, 21 Jan 1941

2-23. Commanders use the principles of command to guide how they employ elements of command to fulfill their fundamental responsibilities of command: mission accomplishment and people. Figure 2-1 graphically relates these responsibilities to the principles of command.

2-24. A commander's use of the principles of command must fit the requirements of the situation, his own personality, and the capability and understanding of his subordinate commanders. Command cannot be stereotyped.

Moreover, the command principles and applying mission command must guide and stay abreast of the capabilities of emerging technology.

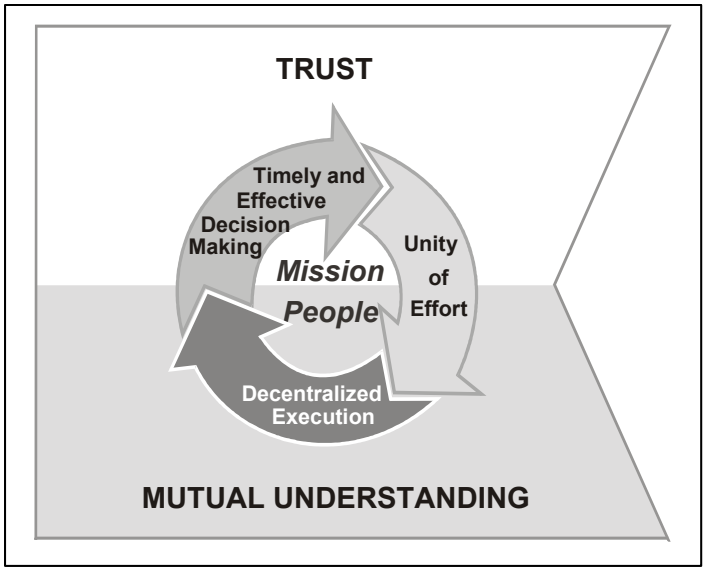


Figure 2-1. Command

2-25. Mission command reconciles the absolute requirement for unity of effort at all levels with decentralization of execution by emphasizing the commander's intent. Decentralization of execution is sustained by and contributes to timely and effective decisionmaking through subordinates' initiative. Mission command can only work in an environment of trust and mutual understanding. Mission command provides a common baseline for command not only during operations but also in peacetime activities. To employ mission command successfully during operations, units must understand, foster, and frequently practice the principles of command during training. Indeed, using command principles during peacetime overcomes institutional obstacles to mission command. The principles of command apply to all levels of command.

Ensure Unity of Effort

2-26. ***Unity of effort*** **is coordination and cooperation among all military forces and other organizations toward a commonly recognized objective, even if the forces and nonmilitary organizations are not necessarily part of the same command structure.** Under mission command, commanders give a clear commander's intent to provide sense of purpose and achieve unity of effort within the force. The commander's intent provides a focus for separate but coordinated efforts by subordinates. It describes the limits of the decisionmaking authority the commander has delegated to them. Designating priorities in operations also aids unity of effort and is part of the commander's intent. Failure to achieve unity of effort leads to confusion and missed opportunities; the effects can be catastrophic.

2-27. The commander's intent provides a unifying idea that allows decentralized execution within an overarching framework. It provides guidance within which individuals may exercise initiative to accomplish overall goals.

Understanding the commander's intent two echelons up further enhances unity of effort while providing the basis for decentralized decisionmaking and execution. Subordinates aware of the commander's intent are far more likely to exercise subordinates' initiative in unexpected situations. Under mission command, subordinates have an absolute responsibility to fulfill the commander's intent.

> *I suppose dozens of operation orders have gone out in my name, but I never, throughout the war, actually wrote one myself. I always had someone who could do that better than I could. One part of the order I did, however, draft myself—the intention. It is usually the shortest of all paragraphs, but it is always the most important, because it states—or it should—just what the commander intends to achieve. It is the one overriding expression of will by which every-thing in the order and every action by every commander and soldier in the army must be dominated. It should, therefore, be worded by the commander, himself.*
>
> Field Marshal Sir William Slim,
> *Defeat Into Victory*

2-28. Unity of command is the Army's preferred method for achieving unity of effort. Commanders always adhere to unity of command when task-organizing Army forces. Under unity of command, any mission falls within the authority and responsibility of a single, responsible commander. Commanders receive orders from only one superior, to whom they are accountable for accomplishing the mission.

2-29. In certain circumstances, such as some interagency and multinational operations, unity of command may not be possible. In addition, Army forces may include contractors, over whom commanders have authority different from command. However, commanders still organize their C2 (command and control) system to achieve unity of effort. (See FM 3-0.) When unity of command is not possible, commanders must achieve unity of effort through cooperation and coordination among all elements of the force—even if they are not part of the same command structure.

Employ Decentralized Execution

2-30. Decentralized execution is essential to gaining and maintaining the operational initiative in dynamic operations and environments of high uncertainty. (*Operational initiative* is setting and dictating the terms of action throughout the battle or operation. It applies at all levels of war [FM 3-0]). Decentralized execution requires subordinates to act with agility that unbalances the enemy. It leads to disrupting the enemy force's coherence and destroying its will to resist. It requires subordinates to use their initiative to make decisions that further their higher commander's intent. Delegating this authority is especially important if subordinates are to take advantage of unforeseen events or adjust to changes in the situation before the enemy can effectively react. Decentralized execution allows subordinates with current information to make decisions. It reduces the amount of information passed up and down the chain of command. Generally, the more dynamic the circumstances, the greater the need for decisions at lower levels. However, even in situations where a high level of knowledge exists at high levels,

commanders must exercise decentralized execution routinely or subordinates' initiative will disappear as subordinates become used to waiting for detailed instructions from higher headquarters.

2-31. Decentralized execution, central to mission command, requires delegating specific decisionmaking authority. Determining what authority to delegate is an essential part of the art of command. This delegating may be explicit, as in the specified tasks outlined in orders, or implicit, as in the implied tasks and commander's intent found in mission orders. Delegating authority also provides a means of handling the information produced by modern technology and operations. It reduces the number of decisions made at the higher levels and increases agility through reduced response time at lower levels. Delegation not only applies to subordinate commanders but also to staff members. Detailed command requires more decisions at higher levels, often overloading those commanders.

2-32. When delegating authority to subordinates, commanders do everything in their power to set the necessary conditions for success by the subordinate. They allocate enough resources for them to accomplish their missions. These resources include information as well as forces, materiel, and time. Forces include combat, combat support, and combat service support units and systems. Information resources include RI, intelligence, surveillance, and reconnaissance (ISR) assets, and priority of access to higher-level collection means. Because of the need for economy of force, allocating resources is not just a management or scientific matter, but one requiring the art of command. (See paragraphs 2-100–2-104.)

2-33. Commanders must still synchronize subordinates' activities. Synchronization of effects during execution results from integrating fragmentary information and complex combat functions during planning and preparation. A single, unifying concept of operations, together with a keen understanding of time-space dynamics, is needed to synchronize effects. Delegating authority to subordinates, who exercise initiative within the commander's intent, allows them to initiate activities that synchronize their units with those of the rest of the force without consulting the commander.

2-34. Successful integration means that activity is arranged in time and space to achieve desired effects at decisive points. Prudent selection of and attention to the commander's critical information requirements (CCIR) facilitate integrating information. (See paragraphs B-68–B-72.) Commanders consider integration as part of the branches and sequels to a plan. Effectively integrating activities requires understanding the capabilities and limitations of systems on the battlefield and ensuring coordination among the units and activities participating in an operation.

2-35. Under mission command, orders and plans are as brief and simple as possible. Decentralized execution relies on subordinates making necessary coordination and on implicit communication—the human capacity for mutual understanding with minimum verbal information exchange. Decentralizing seeks to increase tempo (the rate of military action) and improve the ability to deal with fluid and disorderly situations. Moreover, reliance on implicit communication makes C2 less vulnerable to disruption of the information flow than centralized execution.

Develop Trust

2-36. Trust is one of the cornerstones of leadership. It is essential to successful mission command. Like loyalty, it must go up and down the chain of command; like respect, it must be earned. To function effectively, commanders must trust their subordinates, and subordinates must trust their commander. Subordinates more willingly exercise the initiative required in mission command when their commander trusts them. They will also be more willing to encourage initiative by their own subordinates if they have learned to trust that their higher commander will accept and support the outcome. Likewise, commanders delegate greater authority to subordinates whose judgment they trust. Commanders must also trust their colleagues commanding adjacent and supporting forces, and must earn their trust as well. When a commander exercises subordinates' initiative, mutual trust gives other commanders at the same level the confidence to act to resynchronize their actions with those of that commander. Such actions bring the operation back into synchronization without requiring detailed instructions from higher echelons. Once established and sustained, trust brings its own rewards. It allows each level of command to focus on its overall operations rather than on those of subordinates.

2-37. There are few shortcuts to gaining the trust of others. Often slowly gained, trust can be lost quickly by mistakes made under pressure and the extreme conditions of war. It is based on personal qualities, including professional competence, personal example, and integrity. It starts with technical and tactical warfighting skills because those are the easiest to demonstrate. Soldiers must see values and attributes in action before they become a basis for trust. Trust also comes from successful shared experiences and training, usually gained incidental to operations but also deliberately developed by the commander. During these shared experiences, the interaction of the commander, subordinates, and soldiers through communicating up as well as down, reinforces trust. Soldiers see the chain of command accomplishing the mission, taking care of their welfare, and sharing hardships and danger.

Develop Mutual Understanding

2-38. Mutual understanding both supports and derives from trust. However, like trust, it requires time to establish. From their experiences, commanders understand the issues and concerns of subordinates. Professional knowledge and study give subordinates an insight into command at higher levels. Commanders can develop mutual understanding, both implicit and explicit, in their organizations through training. Good commanders ensure that they understand their subordinates and that subordinates understand them. Mutual understanding is essential for conducting successful operations under mission command.

2-39. Important sources of mutual understanding are nonverbal communication (a direct leadership skill; see FM 22-100), using key, well-understood phrases and doctrinal terms, and anticipating each other's thoughts. Nonverbal communications are faster and more effective than detailed, explicit communications. Commanders can aid mutual understanding by exhibiting a demeanor and personal mannerisms that reinforce, or at least do not contradict, the spoken message. Units develop the ability to communicate

nonverbally through familiarity and trust, as well as a shared philosophy and experiences. Sharing a common perception of military problems also leads to mutual understanding. "Common perception" does not imply any requirement to come to identical solutions; under mission command understanding what effect to achieve is more important than agreement on how to achieve it. Activities that can lead to mutual understanding include officer professional development meetings, terrain walks, and professional discussions.

Command Based on Trust and Mutual Understanding— Grant's Orders to Sherman, 1864

In a letter to MG William T. Sherman dated 4 April 1864, LTG Ulysses S. Grant outlined his 1864 campaign plan. Grant described Sherman's role as follows:

"It is my design, if the enemy keep quiet and allow me to take the initiative in the Spring Campaign to work all parts of the Army to-gether, and, somewhat, toward a common center.… You I propose to move against Johnston's Army, to break it up and to get into the interior of the enemy's country as far as you can, inflicting all the damage you can against their War resources. I do not propose to lay down for you a plan of Campaign, but simply to lay down the work it is desirable to have done and leave you free to execute in your own way. Submit to me however as early as you can your plan of operation."

Sherman responded to Grant immediately in a letter dated 10 April 1864. He sent Grant, as requested, his specific plan of operations, demonstrating that he understood Grant's intent:

"...That we are now all to act in a Common plan, Converging on a Common Center, looks like Enlightened War.... I will not let side issues draw me off from your main plan in which I am to Knock Joe [Confederate GEN Joseph E.] Johnston, and do as much damage to the resources of the Enemy as possible.... I would ever bear in mind that Johnston is at all times to be kept so busy that he cannot in any event send any part of his command against you or [Union MG Nathaniel P.] Banks."

Make Timely and Effective Decisions and Act

2-40. A tempo advantageous to friendly forces can place the enemy under the pressures of uncertainty and time. Throughout the operations process, making and communicating decisions faster than the enemy can react produces a tempo with which the enemy cannot compete. These decisions include determining the information the commander requires for decisions (CCIR—commander's critical information requirements); assigning missions; prioritizing, allocating, and organizing forces and resources; and selecting the critical times and places to act. Decisionmaking during operations includes knowing how and when to adjust previous decisions. The speed and accuracy of a commander's actions to address changing situations is a key contributor to agility. Finally, commanders must anticipate the activities and effects that occur because of their decisions, including unintended second-order effects, effects caused by the enemy's reaction to friendly actions, and effects on future operations. (FM 22-100 discusses second- and third-order effects.)

2-41. To make timely decisions, commanders must understand the effects of their decisions on a complex operational environment. To help them understand, staffs work together to develop the environment input to the common operational picture (COP). Understanding the environment includes civil considerations; such as, the population (with demographics and culture), the government, economics, nongovernmental organizations, and history—among other factors. Commanders make decisions that start and govern actions by subordinate forces throughout the operations process.

2-42. Timely decisions and actions are essential for effective C2. Commanders who consistently decide and act quicker than the enemy have a significant advantage. By the time the slower commander decides and acts, the faster one has already changed the situation, rendering the slower one's actions inappropriate. With such an advantage, the commander can maintain the initiative and dictate the tempo. (See paragraph A-5.)

2-43. Mission command makes it easier for commanders to make timely decisions and take actions that create and exploit this advantage. Effective commanders do the following:

- Take enemy plans, capabilities, and reaction times into account when making decisions.
- Make decisions quickly—even with incomplete information. Commanders who can make and implement decisions faster than the enemy, even to a small degree, gain an accruing advantage that becomes significant over time,
- Not delay a decision in hopes of finding a perfect solution to a battlefield problem. Adopt a satisfactory COA with acceptable risk as quickly as possible. (See chapter 4.)
- Delegate decisionmaking authority as low as possible to obtain faster decisions in battle. Decisionmaking at lower echelons is faster and more direct. Support decentralized execution by communicating ("describing") with subordinates and adjacent commanders frequently.

2-44. Commanders change and combine intuitive and analytical decisionmaking techniques as the situation requires. Because uncertainty and time drive most decisions, commanders emphasize intuitive decisionmaking as the norm, and develop their subordinates accordingly. Emphasizing experienced judgment and intuition over deliberate analysis, the intuitive approach helps commanders increase tempo and develops the flexibility to deal with the uncertainty that follows. The intuitive approach is consistent with the fact that there are no perfect solutions to battlefield problems. However, commanders consider the factors that favor analytical decisionmaking. When time is not critical, commanders use an analytical approach or incorporate analysis into their intuitive decisions. Time permitting, commanders can have their staffs validate intuitive decisions, even while refining them, ensuring they are at least suitable, feasible, and acceptable.

2-45. When time is available, commanders and staffs use the MDMP, a highly analytical technique. However, commanders can alter the MDMP to fit time-constrained circumstances and produce a satisfactory plan. In time-constrained conditions, commanders assess the situation, update their commander's visualization, and direct the staff to perform those MDMP activities

needed to support the required decisions. Streamlined processes permit commanders and staffs to shorten the time needed to issue orders when the situation changes. In a time-constrained environment, many steps of the MDMP are conducted concurrently. To an outsider, it may appear that experienced commanders and staffs omit key steps. In reality, they use existing products or perform steps in their heads instead of on paper. They also use many shorthand procedures and implicit communication. FRAGOs and WARNOs are essential in this environment.

2-46. Commanders and staffs constantly assess where the operation is in relation to the end state and estimate how best to adjust that operation to accomplish the mission and posture the force for future operations. The commander's visualization and the staff's running estimates, maintained continuously, are the primary assessment tools. Keeping running estimates current is key to keeping commanders aware of feasible options. Staffs use newly collected information to replace outdated facts and assumptions in their previous estimate. They perform analysis and evaluation based on the information, and form new or revised conclusions and recommendations. The commander's visualization focuses the staff's running estimates. The commander's visualization identifies decisions the commander expects to make. Running estimates focus on determining recommendations concerning those decisions. To dominate the enemy during operations, commanders can never be without options. Current running estimates based on the commander's visualization provide the recommendations commanders need to make timely decisions during execution.

2-47. Effective tactical decisionmaking by calm, competent, confident commanders synchronize operations. It is refined through the war-gaming process. Synchronization is continuous, as execution requires constant adjustment to unfolding battlefield events, including branches and sequels.

ART OF COMMAND

2-48. The art of command lies in the conscious and skillful exercise of its authority to fulfill command responsibilities through decisionmaking and leadership. The true measure of the art of command is not whether a commander uses certain techniques or procedures, but if the techniques and procedures used were appropriate to the situation. Expert performance in the art of command leads to mission accomplishment with fewest friendly casualties. Proficiency in the art of command stems from years of schooling and training, self-development, and operational and training experiences.

AUTHORITY

2-49. While all elements of command contain some aspects of the art of command, some depend more on the art and others more on the science. Authority is primarily a matter of statutes and regulations (science). The art in authority lies in establishing personal authority. (See paragraph 2-7 and FM 22-100.)

DECISIONMAKING

2-50. A large portion of the art of command involves decisionmaking. Commanders use the *visualize-describe-direct* methodology as their personal contribution to decisionmaking, whether they have a staff or not. (See FM 3-0.) Staffs support commanders with running estimates.

2-51. Visualizing is primarily an aspect of the art of war. Describing balances the art and science of war, with the art expressed primarily in the commander's intent and planning guidance. Directing is primarily science. Visualizing and describing are addressed below. Directing is addressed briefly below and covered in detail in FM 5-0.

Visualize

2-52. ***Visualize* means to create and think in mental images**. Human beings do not normally think in terms of data, or even knowledge; they generally think in terms of ideas or images—mental pictures of a given situation. There are three sources for these images:

- Principles that guide commanders' behavior: their military experience, training, and education, including their knowledge of doctrine.
- Force goals, the timetable for achieving them, and the end state: militarily, they include the higher commander's intent, the force mission, and the commander's own intent.
- Decisions for allocating resources and sequencing activities to achieve the force goals, including specific actions and expected events.

2-53. Visualizing military operations effectively depends on understanding the human factors involved in operations and the dynamics of operations themselves. Commanders consider both of these when performing their commander's visualization.

2-54. **Human Factors.** In operations, the quality of soldiers and cohesion of units are critical to mission accomplishment. Commanders know the status of their forces. They are aware that circumstances may prevent friendly forces from performing to their doctrinal capabilities. Some units may have just received new replacements or had an extended period of operations under heavy stress. Others may be experiencing a lack of repair parts that renders major equipment unavailable in expected quantities or limits their capabilities. Still others may have sustained casualties that make them less capable, experienced an enemy NBC attack, or just arrived in theater and are not yet acclimated. Commanders consider such factors as these when establishing their FFIR.

2-55. Military operations are dynamic: they affect and are affected by human interactions. These interactions occur within friendly forces, within enemy forces, and between friendly and enemy forces. Commanders understand and use these relationships to overcome uncertainty and chaos, and maintain the balance and focus of their forces. Then they can seize and exploit opportunities by unleashing their soldiers' initiative, audacity, creativity, judgment, and strength of character. The art of command involves exploiting these dynamics to the advantage of friendly forces and the disadvantage of the enemy. Commanders consider the condition of enemy forces as well as

their own and acts to ensure enemy commanders suffer from the pressures and consequences of operations more than they do.

2-56. Commanders do not take the readiness of friendly forces relative to the enemy for granted. Military operations take a toll on the moral, physical, and mental stamina of soldiers that, if left unchecked, can ultimately lead to their inability to accomplish the mission, regardless of the condition of the enemy. Commanders consider these dynamics throughout the operations process and recognize the limits of human endurance. They press the fight tenaciously and aggressively. They accept risks and push soldiers and systems to the limits of their endurance—and sometimes seemingly beyond—for as long as possible. The art of command includes recognizing when to push soldiers to their limits and when to rest soldiers to prevent individual and collective collapse. Even the most successful combat actions can render soldiers incapable of further operations. Commanders recognize this and act aggressively to prevent this situation. A loss of stamina is even more telling if the encounter with the enemy is unsuccessful. Commanders know this as well, and prepare themselves for it.

> *[N]ext to a battle lost, the greatest misery is a battle gained.*
>
> Wellington, July 1815

2-57. **Dynamics of Operations.** The dynamic relationships among friendly forces, enemy forces, and the environment make land operations exceedingly complex. Understanding each of these elements separately is necessary but not sufficient to understand the relationships among them. The complexity of land combat operations requires control to inform command. Friendly forces compete with the enemy to attain operational advantages in both the physical and information environments. Advantages in the physical environment allow Army forces to close with and destroy the enemy with minimal losses. Advantages in the information environment result in information superiority, which complements and reinforces advantages gained in the physical environment. Together, these advantages allow Army forces to defeat enemy forces—decisively.

2-58. Operations in the information environment involve collecting and processing information at the level of fidelity necessary to support commanders' situational understanding. Situational understanding allows commanders to exploit operational advantages and seize opportunities. Success can be gauged by whether commanders have the information they need at the time they must make a decision. It comes from careful analysis, an understanding of the technical aspects of information collection and intelligence, a high level of training, and experience. Understanding these dynamics—both in the physical and information environments—is the first step in visualizing them. Assigning a mission to a force gives its commander a focus for visualizing these dynamics.

2-59. The environment is neutral in terms of favoring one side over the other. It can keep both sides from performing up to their capabilities or can be used to advantage by the force best equipped and trained to cope with its effects. Commanders understand these effects and account for them. (See appendix B).

2-60. During operations, the complexity and unpredictability of interactions among friendly forces, enemy forces, and the environment add to the fog and friction of war. Applying the art of command requires commanders to account for these interrelated effects. They visualize the second- and third-order effects of their actions and develop COAs that reduce their negative effects and exploit their positive effects.

2-61. **Commander's Visualization.** ***Commander's visualization*** **is the mental process of achieving a clear understanding of the force's current state with relation to the enemy and environment (situational understanding), and developing a desired end state that represents mission accomplishment and the key tasks that move the force from its current state to the end state (commander's intent).** Commander's visualization (see figure 2-2) is a way of mentally viewing the dynamic relationship among Army forces, enemy forces, and the environment at the present while conducting operations against an opposing force over time. It occurs until the end state of an operation is achieved. Commander's visualization is the key to combining the art of command with the science of control. (See chapter 4.) It focuses on three main factors:

- Foreseeing an end state.
- Understanding the current state of friendly and enemy forces.
- Visualizing the dynamics of operations leading to the end state.

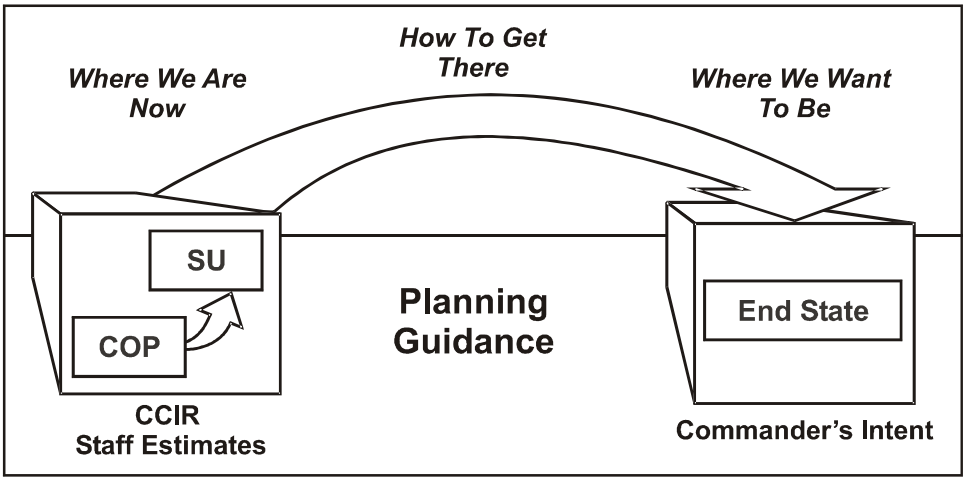


Figure 2-2. Commander's Visualization

2-62. ***End State.*** Whether during training or operations, the most important aspect of the commander's visualization is foreseeing a feasible outcome that results in mission success and leaves the force postured for the next operation. Its product is the commander's mental image of the end state. Commander's visualization includes anticipating outcomes, understanding the relationships between means and ends, and understanding inherent risks. Commanders assess the current situation and visualize future operations. They always use the most current intelligence about the enemy and environment when visualizing.

2-63. ***Situational Understanding.*** Situational understanding involves understanding the current state of friendly and enemy forces. It is derived from applying judgment and experience to the COP through the filter of the commander's knowledge of the friendly forces, threat, and environment. Situational understanding includes physical factors (such as location of forces), human factors (such as fatigue and morale), and the relationships among friendly and enemy forces and the environment that potentially represent opportunities and threats for friendly forces. Commanders need to develop three views of each situation:

- A close-up of the situation, a "feel" for the action gained through personal observation and experience.
- An overview of the situation and the overall development of the operation.
- The situation from the enemy's perspective.

2-64. To visualize the battlespace, commanders consider the human dimension; the physical dimensions of width, depth, height, and time; and the information environment. (See FM 3-0.) Failure to consider all battlespace dimensions results in an incomplete situational understanding and renders commanders vulnerable to military deception and other threat information operations. Accurate situational understanding is especially important when engaging an adaptive threat using asymmetric means.

2-65. Commanders base their commander's visualization of a situation not only on facts but also on their interpretation of them. They incorporate images from others' observations as well as their own. In general, the higher the level of command the more commanders depend on information from others and less on their own observations. This situation can cause several problems:

- First, when commanders observe a situation firsthand they intuitively appreciate the level of uncertainty. However, they may lose this when they receive information secondhand. This is especially dangerous when a commander does not realize it is happening. For example, a high-technology information display that appears especially reliable may, in fact, be based on hours-old information. Effective commanders guard against a false sense of security based on modern INFOSYS. They are aware of the strengths and weaknesses of information sources and consider them when visualizing.
- Second, most situations include more details than an observer can communicate. The lack of time to communicate during operations means that reports may lack significant details. In addition, reports sent hastily may be wrong. Commanders counter this problem by basing decisions on information from as many sources as possible. The art of command includes deciding when to make decisions versus waiting for more information.
- Third, each node or person can distort and delay information as it passes to its final destination. This means that the higher the echelon, the greater the chance that any individual report will contain errors. Again, commanders counter this problem by basing decisions on information from as many sources as possible. The higher the echelon, the more sources of information commanders have and, in most cases, the

more time commanders have to make decisions. However, higher echelon commanders still must decide when to make a decision. Deciding when to decide requires a "feel" for the battle. Higher echelon commanders use all available assets to obtain and keep that feel.

- Finally, some systems may be vulnerable to the enemy's innovative use of military deception. (See appendix B.) Commanders counter this by knowing themselves, their subordinates, and the enemy. They draw on intelligence to determine what the enemy is most likely to do. They conduct counterdeception operations as necessary. (See FM 3-13.)

2-66. ***Key Tasks.*** Finally, commanders visualize the dynamics between the opposing forces during the sequence of actions leading from the current situation to the end state. This includes evaluating possible enemy reactions and friendly counters to those moves. This part of the commander's visualization produces the key tasks: those tasks that the force as a whole must perform or conditions the force must meet to achieve the end state and stated purpose of the operation.

2-67. Commanders begin their commander's visualization when they receive or perceive a mission. They start by applying their current situational understanding of where they are to this mission. They develop their desired end state by determining how their mission contributes to achieving their higher commander's intent and what is possible, given their understanding of their own force, the enemy, and the environment. As commanders analyze or receive the staff's mission analysis, they develop a mental image of the dynamics involved in moving their forces from their current positions to the desired end state, and of possible future operations. They know that during operations, enemies try to execute their own plans. They will endeavor to upset the commander's plan, desynchronize friendly force operations, and destroy friendly units. Enemies exploit any advantages to further their own operations and defeat friendly forces. Commanders incorporate their knowledge of enemy capabilities into their commander's visualization. They guide the staff as it plans the operation to ensure the force is ready for the opposition it will face.

Describe

2-68. ***Describe*** **means to relate operations to time and space in terms of accomplishing the purpose of the overall operation.** Unless subordinate commanders and staffs understand the commander's visualization, there is no unifying design. In all operations, purpose and time determine the allocation of space. To describe their commander's visualization, commanders communicate their visualization by describing it in doctrinal terms. They clarify their description, as circumstances require. Using terms suited to the nature of the mission and their experience, commanders describe their visualization through—

- Commander's intent.
- Planning guidance.
- CCIR.

2-69. Commanders may also describe their visualizations graphically using doctrinal graphics for easier communication as well as verbally. Describing is

not a one-time event. As the commander confirms or modifies his visualization, he continues to describe his visualization to his staff and subordinates so they may better support his decisionmaking. Better effort in describing leads to better comprehension by subordinates of the context of his decision and better decisions on their part when exercising subordinates' initiative.

Direct

2-70. ***Direct* means to communicate execution information**. To command is to direct. Directing converts commanders' decisions into effective action by their forces. Commanders generate effective action through directing forces and synchronizing the battlefield operating systems. Commanders direct the outcome of major operations, battles, and engagements by—

- Guiding and motivating the command toward mission accomplishment.
- Assigning missions.
- Prioritizing and allocating resources.
- Assessing and taking risks.
- Deciding when and how to make adjustments.
- Committing reserves.
- Seeing, hearing, and understanding the needs of subordinates and superiors.

2-71. Militarily the means of directing include plans and orders, especially the commander's intent, concept of operations, the synchronization matrix, the decision support template, and other supporting plans, such as branches and sequels.

LEADERSHIP

2-72. After commanders make decisions, they guide their forces throughout execution. After forces have been put in motion, commanders must provide the strength and will to follow through with the COA they chose. They must also possess the wisdom to know when to change that COA and make further decisions that address changes in the situation. FM 22-100 discusses leadership actions when executing. Two elements of leadership peculiar to command are command presence and skilled judgment.

Command Presence

> *A commander in battle has three means of influencing the action: Fire support…; his personal presence on the battlefield [emphasis added]; and the use of his reserve.*
>
> LTG Harold G. Moore (USA, Ret.)
> *We Were Soldiers Once…and Young*

2-73. Establishing command presence makes the commander's knowledge and experience available to subordinates. The commander's presence also communicates the commander's intent. Skilled commanders communicate tactical and technical knowledge that goes beyond plans and procedures. Subordinates can use knowledge of their commander's leadership style to guide their tactical decisions in unanticipated situations. Establishing

command presence does not require giving subordinates detailed instructions, nor does it include second-guessing subordinates' performance. Command presence establishes a background for all plans and procedures so that subordinates can understand how and when to adapt them to achieve the commander's intent. Commanders can establish command presence in a variety of ways, including the following:

- Briefings.
- Back-briefings.
- Rehearsals.
- Leader's reconnaissance.
- On-site visits.
- Commander's intent.
- After-action reviews.
- Commander's guidance.
- Personal example. (See FM 22-100.)

2-74. How well these techniques establish command presence depends on the actions of commanders or those acting for them. Commanders or their representatives use their presence to gather and communicate information; such as, knowledge about their views of the command's purpose, goals, constraints, and tradeoffs. This exchange can take the form of direct communication, questioning, discussing, or conversing in informal settings.

2-75. Command takes place from the commander's location. To lead, commanders cannot be prisoners of a command post. Commanders lead by example and by direction; they position themselves where they can best command without losing the ability to respond to changing situations. Modern technology allows commanders to obtain the information they need to assess operations and risks, and make necessary adjustments, from anywhere in the area of operations (AO).

Skilled Judgment

2-76. Commanders make decisions using judgment acquired from experience, training, study, imagination, and creative and critical thinking. Judgment forms an estimate based on available information, filling information gaps with an informed intuition. Experience contributes to judgment by providing a basis for rapidly identifying practical COAs and dismissing impractical ones. Study adds the experiences of others to those of the commander. It may provide knowledge essential to commanders' understanding and decisions, and the relationship of the situation that they and their forces face.

2-77. Commanders use judgment in applying doctrine, whether visualizing, describing, directing, or leading. Intellect, doctrine, and experience combine to shape judgment, expanding it to more than an educated guess. Moreover, commanders use informed judgment to apply doctrine to specific situations. In these cases, the art of command lies in interpreting how doctrine applies to the specific situation.

2-78. Through informed judgment, commanders also recognize when doctrine (or parts of it) does not adequately serve the needs of a specific situation. In that case, they base decisions and actions on the circumstances, as described

by the factors of METT-TC (mission, enemy, terrain and weather, troops and support available, time available, and civil considerations). Commanders who deviate from doctrine based on circumstances make sure to communicate their rationale to subordinates. They use doctrinal terms to limit confusion, while cautioning that they have deviated from doctrine and explaining the implications. Doing this helps guard against the perception of either disdain for authority or ignorance of doctrine.

2-79. Judgment is required for selecting the critical time and place to act, assigning missions, prioritizing, managing risk, allocating resources, and leading soldiers. Thorough knowledge of the science of war, a strong ethical sense, and an understanding of enemy and friendly capabilities form the basis of the judgment commanders require. Judgment becomes more refined as commanders become more experienced. With experience, commanders become confident in their ability to assess a situation after processing available information (although common sense still guides even experienced commanders). Increasing their knowledge, developing their intellect, and gaining experience allow commanders to develop the greater judgment required by increased responsibilities. Judgment allows commanders to distinguish calculated risks essential to successfully conducting operations from military gambles based on potentially disastrous rashness. (See paragraph 2-94.)

2-80. Commanders apply judgment in several dimensions. How they apply judgment in each proceeds from how they intend to accomplish the mission. These dimensions are—

- Decentralization.
- Subordinates' initiative.
- Risk.
- Resolve.
- Resource allocation.
- Use of staff.

2-81. **Decentralization.** Commanders favor decentralized execution wherever possible. It is the doctrinal solution to uncertainty and increased tempo. However, decentralized execution is not appropriate in all cases. Centralized execution is better for managing scarce resources, especially those that can produce effects throughout the AO. It may also be necessary to mass effects decisively in some cases. Centralized execution is also suitable for operations in which greater than normal coordination—either within the force or with other Services' or nations' forces—is involved. A command's state of training or composition may require centralized execution: if the command has not trained together enough or has too many newly assigned organizations, the commander may centralize execution until it becomes a cohesive team. These circumstances and the conditions governing their application are examples of when commanders may determine centralized execution is necessary. However, they remain the exception in an operational environment that requires disciplined initiative at all levels.

2-82. Commanders balance the proportions of decentralized and centralized execution for each operation. Centralization may contribute to subordinates losing situational understanding regarding the overall operation, resulting in

a loss of the context within which subordinates exercise subordinates' initiative. This situation risks making the force less agile. Commanders apply judgment when deciding between the increased control that comes with centralized execution and the increased flexibility of decentralized execution.

2-83. **Subordinates' initiative.** ***Subordinates' initiative*** **is the assumption of responsibility for deciding and initiating independent actions when the concept of operations no longer applies or when an unanticipated opportunity leading to achieving the commander's intent presents itself**. It complements *operational initiative*, which involves seizing and dictating the terms of action throughout the battle or operation (FM 3-0).

2-84. Mission command requires subordinates to exercise disciplined initiative guided by their commander's intent. It charges subordinates to act when presented with an unforeseen opportunity for success or to counter an unanticipated threat to the mission or force. Mission command relies on subordinates effecting necessary coordination without orders. While mission command stresses exercising subordinates' initiative at the lowest possible level, all soldiers recognize that doing so may reduce synchronization of the operation. Thus, commanders accept the uncertainty that accompanies subordinates exercising initiative. Their trust in subordinates they have trained gives them the assurance that those subordinates will direct actions that will accomplish the mission within the commander's intent.

2-85. For most operations, the benefits of subordinates' initiative outweigh the cost in synchronization. However, for some operations such cost may be unacceptable. The battle for France in 1944 offers examples of both situations: In the exploitation by American forces after the breakout from the Normandy beachhead, subordinates' initiative unquestionably contributed to Third Army's success. However, in Operation COBRA—the operation that produced the breakout—synchronization of the multinational, joint force, was the governing factor. This synchronization required extensive coordination, which required more centralized control.

2-86. A clear commander's intent leaves no doubt regarding the limits within which subordinates may exercise subordinates' initiative. It gives subordinates the confidence to apply their judgment in ambiguous situations and take actions they think will best accomplish the mission.

2-87. Even when exercising initiative, neither commanders nor subordinates are independent actors. Subordinates consider at least three factors when deciding how to exercise subordinates' initiative:

- Whether the benefits of the action outweigh the costs of desynchronizing the overall operation.
- Whether the action will further the higher commander's intent.
- Whether the action's purpose is to take advantage of an opportunity for victory or prevent defeat.

Making the best decision for the situation requires commanders to exercise judgment in assessing each factor in terms of the circumstances affecting it.

2-88. The exercise of subordinates' initiative must lead to benefits that outweigh the costs of desynchronizing operations. If time permits, subordinates attempt to communicate their new situational understanding and

recommended COA to their commander. However, subordinates may depart from their orders if they are unable to contact their commander, or if there is not time to obtain permission to seize a fleeting opportunity. The main criterion in this case is the urgency of the situation. When subordinates communicate their intentions to the commander, the commander can assess the implications for the overall force, as well as for other operations, and set in motion supporting actions. However, if any doubt exists about whether to contact the commander or act to seize a fleeting opportunity, subordinates should act if they can do so within the commander's intent.

2-89. Commanders exercise subordinates' initiative within their higher commander's intent. Commanders establish their own commander's intent within the intent of their higher commander. The higher commander's intent provides the basis for unity of effort throughout the larger force.

2-90. Commanders exercise initiative to take advantage of an opportunity for victory, not to prevent defeat. Advantages can take the form of inflicting greater damage on the enemy, completing the mission more rapidly, or entailing less cost to the friendly force.

2-91. Subordinates should not have to wait for a breakdown in communications—or a crisis situation—to learn how to act without the commander's direct participation. *Command by negation* is a training technique that develops initiative in subordinates. It works like this: After giving subordinates a mission order that includes a clear commander's intent, the commander places them in ambiguous situations requiring exercise of subordinates' initiative. In those situations, subordinates report what they intend to do and execute unless the commander specifically denies permission. This training technique encourages subordinates to exercise initiative by placing them in situations that require it.

2-92. Command by negation fosters trust and mutual understanding. It rests on the assumption that permitting honest mistakes develops in subordinates the ability to execute mission orders fully when they cannot communicate with their commander. As subordinates realize their commander will support their decisions, trust is built and subordinates become willing to exercise subordinates' initiative. As commanders see subordinates perform in uncertain situations, they gain trust in their subordinates' judgment and ability to exercise subordinates' initiative. Finally, through practicing this technique, commanders and subordinates develop mutual understanding, the ability of each to know what the other will do based on based on knowledge of each other's character and mutual confidence in judgment and abilities.

2-93. **Risk.** Using initiative requires a training and organizational climate that promotes calculated, disciplined risk-taking focused on winning rather than preventing defeat—even when preventing defeat appears safer. Mission command requires commanders who take calculated risks, exercise initiative, and act decisively—even when the outcome is uncertain. Because uncertainty exists in all operations, every decision involves risk. Among key elements of the art of command are deciding how much risk to accept and minimizing the effects of accepted risk. All techniques for reducing uncertainty take time (see paragraphs 1-47—1-50); commanders must accept risk and act. Commanders can reduce risk by foresight and careful planning. However, military judgment

is required to determine whether the risk is worth taking. Ultimately, the willingness to take calculated risks stems from the commander's character.

2-94. A calculated risk is not the same as a military gamble. **A *calculated risk* is an exposure to chance of injury or loss when the commander can visualize the outcome in terms of mission accomplishment or damage to the force, and judges the outcome as worth the cost.** Taking a calculated risk is acceptable. **A *military gamble* is a decision in which a commander risks the force without a reasonable level of information about the outcome.** In the case of a military gamble, the commander decides based on hope rather than reason. The situations that justify a military gamble occur when defeat or destruction of the friendly force is only a matter of time and the only chance for mission accomplishment or preservation of the force lies in the gamble.

Calculated Risk or Military Gamble?
Operation HAWTHORNE, Dak To, Vietnam

At 0230, 7 June 1966, a battalion of the 24th NVA (North Vietnamese Army) Regiment attacked an artillery firebase manned by elements of 1st Brigade, 101st Airborne Division, beginning the battle of Dak To. While the forces at the firebase defeated this attack, two battalions of the 101st Airborne were lifted in by helicopters to envelop the 24th NVA Regiment in the Dak To area. One battalion, 1/327th, attacked north up Dak Tan Kan valley, while the other, 2/502d, attacked toward the south. The 1/327th encountered the NVA first and fixed them. The 2/502d established a blocking position initially but then began a sweep south to link up with 1/327th.

The 2/502d used its famous "checkerboard" technique in its advance, breaking down into small units, with squad-size patrols searching designated areas into which the battalion had divided its AO. This technique covered ground, but the squads were too weak to face stiff opposition. Company commanders had to assess indicators, decide when they indicated the presence of heavy enemy forces, and assemble their companies for action. As C Company advanced on 12 June, its commander, CPT William S. Carpenter Jr., sensed those indicators and concentrated his company, but it was surrounded and in danger of being overrun by an estimated NVA battalion. As he spoke to his battalion commander, LTC Hank Emerson ("the Gunfighter"), the sounds of the screaming, charging enemy could be heard over the radio. CPT Carpenter reportedly called for an air strike "right on top of us." The only air support available was armed with napalm; when it hit, it broke the enemy attack and saved the company. A day later, another company linked up with C Company, and they continued the mission. The battle of Dak To was a staggering defeat for the NVA.

CPT Carpenter's action can be considered a justified military gamble. The survival of his force was at stake. The NVA would have destroyed C Company before another company could relieve it. CPT Carpenter later stated privately that he realized the survival of his company was at stake, but that he did not actually call the air strike directly in on his position. Instead, he told the forward air controller to use the smoke marking his company's position as the aiming point for the air strike. He knew that using conventional air strike techniques and safe distances would not defeat the enemy. He also reasoned that the napalm

would "splash" forward of his position, causing more enemy than friendly casualties. The air strike did just that. Thus, CPT Carpenter exercised judgment based on experience. CPT Carpenter believed he was taking a calculated risk, although a high risk from the standpoint of troop safety. But he accepted that risk, made a decision, and acted. His actions saved his company and contributed to a major NVA defeat. CPT Carpenter and his first sergeant, 1SG Walter Sabaulaski, received the Distinguished Service Cross for their heroism.

2-95. Commanders alone decide what risk to accept during execution. They exercise the art of command when weighing their obligation to accomplish the mission at least cost to the force. They decide, using subjective factors and seasoned judgment, whether to accept risk. Risk assessment and risk management helps them determine what level of risk exists and how to mitigate it. (See FM 100-14.) Their decisions lie in whether or not to accept that risk for perceived gains or advantages.

2-96. Consideration of risk (both tactical and accident) begins during planning, as commanders designate and weight the decisive operation. To do this, they accept risk elsewhere to mass the combat power needed to accomplish the mission. In addition to mission accomplishment, commanders consider how the force needs to be postured for subsequent operations. Commanders evaluate whether the command can recover if they decide wrongly or if it will be in a position to seize an unexpected advantage over the enemy.

2-97. **Resolve.** Commanders apply judgment to distinguish resolve in pursuing the mission from obstinacy in pursuing a fruitless COA. While resolve is a command quality, obstinacy leads to excessive casualties, and possibly mission failure.

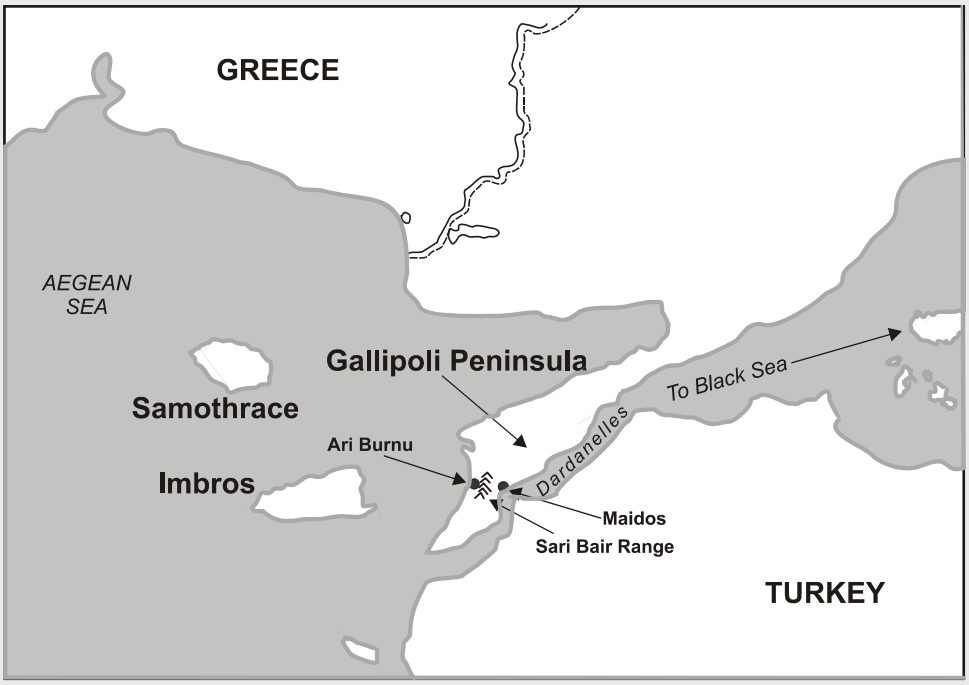
2-98. Commanders apply resolve to keep focus on the mission and retain flexibility in the methods or resources dedicated to accomplishing it. Applying resolve allows commanders to pursue mission accomplishment steadfastly at acceptable cost, even at physical risk. Resolve allows them to see the possibilities for success, despite minor—or even major—setbacks, casualties, and hardship.

Resolve—Mustafa Kemal at Gallipoli

On 25 April 1915, the Allies launched the Gallipoli campaign. (See map 2-1 on page 2-26.) The strategic objective was to open a line of communication to Russia and influence neutral Balkan states to favor the Allies' cause. Unfortunately for them, Mustafa Kemal's decisive and tenacious leadership at a crucial point in the battle preserved the Ottoman defenses. His troops seized the initiative and pushed the superior Allied invasion force back to its bridgehead. The result was nine months of trench warfare, followed by the Allies' withdrawal from Gallipoli. First, Kemal exercised individual initiative to prevent Allied success, focusing his initial efforts on decisive points. Then, he exhibited resolve in holding until reinforcements arrived.

The Fifth (Turkish) Army commander, German General Liman von Sanders, expected a major Allied landing northeast of where the actual landing occurred. The British conducted a feint there and landed two ANZAC divisions as the main

effort at Ari Burnu, 30 miles to the south. Sanders had left only one Ottoman infantry company to guard the cove there. LTC Mustafa Kemal, commander of the 19th (Turkish) Infantry Division, which was in reserve at Maidos, was informed of the fighting at Ari Burnu. Although prewar plans contained contingencies for the division's use, he received no orders regarding the developing situation. Realizing a major Allied landing could split the peninsula and understanding the critical time factor, he decided to act without waiting for approval from his commander. He set off with a small force to assess the situation personally. Recognizing the importance of the hilly terrain, Kemal focused his attention on decisive points. When he encountered fleeing Turkish soldiers. Kemal emphatically dismissed their fears and ordered them to lie down in hopes of making the pursuing Allies believe they faced an ambush. The ruse bought Kemal valuable time, as it delayed the Allied force until arrival of advance elements from the 57th (Turkish) Infantry Regiment.



Map 2-1. Gallipoli

Kemal then engaged the enemy. He impressed upon his men the importance of controlling the hilltops at all costs, issuing his famous order: "I am not ordering you to attack. I am ordering you to die. In the time it takes us to die, other forces and commanders can come and take our place." Despite being outnumbered three to one, the Turks accomplished their mission, and the Allies were pushed back toward their bridgehead. Around noon, Kemal learned that there would be no additional support from the division. He then met personally with the corps commander to impress upon him the gravity of the situation. Kemal convinced him that if the Allies captured the high ground around Ari Burnu, they would be in an excellent position to cut the peninsula in half. The corps commander approved Kemal's request for additional forces. Both sides suffered heavy casualties, and only nightfall brought a lull in the fighting.

Kemal's resolute leadership had shaken his opponent's morale. Allied commanders had serious reservations as to whether their men could withstand another day of artillery barrages. The men were ordered to establish impregnable defensive positions in anticipation of a fresh Turkish assault, which gave Kemal time to revive his troops. There was some sniping and a few local encounters on 26 April, and on 27 April Kemal finally received major reinforcements. The front stabilized, and the opposing armies settled into trench warfare for the rest of 1915. On 16 January 1916, the Allies admitted defeat and withdrew.

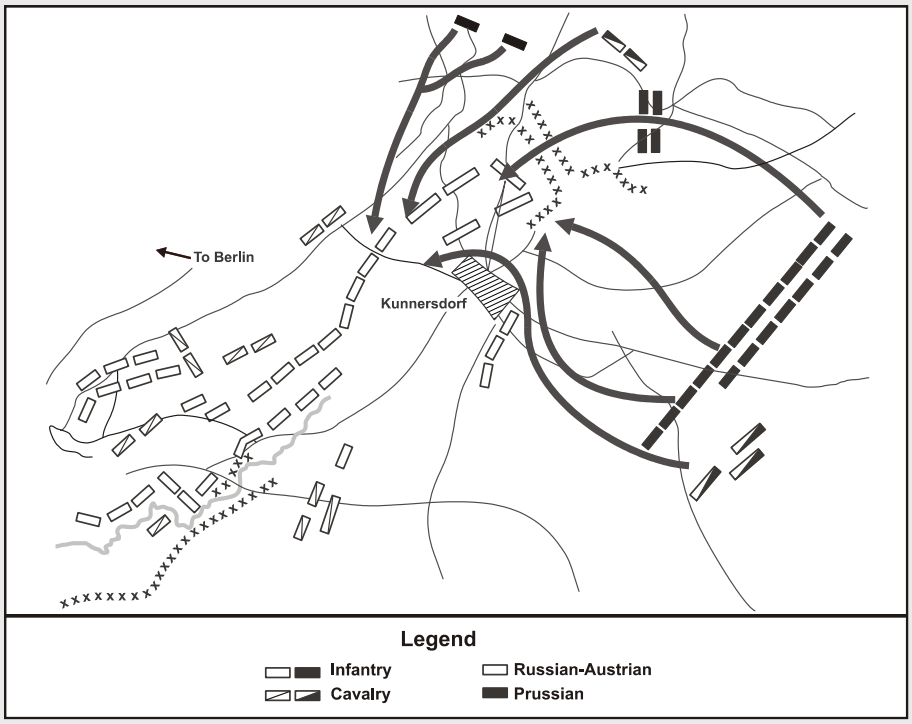
Kemal's decisive actions prevented the ANZAC forces from splitting the peninsula. The Allied mission failed, and a possible opportunity to shorten the war was lost. Kemal instinctively understood the enemy's intent and, recognizing the critical time factor, took the initiative without waiting for his commander's approval. He moved with confidence and courage, resolutely committed to concentrating his combat power to seize and hold key terrain. Confronted with superior forces, he refused to second-guess his initial decision, but rather demanded and, through force of leadership, obtained supreme sacrifices from his men.

2-99. In contrast to resolve, obstinacy consists of pursuing an ineffective method or dedicating resources to an unproductive COA while not making any progress toward accomplishing the mission. The art of command lies in distinguishing between the setbacks and hardships normally expected during combat and those that indicate failure. Indeed, as the following examples demonstrate, resolve consists of focus on the mission and flexibility in the method used to accomplish it.

Obstinacy—Frederick the Great at Kunersdorf

Although considered the foremost commander of his day, Frederick the Great (King of Prussia, 1740–1786) had his share of setbacks. One of the worst of these came at Kunersdorf (east of the Oder River between Frankfurt/Oder and present-day Kostrzyn, Poland) during the Seven Years' War. On 12 August 1759, his army was defeated there by a combined Russian and Austrian force. Much of the blame for the defeat lies with Frederick himself: his ill-considered battle plan, failure to measure the combat power of his own forces against that of his enemy, and stubborn insistence on pressing a hopeless attack were all critical elements in the Prussian defeat.

In late July 1759, a Russian army combined with an Austrian corps on the Oder River (the present boundary between Germany and Poland). (See map 2-2, page 2-28.) The forces totaled more than 64,000 men. Frederick's force numbered 50,000, but it had been hastily assembled from various units. In addition, losses in earlier campaigns had both decimated the officer corps and seriously reduced the quality of the soldiers. Nevertheless, Frederick decided to attack the Russians. By 10 August, he had concentrated his army and crossed the Oder in a forced march. His troops were short of food and water, and worn out from the heat. A hasty reconnaissance failed to disclose that the allied forces had fortified themselves on high ground north of Kunersdorf and that their positions were reinforced by obstacles and surrounded by marshy ground and forest. Frederick decided to flank the enemy with his main body, and the Prussians began an exhausting eight-hour march around the Austro-Russian entrenchments.



Map 2-2. Kunersdorf

Frederick's grasp of the enemy dispositions was incorrect. Instead of the expected exposed flank, he faced the allied position's strongest sector. Despite this and the loss of surprise, Frederick decided to attack. He was initially successful, but because of the terrain he was unable to exploit this success. Prussian attacks were repeatedly repulsed, resulting in heavy casualties. Frederick's subordinates advised him to call off the attack and accept the limited success. However, he stubbornly insisted on continuing and committed the last of his reserves. His detachment on the right was cut to pieces, and cavalry charges on the left were canalized by ponds and broken up by entrenched Russian artillery. The Austrians then launched a cavalry attack against the Prussian left and swept the Prussian cavalry from the field. The Prussian infantry's morale was completely shattered, and Frederick's army was reduced to a fleeing, panic-stricken mob.

Frederick lost because he failed to see the terrain, correctly assess the enemy and his own force, and mass decisive combat power at the right time and place while protecting his force. In his haste, he had proceeded without a proper reconnaissance, vastly underestimated his opponents' capabilities, and was blind to the exhaustion of his own troops. Moreover, by obstinately pressing a futile attack, contrary to the advice of his subordinates, he fatally compromised his army.

2-100. **Resource Allocation.** Applying judgment when allocating resources is one of the key aspects of the art of command. It has three dimensions:

- Balancing effectiveness and efficiency.
- Applying the principle of economy of force.
- Visualizing short- versus long-term benefits.

2-101. There is a distinct hierarchy of considerations in the tension between effectiveness and efficiency. The foremost consideration is mission accomplishment, or effectiveness. In planning, preparation, and execution, it is the most important consideration. A plan that does not accomplish the mission, regardless of how efficient it is, is worthless. Only if there are different ways to accomplish the mission does the second consideration, efficiency, comes into play.

2-102. Within considerations of efficiency, there is also a hierarchy: soldiers lives and other resources. The primary consideration is to conserve the lives of soldiers, even if other resources are wasted. Commanders use material resources lavishly, if doing so saves lives. Only when mission accomplishment and soldiers lives are accounted for will the saving of other scarce resources become important. Commanders have an obligation to conserve all resources, but accomplishing the mission and preserving soldiers' lives take precedence.

2-103. The second aspect of applying judgment to resource allocation is economy of force. Commanders weight their decisive operation to ensure mission accomplishment. This requires allocating minimum essential combat power to other operations. The art of command includes determining the minimum combat power essential to accomplishing a task. Commanders must allocate enough resources to subordinates to accomplish their missions, whether decisive or shaping. However, shaping operations should always have the minimum resources necessary; commanders weight the decisive operation with all possible combat power. If subordinates believe they have not received enough resources, or believe accomplishing their mission would produce an unacceptable cost to the force, they inform the commander. The commander then decides whether to accept the risk, allocate more combat power to the shaping operation, or change the plan.

2-104. The third aspect of applying judgment to resource allocation concerns visualizing short-term versus long-term benefits and determining their relative importance. Commanders must accomplish their mission at least cost to the force and remain able to conduct succeeding operations. At lower echelons, the focus is on the immediate operation—the short term. At progressively higher echelons, long-term considerations become more important. Among these are the cost to the force and the effects of the current operation on the ability to execute follow-on operations. Commanders balance the need for immediate mission accomplishment with requirements for subsequent operations.

2-105. **Use of Staff.** The final dimension of applying judgment lies in the commander's use of the staff. Commanders rely on and expect initiative from staff officers as much as from subordinate commanders. Delegating authority to them allows commanders to use their time for the more creative aspects of command, the art. Commanders delegate authority and set the level of their personal involvement in staff activities based on their assessment of the skill and experience of their subordinates. This assessment requires skilled judgment.

2-106. Within the headquarters, commanders exercise their judgment to determine when to intervene and participate personally in staff operations, as opposed to letting the staff operate on its own based on their guidance.

Commanders cannot do everything themselves or make every decision; such participation does not give staffs the experience mission command requires. However, commanders cannot simply "rubber stamp" staff products produced without their input. They participate in staff work where it is necessary to guide the staff. They use their situational understanding and commander's visualization to provide guidance from which the staff produces plans and orders. In deciding when and where to interact with subordinates, the key is for commanders to determine where they can best use their limited time to greatest effect—where their personal intervention will pay the greatest dividend.

HISTORICAL VIGNETTE—THE RUHR ENCIRCLEMENT

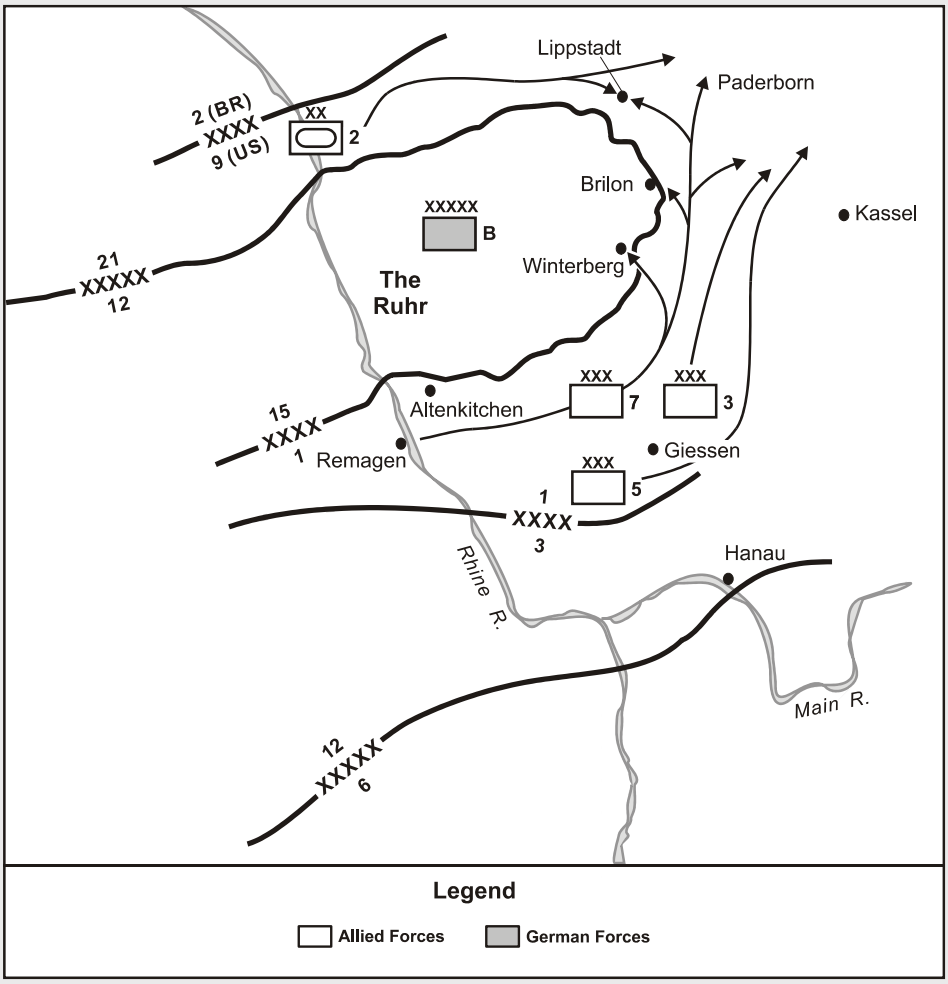
2-107. Army doctrine during World War II included many attributes of mission command. Subordinate commanders, guided by the overall operational plan and mission, were responsible for acting to accomplish the mission in the absence of, or when the situation was no longer covered by, orders. Personal conferences between commanders and subordinates ensured subordinates understood the overall plan. Commanders were to issue clear and concise orders and give subordinates freedom of action appropriate to their professional knowledge, the situation, their dependability, and the team play desired. Orders were to contain only such details or methods of execution necessary to ensure subordinate actions conformed to the overall plan.

Establishing and Using Commander's Intent— VII Corps and the Ruhr Encirclement

First Army's VII Corps, under MG J. Lawton Collins, entered action in Europe on 6 June 1944. Collins' staff served with him almost uninterruptedly before and through the campaign. This familiarity helped ensure that Collins' subordinates would understand and carry through his intent in issuing and executing their own orders. Collins' command techniques supported subordinates' exercise of initiative. He discussed his principal decisions, important enemy dispositions, and principal terrain features with major subordinate commanders. If he could not assemble these commanders, he visited them individually as time permitted, with priority given to the commander of the decisive operation. During operations, he visited major subordinate units to obtain information on enemy reactions and major difficulties encountered, again giving priority to units conducting the decisive operation. His general and special staff officers visited other units to report critical matters to the corps chief of staff. Upon returning to headquarters, Collins met with his staff to review the day's events and the changes he had directed. After that, the G-3 prepared and distributed a daily operations memorandum confirming Collins' oral instructions and adding any other information or instructions developed during the staff meeting. During the European campaign, VII Corps issued only 20 field orders, an average of two per month, to direct operations.

For the Ruhr encirclement, First Army's mission was to break out from its Rhine River bridgehead at Remagen, link up with Third Army in the Hanau-Giessen area, and join Ninth Army of 21st Army Group near Kassel-Paderborn. The attack began on 25 March 1945, with VII Corps attacking and passing through the enemy's main defensive positions. By this time, GA Dwight D. Eisenhower,

Supreme Commander Allied Expeditionary Force, had decided to isolate the Ruhr from north and south by encirclement, the junction point being the Kassel-Paderborn area. On 26 March, VII Corps took Altenkirchen and, on 27 March, crossed the Dill River. First Army assigned VII Corps as the decisive operation for the linkup with Ninth Army at Paderborn. Collins had only 3d Armored Division (AD) and 104th Infantry Division (ID) available, and the objective was more than 100 kilometers away. Nevertheless, 3d AD, commanded by MG Maurice Rose, was directed to reach Paderborn in one day, and Rose, in turn, assigned his subordinates decisive and shaping operations to accomplish that mission. The decisive operation halted 25 kilometers short of Paderborn at 2200 on 29 March. The next day Rose was killed in action, as the Germans strongly defended Paderborn; 3d AD's lead elements were held 10 kilometers from the town. The corps received intelligence of German counterattack forces building around Winterberg, southwest of Paderborn. To counter this, 104th ID took the road junctions of Hallenberg, Medebach, and Brilon. First Army ordered III and V Corps to shield VII Corps from any attacks from outside the ring.



Map 2-3. Ruhr Encirclement

As the situation developed, Collins adapted the corps plan to his situational understanding, while remaining within the framework of the higher commander's

intent. By 31 March, German attacks against 104th ID, increasing German resistance around Paderborn, 3d AD's reorganization necessitated by Rose's death, and preparation of a coordinated attack against Paderborn required Collins to contact the Ninth Army commander and suggest a change in the linkup point. They agreed on the village of Lippstadt, halfway between Paderborn and the lead elements of 2d AD (the right-flank division of Ninth Army). The linkup was effected on 1 April, closing the Ruhr pocket. Collins personally led a task force from 3d AD, overcoming weak resistance in its push west, linking up with elements of 2d AD at 1530 at Lippstadt. Later that day, VII Corps successfully overcame the German defenses at Paderborn. The encirclement trapped Army Group B, including Field Marshal Model, 5th Panzer and 15th Armies, and parts of 1st Parachute Army, along with seven corps, 19 divisions, and antiaircraft and local defense troops—a total of nearly 350,000 soldiers. The reduction of the Ruhr pocket would take another two weeks.

The Ruhr had been selected as an objective even before the Allies landed in Europe. All major commanders appear to have understood this. However, 12th Army Group only gave the actual orders for the encirclement in late March 1945, when the success of First Army's breakout had become clear. The actual linkup was eventually effected between VII Corps and Ninth Army, principally on Collins' understanding of the higher commander's intent and initiative by his subordinates. He practiced a technique similar to mission orders, giving only one or two immediate objectives to each major subordinate command and a distant objective toward which to proceed, without specific instructions. This gave his subordinates freedom to act and exercise initiative, while still providing essential elements needed for coordination among the subunits. Knowing the overall commander's intent enabled commanders on both sides of the encirclement to direct efforts toward its fulfillment. When lack of lateral communications hindered coordination, subordinates took the initiative to accomplish the mission and fulfill the commander's intent as they understood it. At 3d AD, subordinates' understanding of the corps' commander's intent allowed operations to resume the day after Rose was killed. When the original objective, achieving a linkup at Paderborn, could no longer be accomplished, Collins proposed an alternative linkup point. Finally, with elements of his corps defending at Winterberg, attacking at Paderborn, and moving to Lippstadt, Collins positioned himself with the task force from 3d AD to make the linkup—the decisive operation that day for his corps, First Army, and 12th Army Group.

CONCLUSION

2-108. Ultimately command reflects everything the commander understands about the nature of war, warfighting doctrine, training, leadership, organizations, materiel, and soldiers. It is how commanders organize their forces, structure operations, and direct the synchronized effects of organic and allocated assets toward their visualized end state. Command is built on training and mutual understanding by all soldiers within that command about how it operates. It is the expression of the commander's professional competence and leadership style, and his translation of his vision to the command. However, command alone is not sufficient to translate that vision and to assure mission accomplishment; control, the subject of chapter 3, is also necessary.

Chapter 3

Control

The test of control is the ability of the leader to obtain the desired reaction from his command

Infantry in Battle, 1939

Whereas command pertains to an individual, control is systemic; it involves the whole force, especially those who are part of the command and control system. The authority of command provides the basis for control. Without command, control would not exist. Control serves commanders, allowing them to regulate forces and battlefield operating systems. Control is mostly science, but also includes some art. It employs objective data, analytic processes, and scientific methods and theories in assessing, planning, preparing for, and executing operations. Control allows commanders to monitor their forces, the enemy, and the environment during operations. Through this monitoring, they identify new decision points, opportunities to exploit success, and threats to mission accomplishment. Control permits commanders to adjust operations to account for changing circumstances by modifying one or more of the results of their commander's visualization and directing the changes necessary to address the new situation.

NATURE OF CONTROL

3-1. The nature of control, including why it is even necessary, begins with its definition. It involves the elements and principles of control that guide applying the elements of control within command and control (C2). **Within command and control, *control* is the regulation of forces and battlefield operating systems to accomplish the mission in accordance with the commander's intent. It includes collecting, processing, displaying, storing, and disseminating relevant information for creating the common operational picture, and using information, primarily by the staff, during the operations process.** Control allows commanders to direct the execution of operations to conform to their commander's intent. Unlike command functions—which remain relatively similar among echelons of command—control functions increase in complexity at each higher echelon.

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Control extends over the entire force and includes the airspace over the area of operations (AO). Commanders, from company to corps, control their forces and are, in turn, influenced by these forces. (See figure 3-1.)

3-2. Impediments to mission accomplishment that act before, during, and after operations create the requirement for control. These impediments include the enemy, the environment, and the "friction" of war.

3-3. First and foremost among these impediments is the enemy. Enemies may act against the friendly commander personally, the commander's C2 system, or friendly forces. They may use lethal weapons or execute operations that produce nonlethal effects, such as information operations (including military deception). The second impediment to mission accomplishment is the environment. The often unpredictable impact of these first two impediments constitutes what Clausewitz meant by the "fog" of uncertainty characteristic of war. (See paragraph 1-39.) He described it by saying:

> *Many intelligence reports in war are contradictory; even more are false, and most are uncertain....reports turn out to be lies, exaggerations, errors, and so on.*

3-4. The final impediment to mission accomplishment is the actions of friendly forces themselves. The specific manifestations are human error, mismanagement of information, equipment limitations, and the "physics" of executing an action. These unanticipated manifestations compose what Clausewitz called the "friction" of war. Their effects on the C2 system and employed forces often cause deviations from the plan during execution. (See figure 3-1.) Clausewitz characterized these effects as follows:

> *Everything in war is very simple, but the simplest thing is difficult. The difficulties accumulate and end by producing a kind of friction that is inconceivable unless one has experienced war.... Friction...makes the apparently easy so difficult.*

3-5. Nonlinear interactions characterize control during operations. Extremely small influences can have large, unpredictable effects on military organizations. Interactions among organizations and people—both within and outside the chain of command—occur randomly throughout the command. Soldiers and organizations interact—with the enemy, the environment, and each other—frequently, freely, and unpredictably. This makes control an open system, which means the behavior of a force cannot be isolated from the factors affecting it. In addition, a force's components (including soldiers), behave organically, like living beings, rather than mechanically, like parts of a well-oiled machine. This behavior further complicates control.

3-6. Commanders, aided by staffs, use control to regulate forces and the functions of subordinate and supporting units. Staffs give commanders their greatest support in providing control. However, for control to be effective, commanders must actively participate in exercising it. One of mission command's strengths is that it provides a measure of self-regulation within organizations executing operations.

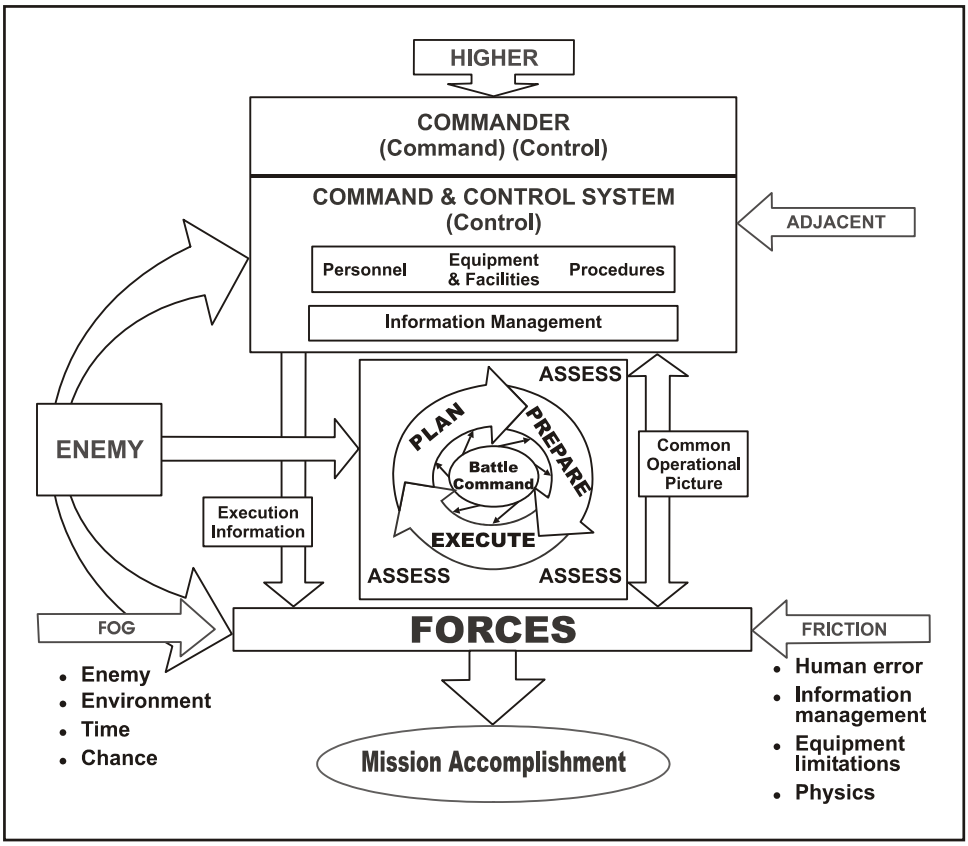


Figure 3-1. Control

3-7. In the broadest terms, control helps commanders answer two fundamental questions:

- What is the actual situation compared with the desired end state?
- Are adjustments to the plan necessary to reconcile the situation with the desired end state?

A C2 system performs three basic functions to answer these questions. (See figure 3-2, page 3-4.) First, it helps commanders achieve situational understanding by using IM to create the COP (common operational picture) and disseminate it throughout the force. It does this by acquiring relevant information (RI) and categorizing it in terms of the factors of METT-TC. (See paragraphs 3-39–3-47.) Second, it regulates forces and battlefield operating systems (BOSs) by supporting commanders' decisionmaking as they develop, analyze, select, and refine courses of action (COAs). Commanders then execute their decisions—preparing and disseminating orders to subordinate forces. Third, it allows the force to adapt to change throughout the operations process (assessing, planning, preparing for, and executing operations).

3-8. An effective C2 system allows the commander to—

- Operate freely throughout the AO to exercise C2 from anywhere on the battlefield.
- Delegate authority to subordinate commanders and staff to allow decentralized execution of operations.

- Synchronize actions throughout the AO.
- Focus on critical actions instead of details.

Support Achieving Situational Understanding	Regulate Forces and Operating Systems	Allow the Organization to Adapt to Change
• Determine and dynamically adjust requirements. • Collect, process, display, store, and disseminate information. • Assess the status and performance of subordinate units and the overall force. • Anticipate opportunities or threats in execution, through intelligence preparation of the battlefield, indications and warnings, and situation development.	• Support the commander's decisionmaking. • Define limits. • Allocate resources to requirements and tasks. • Direct operations by producing and disseminating orders. • Acquire means to accomplish the mission. • Develop specific directives from general guidance from the commander.	• Forecast change in friendly, enemy, or environmental situations; determine the meaning of that change. • Identify variances in performance from the concept of operations. • Report significant changes in the situation to the commander.

Figure 3-2. Control Functions of the Command and Control System

3-9. Control includes functions normally associated with management, primarily when it concerns efficient and effective resource allocation. Management is inherent in C2, but lacks the extensive authority and responsibility of command. While management techniques may assist commanders in making decisions and leading, they are not sufficient to accomplish missions.

ELEMENTS OF CONTROL

3-10. Control allows commanders to disseminate the two types of information: COP-related information and execution information. It also lets them adjust operations to reflect changing reality and enemy actions. This capability allows commanders to modify the commander's visualization with respect to the current state, the end state, or the process of getting from the current state to the end state. Effective control further identifies times and points requiring new decisions during execution. The elements of control are—

- Information.
- Communication.
- Structure.

Information

3-11. **In the general sense, *information* is the meaning humans assign to data.** It is the most important element of control. Information includes all forms of description or representation at any level of the cognitive hierarchy. (The levels of the cognitive hierarchy are data, information, knowledge, and understanding. See appendix B.) Information gives structure and shape to military operations and the battlespace. Commanders and staffs can then give meaning to and gain understanding of the events and conditions in which they make decisions and conduct operations.

3-12. *Relevant information* is all information of importance to the commander and staff in the exercise of command and control (FM 3-0). (Intelligence is a subset of relevant information.) An *operational picture* is a single display of relevant information within a commander's area of interest (FM 3-0). A *common operational picture* is an operational picture tailored to the user's requirements, based on common data and information shared by more than one command (FM 3-0). Data and information from all echelons of command and shared among all users create the COP. (See paragraphs 3-30–3-32.) Although ideally the COP is a single display, it may include more than one display and information in other forms. By applying judgment to the COP, commanders achieve situational understanding, upon which they base decisions. However, maintaining an accurate COP is complex and difficult.

3-13. Friction within the COP has many sources; for example, delays in receiving intelligence as compared to friendly force information, the complexity of the terrain, the uncertainty of the weather, and a large number of civil considerations. Staffs also have to struggle with portraying meaning and the necessary level of detail without overloading their commander. Commanders direct by disseminating execution information, typically as orders and plans, to implement their decisions; they receive feedback from subordinates and supporting forces in the process. This reciprocal influence between commanders and subordinates allows commanders to keep in touch with the situation. It also helps commanders and subordinates maintain a shared situational understanding.

3-14. One important piece of information for commanders is whether their subordinates understand the commander's intent. Commanders who are assured their subordinates understand the commander's intent may require less detailed information from them. If subordinates do not understand the commander's intent, the commander requires more information from them and gives them less latitude in making decisions. Commanders use training to see how subordinates interpret the commander's intent in different situations.

Communication

3-15. To *communicate* means to use any means or method to convey information of any kind from one person or place to another (JP 1-02). (*Communications* are means of communicating, such as telephones.) Communication allows units/organizations to disseminate and share information among people, elements, and places. It links information to decisions and decisions to action. No decision in combat can be executed without clear communication between commanders and subordinates. Communication among the parts of a command supports their coordinated action. The communication that characterizes effective control is multidirectional. (See figure 3-1, page 3-3.) Effective communication is critical to achieving effective C2.

3-16. How commanders communicate contributes to or detracts from leading. Communication is the means through which commanders exercise immediate and personal control over their forces. In general, intense, unconstrained communication—the free and unhindered sharing of meaningful information throughout the force—characterizes effective communication. Because

military operations require collective efforts, effective communication is imperative.

3-17. A major purpose of communication lies in sharing images, particularly the commander's intent. It is essential for commanders to communicate their commander's intent, whether verbally or with illustrations or analogies. General of the Army Omar Bradley understood that "Congress can make a general, but only communication can make a commander."

3-18. Communication has an importance far beyond exchanging information. Separate from the quality or meaning of information exchanged, communication strengthens bonds within a command. It is an important factor in building trust, cooperation, cohesion, and mutual understanding.

Structure

3-19. As an element of control, *structure* is a defined organization that establishes relationships among its elements or a procedure that establishes relationships among its activities. The commander establishes control with a defined organization and its relationships. This structure or organization is both internal (for example, a headquarters structure—the command post [CP]) and external (for example, command and support relationships among subordinate forces). The most basic organization in control is a hierarchy. In military terms, this relationship is between the commander and staff, and subordinate forces. (See chapter 5.)

3-20. Structure also determines interactions among the elements of the organization, whether units or individuals. The effects of these interactions affect collecting, disseminating, and processing information.

PRINCIPLES OF CONTROL

3-21. The principles of control govern how commanders and their C2 systems use the elements of control to carry out functions of control. Control permits a command to adapt to change. Because of feedback, control is cyclic and continuous, not a series of discrete actions. It is a process of dynamic, interactive cooperation. Control continues throughout the operations process. The principles of control are—

- Allow subordinates maximum freedom of decision and action.
- Create, maintain, and disseminate the COP.
- Use common doctrinal procedures, graphics, and terms.
- Provide for flexibility and adaptability.

Allow Subordinates Maximum Freedom of Decision and Action

3-22. Effective commanders impose minimum constraints on subordinates. They exercise only the control necessary to give subordinates the guidance and resources needed to accomplish assigned tasks. This principle, however, includes exercising the control necessary for proper, if imperfect, coordination.

3-23. This principle directly supports exercising mission command. Mission command relies on mission orders, shared situational understanding, open communication of RI, and flexible procedural control. These techniques allow

subordinates freedom of action to exercise subordinates' initiative within the commander's intent.

3-24. Under mission command, doctrine, established procedures, and the commander's intent provide the basis for implicit coordination. However, essential coordination always requires some control measures. Commanders exercise the least restrictive procedural control, consistent with the capabilities of subordinates and their organizations.

3-25. In most instances, front-line commanders know the most about their forces and the environment, and have the clearest understanding of their own situations. They are, therefore, better suited than higher commanders to develop those situations. Even two or more subordinate commanders working together may solve a problem better and faster than the higher commander. This type of coordination, involving direct communication among subordinate commanders is critical for effective C2. Commanders emphasize this principle of control, and the implicit requirement to exercise subordinates' initiative, at every opportunity.

3-26. *Overcontrol* results when commanders establish excessive limits on the subordinates' freedom of action. Some commanders try to achieve the massed effects espoused by the Army's operations doctrine by using detailed command methods. Doing this may result in overcontrol. Overcontrol takes two forms: tactical overcontrol and excessive requests for information.

3-27. Tactical overcontrol consists of issuing excessively detailed orders initially or giving excessive direction during execution. It inhibits subordinates' initiative and tires commanders by referring too many decisions to them. Tactical overcontrol may also result from emphasis on procedure or process rather than on outcome—on efficiency rather than effectiveness. The guiding precept is that minimum essential coordination achieves mission success.

3-28. Excessive requests for information distract subordinates from executing their operations. They can also affect the requesting unit, because it must process the responses. One cause of excessive requests is the search for perfect situational understanding. Another stems from poor IM. No one can predict all information requirements (IRs) before operations begin; however, commanders and staffs must balance new IRs against the effect that finding and providing that information will have on subordinates' operations. Excessive and redundant IRs create unnecessary stress or fatigue for subordinate units. This situation may result in their failing to respond to an important IR and depriving the higher commander of information needed to make decisions.

3-29. Commanders consider the following precepts when deciding how to exercise control:

- Limit control measures to those necessary to effect essential coordination.
- Limit IRs to the minimum needed to exercise C2.
- Give subordinates as much leeway for initiative as possible consistent with keeping operations synchronized and maintaining enough situational understanding to restore the situation, if necessary, or to exploit opportunity.

Create, Maintain, and Disseminate the Common Operational Picture

3-30. Relevant information provides the basis for constructing the COP. The COP facilitates collaborative planning and helps commanders at all echelons achieve shared situational understanding. Shared situational understanding allows commanders to visualize the effects of their decisions on other elements of the force and the overall operation. Commanders apply judgment to the COP to achieve the situational understanding needed to make decisions. Under mission command, subordinates use the COP in conjunction with the commander's intent to guide their exercise of subordinates' initiative. Digital, analog, or mixed digital/analog forces can use the concept of the COP. Each applies the concept differently based on available resources.

3-31. Commanders achieve situational understanding by applying judgment to the COP. Doing this is neither simple nor automatic. The COP consists primarily of knowledge, which the staff provides through analysis and evaluation. Accurate, timely intelligence—a major category of this knowledge that the intelligence BOS produces—is indispensable to a complete COP and achieving accurate situational understanding. Intelligence—supported by ISR (intelligence, surveillance, and reconnaissance) synchronization—is a critical, integrated part of C2. Its contributions to the COP support all BOSs. Sharing of knowledge through the COP contributes to achieving a more complete, timely, and comprehensive shared situational understanding. An accurate COP ensures commanders' situational understanding accurately reflects the actual situation.

3-32. This concept of combining inputs to create a COP applies to both digital and analog CPs. All CPs maintain an operational picture based on information that comes into them. By collaborating and sharing RI, and tailoring it to their needs, separate echelons create their own operational picture or the COP, as the situation requires. The difference between an operational picture and a COP is that, in a digital environment, all CPs draw on a common set of RI available within a shared database. With that RI, they create the portion of the COP that shows what their commanders want to know. Rapidly sharing RI among higher headquarters and subordinate, adjacent, supporting, and supported forces creates a COP throughout the force. In an analog environment, a CP is limited to the information it physically has on hand. Much of the creation of a COP is done manually, and it is harder to update, disseminate, or tailor dynamically to user requirements. Nevertheless, the concept of the COP still applies. The use of reproduced overlays or gathering subordinates around a common map or graphic are examples of applying the COP concept in analog CPs.

Use Doctrinally-based TTP, Graphics, and Terms

3-33. Language used in communicating should be simple, clear, and easily understood. An understanding of common doctrinal procedures, graphics, and terms contributes to the simplicity and clarity essential to mutual understanding. Using correct doctrinal procedures, graphics, and terms shortens the amount of explicit communication needed to convey or explain an order or plan. However, during stability operations and support operations, staffs may need to create nonstandard graphics or modify existing graphics to portray

the environment, an adaptive enemy, or other elements. They should do this only when standard graphics are unsuitable.

3-34. This principle does not imply unthinking adherence to every aspect of doctrine in inappropriate situations. Rather, it means that commanders consider all levels of doctrinal requirements and limitations before directing a nondoctrinal action. When time permits, they explain their reasoning to their subordinates. Soldiers understand a creative, but nondoctrinal, solution to a tactical problem when it is explained using doctrinal terms and tactics, techniques, and procedures (TTP).

Provide Flexibility and Adaptability

3-35. Control allows organizations to respond to change, whether due to enemy or friendly actions, or to situations. Control provides flexibility and adaptability (being able to recognize and respond effectively to emerging conditions, and to correct for the effects of fog and friction). It provides information that allows commanders to base decisions and actions on the results of friendly and enemy actions, rather than rigid adherence to the plan. Commanders build flexibility and adaptability into their plans. (See paragraph 4-13.)

3-36. Control supports flexibility and adaptability in two ways. First, it identifies the need to change the plan. It does this through anticipating or forecasting possible enemy actions, and by identifying unexpected variances—opportunities or threats—from the plan. (See paragraphs 6-11–6-16.) This occurs throughout the operations process. Second, control helps commanders develop and implement options to respond to these changes in a timely manner. Flexibility and adaptability reduce the enemy's available options while maintaining or expanding friendly options. Effective control provides for timely action before enemies can accomplish their objectives. Control allows the C2 system to guide modification of plans and actions as the situation and commander's situational understanding change.

3-37. To help commanders fight the enemy and not the plan, control orients on information about emerging conditions. Control provides flexibility by—

- Allowing friendly forces to change their types and forms of operations (see FM 3-90), their task organization, or their plan.
- Producing information about options to respond to changing conditions.
- Communicating the commander's decisions quickly and accurately.
- Providing for rapid BOS resynchronization when the plan changes during execution.
- Allowing collaborative planning to respond to the progress of operations.

SCIENCE OF CONTROL

3-38. Control, as contrasted with command, is more science than art. As such, it relies on objectivity, facts, empirical methods, and analysis. Control emphasizes anticipation in the form of forecasting to perform the functions discussed earlier. (See figure 3-2 on page 3-4.) Higher echelon commanders have staffs to help them perform control functions. In units without staffs,

commanders employ as much control as time permits. The science of control includes the following:

- Information management.
- Communications.
- Forms of control.

INFORMATION MANAGEMENT

3-39. Information management is a component of all C2 systems. It is a contributor to information superiority. (See FM 3-0.) IM consists of two elements: information systems (INFOSYS) (see paragraphs 5-38–5-58) and RI (see paragraphs B-10–B-54). The following section discusses IM with respect to the C2 BOS. Decisionmakers in other BOS use BOS-specific IM cycles to develop and manage the RI they need. The intelligence system, for example, uses the intelligence cycle to provide IM for intelligence.

3-40. *Information management* is the provision of relevant information to the right person at the right time in a usable form to facilitate situational understanding and decisionmaking. It uses procedures and information systems to collect, process, store, display, and disseminate information (FM 3-0). IM provides structure through which to process and communicate information and to put decisions into action.

3-41. Commanders can neither make decisions nor act to implement them without information. The amount of information that is available today and will be in the future makes managing information and turning it into effective decisions and actions critical to success during operations. Since effective C2 depends on getting RI to the right person at the right time, IM is crucial to C2. Effective IM determines RI, processes data into information and then knowledge, and quickly routes it to those who need it. Commanders and staffs assess the effectiveness of IM by considering whether it lessens the fog of war.

3-42. IM narrows the gap between RI commanders require and the RI they have. C2 systems manage information for one overriding purpose—to enable commanders to make timely decisions in spite of the fog and friction of operations. All information given to commanders must be RI; that is, commanders should only receive information they need to exercise C2. Staffs ensure this RI is accurate, timely, usable, complete, precise, and reliable.

3-43. The information commanders receive drives how they visualize the operation. How RI fits into the commander's visualization determines its value. In turn, the commander's visualization drives what information commanders seek. Commanders state the RI they need by establishing the commander's critical information requirements (CCIR). (See paragraphs B-68–B-72.) Staffs must understand the commander's intent and CCIR to provide the information commanders need to make decisions and maintain an accurate situational understanding.

3-44. Tactical operations produce large amounts of information. While much of this information is RI for others in the C2 system, it may not be RI for the commander. For example, coordinating staff officers require different information to perform their functional responsibilities than the commander does

to exercise C2 over the entire force. In each case, RI provides the information individual decisionmakers need to perform their C2 functions. Commanders and staffs who understand this can avoid information overload by establishing criteria for which information to present to the commander. Guidance on these criteria must come from the commander personally. In most cases, this guidance is the CCIR.

3-45. Effective IM facilitates the rapid flow of information in all directions. Improvements in the technical means for distributing information will allow users to quickly identify RI among the mass of information the C2 system processes. This capability will help prevent information overload. These improvements will also help commanders communicate their commander's intent and the concept of operations clearly and quickly.

3-46. Effective IM facilitates communications vertically (within the chain of command) and horizontally (among subordinate, adjacent, supporting, and supported units). Redundancy in transmission paths safeguards against disruption and battle damage. However, the transmission path information follows is less important than whether it reaches the right destination at the right time in a usable format. The ability of technical systems to provide RI to commanders and other leaders when needed ultimately depends on the continuous updating of guidance concerning the information needed to make decisions. For commanders, this means updating the CCIR based on changes in the decisions they expect to make.

3-47. Commanders base their IM guidance on the following factors:

- Degree of willingness to cope with uncertainty.
- Number and type of decisions the commander expects to make personally.
- Whether the needed RI can be obtained.
- Gaps in RI needed for specific decisions.
- Ability of subordinates to understand the commander's intent.
- Availability of liaison officers and informal communications networks.

Relevant Information

3-48. Information becomes RI if it supports exercising C2 for a mission, and if it is accurate, timely, usable, complete, precise, and reliable. RI provides the basis for creating and maintaining the COP and the substance of execution information. It is the basis for achieving situational understanding. (See appendix B.)

3-49. Commanders determine IRs and set IM priorities. If they request too much information, the staff's chances of obtaining the RI decrease. Similarly, staffs should collect, analyze, and disseminate RI that answers CCIR or parts of CCIR ahead of routine reports. Routine or irrelevant details may conceal answers to CCIR and slow processing and communication. The quest for complete information consumes too much time and places an unreasonable burden on information sources. At worst, it corrupts the trust required for mission command. Subordinates who worry over every detail rarely have the resources or desire to take the initiative.

Information Management Activities

3-50. IM consists of five activities: collect, process, store, display, and disseminate. In practice the different activities overlap, effectively complementing each other.

3-51. **Collect. As an information management activity, *collect* is to continuously acquire relevant information by any means, including direct observation, other organic resources, or other official, unofficial, or public sources from the information environment.** Commanders set priorities for collecting by establishing CCIR. They continuously revise them throughout the operations process, as the situation changes. Collecting takes two forms: information push and information pull.

3-52. An *information-push* system collects information by pushing it from the source to the user, either as the information becomes available or according to a schedule. The advantages of information push are that commanders do not need to request the information, except initially, and the information arrives on a predictable schedule. This system is best for managing routine reports, including information that is not time sensitive. A properly designed information-push system lessens the problem of distracting subordinate units with excessive requests for information.

3-53. An information-push system does not work well in filling unforeseen IRs, especially important, time-sensitive information. While an information-push system may push RI to those who need it, it does so only if commanders widely distribute the CCIR and continuously revise them as the situation changes. Trying to anticipate all the commander's needs under an information-push system can lead to attempts to deliver all possible information rather than RI alone. This situation leads to information overload. Commanders avoid it by establishing and continuously revising the CCIR.

3-54. Under an *information-pull* system, users request information as they need it, and sources respond with the information. An information-pull system does not anticipate information needs, but reacts to demands. If the information is readily available, the source fills the demand quickly and efficiently. A common database can serve this system by allowing authorized users to query it for information and receive it in the requested format.

3-55. If the information is not readily available, the demand—or accumulated demands—triggers a "demand cascade" as the requirement filters through the C2 system until it reaches the appropriate collecting organization. A single demand by a higher headquarters produces multiple demands at lower echelons. Thus, even a single demand can produce a "cascade." Excessive information demands burden lower echelons, especially in centralized C2 systems in which all information passes to the senior echelons. A demand cascade can produce information overload when commanders request unnecessary quantities of information. To avoid demand cascade, commanders keep some dedicated collection assets that answer directly to them, such as directed telescopes. (See paragraphs 3-102–3-105.)

3-56. An information-pull system helps focus scarce resources on critical tasks. It delivers information tailored to RI commanders' need and only produces information to fill those IR. These characteristics can be both

strengths and weaknesses. They can be strengths because information flow is tailored to established IRs. However, they can be weaknesses because there are often unstated or unidentified IRs that go unsatisfied under an information-pull system. One definite disadvantage is the cost in time and timeliness that occurs when the search for information does not begin until the commander identifies an IR.

3-57. ***Exceptional information*** **is specific and immediately vital information that directly affects the success of the current operation.** It would have been one of the CCIR if it had been foreseen; it is therefore treated as one of the CCIR. Exceptional information usually results from discovering something unanticipated about an enemy. It allows the commander to take advantage of an unexpected opportunity to defeat the enemy or to avoid a surprise that could lead to a friendly defeat. Exceptional information is reported to the commander immediately by any method available.

3-58. Effective C2 systems combine the best characteristics of information-push and information-pull collection. Information push is the more efficient way to provide information needed routinely. The C2 system should anticipate commanders' IRs and manage routine information by pushing it to an easily accessible local database. Commanders then use information pull to obtain only the information they need from that database. This solution avoids the danger of information overload associated with information-push collection. It also eliminates some delays normally associated with information-pull collection. Although a strict pull system generally requires more time to collect and process information, a near real-time ISR capability should support both pull and push capabilities. Commanders need both capabilities in their C2 systems.

3-59. Commanders will likely not recognize all their information requirements initially, so the C2 system must ensure that truly critical, time-sensitive information is pushed directly to them without delay. This might mean skipping intermediate echelons of command, although in most cases all echelons should receive such information simultaneously. Echelon skipping does not mean, however, that intermediate echelons remain uninformed. After passing critical information directly between the concerned echelons, both echelons should inform intermediate echelons through normal channels.

3-60. **Process. As an information management activity,** ***process*** **is to raise the meaning of information from data to knowledge.** Processing adds meaning to data and information through progressively higher-level and complex cognitive methods. (See figure 3-3 on page 3-14.) It contributes to creating the COP. Processing includes lower-level mechanical methods; such as, organizing, collating, plotting, and arranging data and information. However, effective processing requires the higher-level cognitive methods of analysis and evaluation to convert information into knowledge that supports situational understanding. Higher-order processing depends primarily on the insight that well-trained and adaptive analysts available at higher echelons provide. Effective IM and INFOSYS disseminate these products to users throughout the organization. Where commanders do not have access to these products, they do their own analysis and evaluation to process available information into knowledge themselves. Commanders apply judgment to knowledge to achieve situational understanding. That, combined with

intuition, enables them to make informed decisions with less-than-perfect information.

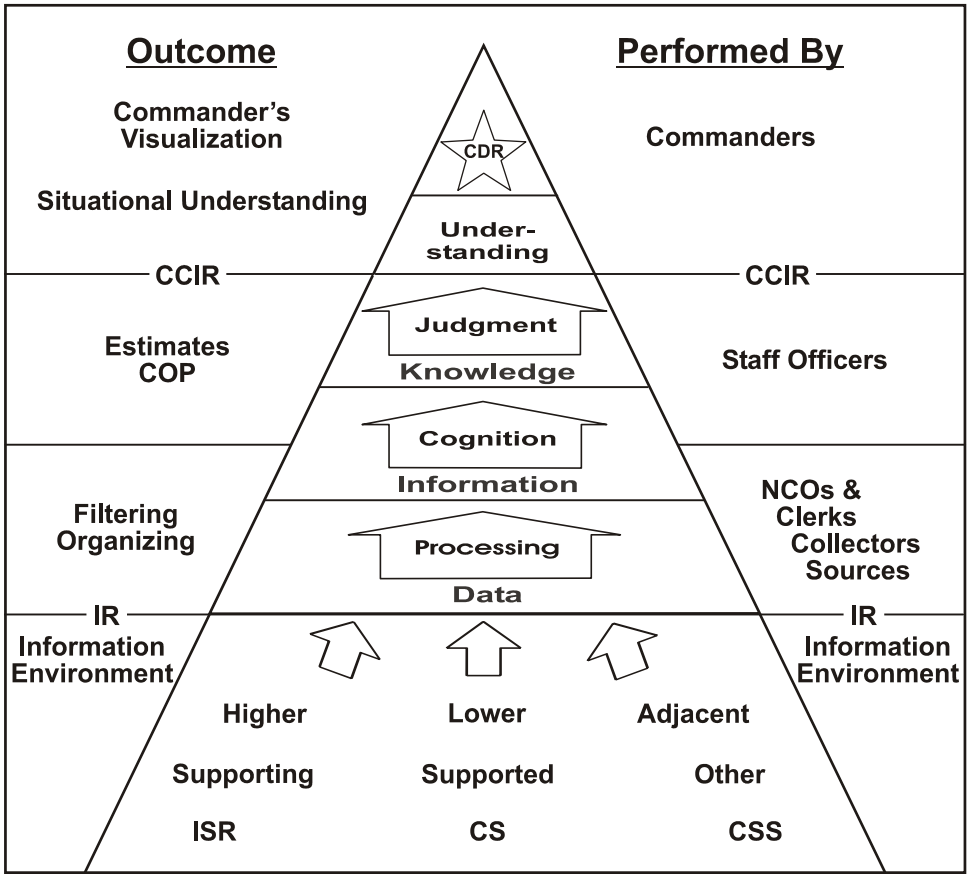


Figure 3-3. Processing Information

3-61. Incoming data are not information until they have meaning added by processing. At higher echelons, staffs are major contributors to processing. In organizations without staffs, commanders themselves explicitly or implicitly raise the meaning of information they receive. For example: A platoon leader collects *data* by observing enemy actions to the front. After reporting this observation to the commander, the platoon leader processes the data into *information* by portraying those actions on a map as graphics. Considering friendly plans and actions, the platoon leader applies existing knowledge of enemy operations to the observations and analyzes their meaning to anticipate possible enemy actions. He then evaluates the effects of possible enemy actions on his and the higher commander's mission. He also considers the effects on the enemy of any actions his platoon might take. These thought processes constitute cognition, the act of learning or integrating various pieces of information. It raises information (the actions portrayed on the map) obtained from processing data (the observation of the enemy) into *knowledge*. Finally, after applying judgment to *understand* the situation, the platoon leader decides if he needs to do anything to counter the enemy's actions.

3-62. An important processing tool is *collaboration*. Collaboration involves real-time or near real-time audio and visual communications. At higher echelons it may include video teleconferences and white-boarding. At lower echelons it may involve only radio conversations and meetings. Collaboration can serve to discuss the COP, update IRs, generate knowledge, improve the commander's visualization, share situational understanding, and improve decisionmaking. Collaboration disseminates knowledge and improves situational understanding, both horizontally and vertically.

3-63. Processing filters, fuses, and prioritizes information. *Filtering* means assessing the value of information and removing what is not pertinent or important. Staffs (or commanders personally in units without staffs) filter data and information to identify RI and create the COP. Effective filtering requires specific criteria expressed in these terms: timeliness, accuracy, usability, completeness, precision, and relation to the CCIR and other IRs. *Fusing* integrates information into an easily usable form at an appropriate level of detail. *Prioritizing* expedites information flow by indicating and displaying the relative importance of different RI. The prime example of this prioritization is the CCIR. Prioritizing demands a clear commander's visualization and understanding of the commander's intent by subordinates. Effective prioritization allows the staff to quickly identify information that answers the CCIR.

3-64. Commanders apply their education, experience, intuition, and judgment to transform knowledge into situational understanding. During planning and preparation, situational understanding contributes to the commander's visualization. Accurate situational understanding leads to a commander's visualization that includes a clear commander's intent and comprehensive planning guidance. During execution, accurate situational understanding supports fast decisions and better C2.

3-65. **Store. As an information management activity, *store* is to retain relevant information in any form, usually for orderly, timely retrieval and documentation, until it is needed for exercising command and control.** C2 systems store information because not all information collected or processed can be displayed at the same time, nor is it relevant at all times. The DA Form 1594, Staff Journal, is a primitive storage means. It retains information or analyses of past outcomes for future use; however, it is difficult to rapidly resort, reorder, and analyze data recorded on this form.

3-66. Common databases provide powerful tools for transforming data into the information and knowledge required for decisions. Data in a database can be stored, ordered, and structured based on data models reflecting commanders' decisionmaking needs. For example, software applications allow analysts to sort, store, organize, and query data by unit identification, geographic location, resource status, or consumption. This versatility helps them quickly answer specific questions in terms the questioner understands. A variety of software applications can use and share this data for multiple purposes. A database provides a bridge allowing different systems with different purposes to work together. For example, data on the location and identification of friendly units, when processed and compared with other data, can both help commanders achieve situational understanding and assist in clearing artillery fire missions. Through a database, multiple

applications can simultaneously use the same data for different purposes at different echelons.

3-67. **Display. As an information management activity, *display* is to represent relevant information in a usable, easily understood audio or visual form tailored to the needs of the user that conveys the common operational picture for decisionmaking and exercising command and control functions.** There are three ways to display information: graphic displays, written reports, and verbal narrative reports. Graphic displays are discussed below. FM 5-0 discusses written reports and verbal narrative reports.

3-68. Effective graphic displays are meaningful images, rather than masses of data. Staffs use standard formats and doctrinal terms and graphics to organize displays and present information. Standard formats ensure that all RI is included and help users find needed information. Displays shorten communications because they do not require lengthy instructions. Properly executed, displays aid communication and understanding.

3-69. Graphic displays visually represent current or future operational information. They may use automated or manual means. When possible, commanders and staffs graphically portray quantifiable information using standard formats. Effective graphic displays—

- Use symbols, graphics, and terminology consistent with FM 1-02.
- Show only RI.
- Show information clearly and understandably.
- Include accurate, reliable, and timely information.
- Can be promptly and easily updated.
- Can be quickly disseminated to higher, lower, and adjacent units.

3-70. Display is more than just the communication and portrayal of data and information. The quality of the presentation contributes to the assimilation and development of knowledge. A good display allows commanders to look across the area of interest in space and time, rapidly focus on decisive points, and identify opportunities, threats, and information gaps. Good displays also allow commanders to communicate execution information to subordinates in terms they understand.

3-71. **Disseminate. As an information management activity, *disseminate* is to communicate relevant information of any kind from one person or place to another in a usable form by any means to improve understanding or to initiate or govern action.** It takes two forms: broadcast dissemination and point-to-point dissemination. Effective IM combines broadcast and point-to-point dissemination based on the situation and available INFOSYS.

3-72. Senders may *broadcast* information simultaneously to a broad audience—anyone with access to the C2 system. The great advantage of broadcast dissemination is that it gets information to the widest audience in the shortest time. For generic information, this method may be efficient. However, the information cannot be tailored to a specific user's needs. Perhaps the greatest drawback of broadcast dissemination is that its undisciplined use can quickly lead to information overload.

3-73. In *point-to-point* dissemination, information goes to a specific user or users. It then passes sequentially from one user to the next. Point-to-point dissemination has two advantages. First, information can be tailored to the needs of each recipient. Second, point-to-point dissemination has built-in control mechanisms that broadcast dissemination lacks. Each node in the sequence can filter and integrate information before passing it on—tailoring information to the needs of the next recipient and lessening the risk of information overload. The major disadvantages of point-to-point dissemination are that information reaches a broad audience slowly, and the chances of distortion increase with each node.

COMMUNICATIONS

3-74. The traditional view of communication within military organizations is that subordinates send commanders COP-related information and commanders provide subordinates with decisions and instructions. This linear form of communication may be consistent with detailed command but it is inadequate for mission command. Mission command requires interactive communications characterized by continuous feedback. Feedback provides the means to improve and confirm mutual understanding. This applies to lateral as well as vertical communications.

3-75. Accurate situational understanding requires RI from all BOS. Communications is the key for commanders obtaining this RI. As commanders structure their C2 systems and establish their information priorities, they consider the requirement for communications. Communications shortfalls that have existed in the past must be corrected so that commanders have the unobstructed and full information that supports achieving accurate situational understanding.

3-76. Humans communicate both verbally and nonverbally. Evidence suggests that, in face-to-face conversation, humans communicate more by nonverbal means than by the words they use. (Nonverbal means may be vocal or nonvocal. Vocal means include sounds, such as sighs and grunts, as well as voice tone and inflection. Nonvocal means include such things as gestures, body language, and facial expressions.) Teleconferencing and other collaboration means allow commanders to obtain the benefits of face-to-face communication without traveling to distant locations.

3-77. In peacetime, commanders are tempted to rely too much on written communications. Although modern INFOSYS facilitate this approach, written papers, briefs, and directives may not have the same impact as oral orders, consultations, and briefings. Modern word processors provide the ability to produce vast amounts of writing, but effective commanders avoid this tyranny. Just because the capability exists does not mean it should be used this way; quality rather than quantity best serves communications in command.

3-78. *Implicit communication* involves achieving mutual understanding and cooperation with a minimal amount of information transmitted. People communicate implicitly if they have formed a familiarity of shared experiences and a common outlook. Implicit communication is a function of an individual's personal, military, cultural, and national expectations. It consists of

personal and organizational styles, habits, experiences, beliefs, and values. Implicit communication takes place when members of a group internalize and share explicitly stated standards, norms, or values. It also takes place through individuals adopting the command's styles, habits, experiences, and beliefs as their own (becoming socialized).

3-79. Through implicit communication, a key phrase or slight gesture can sometimes communicate more than a detailed order. Since such implicit communication reduces the time spent drafting and relaying messages, it reduces the problems of delay typically associated with information flow. Implicit communication helps maximize information content while minimizing data flow. It makes organizations less vulnerable to communication disruptions.

3-80. While conciseness is a virtue, so is a certain amount of redundancy. Used within reason, communications redundancy can improve clarity of meaning and reduce disruptions. Effective communications consequently exhibit a balance between conciseness and redundancy. The ability to communicate implicitly reduces the need for redundancy.

3-81. Since each person who handles information changes it, important information should pass directly between principal users. Doing this eliminates intermediaries, such as equipment operators. Humans communicate both by what they say and do, and how they say and do it; therefore, commanders and staffs should communicate face-to-face whenever possible. This does not mean they do not keep records of communications. Permanent records are important as a means of affirming understanding for later study and critique. They also assure understanding over time, whereas memory may distort or even forget elements of the information required or passed.

Channels

3-82. Information normally moves throughout a force along specific transmission paths, or channels. Structure, in the form of command relationships, establishes these channels. Channels help streamline information dissemination by ensuring the right information passes promptly to the right people. Channels disseminate both COP-related information and execution information. Commanders and staffs communicate through three channels—command, staff, and technical:

- *Command channels* are direct chain-of-command transmission paths. Commanders and authorized staff officers use them for command-related activities.
- *Staff channels* are staff-to-staff transmission paths between headquarters. They are used for control-related activities. They transmit planning information, controlling instructions, and other information to support C2. The intelligence and admin-log nets are examples of staff channels.
- *Technical channels* are the transmission paths between two technically similar units or offices within a command that perform a technical function requiring special expertise. Technical channels are typically used to control performance of technical functions. They are not used for conducting operations or supporting another unit's mission. For

example, the staff can pass a military deception plan up and down the technical channel before it is approved.

3-83. Crosstalk between subordinate commanders can transfer information and lead to decisionmaking without the higher commander becoming involved, except to affirm, either positively or through silence, the decisions or agreements of the subordinates. However, commanders must train their subordinates to crosstalk, so they can quickly and competently exchange information, reach decisions, and open up the command net for others. An example of an organization trained this way was VII Corps in 1991.

Crosstalk in the Desert—VII Corps in the Gulf War

On the morning of 17 January 1991, the day after the start of U.S. Central Command's major air operation against Iraq, the VII Corps commander, LTG Frederick M. Franks Jr., was with the 1st Infantry Division as it honed tank and Bradley gunnery skills in the desert of Saudi Arabia. While there, he received a spot report from BG John Landry, corps chief of staff, over FM radio: "55 Iraqi tanks have crossed the Kuwaiti Border, heading southwest toward Hafir al-Batin and are engaging Egyptian coalition forces in what may be the beginnings of an Iraqi preemptive strike."

Within seconds, COL Johnnie Hitt, commander of the corps' 11th Aviation Brigade, entered the net indicating that he had monitored the report and alerted two Apache battalions that could respond in 30 minutes if necessary. At the same time, COL Don Holder, commander of the 2nd Armored Cavalry Regiment, the corps unit closest to the reported enemy, called to notify Franks that he had issued orders for 1st Squadron to send a unit forward to recon and make contact with the enemy. Those were the immediate and correct actions taken by commanders as a result of eavesdropping on the command net and having the confidence to act—confidence developed through training, teamwork, and trust among the key players of the VII Corps team.

Feedback

3-84. Feedback is information about the situation, flowing continuously to the commander. Feedback allows commanders to compare the actual situation to the commander's visualization, decide whether or not to adjust operations, and direct actions. Situational understanding is based on interpreting information received. New information that conflicts with the expectations established during planning requires commanders and staffs to validate those expectations or revise them to reflect reality. Feedback comes from many sources: subordinates, higher headquarters, or adjacent, supporting, and supported forces. It can arrive any time: before, during, or after operations. For feedback to be effective, the C2 system must process it into knowledge, identifying any differences between the desired end state and the situation that exists. Feedback contributes to an accurate situational understanding that allows commanders to exploit fleeting opportunities, respond to developing situations, modify concepts, or reallocate resources.

3-85. Feedback should not flow only from lower to higher headquarters as COP-related information; it should also flow from higher to lower headquarters. (See figures 1-1 on page 1-2 and 3-1 on page 3-3). Normally

information from higher to lower headquarters consists of execution information to adjust the subordinates' resources, concepts, or missions. However, it should also include COP-related information. Multidirectional information flow produces a reciprocal influence between higher commanders and subordinate forces that supports exercise of mission command. Fielding more digital INFOSYS will allow dissemination of such information as the commander's intent and situational understanding, feedback, and mission adjustments both horizontally and vertically. This capability will support achieving shared situational understanding among commanders. However, it will require subordinate commanders' communications personnel to manage the information carefully to prevent information overload.

FORMS OF CONTROL

3-86. Control takes two basic forms—procedural and positive. Military operations require both forms to offset the weaknesses of each. They complement each other and enhance operations. Commanders balance the two for each situation. One method of positive control, the directed telescope, is discussed separately because of its importance to commanders directly and personally. (FM 3-52 discusses control of airspace over the AO.)

Procedural Control

3-87. ***Procedural control*** **is a technique of regulating forces that relies on a combination of orders, regulations, policies, doctrine, and tactics, techniques, and procedures.** This form is most effective in static operations or when—

- Making a decision about future events.
- The situation is clear and ordinary.
- Task identification is easy and reliably made.
- How to accomplish the task is easily understood and conforms to prescribed doctrinal procedures.

3-88. Procedural control is less effective in generating correct actions for unusual contingencies. Moreover, if applied too prescriptively it can be inflexible and restrictive, and stifle initiative. Intelligent use of procedural control supports mission command by allowing commanders to initiate and direct the operation with minimum interference with subordinate units. It also allows them to focus on actions at decisive points during operations. Examples of procedural controls include unit standing operating procedures (SOPs), the commander's intent, recurring reports, doctrinal terms, and overlay graphics.

3-89. Procedural control frees commanders from having to make all decisions themselves. It can provide standard ways of accomplishing tasks or functions. Well-thought-out procedural controls also standardize routine matters, allowing better integration and synchronization of forces. With routine matters covered by procedural controls, commanders can focus their energies on matters that require creative thought.

3-90. **Doctrine and TTP.** Doctrine and its associated TTP are procedural controls that provide, in terms of existing capabilities, a common approach to conducting operations. By their nature, they govern process rather than

product or outcome. Doctrine is the most flexible; it deals with the fundamental principles that guide military actions. Doctrine includes a common language that enables all other methods of procedural and positive control.

3-91. *Tactics* is the employment of units in combat. It includes the ordered arrangement and maneuver of units in relation to each other, the terrain, and the enemy to translate potential combat power into victorious battles and engagements (FM 3-0). *Techniques* are the general and detailed methods used by troops and commanders to perform assigned missions and functions, specifically, the methods of using equipment and personnel (FM 3-90). Battle drills and crew drills are techniques. *Procedures* are standard and detailed courses of action that describe how to perform tasks (FM 3-90). Collectively, known as TTP, tactics, techniques, and procedures are doctrine-based and structure the way soldiers solve problems and implement decisions. They stem from time-tested theories and principles but are adaptable in application. TTP control more directly than doctrine, but when the two conflict, doctrine takes precedence.

3-92. **Control Measures.** Control measures, such as graphics on an operation overlay, help commanders establish procedural control. (See FM 1-02.) C*ontrol measures* are directives given graphically or orally by a commander to subordinate commands to assign responsibilities, coordinate fires and maneuver, and control combat operations. Each control measure can be portrayed graphically. In general, all control measures should be easily identifiable on the ground (FM 5-0). The type and extent of control measures are situation-dependent, although control measures have very specific, standing meanings. Commanders tailor their use of control measures to conform to the higher commander's intent. They also consider the mission, terrain, and amount of authority delegated to subordinates. Effectively employing control measures requires commanders and staffs to understand the purpose and ramifications of using each one and the limitations each imposes on subordinates' freedom of action and initiative.

3-93. Commanders use the minimum number of control measures needed to control their forces. Control measures limit subordinates' freedom of action, so commanders normally avoid control measures that restrict planning and routine actions. Each measure should have a specific purpose: mass the effects of combat power, synchronize subordinate forces' operations, or minimize exposure to fratricide.

3-94. The most important control measure is the boundary. Boundaries define the AO assigned to a commander. Commanders have full freedom to conduct operations within the boundaries of their AOs unless the order establishing the AO includes constraints. Boundaries themselves also act as constraints: they limit commanders by preventing them from creating uncoordinated effects outside the boundaries. (See FM 3-90.)

Positive Control

3-95. ***Positive control* is a technique of regulating forces that involves commanders and leaders actively assessing, deciding, and directing them.** Commanders use positive control to direct complex or vague tasks. However, overreliance on it tends to overload commanders with information

(or requests for information), increase their fatigue (as they attempt to decide too much or be in too many places), and cause subordinates to rely on commanders to make all important decisions. It can rapidly become detailed command. It is most useful in dynamic operations and in the following situations:

- The occurrences of forecasted events require a decision to implement one of several solutions.
- The situation is dynamic.
- Task identification by individual subordinates is difficult.
- Task accomplishment is complex; implementing actions are multifaceted; and several sets of solutions are possible, each explicitly described and involving multiple means.

3-96. Positive control is consistent with mission command. In exercising positive control, commanders may use their digital INFOSYS to assess without requesting information from subordinates. They can monitor subordinates' exercise of initiative and use command by negation to allow that initiative to proceed, while they reallocate resources to exploit the opportunity the subordinate seized. Examples of positive control include prescribing the date, time, and location for an event or activity; altering the resources, concept, or objectives of an operation; and ordering execution of a branch or sequel.

> *...avoid taking "firm control" or a "tight rein" over the battle...these measures are likely to hold back the offensive during a penetration or pursuit and thus damage their chances of success.*
>
> Marshal of the Soviet Union, Mikhail N. Tukhachevskiy
> Paraphrased from Richard Simpkin, *Deep Battle*

3-97. **Plans and Orders.** A *plan* is a design for a future or anticipated operation (FM 5-0). Plans always include assumptions, but they are not static. Commanders change, refine, and update them, based on continuing estimates and studies. Subordinates may use their commander's plans as a guide to action in the absence of orders about an event within the space or time covered by a plan. There are many types of plans and orders. Each type is used for a specific purpose. (See FM 5-0.)

3-98. An *order* is a communication, written, oral, or by signal, which conveys instructions from a superior to a subordinate (JP 1-02). An order communicates execution information that directs action. The source for any directive is the commander's decision—the initial planning product. An order is one way for commanders to convey their intentions to subordinates.

3-99. Orders should be timely, and as clear, simple, and concise as each situation permits. Mission orders convey the minimum information necessary for execution. They contain a simple, clearly stated commander's intent and concept of operations. An excellent example of one is VII Corps Field Order 18, 23 March 1944. It directed a six-division coordinated attack that encircled the Ruhr industrial region in Germany. (See FM 5-0.) This field order was only three typed pages, with an operations overlay, a fire support annex, and an intelligence annex.

3-100. **Liaison.** Liaison facilitates communication of COP-related information and execution information between the sending headquarters and the receiving headquarters. In addition to passing information, liaison personnel can add meaning and context to information they send and receive. Liaison personnel can also expedite passage of RI that answer CCIR and exceptional information. Liaison officers usually report to the chief of staff. (See appendix E.)

3-101. **Staff Visits.** Staff visits are not practiced as widely as they once were. However, in addition to assisting the unit visited, staff visits can give the sending headquarters valuable information about the view of operations at the headquarters visited. GEN George S. Patton Jr. believed these visits were valuable and required his staff officers to visit forward units once a week. Staff visits may or may not be by invitation from the visited headquarters, and they may be announced or unannounced. Staff visits should do no harm in the headquarters visited; they should not interfere with the visited headquarters' conducting operations, and the visitors should not require special treatment or resources from the visited headquarters.

Directed Telescope

3-102. One historical method of positive control is the use of a ***directed telescope*: a dedicated information collector—a trusted and like-minded subordinate—to observe selected events or units and report directly to the commander.** Directed telescopes often skip echelons when collecting and reporting. They report RI in a less-structured format than normal communications but tailor it to the commander's needs. If the commander briefs and trains them before their mission, directed telescopes are more effective. Directed telescopes are not always individuals. In his pursuit across France in August 1944, then-LTG George S. Patton Jr. used his Third Army's armored cavalry group elements as directed telescopes. Often he had information on his army's lead elements before his division commanders did. Unlike liaison officers, directed telescopes skip echelons, do not have standing relationships or assignments to a single headquarters, and report directly to the commander.

3-103. Directed telescopes generally augment regular reporting chains to avoid burdening lower echelons with additional information gathering requirements. They can validate information received through regular channels or obtain important RI more rapidly than through regular channels. It is important that directed telescopes not interfere (or be perceived as interfering) with the normal functioning of the chain of command. The perception of spying or intruding on the province of the subordinate commanders can damage the trust between seniors and subordinates vital to mission command.

3-104. Directed telescopes require their commander's authority for their mission and actions. There is no set rule for their authority, but two factors govern it: First is the experience, training, and personality of the directed telescope. Second is the sending commander's leadership style. Directed telescopes must also have the means to communicate with their commander or headquarters so they can transmit their information expeditiously. Finally, directed telescopes may pass their information to the local commander as a courtesy, but this is not mandatory.

3-105. Using directed telescopes remains a valid technique, even with the advent of modern INFOSYS. First, directed telescopes give commanders an informal, personal method to seek or clarify information they need make decisions. Second, directed telescopes gather intangible information and the context of tangible information that INFOSYS cannot. These improve the commander's situational understanding. Intangible information, such as morale and cohesiveness, is as important as tangible information. And the context of information may be more important to the commander than its substance. Third, the operational environment increasingly involves unified action. (See FM 3-0.) Operations often include ad-hoc organizations consisting of military, nonmilitary, and multinational organizations. These may require C2 TTP to overcome technology differences between the Army forces, multinational partners, and interagency organizations. Using directed telescopes is one such technique.

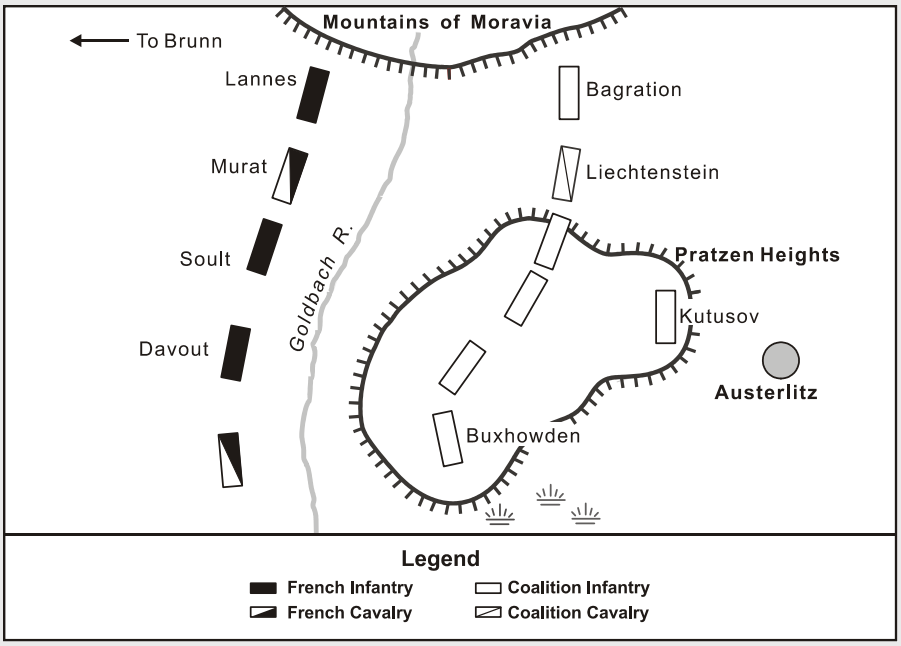
HISTORICAL VIGNETTE—THE BATTLE OF AUSTERLITZ

3-106. In the French campaign of 1805 against the Third Coalition—the British, Austrian, and Russian Empires—Napoleon Bonaparte defeated numerically superior forces and ended the campaign in the battle of Austerlitz. Control was a major factor in this victory. It contributed to Napoleon's situational understanding, allowing him to regulate his forces' execution within his commander's intent. It also allowed his forces to adapt to change with effective and timely actions. The timeliness of Napoleon's decisions and his forces' actions rendered his enemies' reactions progressively more irrelevant as the battle went on. It contributed to a victory that Napoleon always regarded as his finest, and that history considers a masterpiece of the military art.

Control in Command and Control—Austerlitz

Napoleon's Grande Armee of 1805 had spent two years training along the coast of the English Channel to invade England. On 3 September 1805, after the Third Coalition formed, Napoleon moved that army against the first opposing force that presented itself. His desired end state was to defeat it before the rest of the coalition forces could join the campaign. Napoleon marched east with 200,000 men. He defeated an Austrian army at Ulm in Bavaria by 20 October 1805 and pursued an approaching Russian army down the Danube River toward Vienna. On 23 November, he halted his pursuit east of Brunn (present-day Brno, Czech Republic) near the village of Austerlitz, 700 miles from the Channel coast.

The Russian army had joined another Austrian army to form a force that numbered 85,000 to Napoleon's 53,000. Napoleon decided to entice the coalition force to attack him before others could reinforce it. He displayed his weakness in numbers, which he let the coalition commanders see, and withdrew his main body from the Pratzen Heights, key terrain in the area he had selected for battle. The coalition force occupied that terrain on 30 November and prepared for battle. (See map 3-1.) Napoleon had two corps moving to reinforce his main body, increasing its strength to 73,000 before the battle: one joined him on 1 December; the other, with 50 hours to march 80 miles from Vienna, would not arrive until the day of the battle.



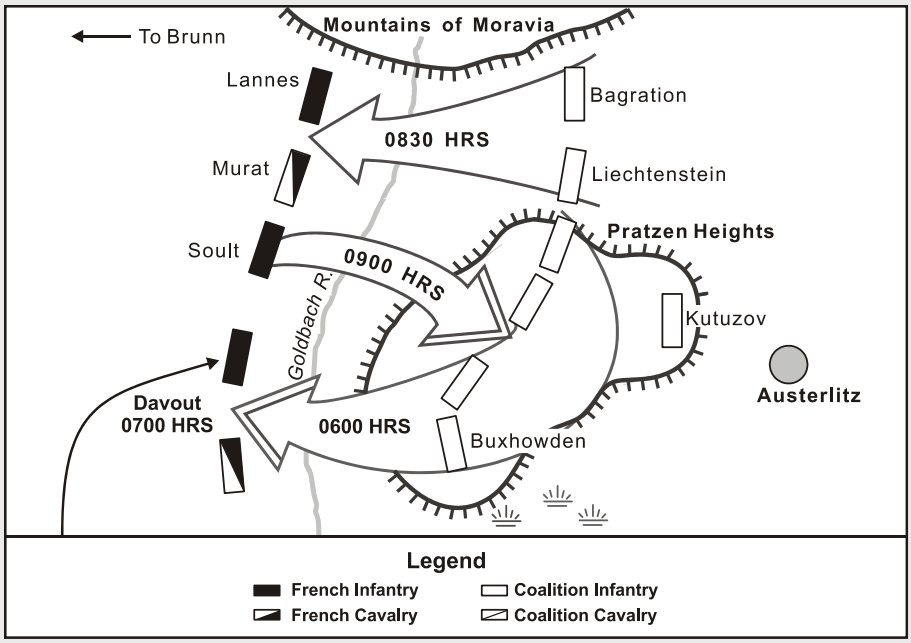
Map 3-1. Austerlitz—Initial Situation

Napoleon planned to show weakness on his right flank, which was held by a single division. This display would encourage the coalition commanders to attack there. He would hold on his left flank and attack the coalition center, where the coalition had taken forces to carry out their attack on his right. With his forces attacking in the center, Napoleon could either roll up the coalition forces attacking his left or, more decisively, envelop those attacking his right. Key to this was the timely (for him), unexpected (for the coalition) arrival of the corps from Vienna (under Marshal Davout). It reinforced his right as the coalition attack began.

The attack against Napoleon's right began at 0600 on 2 December and had intensified by 0700. (See map 3-2, page 3-26.) A coalition attack against his left also threatened but had not yet commenced. Davout's lead forces reinforced the French right by 0700, and the fight there continued for the next two hours. There a French force of 10,600 occupied a coalition force of nearly 50,000. By 0800, Napoleon, from his CP, could directly observe the majority of the coalition force moving against his right. The Pratzen Heights, key terrain that he had given up to entice the coalition commanders to give battle, was now uncovered. By 0830, Napoleon had also received reports about the tenacious, successful fight of his right and that his left was still secure.

Hidden from coalition view but within striking distance of the key terrain were two French divisions, 16,000 men and 16 guns, under command of "the finest maneuverer in Europe," Marshal Soult. Through the initial fight, Soult chafed to commence his attack, but Napoleon restrained him. At 0845, Napoleon turned to Soult and asked, "How long will it take you to move your divisions to the top of Pratzen Heights?" "Less than 20 minutes, sire," Soult answered. "Very well, we'll wait another quarter of an hour," decided Napoleon. By then, Napoleon knew that a coalition force had begun attacking his left. At 0900, Napoleon turned to Soult and directed him to attack: "One sharp blow and the war's over." By 0930,

Soult had taken the Pratzen Heights and was well on the way to securing it. The French left now also attacked the coalition right with coordinated infantry and cavalry actions under Marshals Lannes and Murat. By noon, this French shaping operation drove the coalition right back four miles, making it unable to move against the decisive operation on the Pratzen. Stationing himself in the center, Napoleon remained informed of events on both flanks but did not direct subordinate actions. Napoleon's situational understanding and ability to regulate his forces was enhanced by a semaphore (signal flag) station at his CP and relay stations throughout the AO.



Map 3-2. Austerlitz—Operations

Soult's assault of the Pratzen only began the struggle in the center. The Russian commander, Marshal Kutuzov, recognized the danger and recalled forces from attacking the French right to counter Soult's attack. The battle against this counterattack began about 1000 and continued through 1100. By noon, Napoleon had moved his CP and his reserve up to the Pratzen. The Russian Imperial Guard mounted another counterattack against the center at 1300, but the well-positioned French reserves, in coordination with Soult's forces, defeated them after much hard fighting by 1400.

This left Napoleon with the initiative to envelop either coalition wing. Napoleon had an accurate' situational understanding. He knew the coalition right could neither intervene against him nor support the coalition center (although it was still in good order and had good withdrawal routes). He was also aware that nearly half of the coalition force still engaged the French right, with a lake to their south. Accordingly, he directed his center to wheel south (to its right), taking the coalition left in the rear and destroying it. He left one corps in the center to secure the Pratzen Heights and his rear, while Soult's corps and Napoleon's Imperial Guard executed the envelopment to the south. By 1430, the coalition commander in the south recognized the peril to his force and directed its retreat. About half escaped the encirclement by 1500. Some of the encircled coalition forces

attempted to escape over the frozen lake to the south, but French artillery fired at the ice, breaking it and cutting off that avenue, while drowning over 200 men. By 1500, the coalition right wing began to retreat as well, and by 1630, as dark fell, all firing stopped. The coalition army was destroyed, over one-third of its force lost.

The coalition defeat had strategic significance. Austria sued for peace. The Russian Army withdrew to Russia. Prussia, the other major continental power, remained neutral. Napoleon's remark to Soult proved correct: one sharp blow did end the war. The Third Coalition was broken.

CONCLUSION

3-107. Control permits commanders to counter the effects of enemy actions, fog, and friction on operations. Commanders turn decisions into effective actions through procedural and positive control. IM supports control by providing structure to communications and transforming information in support of decisionmaking. Chapter 4 discusses how commanders combine the science of control with the art of command to train effective organizations in peacetime and exercise battle command during operations.

Chapter 4

The Role of the Commander

Commanders are the key to command and control (C2). They execute C2 by combining the art of command with the science of control. They create a positive command climate to inculcate and foster trust and mutual understanding. They train their subordinates in C2, and use the C2 system to direct operations. Commanders are the focal point for penetrating the fog of war, overcoming its unceasing friction, and instilling in soldiers the will to win against any opponent. The knowledge, experience, and personality of commanders determine how they interact with their commands. They decide what they need to do and the best method to achieve the end state. Then they lead their commands through operations to mission accomplishment. Under mission command, commanders drive the operations process. Commanders use influencing leadership actions, normally issuing broad guidance rather than detailed directions or orders. Commanders limit their use of close personal supervision and intervene in subordinates' actions only in exceptional cases. They establish a command climate for their commands, prepare them for operations, direct them during operations, and continually assess their subordinates. Commanders establish their command's C2 system and operate it based on their personalities. They establish a system to meet the demands they place on it, the abilities and personalities of the soldiers, and the capabilities of the command's equipment.

COMBINING THE ART OF COMMAND AND SCIENCE OF CONTROL

4-1. The most important role commanders play in command and control (C2) is combining the art of command with the science of control. Commanders use the activities of *visualizing* the battlespace, *describing* their commander's

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visualization to subordinates, *directing* actions to achieve results, and *leading* the command to mission accomplishment as their decisionmaking methodology throughout the operations process. (See figure 4-1.) This methodology combines the art of command and the science of control.

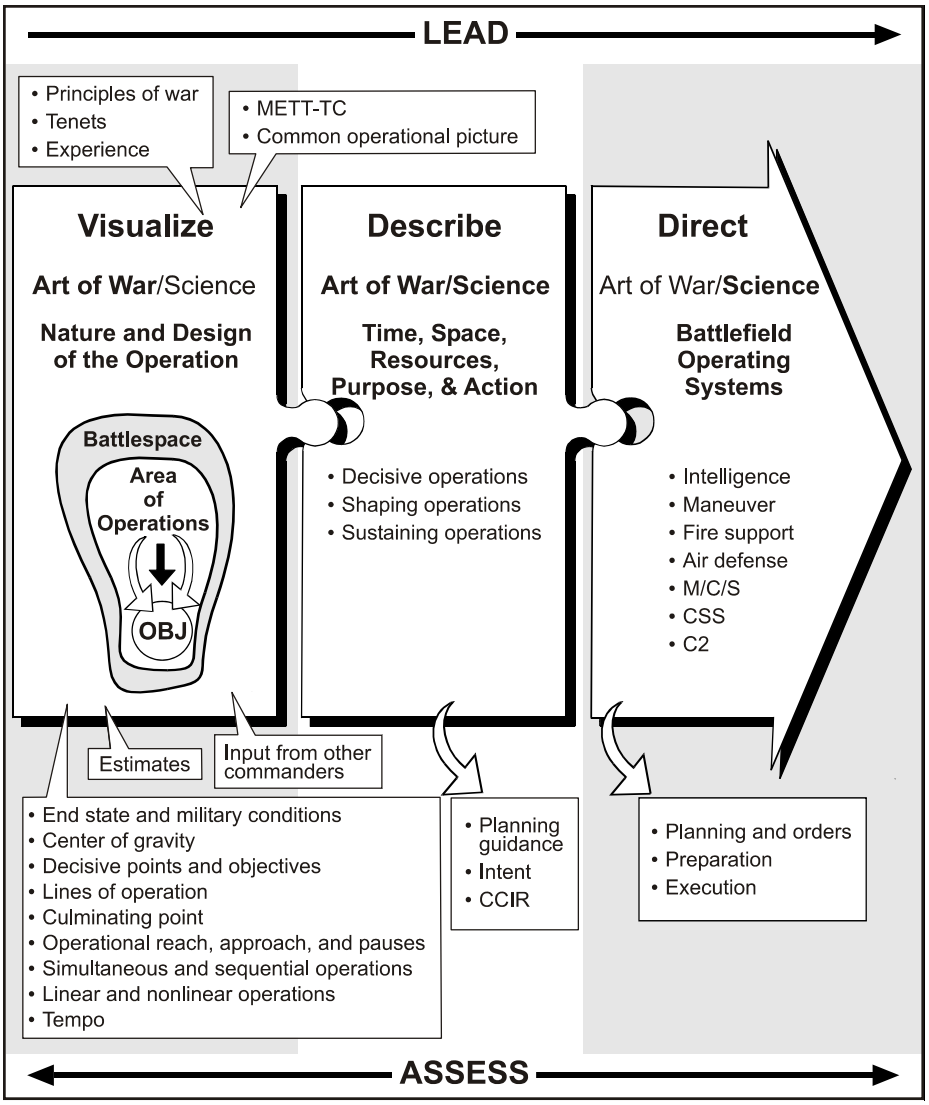


Figure 4-1. Visualize, Describe, Direct, Lead

VISUALIZE

When he looked at a map, Zhukov did not just reproduce the picture of the past engagement; he could foresee the nature of the future encounter and in a matter of minutes "play out", as it were, the various scenarios first for himself and then for the enemy. He could put himself in the enemy's place for a while so that when he became himself again he could evaluate the intentions of the enemy.

A. Chakovskly, "The Blockade,"
Fundamentals of Tactical Command And Control

4-2. Military operations never take place in a vacuum; they always occur within a context. Commander's visualization begins with an already established situational understanding. Visualization is the commander's essential means of assessing throughout the operations process.

Situational Understanding

4-3. Situational understanding supports commander's visualization. Information management, including priorities commanders set by establishing and continuously updating their commander's critical information requirements (CCIR) support commanders' achieving and maintaining situational understanding. Situational understanding and commander's visualization are based on RI (relevant information) provided by functional experts in the C2 system who process data into information. As commanders achieve situational understanding, they use commander's visualization to determine the end state and the ways of getting from the present state to the end state. They consider the dynamics among friendly forces, enemy forces, and the environment.

4-4. Situational understanding does not support conducting operations until a commander receives a mission. Receiving or deriving a mission from an ongoing operation starts the operations process. Assessing helps commanders focus their situational understanding on that mission. Based on their situational understanding, commanders determine the information they need (their information requirements [IRs]) to develop their commander's visualization and to give initial guidance.

4-5. In assessing, commanders integrate information received from human and technological collectors. They use their staffs to comprehend the situation rapidly, make effective decisions, and assess the preparation for and execution of operations. Staffs help commanders anticipate the outcome of current and future operations. They help them develop a detailed concept for future operations. Commanders and staffs may use many information systems (INFOSYS) to process information. INFOSYS can increase the accuracy and timeliness of RI. As staffs process data, they raise its level to knowledge, allowing commanders to apply judgment to form their situational understanding. (See appendix B.)

4-6. Before commanders visualize an operation, they form a clear understanding of the situation, organized in terms of METT-TC (the major subject categories into which RI is grouped for military operations: mission, enemy, terrain and weather, troops and support available, time available, civil considerations). This framing of the battlespace takes place during mission analysis. Further, commanders draw on the principles of war, tenets of Army operations, and their own experiences.

4-7. Ideally, a commander's situational understanding increases as an operation proceeds. Commanders make the most use of the art of command to replace missing information during their initial commander's visualization, early in the operations process. (See figure 4-2.) In most cases this takes the form of assumptions. As time passes and commanders receive more information, they replace assumptions with facts, and the science of control becomes more prominent. However, the science of control never completely displaces

the art of command. Commanders never have complete information; the art of command includes determining when to make decisions based on the available information.

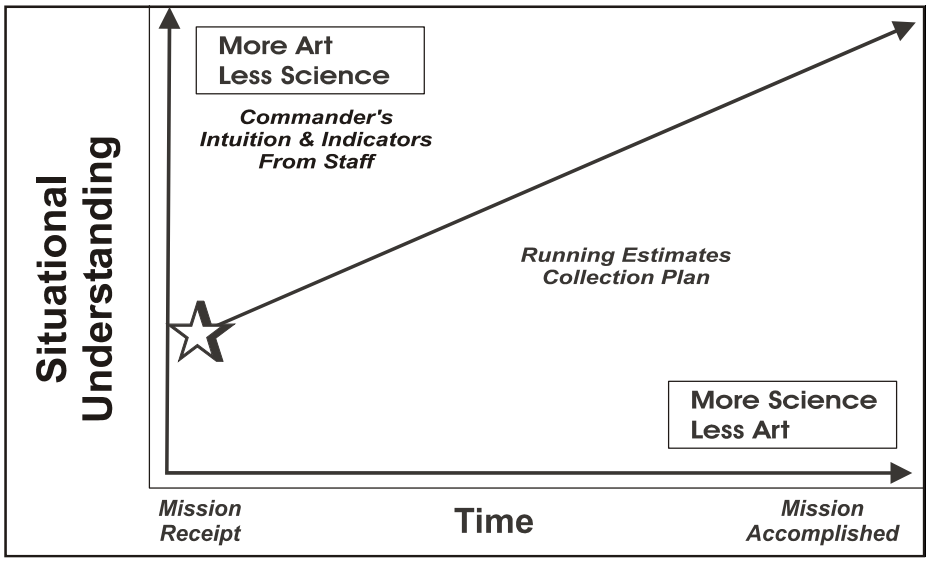


Figure 4-2. Situational Understanding Over Time (Ideal)

4-8. At the start of the military decisionmaking process (MDMP), commanders expect to have gaps in information needed to accomplish the mission. Nevertheless, they make some initial decisions. One decision is which information, including intelligence, they need to fill those gaps and attain a comprehensive situational understanding. They use intuition to fill those gaps until the C2 system provides the information. Figure 4-2 represents an ideal: a commander's attainment of situational understanding is usually more uneven. That reality is discussed later.

4-9. Situational understanding helps commanders overcome and manage uncertainty, the "fog of war." There are four sources of "fog" commanders and staffs must overcome to achieve accurate situational understanding:

- Inadequate or poor-quality information.
- Misinterpretation of information.
- Conflicting information or choices.
- Too much information.

There are four ways to cope with the fog of war:

- Collect and improve the quality of information for the common operational picture.
- Use assumptions.
- Reason analytically.
- Forestall or preempt.

4-10. Two solutions resolve fog created by inadequate or poor-quality information: collect more information and use assumptions. Time and other available resources are factors commanders consider when deciding whether to collect more information or make a decision. Both are generally scarce

during operations. However, using assumptions to replace missing or incomplete information allows planning or execution to continue. Using assumptions requires commanders and staffs to continually attempt to replace assumptions with facts. This effort leads to developing IRs to supply the missing facts. If an assumption is critical to conducting the operation, commanders will probably name the IR associated with it as one of the CCIR. CCIR are tied to decisions commanders expect to make. They change throughout an operation, as commanders make decisions and identify potential future decisions. Commanders continually review assumptions and the CCIR for need and currency.

4-11. Uncertainty caused by misinterpretation of information is difficult to resolve because users do not realize the interpretation is faulty. This situation results in a false sense of certainty. The only solution is to assume uncertainty: Continually question assumptions. Question the interpretation of information in the light of new evidence. Do not dismiss conflicting interpretations without good evidence. One of the great dangers in information interpretation is taking a best guess of what events mean and then uncritically fitting new information into this incorrect "situational understanding." Periodically, commanders and staffs should seriously question any interpretation of events and information to ensure that it has not become a self-fulfilling prophecy.

4-12. Two ways of resolving uncertainty caused by conflicting information or choices are analytic reasoning and obtaining more information. Conflicting information suggests or leads to differing explanations or conclusions about the outcome of the situation. For example, evaluating progress can be a normal source of conflicting information. Conflicting choices also occur when all courses of action (COAs) have similar advantages or disadvantages and one is not clearly better than the others. In this instance, sophisticated analytic reasoning or new information can resolve the conflict enough to reduce or manage uncertainty. Refining the problem or evaluation criteria to reduce conflicting information or choices can also help. (See FM 5-0.)

4-13. Forestalling can help reduce the fog of war from all four sources, but it is usually not the primary technique for dealing with any single source. Two techniques of forestalling exist. First, make incremental decisions or conclusions until other techniques, such as collecting more information, have resolved the fog satisfactorily. Second, making branches and sequels mitigates the effects of assumptions proving invalid, criteria or analysis proving faulty, or the initial decision proving wrong. Building flexibility into the plan this way also facilitates exploiting opportunities. A good plan provides options for addressing as much uncertainty as possible.

4-14. As the Army fields digital INFOSYS, techniques used to overcome uncertainty during execution will change. For example, the analytic power of INFOSYS may allow wider application of analytic decisionmaking techniques and of developing and testing assumptions. Likewise, the power of modern INFOSYS may reduce the uncertainty involved in interpreting information and resolving conflicting information.

4-15. Staffs translate CCIR into execution information by tasking assets to collect the information required to answer them. When data is collected and

reported, it enters the C2 system. INFOSYS in the C2 system help process data into information, display it as the operational picture, and store it for future use. CPs with access to INFOSYS share this data supporting an operational picture as the common operational picture (COP) (information-pull), or INFOSYS may disseminate the information to them (information-push). Analyzing and evaluating information converts it into knowledge. Commanders apply judgment to knowledge based on the COP to raise it to situational understanding—identifying opportunities, threats, and gaps in information. (See appendix B.) INFOSYS can provide assistance in these steps, although they do not currently apply judgment. (See chapter 5.)

4-16. When commanders' situational understanding is better than their enemy's, they have a significant but temporary advantage. They can maintain the advantage by acting faster than their enemies. The *observe-orient-decide-act* (OODA) cycle describes how to maintain this advantage. (See appendix A.) Collecting data constitutes the *observe* activity of the cycle. Raising the meaning of information from data to understanding constitutes the *orient* activity. Using situational understanding and a mission to plan constitutes the *decide* activity. Creating and disseminating execution information constitute the *act* activity. Actions create new observations, and the cycle repeats. Figure 4-3 displays the cognitive hierarchy from appendix B to show how meaning is added to data.

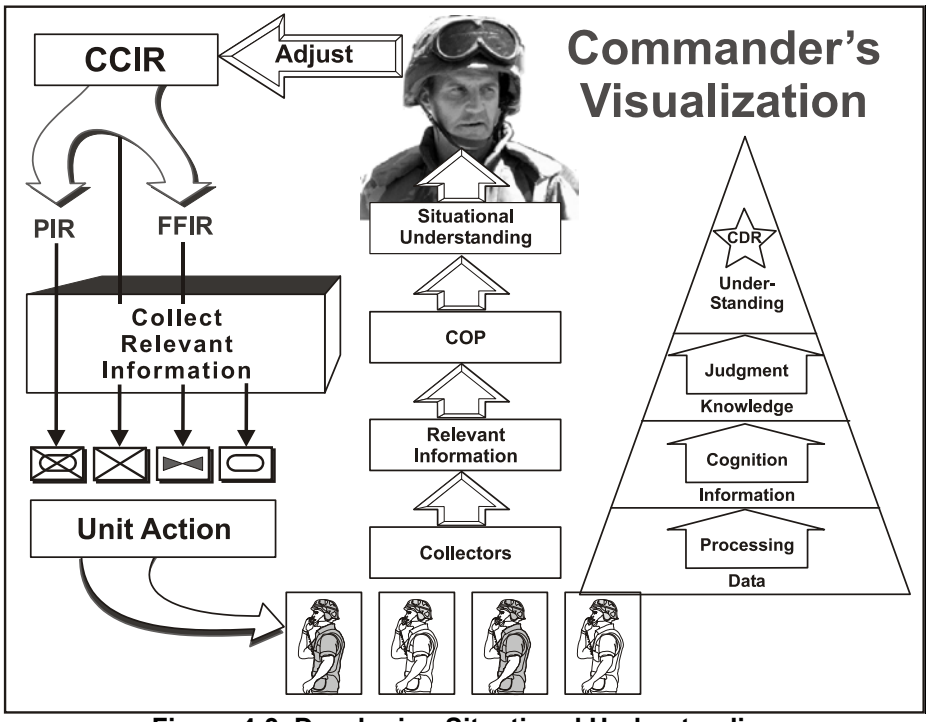


Figure 4-3. Developing Situational Understanding

Commander's Visualization

4-17. Commander's visualization is the core mental process that commanders use in decisionmaking. (See figure 4-4 on page 4-6.) They use it to determine

how to get forces from their current state or position to the end state that represents mission accomplishment. Military operations are dynamic; therefore commander's visualization is continuous. During execution, commander's visualization helps commanders determine when, where, and if to make a decision. It can also help commanders see where and how they can best lead and motivate soldiers, and see the battlefield, their own forces, the enemy, and the end state.

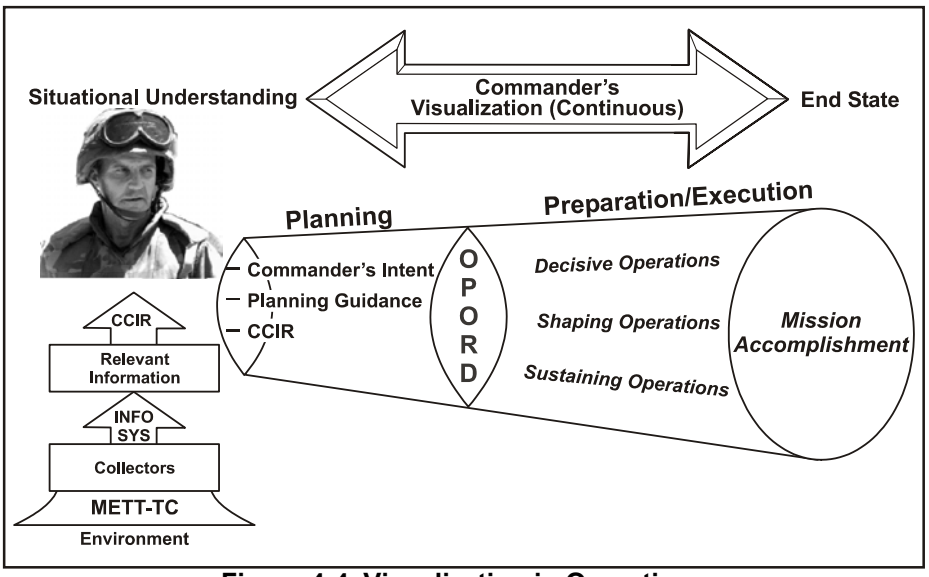


Figure 4-4. Visualization in Operations

4-18. Commander's visualization begins with a commander's situational understanding and follows with a construct of how to get from where the command is to where the commander wants it to go—the commander's intent. It begins in planning and continues throughout the operations process until the force accomplishes its mission. Commander's visualization is difficult and complex. Staffs process and analyze information obtained by human and technological means to provide commanders only the information needed to make decisions. Commanders then blend this information with their knowledge, experience, and intuitive feel to visualize the operation and describe this visualization through its products: the commander's intent, CCIR, and planning guidance. Commanders can use war-gaming or analysis to obtain a feel for the relationships between enemy and friendly forces with respect to the terrain and mission. They may also use technology-based simulations to view their force as the enemy sees it.

4-19. After receiving a mission, commanders develop their initial commander's visualization. They continually confirm or modify it throughout the operation. They use RI (categorized by the factors of METT-TC), basic tactical concepts, staff running estimates, and their experience and judgment to form this visualization. They determine the desired end state. They then use their commander's visualization to compare the analyzed COAs and decide which COA to approve.

4-20. While various INFOSYS can provide support in rapidly assessing trends and suggesting previously unexplored COAs, commanders use these tools carefully. They do not unquestioningly accept their products. When using INFOSYS, commanders apply judgment and experience before making a decision and describing it to subordinates.

4-21. Time is equal for everyone (friendly, enemy, and neutral) in the area of operations (AO)—they can exploit or waste it. Commanders retain the initiative with respect to time through both the tempo and timing of activities. *Tempo* is the rate of military action (FM 3-0). Commanders establish a tempo that allows them to retain the initiative. Tempo may be fast or slow, depending on the effects the commander wants to achieve. Commanders time activities by arranging them simultaneously or sequentially.

4-22. Simultaneous operations are preferred when the necessary combat power is available. Simultaneity of activities in space and time overwhelms enemy commanders with a wide range of immediate decision requirements. Simultaneity in space presents enemy forces with devastating consequences throughout the depth of the AO. Simultaneity in purpose synchronizes the linkage between activities in the operational framework, ensuring that friendly forces direct all operations toward the desired end state.

DESCRIBE

4-23. During the MDMP, commanders begin to describe their commander's visualization through the commander's intent, planning guidance, and CCIR. (See figure 4-5.) These initial products all serve to guide and focus the C2 system as it supports their decisionmaking and communicates their decision for execution.

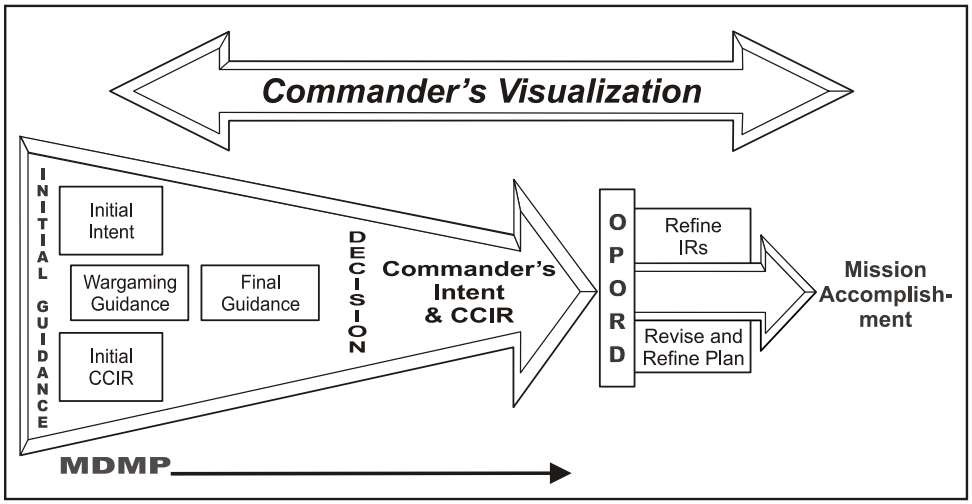


Figure 4-5. Visualization and Describing

4-24. Commanders describe an operation in terms suited to their experience and the nature of the mission. Commanders visualize time and space within the operational framework: the battlespace, AO, and battlefield organization. (See FM 3-0.) Using the operational framework, commanders describe how they intend to conduct operations to achieve the end state. A major aspect of

this description is the mission statement. Commanders construct mission statements using the vocabulary for task and purpose contained in FM 3-90.

4-25. Rehearsals help commanders and staffs prepare for an operation. They are an excellent opportunity for commanders to describe their commander's visualization better and in a more mature form. (See appendix F.) Commanders use rehearsals to accomplish the following:

- Further describe the commander's intent and concept of operations.
- Identify and discuss options at decision points.
- Synchronize activities within the force and among subordinate forces.
- Add to the commander's visualization.

Commander's Intent

4-26. The commander's intent focuses effort throughout the operations process. It is the statement describing the commander's visualization—not the product of any process. During planning, the commander's intent drives the MDMP. The staff uses it to develop COAs that conform to how the commander wants to achieve the end state. During execution, the commander's intent enables subordinates' initiative by setting limits beyond those established in the plan or order while retaining unity of effort. Subordinates use these expanded limits for solutions when deciding how to act when facing unforeseen opportunities and threats, and in situations where the concept of operations no longer applies.

4-27. The commander's intent links the mission and concept of operations. It describes the end state and key tasks that, along with the mission, are the basis for subordinates' initiative. Commanders may also use the commander's intent to explain a broader purpose beyond that of the mission statement. The mission and the commander's intent must be understood two echelons down.

4-28. Commanders begin constructing the commander's intent with the end state and the current state of friendly forces relative to the enemy and the environment from the commander's visualization. Based on their situational understanding, commanders visualize the dynamic interaction that will occur among those elements as friendly forces move from the current state to the end state. From the visualization of these dynamics, commanders determine the key tasks necessary to achieve the end state.

4-29. *Key tasks* are those tasks the force as a whole must perform, or conditions the force must meet, to achieve the end state and stated purpose of the operation. Key tasks are not tied to a specific COA; rather, they identify what the force must do to achieve the end state. Acceptable COAs accomplish all key tasks. In changed circumstances—when significant opportunities present themselves or the concept of operations no longer fits the situation—subordinates use key tasks to keep their efforts focused on achieving the commander's intent. Examples of key tasks include terrain that must be controlled, the operation's tempo and duration, and the operation's effect on the enemy. Key tasks are not specified tasks for any subordinate unit; however, they may be sources of implied tasks.

4-30. The commander's intent does not include a method for the force to get from its current state to the end state. The "method" is the concept of operations. Nor does the commander's intent contain "acceptable risk." Risk is stated in the commander's guidance and is addressed in all COAs. If purpose is addressed in the commander's intent, it is not the "why" (purpose) of the mission statement. Rather, it is a broader purpose that looks beyond the why of the immediate operation to the broader operational context of the mission.

4-31. Commanders personally prepare their commander's intent. They make their independent, and sometimes intuitive, assessment of how they intend to win. When possible they deliver it, along with the order, personally. Face-to-face delivery ensures mutual understanding of what the commander wants by allowing immediate clarification of specific points. The commander's intent becomes the basis on which staffs and subordinates develop plans and orders that transform thought to action.

Planning Guidance

4-32. Commanders develop planning guidance to the staff from the commander's visualization. Planning guidance may be as broad or detailed as circumstances require. However, it must convey to the staff the essence of the commander's visualization. Commanders use their experience and judgment to add depth and clarity to the planning guidance. They ensure the staff understands the broad outline of the commander's visualization, while still permitting the necessary latitude for the staff to explore different options. Commanders may, for example, identify decisive points and describe how they envision the concentration of combat power against each.

4-33. Planning guidance focuses on COA development, analysis, and comparison, with particular attention to the key tasks. It states in broad terms when, where, and how the commander intends to mass combat power in the decisive operation to accomplish the mission within the higher commander's intent. Planning guidance contains general combat, combat support, and combat service support priorities. It also includes how the commander visualizes shaping and sustaining operations contributing to the concept of operations. The amount of detail in the planning guidance depends on the time available, the staff's proficiency, and the latitude the higher commander allows. Broad and general guidance gives the staff maximum latitude; it lets proficient staffs develop flexible and effective options. More constrained conditions require planning guidance to be more specific and directive. The more detailed the guidance, the more quickly the staff can complete the plan. However, this approach risks overlooking or insufficiently examining things that might affect mission execution. (See FM 5-0 for information to consider including in planning guidance.)

4-34. When commanders identify one or more decisive points, or an operation they consider decisive, they tell the staff. Decisive points exist where an enemy weakness allows maximum combat power to be applied. A decisive point is not an end state; it is a time, event, or location where the force can achieve decisive results leading to mission accomplishment. Commanders can describe it verbally, with a sketch, or on a map. The description shows how the commander visualizes the array of forces at the decisive point, the expected effects on the enemy, and how these effects lead to mission accomplishment.

Commander's Critical Information Requirements

4-35. Commanders use CCIR to focus information collection on RI they need to support the commander's visualization and make critical decisions. CCIR change as the decisions commanders must make change. The initial CCIR address information commanders need to make decisions during planning. These IRs often concern information commanders need to select a COA. During preparation and execution, the CCIR address information commanders require to make decisions anticipated in the plan. These decisions may or may not be associated with decision points. CCIR may also concern information commanders require to decide whether to execute a branch or sequel. Commanders limit the number of CCIR in effect at one time. This practice sets priorities staffs use to allocate resources manage information. CCIR address only near-term decisions, not every anticipated decision. As commanders make decisions, their CCIR change to support other anticipated decisions. CCIR spare the commander from receiving irrelevant information. They also protect subordinate headquarters from receiving excessive requests for information (See appendix B).

4-36. The CCIR set IM and resource allocation priorities for staffs. They set IM priorities by establishing the information most important to the commander. This includes establishing which friendly force information the commander needs to know—the friendly force information requirements (FFIR). CCIR also establish priorities for allocating intelligence, surveillance, and reconnaissance (ISR) resources.

DIRECT

> *...one of the most difficult things we have to do in war <u>is to recognize the moment for making a decision</u> [emphasis in original]....The information comes in degrees. Shall we make a decision now or shall we wait a little longer? It is usually more difficult to determine the moment for making a decision than it is to formulate the decision itself.*
>
> Adolf von Schell, *Battle Leadership*

4-37. Commanders direct throughout the operations process. Their directions take different forms during planning, preparation, and execution. Commanders make decisions and direct actions based on their situational understanding. They keep their situational understanding current by continuously assessing the situation. Commanders state the information they need to make assessments by establishing the CCIR. They receive RI upon which to assess the situation (answers to the CCIR) through their C2 systems. (See figure 4-3 on page 4-5.)

Planning

4-38. Commanders direct during planning by guiding staffs during the MDMP, preparing mission orders, and establishing control measures.

4-39. **MDMP.** During the MDMP, commanders direct when they select a COA and communicate that decision to subordinates in a plan or order. They or their staffs analyze each possible COA for suitability, feasibility, and acceptability to select COAs for further analysis. After COA analysis and

COA comparison using criteria of success derived during the war game, commanders select or approve the COA. Commanders also direct when they issue and revise planning guidance.

4-40. **Mission Orders.** Under mission command, commanders direct with mission orders. Effective mission orders enable subordinates to understand the situation, their commander's mission and intent, and their own mission. Subordinate commanders decide how to accomplish their own mission. The commander's intent and concept of operations set guidelines that provide unity of effort while allowing subordinate commanders to exercise initiative in planning, preparing, and executing their operations.

4-41. Mission orders stress not only the tasks required of subordinates but also understanding their context and purpose. While clear direction is essential to accomplishing the mission, commanders strike a balance between necessary but minimum direction and overly detailed direction. Subordinates who act first (within the commander's intent) and report later often achieve far more than those who delay action to wait for the commander's confirmation.

4-42. **Control Measures.** Control measures direct by establishing specific responsibilities and limits. Their purpose is to facilitate coordination and prevent units from impeding one another. They may be permissive or restrictive. Permissive control measures are preferred in mission command. Commanders impose the minimum control measures needed for essential coordination and deconfliction among units. They remove restrictive control measures as soon as possible. Control measures may be graphic, written, or procedural. (See FM 3-90 for control measures associated with each type of operation. See FM 1-02 for a list of doctrinal control measures and rules for constructing them.)

4-43. Well-conceived control measures facilitate current and future operations. As operations evolve, commanders adjust them as necessary to maintain synchronization and freedom of action.

Preparation

4-44. During preparation, commanders continue to use the *visualize-describe-direct* methodology for decisionmaking. They update and validate their commander's visualization as they receive intelligence based on the results of ISR operations and friendly information from reports. Commanders' situational understanding changes as they receive information: Assumptions may prove true or false. Intelligence may confirm or deny enemy actions and conditions in the environment. The status of friendly forces may change. As their situational understanding changes, commanders validate their commander's visualization, changing it as necessary. Significant new information requires commanders to make one of three assessments:

- The new information validates the plan with no further changes.
- The new information requires adjustment of the plan.
- The new information invalidates the plan.

The earlier the commander identifies the need for modifications, the easier it is to incorporate them into the plan and resynchronize it. Commanders use

their updated commander's visualization to balance the loss of synchronization and coordination caused by a change to the plan against the consequences of executing a plan that no longer fits the situation. They describe their view of the implications of the changes to the plan and direct actions to effect any necessary revisions.

Execution

4-45. Combining the art of command with the science of control through visualizing, describing, and directing is most evident during execution, as is leading. Commanders exercise judgment and initiative continuously. They assess the situation and make decisions, often with incomplete, conflicting, and vague information. Waiting for perfect information is rarely an option. During execution, commanders, supported by their C2 systems, continually evaluate the operation's progress. They act to ensure that subordinate units execute actions appropriate for the actual situation. They adjust the disposition of their forces, the tasks assigned to subordinates, and the priorities for support to achieve the greatest effect at minimum cost. They modify some tasks, even if the operation unfolds as expected. A major part of the art of command is knowing when to change the plan and determining the right changes to assure success. Critical to command is determining what criteria indicate needed changes and deciding which changes will obtain the maximum contribution to achieving the higher commander's intent.

4-46. Commanders fight the enemy, not the plan. No plan survives intact once contact is made. The enemy rarely acts exactly as predicted. This is the principal cause of fog, and commanders modify their plans to counter enemy reactions. Tactical flexibility requires mental agility and training: well-trained, flexible forces with sound battle drills; flexible leaders capable of adapting to rapidly changing circumstances; and staffs able to recognize significant changes in the situation, prepare the necessary fragmentary orders (FRAGOs), and resynchronize the operation by coordinating the changes to alter plan. A clear commander's intent does much to allow prompt and effective exercise of subordinates' initiative. This ability greatly enhances the capability of the overall force to react effectively and quickly to changes in the situation.

4-47. Execution is much more than putting a decision—communicated through orders or plans—into action. Throughout execution, commanders continuously assess the progress of the operation based on the COP and answers to the CCIR. This assessment keeps their situational understanding current and allows them to continuously validate or update their commander's visualization. When the situation varies from the commander's visualization, commanders direct adjustments to exploit opportunities and counter unforeseen enemy actions. CCIR—continuously updated as commanders make some decisions and anticipate others—shape commanders' situational understanding by establishing which RI they receive.

4-48. A commander's situational understanding does not improve in the straight-line fashion figure 4-2 (on page 4-3) portrays. Rather, the effects of fog and friction cause it to change unevenly. (See figure 4-6.) Commanders' situational understanding will never be perfect, even at the end of the operation. Normally, as an operation progresses, the C2 system contributes

progressively more information to the commander's situational understanding. The commander's visualization draws more on the science of control and less on the art of command. The art, however, never disappears completely. A commander's situational understanding always contains some gaps. Practicing the art of command includes filling those gaps with assumptions and acting to obtain RI to replace the assumptions.

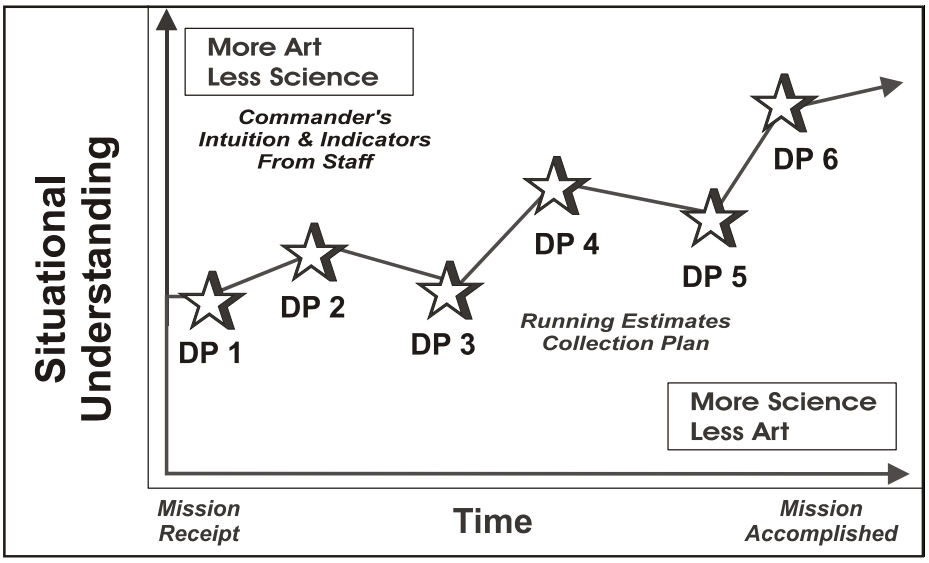


Figure 4-6. Visualization in Execution

4-49. Commanders do not restrict their commander's visualization to the current operation. Even as their situational understanding of the current operation improves, they extend their commander's visualization to include the end state of the follow-on operation. Doing this allows commanders to direct actions that posture the force to facilitate future operations. As they visualize the implications of events and their solutions, commanders describe their conclusions to staff and subordinates through updated CCIR and guidance. They direct actions when necessary, primarily through FRAGOs.

4-50. As commanders assess an operation (see chapter 6), they use their commander's visualization to determine decision points. These can be identified in the plan or result from unanticipated enemy actions. Commanders use their C2 systems to provide realistic alternatives. Doing this allows their commander's visualization to evolve. A commander's visualization based on accurate, current situational understanding allows commanders to rapidly and effectively adjust the plan to adapt to changing situations—whether precipitated by the enemy or by changes in friendly force status. Commanders do not hesitate to modify the plan or scrap it altogether if they think it necessary to accomplish the mission, better achieve the higher commander's intent, or save the force. Adhering to a plan when the situation changes significantly wastes resources and opportunities. It may risk defeat. Being flexible enough to adapt to changing situations is the hallmark of a good tactician. Effective commanders are flexible in their thinking. Their commands are flexible enough to execute mission changes on short notice.

Commanders at all levels create and nurture this capability in themselves and their subordinates.

4-51. The dynamics of operations create the need for adjustments during execution. (See figure 4-7.) As the force proceeds on its mission, the dynamics of operations initiate an *action-reaction-counteraction* series of responses between friendly and enemy commanders. As one gains an advantage, the other acts to counter it. The first commander then adjusts his operation to fit the new situation. Even a successful action or reaction may require an adjustment to exploit it. In all cases, the commander's visualization helps commanders recognize the need to make a decision. Commanders use FRAGOs to direct adjustments.

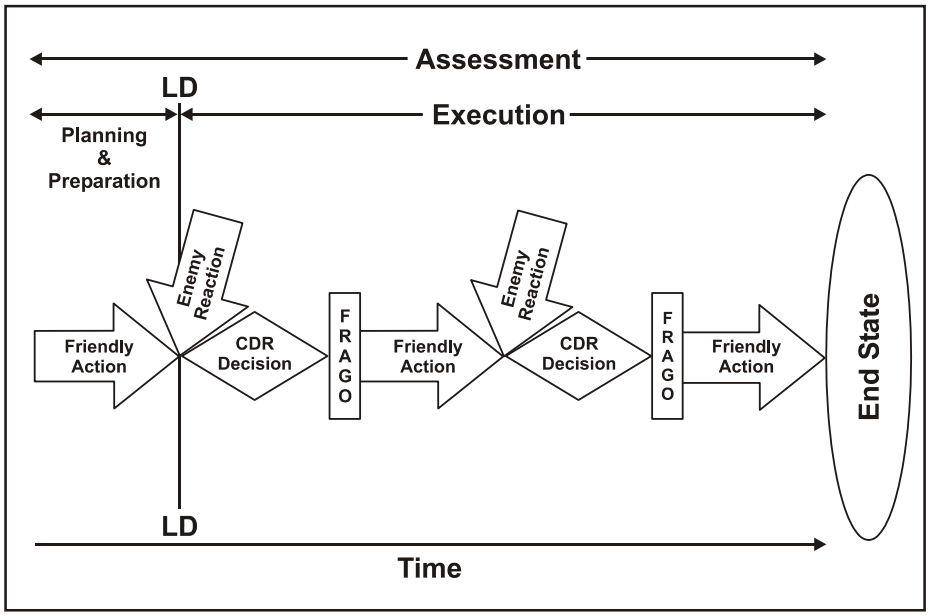


Figure 4-7. Adjustments During Execution

4-52. Adjustments take many forms. (See chapter 6.) One form is to shift resources from one part of the operation to another. Commanders can allocate additional combat support, such as artillery and engineers, or reinforce with additional combat units. However, they avoid reinforcing a failing effort. If an operation is failing, commanders strengthen it only if there is a clear indication that more resources will produce success, or if they have no better options for employing those resources. Commanders reinforce success when it creates opportunities for more success.

4-53. During execution, commanders use their commander's visualization to determine if variances in the situation reported by the C2 system differ significantly from how they expected the operation unfold. If they do, they determine whether the variances can affect achieving the end state. A variance can be either an opportunity or a threat. If it is an opportunity, commanders direct an adjustment to take advantage of it. If it is a threat, they direct an adjustment to counter it. Commanders use the decisionmaking method—analytic or intuitive—that fits the situation. They use the MDMP—whether unrestricted or time-constrained—whenever possible. They choose

the method based on the time available and the complexity of the variance. Once commanders direct an action, they adjust their commander's visualization to account for the new situation and begin assessing the results of their action.

CREATING A POSITIVE COMMAND CLIMATE

Morale is a state of mind. It is that intangible force which will move a whole group of men to give their last ounce to achieve something, without counting the cost to themselves; that makes them feel they are part of something greater than themselves.

Field Marshal Sir William Slim, *Defeat Into* Victory

4-54. During training and operations, commanders—by force of their personality, leadership, command style, and general behavior—influence the morale, sense of direction, and performance of their commands, including staff and subordinate commanders. Commanders are responsible for creating and maintaining a positive command climate. They do this through influencing, operating, and improving leadership actions. These actions rest on the foundation of values, attributes, and skills each commander possesses and develops. (See FM 22-100.)

4-55. Part of the command climate is the commander's style and philosophy of command. Successful commands become accustomed to how their commander commands. Commanders may modify either their style or their C2 system so that the two fit together and fit the command. Practically, how the commander achieves this fit constitutes part of the art of command.

4-56. Commanders gives their command an identity, promote its pride, inspire it with a sense of common purpose and unity of effort, and give it achievable goals to ensure success. Along with discipline, comradeship, and self-respect, morale is fundamental to achieving this goal.

4-57. Successful mission command depends on a command climate that encourages subordinate commanders at all levels to think independently and take the initiative. Subordinates also expect to know the "reason why." Under mission command, commanders explain their intentions to subordinates and foster a sense of shared commitment and involvement in decisionmaking. Commanders create a positive command climate by—

- Accepting subordinates' risk-taking and errors.
- Fostering trust and mutual understanding.
- Communicating with subordinates.
- Building teamwork.

ACCEPT SUBORDINATES' RISK-TAKING AND ERRORS

Judgment comes from experience and experience comes from bad judgment.

General of the Army Omar N. Bradley

4-58. Training and operations entail two kinds of risk: accidental and tactical. Commanders ensure their subordinates know the difference between

the two and take appropriate actions to mitigate each. When possible, commanders use analytic decisionmaking to make risk decisions. However, most tactical risk decisions are intuitive. Commanders inculcate the willingness to accept risk into their commands in two ways: leading by example, and accepting subordinates' risk-taking.

4-59. First, commanders lead by example. They accept risk during training and operations. However, they also use risk management to reduce risk to an acceptable level. (See FM 100-14.) They inform subordinates, either at the time of the decision (if time permits) or in the after-action review (AAR), of the residual risk accepted and why. They ensure that risk management does not become risk aversion, particularly for tactical risk.

4-60. Second, commanders allow subordinates to accept risk, while ensuring they perform risk assessments and make analytic risk decisions when time and circumstances allow. In training, commanders might allow subordinates to execute a too-risky tactical decision as a teaching point; they instruct them afterward on a more appropriate level of tactical risk and how to determine it. This sort of coaching helps commanders gain trust in their subordinates' judgment and initiative, and builds subordinates' trust in their commander. During operations, commanders may have to intervene if the tactical risk is too great for the benefits expected.

4-61. Inculcating risk acceptance goes hand in hand with accepting errors. Commanders realize that subordinates may not accomplish all tasks initially and that errors may occur. However, with such acceptance in the command climate, subordinates learn, gaining the experience required to operate on their own. In addition, they learn to trust their commander to give them authority to act, knowing the commander will back their decisions. Because trust and mutual understanding constitute the foundation of subordinates' initiative, commanders train subordinates to act within the commander's intent in uncertain situations. (See paragraphs 4-64–4-67.) Commanders give subordinates latitude to make mistakes and learn.

4-62. There are two types of errors: errors of commission and errors of omission. *Errors of commission* occur when people attempt to act toward some end, such as accomplishing a mission, and make a mistake. *Errors of omission* occur because people fail to act, often because they do not want to accept the risk associated with that action. Subordinates willing to risk errors of commission stand a greater chance of seizing the initiative or an opportunity. Subordinates committing errors of omission—failing to act—are not as apt to seize the initiative or exploit opportunities. To foster mission command, commanders must accept errors of commission. Failure to do so discourages subordinates from boldly acting in uncertain situations. Failure to act leads to errors of omission, something commanders discourage if they intend to successfully exercise mission command.

4-63. Army training doctrine and its tactics, techniques and procedures (TTP) emphasize the importance of learning from training. Making mistakes is integral to the theory of discovery learning, the basic methodology of the AAR process. Underwriting subordinates' honest mistakes is one key to building trust and mutual understanding. Commander cannot stop at

underwriting mistakes, however. They must act to ensure subordinates learn from mistakes. Methods of doing this include—

- Publicly discussing a mistake, including one made by the commander, to determine a better way to achieve the same purpose.
- Correcting a subordinate in private.
- Correcting the systemic problems that led to the mistake.

However, commanders do not continually underwrite subordinates' mistakes resulting from a critical lack of judgment. Nor do they tolerate repeated errors of omission where subordinates fail to exercise initiative. The art of command lies in discriminating between mistakes to underwrite as teaching points from those that are unacceptable in a military leader. A too-punitive approach to mistakes by subordinates leads to a "zero-defects" climate or mentality, making it difficult to exercise mission command. A too-lenient approach to mistakes results in lowered standards, a lack of confidence on all sides, and less effective forces.

FOSTER TRUST AND MUTUAL UNDERSTANDING

4-64. When relayed in an environment of trust and mutual understanding, the commander's intent frees commanders to move about the battlefield: commanders know their subordinates understand the end state, and subordinates know their commander will support their decisions physically and morally. Additionally, this climate allows commanders to operate knowing subordinates will accurately and promptly report both positive and negative information. Trust and mutual understanding are critical to the tempo of decentralized operations. Commanders foster trust and mutual understanding by word and deed.

4-65. To establish mutual understanding, commanders educate and train themselves, their staffs, and their subordinates in Army doctrine and common TTP. Army doctrine, in particular, provides a unifying framework for understanding. A common approach to C2, based on a professional understanding of doctrine and a common terminology, assists mutual understanding and is a fundamental tool of mission command.

4-66. Commanders can use modern INFOSYS to foster trust and mutual understanding. (See chapter 5.) In particular, video teleconferencing capabilities help in exchanging personal assessments about tactical or leadership situations. Modern INFOSYS enable commanders and subordinates at distant locations to receive and participate in information exchanges. INFOSYS provide wider dissemination and more precise and accurate processing of information. They allow commanders to share the information and displays on which they base their situational understanding, giving context to their discussions and orders. Another capability that supports this goal is the white board, which allows commanders and subordinates to collaborate in rapidly and graphically testing options and sharing ideas.

4-67. During operations, there is seldom time for questions or debate over the meanings of tactical terms or command expressions. The most famous misunderstood order in American military history—issued within an organization notorious for its lack of trust and mutual understanding

between commander and subordinates and among subordinates—illustrates this point:

> *[Benteen.] Come on. Big Village. Be quick. Bring pacs. P.S. Bring pacs.*
>
> W.W. Cooke, Adjutant to LTC George A. Custer, 25 June 1876

This lack of trust and mutual understanding contributed to the defeat of the 7th US Cavalry at the Little Big Horn River in 1876 and massacre of a major portion of it.

COMMUNICATE WITH SUBORDINATES

> *More than 50 percent of battle command in VII Corps was non-electric. That's because we were a team forged together quickly during deployment. We practiced using intent. Commanders talked to each other. We were inside each other's heads.*
>
> LTG Frederick Franks, CG, VII Corps, DESERT STORM

4-68. Written directives, including those transmitted electronically, continue to have an indispensable place in exercising C2. Although most prominent in administration, clearly written orders promote consistency of approach in all areas of C2. During operations, oral communications may be more important than written ones, not only for reasons of time but also of leading. Face-to-face communications are the most effective, because humans use more than words to express themselves. An Israeli commander from the Six-Day War of 1967 said it best:

> *[T]here is no alternative to looking into a subordinate's eyes, listening to his tone of voice.*
>
> GEN Yashayahu Gavish, Israeli Defense Forces, 1967

An example of what can happen when unclear communications combine with a lack of trust and mutual understanding occurred during the Crimean War of 1853–1856. A liaison officer, speaking for his commander, issued a verbal order that resulted in the Light Brigade executing an attack at a time and place the higher commander did not intend.

"Magnificent, But Not War"— Misunderstood Orders and the Charge of the Light Brigade

An alliance of Britain, France, and Turkey fought the Crimean War against Russia to counter Russian attempts to gain access to the Mediterranean Sea. Most of the fighting occurred in the Crimean Peninsula on the Black Sea. The charge of the Light Brigade was an engagement in the Battle of Balaclava on 25 October 1854. The port of Balaclava lay at the end of the British line of communication supporting the siege of Sevastopol. The road from Balaclava to Sevastopol was the only paved, direct route available between the allied base of operations and the campaign's decisive operation.

Five weeks after the Russians were soundly defeated at the Alma River, they went over to the offensive. In late October 1854, a large Russian force was threatening Balaclava. Impatient at the slow passage of the British infantry, Lord

Raglan, the senior allied commander, decided to use cavalry to disrupt the Russians. He sent an order to Lord Lucan, his cavalry commander, shortly after 1015 hours on 25 October 1854: “Cavalry to advance and take advantage of any opportunity to recover the Heights. They will be supported by the infantry which have been ordered to advance on two fronts.” Receiving Raglan’s order, Lucan immediately moved Lord Cardigan’s Light Brigade into the North Valley, keeping the Heavy Brigade close to Redoubt Number 6 in the South Valley. Justifiably, he did not intend to launch any attack until the British infantry arrived, and certainly not against prepared enemy positions. At this stage, there could have been no doubt that Raglan’s intention was to recapture the redoubts.

Much of the Causeway Heights and the ground in the North Valley was obscured from Lucan. Neither could he see, as Raglan and his staff could, that Russian artillerymen (the Odessa Regiment) were preparing to take away the British guns captured from Redoubts Number 1, 2, and 3. As the capture of guns was frequently used to claim victory, Raglan was anxious that the Russians not succeed in this. As Lucan could see no sign of infantry support, however, he felt that no “advantageous opportunity” had arrived for him to recover the Heights. Exasperated by Lucan’s inactivity, Raglan dictated another order, one that would later be the subject of bitter and protracted debate: “Lord Raglan wishes the cavalry to advance rapidly to the front—follow the enemy and try to prevent the enemy from carrying away the guns. Troops horse-artillery may accompany. French cavalry is on your left. Immediate.”

Captain Lewis Nolan, (Raglan’s aide de camp, what today would be a liaison officer) who was critical of the cavalry’s performance, especially of Lucan’s leadership, delivered this order to Lucan. Lucan was somewhat puzzled and concerned by this message: from where he sat he could see neither enemy nor guns. He asked Nolan for clarification, to which Nolan replied, “Lord Raglan’s orders are that the cavalry should attack immediately.” Reputedly Lucan retorted: “Attack, sir! Attack what? What guns, sir?” Nolan’s response, verging on insubordination, was to stretch his arm forward and say “There, my lord, is your enemy; there are your guns.” Lucan was furious at the disrespect, but was too proud to question Nolan further. Nevertheless, had this order been read in conjunction with the previous order, there should not have been any confusion. Lucan chose, however, to attack the battery at the eastern end of the North Valley (the only guns he could see), rather than “to recover” the guns on the Causeway Heights (which he could not). He issued orders to this effect to Cardigan. Cardigan pointed out to him that the Russians had a battery to their front and batteries and riflemen on each flank, but Lucan replied: “We have no choice but to obey.” Lord Lucan and Lord Cardigan had been enemies for nearly 30 years, and they had clashed repeatedly in this campaign over command relations between them. Their animosity prevented discussing an apparently senseless order before its execution. At 1110 the die was cast for one of the bloodiest, most glorious, but ultimately senseless engagements in British military history. In the words of French General Bosquet, an eyewitness, the charge was “magnificent but not war... It is madness.”

The result was disastrous for the Light Brigade and had operational-level consequences as well. After the British defeat, the Russians were able to cut the allied line of communications to Sevastopol. This action forced the British to use secondary roads and probably lengthened the war.

4-69. Effective commanders take positive steps that encourage, rather than impede, communications among and with their subordinates and staff. They make themselves available for communications and open to new information. Otherwise, they will find that their lack of communication has caused the situation mentioned below:

> *General Meade was an officer of great merit, with drawbacks to his usefulness that were beyond his control…. [He] made it unpleasant at times, even in battle, for those around him to approach him even with information.*
>
> US Grant, *Memoirs*

GEN Meade's "drawbacks" contributed to the failure of the Army of the Potomac to exploit its victory over the Army of Northern Virginia at Gettysburg in 1863. As a result, the Civil War lasted two more years.

BUILD TEAMWORK

4-70. The fundamentals of building teams, essential for mission command, are contained in FM 22-100. Under current conditions of operations, commanders often build teamwork among units and staffs task-organized on an ad-hoc basis. Using doctrinal terms and symbols is one method of building teamwork. Building on the cohesion available at lower echelons provides another method. Training and rehearsals also provide opportunities. Commanders build teamwork between officers and NCOs (noncommissioned officers). One method for doing this is including and requiring officer-NCO teams during training, especially on staffs. Commanders can also use senior NCOs to provide training to junior officers and all members of staff sections.

TRAINING SUBORDINATES IN COMMAND AND CONTROL

4-71. Training subordinates in C2 includes command prior to operations, promoting leadership qualities, and assessing subordinates.

COMMAND PRIOR TO OPERATIONS

4-72. Before operations, commanders direct, train, and prepare their commands. They ensure that enough resources for mission-essential training are available. They also concern themselves with the professional development of subordinates to prepare them for positions of increased responsibility. Mission command requires an understanding of operations two levels up; effective training of future commanders reflects this requirement. Training subordinates is a key responsibility of all commanders in peacetime; its neglect or delegation without adequate supervision can undermine the effectiveness and fighting power of Army forces on operations.

Foster an Understanding of War

4-73. Professional development focuses on learning relevant lessons for the future. It includes evoking an interest in the critical study of past campaigns and battles, and the study of human behavior. While there is a scientific side to war, it is an applied science rather than a theoretical one. Often the basis of professional development is historical research, but it is not the only one. As Sir Michael Howard advised in his lecture, "The Use and Abuse of

Military History," commanders need to apply caution in drawing lessons from the past. They cause subordinates to undertake such study in breadth, depth, and context not as an end in itself, but to "improve the officer's competence in his profession."

4-74. Professional development should include studying human behavior. One way effective commanders lead is through comprehensive professional development programs. These include leading subordinates through a variety of professional development activities that challenge them to think, promote an understanding of the realities of war, and widen military perspectives. Such nonhistorical professional development activities include the following:

- Participating in tactical exercises without troops (TEWTs).
- Participating in simulations of tactical problems.
- Developing new technical skills.
- Professional reading.
- Discussing current military doctrine and unsolved problems.

Develop Staff Procedures and Interactions

4-75. Commanders apply doctrinal staff procedures and interactions within their commands. They develop their own TTP for those areas where doctrine does not provide sufficient guidance and adapt doctrinal TTP to their command's situation. These procedures and interactions, which unit standing operating procedures (SOPs) capture, must incorporate the elements of mission command if the commander intends to employ mission command. (See paragraphs 1-67–1-80.) Commanders train their commands to use these SOPs to govern routine actions. Training subordinates in this way develops commands where the commander's simple concept statements lead to swift, coordinated, effective actions. MDMP training can serve to refine staff procedures and interactions as well as develop staffs collectively and individually. It can also serve as a vehicle to develop command principles.

Train Staffs and Subordinates

4-76. Commanders train their subordinates to operate in the absence of detailed orders. With information available to all levels of the command and increasing dispersion on the battlefield, junior leaders may find themselves operating almost autonomously. Commanders train their subordinates to counter unexpected enemy actions and take advantage of unforeseen opportunities.

4-77. Training provides the means to practice, develop, and validate—within constraints—the practical application of Army doctrine. Equally important, it provides the only peacetime basis for the firsthand experience essential to commanders and staffs in exercising C2. Also, commanders can use training events to create experience and trust within their commands, fostering teamwork and confidence. FM 7-0 and FM 25-101 provide doctrine and TTP that commanders can adapt to provide C2 training.

4-78. Commanders are responsible for training their staffs as integrated teams. They train themselves, their staffs, and subordinates in making decisions and developing plans. This training includes—

- Performing the MDMP under both unrestricted and time-constrained conditions.
- Emphasis on seizing fleeting opportunities, reacting to unforeseen enemy actions, and quickly modifying plans when conditions change.
- Producing a product that beats the enemy's decision cycle and is good enough rather than perfect.
- Information management, including how to collect, process, display, store, and disseminate information effectively to support the commander's requirements.

4-79. Efficient execution of plans requires flexible use of procedures. Drills are the practice of standardized actions taken in response to common occurrences. They are a form of procedure and should be used to the maximum extent possible in peacetime. Just as soldiers and crews follow drills for routine parts of their duties, C2 personnel follow drills to perform C2-related tasks. The quicker C2 elements execute these drills, the better forces develop and maintain tempo.

4-80. Finally, commanders aggressively train to overcome the institutional obstacles to mission command that the Army's operational pace and personnel turbulence present. Among these are frequent deployments of organizations comprised of units that have not trained together, personnel turbulence caused by operational commitments, and constrained financial resources. In particular, training must create common experiences that increase trust and allow commands to acquire competence in mutual understanding. Such teams are able to communicate explicitly and implicitly, conduct decentralized operations, and achieve unity of effort in uncertain situations by operating within the commander's intent.

PROMOTE LEADERSHIP QUALITIES

4-81. Commanders promote leadership qualities by developing them in themselves and in their subordinates. But qualities alone do not make successful commanders. Successful commanders develop a balance among those qualities. The fact that an officer has been appointed a commander does not automatically endow him with these qualities. Rather, all officers develop them to prepare for command. In general, the higher the level of command, the wider the scope of qualities required. In addition, the emphasis on and among the qualities changes with the level of command. For example, soldiers at higher levels are more likely to encounter situations requiring moral courage than physical courage. FM 22-100 identifies these qualities as the values, attributes, skills, and actions of the leader.

4-82. All commanders emphasize the warrior ethos. The warrior ethos is perishable, so commanders continually affirm, develop, and sustain it. Developing it demands inculcating self-discipline in the commander, subordinates, and command. It requires tough, realistic training that hardens bodies and souls, and develops the mental toughness needed to endure extremes of weather, physical exertion, and lack of sleep and food. Commanders develop an iron will, determination, and the confidence that they, their subordinates, and soldiers will overcome all odds, meet operational demands, and accomplish all missions.

4-83. One of the commander's major responsibilities in training subordinates is providing an example of the values and attributes of a leader, and demonstrating the leadership skills and actions. (See FM 22-100.) Commanders use their responsibilities to learn and develop these qualities and attributes in themselves and their subordinates.

4-84. Training and education can develop much of the knowledge and many of the skills commanders require. In particular, training devices and simulations, such as computer-assisted war games and exercises, can enhance clarity of thought and judgment, including decisionmaking. Developing leadership qualities and practicing leadership skills is necessary for subordinates to make effective decisions and act decisively during operations. All commanders have some abilities that they can develop; even geniuses improve their ability by developing their skills. MG J.F.C. Fuller observed:

> *Like the great artist the general should possess genius, and if he does not, then no effort should be spared to develop his natural abilities, in place of suppressing them.*

ASSESS SUBORDINATES

> *No man is more valiant than Yessoutai; no one has rarer gifts. But, as the longest marches do not tire him, as he feels neither hunger nor thirst, he believes that his officers and soldiers do not suffer such things. That is why he is not fitted for high command.*
>
> Genghis Khan, assessing a subordinate

4-85. Once appointed, commanders assume the role of coach and mentor to their subordinates. They begin with careful study of the personalities and characteristics of their subordinate commanders. Some need a tighter rein; others work best with little or no guidance. Some tire easily and require encouragement and moral support. Others, perhaps uninspired in peace, flourish in conflict and war. Matching talent to tasks is an important function of command. Commanders judge soldiers so they can appoint the right subordinates to the right position at the right time. Assessing individuals and handling them to the best effect applies to staffs as well as subordinate commanders. Commanders also assess subordinates by giving them experience and opportunity to grow through assignments that stretch them. Recognizing subordinates' strengths and limits is vital to effectively exercising command. As Jomini remarked:

> *He [Napoleon] fell from the height of greatness because he forgot that the mind and strength of men have their limits, and the more enormous the masses that are set in motion, the more subordinate does individual genius become to the inflexible laws of nature, and the less is the control which it exercises over events.*

4-86. One of a commander's most important duties is evaluating subordinates and identifying talent—potential future candidates for senior appointments to command and staff positions. To assess the command qualities of subordinates objectively, commanders place individuals in circumstances where they must make decisions and live with the consequences. In these situations, subordinates must know the commander has enough confidence in them to

permit honest mistakes. Training gives commanders opportunities to assess subordinates on the qualities commanders should possess. In particular, assessing subordinates should confirm whether they exhibit the necessary balance of intelligence, professionalism, and common sense required to carry the added responsibilities that go with promotion. (FM 22-100 discusses counseling and evaluating subordinates.)

BATTLE COMMAND

4-87. *Battle command* is the exercise of command in operations against a hostile, thinking opponent (FM 3-0). Decisionmaking and leadership are two aspects of battle command. As the senior leader of a command, the commander directly applies the leadership element of combat power. Subordinate commanders and small-unit leaders reinforce that element.

4-88. The existence of an operational mission against enemies who actively attempt to accomplish their mission (while commanders attempt to accomplish theirs) distinguishes battle command from other cases of command. In these situations, thinking, competitive, adaptive enemies consciously attempt to disrupt friendly operations. Commanders lead their forces through times of uncertainty and fear to defeat enemies quickly at minimum cost to their own forces. This aspect of operations underscores the importance of intelligence as an integral part of battle command. Integrated ISR operations are indispensable to effective C2. At the same time, commanders maintain the morale and material well-being of their soldiers, and posture their forces for future operations. The complexity of operations rarely allows even a carefully rehearsed plan to unfold smoothly. To succeed, commanders develop and maintain their commander's intent resolutely while a displaying flexible approach.

4-89. Effective battle command demands superior decisions—decisions both more timely and more often effective than those of the enemy. The outcome of engagements, battles, and major operations depends on not only superior information, but also on superior decisionmaking based on that information. This is an important aspect of information as an element of combat power. Decisionmaking often requires commanders to judge the quality of information received through staff analysis and technical sources. It also requires them to focus subordinates and staff on information they consider important. These are tactical, operational, and strategic judgments. Commanders anticipate and understand the activities that follow decisions, knowing that some commitments are irretrievable once put into motion. Guided by doctrine, commanders make decisions using judgment acquired from training, experience, study, imagination, and creative and critical thinking.

4-90. Achieving the strategic and operational end state largely depends on tactical success. Battle command during tactical-level operations demands sound knowledge and understanding of tactical doctrine, the commander's ability to translate the higher commander's intent into effective action, and expertise in applying tactics. (See FM 3-90.) Tactical-level commanders exercise C2 quickly to get inside the enemy's decision cycle. (See appendix A.) They also exercise C2 directly because there are fewer levels of command between them and the effects of their directions. Tactical-level commanders

concern themselves more with success in the current engagement than with long-term planning and execution.

4-91. Commanders are key to battle command. They drive the process to produce and execute effective decisions. They combine the art of command with the science of control and train their subordinate commanders to do the same. However, they do not do this alone; they use their C2 systems, defining and focusing them in the direction they desire.

STABILITY OPERATIONS AND SUPPORT OPERATIONS

4-92. With respect to battle command, the distinction between operational- and tactical-level echelons during stability operations and support operations is not clear-cut. First, there may be multiple adversaries. They may be nonhuman (for example, manmade or natural disasters), and not all potential adversaries will directly oppose the commander on every issue. Second, commanders at lower levels may confront legal, political, and media pressures normally associated with senior command. For example, in multinational operations, military commanders are unlikely to have unity of command, and all elements in the AO may not be under local command, military or otherwise. In these operations, planning may focus less on concentrating the effects of combat power on an enemy than on concentrating less lethal resources against multiple objectives. Some of these are, or may become, enemies. Others may be civil centers of gravity. Finally, commanders accustomed to training and operating at the tactical level must be prepared for operational-level considerations.

4-93. Communications and liaison are at least as important and widely used in stability operations and support operations as in offensive and defensive operations. In addition to their normal functions, commanders use them to achieve unity of effort, trust, and mutual understanding with organizations not subordinate to military authority. Commanders ensure that forcewide communications link the command with other organizations in the AO, such as nongovernmental organizations (NGOs). Many of these organizations can affect military operations, but may have goals and operations significantly different from the commander's. Their INFOSYS may not be compatible with the military's. Using INFOSYS to provide accurate and timely information dissemination during these operations is vital to maintaining the commander's situational understanding. Commanders may have to expand the use of liaison officers and alter normal communications procedures.

LOCATION OF THE COMMANDER

One of the most valuable qualities of a commander is a flair for putting himself in the right place at the right time.

Field Marshal Sir William Slim

4-94. Command occurs at the location of the commander. One of the fundamental dilemmas facing all commanders is where to position themselves on the battlefield. Commanders lead. There is no ideal pattern of leadership or simple prescription for it; different commanders lead in different ways. Leadership is essentially creative. As far as operational conditions allow,

leadership must be up front. Command must be forward. Commanders need to see their soldiers and soldiers must see their commander. Commanding forward allows commanders to assess the state of operations face-to-face with their subordinate commanders and their soldiers. It allows them to gather as much information as possible about actual combat conditions when making decisions in uncertain circumstances. Commanders go where they can best influence operations; however, commanding forward does not mean taking over a subordinate's responsibilities. Leading up front improves morale and allows commanders to mass effects at the critical time and place.

4-95. Commanders consider their position in relation to the forces they command and the mission. Their location can have important consequences, not only for the command but also for executing operations. Modern INFOSYS can help commanders command forward without losing access to the information and analysis of their CPs. Should commanders require a larger facility to exercise C2 temporarily, they can use one of their subordinate CPs and establish communications linking them to their CP.

4-96. At the lowest levels, commanders lead by personal example, acquire much information themselves, decide personally, and communicate face-to-face with those they direct. Typically, they position themselves well forward to directly influence the decisive operation. However, even at these levels, commanders cannot always command their whole unit directly. Therefore, they consider the factors below in deciding where to exercise command presence.

4-97. In larger tactical- and operational-level commands, CPs are normally the focus of information flow and planning. Yet commanders cannot always visualize the battlefield and direct and synchronize operations from there. Commanders sometimes assess the situation up front—face-to-face with subordinate commanders and their soldiers. Commanders design their C2 systems so they can position themselves wherever they can best command without losing the situational understanding that lets them respond to opportunities and changing circumstances.

4-98. When the need to command personally overrides all other factors, commanders position themselves to do just that. Under other circumstances, they consider how their command presence might affect their ability to exercise C2 throughout the AO. Commanders who are too close mentally or emotionally to the action risk becoming so engaged that their ability to visualize the overall operation is obscured. This situation undermines the efforts of both commanders and subordinates. More important, commanders weigh the cost to the command and the operation of their being killed or wounded. They consider several factors: among them—

- Potential loss of momentum or intent.
- Benefits to decisionmaking.
- Opportunities to inspire and increase morale.
- Ability to recognize and seize opportunities.

Finally, commanders realize that they might not always be where the critical action is, but at a place that has become relatively unimportant at the time. This possibility reinforces the necessity of training subordinates to operate

under mission command. Commanders can then rely on subordinates to restore or exploit the situation without their presence.

4-99. At all echelons, the best place for commanders is where they can best influence the operation's progress. They convey importance and focus the efforts of the command by their physical presence. When commanders choose to command forward, they not only gain a feel for the actual conditions of combat, but also show their soldiers that they share their danger. They may also inspire them by their physical presence. At higher echelons, command presence decisions are less straightforward than at lower echelons. The wider range of responsibilities and more complex operational framework influences the location of those commanders. However, they have more resources for moving about the battlefield and more and redundant INFOSYS for exercising C2. These resources allow higher-level commanders to position themselves to make the greatest impact on the overall operation.

4-100. Commanders add the leadership element of combat power to the decisive operation by their personal attention and presence. In addition to exercising leadership, they can observe events more directly. Commanders gain firsthand appreciation for the situation that can rarely be gained any other way. Equally important, they can avoid the delays and distortions that occur as information travels down and up the chain of command. Finally, by their presence, commanders direct emphasis to critical spots and focus efforts on them. The following factors influence the decision on the commander's location. They are common to all levels of command:

- Need to see and experience firsthand.
- Need to motivate and lead.
- Access to information to make timely decisions.
- Ability to judge the condition and morale of forces.
- Communicate to subordinate, adjacent, and higher forces.
- Decisionmaking capability.
- Security, including physical protection.
- Time and location of critical events.

4-101. As the echelon of command increases, commanders command more indirectly through their subordinates. They may want to have personal contact or intervene to lead or to make decisions at the location or with the command executing the decisive operation. Similarly, when commanders lose their feel for the situation, they need to reestablish a clear situational understanding and commander's visualization.

4-102. Commanders also position themselves to gather information. The location of the commander varies with the type of information needed. Commanders who want information about the immediate situation go where the critical action or situation is developing. This may be at or near the point of contact or with a subordinate commander or subordinate CP, at a critical point along a route of march, or in a C2 aircraft above the battlefield. Commanders who want an overview of the situation gathers various reports from separated sources at their CPs. However, senior commanders who want to exchange information should move forward to subordinates' CPs rather than requiring subordinate commanders to travel to the higher headquarters.

Finally, when a commander needs to see the situation from the enemy's standpoint, especially if the enemy has made a bold and unexpected move that shattered the commander's situational understanding, the best location may be one apart from distractions and interruptions.

4-103. Much of battle command takes place forward. Command cannot be effectively exercised solely from the CP. Modern INFOSYS facilitate command forward by allowing commanders to access COP-related information from anywhere in the AO. Command forward allows commanders to see the context of reports and actions, as well as assess the command climate—nuances technology has a hard time conveying. Personal visits give commanders the chance to talk to soldiers in forward units to assess their morale. Command forward also allows commanders to focus efforts without intervening in subordinates' fights, and to provide the will and resolve to overcome obstacles. Finally, command forward allows commanders to demonstrate that they are sharing the risk with soldiers.

4-104. German Field Marshal Erwin Rommel, among others, considered command forward so important that he consciously paid the price of loss of communications with his CP, his forces (other than the ones he was visiting), and his higher headquarters. As a division commander in 1940,

> *[Rommel] believed...in commanding from the front. The opportunities of battle present themselves fleetingly, and can only be seen by the eye and seized by the mind of one at the critical point. But to command a large and complex formation of all arms while simultaneously placing oneself at such a critical point or points requires a well-thought-out technique.*
>
> Sir David Fraser

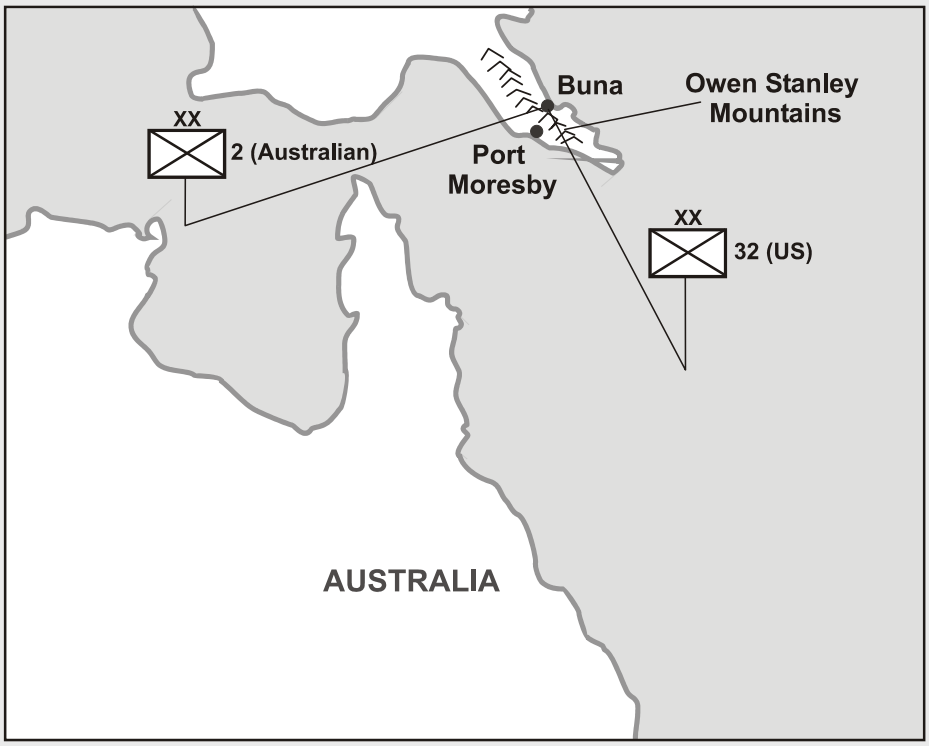
Another example of command forward was set by an American general serving in the Southwest Pacific Theater during World War II. LTG Robert L. Eichelberger's accomplishments at Buna in northeastern New Guinea during December 1942 provide many lessons in the challenges of battle command. His extraordinary leadership qualities allowed him to transform a collection of ineffective units into a potent fighting force.

Command Forward—LTG Eichelberger at Buna

In autumn 1942, US forces were attempting to establish forward positions and air bases from which to drive the Japanese from New Guinea and the adjacent islands. The 32d Infantry Division was to eliminate Japanese positions in Buna on New Guinea. (See map 4-1.) By the end of November, however, the division had made little progress, and GEN Douglas MacArthur sent LTG Robert L. Eichelberger, I Corps commander, there to correct the situation. Eichelberger's instructions were to "remove all officers who won't fight [and]... if necessary, put sergeants in charge of battalions and corporals in charge of companies."

Eichelberger and his staff arrived on 2 December and were disturbed by what they observed during their initial inspection: Soldiers were suffering from a number of tropical diseases. Rations were scant. There was little discipline or military courtesy. Morale was low. Organization was very poor. Only a few

soldiers were at the front line; many were in the rear areas, sent there initially to recover from illness or injury, but now lost to effective control. Units had become mixed, which also complicated control. Fearing the jungle, soldiers were afraid to patrol and, consequently, did not know the location of Japanese positions. Leadership at all levels was ineffective.



Map 4-1. Buna

Eichelberger moved quickly to address these problems. He had supplies flown in and distributed, so that soldiers became better fed, clothed, and medically treated. He stopped offensive operations for two days to reestablish effective C2. Patrols were sent out nightly, and Japanese positions identified. Several commanders, including the division commander, were replaced with officers who could instill a more disciplined and aggressive attitude. Eichelberger was frequently near the front, taking personal risk. Although it increased the danger to him personally, he wore his rank openly to show his soldiers their commander was present. In addition to demonstrating to his men that he was willing to share the same risks, Eichelberger was able to observe battlefield conditions personally, leading to better commander's visualization. By 3 January, after a series of resolute—albeit costly—attacks, Eichelberger had overcome organized Japanese resistance at Buna.

When Eichelberger arrived in Buna, he immediately began doing what is now called commander's visualization. He personally assessed troop conditions at the front to obtain an accurate situational understanding and visualize his desired end state. Eichelberger took immediate actions to fulfill a commander's two responsibilities: accomplishing the mission and taking care of soldiers. On the one hand, he engaged actively in caring for his troops, providing for their

medical, nutritional, clothing, and equipment needs, and adopting measures to protect the security of his force. On the other hand, he communicated his operational concept to his subordinate commanders and mobilized his combat assets, concentrating decisive combat power at the required time and place. He rewarded effective officers with increased command responsibilities and removed ineffective commanders. By commanding forward he not only set a personal example by sharing his men's hardships and dangers, but also allowed him to obtain a first-hand impression of combat conditions. Eichelberger's decisive actions reversed the tide of battle in the Southwest Pacific Theater. From a collection of disintegrating units, he created a fighting force that stopped the Japanese advance, and quite possibly saved Australia from an invasion.

CONCLUSION

4-105. Above all, commanders combine the art of command and the science of control to exercise C2. They focus the science of control through applying the art of command—decisionmaking and leading—to support them and regulate forces and battlefield operating systems. They create a positive command climate that allows them to exercise C2 through mission command. They accustom staff and subordinates to their style and philosophy of command, accept legitimate risk and errors, foster trust and mutual understanding, inculcate positive communications, build teamwork, and establish and use values and examples. Training the staff and subordinates in C2 includes training and preparing the command prior to operations, promoting leadership qualities, developing the warrior ethos, and assessing subordinates. Finally, commanders use battle command to direct operations that successfully accomplish missions. Chapter 5 discusses how commanders structure their C2 systems and use them to exercise battle command.

Chapter 5

The Command and Control System

Commanders cannot exercise command and control (C2) alone except in the simplest and smallest organizations. Even at the lowest levels, commanders need support to exercise C2 effectively. At every level, the commander's C2 system provides that support. The C2 system is not only equipment; it is all the resources used to support C2. The art of establishing the C2 system lies in allocating enough resources to support C2 while simultaneously maintaining the effectiveness of other battlefield operating systems. The C2 system must not waste resources through unnecessary duplication, although some redundancy is necessary for robustness. The C2 system supports the commander's decisionmaking disseminates the commander's decisions to subordinate commanders. This chapter addresses the resources commanders allocate, acquire, or receive to accomplish C2 functions. It includes how commanders organize those resources to exercise C2 and establishes the command post as the doctrinal organization commanders use to exercise C2 during operations.

GENERAL

5-1. The *command and control system* is the arrangement of personnel, information management, procedures, and equipment and facilities essential to the commander to conduct operations. (See figure 5-1, page 5-2.) The command and control (C2) system supports the commander by performing three functions:

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- Creating and maintaining the common operational picture (COP).
- Supporting decisionmaking by improving its speed and accuracy.
- Supporting preparation and communication of execution information.

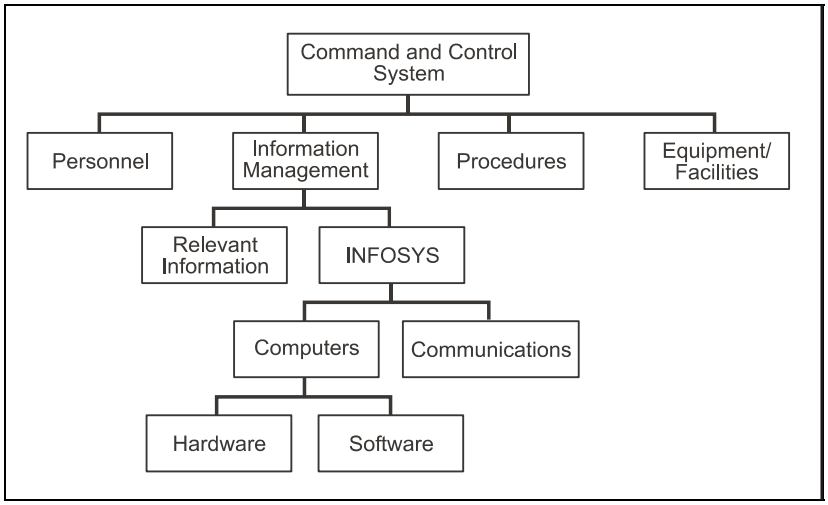

Figure 5-1. Elements of the Command and Control System

5-2. Figure 5-2 shows how the C2 system accomplishes these functions within a command and among higher, lower, and adjacent forces. It also shows the relationships of the information management (IM) activities—collecting, displaying, processing, storing, and disseminating—within the C2 system. The rest of this chapter discusses concerns that affect C2 systems as a whole (location and design considerations) and that affect each component. The IM discussion focuses on information systems (INFOSYS), a major physical component of a modern C2 system. Chapter 3 provides an overview of IM. Chapter 3 and appendix B discuss relevant information (RI).

LOCATION

5-3. Properly locating C2-system elements is important to C2-system effectiveness. Effective communications and security depend on location. Reliable communications—together with administrative support to the commander and staff—are vital to C2-system continuity and effectiveness. Because C2 facilities are high-value targets for enemies, their security is important. Commanders consider the following characteristics when placing the physical C2-system elements:

- **Communications.** Sites must offer good communications to higher, lower, supporting, supported, and adjacent headquarters. They should be protected from enemy offensive information operations (IO) attacks. Access to civil communications and INFOSYS (especially in stability operations and support operations) may be important. At higher echelons, maintaining communications with the host nation, the home station, and other Service and force components are considerations.
- **Security.** C2 facilities must provide security for personnel and equipment. Security is achieved through physical and electronic protection and concealment, and nuclear, biological, and chemical (NBC) defense

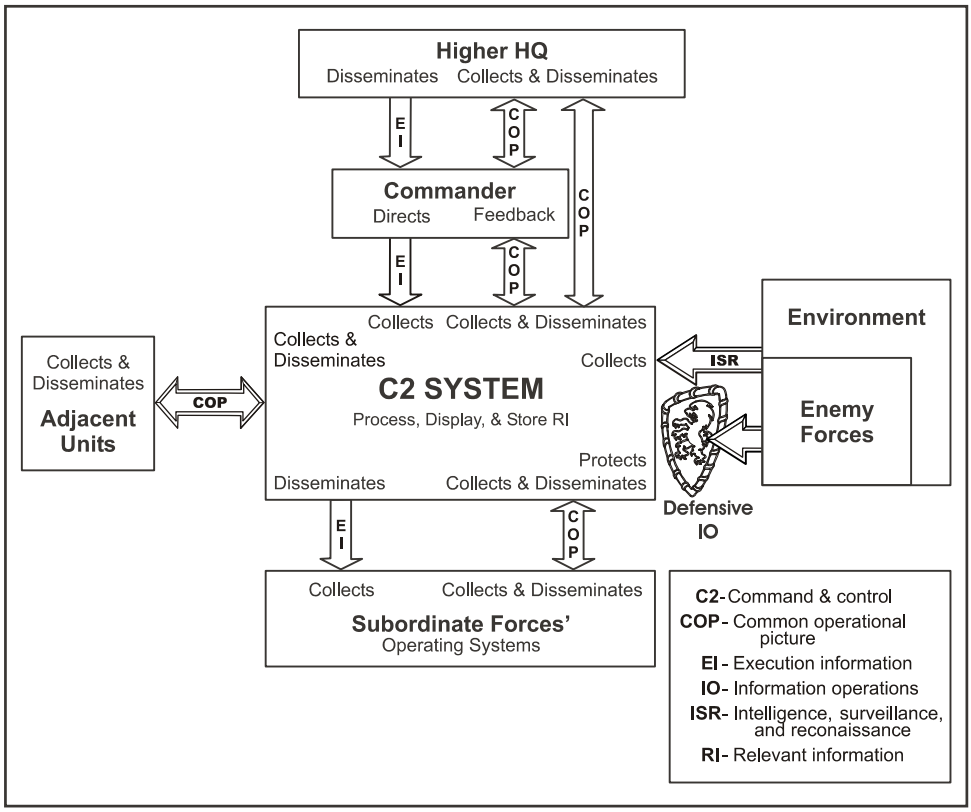

Figure 5-2. Information and the Command and Control System

measures. Dedicated or on-call forces may provide physical security. Commanders balance electronic security considerations against communications requirements.

- **Concealment.** Effective concealment contributes to security. Woods or built-up areas offer the best concealment. Barns, large sheds, or factory complexes all help counter thermal imagery surveillance and provide some basic NBC protection.
- **Accessibility.** Sites should be easily accessible yet not readily detectable by enemy land or aerial reconnaissance. Higher-level headquarters may also require access to ports or fixed-wing airfields.

DESIGN AND ORGANIZATION CONSIDERATIONS

5-4. The details of the C2 system depend on the level and nature of the force and its missions. The commander considers the following when designing and organizing his C2 system:

- **Deployability.** C2 system equipment/facilities must be deployable to overseas theaters. The size and mobility of C2 equipment/facilities affects their deployability. The number of INFOSYS available and their size, weight, and power considerations all affect deployability. C2-system deployability must match that of the force.
- **Continuity of command.** The C2 system must function around the clock in all seasons. Its external communications meet this requirement

primarily by their survivability in the face of ground, air, and other threats.

- **Fusion of command and staff effort.** An effective C2 system integrates and facilitates command and staff efforts. The equipment and internal layout of the facilities, as well as the procedures, should facilitate lateral communication among staff sections and vertical communication between them and the commander.
- **Size.** The commander balances flexibility and survivability when deciding the size of the C2 system. A larger C2 system may provide greater flexibility and survivability through redundancy. This comes at the cost of potentially slower decisionmaking, greater resource investment, and decreased agility, security, deployability, and mobility. A smaller system may limit C2 support, but increase survivability and mobility. Several smaller dispersed facilities may provide equal redundancy and greater survivability than one large facility. The key is to strike the right balance and provide a responsive yet agile organization. Commanders identify necessary elements and eliminate unnecessary ones.
- **Hardness.** Hardness refers to the degree of physical and electronic protection provided to the C2 system, primarily by facilities and equipment. Hardening extends beyond placing personnel and INFOSYS in armored vehicles or protected facilities and providing protection (such as NBC collective protection) to unarmored vehicles and unhardened facilities; it involves a combination of active and passive measures. operations security (OPSEC) measures are key to hardening both the entire C2 system and its individual facilities. (See FM 3-13.) C2-system procedures include standardized OPSEC measures. Dispersed facilities help reduce a force's electromagnetic signature.
- **Modularity.** Modular C2-system design offers flexibility in deploying and employing the C2 system. The commander tailors the C2 system to the mission. Only elements required by the type of operation and situation need deploy. Commanders add elements to accommodate expansion as needed. Larger headquarters occupy smaller facilities. However, when separating C2-system elements, commanders balance the advantages of separation or dispersal against the disadvantages of loss of personal contact and face-to-face planning.
- **Capacity.** A C2 system requires enough IM capacity to manage the RI the force needs to operate effectively. IM includes timely passage of RI to all who need it.
- **Survivability.** A C2 system must be reliable, robust, and resilient. It must be at least as survivable as the force itself. Distributed systems and alternative communication means meet these requirements. The commander organizes and deploys the C2 system so that performance under stress degrades gradually, not catastrophically. The C2 system must cope with communications degradation or failure.
- **Range.** The C2 system requires INFOSYS with enough range to link all headquarters with which the commander communicates, including those outside the force's area of operations (AO). Increasingly, this

means providing a reachback capability to home station. This may require satellite systems.

- **Mobility.** The C2 system must be as mobile as the overall force. Some C2-system elements, especially those that provide range and connectivity to the rest of the force, may need to move more quickly.
- **Control of the electromagnetic spectrum.** A finite part of the electromagnetic spectrum is internationally allocated for military use. During unified actions (see FM 3-0), frequency management is difficult, even in a benign environment. Efficient use of the available and allocated spectrum is critical to coherent communications architecture.
- **Interoperability.** For unified actions, INFOSYS must be compatible and interoperable. Military INFOSYS need to work with civilian INFOSYS, particularly during stability operations and support operations. During these operations, military and civilian INFOSYS might be integrated, for example, with police force INFOSYS.
- **Sustainability.** An effective C2 system integrates and facilitates the close coordination between the commander and combat service support (CSS) planners. Advances in technology enhance achieving CSS situational understanding and provide the links for operational reach and sustainment.

PERSONNEL

5-5. The most important element of the C2 system is people—soldiers who assist commanders and exercise control on their behalf. Personnel dedicated to C2 systems include staffs, deputy commanders, and seconds-in-command. Other C2-system elements exist to serve the personnel and the commander. An effective C2 system accounts for the characteristics and limits of human nature. Simultaneously, it exploits and enhances uniquely human skills.

STAFFS

5-6. Staffs exist to support commanders in making and implementing decisions. Staffs include the most important personnel dedicated to C2 systems. (See appendix C.) They focus on supporting commanders and their subordinate units. Staffs provide RI and analysis, make estimates and recommendations, prepare plans and orders, and monitor execution.

5-7. Commanders give their staffs leadership, direction, and guidance. A staff undertakes all its activities on behalf of the commander. It has no authority by itself; it derives authority from the commander and exercises it only in the commander's name. Commanders use their staffs to exercise C2 when they cannot do so personally.

5-8. The larger a staff, the longer it takes to perform its functions. In the words of GEN William T. Sherman, "A bulky staff implies a division of responsibility, slowness of action and decision, whereas a small staff implies activity and concentration of purpose." Also, larger staffs occupy more space, emit larger electromagnetic signatures, and are less mobile than smaller ones. Consequently, they are more vulnerable to detection and attack. Large staffs with numerous specialists may be more capable of detailed analysis and planning than smaller ones; however, mission command values speed and

agility over precision and certainty. Commanders keep the size of staffs to a minimum to facilitate a high tempo and minimize the space and facilities the headquarters requires.

Functions

5-9. The staff operates the commander's C2 system. All staff organizations and procedures exist to fulfill three functions:

- Support the commander.
- Assist subordinate units.
- Keep subordinate, higher, adjacent, supported, and supporting headquarters informed.

5-10. **Support the Commander.** A staff's most important function is to support and advise the commander throughout the operations process. It does this through IM, which includes each staff section providing control over its field of interest. Commanders structure formal staff processes to provide the two types of information associated with decisionmaking: COP-related information and execution information. All other staff activities are secondary.

5-11. The primary staff products are information and analysis. The COP—and other related information, such as estimates—combined with judgment, leads to situational understanding. Staffs use IM to extract RI from the vast amount of available information and give commanders only what they need to achieve and maintain situational understanding and make decisions. They collect data, including feedback, and process it into RI in the form of the COP and staff running estimates. (Staff running estimates include recommendations based on staff members' expertise in their fields of interest.) These products help commanders identify critical requirements and achieve accurate situational understanding faster than their enemies.

5-12. Staffs also prepare and disseminate execution information. (See paragraph 1-20 and appendix B.) While commanders often personally disseminate some execution information, such as the commander's intent, they rely on their staffs to communicate the majority of it in the form of plans and orders. Staffs must communicate the commander's decisions, and the intent behind them, efficiently and effectively throughout the force to keep it focused on mission accomplishment.

5-13. Finally, each staff section provides control over its field of interest throughout the operations process. While commanders make the key decisions, they are not the only decisionmakers. Trained, trusted staff members, given authority for decisions, and execution based on the commander's intent, free commanders from routine decisions to focus on key aspects of the operation. This practice furthers mission command. Standing operating procedures (SOPs) may establish these responsibilities, or commanders may delegate them for specific situations.

5-14. **Assist Subordinate Units.** While the staff's priority is assisting the commander, it also assists subordinate units. An effective staff enhances subordinate units' ability to train and fight. A proficient staff works in an effective, efficient, and cooperative manner with higher and lower headquarters. It assists subordinate units by providing resources the commander

allocates to them, representing subordinates' concerns to the commander, clarifying orders and directives, and passing RI quickly.

5-15. Effective staffs establish and maintain a high degree of coordination and cooperation with staffs of higher, lower, supporting, supported, and adjacent units. This relationship is based on mutual respect, developed through a conscientious, determined, and helpful approach focused on solving problems. Anything less undermines the confidence and trust required for mission command at all levels. Favorable personal interactions among all members of a staff, and with the staffs of other headquarters, cultivate the desired relationship.

5-16. **Keep Subordinate, Higher, Adjacent, Supported, and Supporting Headquarters Informed.** Staffs pass all RI to other headquarters as soon after determining the information's value to the recipient as possible. The key is relevance, not volume. Masses of data of data are worse than meaningless; they inhibit C2 by distracting staff members from RI. Effective IM identifies the information the commander and each staff section need, and its relative importance. Information should reach recipients based on their need for it. Sending incomplete information sooner is better than sending complete information too late. When forwarding information, senders highlight key information for each recipient and clarify the commander's intent. Senders may pass information directly, include their own analysis, or add context to it. Common, distributed databases can accelerate this function; however, they cannot replace the personal contact that adds context.

5-17. Keeping other headquarters informed contributes to situational understanding at all headquarters. While commanders are responsible for keeping their higher and subordinate commanders informed, staffs supplement their commanders' direct communications by providing clarification through staff and technical channels. They pass routine information required by the other headquarters and answers to the CCIR. Information passed directly from a subordinate staff to a higher commander is limited to information that answers the higher commander's CCIR. All other information goes through staff or technical channels. When authorized, staff members may also inform their counterparts at other headquarters of information being passed between commanders. This helps the higher staff better support its commander.

Staff Relationships

5-18. Staff effectiveness depends in part upon the following relationships:

- Commander and staff.
- Staff integration and teamwork.

5-19. **Commander and Staff.** Commanders are responsible for all their staffs do or fail to do. A commander cannot delegate this responsibility. The final decision, as well as the final responsibility, remains with the commander. When commanders assign a staff member a task, they delegate the authority necessary to accomplish it. Commanders provide guidance, resources, and support. They foster an organizational climate of mutual trust, cooperation, and teamwork.

5-20. Deciding and acting faster than the enemy requires commanders and staffs to focus on anticipating and recognizing battlefield activities. Although commanders set the pace as the principal decisionmakers, their relationship with their staffs must be one of loyalty and respect. It must encourage exercising initiative within the scope of the commander's intent. However, loyalty and respect must not detract from stating hard truths in staff assessments. Before a decision, staff members give honest, independent thoughts and recommendations to their commander so the commander can confirm or restructure the commander's visualization. After an operation begins, staff members provide an accurate COP and separate running estimates (including recommendations) if necessary. Staff members base recommendations on solid analysis and present them to the commander, even if they conflict with the commander's decision. Independent thought and timely actions by staffs are vital to mission command. (See appendix C for staff officer characteristics.)

5-21. Commanders are responsible for training their staffs. While routine staff training may be delegated to the chief of staff (COS), it is the commander who shapes the staff into a cohesive team that works together and knows which information the commander deems important. As an extension of the commander, the staff must know the commander's leadership style, understand the commander's intent, and be able to anticipate the outcome of current operations to develop concepts for follow-on missions.

5-22. **Staff Integration and Teamwork.** Teamwork within a staff and between staffs produces the staff integration essential to synchronized operations. A staff cannot work efficiently without complete cooperation among all branches and sections. A force cannot operate effectively without cooperation among all its headquarters. Commanders, COSs, and executive officers (XOs) all contribute to fostering this climate. They work to achieve it during peacetime and sustain it during operations. However, frequent personnel changes and infrequent opportunities to exercise under operational conditions can undermine an effective command climate. Personnel turbulence, operational pace, and budgetary restrictions can act against achieving staff integration and the teamwork and trust needed for mission command. Overcoming these factors requires attention and solutions by commanders and veteran staff members.

5-23. While all staff sections have clearly defined functional responsibilities (see appendix D), none can operate effectively in isolation. Coordination among them is important. Commanders identify required interaction among staff sections early in the process of organizing the headquarters. They equip and staff each section to work not only with the rest of the headquarters but also with their counterparts in other headquarters.

5-24. Forming ad hoc headquarters, organizations, and units, and integrating additional personnel from multinational partners have characterized many recent operations. Forming a well-integrated staff team able to operate in these situations is critical to mission success. Commanders simulate these situations in training to prepare their staffs for operational conditions. (See paragraphs 4-71–4-86.) A well-integrated staff provides the core into which additional members may be integrated and ad hoc organizations and units formed.

SECONDS IN COMMAND

5-25. At all levels, the second in command is the commander's principal assistant. Seconds in command are deputy commanders, assistant commanders, and XOs. Deputy or assistant commanders are usually assigned as seconds in command for regiments, separate brigades, divisions, and larger organizations. At corps and major-support-command level, there is normally only one deputy or assistant commander. At division level, there are normally two assistant commanders, one for maneuver (ADC-M) or operations (ADC-O), and one for support (ADC-S). At company through brigade level, the XO is the second in command and performs the functions of COS. (See appendix D.)

5-26. The relationship between the deputy or assistant commander and the staff is unique to each command. Staff members do not work for the deputy or assistant commanders unless the commander directs it. Each commander describes the deputy or assistant commander's roles, duties, and relationships with respect to the COS, staff, and subordinate commanders.

5-27. Deputy or assistant commanders normally do not have coordinating or special staffs. When they have specific responsibilities, the headquarters staff assists them as the commander prescribes. Deputy or assistant commanders give orders to the COS (or the staff) within the authority the commander delegates to them. They may go to the COS at any time for staff assistance. If a deputy or assistant commander needs a staff, the commander may form one from headquarters elements or subordinate units, or make a subordinate unit's headquarters available.

5-28. The second in command has important responsibilities in the following circumstances:

- Temporary absence of the commander.
- Succession of command.
- Delegation of authority.
- In joint and multinational forces.

5-29. **Temporary Absence of the Commander.** Seconds in command may assume duties as delegated, either explicitly or by SOP, when the commander is temporarily absent from the command post (CP) or resting. Lack of sleep can impair judgment and creative thinking capabilities. (See FM 6-22.5.) A commander's sleep plan should include delegating authority to the second in command during selected times to give the commander time to sleep. Commanders may also be absent from the command temporarily, either on or off duty. In this case, the second in command may assume command temporarily and make decisions that continue operations in accordance with the commander's intent and policies.

5-30. **Succession of Command.** Commanders may be killed, wounded, medically incapacitated, or, for whatever reason, relieved of command. In these situations, the second in command normally assumes command. At brigade and lower echelons, XOs normally assume command. At higher echelons, deputy or assistant commanders may not be senior to subordinate unit commanders. In this case, the operations order specifies succession of command, and the second in command exercises command until the

designated successor assumes command. However, commanders may designate a second in command who is junior to subordinate commanders as their successor in command. (See AR 600-20 for statutory guidance.)

5-31. Because seconds in command must be able to assume command at any time, they always keep abreast of the situation. Commanders inform their seconds in command of any changes in the commander's visualization or commander's intent. The COS keeps the second in command informed of staff actions. Further, commanders train their seconds in command for command at his level.

5-32. **Delegation of Authority.** Delegating authority to the second in command reduces the burden of commanders' responsibilities and allows them to focus on particular areas or concerns while their seconds in command concentrate on others. Normally, commanders delegate authority to their seconds in command to act in their name for specific fields of interest and responsibility. Doing this decentralizes decisionmaking while allowing the commander to keep overall command.

5-33. **Deputies of Joint and Multinational Forces.** When an Army headquarters serves as the headquarters of a joint or multinational force, appointing a deputy commander from another Service or a multinational partner is often appropriate. These deputy commanders may also exercise command over forces of their Service or nation. They can serve as important advisers to the Army commander. They can further facilitate understanding among participating Service or national forces. In this case, succession of command depends on joint and multinational doctrine, law, or international agreement.

TRAINING

5-34. Training tactically and technically competent leaders and teams is essential to effective C2 systems. The best technology cannot support C2 without trained personnel. Digitization can initially add more training requirements than it eliminates. However, using distance learning can reduce training costs. Training techniques, procedures, and methodologies must evolve and adapt along with doctrine and technology. Commanders ensure they remain efficient, effective, and appropriate in developing and sustaining competent leaders and teams.

INFORMATION MANAGEMENT

5-35. Information management includes RI and INFOSYS. (See figure 5-1, page 5-2.) This section discusses INFOSYS as a part of IM. Chapter 3 discusses IM and RI.

5-36. Advances in information technology are enhancing IM capabilities. First, INFOSYS connectivity allows broadcast dissemination of information. This advance incorporates direct downlink of raw data from multiple sensors to multiple echelons simultaneously. It also allows broadcast of processed information from theater or national production agencies to deployed forces. Deployed units can receive information on a push or pull basis.

5-37. Second, IM involves fusing information from a variety of sources, an INFOSYS capability. Advances in sensors, processors, and communicators provide increased worldwide capabilities for detailed, timely reconnaissance and surveillance. Both military and nonmilitary sources provide information used to produce RI. Open-source information can significantly assist in the production of intelligence or provide a context to the current situation and environment.

INFORMATION SYSTEMS

5-38. *Information systems* are the equipment and facilities that collect, process, store, display, and disseminate information. This includes computers—hardware and software—and communications as well as policies and procedures for their use (FM 3-0). With the integration provided by modern INFOSYS, commanders can achieve higher levels of IM effectiveness and efficiency. INFOSYS directly support C2; however, all battlefield operating systems (BOSs) also depend on responsive INFOSYS. This discussion applies only to INFOSYS devoted to C2 and to information transferred into C2-system INFOSYS from other BOSs. Ultimately, however, effective C2 depends on ensuring that the right person has the needed RI at the right time.

Purpose and Capabilities

5-39. The primary purpose of INFOSYS is to facilitate timely and accurate decisionmaking (including achieving situational understanding) and execution by processing and managing information. With the exception of face-to-face communication, no C2 system can work without INFOSYS. INFOSYS directly affect how commanders communicate and how staffs perform IM. They allow commanders to view and understand their AOs, communicate the commander's intent, and disseminate RI within and beyond their AOs. INFOSYS can simultaneously support current operational deployments and future contingencies. Effective military and nonmilitary INFOSYS help staffs get the right RI to the right place in time for effective decisions and actions. The object of INFOSYS technology is to enhance the performance of people. Once commanders have realized the efficiencies from digitization, the long-term objective will be to decrease the overall number of C2-system personnel required. These efficiencies will be possible when commanders and their soldiers determine how to automate and process the massive amount of information required to conduct modern operations.

5-40. As commanders depend more on INFOSYS for C2, C2 facilities become more attractive targets. INFOSYS can become a weak link if commanders do not take appropriate measures to protect them and ensure their readiness.

5-41. Information sharing, possible with modern INFOSYS, supports shared situational understanding and promotes unity of effort. When used expeditiously, INFOSYS can give commanders a decisive edge over enemies by reducing decision cycles (see appendix A), improving combined arms coordination, and synchronizing the BOSs.

5-42. INFOSYS do more than just collect and process data; properly used, they minimize the time and effort commanders spend assimilating

information and developing situational understanding. INFOSYS capabilities—primarily data processing and analysis tools—allow creation of a truly common COP. In addition, INFOSYS enable the display of COP-related information as meaningful visual images that directly impart knowledge and increase understanding.

5-43. Effective commanders use technology to enable mission command, not to micromanage operations. Equipment that improves the ability to monitor the situation at lower levels increases the temptation, and may provide the means to try, to directly control subordinates' actions. Using INFOSYS this way can undermine mission command. Moreover, such use may fix the higher commander's attention at too low a level. Commanders who focus at too low a level risk losing sight of the overall picture. Consequently, increased INFOSYS capabilities bring the need for increased understanding and discipline. Just because technology allows detailed supervision does not mean commanders should normally use that capability. Effective mission command requires senior commanders to give the on-scene commander freedom to exercise subordinates' initiative.

Roles

5-44. Today's military and nonmilitary INFOSYS combine to give commanders the capability to access information from many sources worldwide. INFOSYS provide the infrastructure that allows commanders to manage information and interface with multiple information sources. They form the architecture that helps commanders and staffs—

- Make decisions.
- Monitor the current situation through the COP.
- Integrate and synchronize decisive, shaping, and sustaining operations.
- Coordinate efforts of subordinate, higher, adjacent, supporting, and supported headquarters.
- Coordinate joint support.
- Link sensors to shooters and update weapon-system targeting parameters.
- Shape the information environment through offensive and defensive IO.

Architecture

5-45. The Army's integrated architecture of advanced INFOSYS maximizes the C2 capabilities of land forces in all environments. The primary national warfighting INFOSYS is the joint Global Command and Control System (GCCS), which interfaces with the Army Battle Command System (ABCS). ABCS is the primary Army warfighting INFOSYS. ABCS—

- Employs a mix of fixed and semifixed installations, and mobile networks.
- Is interoperable with theater and joint INFOSYS.
- Connects directly to GCCS and provides seamless connectivity from platform- and soldier-level to corps.
- Provides connectivity to databases and processes information.

5-46. **Army Battle Command System.** ABCS is a system of BOS INFOSYS that provides commanders with a scalable COP display (one that can be changed in size and configuration). Commanders scale (tailor) the COP display to include only information relevant to the mission, purpose, or task of their echelon. ABCS integrates information from its systems as well as other existing INFOSYS to provide quality information and connectivity with other Services, joint forces, and multinational partners.

5-47. ABCS integrates its components into a coherent, seamless infrastructure that links all echelons from the battalion through strategic levels. ABCS consists of the following 11 systems:

- **Global Command and Control System–Army** (GCCS-A) provides an integrated and automated INFOSYS for Army strategic and theater commanders, corps commanders, and division commanders serving as joint task force commanders or Army service component commanders (ASCCs).
- **Maneuver Control System** (MCS) is the primary tactical-level INFOSYS. It provides the COP, decision aids, and overlay capabilities through interface with other ABCS systems.
- **Force XXI Battle Command Brigade and Below** (FBCB2) provides integrated, on-the-move, and timely RI to tactical combat, combat support (CS), and CSS leaders and soldiers.
- **Combat Service Support Control System** (CSSCS) provides quality automated CSS information (including all classes of supply, field services, maintenance, medical, personnel, and movements) to combat, CS, and CSS commanders; their logistic and special staffs; and to the ASCC.
- **Advanced Field Artillery Tactical Data System** (AFATADS) is a fully integrated fire support INFOSYS. It gives the fire support coordinator automated support for planning, coordinating, controlling, and executing close support, counter-, interdiction, and suppression-of-enemy-air-defenses fires.
- **Air and Missile Defense Planning and Control System** (AMDPCS) integrates air defense fire units, sensors and C2 centers into a single system capable of defeating/denying aerial threats (including unmanned aerial vehicles, helicopters, fixed-wing aircraft, and other platforms). AMDPCS includes AMDWS (the air and missile defense workstation).
- **Tactical Airspace Integration System** (TAIS) is the Army's enabling system for digitization, integration, and automation of Army airspace command and control planning and operations, and for air traffic services. (See FM 3-52.)
- **All Source Analysis System** (ASAS) consists of evolutionary modules that perform system operations management, system security, collection management, intelligence processing and reporting, high-value/high-payoff target processing and nominations, and communications processing and interfacing.
- **Integrated System Control** (ISYSCON) provides integrated technical system control for the integrated ABCS systems.

- **Integrated Meteorological System** (IMETS) provides general weather forecasting, severe weather warnings, and weather effects analysis.
- **Digital Topographic Support System** (DTSS) provides tactical and operational commanders with geospatial information to support terrain and environment parts of commander's visualization.

5-48. **Integration.** Integrating INFOSYS—both vertically and horizontally—facilitates tactical and operational success in joint and multinational operations. Global connectivity is essential to link strategic, operational, and tactical aspects of IM, and to project forces worldwide. The command's command, control, communications, and computers operations (C4 ops) officer (the G-6 [S-6]; see appendix D) integrates nonmilitary equipment and software. Planners ensure that deployed INFOSYS implement open, nonproprietary, commonly accepted standards and protocols to interface with nonmilitary systems. Of the ABCS systems, GCCS-A, MCS, and FBCB2 are integrating systems.

5-49. **Computers.** Computers process COP-related information, support decisionmaking, and disseminate execution information. Computers consist of hardware and software. The widespread use of computers brings two dangers: one is overreliance on technology; the other is not using technological capabilities. Effective IM balances maximum use of computer capabilities with their integration with other C2-system components.

5-50. Modern computers provide new capabilities to support military decisionmaking. They can give commanders higher quality data, collected both vertically and horizontally, faster. Additionally, the number of options—branches, and sequels—commanders can visualize increases in quality, quantity, and depth. This capability can lead to a situation in which friendly commanders regularly can expect to have more and better options for anticipated or unanticipated situations than the enemy. With computers performing many activities done manually in analog CPs, commanders and staffs can shift their time and mental energy to the higher-order thinking skills of transforming information into knowledge and understanding. Having a clear, thorough, and accurate situational understanding allows commanders to visualize likely future states and develop options to shape them rather than react to events as they unfold. Properly used, computers provide commanders RI that helps them reduce and manage uncertainty. This situation increases the force's agility and synergy, and contributes to the exercise of subordinates' initiative. It also helps commanders mass effects at decisive points and times, increasing tempo and reducing the cost of victory.

5-51. **Communications.** Communication is the principal interaction between commanders and those who influence or execute their decisions. Communications using modern INFOSYS provide commanders with near real-time information that is adaptable and responsive to their requirements. There are four principal means of communications: personal contact, liaison, document transfer, and data exchange.

5-52. *Personal contact* can be face to face or over INFOSYS. Two common means of personal contact that use INFOSYS are voice communications and video teleconferencing:

- *Face-to-face communication* is the most productive method, but also the most time-consuming. Many commanders prefer to brief subordinates face to face to ensure that subordinates understand the commander's intent and to sort out any problems. Face-to-face meetings are particularly important and effective in fostering trust and mutual understanding during unified actions, especially multinational operations.
- *Voice communications* over INFOSYS (including telephones, combat net radios, trunk communications, and satellite communications) continues to be a principal method of directing. Commanders can transmit and explain the commander's intent best by voice. It is common to all levels of command and is the only communications method that permits the commander to project personal willpower and inspiration at a distance. Voice communications are especially useful during execution, particularly during fast-moving operations that preclude face-to-face contact. Such communications help maintain tempo.
- *Video teleconferencing* is an effective way to communicate intent and commitment. Facial expression and body language convey information. Video teleconferencing extends face-to-face contact between commanders and subordinates electronically. However, it currently requires large bandwidths to convey subtle nuances.

5-53. Commanders use *liaison* during operations and normal daily activity to help facilitate communication between units, preserve freedom of action, and maintain flexibility. (See appendix E.) Liaison officers (LNOs) and liaison parties convey not only information but also its context by interpreting and explaining it. Effective LNOs understand the operational environment. They exercise initiative and know the mind of their commander and the receiving commander. However, liaison may be of limited effectiveness if dispersion overstretches communications or distances preclude traveling. Vertical liaison is normally required between forces of different nations and when a command is cross-attached. Commanders always establish liaison with adjacent units. This liaison is especially important during multinational operations.

5-54. *Document transfer* can take place by courier, postal service, and facsimile ("fax"). Commanders may use a courier when all else fails or when the person conveying the document is an LNO. Commanders may use postal services when time and service are available. Facsimile is flexible and reliable where small documents—such as, notes, sketches, and small overlays—are concerned; however, it is not an efficient means of passing long documents.

5-55. Modern INFOSYS make *data exchange* easier and faster than in the past. Data exchange includes formal record traffic (joint message text), informal record traffic (facsimile and electronic mail), database-to-database transfer, and pos/nav (position/navigation) data. It can complement voice orders by transferring coordinating information and graphic overlays. Data exchange facilitates communication, but there are constraints associated with using it. It is particularly difficult to convey intentions using data exchange. Data exchange is also bandwidth-intensive.

5-56.While all these methods are useful, voice communications and data exchange remain the primary means of passing information. Operationally, face-to-face contacts and exchanging LNOs assure commanders that the commander's intent is correctly understood. Redundant communication methods harden C2 systems by providing alternative channels for passing information.

5-57. Fixed-message formats help standardize information passed using all four communications means. Formatted messages define the contents closely and minimize the use of free text. Both the sending and receiving systems can process such messages automatically. Currently FM 101-5-2 provides a set of standard message formats. Not all formats in FM 101-5-2 apply to all Army organizations; however, units should incorporate those that do apply to them into their SOPs.

5-58. Friendly and enemy IO affect communications. Close coordination among all staff sections is necessary to reduce these effects. This includes the determining the impact of imposing a restrictive emission control (EMCON) state to support military deception operations or OPSEC. Defensive IO should always be prominent during planning. (See FM 3-13.)

INFOSYS AND INFORMATION MANAGEMENT ACTIVITIES

5-59. INFOSYS are critical to the effective functioning of IM activities. (See chapter 3). This section discusses INFOSYS contributions to each IM activity.

5-60. Currently, staff members who focus on the friendly and enemy military situation typically perform IM activities. Specific IM personnel and specially trained C2-system personnel perform the dynamic oversight necessary to meet commanders' RI requirements. As technical capabilities improve, different echelons can combine them with new procedures to obtain resources through intelligence reach and CSS reach operations. These operations involve obtaining physical and information resources from organizations that have them, regardless of their location.

Collect

5-61. INFOSYS collect information primarily by exploiting the information environment, intelligence, surveillance, and reconnaissance (ISR) operations, and reports and messages from friendly forces. ISR assets collect information about the enemy and environment. However, ISR is part of the intelligence BOS, not the C2 BOS. While some ISR assets are INFOSYS, they support developing intelligence rather than exercising C2.

5-62. Modern INFOSYS give commanders access to information available through the Internet and joint and multinational sources. They allow the C2 system to monitor more sources over a larger area for a longer time. The improved processing capabilities of modern INFOSYS increase the capacity and speed of collection. This increases the timeliness and accuracy of the COP. The versatility of many INFOSYS lets commanders focus collection on specific RI and shift collection efforts as priorities change.

Process

5-63. INFOSYS automate the mechanical aspects and routine functions of processing that machines do more efficiently than people. This capability frees soldiers to concentrate on higher-level tasks (analyzing and evaluating) requiring human cognition and judgment. Automation has made great advances in information processing, but humans remain the most effective means of determining relevance and fusing information. Technology may help in these uniquely human activities, but cannot replace humans.

5-64. Properly used, INFOSYS minimize manual input of data into the COP in two ways. First, as much data as possible should enter the system directly, through sensors. Second, data should be entered only once, at its origin. Shared databases should then make it available electronically to all headquarters. INFOSYS automation of processing can speed and improve the frequency and quality of staff running estimates.

5-65. INFOSYS provide decision aids and functionalities that leverage data and information to provide expanded capabilities to support decisionmaking throughout the operations process. During planning, INFOSYS contribute to the COP that underlies situational understanding. Planning and rehearsal tools provide improved resolution, precision, and accuracy that support commander's visualization. During mission analysis, INFOSYS provide the status of available assets. They facilitate situational understanding and provide tools to assist in COA development, analysis, and comparison. INFOSYS enable commanders, staffs, and subordinates to plan collaboratively and allow more time to prepare. Following the commander's decision, INFOSYS help the staff produce and transmit the order.

5-66. During preparation, INFOSYS allow commanders and staffs to quickly revise and refine the plan based on new information. Staffs can perform more coordination and liaison electronically through INFOSYS. Information developed during war-gaming and stored and disseminated by INFOSYS can contribute to a higher quality rehearsal. INFOSYS allow units to crosswalk their orders electronically rather than manually. They also provide timely information on the progress of task organizing, movements, preoperations checks and inspections, and logistic preparations.

5-67. During execution, INFOSYS provide real-time information to support assessments of variances between expectations during planning and outcomes during execution, analyze their positive or negative significance, and propose possible actions to resolve or exploit the situation. INFOSYS support development and analysis of decisions for keeping operations on track or exploiting opportunities. They allow resynchronization of actions and effects in accord with any adjustments. This capability for rapid resynchronization reduces one impediment to changing a COA during execution—the risk of failure or defeat from loss of synchronization.

Display

5-68. Effective INFOSYS present information in the form required or desired by commanders. Modern INFOSYS provide new capabilities for displaying information. These include imagery; video; color graphics; and digital overlays, mapping, and database technology. INFOSYS allow displays to be

scaled to mission needs, commanders' requirements, and echelon. These displays are updated dynamically and automatically to highlight variances between the plan and its execution. They allow commanders to immediately recognize key elements of the situation—opportunities, threats, and gaps in information—and the relationships among them. Commanders can then assess the implications and act to respond.

Store

5-69. INFOSYS storage capabilities include hardware and software for entering data into databases and retrieving it as needed. These databases are no longer located in one place or on one machine. Modern INFOSYS software allows data on multiple machines to combine into one shared, distributed database. They allow user-scalable profiles and search engines to combine information from multiple databases to answer the commander's and organization's information needs.

Disseminate

5-70. Modern INFOSYS can quickly disseminate information throughout and beyond the AO. While this capability includes communications, it is also embedded in computer hardware and software. For example, INFOSYS now entering the force are capable of database-to-database information transfers. This type of transfer is inherently flexible. It provides the capacity to manage large amounts of information and disseminate it throughout the force. INFOSYS enable dissemination through communications that—

- Digitize, compress, and broadcast multimedia information using increased bandwidth, high-efficiency transport systems.
- Encrypt and provide multilevel information security.
- Manage information networks with "smart" software that dynamically allocates throughput capacity on demand and then routes and disseminates information.

5-71. The Army also relies on some nonmilitary INFOSYS not under its control to disseminate information. These means include—

- American and host-nation public-service networks and postal and telegraph systems.
- Commercial communication satellite systems.
- Commercial global positioning system (GPS) receivers.
- Commercially developed software applications.
- Commercial international news media.
- Public-access databases and electronic bulletin boards.

5-72. These nonmilitary INFOSYS offer an alternative to military means, but only after carefully assessing the security risks. Using nonmilitary INFOSYS may also reduce the requirement for deployed military INFOSYS. Using a nonmilitary system allows planners to compensate for system shortages and meet the IR surge in the early deployment stages.

PROCEDURES

I will only invite your attention to the fact that a necessary preliminary for the musician is a painstaking practice of scales before he reaches the point of making music. Exact forms for orders and annexes, road spaces, systems of abbreviations, symbols for troop units, headquarters, dumps, etc., frontages, formations for attack and defense—estimates of the situation, and a multitude of similar matters of technique, are to the officer what scales and similar exercises are to the musician. Exactitude is required in each exercise until the correct methods become automatic. That is the sort of training you are now undergoing. Later you will be in a position to add or subtract, to amend, or even to depart rather completely from the methods you have learnt—but not until you have thoroughly mastered the elementary technique.

General of the Army George C. Marshall

5-73. *Procedures* are standard and detailed steps that describe how to perform tasks (FM 3-90). A procedure begins with an event and results in a product, which may be the initiating event for another procedure. There are two levels of procedure within C2 systems: doctrinal procedures and standing operating procedures.

5-74. Procedures can increase organizational competence, for example, by improving a staff's efficiency or by increasing the tempo. Procedures can be especially useful in improving the coordination of soldiers who must cooperate to accomplish repetitive tasks, such as the internal functioning of a CP. Using standardized procedures can mitigate the difficult characteristics of land operations discussed in chapter 1. For example, effective procedures can reduce the chance of the COP being inaccurate or misinterpreted at lower levels. However, procedures can also have the opposite effect. Applied blindly to the wrong tasks or the wrong situations, they can lead to ineffective, even counterproductive, performance.

5-75. Procedures apply only to rote or mechanical tasks. They require thought but little judgment, except in deciding which procedure fits the task. Procedures free human analysis and judgment for tasks only humans can perform. Procedures are not rules to follow automatically; commanders and staffs use, modify, or discard them, as the situation requires. Procedures form the basis for automation in INFOSYS but present a challenge: automation must not drive a C2 system. The commander drives the C2 system, and it must remain flexible enough to respond to changes the commander directs.

5-76. C2 procedures are designed for simplicity and speed: They should be simple enough to perform quickly and smoothly under conditions of extreme stress. They should be efficient enough to increase tempo. Streamlined staff-planning sequences are preferable to deliberate, elaborate ones. Procedures should be compressible when time is short—which occurs frequently during operations. As German GEN Hermann Balck said to his staff in World War II, "Don't work hard, work fast."

5-77. Commanders establish procedures to streamline operations and help integrate new soldiers and attachments. Usually spelled out in unit SOPs,

procedures also help commanders make decisions faster by providing RI in standard, easy-to-understand formats. Procedures describe routine actions, thus eliminating repetitive decisions, such as, where to put people in a CP, how to set up a CP, and march formations.

5-78. Procedures facilitate continuity of operations when leaders become unable to perform their duties. Subordinates can step in and use procedures to continue to operate. When soldiers are tired or stressed, their decision-making capability is first to deteriorate. SOPs help individuals and units continue to accomplish many tasks by routine.

5-79. Procedures do not cover every possible situation. It is impossible to think of all activities that require procedures or to include them in doctrine and SOPs. Situations requiring systematic activity to resolve do arise. Commanders then determine whether the probability or effect of a recurrence warrants developing or improving a procedure.

DOCTRINAL PROCEDURES

5-80. While some Army doctrine may be prescriptive and its use mandatory, it normally sets basic principles and functions along with approaches and methods for generating combat power. Doctrine establishes guidance on procedures for problem solving and communicates the wisdom and judgment derived from past operations to the field. It constitutes the starting point for developing procedures for specific units, places, and threats. Doctrinal procedures cannot be applied absolutely. Commanders interpret them to fit the situation.

5-81. Doctrinal procedures for exercising C2 exist. The military decision-making process (MDMP) is one such procedure. Other procedures apply throughout the operations process. They are mentioned in chapter 6 and discussed in the appropriate field manuals. Doctrinal procedures provide the basis for more detailed procedures developed in unit SOPs.

UNIT STANDING OPERATING PROCEDURES

5-82. A *standing operating procedure* is a set of instructions covering those features of operations which lend themselves to a definite or standardized procedure without loss of effectiveness. The procedure is applicable unless ordered otherwise (JP 1-02). SOPs detail how to apply doctrine within a specific unit. They may also be adapted in a given location for a given threat. They standardize unit-level techniques and procedures to enhance effectiveness and flexibility. As the name implies, SOPs standardize routine or recurring actions not needing the commander's personal involvement. However, SOPs may also include rare or abnormal events that could cause mission failure. SOPs regulate operations within and among C2-system elements. They allow internal and external elements to communicate with one another based on shared expectations.

5-83. SOPs reduce the number of instructions commanders and staffs need to issue during operations. They provide a common base of understanding for executing routine tasks. Finally, SOPs serve as a starting point for new personnel to learn the command's routine. Units base SOPs on doctrinal

procedures, higher headquarters procedures, the commander's guidance, and experience.

5-84. SOPs cover the majority of routine tasks. They should be easy to understand and learn, and quick to read. A good way to check a procedure is to give it to a junior enlisted soldier and a junior officer and see if they understand and remember it. In general, SOPs apply until commanders change them. SOPs produce the following benefits:

- Simplified, brief combat orders.
- Enhanced mutual understanding and teamwork among commanders, staffs, and soldiers.
- Established synchronized staff drills.
- Established decisionmaking techniques, including under time constraints.

EQUIPMENT AND FACILITIES

5-85. Equipment and facilities include all C2-support equipment other than INFOSYS. They must meet soldiers' physiological needs—shelter, rest, sanitation, food, and water. They must be as mobile as the force and have internal communications, light, and power.

EQUIPMENT

5-86. The C2 system cannot operate without sustainment and maintenance of personnel and equipment. Support may be dedicated to C2-system elements or made available as needed. Examples of equipment needed to sustain a C2 system include transportation, maintenance assets, shelter, medical support, and supplies for soldiers and equipment. At lower tactical levels, equipment that sustains the C2 system also sustains the unit as a whole. However, part of the justification for that equipment is its support of the C2 system. At higher tactical levels, equipment sustaining the C2 system is usually organic to the headquarters unit.

FACILITIES

5-87. **In the context of the command and control system, a *facility* is a structure or location that provides a work environment.** While the command table of organization and equipment (TOE) normally prescribes C2-system facilities, facilities may also include civilian structures and joint platforms (aircraft, ships, or boats). Army C2 facilities are not necessarily restricted to land. The C2 facilities prescribed by TOE for Army forces may vary widely: tentage; armored vehicles; tactical vehicles, vans and trailers; or a combination of these. Facilities serve a number of functions:

- **Protection.** Facilities provide commanders and staffs a protected area (shelter, light discipline, and NBC protection) in which to work. They protect C2 INFOSYS from the environment.
- **Focus.** Facilities serve as a focal point—a place where commanders and staffs can view RI and subordinate commanders can obtain RI. This aspect may diminish in importance with distributed C2 systems and the Tactical Internet.

- **Face-to-face meetings.** Facilities provide a place for face-to-face meetings. These are especially important for press conferences during stability operations and support operations. Video teleconferencing may replace some meetings, but it remains important for commanders to see subordinates and read their body language.
- **Information display.** Facilities display information not only for the commanders and staffs (their primary purpose), but also for public dissemination through the press.

The joint lexicon includes the terms facility and facility substitutes. See the glossary for a discussion.

ORGANIZATION FOR COMMAND AND CONTROL

5-88. Organization is an important C2 tool. How the commander organizes the C2 system can complicate or simplify execution. Organizing effectively requires commanders to know and apply the fundamentals and principles of organization for C2, how to organize the staff, and how to organize for continuous C2. The basic Army C2 organization is the CP.

FUNDAMENTALS OF ORGANIZATION

5-89. Organizational decisions establish the chain of command (command and support relationships) and task organization. They directly affect C2. They can influence where commanders obtain facts, whom they rely on for advice, and how they supervise execution of their decisions. Organizational decisions affect the structure of the flow of recommendations to commanders. In large part, organization establishes formal communication channels and determines how commanders distribute information throughout their forces.

5-90. Organization serves the important function of providing sources of group identity for soldiers assigned to the command. A command operates most effectively when soldiers consider themselves members of one or more groups characterized by high levels of loyalty, cooperation, morale, and commitment.

5-91. Information flows vertically within the chain of command, but organization should not limit its flow to the chain of command. Information also must flow laterally among adjacent, supported, and supporting units. Information flows informally and unofficially—between individuals according to personal relationships—as well as within formal channels. Informal channels provide important redundancy. They are especially important in team building.

Command and Support Relationships

5-92. Establishing clear command and support relationships is fundamental to organizing for all operations. These relationships prescribe clear responsibilities and authorities among subordinate and supporting units. (See FM 3-0, FM 5-0.) Some forces are given command or support relationships that limit the commander's authority to prescribe additional relationships. Knowing the inherent responsibilities of each command and support relationship allows commanders to establish clear responsibilities when organizing their forces.

5-93. Commanders designate command and support relationships within their authority to weight the decisive operation and support the concept of operations. Task organization also helps subordinate and supporting commanders understand their roles in the operation and contribute to achieving the commander's intent. Command and support relationships carry with them varying responsibilities to subordinate units by parent and gaining units. Commanders consider these responsibilities when establishing command and support relationships.

5-94. Contractors are involved in Army operations. Their management and control differs from that of soldiers and Department of the Army civilians. To employ contractors effectively during operations, commanders make provisions for contractor management during planning. (See FM 3-100.21.) The terms and conditions of the contract establish the relationship between the military and the contractor. Commanders exercise management control through supervisors employed by the contractor. Only the contractor can directly supervise contract personnel.

5-95. During joint and multinational operations, command and support relationships may be less well defined and more open to interpretation. In some international organizations, the North Atlantic Treaty Organization (NATO) for example, command and support relationship terms may have different meanings from those under Army doctrine. For example, the NATO definitions of operational control (OPCON) and tactical control (TACON) are different from Army definitions. In addition, other terms for command and support relationships may exist. In such cases, commanders seek clarification from their higher commander, from orders, or from the agreements that established the force (for example, NATO standardization agreements [STANAGs]). Commanders use agreed-upon multinational command and support relationships when controlling multinational forces.

Allocating Resources

5-96. Mission command requires commanders to have authority over or access to all resources required to accomplish the mission. Accordingly, commanders organize resources as well as forces when making organizational decisions. This resource organization may be implicit in the command and support relationships established; however, it may differ partly or completely from them, as in establishing such priorities as fires, work, or sustainment. In any case, the resource organization must not violate unity of command and should support unity of effort. Further, this organization or allocation of resources should have minimum restrictions on their use, permitting subordinates to further reallocate or to employ them as the tactical situation requires.

PRINCIPLES OF ORGANIZATION

5-97. Organization of C2 should aim to create unity of command, reasonable spans of control, cohesive mission teams, and effective information distribution. Organization, both in peace and war, starts with the chain of command.

The Chain of Command

5-98. The chain of command establishes authority and responsibility in an unbroken succession from one commander to another. (See FM 22-100.) The commander at each level responds to orders from a higher commander and, in turn, issues orders to subordinates. In this way, the chain of command fixes responsibility and sources of authority at each level while, at the same time, distributing them broadly throughout the force. Each commander has designated authority and responsibility in a given sphere. Command and support relationships specify the type and degree of authority one commander has over another, and the type and degree of support one commander provides another. However, support relationships do not establish a chain of command. Some command relationships, such as TACON, only affect employment.

5-99. Strict adherence to a clearly defined chain of command is the best practice in all but exceptional circumstances; however, commanders remain flexible. Circumstances might require them to operate temporarily outside their chain of command. The need for timely decisions and actions may require commanders to provide information to or receive information from different levels of command simultaneously rather than sending it sequentially through the normal chain of command. Likewise, a loss of communications with higher headquarters, coupled with established communications with another headquarters, may make temporary subordination to the second headquarters a better command relationship. In this case, the commander or the higher commander with whom he has communications should contact the common superior of both commands to confirm the temporary subordination or to reestablish communications between the parent headquarters and the subordinate unit.

Span of Control

5-100. Organization should ensure reasonable span of control, which refers to the number of subordinates or activities under a single commander. A commander's span of control should not exceed his capability to command effectively. The optimal number of subordinates is situation-dependent. Generally, commanders exercising detailed command—which requires them to monitor the operations of each subordinate closely—have narrower spans of control than those using mission command. The more fluid and fast-changing the situation, the fewer subordinate elements a commander can supervise closely. In such situations, commanders must either receive fewer units or use mission command techniques. Large spans of control require commanders to let subordinates work out the details of execution.

5-101. Although the span of control varies with the situation, commanders can effectively command two to five subordinates. Within this situation-dependent range, a greater number of subordinates allows greater flexibility, and increases options and combinations. However, as the number increases, commanders, at some point, lose the ability to consider each unit individually and begin to think of the units as a single, inflexible mass. At this point, the only way to reintroduce flexibility is to group elements into a smaller number of parts, creating another echelon of command.

5-102. Narrowing the span of control—that is, lessening the number of immediate subordinates—deepens the organization by adding layers of command. The more layers of command in an organization, the longer it takes for information to move up or down. Consequently, the organization becomes slower and less responsive. Conversely, an effort to increase tempo by eliminating echelons of command or "flattening" an organization necessitates widening the span of control. Commanders balance width and depth, so that the C2 organization fits the situation. The aim is to flatten the organization to the extent compatible with reasonable spans of control.

5-103. Modern technology, particularly INFOSYS and IM techniques, may make it appear possible to widen spans of control. However, command is primarily a human function. Technological considerations cannot be the only criterion used to determine spans of control. Modern INFOSYS enable many civilian organizations to flatten their management structures. This allows them to eliminate layers of management within the organizational hierarchy. The danger, fog, and friction of military operations, combined with the need for on-scene leadership at multiple critical points, dictate care when applying this technology to military organizations.

5-104. Traditionally, the effective span of control was limited by the amount of communications traffic commanders could monitor, the ability to disseminate execution information, and the ability of commanders to monitor subordinate unit operations. With digital systems, commanders and staffs can effectively disseminate and receive information from far more sources. However, the number of critical matters commanders and staffs can process or focus on at one time is limited. The nature of military operations is such that most, if not all, subordinate units are often in near-crisis and need the commander's attention, even if only monitoring their performance.

5-105. An effective task organization enables the commander and subordinate commanders to command without information overload. The commander establishes his span of control and organizes the C2 system so as to be able to exercise C2 under all circumstances, including successful attacks on the C2 system.

Unit Integrity

5-106. Mission command requires self-reliant subordinate commands able to act semiautonomously. Forming such task organizations increases each commander's freedom of action and decreases the need for centralized coordination of support. Effective commanders are flexible: they task organize forces to suit the situation. This might include creating nonstandard, temporary teams or task forces. However, commanders reconcile the need for organizational flexibility with the requirement to create implicit understanding and mutual trust. These characteristics result from familiarity and stable working relationships.

5-107. One way to balance these demands is to observe unit integrity when organizing for C2. There are two imperatives for maintaining unit integrity under mission command:

- Task organize forces based on standing headquarters, their assigned forces, and habitually associated slice elements. Where this is not

feasible and ad hoc organizations are formed, allow time for training and establishing functional working relationships and procedures.

- Once a force is task organized and committed, do not change the task organization during operations unless the benefits clearly outweigh the disadvantages. Reorganizations cost time, effort, and tempo. Consider logistic factors. The time required may counter any organizational advantages gained.

Subordinate Commanders

5-108. Commanders direct subordinate commanders, not subordinate units. Subordinate commanders direct their own units. Mission command absolutely depends on subordinate commanders exercising subordinates' initiative within the commander's intent. Commanders who use mission command techniques select and develop subordinates in whom they have confidence and trust. Moreover, developing subordinates includes making them familiar with the commander's style of implementing mission command. Commanders who train subordinates to operate under mission command accept less-than-perfect solutions by their subordinates if they act rapidly and decisively within the commander's intent and keep the commander informed.

5-109. Maintaining a high tempo to retain the initiative requires many simultaneous decisions at each level of command. This requirement favors intelligent delegation, rather than centralization, of decisionmaking and execution authority. There are three reasons for prudently delegating authority to subordinate commanders:

- First, a commander can process only so much information at a time; most can only focus on one issue at a time.
- Second, opportunities for employing subordinate forces in ways other than expected open and close irregularly. While commanders and staffs focus on one decision, other opportunities will not be exploited unless subordinates are delegated authority to act.
- Third, the meaning of new and unexpected information is often not immediately recognized. The relevance of new information degrades rapidly with time, and competent enemies ensure that any signatures they emit are short. Thus, time spent passing information through the C2 system is time enemies have to accomplish their purposes.

5-110. INFOSYS facilitate control functions; however, they do not accommodate command functions as readily, especially in times of high stress and great uncertainty. INFOSYS make it possible to monitor and control more subordinate elements and track and redistribute priorities for a wider array of functions and resources. When decisions need to be made rapidly on less-than-perfect information and subordinate commanders need the positive motivation of a commander's attention, commanders need to have fewer subordinate elements and fewer fields of interest. Much flattening during peacetime is possible because subordinate elements do not need the commander's attention at the same time at the same level of detail. However, during operations, many subordinate commanders and their operations may need the higher commander's attention at the same time. When commanders organize for C2, including establishing their span of control, they keep this fact in mind.

COMMAND POST

5-111. The CP is the basic headquarters organization used to perform C2 during operations. Headquarters have existed throughout military history. Historical documents show that Roman legions had headquarters that included all the elements of what is now called a C2 system. In the nineteenth century, Napoleon recognized that a headquarters that provided the planning and analytic capability for a campaign was too large to use in battle. He exercised battle command through a smaller grouping brought from the larger headquarters, but with communications to it for coordinating and planning. By World War II, Army doctrine divided operational headquarters into two echelons, forward and rear. That doctrine named the forward echelon the CP. Certain principles of organizing the CP today—echelonment, mobility, survivability, and redundancy—already existed in this doctrine.

DEFINITION

5-112. **A *command post* is a unit headquarters where the commander and staff perform their activities.** It is often divided into echelons. CPs are the principal facilities commanders use to control operations. Each facility is a CP, regardless of whether the commander is present. When they deem necessary, commanders personally control the battle from other locations. In all cases, the commander alone exercises command, whether in the CP or elsewhere.

PURPOSE

5-113. CPs are facilities for exercising C2. Commanders organize them flexibly to meet changing situations and requirements of different operations. They help commanders control operations through continuity, planning, coordinating, and synchronizing the BOSs. CPs process and disseminate COP-related and execution information. COP-related information supports commanders' and staffs' situational understanding. Execution information directs actions by subordinate and supporting units. Effective CPs enable commanders to make decisions faster than the enemy. Effective INFOSYS quickly communicate those decisions to subordinates, allowing the force to rapidly execute them and develop a faster tempo than the enemy.

FUNCTIONS

5-114. Most CP functions directly relate to assessing and directing ongoing operations, planning future operations, or supporting the force. CP functions that directly contribute to these tasks include the following:

- Developing and disseminating orders.
- Information management.
- Maintaining staff running estimates.
- Controlling operations.
  - Directing and regulating actions.
  - Performing critical ongoing functions of execution. (See chapter 6.)
- Assessing operations.
- CP administration.
  - Displacing.

- Providing security.
- Organizing for operations.
- Maintaining continuity of operations.

ORGANIZATION

5-115. In addition to the design and organizational considerations, commanders consider the following when organizing their CPs:

- Balance missions, tasks, and resources. Commanders consider what needs to be done, organize the force, and allocate resources to each BOS, including the C2 BOS. They consider their own and their staffs' efficiency and effectiveness when doing this.
- Establish functional responsibilities and authority. Functional grouping of staff sections, or elements of staff sections, promotes efficiency and coordination. When the CP is echeloned, the commander clearly defines the authority of each echelon, usually in SOPs.
- Echelon C2 elements. Doing this makes commanders' actions more effective and efficient. This redundancy enables them to move throughout the AO while exercising C2. Commanders can make their presence felt over a wider area. Echeloning CPs requires good, continuous communications.
- Maintain communications to all nodes during displacements.
- Organize and train CPs in peacetime to do what is required in combat.

CONTINUITY OF COMMAND AND CONTROL

5-116. A commander organizes the C2 system to provide continuity of C2 functions, tasks, and duties. Commanders consider their own functions and duties as well as those of their staffs. Continuity includes duration over time as well as throughout the AO. (See FM 6-22.5.)

5-117. C2 continuity has two requirements: The first is to have a properly designated commander available to command. The second is to organize the C2 system so the commander can exercise that authority continuously. Continuity depends on the location and echelonment of alternate and redundant facilities, on managing time for transitions, and on mitigating the effects of sleep deprivation. Commanders train their units to maintain C2 continuity during fast-paced operations. This training addresses succession of command, transfer of control among facilities, continuous operations, and transitions between different types of operations.

LOCATION AND ECHELONMENT

5-118. A CP may maintain C2 continuity through the related considerations of echelonment and location. Echeloning CP elements places the minimum C2 resources forward, while keeping more elaborate facilities farther from enemy detection and attack. Echeloning adds redundancy to communications within the force and with other forces. Effectively locating C2-system elements increases C2-system survivability by hardening the elements and making them more difficult to find and attack.

TIME MANAGEMENT

5-119. Time management plays an especially important role in C2 continuity. First, it allows continuity in tempo. Effective time management includes anticipating reaction times by friendly and enemy forces, making decisions, and disseminating execution information in enough time for subordinate units to effectively act. It contributes to agility by allowing commanders to seize or maintain the initiative and maintain or increase the tempo. It also prevents forces from prematurely executing decisions that result in excessive, incorrect, or nonoptimal concentrations that may slow the tempo. While these considerations are more relevant to higher tactical levels, whose subordinate units require more time to initiate and complete tasks, low-level commanders also use time management to mass effects in time and space.

5-120. Time management involves planning and organizing the C2 system to operate around the clock for extended periods. This includes organizing personnel for 24-hour operations. C2-system staffing must be able to meet anticipated requirements, provide a "surge" capability for unanticipated requirements, and mitigate the effects of sleep deprivation on personnel, including commanders. (See FM 6-22.5.)

CONCLUSION

5-121. C2 systems and the INFOSYS they contain are in a period of transition. As ABCS systems are fielded, commanders will be able to exercise more effective C2. ABCS will link Army headquarters at all echelons and (when configured with Land Warrior) will link soldiers and major weapon systems directly to their commander's C2 system. Commanders will receive real-time COP-related information from multiple sources and echelons. They will have flexible decisionmaking tools to respond to rapidly changing situations. Commanders will be able to rapidly adjust to the dynamic operational environment, taking advantage of opportunities and responding to threats as they arise. Decisionmaking will change from a sequential, staff-centered, planning-focused process to one that is simultaneous, commander-centered, and execution-focused.

5-122. Digitization will increase the capacity of commanders and staffs to share information. All commanders will have access to a single COP, based on an integrated database, scalable to their echelons and IRs, and available on the move. This COP will provide commanders a horizontal and virtual picture of the AO, including voice, data, graphics, imagery, and video information. This shared COP will facilitate COA development and adjustment. Combat, CS, and CSS commanders at the same echelon will be able to simultaneously share their situational understanding with higher, adjacent, and supporting commanders. Shared situational understanding will facilitate integrating and synchronizing plans. It will provide all commanders with a common basis for their commander's visualization. Combined with the commander's intent, these displays will result in operations better synchronized vertically and horizontally. Together, these developments will make collaborative planning the standard for operations. They will also allow commanders to identify feasible COAs during ongoing operations, lessening the need to prepare multiple branches before execution.

5-123. By design, the commander must integrate the elements of the C2 system to exercise C2. These elements are interrelated: the role and functions of each depends on and influences the others. For example, INFOSYS influence how personnel perform procedures. Procedures, equipment, and personnel influence the design of facilities. The design and location of facilities affect a commander's ability to control the force. Ultimately, effective performance of C2 is more important than how C2 is performed. To execute operations, commanders organize for C2 and provide for its continuity. Exercising C2 is the subject of chapter 6.

Chapter 6

Exercising Command and Control

The great end of [military operations] is not knowledge, but action.

Paraphrased from T.H. Huxley

This chapter discusses exercising command and control throughout the operations process. Commanders use commander's visualization to assess operations. Staff members use running estimates—developed during planning and continuously updated during preparation and execution—for assessing. Since assessing occurs throughout the operations process, this chapter discusses it in general and then again during the discussions of planning, preparation, and execution. Each commander exercises command and control through a command and control system. Exercising command and control is dynamic and occurs throughout the operations process.

SECTION I – GENERAL

6-1. Command and control (C2) is execution-focused rather than planning-focused. Modern information systems (INFOSYS) compress planning in three ways:

- They allow near simultaneous parallel planning among echelons.
- They allow collaborative planning among two or more echelons.

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- They provide nearly continuous high quality updates of the common operational picture (COP).

These capabilities permit commanders to direct execution earlier with a less time-intensive but satisfactory plan Commanders can then adapt actions quicker to new situations as they identify them and fight emerging conditions (enemy actions) rather than fighting the plan. INFOSYS allow a rapid resynchronization of forces and functions that mitigates the potential loss of synchronization caused by changing the plan.

6-2. Operations generally follow the operations process of planning, preparation, execution, and continuous assessment described in FM 3-0. (See figure 1-2 on page 1-8.) These collective activities correspond to the individual operating actions described in FM 22-100. While these activities are cyclical and continuous, they do not necessarily occur sequentially. All activities occur concurrently, with commanders exercising battle command throughout the process. (See figure 6-1.)

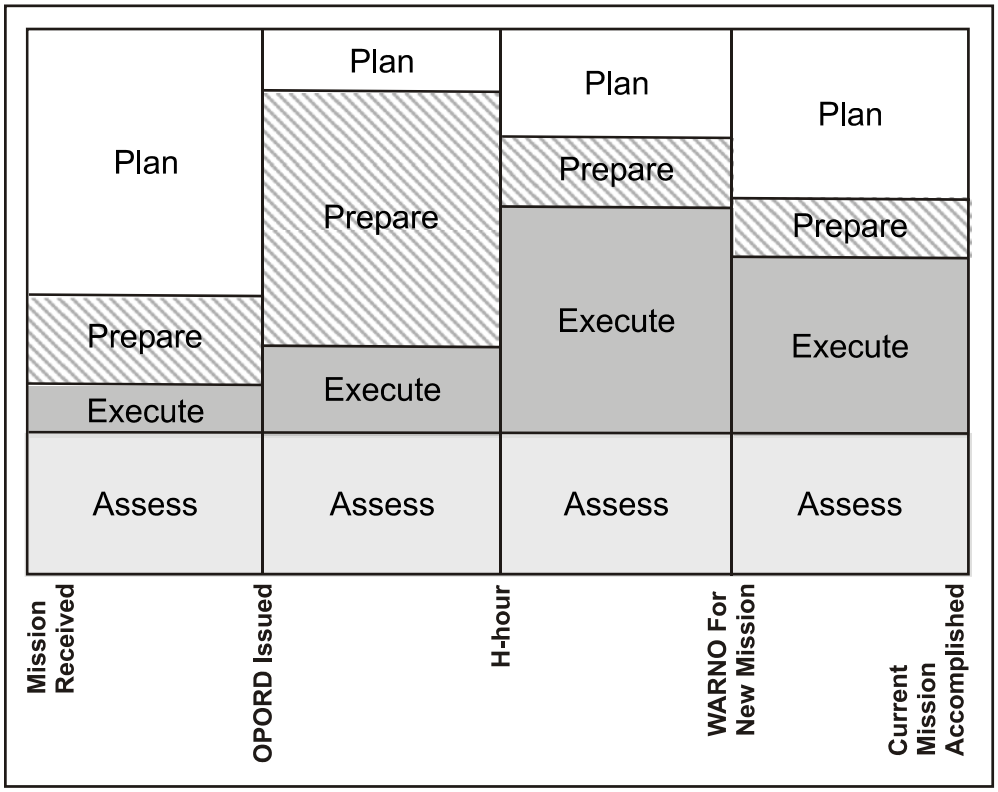


Figure 6-1. Distribution of Operations Process Activities

6-3. Planning is continuous. While preparing for or executing one operation, commanders plan (or refine plans) for branches and sequels to it. They may begin planning for a subsequent operation. Preparation is also continuous whenever a command is not executing an operation. Preparing for a specific operation starts with receiving a warning order (WARNO). It always overlaps with planning and continues through execution for some subordinate units. Assessing is continuous and influences the other three activities. Subordinate

units of the same command may be in different stages of the operations process at any given time.

6-4. Chapter 6 discusses these activities, as well as their supporting topics. (See figure 6-2.) Commanders use visualizing, describing, and directing as their decisionmaking methodology throughout the operations process. (See chapter 4.) Commander's visualization produces an assessment based on the commander's situational understanding. Commanders guide their staffs and subordinates with describing, and direct them to execute actions to implement their decisions. Staff running estimates—developed during planning and continuously updated throughout preparation and execution—provide the basis for assessing and supporting the commander's visualization.

Plan	Prepare	Execute
• TLP and MDMP • Orders and plans	• Reconnaissance • Security • Force protection • Revise and refine the plan • Coordination and Liaison • Rehearsals • Task organization • Train • Movement • Precombat checks and inspections • Logistic preparations • Integration of new soldiers and units	• Decide ▪ Execution ▪ Adjustment • Direct ▪ Apply combat power ▪ Synchronize ▪ Maintain continuity
Assessment During Planning • Monitor the situation • Monitor criteria of success • Evaluate COAs	**Assessment During Preparation** • Monitor preparations • Evaluate preparations	**Assessment During Execution** • Monitor operations • Evaluate progress
Continuous Assessment		
• Situational understanding—sources, solutions • Monitoring—situation/operations, criteria of success • Evaluating—forecasting; seize, retain, and exploit the initiative; variances		

Figure 6-2. Operations Process Supporting Topics

6-5. Intelligence is a critical part of C2 throughout the operations process. It provides the first look at the enemy, the environment, enemy courses of action (COAs), and high-value targets for each COA. Intelligence, surveillance, and reconnaissance (ISR) is an integrated concept that contributes to assessment. Staffs synchronize and integrate ISR operations to provide commanders relevant information (RI) about the enemy and environment. This RI from ISR often comes in the form of analytic products (intelligence) at the knowledge level on the cognitive hierarchy. ISR integration begins during planning and continues throughout preparation and execution.

SECTION II – ASSESSMENT

6-6. *Assessment* is the continuous monitoring—throughout planning, preparation, and execution—of the current situation and progress of an operation and the evaluation of it against criteria of success to make decisions and adjustments (FM 3-0). Commanders and staffs base assessments on their situational understanding. They achieve and maintain situational understanding to identify opportunities for more effective mission accomplishment, threats to the force, and gaps in information.

6-7. Situational understanding during planning forms the basis for commander's visualization. Commanders have situational understanding of the general situation before planning; receiving a mission focuses their attention on a specific purpose. During preparation and execution, situational understanding allows commanders to assess the progress of operations, continuously update their commander's visualization, and make decisions. The commander's critical information requirements (CCIR), continuously updated, set the commander's information management (IM) priorities. They focus the commander's situational understanding on expected decisions. Throughout operations, intelligence provides situation development and battle damage assessment to support assessment and decisionmaking.

6-8. Assessing consists of two tasks:

- Monitoring the current situation and progress of the operation.
- Evaluating the operation against criteria of success.

These tasks take different forms during planning, preparation, and execution. (See figure 6-2, page 6-3.) Together, they allow commanders to assess the situation in terms of expectations and the progress of the plan.

MONITORING

6-9. ***Monitoring* is continuous observation of the common operational picture to identify indicators of opportunities for success, threats to the force, and gaps in information.** During planning, commanders and staffs focus their monitoring on facts and assumptions that underlie the plan. They monitor these to ensure they remain valid and to identify new ones that will affect the plan. During preparation and execution, commanders and staffs continue to validate facts and assumptions. However, they focus their monitoring on identifying variances and gaps in RI.

6-10. At lower tactical levels, reports required by standing operating procedures (SOPs) are often adequate for monitoring. Sometimes simple reports or communications through liaison teams are enough. However, the complexity of operations at higher echelons may require a monitoring plan. Synchronization matrixes and decision support templates provide starting points. They show key points of synchronization and events to monitor. The monitoring plan assigns responsibility for monitoring specific actions. Modern INFOSYS allow monitoring to a greater level of detail at higher echelons than before; however, the best monitoring is the least intrusive.

EVALUATING

6-11. ***To evaluate*** **is to compare relevant information on the situation or operation against criteria of success to determine success or progress.** Evaluating allows commanders to identify variances from the plan, including its assumptions, and to forecast trends. It uses RI from the COP to measure, analyze, and report the performance of forces against criteria of success. Staff sections incorporate assessments based on evaluations into running estimates that present recommendations to the commander. The commander considers these recommendations, makes a decision, and directs actions to seize, retain, or exploit the initiative.

6-12. Commanders and staffs continuously evaluate the current and projected situation to determine if changes are necessary to accomplish the mission, better achieve the commander's intent, or protect the force. One aid to evaluation is the following list of questions. These questions may also serve as a basis for constructing or revising the CCIR. However, they must be converted to address the specific situation before they suffice for CCIR. Many answers to these questions can serve as criteria of success:

- Can the force achieve the commander's intent?
- Where is the enemy? Doing what? How?
- Where are friendly forces? Doing what? How?
- What is the posture of the enemy force now? What will it be at the time being considered (for example, an anticipated decision time)?
- Where will the friendly force be at the time being considered?
- What are the enemy's problems? How can we exploit them?
- What are our problems? How can we correct them?
- What are the enemy's opportunities? How can we deny them?
- What are our opportunities? How can we exploit them?
- Are any changes needed to our concept of operations? task organization? mission?

By evaluating the answers to questions such as these, commanders and staffs determine variances and their significance.

VARIANCES

6-13. ***A variance*** **is a difference between the actual situation during an operation and what the plan forecasted the situation would be at that time or event.** (See figure 6-3, page 6-6.) Staffs ensure INFOSYS display RI that allows them to identify variances. When a variance emerges, the commander and staff evaluate it. If necessary, the staff updates its running estimates and recommends a COA to the commander, who directs the necessary action. There are two forms of variances: opportunities and threats.

6-14. **Opportunities.** The first form of variance is an opportunity to accomplish the mission more effectively. Opportunities result from forecasted or unexpected successes. When they recognize an opportunity, commanders alter the plan to exploit it, if they can do so without compromising the plan or incurring unacceptable risk. Exploiting a forecasted opportunity usually involves executing approved branches or sequels. When exploiting an

opportunity, the concept of operations may change, but the commander's intent usually remains the same.

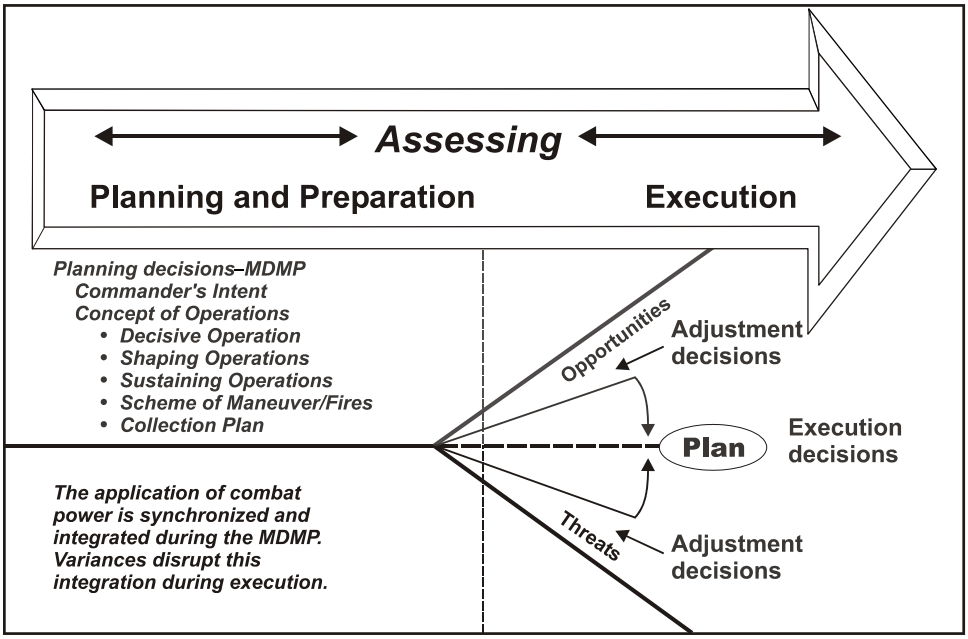


Figure 6-3. Recognition of Variances

6-15. **Threats.** The second form of variance is a threat to mission accomplishment or survival of the force. When a threat is recognized, the commander adjusts the plan to eliminate the enemy advantage, restore the friendly advantage, and regain the initiative.

6-16. Victory in battle requires commanders to recognize and evaluate opportunities and threats—current and projected—in time to direct effective actions that exploit or counter them. Commanders use commander's visualization based on the COP as their primary evaluation method. (See chapter 4.) Staffs use their running estimates, derived from their understanding of the COP, to evaluate the situation. Mission command, with decentralized operations guided by the commander's intent, creates and allows earlier recognition of opportunities and threats. It permits faster reactions than detailed command.

CRITERIA OF SUCCESS

6-17. ***Criteria of success*** **are information requirements developed during the operations process that measure the degree of success in accomplishing the unit's mission. They are normally expressed as either an explicit evaluation of the present situation or a forecast of the degree of mission accomplishment.** Criteria of success may be based on such factors as time lines, distances, loss rates, consumption rates, unit effectiveness, enemy actions, and facts and assumptions. During planning, especially during war-gaming, staffs use them to evaluate COAs. Once the commander approves a COA, the criteria of success serve as a basis to evaluate the progress of operations against the expectations of the plan.

During execution, the criteria of success can, and should, change. They may become CCIR if they affect a projected decision by the commander.

RUNNING ESTIMATES

6-18. ***A running estimate* is a staff estimate, continuously updated based on new information as the operation proceeds.** It is a staff technique that supports commander's visualization and decisionmaking. It is also a staff tool for assessing during preparation and execution. In running estimates, staffs continuously update their conclusions and recommendations based on the impact of new facts. The updated conclusions and recommendations make running estimates useful in assessing. Staff sections provide these updated conclusions and recommendations to the commander as required, either by the situation or by the commander.

TECHNOLOGY AND THE COMMON OPERATIONAL PICTURE

6-19. Technology improves the quality of the COP and makes assessing more accurate than in the past. (See figure 6-4.) Current technology allows commanders to achieve a higher initial level of situational understanding than previously. It allows frequent updates of the COP and helps them retain situational understanding with less degradation. Technology cannot fully answer all questions, but it informs commanders on the gaps that remain. Commanders apply the art of command to fill those gaps with assumptions until they receive the necessary RI.

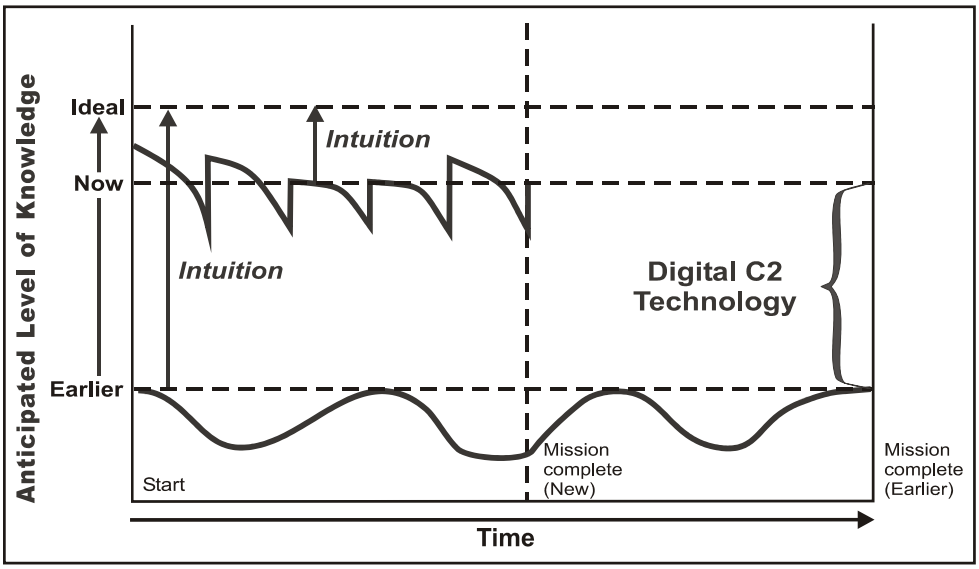


Figure 6-4. Restoring the Common Operational Picture

6-20. Modern INFOSYS support evaluating through automated monitoring of criteria of success, identifying variances, forecasting the magnitude of changes, and comparing performance against expectations. INFOSYS accomplish these tasks faster and with greater precision than analog methods. They allow commanders and staffs to focus on the significance of variances and their implications for success. These capabilities help staffs

maintain running estimates. They also help commanders visualize and anticipate opportunities and threats. Commanders can then direct actions to seize, retain, or exploit the initiative. These actions occur throughout the operations process.

SEIZE THE INITIATIVE

6-21. Seizing the initiative means setting and dictating the terms of action throughout the operation. Commanders plan to seize the initiative as early as possible. Effective planning determines where, when, and how to do so. However, enemies will actively try to prevent this and disrupt friendly plans. Seizing the initiative requires effective plans to counter enemy efforts. During preparation, commanders set conditions that lead to seizing the initiative and assess their effectiveness. During execution, commanders and staffs recognize and exploit projected opportunities to seize the initiative, and identify or create others.

6-22. During planning, staffs identify criteria of success related to seizing the initiative. They assess them during preparation and execution. Friendly forces may seize the initiative unexpectedly or find unexpected opportunities to seize it. In such cases, well-crafted criteria of success help commanders realize what is happening and choose what COA to direct to exploit the situation.

6-23. Seizing the initiative often requires accepting risk. Commanders and staffs evaluate enemy and friendly actions to determine who has the initiative. They determine what friendly actions will enable friendly forces to retain and exploit the initiative if they have it and seize the initiative if they do not. The following are general indicators that friendly forces have the initiative:

- Friendly forces are no longer decisively engaged or threatened with decisive engagement.
- Subordinate commanders are able to mass combat power or concentrate forces at times and places of their choosing.
- Enemy forces are not offering effective resistance and do not appear capable of reestablishing resistance.
- Friendly forces encounter lighter-than-anticipated enemy resistance or large numbers of prisoners.
- Friendly rates of advance suddenly accelerate or casualty rates suddenly drop.

6-24. Planning for and seizing the initiative are easier during the offense than during the defense, as friendly forces often start with the initiative. However, they must still dictate the terms of action to uncooperative enemies who are trying to seize the initiative. In the defense, enemies usually have the initiative to begin with, and friendly forces must seize it from them. However, defending forces can set the terms of battle or seize the initiative early through shaping operations. Determining how to seize the initiative during stability operations and support operations is difficult, as the adversary is not as clearly evident as in the offense or defense. In these operations, seizing the initiative consists of planning for and applying enough resources to control the situation.

RETAIN THE INITIATIVE

6-25. Retaining the initiative involves applying unrelenting pressure on the enemy. Commanders do this by synchronizing the BOSs to present enemy commanders with continuously changing combinations of combat power at a tempo they cannot effectively counter. Commanders and staffs use ISR assets to identify enemy attempts to regain the initiative. Effective IM processes this information from ISR operations fast enough to keep commanders inside the enemy's decisionmaking cycle. Combined with effective planning, it helps commanders anticipate key events and likely enemy actions hours or days beforehand and develop branches, sequels, or adjustments to the plan. Properly executed, these create a seamless, uninterrupted series of actions that force enemies to react immediately and do not allow them to regain synchronization. Ideally, these actions present enemies with multiple critical problems that require more resources to solve than they have. As tempo is part of maintaining momentum, the C2 system keeps the operation synchronized at the desired tempo.

EXPLOIT THE INITIATIVE

6-26. Exploiting the initiative means following through on local successes to realize long-term decisive success. Once friendly forces seize the initiative, they immediately plan to exploit it by conducting continuous operations to accelerate the enemy's complete defeat. This starts the process again, bringing the *observe-orient-decide-act* (OODA) cycle back to the beginning. (See appendix A.) Collaterally, the C2 system identifies disorganization among friendly forces and directs reorganization or reconstitution to restore those forces to combat readiness and to develop options to exploit the initiative.

SECTION III – PLANNING

6-27. *Planning* is the means by which the commander envisions a desired outcome, lays out effective ways of achieving it, and communicates to his subordinates his vision, intent, and decisions, focusing on the results he expects to achieve (FM 3-0). Assessment during planning focuses on monitoring the current situation, establishing criteria of success, and evaluating COAs. Under mission command, any plan is a framework from which to adapt as the situation requires, not a script to follow to the letter. The measure of a good plan is not whether it transpires as designed but if it facilitates effective action in the face of unforeseen events.

PLANNING FUNDAMENTALS

6-28. Successful planning is both an art and a science. All planning takes time. The time allocated to planning must not detract from the force generating or maintaining the tempo the commander desires. Planning can be deliberate or hasty.

6-29. *Deliberate planning* involves a detailed, systematic analysis and evaluation of all factors affecting an anticipated operation. It provides insight

into what might occur and takes the time needed to produce an optimal COA. Deliberate planning anticipates future conditions and expects possible execution later.

6-30. *Hasty planning* usually occurs under time-constrained conditions. It considers only critical aspects of the situation. Hasty planning reaches an acceptable COA quickly. Staffs are usually responding to existing conditions when a quick plan is needed for immediate or near-term execution.

6-31. Planning is a dynamic process of interrelated activities rather than a single action. It starts when the commander receives a new mission or derives one from an ongoing operation. It supports decisionmaking by analyzing RI and providing context to develop situational understanding. The outcome of planning is the commander's decision about how to execute the operation, the approved COA. After this decision, planning concludes with orders production. The order may be a formal order or a fragmentary order (FRAGO). It contains coordinating measures, directs preparation activities, allocates or reallocates resources, and dictates timing for execution. Planning continues during preparation and execution, based on information received from continuous assessment. This may include refining the plan, usually in response to updated COP-related information, or creating or refining branches and sequels.

6-32. Deliberate planning facilitates future decisions. It allows assessment of factors that are predictable (such as ammunition expenditures) and unpredictable (such as the effects of weather and terrain). It allows examination of factors not likely to change during the operation (such as certain aspects of supply or transport). It helps staffs examine their assumptions, understand the situation, and anticipate possible enemy actions and friendly counteractions. It can identify mistakes in coordination and synchronization, and allow commanders to prevent them. Finally, it can uncover and clarify potential opportunities, threats, and information gaps.

6-33. Because planning is oriented on the future and the future is always uncertain, planning should not specify future actions with undue precision. Useful plans are flexible and adaptable; they provide opportunity to pursue a variety of options. As planning horizons (see FM 5-0) extend further into the future, plans become less concerned with directing actions and more with identifying options and possibilities. Effective planning projects future actions to retain the initiative and prepare adequately for upcoming operations; however, it should not project them so far out that actual developments make plans obsolete. A key to how far ahead to plan is the ability to discern future enemy actions. If enemy actions cannot be predicted with reasonable certainty, useful plans keep friendly options open until intelligence provides a clearer picture of the enemy or timeliness requires a decision.

6-34. Mission command requires flexible plans that allow commanders to exploit opportunities and respond to threats. Commanders decentralize planning to the lowest possible level, allowing subordinates maximum freedom of action. In general, plans should not be a script establishing specific actions and timetables, either for the command itself or for subordinates. Such scripting severely restricts chances to seize, retain, or exploit the initiative. Rather, a good mission order encourages subordinates to exercise

subordinates' initiative based on the commander's intent and the particulars of each situation. Mission orders prescribe subordinates' actions only to provide for necessary coordination.

6-35. Effective planning requires a sensitive awareness and judicious use of time. Plans should always be completed as soon as possible to maximize subordinates' planning time. Frequent WARNOs and judicious collaborative planning facilitate parallel planning with subordinates. In addition, just because time is available does not mean that orders or plans need to be detailed or lengthy. Good mission orders are as simple as possible and allow subordinates maximum latitude.

6-36. Planning should be collaborative to the extent the situation permits. The main benefits of collaborative planning come as much from engaging meaningfully in the process as from the product itself. While a plan may convey the commander's decision, participating in planning conveys its context and develops an understanding of available options and relationships.

6-37. Planning is an important and valuable C2 activity. However, focusing on the process for its own sake can lead to overcontrol and mechanical thinking. A properly framed commander's intent, effective planning guidance, and judicious participation by commanders create plans that foster mission command. Executing them creates a high tempo that allows maximum opportunity for exercising subordinates' initiative.

ASSESSMENT DURING PLANNING

6-38. During planning, staffs achieve situational understanding based on the COP. From this, they develop and evaluate COAs, and identify opportunities, threats, and gaps in information. Assessing establishes the initial criteria of success for the operation. Commanders and staffs develop these criteria during the COA analysis and use them for COA comparison. (See FM 5-0.) These criteria are then used for evaluating during preparation and execution. IPB is a key tool for assessing the enemy situation and the environment. It begins during planning and continues throughout the operations process. Staffs use running estimates for assessment during planning.

PLANNING PROCEDURES

6-39. The Army uses two procedures to guide planning activities: Troop leading procedures (TLP) and the military decisionmaking process (MDMP). (See FM 5-0.) Leaders at company level and below usually use TLP to guide their planning. The MDMP is more appropriate for units with a staff, usually at battalion through corps level. The two procedures are closely related. Both TLP and the MDMP can be done under unrestricted or time-constrained conditions. More planning time allows better coordinated and synchronized plans; however, it also means less time for subordinates to plan and prepare, and more time for the enemy to prepare and act.

ORDERS AND PLANS

6-40. Both plans and orders represent the commander's visualization for a specific operation. The difference between plans and orders is that plans do

not include an execution time (H-hour). Plans may be executed fully, only in part, or not at all. An order always includes an execution time; for some verbal orders, the execution time is, "now." (This is an example of positive control. See paragraph 3-95.) Plans and orders may be issued in whole or in part, for planning or for execution. Under Army doctrine, an order is both a plan (representing a design for an anticipated operation, even if immediate) and an order conveying instructions (often for execution of an operation to accomplish a mission). A higher headquarters may disseminate a plan to subordinates with an order to prepare implementing plans based on that plan. A later order may direct execution of the plans.

6-41. Under mission command, commanders direct their subordinates with mission orders. (See paragraphs 1-67–1-80.) Properly prepared mission orders enable subordinates to understand the situation, the commander's intent, the concept of operations, and their own mission. They leave the "how" of mission accomplishment to subordinate commanders. The commander's intent provides unity of effort to guide subordinates' initiative. Mission command stresses that higher commanders state only what is required of subordinates, rather than how to achieve it.

6-42. In practice, no commander relies solely on mission orders. Commanders balance the forms of control based on the nature of the operation or task, the environment, the nature and capabilities of the enemy, and—most important—the qualities of their subordinates, in short, on the factors of METT-TC. Mission orders are preferred for mission command. However, detailed orders may be appropriate when assigning precise, specific tasks of a procedural nature, when the task is not well known, or when time is not a factor. Well-structured C2 systems provide commanders with the RI needed to maintain an accurate situational understanding, which allows them to determine when to assert positive control over a subordinate or a situation. Mission orders allow commanders and subordinates to adapt to changing situations. They are more responsive when time is critical and are less vulnerable to disruption than detailed orders. Mission orders—the more challenging form of control—demand more of leaders at all levels.

6-43. Issuing orders in the command post (CP) allows each staff member to answer questions about the order and helps commanders make refinements. It also helps coordination. However, issuing orders is less than half the work. GEN George S. Patton Jr., commander of Third Army in World War II, counted it only 10 percent, with the other 90 percent focused on preparing and executing operations.

SECTION IV – PREPARATION

6-44. *Preparation* is activities by the unit before execution to improve its ability to conduct the operation including, but not limited to, the following: plan refinement, rehearsals, reconnaissance, coordination, inspections, and movement (FM 3-0). Preparation occurs when a command is not executing an operation. When not executing operations, commanders prepare their forces for them. These preparations include such activities as training and

maintaining personnel and equipment. Preparation for a specific operation starts with receiving a WARNO and ends when execution begins.

6-45. Preparation consists of the following activities, all of which involve actions by staffs, units, and soldiers:

- Assessment.
- Reconnaissance operations.
- Security operations.
- Force protection.
- Revising and refining the plan.
- Coordination and liaison.
- Rehearsals.
- Task organizing.
- Training.
- Troop movement.
- Preoperations checks and inspections.
- Logistic preparations.
- Integrating new soldiers and units.

ASSESSMENT DURING PREPARATION

6-46. Assessment during preparation involves monitoring the progress of readiness to execute the operation and helps staffs refine plans. It evaluates preparations against criteria of success established during planning to determine variances. It forecasts their significance for the success of the operation. Commanders continue commander's visualization. Staffs continue running estimates begun during planning.

RECONNAISSANCE OPERATIONS

6-47. During preparation, commanders take every opportunity to improve their situational understanding about the enemy and environment. Commanders integrate reconnaissance missions and surveillance means to form an integrated ISR plan that capitalizes on their different capabilities. Reconnaissance is often the most important part of this activity, providing data that contribute to answering the CCIR. As such, commanders conduct it with the same care as any other operation. They normally initiate reconnaissance operations before completing the plan. In fact, information on which the final plan is based is often gathered by reconnaissance operations executed while the overall command is preparing.

6-48. Commanders direct reconnaissance using the ISR annex to the order. (See FM 5-0.) Commanders consider requesting assistance from sources outside of their control, including long-range surveillance teams and joint assets. They synchronize reconnaissance missions with the other ISR components to continuously update and improve their situational understanding.

6-49. Reconnaissance is not a static, one-time effort that achieves a goal and stops. As reconnaissance forces gather information, the staff modifies the collection plan to account for new information and to redirect ISR efforts. Commanders and staffs continuously review intelligence products and

synchronize their reconnaissance efforts within the ISR plan. They focus on the most important remaining gaps, emphasizing the established or revised CCIR. Commanders balance several factors against their need for RI: the ability of reconnaissance units to gather it, risk to reconnaissance assets during collecting, ability to sustain the reconnaissance effort over time, and requirement to have reconnaissance assets available at critical times and places.

SECURITY OPERATIONS

6-50. Security operations during preparation prevent surprise and reduce uncertainty through security operations (see FM 3-90), local security, and operations security (OPSEC; see FM 3-13). These are all designed to prevent enemies from discovering the friendly force's plan and to protect the force from unforeseen enemy actions. Security elements direct their main effort toward preventing the enemy from gathering essential elements of friendly information (EEFI). As with reconnaissance, security is a dynamic effort that anticipates and thwarts enemy collection efforts. When successful, security operations provide the force enough time and maneuver space to react to enemy attacks. To accomplish this, staffs coordinate security operations among the units that conduct them and concurrently synchronize them with local unit security.

FORCE PROTECTION

6-51. *Force protection* consists of those actions taken to prevent or mitigate hostile actions against DOD personnel (to include family members), resources, facilities, and critical information. These actions conserve the force's fighting potential so it can be applied at the decisive time and place and incorporates the coordinated and synchronized offensive and defensive measures to enable the effective employment of the joint force while degrading opportunities for the enemy. Force protection does not include actions to defeat the enemy or protect against accidents, weather, or disease (FM 3-0). Force protection employs a combination of active and passive measures to deter, defeat, or mitigate hostile actions against friendly forces. It is not a discrete mission assigned to a single unit, but a continuous process performed by all commands, regardless of their mission, location, or threat. It consists of a broad set of unit-specific, coordinated actions executed to protect the entire force across the range of operations and spectrum of conflict. Commanders and staffs develop and initiate actions during planning, but execute them mainly during preparation and execution. Assessment includes monitoring and evaluating the effectiveness of force protection measures.

REVISING AND REFINING THE PLAN

6-52. Plans are not static; commanders adjust them based on new information. During preparation, enemies are also acting and the friendly situation is evolving: Assumptions prove true or false. Reconnaissance confirms or denies enemy actions and dispositions. The status of friendly units changes. As these and other aspects of the situation change, commanders determine whether the new information invalidates the plan, requires adjustments to the plan, or validates the plan with no further changes. They adjust the plan

or prepare a new one, if necessary. When deciding whether and how to change the plan, commanders balance the loss of synchronization and coordination caused by a change against the problems produced by executing a plan that no longer fits reality. The higher commander's intent guides their decisionmaking.

COORDINATION AND LIAISON

6-53. *Coordination* is the action necessary to ensure adequately integrated relationships between separate organizations located in the same area. Coordination may include such matters as fire support, emergency defense measures, area intelligence, and other situations in which coordination is considered necessary (Army-Marine Corps). Coordination takes place continuously throughout operations. Commands do not operate in isolation; they synchronize their actions with those of others. Coordination is essential to this synchronization. It has four objectives:

- Ensure a thorough understanding of the commander's intent as well as subordinates' and supporting forces' roles.
- Ensure all affected and interested personnel have been consulted or informed, as time allows, so they may respond as desired or adjust their plans and actions.
- Avoid conflict and duplication of effort among units, reducing fratricide and expending resources.
- Ensure commanders and staffs consider as many relevant factors as time permits and effectively employ all available assets.

Locations, times, and functions may all require coordination. Coordinating begins during planning. However, a plan alone does not guarantee coordination. Exchanging information is critical to successful coordination.

6-54. During preparation, commands coordinate with higher, lower, adjacent, supporting, and supported units. Coordination includes the following:

- Sending and receiving liaison teams as necessary.
- Establishing communications links that assure continuous contact during execution.
- Exchanging SOPs as needed.
- Synchronizing security and reconnaissance plans to prevent breaks in coverage.

Coordination requirements fall into two categories: external and internal.

6-55. *Internal coordination* occurs within headquarters. It starts activities within and among staff sections that the plan requires to succeed. It ensures staff members remain fully informed of RI affecting their functional responsibilities. During preparation, internal coordination ensures that staffs refine plans based on updated RI. It helps resolve problems of external coordination. Internal coordination also supports subordinate units' preparations by resolving problems, conflicts, and resource allocations.

6-56. *External coordination* includes coordinating with subordinate units, adjacent units, higher headquarters, and supported and supporting units for resources or forces that may not be immediately under the command's control during planning. Places where two headquarters must coordinate their

actions are potential weak points. Enemies may exploit them, or commanders may commit too many or too few resources there. These points include unit boundaries, where unit interdependence may delay execution. The "directed telescope" is an important technique of external coordination because of its information-gathering capability and the ability of the directed telescope to speak for the commander if authorized. (See paragraphs 3-102–3-105.)

6-57. Coordination among forces in noncontiguous areas of operations (AOs) requires special efforts. The headquarters that assigns subordinate units noncontiguous AOs retains responsibility for controlling the area between them. The higher headquarters makes provisions for coordination between subordinate units assigned noncontiguous AOs and those operating in the "white space" between those AOs. In addition, the subordinate units must coordinate with units located in their areas of interest but with which they are not adjacent. Authorization for direct coordination is one common practice in this situation. Exchange of liaison is another. Exercise of initiative during planning is imperative. All concerned must determine whom they may need to communicate with and act to establish the necessary channels.

6-58. Establishing and maintaining liaison is vital to external coordination. Liaison provides a means of direct communications between the sending and receiving headquarters. (See appendix E.) It may begin with planning and continue through preparing and executing, or it may start as late as execution. Available resources and the need for direct contact between sending and receiving headquarters determine when to establish liaison. The earlier liaison is established, the more effective the coordination.

6-59. Graphic control measures are among the most basic means of coordination. (See FM 1-02, FM 3-90.) The "Coordinating Instructions" subparagraph of operation plans and orders lists control measures in written form. (See FM 5-0.) In graphic and written forms, control measures help commanders coordinate forces' actions geographically, functionally, or chronologically, as well as control individual subordinates' actions. Written control measures are the most likely source for chronological coordination, although some graphic control measures contain chronological restrictions. The joint force airspace control authority approves all airspace control measures. (See FM 3-52.)

REHEARSALS

6-60. **A *rehearsal* is a session in which a unit or staff practices expected actions to improve performance during execution.** (See appendix F.) Rehearsals occur during preparation. They are the commander's tool; they use them to ensure staffs and subordinates understand the commander's intent and concept of operations. Rehearsals also synchronize operations at times and places critical to successful mission accomplishment. The extent of rehearsals depends on available time. Rehearsals allow participants in an operation to become familiar with the plan. They also translate the plan into a visual impression that orients them to their environment and to other units that will execute the operation. Effective rehearsals further imprint a mental picture of the sequence of key actions within the operation. Finally, they provide a coordination forum for subordinate and supporting leaders and units.

6-61. Rehearsals contribute to external and internal coordination. They accomplish the following:

- Reveal unidentified external coordination requirements.
- Help synchronize the operation at key points by identifying times and locations requiring coordination, and solutions for coordinating actions.
- Support internal coordination by identifying tasks needed to accomplish external coordination.
- Update internal coordination techniques, such as the synchronization matrix and decision support template.

Even if staff members do not attend a rehearsal, they may still receive taskings for internal coordination.

TASK ORGANIZING

6-62. *Task organizing* is the process of allocating available assets to subordinate commanders and establishing their command and support relationships (FM 3-0). Receiving commands act to integrate units that are assigned, attached, under operational control (OPCON), or placed in direct support under a task organization. The command directing the task assignment also makes provisions for logistic support. (See FM 5-0 for doctrine on task organizing.)

TRAINING

6-63. Training develops the teamwork, trust, and mutual understanding that commanders need to exercise mission command and forces need to achieve unity of effort. During repetitive, challenging training, commanders enhance their tactical skills and learn to develop, articulate, and disseminate their commander's intent. They hone command skills during rehearsals, which also help to reinforce their command's common understanding of tactics, techniques, and procedures (TTP).

6-64. Training prepares forces and soldiers to conduct operations according to doctrine and TTP as practiced by the commander. Some training prepares forces for immediate missions. Other training readies them for generic missions or improves their skill in TTP that the commander expects them to use in foreseen missions. The after-action review (AAR) process associated with most Army training allows commanders and forces to review their grasp and practice of TTP doctrinally.

TROOP MOVEMENT

6-65. *Troop movement* is the movement of troops from one place to another by any available means (FM 3-90). Troop movements to position or reposition units for execution occur during preparation. Commanders integrate OPSEC measures with troop movements to ensure that they do not reveal any intentions to the enemy. (See FM 3-13.) Troop movements include assembly area reconnaissance by advance parties and route reconnaissance.

PREOPERATION CHECKS AND INSPECTIONS

6-66. Unit preparation includes completing precombat checks and inspections. These ensure that soldiers, units, and systems are as fully capable and ready to execute as time and resources permit. This preparation includes precombat training that readies soldiers and systems to execute the mission.

LOGISTIC PREPARATION

6-67. Resupplying, maintaining, and issuing special supplies or equipment occurs during preparation. So does any repositioning of logistic assets. In addition, there are many other possible activities. These may include identifying and preparing forward bases, selecting and improving lines of communications, and identifying resources available in the area and making arrangements to acquire them. Commanders direct OPSEC measures to conceal preparations and friendly intentions.

INTEGRATING NEW SOLDIERS AND UNITS

6-68. Commanders and staffs ensure that new soldiers are assimilated into their units and new units into the force in a posture that allows them to contribute effectively. They also prepare new units and soldiers to perform their roles in the upcoming operation. Integrating includes—

- Receiving and introducing new units and soldiers to the force and environment.
- Exchanging SOPs.
- Orienting them on their places and roles in the force and operation.
- Conducting briefings and rehearsals.
- Establishing C2 over them.
- Establishing communications links.
- Training them on the unit SOP and mission essential tasks for the operation.

SECTION V – EXECUTION

Only in very rare cases can an army obtain a complete picture of the enemy's situation before an attack is launched, even when reconnaissance has been detailed and thorough. Wireless silence, misleading information from agents, standing patrols, and defensive screens by land and air, make reconnaissance difficult. Therefore offensive plans must be flexible, and once the attack has begun commanders and troops must be ready to adapt themselves to rapidly changing situations. In principle, estimates of enemy dispositions only hold good until the first clash—as the great von Moltke said,

"No plan survives contact with the enemy."

MG F.W. von Mellenthin, German Army

6-69. ***Execute*** **means to put a plan into action by applying combat power to accomplish the mission and using situational**

understanding to assess progress and make execution and adjustment decisions. Inherent in execution is deciding whether to execute planned actions, such as, phases, branches, and sequels. Execution also includes deciding whether to alter the plan based on changes in the situation. During execution, commanders direct the application of combat power. They synchronize the elements of combat power as much as possible in the time available. Commanders mass effects at decisive points when the time to strike occurs; they do not delay to wait for optimal synchronization. They maintain continuity of operations to prevent enemies from regaining equilibrium. Because the situation changes rapidly, assessment is particularly important during execution.

6-70. During execution, the commander uses the C2 system to assess the situation to determine if progress meets expectations. Based on their assessments, commanders make decisions and put them into action. Commanders use the visualize-describe-direct methodology to assess the situation and make decisions. Staffs support commander's visualization with running estimates.

EXECUTION FUNDAMENTALS

6-71. Planning and preparation accomplish nothing if the command does not execute effectively. The best plan poorly executed has much less value than an adequate plan well executed. Superior execution effected in a timely manner can compensate for a less-than-adequate plan; a brilliant plan cannot overcome poor execution. Friction and uncertainty, especially enemy actions, dynamically affect plans. An accurate situational understanding that accounts for new realities provides the basis for commanders to exploit opportunities or counter threats.

6-72. Execution entails more than just putting the plan into action. Execution, a continuous process of three activities, follows the OODA cycle. (See figure 6-5.) The activities are—

- Assessing the current situation and forecasting progress of the operation.
- Making execution and adjustment decisions to exploit opportunities or counter threats. (See paragraphs 6-90–6-110.)
- Directing actions to apply combat power at decisive points and times.

Assessment consists of monitoring and evaluating, which closely correspond to the *observe* and *orient* activities of the OODA cycle. Making execution and adjustment decisions corresponds to the *decide* activity. Directing actions to apply combat power corresponds to the *act* activity. (See appendix A.)

6-73. During execution, changes in the situation occur. Some of these result from effective or ineffective actions by enemy or friendly forces; others result from changes in the environment. Successful execution depends on identifying and adapting to these changes. There are two methods for adapting to changes: anticipating and improvising.

6-74. *Anticipating* consists of forecasting changes and developing branches and sequels to address them. Anticipating does not end with planning; it

continues throughout preparation and, especially, execution. Napoleon, who often appeared to have luck on his side, remarked:

> *If I always appeared prepared, it is because before entering on an undertaking, I have meditated for long and have foreseen what may occur. It is not genius which reveals to me suddenly and secretly what I should do in circumstances unexpected by others; it is thought and meditation.*

Napoleon's view reinforces the role of anticipation for commanders. Study and development prepare commanders to apply analysis and judgment to achieve situational understanding; establish valid, realistic criteria for decisions; and anticipate events and their consequences.

6-75. *Improvising* consists of acting to counter unforeseen changes. While improvisation is not preferred, situations requiring it frequently arise. The real difference between anticipating and improvising is available time: Anticipation occurs when commanders foresee enemy actions early enough to develop an analytic response. Improvising occurs when enemy actions are unexpected and do not allow time for formal planning.

6-76. During execution, the C2 system continuously manages RI. It compares the COP against the commander's intent, identifies variances, and recommends to the commander solutions for correcting or exploiting the variances. Finally, it prepares and processes execution information that directs actions to exploit unforeseen opportunities and counter enemy actions.

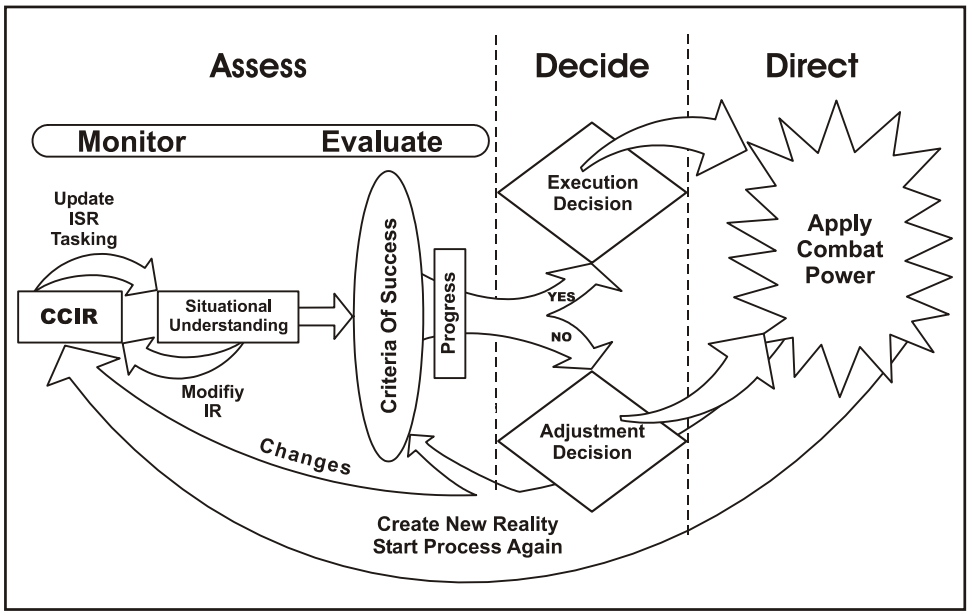


Figure 6-5. Decisionmaking During Execution

ASSESSMENT DURING EXECUTION

6-77. During execution, continuous assessment is essential. Assessment involves a deliberate comparison of forecasted outcomes to actual events, using the criteria of success to judge operational progress towards success.

Intelligence contributes situation development to assessment during execution. Assessment identifies the magnitude and significance of variances and determines the need for adjustments. The commander and staff assess the probable outcome of the operation to determine whether changes are necessary to accomplish the mission, take advantage of opportunities, or react to unexpected threats. Commanders also assess the probable outcome of current operations in terms of their impact on potential future operations in order to develop concepts for these operations early.

6-78. During execution, commanders use their situational understanding to monitor and evaluate the operation. The most important question when assessing execution is whether the current plan is still valid. Commanders make execution decisions if the plan is still valid. They make adjustment decisions if the situation requires altering the plan. As the commander develops an assessment, he describes his conclusions to the staff and subordinates. After commanders make decisions, the staff transmits the necessary execution information. When necessary, it adjusts the plan—to include adjusting the criteria of success if required. The focus then returns to executing and assessing.

MONITORING

6-79. Commanders and staffs monitor ongoing operations to determine if they are progressing satisfactorily according to current plans, including any FRAGOs that have modified them. Plans are based on facts and assumptions. Staffs monitor these to ensure they remain valid and to determine new facts and assumptions that affect current and future operations. The criteria of success can, and should, change during execution. These changes often generate new IRs.

6-80. During monitoring, commanders use RI to develop a clear understanding of the command's current situation with respect to the enemy and environment. The staff processes RI and presents the commander as clear an operational picture of the current situation as possible. All staff members must understand the CCIR, including which changes in capabilities and resources (friendly force information requirements [FFIR]) to report to the commander or appropriate staff sections immediately. They must also be able to identify exceptional information. (See paragraphs B-60–B-62.)

EVALUATING

6-81. Commanders and staffs continuously evaluate the operation in terms of the criteria of success, including forecasted performance, to determine variances and their significance. Determining the significance of variances is necessary to assessing the progress of operations and deciding what to do. Commanders do not view the task of making adjustments as a problem. In any operation, enemies actively try to defeat friendly efforts. Sometimes they make an unexpected move or friendly actions are ineffective. Sometimes the environment changes. In these cases, commanders adjust their plans. These same factors may also present commanders with opportunities to achieve greater success or accomplish objectives beyond those immediately assigned. Staffs continuously update running estimates based on their assessments.

Running estimates supplement and support the commander's visualization. Intelligence contributes battle damage assessment to this evaluation.

6-82. The chief of staff (COS—the executive officer at lower echelons) assists and advises the commander in making adjustments, particularly when the commander is not at the CP. While staff sections at the main CP collect and process RI under the COS's supervision, their products may not always be available to the commander. In these situations, the COS conveys recommended adjustments quickly and accurately to the commander. When the commander makes a decision, the COS supervises the staff activities needed to execute it.

6-83. Evaluation gains time by anticipating future operations and linking them to current operations. Commanders use the answers to certain questions to link current and future operations. Commanders and staffs consciously and continuously pose the following questions and evaluate the answers:

- Is the enemy acting as anticipated? If not, do enemy actions invalidate the current plan?
- Is the friendly force accomplishing the mission at an acceptable cost? If not, what adjustments are required to correct the variances?
- Is the progress of the operation leading to a disposition of friendly forces that can transition effectively to anticipated future operations?
- Has the situation changed so that friendly forces can exploit unanticipated opportunities to achieve the end state more effectively than what the original plan calls for?

These questions check the assumptions, estimates, and planning used in the war game to confirm or adjust plans. The answers help anticipate future operations. Staffs use them to develop COAs for anticipated situations, refine friendly options developed during war-gaming, and disseminate COAs early for parallel and collaborative planning.

6-84. A substantial focus of assessment during execution is on progress, that is, assessing whether individual activities, and the larger operation itself, are progressing according to the criteria of success. Assessing progress determines one of two states:

- The operation or its preparation is progressing satisfactorily or within acceptable variances.
- The operation as a whole, or one or more of its major activities, is not proceeding according to expectations.

6-85. When operations or their preparations are progressing satisfactorily, variances are minor and within acceptable levels. Progress that meets the criteria of success is still relevant to the situation and will result in achieving the commander's intent. Commanders who make this evaluation—explicitly or implicitly—allow operations to continue according to plan. This situation leads to execution decisions included in the plan.

6-86. An assessment may determine that the operation as a whole, or one or more of its major actions, is not progressing according to expectations. Variances of this magnitude present one of two situations:

- Significant, unforeseen opportunities to achieve the commander's intent.
- Significant threats to the operation's success. This situation can result from friendly failures or enemy successes.

In either case, the commander makes an adjustment decision.

DECIDE

6-87. The commander does not hesitate to modify a plan, or scrap it altogether, if necessary to accomplish the mission, achieve greater success, or save the force. Adhering to a plan when the situation has changed significantly wastes resources and opportunities. Since operations rarely unfold according to plan, the flexibility to adapt to changes is the hallmark of a good tactician. Effective commanders are flexible in their thinking. Their commands are agile enough to execute changes to plans on short notice.

6-88. Commanders at all levels create and nurture flexibility in themselves and their subordinates. This includes preparing to determine when the benefits of adjustments outweigh the costs of disrupting the plan, particularly its synchronization. It also emphasizes taking advantage of unforeseen opportunities, such as shifting the decisive operation to exploit the success of a shaping operation. In addition, commanders prepare for the difficult decisions they may need to make to counter unexpected enemy actions, such as employing the reserve to defeat an enemy counterattack. Effective training incorporates uncertain situations that prepare commanders to make unexpected decisions and prepare their commands to execute them.

6-89. Decisions during execution comprise two basic types:

- Execution decisions.
- Adjustment decisions.

The difference between execution and adjustment decisions lies in whether the plan anticipates the situation requiring a decision. Variances within limits for planned actions (including branches and sequels) require execution decisions. Variances greater than expected require adjustment decisions.

EXECUTION DECISIONS

6-90. **An *execution decision* is the selection, during preparation and execution, of a course of action anticipated by the order**. The most basic form of an execution decision is applying resources or activities as outlined in the plan, or within minor deviations from the plan. Other execution decisions involve initiating planned actions and performing critical ongoing functions when they support planned activities.

Planned Actions

6-91. One form of execution decision is permissive—directing execution of planned actions. This usually requires commanders to recognize that the preconditions for execution have been met. Preconditions may include completing certain tasks or encountering anticipated situations. Executing planned actions includes modifying them to fit the circumstances at the time of execution.

6-92. Branches and sequels are planned actions. Criteria of success used to evaluate progress help identify events that trigger executing branches and sequels.

Critical Ongoing Functions

6-93. Even if the plan is progressing satisfactorily a command must accomplish certain tasks during execution—the critical ongoing functions. These functions are routine in any operation; however, commanders consciously and continuously consider and, when necessary, direct activities related to them. They also describe aspects of the commander's visualization that apply to them in the form of guidance and priorities. Failure to consider these routine tasks can waste resources, squander opportunities, or even lead to failure. Proper performance of critical ongoing functions helps keep minor variances from becoming obstacles to mission accomplishment. Critical ongoing functions include the following:

- Focus all assets on the decisive operation.
- Conduct continuous ISR and target acquisition.
- Conduct security operations.
- Adjust CCIR based on the situation.
- Adjust graphic control measures.
- Perform battle tracking.
- Employ airspace control measures.
- Continue liaison and coordination.
- Conduct targeting.
- Manage movement and positioning of combat support (CS) and combat service support (CSS) units.
- Perform terrain management.

6-94. **Focus All Assets on the Decisive Operation.** At every stage of an operation, all elements of a command contribute to the decisive operation. Shaping operations focus on setting conditions for it to succeed. Sustaining operations ensure it receives the needed resources and other support. As operations progress, situations may render shaping operations irrelevant or cause sustaining operations to become misdirected. Commanders and staffs continuously monitor all assets. They ensure they are in position and tasked to contribute to the decisive operation or that they are moving to where they can support or facilitate it.

6-95. **Conduct Continuous ISR and Target Acquisition.** ISR is a continuous combined arms effort led by the operations and intelligence staffs in coordination with the battle staff. The priority intelligence requirements (PIRs) drive this ISR effort. Requesting support or performing intelligence-reach answers some requirements. Additionally, broadcast dissemination can ensure intelligence required across the command reaches those who need it. Organic reconnaissance and surveillance assets collect against requirements that no other source can answer or that the commander considers critical.

6-96. Reconnaissance and surveillance assets are never kept in reserve. They are always looking for weaknesses in enemy dispositions and targets. When the force engages the enemy, reconnaissance and surveillance assets operate

on the flanks, looking beyond the area of close combat and seeking opportunities to exploit. This does not mean that ISR assets never rest, maintain, or train. Commanders phase or sequence ISR operations to ensure that assets are available when needed and required coverage is maintained. They continue to synchronize the efforts of all assets through dynamic retasking and changes to the integrated ISR plan.

6-97. **Conduct Security Operations.** Security missions are associated with many operations. Once they complete these missions, security forces hand off the fight to the main body. However, commanders always look beyond the specific security missions. They continually assess the command's security posture and update the EEFI to fit the situation. (See FM 3-13.) Commanders cover open flanks and gaps between units with some form of security. This security may take the form of a security operation (screen, guard, or cover). (See FM 3-90.) Or it may involve placing and monitoring an ISR system able to detect enemy absence or presence and provide adequate warning.

6-98. **Adjust CCIR Based on the Situation.** Commanders and staffs continuously review CCIR throughout an operation. They analyze IRs against the mission and current commander's intent to identify IRs that directly affect projected decisionmaking by the commander. These are recommended to or selected by the commander as new CCIR. As CCIR are answered or the situation changes, commanders establish and disseminate new CCIR. Staffs allocate assets to collect against the new CCIR.

6-99. **Adjust Graphic Control Measures.** Full integration of forces and systems requires changing graphic control measures anytime there is significant movement of forces (including special operations forces activities). Commanders adjust graphic control measures to provide as much flexibility as possible for all BOSs. For example, during a delay, the fire support coordination line (FSCL) moves back as friendly forces move to the rear. In offensive operations, the FSCL moves forward as friendly forces advance. Commanders use graphic control measures sparingly and for the shortest time necessary. For example, commanders cancel no-fire areas once the circumstances that required them have passed. (See FM 1-02, FM 3-07, FM 3-90.)

6-100. **Perform Battle Tracking.** Battle tracking involves monitoring elements of the COP that are tied to the criteria of success. Battle tracking requires special attention by all staff members. The operations officer continuously monitors the progress of air and ground movement and expeditiously recommends changes as required.

6-101. **Employ Airspace Control Measures.** Airspace control measures (ACMs) are a major procedural means of Army airspace command and control (A2C2). (See FM 3-52.) They are closely associated with graphic control measures and battle tracking. ACMs concern all forces, not just Army aviation, air defense, and fire support forces. (See FM 3-07, FM 3-90.) All commanders and staffs remain aware of current ACMs and their integration with and effects on ground operations. They also consider the effects of ground operations on ACMs and adjust them as needed. For example, repositioning Army rocket and missile systems requires ACM adjustments.

6-102. **Continue Liaison and Coordination.** Internal coordination continues because friction within friendly forces and actions by enemy forces

affect a plan's execution. Staffs and (especially at lower echelons) commanders coordinate execution and adjustment decisions internally and externally to keep operations synchronized.

6-103. Situational understanding includes knowing the location of adjacent, higher, subordinate, supporting, and supported units, and what they are doing. It also includes knowing intelligence sources and how gaps between units are secured or monitored. Maintaining this knowledge requires reliable communications, liaison, and coordination. The CCIR may include any significant changes in the situation of adjacent units. When these occur, commanders evaluate their effect on operations, decide if they matter, and direct the necessary actions.

6-104. Commanders establish positive controls (normally periodic reports) to ensure that any loss of communications is immediately identified. They report any loss of required communications to higher headquarters and act to reestablish them. Doctrinal procedures prescribe who is responsible for establishing contact (left to right, higher to lower, rear to front, and supported to supporting). However, when communications are lost, all elements seek to regain them.

6-105. **Conduct Targeting.** Targeting is a logical process that synchronizes lethal and nonlethal fires with the effects of other BOSs. (See FM 6-20-10.) Nonlethal fires include offensive information operations effects. (See FM 3-13.) The targeting team performs targeting functions for the commander. The targeting meeting is the primary targeting forum.

6-106. During execution, the targeting team continually assesses the current situation, tracks decision points, and plans and prepares for engagement of future targets. (Targeting teams look 6, 24, 72, or more hours out, depending on the echelon and situation.) Intelligence provides target development and other support to targeting. The targeting meeting focuses and synchronizes the command's combat power and resources toward finding, tracking, attacking, and assessing high-payoff targets (HPTs). The meeting—

- Verifies and updates the high-payoff target list.
- Verifies, updates, and retasks ISR assets for each HPT.
- Allocates delivery systems to engage targets.
- Confirms that ISR assets are tasked to verify effects on targets.
- Nominates targets for attack by joint systems.
- Synchronizes lethal and nonlethal fires (including information operations).

The targeting meeting provides a forum to resynchronize target engagements when the commander makes execution and adjustment decisions.

6-107. **Manage Movement and Positioning of Combat Support and Combat Service Support Units.** Any operation focuses on massing the effects of combat power at the decisive point of the decisive operation. This requires maneuvering not only combat forces but also CS and CSS forces. Commanders and staffs determine where to mass effects and direct movements early enough to position all forces, including CS and CSS, to accomplish that task. They plan CS and CSS to shaping operations so as not to interfere with support to the decisive operations.

6-108. During execution, it is easy to lose sight of the time required to reposition assets. Moving CS and CSS units during movements to contact, exploitations, and pursuits is particularly important. Staffs include these units in the movement formation and track their locations. Maneuver units must not outrun critical supporting units. Staff elements remain aware of the time required to move assets for which they have functional responsibility. They initiate movement in time to get them to the right place at the right time. They allow enough time to account for the friction accompanying moves during operations.

6-109. **Perform Terrain Management.** Headquarters deconflict land use within their AOs. They track the location and land use of all units. Effective terrain management ensures that adequate space, including routes, is available at the right time to support critical activities, especially the decisive operation. Staffs reverse-plan to determine which units require what space at what time. They give priority to those executing and supporting the decisive operation. They ensure that space is available when those units need it.

ADJUSTMENT DECISIONS

6-110. **An *adjustment decision* is the selection of a course of action that modifies the order to respond to unanticipated opportunities or threats. Commanders make adjustment decisions during preparation and execution.** When the commander makes an adjustment decision, it normally requires resynchronizing operations across the BOSs. The commander may have to describe the commander's visualization that underlies the adjustment decision with guidance on the critical ongoing functions. Staff members take necessary actions within their functional responsibilities to execute the decision. Collectively, these actions resynchronize the BOSs. Commanders pay particular attention to the effects of adjustment decisions on targeting. They give enough guidance to continue the targeting process. Adjustments may take one of three forms:

- Reallocating resources.
- Changing the concept of operations.
- Changing the mission.

Reallocating Resources

6-111. The simplest adjustment is reallocating resources. This normally provides additional assets to the decisive operation; however, some situations may require reinforcing a shaping operation. Commanders can allocate additional CS, such as artillery, or reinforce with additional combat units. Commanders avoid reinforcing a failing effort. If an operation is failing, the commander does not strengthen it without a clear indication that additional resources will result in success. On the other hand, commanders reinforce success if it creates opportunities for more success.

Changing the Concept of Operations

6-112. Changing the concept of operations adjusts the way the force executes the operation without changing the mission. Most often, this adjustment involves designating a different operation as the decisive operation. Commanders normally do this to exploit an unplanned opportunity or counter an

unexpected threat. When the decisive operation is unsuccessful (or less successful than planned), the commander designates a more successful shaping operation as the decisive operation.

6-113. A shaping operation may achieve significant success beyond that anticipated. In that situation, the commander may shift the decisive operation to it, if that is possible within the higher commander's intent. However, commanders do this only if it accomplishes the mission in a manner superior to that of the original plan. Commanders may also shift the decisive operation if unanticipated enemy actions threaten to defeat the operation. When shifting the decisive operation, commanders also shift all priorities of support and all available CS and CSS to the new decisive operation.

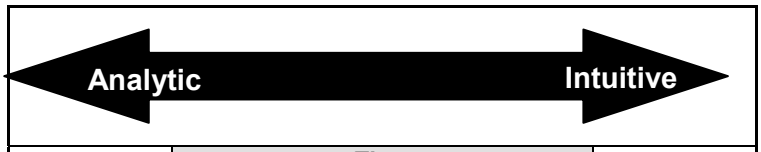
6-114. Among the most important adjustment decisions are those concerning the reserve: the number and type of forces to allocate to it, and when and where to commit it. Employing reserves successfully requires anticipation. Anticipation helps commanders task organize, position, and move reserves in a way that minimizes loss of momentum on their commitment. When the reserve is committed, the commander designates another force as a new reserve.

Changing the Mission

6-115. When reallocating resources or changing the concept of operations does not resolve a problem hampering mission accomplishment, the commander may have to change the mission. Commanders do this only as a last resort, and the new mission must still accomplish the higher commander's intent. Of the three adjustment decisions, this one presents the greatest difficulties in resynchronizing the force's operations with those of the overall force.

ADJUSTMENT DECISION METHODS

6-116. Methods for making adjustment decisions fall along the continuum shown in figure 6-6. The key factor commanders consider when selecting a decisionmaking method is the time available to make a decision and initiate action. Figure 6-6 shows other important factors. As underlying factors push the method further to the intuitive side of the continuum, at some point the MDMP methodology no longer applies. However, the context provided by the order—which was developed using the MDMP—allows commanders to make adjustments, even major ones, without having to redo the entire order.



More	**Time**	Less
Less	**Commander's Experience**	More
Less	**Commander's Involvement**	More
More	**Staff's Training Level & Experience**	Less
More	**Staff Involvement**	Less

Figure 6-6. Adjustment Decision Methods

6-117. Adjustment decisions in novel or complex situations should be as analytic as time allows. Commanders follow the MDMP, modifying selected steps to fit the situation and available time. (See FM 5-0.) Time-constrained conditions require more intuitive decisionmaking techniques. Commanders use the focused COA technique when there is not enough time for thorough analysis. They use the recognition technique when a satisfactory solution is so obvious that rigorous analysis is not required.

Focused COA

6-118. The focused COA technique depends heavily on the commander's situational understanding. It starts with the commander visualizing and mentally war-gaming COAs until he finds one that appears to solve the problem. The staff then analyzes the COA and refines it into an order. The commander solves inadequacies detected during analysis by revising or modifying the COA rather than developing alternative COAs.

Recognition

6-119. Commanders reach recognition decisions when they can determine an acceptable solution immediately, with little or no analysis. The recognition decision technique is the most common decisionmaking technique used during execution of fast-paced operations. Commanders make dozens of decisions during execution. Most are recognition decisions.

6-120. Recognition decisions are not MDMP-based; however, they are grounded in IPB, estimates, and the order that initiated the operation. They result from intuitive decisionmaking. Recognition decisions are appropriate when—

- There is little or no time available for deliberation.
- Significant progress problems require an immediate solution.
- The situation and reasons for the lack of progress are clear.
- A single, acceptable solution is obvious to the commander.

A recognition decision produces an acceptable solution based on the commander's situational understanding and assessment of the significance of variances. Commanders determine and refine an acceptable solution mentally instead of analyzing multiple options to determine the optimal one.

6-121. The recognition decision technique requires an experienced decision-maker. It requires the least staff involvement before the decision, but a great deal of staff action afterwards. The coordinating and synchronizing activities that occur before the commander's decision under analytic decisionmaking must be accomplished after the commander makes a recognition decision. The staff resynchronizes the operation as much as possible through coordination, issuing FRAGOs as needed.

DIRECT

6-122. Land forces do not respond to a decision until directed to do so. Subordinates then perform their own decisionmaking and direct actions by their forces. Any change to a plan requires changes in applying combat power and resynchronization to mass effects. In addition, staffs ensure continuity of the

operation. Figure 6-7 summarizes the range of possible actions with respect to decisions made during execution.

Type Decision	Situation	Action
Execution	**Minor Variances from the Plan** Operation proceding according to plan. Variances are within acceptable limits.	**Execute Planned Actions** • Commander or designee decides which planned actions best meet situation and directs their execution. • Staff completes follow-up actions. • Decision may be permissive. • FRAGO not normally issued.
Execution	**Anticipated Situation** Operation encountering variances within the limits for one or more sequels.	**Execute a Branch or Sequel** • Commander or staff review branch/sequel plan. • Commander receives assessments and recommendations for modifications to the plan, determines the time available to refine it, and either issues guidance for further actions or directs execution of a branch/sequel. • Staff issues FRAGO. • Staff completes follow-up actions.
Adjustment	**Unanticipated Situation—Friendly Success** Significant unanticipated positive variances result in opportunities to achieve the end state in ways that differ significantly from the plan.	**Make an Adjustment Decision** • Commander recognizes threat/opportunity and determines time available for decisionmaking. • Commander selects a decisionmaking method. If there is not enough time for a complete MDMP, the commander directs the staff to refine a single COA or directs actions by subordinates to counter the threat/exploit opportunity and exercise initiative within the higher commander's intent. • Commander normally does not attempt to restore the plan. • Commander issues a verbal WARNO or FRAGO to subordinate commanders. • Staff resynchronizes operation, modifies the criteria of success, and begins assessing operations for progress using the new criteria of success.
Adjustment	**Unanticipated Situation—Enemy Threat** Significant, unanticipated negative variances impede mission accomplishment.	

Figure 6-7. Decision Types and Related Actions

APPLY COMBAT POWER

6-123. To implement execution or adjustment decisions, commanders direct actions that apply combat power. The normal means of doing this during execution is the FRAGO. Modern INFOSYS enable a C2 system to automate production of orders and associated graphics for dissemination, especially for execution decisions that use data already stored in a common database.

SYNCHRONIZE OPERATIONS

6-124. After the commander makes an execution or adjustment decision, the staff resynchronizes the operation to mass the maximum effects of combat power on the enemy and seize, retain, and exploit the initiative. This involves synchronizing the operation in time, space, and purpose across all BOSs. Individual staff sections and subordinate and supporting forces keep each other informed and integrate and deconflict their actions to reduce duplication, confusion, and problems.

6-125. In particular, the staff applies the commander's directions to the targeting process. (See FM 6-20-10.) At lower echelons, the targeting process serves as a synchronization tool. The targeting team reviews the appropriate targeting products and makes any changes necessary to support the commander's decision. The staff obtains the commander's approval of any changes to targeting recommendations. It then prepares FRAGOs for subordinate units with new targeting-related tasks and essential fire support tasks, and rehearses if time permits. It tracks targeting actions with the products (such as the target synchronization matrix) the command uses.

6-126. Modern INFOSYS can reduce the difficulties of resynchronizing operations after an adjustment decision by adjusting supporting plans through automation. Synchronization is not an end in itself. Excessive concern with synchronization can waste resources and opportunities. Synchronization should be pursued only to the extent required to assure success and not at the expense of speed and flexibility. Often speed of execution will generate more combat power than detailed synchronization.

MAINTAIN CONTINUITY OF OPERATIONS

6-127. To maintain continuity of operations, commanders and staffs follow these tenets:

- Make the fewest changes possible.
- Facilitate future operations.

6-128. Commanders make only those changes to the plan needed to correct variances. They keep as much of the current plan the same as possible. That presents subordinates with the fewest possible changes. The fewer the changes, the less resynchronization needed, and the greater the chance that the changes will be executed successfully.

6-129. Whenever possible, commanders ensure that changes do not preclude options for future operations. Normally this tenet applies only to higher echelons with organic planning capabilities.

6-130. Figure 6-8 (page 6-32) shows a concept for adjusting or planning future operations. Using it requires staffs to develop options during planning or commanders to infer them based on their assessment of the current situation. It depends on validating earlier assumptions and updating planning factors and staff estimates. The concept of future operations may be war-gamed using updated planning factors, running estimates, and assumptions. Commanders project the situation in time, visualize the flow of battle, and project the outcomes of future engagements. Decisionmaking during operations is continuous, not a discrete event. Commanders balance

priorities carefully between current and future operations. They seek to accomplish the mission efficiently, while conserving as many resources as possible for future operations. Achieving this balance—while remembering that soldiers' lives are the most important resource—is a major aspect of the art of command.

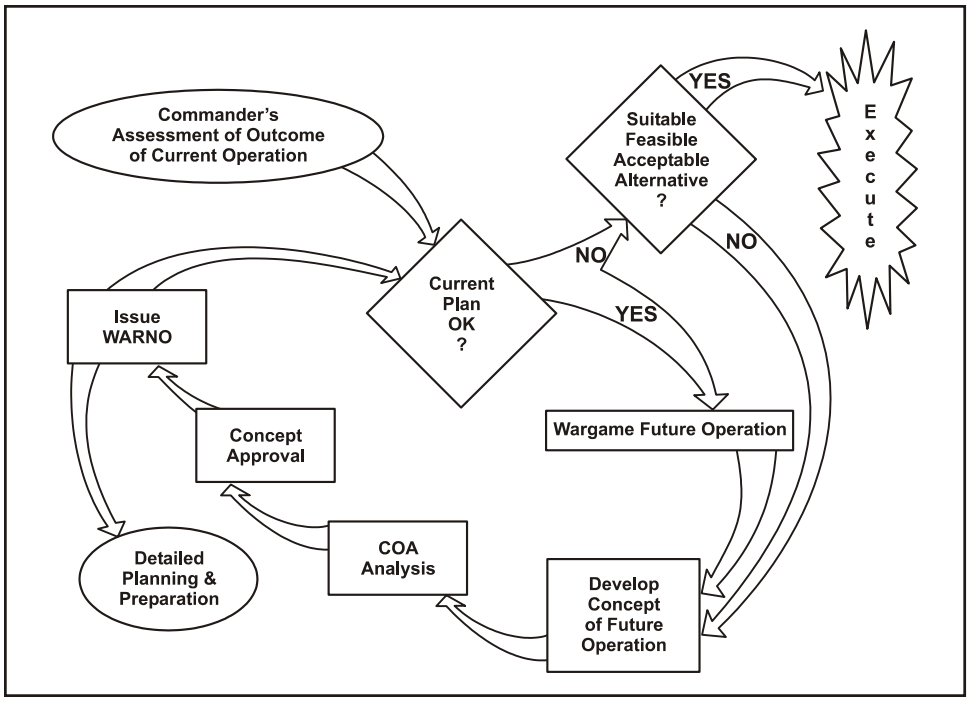


Figure 6-8. Planning Future Operations

SECTION VI – CONCLUSION

6-131. C2 doctrine establishes a framework for commanders to use to exercise effective C2 during operations. The key to exercising effective C2 lies in the commander's ability to make effective decisions and direct actions to mass the effects of combat power at decisive points. The C2 system supports the commander by providing COP-related information that sustains the commander's situational understanding, by developing products supporting his decisionmaking, and by preparing and disseminating execution information to implement his decisions. Staffs process information into input to the COP and running estimates, which recommend COAs for decisions commanders must make. Commanders determine whether execution or adjustment decisions are needed by monitoring the situation and assessing the significance of variances. When time permits, commanders make analytic decisions based on staff analyses. Under time-constrained conditions, they adapt analytic decisionmaking methods to the situation, making intuitive decisions as needed. The heart of C2 is the commander. All C2 processes exist to provide the commander with the RI needed to make decisions at the appropriate times and place to accomplish the mission.

Appendix A

The Observe-Orient-Decide-Act (OODA) Cycle

The OODA cycle describes the basic sequence that occurs when commanders make decisions. (See figure A-1.) This concept relies heavily on extensive research into adversarial "decision-action" cycles in aerial combat. Certain conclusions from the OODA cycle apply to any two-sided conflict, whether between individuals in hand-to-hand combat or large military formations. Used to describe command and control of land forces, however, it vastly simplifies an extremely complicated process. Nevertheless, it can be used to show how command and control works. It emphasizes the importance of the commander as the decisionmaker—the crucial element in command and control.

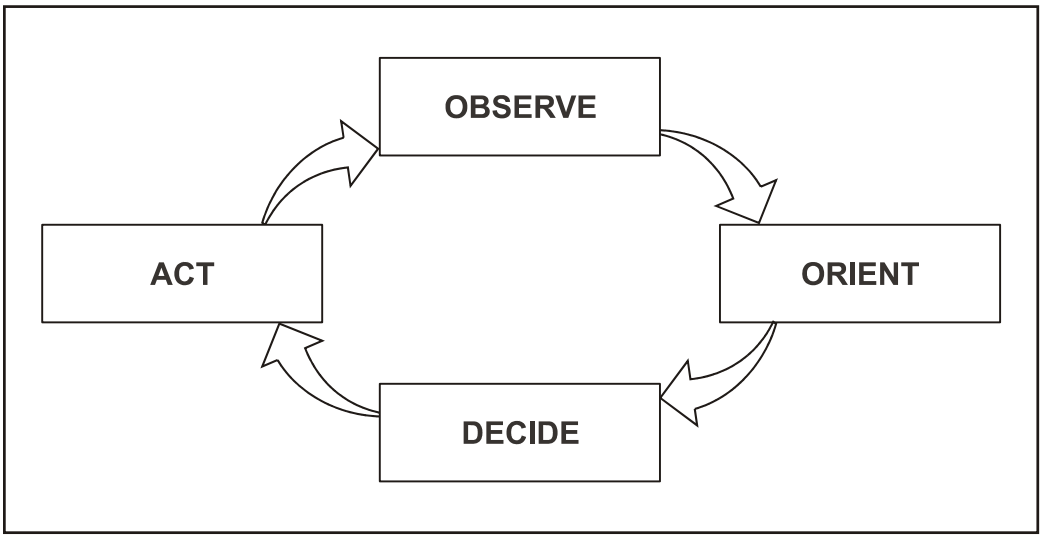


Figure A-1. The OODA Cycle

A-1. During operations, commanders first *observe* the situation—that is, they collect information. They learn about the status of their own forces, the environment, and the enemy through intelligence, surveillance, reconnaissance, information systems (INFOSYS), and reports from other headquarters. Sometimes they actively seek information; sometimes the command and control (C2) system disseminates it to them.

A-2. Having observed the situation, commanders next *orient* to it by achieving situational understanding based on the common operational picture (COP) and staff running estimates. During this activity, commanders develop their commander's visualization based on their situational understanding. However, this orientation is rooted in what the commander

believes to be the current reality of the area of interest. Since these sources of information are all imperfect and may be manipulated by enemies (creating fog), a commander's perception of reality will inevitably differ from absolute reality. Thus, commanders constantly strive to validate their commander's visualization. (See figure 6-4 on page 6-7.) At the same time, they recognize the inherent uncertainty in their commander's visualization and the advantages to gain by increasing the enemy's level of uncertainty. Employing information operations is one way to do this. The outcome of successful orientation is improved situational understanding.

A-3. Based on their orientation, commanders make a deliberate or hasty plan, deciding what to do and how to do it. The decisionmaking will be intuitive or analytic, depending on the situation. Commanders put their decision into action by disseminating it through execution information—orders or plans—supervising to ensure proper execution, and assessing results through feedback from the COP and staff running estimates. This assessment returns them to the observation activity. Having acted, changed the situation, and caused the enemy to react, they observe the enemy's reaction and their own forces' actions, and begin the cycle again.

A-4. The OODA cycle is continuous, rather than sequential: all its activities occur simultaneously. Commanders collect information, assess, and make decisions while subordinate commanders execute actions. All commanders, at all levels on all sides, engage in the cycle simultaneously throughout an operation. Actions taken as a result of these cycles continuously change the situation in the area of operations.

A-5. The OODA cycle accurately portrays C2 as a continuous process. It demonstrates that the antagonist who can consistently and effectively cycle through the process faster—that is, maintain a higher tempo—gains an ever-increasing advantage with each cycle. With each cycle, the slower antagonist falls further and further behind becoming increasingly unable to cope with the deteriorating situation. With each cycle, the slower antagonist's actions become less relevant to the true situation. His C2 deteriorates because his decisions become less and less appropriate, either in substance or in timeliness.

A-6. The important lesson of the OODA cycle is to generate tempo by shortening the time needed to plan, prepare, and execute. It is not absolute speed that matters, but speed relative to the enemy: the aim is to be faster than the enemy. Commanders can achieve this by interfering with the enemy's C2 as well as streamlining their own C2. The speed advantage does not necessarily have to be a great one: a small advantage exploited repeatedly can quickly lead to decisive results. The ability and desire to generate a higher tempo does not mean commanders should act when the situation calls for waiting. The aim is meaningful—not merely rapid—action. A decision to act is meaningful only if that act has a significant effect on the enemy. Rapid but ineffectual actions accomplish nothing.

A-7. There is one caveat to applying the OODA cycle directly to land operations. The OODA cycle was developed to explain air combat between fighter aircraft, not land operations. When pilots decide to initiate action, they directly maneuver their aircraft. In comparison, land force commanders do

not directly initiate actions; they issue directions to subordinate commanders, each of whom performs the OODA cycle. In land operations, commanders at each level must execute the OODA cycle before the force as a whole responds to an order from the overall force commander.

A-8. The OODA cycle is especially appropriate to decisionmaking during execution. The continuous cycle of *see first, understand first, act first, and finish decisively* reflects the OODA cycle and focuses on the specific requirements of modern operations. "See first" equates to the "observe" activity but emphasizes accomplishing it before the enemy does. Similarly, "understand first" equates to "orient," again emphasizing the need to accomplish it before the enemy. Collaboration, discussion, and sharing of knowledge related to the COP are means of doing this. Orienting includes understanding the intent of enemies and others who attempt to shape friendly operations to their benefit or friendly disadvantage. "Act first" includes both the "decide" and "act" activities, as acting requires decisions, whether analytic or intuitive, to guide actions. The commander, through the C2 system, synchronizes and integrates the battlefield operating systems as well as directing execution within the higher commander's intent. Finally, "finish decisively" corresponds to the "act" activity. It emphasizes applying relentless pressure, following up and exploiting initial blows, and exercising subordinates' initiative.

Appendix B

Information

The most important element of control is information. However, information alone has no meaning. This appendix expands the discussion of information in chapter 3. It addresses the following related concepts: the cognitive hierarchy of information, relevant information categories by subject (METT-TC) and by usage, information management categories, and relevant information quality criteria.

COGNITIVE HIERARCHY

B-1. ***Information*, in the general sense, is the meaning humans assign to data.** The cognitive hierarchy defines four different levels of meaning. (See figure B-1.) A principal task of information management (IM) is to collect information and transform it by adding progressively greater meaning at each level of the cognitive hierarchy. This process raises information from the lowest level, data, to the

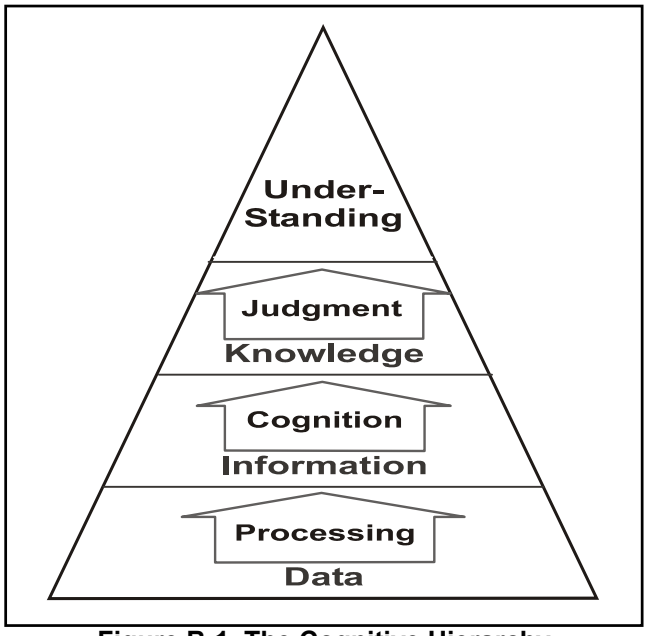


Figure B-1. The Cognitive Hierarchy

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highest, understanding. With understanding, commanders can make better decisions and more effectively regulate actions by their forces. Each level of information has a different value in supporting command and control (C2). The distinctions between the levels of the cognitive hierarchy are not always clear. However, it is important to realize that they exist.

B-2. Intelligence, a product that becomes relevant information (RI) within C2, falls into the second (information) and third (knowledge) levels of the cognitive hierarchy. Intelligence does not come as raw data; to be RI in C2, it must come through the intelligence cycle. The cycle of planning and directing, collecting, processing, analyzing and producing, and disseminating intelligence requires a substantial effort to overcome some unique and complex challenges. As both processed data (information) and analyzed and evaluated information (knowledge) about the enemy and environment, intelligence is crucial to commanders' achieving situational understanding.

DATA

B-3. ***Data* is the lowest level of information on the cognitive hierarchy. Data consist of unprocessed signals communicated between any nodes in an information system, or sensings from the environment detected by a collector of any kind (human, mechanical, or electronic).** Data is rarely useful until it is processed to give it meaning. The exception is combat information. *Combat information* is unevaluated data, gathered by or provided directly to the tactical commander which, due to its highly perishable nature or the criticality of the situation, cannot be processed into tactical intelligence in time to satisfy the user's tactical intelligence requirements (JP 1-02). Because of its nature, collectors often amass a lot of unimportant data. Until data is processed, it is often difficult to tell if it is relevant. However, as with all information, collectors should focus, as much as possible, only on data needed to determine the information required to build the common operational picture (COP).

INFORMATION

B-4. **In the context of the cognitive hierarchy, *information* is data that have been processed to provide further meaning.** Processing includes filtering, fusing, formatting, organizing, collating, correlating, plotting, translating, categorizing, and arranging. Information is useful for immediate application. It can be used to avoid threats, acquire targets, or take other immediate actions. Information forms the basis of the COP.

KNOWLEDGE

B-5. **In the context of the cognitive hierarchy, *knowledge* is information analyzed to provide meaning and value, or evaluated as to implications for the operation.** Cognition—the act of learning, of integrating from various pieces of information—allows commanders and staffs to generate knowledge. At this point, a product useful for decisionmaking forms. Commanders and staffs can recognize relationships among events in the area of interest, discern the way the enemy thinks, and forecast what he might do. Moreover, commanders and staffs begin to recognize what they do not yet understand—they identify the uncertainty that exists. Knowledge, including

aspects of running estimates, can often be represented on displays of the COP. Other knowledge products may be presented separately from, but in conjunction with, the COP.

UNDERSTANDING

B-6. **In the context of the cognitive hierarchy, *understanding* is knowledge that has been synthesized and had judgment applied to it in a specific situation to comprehend the situation's inner relationships.** Commanders may know what is happening and why. They and others apply judgment to transform that knowledge into understanding. Judgment is a purely human skill. It is based on experience, expertise, and intuition. While staffs may support commanders in achieving understanding, the most important understanding is that which commanders achieve. When commanders achieve situational understanding, they see patterns emerging from events in the area of interest. They can anticipate the consequences of both their own force's actions and the enemy's. While true understanding should be the basis for their decisions, commanders realize that uncertainty and time preclude achieving perfect situational understanding before deciding and acting.

INFORMATION TRANSFORMATION

B-7. As information moves up the hierarchy, the C2 system transforms it. (See figure B-1 on page B-0.) Processing transforms data into information. Because processing involves rote application of procedures, machines can process many types of data more quickly and efficiently than people. Cognition turns information into knowledge. To a degree, cognition relies on rules of logic or deduction; thus, expert systems and artificial intelligence can assist with cognition to some extent by helping integrate pieces of processed data. Cognition is primarily a human mental activity. It is not a procedural act, but an act of learning. Judgment, a purely human skill, transforms knowledge into understanding. The C2 system cannot reduce judgment to procedures or rules.

B-8. Integration occurs as information moves up the cognitive hierarchy. The commander and C2 system piece together multiple bits of data to make information; analysis and evaluation of numerous pieces of information produce knowledge. Finally, multiple forms of knowledge distill under judgment into understanding. This integration is essential to reaching understanding because it involves reducing the total number of bits to consider at any one time. If integration did not occur, commanders would be overwhelmed by bits of data or overloaded by a staggering number of factors.

B-9. Commanders need knowledge and understanding to make effective decisions. The goal in IM should not be processing vast amounts of data but processing the information necessary to bring commanders to an accurate situational understanding as quickly as possible. Commanders apply the final judgments, but effective IM provides knowledge and information in forms that make it easy to assimilate and understand.

RELEVANT INFORMATION SUBJECT CATEGORIES—METT-TC

B-10. *Relevant information* is all information of importance to the commander and staff in the exercise of command and control (FM 3-0). **In**

the context of information management, the six factors of METT-TC—mission, enemy, terrain and weather, troops and support available, time available, and civil considerations—make up the major subject categories into which relevant information is grouped for military operations. The commander and staff consider RI for each category in all military operations. The relative impact of each category may vary, but the commander and C2 system consider them all.

MISSION

B-11. The *mission* is the task, together with the purpose, that clearly indicates the action to be taken and the reason therefore (JP 1-02). It is always the first factor commanders consider during decisionmaking. (See FM 5-0.) A thorough understanding of the mission focuses decisionmaking throughout the operations process. Commanders analyze their missions and decisions in terms of the higher commander's intent, mission, and concept of operations. As commanders allocate tasks and resources to subordinates, they ensure their decisions support the decisive operation and the higher commander's intent. Commanders and staffs view all the other factors of METT-TC in terms of their impact on mission accomplishment.

B-12. The mission statement defines the *who, what, when, where*, and *why* of the operation. A thorough understanding of *why* the unit is conducting an operation provides the focus for planning. Commanders analyze a mission in terms of the intent of the two higher commanders and their concepts of operations. They also consider the missions of adjacent units to understand their contributions in relation to their own units.

B-13. When assigning missions, commanders ensure all their subordinates' missions support the decisive operation and the higher commander's intent. Under mission command, missions to subordinate commanders allow the greatest possible freedom of action. They are constrained only by those control measures that ensure necessary coordination. Ideally, commanders assign each subordinate a mission and an area of operations (AO) without further restrictions. However, some operations (such as a combined arms breaching operation) require greater control and coordination than others (such as an exploitation).

B-14. When analyzing a mission, commanders consider possible subsequent missions, focusing their planning resources on the most probable. They plan to exploit success and aggressively look for opportunities, keeping within the higher commander's intent.

ENEMY

B-15. The second factor to consider is the enemy—dispositions (including organization, strength, location, and tactical mobility), doctrine, equipment, capabilities, vulnerabilities, and probable courses of action (COAs). (See FM 34-130.)

B-16. The enemy, terrain and weather, and civil consideration contributions to the COP come from many sources, including intelligence, surveillance, and reconnaissance (ISR) assets and combat information. Of all RI, intelligence (RI on the enemy and environment) is inherently the most uncertain;

therefore the G-2 (S-2) carefully manages collection. To visualize enemy forces, commanders need detailed intelligence, such as, speed of advance, tempo, and strengths and weaknesses. Technology must display RI about enemy forces and significant aspects of the environment within the same digital frame of reference as friendly force information.

B-17. Once a commander initiates an operation, the enemy attempts to determine the friendly concept of operations and defeat it. Enemies react to every friendly move. When the enemy has the initiative, all friendly reactions to enemy actions result in an enemy counteraction. Consequently, commanders never assume their operations will unfold as planned. Enemies always have opportunities to unhinge them. Commanders look for enemy weaknesses and strengths in order to deny options to enemy commanders and keep them reacting to friendly maneuvers. Commanders analyze their forces for weaknesses and vulnerabilities that enemies might exploit, and act to counter them.

TERRAIN AND WEATHER

B-18. Terrain and weather are natural conditions. Commanders have only a limited ability to influence them, although terrain includes manmade structures, such as roads and cities. Human modification of terrain can change the shape of the land or its trafficability. It can also change local weather effects by modifying local wind or water pathways. Commanders consider manmade features and their effects on natural terrain features and climate when they analyze terrain. Commanders also consider the effects of manmade and natural terrain in conjunction with the weather on friendly and enemy operations. The second step of intelligence preparation of the battlefield (IPB) helps commanders with this complex task. (See FM 34-130.) Terrain and weather are relatively neutral; they favor neither side unless one is better prepared to operate in the environment or is more familiar with it (for example, fighting on friendly territory). Commanders analyze terrain and weather for favorable and unfavorable conditions. Enemy commanders do the same.

Terrain

B-19. The terrain has a direct impact on selecting objectives; location, movement, and control of forces; effectiveness of weapons and other systems; and protective measures. Effective use of terrain diminishes the effects of enemy fires, increases the effects of friendly fires, and facilitates surprise. The effects of terrain on operations vary, depending on whether a force is defending or attacking. For example, cross-compartmented terrain favors the defender and hinders the attacker.

B-20. An appreciation of terrain—the ability to analyze its impact on operations—is one of a commander's most important skills. Whenever possible, commanders perform a personal reconnaissance of the terrain where they plan to operate. IPB is critical to analyzing and understanding the effect of terrain on friendly and enemy COAs. Complete information on terrain is more than data on features, slope and elevation, soil conditions, and vegetation; it also includes their impact on vehicle and human movement rates, maintenance, tempo, trafficability, and maneuverability by various types of forces. Engineer topographic teams produce terrain analysis products to help

commanders visualize the effect of terrain on operations. These teams regularly update terrain information to reflect the effects of combat, as well as of nature. Terrain also includes environmental considerations, that is, the spectrum of environmental media, resources, or programs that affect and are affected by operations. Terrain is normally analyzed using the five military aspects of terrain, expressed in the memory aid, OAKOC:

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

Commanders consider all five aspects when analyzing terrain. They focus on the ones most relevant to the situation.

B-21. **Observation and Fields of Fire. *Observation* is the condition of weather and terrain that permits a force to see the friendly, enemy, and neutral personnel and systems, and key aspects of the environment.** Commanders evaluate their observation capabilities for electronic and optical line-of-sight surveillance systems, as well as for unaided visual observation. The highest terrain normally provides the best observation. For this reason, elevated terrain often draws enemy attention. A *field of fire* is the area that a weapon or group of weapons may cover effectively from a given position (JP 1-02). A unit's field of fire is directly related to its ability to observe.

B-22. The commander's analysis of observation and fields of fire considers many factors, including the location and effect of dead space. *Dead space* is an area within the maximum range of a weapon, radar, or observer, which cannot be covered by fire or observation from a particular position because of intervening obstacles, the nature of the ground, or the characteristics of the trajectory, or the limitations of the pointing capabilities of the weapon (JP 1-02). Commanders identify potential enemy and friendly engagement areas through observation and fields of fire.

B-23. **Avenues of Approach.** An *avenue of approach* is an air or ground route of an attacking force of a given size leading to its objective or to key terrain in its path (JP 1-02). An avenue of approach is categorized by the size and type of force that can use it, for example, a dismounted infantry company, an armored division, or an attack-helicopter company. A good avenue of approach allows ease of movement and good cover, concealment, observation, and fields of fire. It avoids obstacles and contributes to protection of the force by providing adequate maneuver space. Avenues of approach normally incorporate key terrain or deny its use to the enemy.

B-24. Corridors (ridge and valley systems) can either form natural avenues of approach (if they run toward an objective), or obstacles to movement (if they run perpendicular to the direction of movement, forming cross compartments). Troops using valleys as avenues of approach must control the adjacent ridges to protect their movement. Close or broken terrain, heavy woods, built-up areas, and abrupt changes in elevation hinder heavy forces but provide cover and concealment for light forces. Although open, rolling

terrain provides little concealment and cover to light forces, it is suited for rapid advances by heavy formations.

B-25. **Key Terrain and Decisive Terrain.** *Key terrain* is any locality or area, the seizure or retention of which affords a marked advantage to either combatant (JP 1-02). Two factors can make terrain key: how the friendly commander wants to use it, and whether the enemy can use it to defeat a friendly COA. Different COAs may have different key terrain associated with them. The same terrain feature may not be key for all COAs. Terrain adjacent to the AO may be key if its control is necessary to accomplish the mission.

B-26. *Decisive terrain* is key terrain whose seizure and retention is mandatory for successful mission accomplishment (FM 3-90). Decisive terrain is relatively rare; it is not necessarily present in every situation. Unlike key terrain, decisive terrain is not associated with any COA. By definition, the force cannot accomplish its mission without seizing and retaining decisive terrain. When commanders identify decisive terrain, they specify actions related to it as one or more key tasks in the commander's intent.

B-27. **Obstacles.** An *obstacle* is any obstruction designed or employed to disrupt, fix, turn, or block the movement of an opposing force, and to impose additional losses in personnel, time, and equipment on the opposing force. Obstacles can be natural, manmade, or a combination of both (JP 1-02). Obstacles fall into two categories: existing and reinforcing. The types of existing obstacles are natural, manmade, and military. The types of reinforcing obstacles are tactical and protective. A reinforcing obstacle's effectiveness varies with the type of force negotiating it, the fires covering it, the nature of the obstacle, and the weather. (See FM 5-102.)

B-28. **Cover and Concealment. *Cover* is protection from the effects of fires.** *Concealment* is protection from observation and surveillance (JP 1-02). Terrain that offers cover and concealment limits fields of fire. Commanders consider cover and concealment to identify potential friendly and enemy locations. They look for possible assembly areas, routes, axes of movement, assault positions, ambushes, and battle positions. They consider both friendly and enemy perspectives.

Weather

B-29. Weather and climate have direct and indirect effects on tactical operations. Climate is a longer-term but more predictable phenomenon than weather. Planners consider climate with longer-range plans, while most tactical planning considers weather. Effective commanders use weather and climate to their advantage.

B-30. For planning purposes, weather is a shorter-term, but less predictable, phenomenon than climate. Weather affects the condition and capabilities of soldiers and weapon systems, including, trafficability, visibility, obstacle emplacement times, and munitions performance. Weather effects are classified as direct and indirect:

- *Direct effects* are those that immediately affect the operations of friendly and enemy forces. They do not favor one side or the other. Their relative impact on each force is a function only of that force's preparation.

- *Indirect effects* are those on other elements of the environment—terrain and human, military and nonmilitary—that either hamper or help military operations of one or both forces.

B-31. Weather can create opportunities as well as difficulties for each side. For example, bad weather can favor the attacker by concealing a moving force while making construction of fighting positions more difficult for the defender. Simultaneously, bad weather can help the defender by making offensive movement more difficult. Stable weather conditions favor the use of chemical and biological agents. Cold weather slows both soldiers and machines; however, it freezes water and allows movement across normally wet areas that are otherwise difficult to pass.

TROOPS AND SUPPORT AVAILABLE

B-32. The fourth factor of METT-TC is the number, type, capabilities, and condition of available friendly troops and support. These include supplies and support available from joint, multinational, and interagency forces. They also include support from Department of Defense and Department of the Army civilians, and contractors employed by military organizations, such as, the Defense Logistics Agency and the Army Materiel Command.

B-33. Commanders should know the disposition and situation of their forces without having to visit each unit on the ground. They generally maintain information of friendly forces two levels down. They maintain understanding of subordinates' readiness, including, maintenance, training, strengths and weaknesses, commanders, and logistic status. Thus, commanders visit units to confirm reports or obtain better understanding of the operation's decisive points or factors. These visits also provide insights into the intangibles that data and reports cannot capture.

B-34. Commanders consider available troops and support when analyzing whether they have enough resources to accomplish a mission. If commanders determine that they do not, they request more from the higher commander. Increasing assets in one area may compensate for a shortage of assets in another. Under mission command, commanders ensure they provide subordinates with the right mix of troops and support to accomplish the missions they assign. Commanders consider tangible and intangible factors when assigning missions. Differences in mobility, protection, firepower, equipment, morale, experience, leadership, and training make some units more suitable for certain missions than others. The personalities of subordinate commanders are also important: A bold commander may be a good choice for a pursuit mission. A methodical commander may be a better choice for a deliberate breaching operation.

TIME AVAILABLE

B-35. Effective commanders and staffs know how much time and space their units need to plan, prepare, and execute operations. This includes the time required to assemble, deploy, move, and converge units to mass the effects of combat power effectively. They also consider time with respect to the enemy: time available is always related to the enemy's ability to plan, prepare, and execute operations, and react effectively to friendly actions. Time available

varies with unit size and mission. It also depends on how much time is usable; for example, for some activities, hours of darkness are useable time, while for others they are not.

B-36. Consideration of time available further includes the time subordinate commanders and units require to plan and prepare their own operations. (See FM 5-0.) Parallel planning can help make the most of time available. Commanders can save more time by using standing operating procedures (SOPs), tactics, techniques, and procedures (TTPs), and habitual relationships. SOPs promote understanding and teamwork among commanders, staffs, and subordinates. TTPs include battle drills and tactical actions that lend themselves to standardized execution, such as refuel-on-the-move site operations. Standard supporting plans, such as rear area security plans, are a form of TTP. Commanders use rehearsals to fit TTPs to the situation. Habitual relationships in task organization also save preparation time. Units and soldiers who work together frequently already know each other's SOPs and how they use TTPs. They can begin working together more quickly than units not habitually associated.

CIVIL CONSIDERATIONS

B-37. ***Civil considerations*** **comprise the influence of manmade infrastructure, civilian institutions, and attitudes and activities of the civilian leaders, populations, and organizations within an area of operations on the conduct of military operations.** They are a factor in all types of military operations: offense, defense, stability, and support. If the military's mission is to support civil authorities, civil considerations define the mission.

B-38. Civil considerations generally focus on the immediate impact of civilians on operations in progress; however, they also include larger, long-term diplomatic, informational, and economic issues at higher levels. At the tactical level, they directly relate to key civilian areas, structures, capabilities, organizations, people, and events within the AO. Discounting these can tax the resources of follow-on elements. The world's increasing urbanization means that the attitudes and activities of the civilian population in the AO often influence the outcome of military operations. Civil considerations of the environment can either help or hinder friendly or enemy forces; the difference lies in which commander has taken time to learn the situation and its possible effects on the operation. These considerations can influence the choice of a COA and the execution of operations.

B-39. Some effects of civil considerations may impede overall force activities; others affect soldiers directly, preventing them from functioning to their full capability. Anticipation and preparation can often overcome these effects, or even turn them to friendly advantage. This holds particularly true for civil considerations, where careful preparation can turn parts of civil populations into advantages for friendly forces and disadvantages for enemy forces.

B-40. An appreciation of civil considerations—the ability to analyze their impact on operations—enhances several aspects of operations: among them, the selection of objectives; location, movement, and control of forces; use of

weapons; and force protection measures. Civil considerations comprise six characteristics, expressed in the memory aid ASCOPE:

- Areas.
- Structures.
- Capabilities.
- Organizations.
- People.
- Events.

Areas

B-41. Key civilian areas are localities or aspects of the terrain within an AO that are not normally militarily significant. This characteristic approaches terrain analysis (OAKOC) from a civilian perspective. Commanders analyze key civilian areas in terms of how they affect the missions of their individual forces as well as how military operations affect these areas. Examples of key civilian areas are—

- Areas defined by political boundaries, such as, districts within a city or municipalities within a region.
- Locations of government centers.
- Social, political, religious, or criminal enclaves.
- Agricultural and mining regions.
- Trade routes.
- Possible sites for the temporary settlement of dislocated civilians or other civil functions.

Failure to consider key civilian areas can seriously affect the success of any operation.

Structures

B-42. Existing structures can play many significant roles. Some—such as, bridges, communications towers, power plants, and dams—are traditional high-payoff targets. Others—such as, churches, mosques, national libraries, and hospitals—are cultural sites that international law or other agreements generally protect. Still others are facilities with practical applications—such as, jails, warehouses, television and radio stations, and print plants—that may be useful for military purposes. Some aspects of the civilian infrastructure, such as the location of toxic industrial materials, may influence operations.

B-43. Analyzing a structure involves determining how its location, functions, and capabilities can support the operation. Commanders also consider the consequences of using it. Using a structure for military purposes often competes with civilian requirements for it. Commanders carefully weigh the expected military benefits against costs to the community that will have to be addressed in the future.

Capabilities

B-44. Commanders and staffs analyze capabilities from different levels. They view capabilities in terms of those required to save, sustain, or enhance life, in that priority. Capabilities can refer to the ability of local authorities—

those of the host nation, aggressor nation, or some other body—to provide a populace with key functions or services, such as, public administration, public safety, emergency services, and food. Capabilities include those areas in which the populace may need help after combat operations, such as, public works and utilities, public health, economics, and commerce. Capabilities also refer to resources and services that can be contracted to support the military mission, such as, interpreters, laundry services, construction materials, and equipment. The host nation or other nations might provide these resources and services.

Organizations

B-45. Organizations are nonmilitary groups or institutions in the AO. They influence and interact with the populace, the force, and each other. They generally have a hierarchical structure, defined goals, established operations, fixed facilities or meeting places, and a means of financial or logistic support. Some organizations may be indigenous to the area. These may include church groups, fraternal organizations, patriotic or service organizations, labor unions, criminal organizations, and community watch groups. Other organizations may come from outside the AO. Examples of these include multinational corporations, United Nations agencies, US governmental agencies, and nongovernmental organizations (NGOs), such as the International Red Cross.

B-46. Operations also often require commanders to coordinate with international organizations and NGOs. Commanders remain familiar with organizations operating in their AOs. RI includes information about their activities, capabilities, and limitations. Situational understanding includes understanding how the activities of different organizations may affect military operations and how military operations may affect these organizations' activities. From this, commanders can determine how organizations and military forces can work together toward common goals when necessary.

B-47. Corps and divisions routinely interact with other US agencies, host-nation governmental agencies, and NGOs. In some circumstances, brigades and battalions also have to interact with these organizations. These groups may not share the commander's objectives and point of view.

B-48. In almost every case, military forces have more resources than civilian organizations. However, civilian organizations may possess specialized capabilities that they may be willing to share with military forces. Commanders do not command civilian organizations in their AOs. However some operations require achieving unity of effort between them and the force. These situations require commanders to influence the leaders of these organizations through persuasion. They produce constructive results by the force of argument and the example of their actions. (See FM 22-100.)

People

B-49. *People* is a general term used to describe nonmilitary personnel encountered by military forces. The term includes all civilians within an AO as well as those outside the AO whose actions, opinions, or political influence can affect the mission. Individually or collectively, people can affect a

military operation positively, negatively, or neutrally. In stability operations and support operations, Army forces work closely with civilians of all types.

B-50. There can be many different kinds of people living and operating in and around an AO. As with organizations, people may be indigenous or introduced from outside the AO. An analysis of people should identify them by their various capabilities, needs, and intentions. It is useful to separate people into distinct categories. When analyzing people, commanders consider historical, cultural, ethnic, political, economic, and humanitarian factors. They also identify the key communicators and the formal and informal processes used to influence people.

Events

B-51. *Events* are routine, cyclical, planned, or spontaneous activities that significantly affect organizations, people, and military operations. Examples include national and religious holidays, agricultural crop/livestock and market cycles, elections, civil disturbances, and celebrations. Other events are disasters from natural, manmade, or technological sources. These create civil hardship and require emergency responses. Examples of events precipitated by military forces include combat operations, deployments, redeployments, and paydays. Once significant events are determined, it is important to template the events and to analyze them for their political, economic, psychological, environmental, and legal implications.

B-52. Technological innovation, external social influences, and natural and manmade disasters (such as, hurricanes, environmental damage, and war) affect the attitudes and activities of governments and civilian populations. These changes cause stress in the civilian population and its leaders. The civilian population may or may not successfully incorporate these changes within its existing cultural value system. Addressing the problems posed by change requires considerable time and resources. The impatience of key leaders and groups, legal restrictions, and limits on resources can make resolution difficult. However, when their resolution is necessary to accomplish the mission, commanders become concerned with them.

B-53. The existence of an independent press guarantees that US military activities that do not meet America's military standards for dealing with noncombatants will be reported in US, host-nation, and international public forums. Commanders consider the effects of their decisions and their forces' actions on public opinion. The activities of a force—or individual members of a force—can have far-reaching effects on the legitimacy of all military operations—offense, defense, stability, or support. Commanders ensure their soldiers understand that a tactically successful operation can also be operationally or strategically counterproductive because of the way in which they execute it or how the people perceive its execution.

B-54. Commanders have legal and moral responsibilities to refugees and noncombatants in their AOs. These responsibilities may include providing humanitarian assistance. A commander's moral responsibility to protect noncombatants influences planning and preparing for operations. Commanders assess the chance that their actions may result in dislocated civilians and

consider their legal obligation to respect and protect them when choosing a COA and executing an operation.

RELEVANT INFORMATION USAGE CATEGORIES

B-55. Relevant information is also placed into four categories based on how it is used:

- COP-related information.
- Execution information.
- Exceptional information
- Essential elements of friendly information.

COP-RELATED INFORMATION

B-56. RI used to create the COP is *COP-related information*. The C2 system collects RI—friendly, enemy, and environmental—and uses it to create the COP. Commanders base their situational understanding on the COP. Staffs base their running estimates on the COP. Commanders base their decision-making on their situational understanding, using the COP and recommendations from staff running estimates. COP-related information is grouped into the major subject categories of METT-TC.

B-57. Information systems (INFOSYS) now available provide commanders at all levels with near real-time RI on the current situation in the form of the COP. The COP is derived from data, information, and knowledge common to all echelons. The commander and staff tailor their display for resolution and content appropriate to their echelon of command and the mission.

B-58. Reports normally convey COP-related information. Usually reports have a prescribed purpose and format. (See FM 101-5-2.) They may transmit exceptional information, answers to the CCIR, and routine information.

EXECUTION INFORMATION

B-59. ***Execution information*** **is information that directs, initiates, or regulates action, conduct, or procedure.** It provides a means for communicating a clearly understood vision of an operation and its desired outcome that guides subordinates as they carry out decisions. The source of execution information is the commander's decisions. Execution information takes many forms: including, orders, plans, directives, memorandums, and regulations. Orders, including fragmentary orders (FRAGOs) and warning orders (WARNOs), and plans constitute the primary means of communicating execution information.

EXCEPTIONAL INFORMATION

B-60. ***Exceptional information*** **is information that would have answered one of the commander's critical information requirements if the requirement for it had been foreseen and stated as one of the commander's critical information requirements.** It is treated as an answer to one of the CCIR and reported to the commander immediately by any method available. Exceptional information is—

- Unexpected, unplanned, and situation-dependent.

- An immediate priority for command and staff action. The commander and staff must address exceptional information before the operation can continue.
- Extremely time-sensitive in terms of decisionmaking; there can be no delays in transmission.
- Transmitted directly to the commander as quickly as possible by whatever means are immediately available.
- Applicable to both the friendly and enemy situations.

B-61. Exceptional information results from an unexpected extraordinary event, such as an unforeseen opportunity for success or an early warning of an unforeseen threat. By its nature, identifying exceptional information relies on the initiative of subordinate commanders and the staff. Unlike information that answers CCIR, exceptional information is neither published nor explicitly stated. That is because the requirement for it was not identified beforehand or the situation that produced it is completely unanticipated. Therefore, tactically and technically competent subordinates and staffs must recognize it as vital. This requires the commander and subordinate commanders to share an accurate situational understanding. It also requires subordinates to thoroughly understand the commander's intent.

B-62. Exceptional information is processed as an answer to one of the CCIR. (See paragraphs B-68–B-72.) Exceptional information directly affects either mission accomplishment or survival of the force. It is passed to the commander by the fastest possible means. By definition, commanders need it to make a decision. Often, the exceptional information itself presents a decision the commander must make.

ESSENTIAL ELEMENTS OF FRIENDLY INFORMATION

B-63. *Essential elements of friendly information* are the critical aspects of a friendly operation that, if known by the enemy, would subsequently compromise, lead to failure, or limit success of the operation, and therefore must be protected from enemy detection (FM 3-13). EEFI answer the question, How can I (the commander) prevent the enemy force from seeing me?

B-64. Commanders designate EEFI and transmit them to their staffs and subordinates. When established, EEFI have a priority on a level with CCIR. Identification of EEFI is the first action in the operations security (OPSEC) process, which commanders use to determine measures to protect this information (OPSEC measures). (See FM 3-13.) EEFI state the friendly force information that, if compromised to the enemy, would place mission accomplishment in jeopardy. EEFI are often key factors in designing military deception operations. They form the basis for some security operations.

B-65. EEFI are neither IRs nor part of the CCIR. EEFI establish information to protect, not information to obtain. Friendly forces must take all necessary measures to ensure that this information does not fall into enemy hands. However, commanders may determine that they need to know whether one or more of the EEFI have been compromised or that the enemy is collecting against a designated EEFI. In those cases, commanders may designate that question as one of their CCIR, which generates PIR or FFIR. For example, a commander may determine that if the enemy discovers the location and

movement of the friendly reserve, the operation is at risk. In this case, the location and movement of the friendly reserve are EEFI. The commander designates determining whether the enemy has discovered the location and movement of the friendly reserve as one of the CCIR. That CCIR, in turn, generates PIR and FFIR to support staff actions that determine whether the information has been compromised.

INFORMATION MANAGEMENT CATEGORIES

B-66. IM provides the structure through which the C2 system collects, processes, displays, store, and disseminates information, and puts the commander's decisions into action. (See paragraphs 3-39–3-73.) IM consists of two elements: INFOSYS (see paragraphs 5-38–5-72) and RI.

B-67. Large amounts of RI are collected as a routine part of operations. It is provided by standard reports and ISR activities. Some RI is essential for ongoing tasks staffs perform, regardless of the type of mission. Other RI is mission-specific and assets must be specifically tasked to collect it. Because collection assets are limited, a method of prioritizing collection and processing is required. CCIR and IR are the categories used to prioritize collection asset allocation and information processing within the C2 system.

COMMANDER'S CRITICAL INFORMATION REQUIREMENTS

B-68. *Commander's critical information requirements* are elements of information required by commanders that directly affect decisionmaking and dictate the successful execution of military operations (FM 3-0). CCIR result from the analysis of IRs in the context of a mission and commander's intent. Commanders limit them to a useable number for comprehension. Commanders designate CCIR to let their staffs and subordinates know what information they deem necessary for decisionmaking. All CCIR are not tied to decision points; however, some CCIR may support one or more decision points. In all cases, the fewer the CCIR, the better the staff can focus its efforts and allocate scarce resources.

B-69. CCIR belong to the commander alone. Commanders decide what IRs are critical IRs based on their individual cognitive abilities and commander's visualization. Staffs may recommend CCIR, based on mission analysis during planning and on assessment during preparation and execution; however, they keep the number of recommended CCIR to a minimum.

B-70. CCIR are not static. Commanders add, delete, adjust, and update them throughout an operation based on the information they need for decisionmaking. CCIR are—

- Specified by the commander for each operation.
- Applicable only to the commander who specifies them.
- Situation-dependent—directly linked to current and future missions.
- Focused on predictable events or activities.
- Time-sensitive. Answers to CCIR must be immediately reported to the commander by any means available.

- Always established by an order or plan. During planning, CCIR are established by WARNO. During preparation and execution, changes to CCIR are disseminated by FRAGO.

B-71. CCIR limit information reported to commanders to information critical to decisionmaking. During planning, CCIR focus on information needed to determine which COA to choose. During preparation and execution, CCIR focus on information needed to validate the selected COA or determine when to initiate critical events, such as a branch or sequel. CCIR may include a latest time information of value (LTIOV) to indicate time sensitivity.

B-72. CCIR include priority intelligence requirements (PIRs) and friendly forces information requirements (FFIR). PIR focus on "how I (the commander) see the enemy." FFIR focus on "how I see myself." Although CCIR generate PIR and FFIR for management, the focus for the staff is answering the CCIR to support the commander's visualization and decisionmaking.

- *Priority intelligence requirements* are those intelligence requirements for which a commander has an anticipated and stated priority in his task of planning and decisionmaking (JP 1-02). PIRs identify the information the commander considers most important for decisionmaking. They concern both the enemy (including the time available to the enemy) and the environment (terrain, weather, and some civil considerations).
- ***Friendly forces information requirements* are information the commander and staff need about the forces available for the operation.** FFIR consist of information on the mission, troops and support available, and time available for friendly forces.

INFORMATION REQUIREMENTS

B-73. ***Information requirements* are all information elements the commander and staff require to successfully conduct operations; that is, all elements necessary to address the factors of METT-TC.** (The joint definition of *information requirements* [IRs] includes only intelligence requirements; the Army definition encompasses all RI.) A headquarters must focus IRs on RI. Commanders do this through designating CCIR. Effective staffs ensure that the vast amount of other information they collect is truly RI and not just nice to have. Each BOS develops its own IRs to answer CCIR and perform its functional responsibilities. IRs must be related to the unit mission; unfocused requests may provide plenty of data, but not much RI.

B-74. Figure B-2 (on page B-16) shows the relationship of IM, RI, and IRs. IM begins (at the lower left corner of figure B-2) with questions that the commander and staff need answered to exercise C2. These questions become IRs. From the IRs, the staff recommends designating some as PIRs or FFIR. From the staff recommendations, or from his own priorities, the commander designates his CCIR. This provides a clear set of priorities for allocating resources to answer IRs. The staff allocates resources first to answer CCIR, then to PIRs and FFIR, and only then to the remaining IRs. In the case of PIRs, especially PIR that are CCIR, resource allocation involves tasking ISR assets to collect the information and process it into intelligence.

B-75. As information that answers IRs is collected, soldiers in the C2 system enter it into databases maintained in C2-system INFOSYS. These databases form the basis of the COP. Staffs identify RI for their particular IRs from the mass of available data within the COP and transform it into knowledge and understanding. This transformation includes developing and maintaining staff running estimates. Commanders draw on the COP and these running estimates to gain situational understanding.

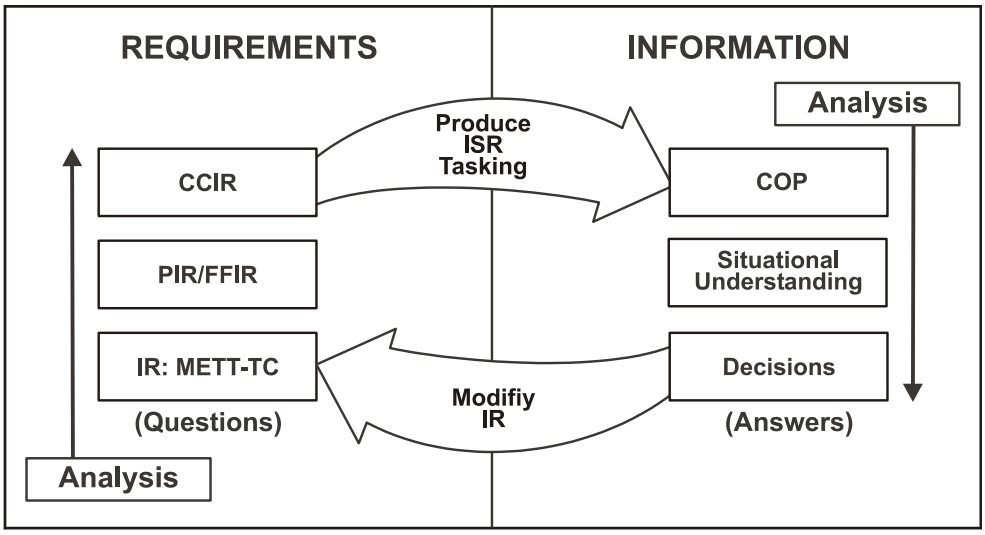

Figure B-2. Relevant Information Production and Flow

B-76. IM is a dynamic process that supports commanders in the fast-moving operational environment. (See figure B-2.) During operations, answers to IRs, especially the CCIR, contribute to assessments of the operation's progress that result in decisions by commanders and staff members. These decisions and assessments produce new questions that address the changed situation and future command decisions. These questions require staffs to modify IRs and commanders to modify their CCIR. These changed IRs produce changes to collection taskings. It occurs continually. Staffs review IRs frequently to ensure they are still relevant and to identify new IRs to support the commander's decisionmaking.

B-77. Figure B-3 illustrates the relationships among the cognitive hierarchy, IRs, and CCIR. The hierarchy shows where meaning is added to data as the C2 system processes it. The C2 system collects data from various sources to answer IRs. It adds meaning to data as it processes it into information, organizing it in terms of METT-TC and creating the COP. Staffs use information from the COP to answer CCIR, including PIRs and FFIR, and to maintain their running estimates. Commanders apply their judgment to information from the COP and running estimates to achieve situational understanding. Based on their situational understanding and recommendations from the running estimates, commanders make decisions and revise the CCIR as needed to fill gaps in information needed to make future decisions.

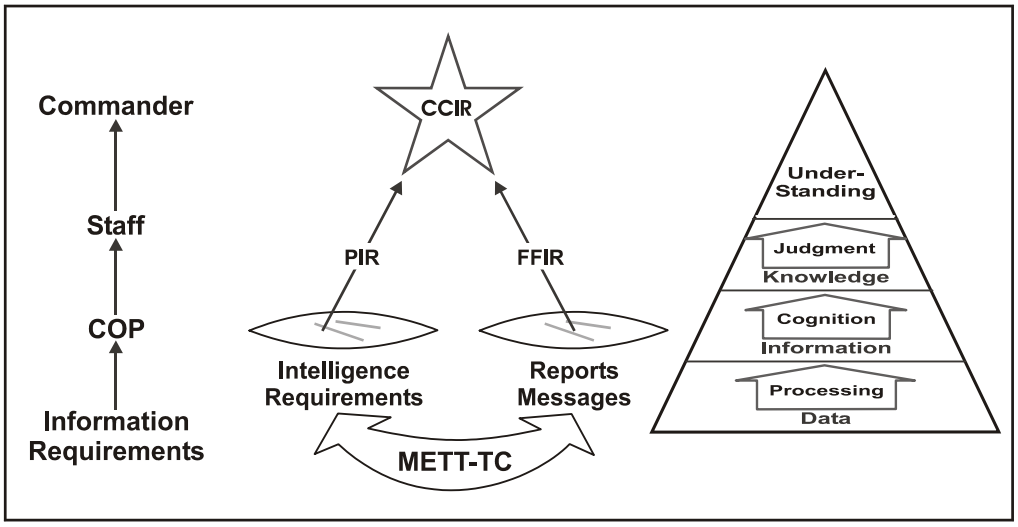

Figure B-3. Information Requirements and Cognitive Hierarchy

RELEVANT INFORMATION QUALITY CRITERIA

B-78. Because sources of information are imperfect and susceptible to distortion and deception, IM includes carefully assessing information quality. The following criteria, listed in relative order of importance, help do this:

- **Accuracy.** The extent to which the information conveys the true situation, the degree to which it is fact.
- **Timeliness.** The extent to which the information still reflects reality. Timely information is not overtaken by events.
- **Usability.** The extent to which the information is easily understood or displayed in a format that immediately conveys the meaning.
- **Completeness.** The extent to which the information contains all necessary components.
- **Precision.** The extent to which the information has the required level of detail, no more and no less.
- **Reliability.** The extent to which the information is trustworthy, uncorrupted, and undistorted.

B-79. The following priorities apply:

- Incomplete or imprecise information is *better than* no information.
- Untimely or unusable information is *the same as* no information.
- Irrelevant or inaccurate information is *worse than* no information.

B-80. In general, commanders do not require RI beyond a moderate level to accomplish their individual missions, so long as it is accurate, timely, and usable. Beyond that, more RI can help commanders achieve mission success at reduced cost; however, waiting for that RI may carry an unacceptable cost in timeliness. Effective IM focuses on CCIR. Keeping this focus demands vision on the part of the commander and understanding of the commander's intent and CCIR by subordinates. This understanding allows subordinates to identify and recognize information needed to answer CCIR. It is essential to identifying exceptional information.

Appendix C

Staff Organization and Staff Officers

This appendix describes the foundations of battalion- through corps-level staff organizations. The Army uses standardized staff organizations to benefit from consistency in performance, responsibilities (regardless of unit type or echelon), training, and resources. This appendix also addresses the basic Army staff structure, staff models for large and small units, and characteristics of staff officers.

BASIS FOR STAFF ORGANIZATIONS

C-1. Military staffs are organized based on three considerations:

- Mission.
- Broad fields of interest (functional responsibilities).
- Regulations and laws.

C-2. The mission determines which activities to accomplish. These activities determine how commanders organize, tailor, or adapt their individual staffs to accomplish the mission. The mission also determines the size and composition of the staff.

C-3. Regardless of mission, every Army staff has common broad fields of interest that determine how the commander divides duties and responsibilities. The duties and responsibilities inherent in a field of interest are called *functional responsibilities*. Grouping related activities allows an effective span of control and unified effort. Fields of interest may vary slightly, depending on the echelon of command, mission, and environment. For example, at battalion level there is no resource manager, while certain logistic units combine the intelligence and operations functions. Common fields of interest

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and the abbreviations for the staff sections to which they are assigned are—

- Personnel (G-1/AG [S-1]).
- Intelligence (G-2 [S-2]).
- Operations and training (G-3 [S-3]).
- Logistics (G-4 [S-4]).
- Civil-military operations (G-5 [S-5]).
- Command, control, communications, and computer operations (C4OPS) (G-6 [S-6]).
- Information operations officer (G-7 [S-7]) (corps, divisions, and selected brigades only).
- Resource management (RM).

The commanding officer's rank determines whether the staff is a G staff or an S staff. Organizations commanded by generals have G staffs. Other organizations have S staffs.

C-4. Army regulations and laws establish special relationships between certain staff officers and the commander. For example, AR 20-1, AR 27-1, and AR 165-1 require the inspector general (IG), staff judge advocate (SJA), and chaplain to be members of the commander's personal staff.

FACTORS AFFECTING STAFF ORGANIZATIONS

C-5. Commanders use their professional knowledge, experience, and leadership style to organize their individual staffs. Several factors influence staff organization:

- Size and diversity of responsibilities.
- Local (distinct) requirements.
- Amount of relevant information (RI) each section manages.
- Availability, qualifications, and performance of personnel.
- Organization and locations of command posts (CPs).
- Mobility requirements.
- Requirements for 24-hour operations and security.
- Ability to combine related activities.
- Desired span of control.
- Preferences of the commander and chief of staff.

AUTHORIZATION FOR STAFF ORGANIZATIONS

C-6. Every organization and activity requires an authorization document that states a unit's approved structure and resources. (See FM 100-11.) It is the basis and authority for personnel assignments and equipment requisitions. This document is a modification table of organization and equipment (MTOE), a table of distribution and allowances (TDA), or a combination of both.

C-7. A table of organization and equipment (TOE) is a standard authorization document that prescribes organizational structure, personnel, and equipment requirements of a military unit. Commanders establish wartime authorizations by developing an MTOE from the TOE for their individual units. Commanders prescribe in more detail organization, personnel, and equipment to be authorized to accomplish doctrinal missions in specific operational or

geographical environments, or at specific points on a modernization path. Commanders can change their individual MTOEs with Department of the Army approval.

C-8. TDAs prescribe organizational structures for units with support missions or functions where no TOE exists. They may include civilian positions. TDAs are unique authorization documents. They help staffs attain the most efficient operational capability possible—using the command's force-structure manpower spaces—to accomplish specific missions and functions. Types of TDAs include mobilization, augmentation, and full-time support.

BASIC STAFF STRUCTURE

C-9. Staffs at every echelon are structured differently; however, all staffs are similar. The basic staff structure includes a chief of staff (COS) or executive officer (XO), and three staff groups: coordinating, special, and personal. (See figure C-1.) The number of coordinating, special, and personal staff officers within each staff group varies at different levels of command. Commanders may integrate TDA staffs with MTOE staffs to promote unity of effort and save resources.

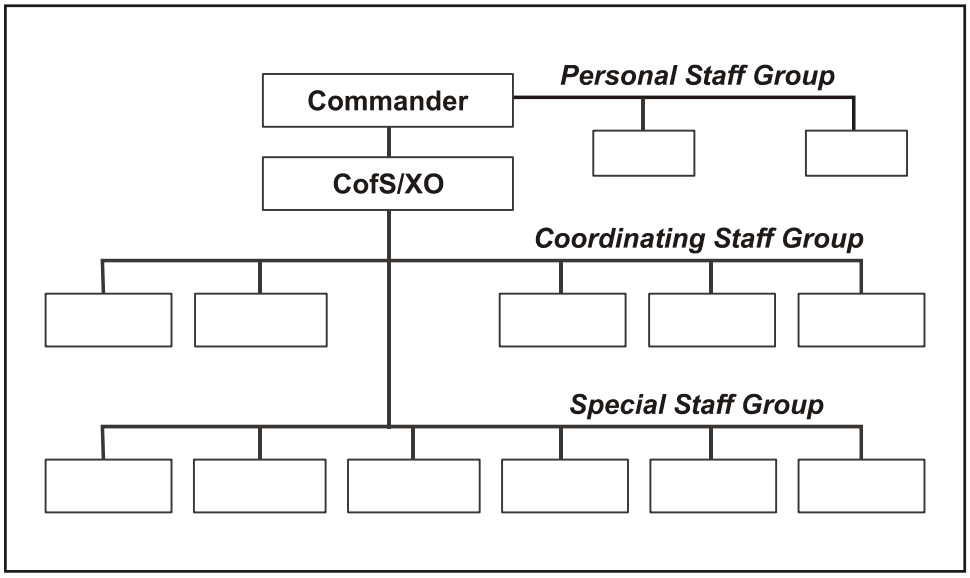

Figure C-1. Basic Staff Structure

C-10. The COS (XO) is the commander's principal staff officer. He directs staff tasks, oversees staff coordination, and ensures efficient and prompt staff actions. The COS oversees coordinating and special staff officers. He does not necessarily oversee the personal staff officers, although he normally interacts with them. The commander normally delegates authority to the COS for executive management of coordinating and special staff officers.

COORDINATING STAFF GROUP

C-11. Coordinating staff officers are the commander's principal staff assistants. They are directly accountable to the COS (XO). They have

functional responsibilities over one or a combination of fields of interest. (See appendix D.) Collectively, through the COS (XO), coordinating staff officers are accountable to their commander for all their responsibilities. The staff is not accountable for fields of interest the commander decides to control personally.

C-12. Commanders may designate coordinating staff officers as assistant chiefs of staff, deputy chiefs of staff, directors, or regular staff officers. These positions generally reflect the degree of authority the commander delegates to them and the scope and complexity of operations conducted by the command. However, commanders establish a staff officer's actual authority if it is not inherent in the position's title.

C-13. Coordinating staff officers' authority is limited to advising, planning, and coordinating actions within their individual fields of interest. They also exercise planning and supervisory authority over designated special staff officers. (See appendix D.) Commanders may also delegate to coordinating staff officers additional authority to act on specific matters within the staff officer's field of interest.

C-14. Directors have both staff and line authority. For example, directors of logistic operations might be responsible for operating support activities in addition to their normal responsibilities. Typically, commanders delegate to directors significant responsibility for specific functions and the authority necessary to accomplish them.

C-15. Normally, coordinating staff officers have a direct interest in other staff officers' fields of interest. Clearly defined staff responsibilities are necessary to facilitate coordination and eliminate conflict. Unit standing operating procedures (SOPs) or organization and functions manuals contain procedures that specify primary responsibilities and coordination requirements.

C-16. Coordinating staff officers are responsible for collecting information and analyzing its implications and impact on the command. More important, coordinating staff officers provide timely and accurate recommendations to their individual commanders to help them make the best possible decisions. While doing so, they often request and receive information and recommendations from special staff officers. They also inform other coordinating staff officers, as required.

SPECIAL STAFF GROUP

C-17. Special staff officers help commanders and other staff members perform their functional responsibilities. (See figure C-2.) The number of special staff officers and their duties vary with the level of command. Special staff sections are organized according to professional or technical responsibilities. For example, the fire support coordinator (FSCOORD) is the staff officer responsible for fire support. In some cases, special staff officers command units. For example, the division FSCOORD is normally the division artillery commander.

C-18. The commander delegates planning and supervisory authority over each special staff function to a coordinating staff officer. Although special staff sections may not be integral to a coordinating staff section, there are usually areas of common interest and habitual association. For example, a division G-3 coordinates matters relating to fires with the FSCOORD,

engineer coordinator (ENCOORD), Marine liaison team (MLT) commander, aviation coordinator (AVCOORD), and air liaison officer (ALO).

C-19. Special staff officers usually deal routinely with more than one coordinating staff officer. For example, the provost marshal (PM) usually functions under the G-3, but coordinates with the G-1, G-2, G-4, G-5, and G-7.

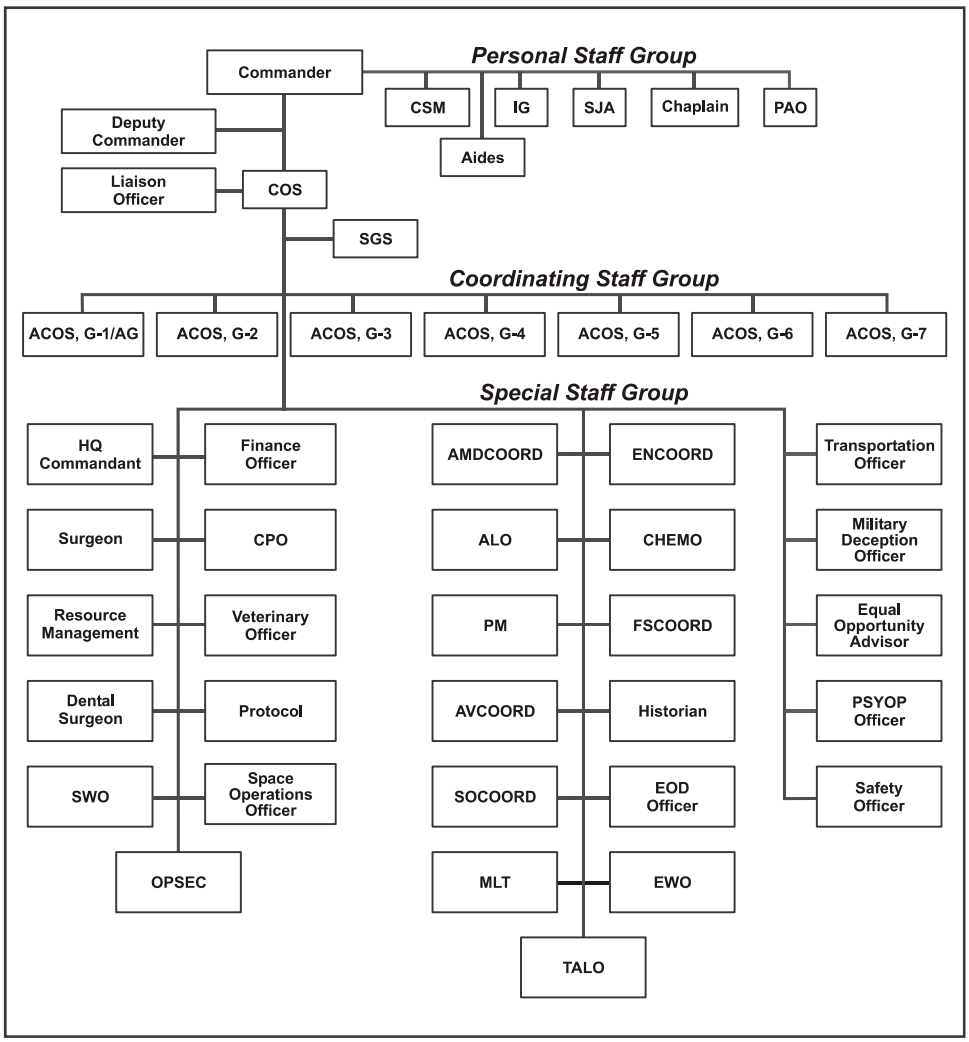

Figure C-2. Basic Corps or Division Staff Structure

PERSONAL STAFF GROUP

C-20. Personal staff members work under the commander's immediate control. They also may serve as special staff officers when they coordinate with other staff members. When performing their duties as special staff officers, personal staff officers may work through the COS (XO) and under a coordinating staff officer for coordination and control purposes. Members of the personal staff include—

- Personal assistants, such as aides-de-camp.
- Personnel the commander desires to supervise directly.

- Personnel who, by law or regulation, have a special relationship to the commander.

STAFF MODELS

C-21. Army staff organizations at the battalion through corps levels follow the same organizational model. (See figure C-1 on page C-2.) Commanders tailor their individual staffs to meet their specific needs.

MAJOR COMMANDS (CORPS AND DIVISIONS) (G STAFFS)

C-22. Figure C-2 shows the typical staff organization for a corps or division. The staff of a major command has each of the major staff groups: coordinating, special, and personal. In corps and divisions, deputy or assistant commanders extend the commander's span of control over areas and functions the commander designates. (See paragraphs 5-25–5-28.)

SMALLER UNITS (REGIMENTS, BRIGADES, AND BATTALIONS) (S STAFFS)

C-23. Figure C-3 depicts a typical smaller-unit staff structure. Smaller-unit staffs generally perform the same functions as larger staffs. However, the operational nature of smaller units sometimes requires modifications. For example, staff activities (such as, advising, planning, coordinating, and supervising) are more informal at lower levels. Often supporting unit commanders—for example, the engineer battalion commander at maneuver brigade level—serve as special staff officers for their individual fields of interest.

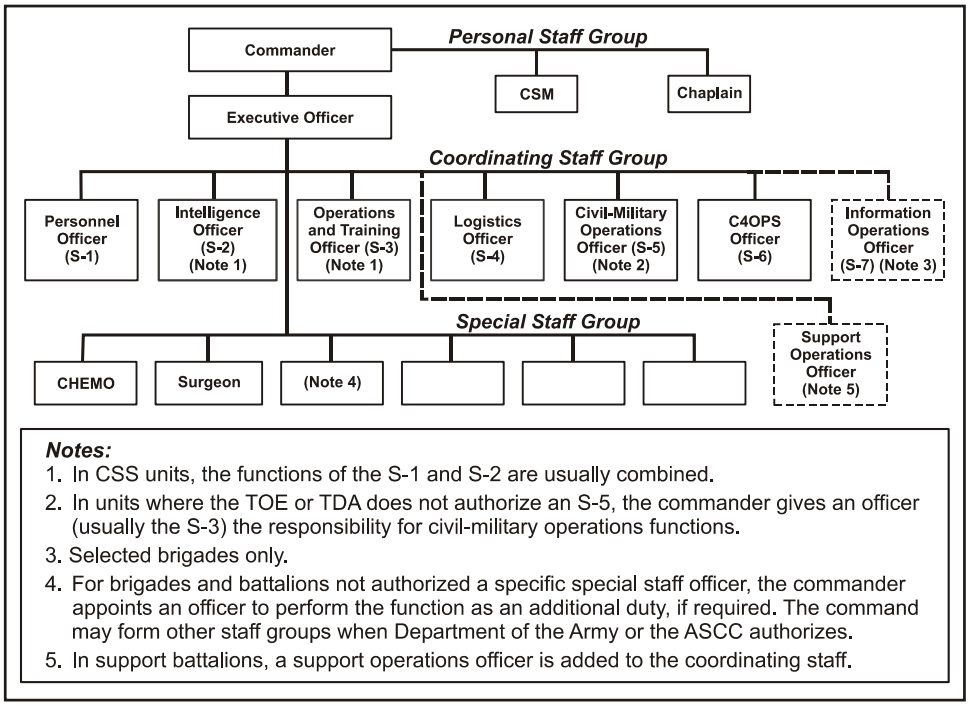

Figure C-3. Basic Smaller-unit Staff Structure (Brigade and Battalion)

C-24. In combat service support units, commanders usually combine the S-2 and S-3 sections, and add a support operations section. Like a personal or special staff officer, the support operations officer works directly for the commander and is responsible for external support of the unit's mission. There may also be other coordinating staff officers, depending on the command's mission. Commanders may form other staff sections when Department of the Army or the Army service component commander authorizes. In units where the TOE or TDA does not authorize an S-5, commanders assign responsibility for civil-military operations functions to another coordinating staff officer (usually the S-3). In brigades and battalions not authorized a specific special staff officer, commanders assign responsibility for those functions to another staff officer as required.

CHARACTERISTICS OF A STAFF OFFICER

C-25. This section describes the characteristics required of staff officers at every echelon, from battalion through corps. Most officers serve in a variety of staff positions throughout their careers. Although much of what staff officers do is not noticed, their competence is crucial in all that the Army accomplishes.

C-26. Commanders always retain the ultimate responsibility for final decisions. Staff officers contribute to achieving the commander's intent by fulfilling their functional responsibilities within the authority the commander delegates to them. Effective staff officers provide commanders with correct and timely relevant information (RI) and well-analyzed recommendations.

C-27. FM 22-100 discusses the values, attributes, skills, and actions expected of all leaders. As Army leaders, staff officers are expected to possess and develop those characteristics; however, staff work requires specialized applications of them. A good staff officer demonstrates the following:

- Competence.
- Initiative.
- Creativity.
- Flexibility.
- Confidence.
- Loyalty.
- Team player.
- Effective manager.
- Effective communicator.

This list provides a basis for counseling and professional development sessions on what commanders expect of staff officers.

COMPETENCE

C-28. Effective staff officers are competent in all aspects of their functional responsibilities and know their duties. They are familiar enough with the duties of other staff members to accomplish vertical and lateral coordination. Commanders expect staff officers to analyze each problem and know—not guess at—the correct answer before making a recommendation. Staff officers must possess the moral courage to admit when they do not know something.

INITIATIVE

C-29. Staff officers exercise subordinates' initiative. They anticipate requirements rather than waiting for taskings. They do not wait for orders. They anticipate what the commander needs to accomplish the mission and prepare answers to those questions before they are asked. Effective staff officers know the commanders' intent two levels up and operate within their own commanders' intent. They do not hesitate to take advantage of opportunities. In the commander's absence, they exercise the authority delegated to them to achieve the commander's intent. When exercising subordinates' initiative, staff officers report their actions to the commander as soon as possible.

CREATIVITY

C-30. Commanders are always looking for new and innovative solutions to problems. Thus, effective staff officers are creative in researching solutions to difficult and unfamiliar situations. If they cannot recommend a course of action (COA) in one direction or area, they find an alternative. As team players, staff officers draw on the creativity of all staff and command members. Staff officers brief solutions, not problems. They always give the commander a recommended COA.

FLEXIBILITY

C-31. Staff officers require the maturity and presence of mind to keep from becoming overwhelmed or frustrated by changing requirements and priorities. Commanders often change their minds or redirect the command after receiving additional information or a new mission. They may not share with the staff the reason for such a change. Staff officers remain flexible and adjust to any changes. They master setting priorities when there are more tasks to accomplish than time allows. They learn to juggle multiple commitments simultaneously. It is essential that staff officers meet suspenses; the commander and other staff members depend on their contributions to decisionmaking. Staff officers meet suspenses or request a time or priority adjustment in advance.

SELF-CONFIDENCE

C-32. Staff officers possess mental discipline and self-confidence. They understand that all staff work serves the commander, even if the commander rejects the resulting recommendation. Staff officers do not give a "half effort" when they think the commander will disagree with their recommendations. Effective staff work helps commanders make the best possible decisions.

C-33. Staff officers develop multiple sides of an issue. They do not bias the evaluation criteria in favor of any COA. Staff officers give the commander an unbiased look at a problem and recommend the best possible solution.

C-34. Staff officers understand that a five-minute answer for the commander may require ten hours of staff work. Spending that much time may not appear worth the return. This is not true. In-depth research by staff officers relieves commanders of that task; it allows them to focus on the overall operation. Further, the knowledge staff officers develop for the commander is a form of professional development. It gives them experience upon which to

base future decisions as staff officers and commanders. During a crisis, this knowledge of what works provides the basis for the self-confidence that underlies subordinates' initiative.

LOYALTY

C-35. Staff officers are loyal to the commander and the soldiers of the command. This means staff officers tell the commander what they believe, not what the commander wants to hear. Staff officers require moral courage. They must be willing to tell the commander both good and bad news. Any staff work eventually affects soldiers, who must execute staff officer recommendations approved by the commander. Staff officers never forget that their recommendations affect soldiers.

TEAM PLAYER

C-36. Staff officers are team players. They cannot complete staff actions and staff work in a vacuum. They must advise, consult, and cooperate with others. They are prepared to represent another's decisions and to sacrifice individual interests when the overall good requires it. Staff officers maintain a pleasant disposition. This practices contributes to effective cooperation and coordination.

EFFECTIVE MANAGER

C-37. Good staff officers effectively manage time and resources. Time is always critical. Staff officers consider not only their own time, but that of other staff members and subordinate units as well. Staff officers recognize that not all projects can be the highest or second highest priority. They set reasonable suspenses that allow completion of lower priority (but nonetheless important) projects.

C-38. Staff officers are good stewards of resources (people, environment, and money) the Nation entrusts to their care. They are diligent in efforts to efficiently manage these resources and preserve the environment. They avoid waste, destruction, and duplication of effort.

EFFECTIVE COMMUNICATOR

C-39. Effective communication is crucial for staff officers. They must be able to clearly articulate and effectively present information orally, in writing, and visually (with charts and graphs). Staff officers routinely brief individuals and groups. They know and understand briefing techniques that convey complex information in easily understood formats. They can write clear and concise orders and plans, staff studies, staff summaries, and reports. (See FM 5-0.)

C-40. Efficient staff officers use current computer technology. This includes being able to produce visual briefing aids—such as, charts, graphs, slides, and multimedia products. They are proficient in using computer technology—such as, word processing, electronic mail, and other available resources—to manage time and to solve problems.

C-41. Staff officers frequently prepare briefings and written documents for the commander or higher staff officers. They prepare these products as if they are going to sign them or brief them personally.

Appendix D

Staff Responsibilities and Duties

The commander's staff must function as a single, cohesive unit—a professional team. Effective staff members know their respective responsibilities and duties. They are also familiar with the responsibilities and duties of other staff members. This appendix describes the responsibilities and duties commonly performed by staff officers assigned to the headquarters of Army organizations in the field, from battalion through corps. AR 10-5 describes the responsibilities and duties of the Army Staff. FM 100-22 contains information about the responsibilities of installation staffs. This appendix first discusses the common responsibilities and duties of all staff members. It then discusses specific responsibilities of chiefs of staff and of coordinating, special, and personal staff officers.

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COMMON STAFF ACTIVITIES, RESPONSIBILITIES, AND DUTIES

D-1. Staff activities focus on assisting the commander in mission accomplishment. The staff contributes to making and executing timely decisions. Commanders and staffs are continually alert for opportunities to streamline cumbersome or time-consuming procedures. The following paragraphs discuss activities, responsibilities, and duties common to all staff members.

ADVISING AND INFORMING THE COMMANDER

D-2. Staffs continuously provide relevant information (RI) to their respective commanders on the progress of operations. This RI helps commanders achieve situational understanding. One piece of information alone may not be significant; however, when combined with other information from the common operational picture (COP), it may allow the commander to formulate an accurate commander's visualization and make an appropriate decision. Staff members inform and advise the commander and other staff members concerning all matters pertaining to their individual fields of interest and related functional responsibilities, specifically on—

- Capabilities, limitations, requirements, availability, and employment of resources.
- Capabilities, limitations, and employment of supporting forces.
- Directives and policy guidance from higher headquarters.

PREPARING, UPDATING, AND MAINTAINING STAFF ESTIMATES

D-3. Staff sections prepare and maintain running estimates to help commanders make decisions. (See FM 5-0.) Effective plans and successful execution hinge on current staff estimates. Staff estimates always include recommendations for anticipated decisions. During planning, commanders use these recommendations to select feasible courses of action (COAs) for further analysis. During preparation and execution, commanders use recommendations from running estimates in decisionmaking. Failure to maintain running estimates may lead to errors or omissions that result in flawed plans or bad decisions.

MAKING RECOMMENDATIONS

D-4. Staff members make recommendations to help commanders reach decisions and establish policies. They also offer recommendations to each other and subordinate commanders. These recommendations are for information and assistance only.

D-5. Staff members present recommendations orally or in writing. Presentations may take the form of briefings, written estimates, or staff studies. Whether procedures are formal or informal, staff members carefully analyze and compare all feasible COAs, using the best information available. They candidly and objectively present alternatives, clearly explaining advantages and disadvantages of each. They are thoroughly prepared to recommend the best COA from the perspective of their individual fields of interest. Preparing recommendations includes coordinating with staff members whose fields of interest the recommendation might affect. Staff members prepare recommendations in a form that requires only the commander's approval or

disapproval. Within their fields of interest, staff members make recommendations regarding—

- Command policy.
- Guidance concerning force capabilities, limitations, and employment.
- Policies and procedures to enhance force capabilities.
- Priorities for employment, distribution, and support.
- Acceptable risk.
- Organization for combat, resource allocations, and command and support relationships.
- Resource allocation and employment synchronization of all organic and supporting assets (including those of other Services).
- General unit locations and movements.

PREPARING PLANS AND ORDERS

D-6. Staffs prepare and issue plans and orders to execute their commanders' decisions, coordinating all necessary details. (See FM 5-0.) Commanders may delegate authority to certain staff officers to issue plans and orders without their personal approval. Commanders assign a single staff officer responsibility for preparing and publishing plans and orders. Other staff members prepare portions of plans and orders that address their fields of interest. Examples include—

- Formulating the concepts of operations and support per the commander's intent.
- Identifying specified and implied tasks needed to accomplish the mission.
- Developing a concept of operations to support each COA.
- Adjusting plans and orders based on feedback.
- Identifying constraints.

Staff members make similar contributions to command standing operating procedures (SOPs), training plans, reports, studies, and summaries.

ASSESSING EXECUTION OF OPERATIONS

D-7. Staffs assist their commanders by ensuring that subordinates execute their decisions. This practice allows commanders to focus on the overall operation. It relieves commanders of having to address details better handled by subordinates. Assessing keeps staffs informed of the situation and provides them with current RI. Staffs use this RI to maintain running estimates and produce progress reports for their commanders. Staff members ensure that the intended recipients receive the commander's decisions and understand and execute them within the commander's intent. They also recommend adjustments when circumstances require. Staffs assess by analyzing reports, messages, and reports of staff visits and inspections. Assessment actions by staff members include—

- Monitoring the execution of instructions, plans, and orders.
- Ensuring subordinate and supporting units accomplish assigned tasks.

MANAGING INFORMATION WITHIN FIELDS OF INTEREST

D-8. Staff sections manage information related to their individual fields of interest. Staff members are not merely data collectors and transmitters. They analyze and clearly articulate information. Staffs collect, process, store, display, and disseminate information that flows continuously into their headquarters. They provide answers to the commander's critical information requirements (CCIR) to the commander and other staff members as quickly as possible.

D-9. Staff members routinely analyze factors influencing operations. They seek to identify problems affecting their fields of interest or the entire command. Judgment and experience are major factors in recognizing problems. Staff members follow a systematic approach, weighing each new item of information in relation to other available information. Staff sections may follow information management (IM) processes specific to their field of interest or battlefield operating system (BOS). The intelligence cycle is an example of such a process.

D-10. Staff members disseminate information using, among other media, briefings, electronic mail, staff papers, reports, and summaries. They use reports and summaries extensively to provide information to higher, subordinate, supporting, supported, and adjacent commands.

D-11. Staffs require the minimum number of reports from subordinates consistent with the commander's need for information.

D-12. Staff members perform the following general IM activities for information related to their fields of interest:

- Submitting information and intelligence requirements and reports to the G-2 (S-2).
- Monitoring operations and maintaining current COP-related information.
- Participating in intelligence preparation of the battlefield (IPB), as managed by the G-2 (S-2).
- Participating in intelligence, surveillance, and reconnaissance (ISR) planning.
- Participating in execution of ISR operations, as integrated by the G-3 (S-3) and synchronized by the G-2 (S-2).
- Providing risk assessment input to the G-3 (S-3).
- Reporting information of interest to the historian.
- Monitoring compliance with operations security (OPSEC) directives and procedures.
- Identifying host-nation (HN) requirements and coordinating with the G-5 (S-5) on integrating HN assets.
- Assessing and reporting military occupational specialty (MOS) shortfalls and personnel readiness issues to the G-1/AG (S-1).
- Determining workload requirements and assessing status of their organizations.
- Evaluating the effectiveness of support.
- Identifying requirements for additional units, personnel, equipment, or support.

- Determining and planning training requirements for the entire force.
- Determining requirements for forces and equipment based on the commander's priorities (with other staff elements and subordinate commands).
- Determining the adequacy of priorities for employing units.
- Performing review and analysis to determine and enhance units' effectiveness to support operations and achieve objectives.
- Analyzing operational effects on the environment and assessing its status.

D-13. Within their fields of interest, staff members fulfill the following specific IM tasks and activities:

- Develop and provide to the G-6, their assigned annex of or input to the command information management plan (CIMP).
- Identify and update information requirements (IRs).
- Recommend changes to the CCIR.
- Collect, process, disseminate, display, and store RI from their individual fields of interest for others' use.
- Help the G-3 (S-3) and G-6 (S-6) maintain the COP.
- Help the commander develop knowledge and derive situational understanding from the COP.

D-14. The information management coordinator (IMCOORD), assisted by the RI and information systems (INFOSYS) officers, has overall responsibility for compiling RI developed by all staff sections. The IMCOORD, RI officer, and INFOSYS officer manage available networked means to collect, process, display, store, and disseminate RI needed to maintain and disseminate the COP.

IDENTIFYING AND ANALYZING PROBLEMS

D-15. Staffs continually identify current and future problems or issues that affect mission accomplishment. Once they identify a problem, staff members analyze the actions or coordination needed to solve it. Sometimes staff members have the ability and authority to solve the problem without involving the commander. If not, once they analyze the problem, they make a recommendation to the commander for decision.

PERFORMING STAFF COORDINATION

D-16. Staff coordination results in making certain that staff actions and subordinate unit operations fit together in an integrated whole to achieve a unified effort. Good staff coordination requires personal initiative, a spirit of cooperation, and the genuine interest of each staff member. Most staff actions require coordination that extends beyond the immediate command to higher, subordinate, supporting, supported, and adjacent commands. Coordination is essential for four reasons:

- Ensure a thorough understanding of the commander's intent.
- Ensure complete and coherent staff actions.
- Avoid conflict and duplication by adjusting plans or policies before implementation.
- Consider all factors affecting the situation.

D-17. The coordinating staff officer under whose field of interest an action falls is responsible for coordinating it. Coordinating staff officers frequently designate members of their sections as action officers. Action officers coordinate proposed COAs with staff sections the COA would affect. All staff members examine the action from the perspective of their individual fields of interest and that of the commander to determine the optimal COA. The action officer resolves any conflicts and presents a recommendation to the approving authority for decision. Coordination by staff members includes—

- Coordinating with and providing direction to other staff elements about issues and information.
- Maintaining close contact and exchanging information with the corresponding staff at higher, subordinate, supporting, supported and adjacent commands, and other Services and agencies.
- Coordinating HN support or local civilian support with the G-5 (S-5).

When the command is subordinate to a joint headquarters, the G-3 (S-3) is responsible for coordinating with the J-3 (operations) and the J-5 (plans and policy). The G-5 (S-5) is responsible for coordinating with the J-5 and the J-3.

CONDUCTING TRAINING

D-18. All staff members assess training requirements within their fields of interest across the command. Each adds these requirements into the overall command training plan, which the G-3 (S-3) maintains. Staff members determine the amount and type of training needed, and any evaluation requirements. This includes any command technical training within a staff member's field of interest. The staff member is responsible for planning and supervising this training. Examples include training requirements for—

- Intelligence-related subjects, determined by the G-2.
- Treatment and disposition of enemy defectors and enemy prisoners of war (EPWs), civilian internees, and detainees, determined by the G-5.
- Risk management, determined by the safety officer.

D-19. In addition, all staff members are responsible for supporting the overall command training program with expertise and resources from their fields of interest. (See FM 7-0 and FM 25-101.)

PERFORMING STAFF ASSISTANCE VISITS

D-20. Staff members visit subordinate units for several reasons. These include gathering information for the commander, observing the execution of orders, and providing advice and assistance in their fields of interest. Commanders may designate representatives to make these visits in their name.

D-21. When visiting subordinate units, staff members call on the subordinate unit commander to explain the visit's purpose. Before leaving, they report any findings to the subordinate commander and any information they plan to report. Staff members avoid interfering with the subordinate commander's responsibilities. If the subordinate commander misunderstands the higher commander's orders, staff members provide additional information and guidance to the subordinate commander or staff. When staff members return to the sending headquarters, they make a brief oral or written report to their

staff principal, the chief of staff (COS), or the commander. The COS provides this report to other staff members.

PERFORMING RISK MANAGEMENT

D-22. Every staff member integrates risk management into the conduct (planning, preparing, executing, and assessing) of training and operations. Staff members help their commander minimize unnecessary risk by assessing hazards within their fields of interest and recommending controls to reduce or eliminate unnecessary risk. (See FM 100-14.)

CONDUCTING STAFF INSPECTIONS

D-23. Commanders direct individual staff members or teams to conduct staff inspections. Commanders use inspections to determine certain conditions within a subordinate unit, such as compliance or conformity with policies and regulations. Inspectors note positive and negative observations. Before the inspection, inspectors inform the subordinate commander of the inspection's purpose. Afterward, inspectors provide an informal report to the subordinate commander before they leave. Inspectors normally prepare a written report for their commander and furnish a copy to the inspected unit.

PERFORMING STAFF WRITING

D-24. Staff members prepare a variety of written communications—particularly at division level and above, where operations rely primarily on written directives, reports, orders, and studies. Effective staff writing conveys the writer's exact meaning and cannot be misinterpreted.

CONDUCTING STAFF RESEARCH

D-25. Staff research involves collecting and evaluating facts to solve problems or provide information. The problem determines the extent of research. Only after analyzing a problem and listing the main factors to consider can staff members determine how much and what kind of information to collect.

D-26. Staff members decide when they have enough information to draw valid conclusions. Valid conclusions are relevant to the topic, objective, and supported by data. Staff members arrive at them through a logical thought process.

PERFORMING STAFF ADMINISTRATIVE PROCEDURES

D-27. Each staff member performs administrative procedures. Effective procedures provide continuity for completed staff actions and allow staff members and staff sections to accomplish tasks efficiently and effectively. Staff members manage administrative activities within their own staff sections. Examples include maintaining—

- Policy files of the commander and higher headquarters.
- Current command SOPs and, specifically, the internal SOP for the staff member's field of interest.
- Staff section records, especially those providing RI for the commander.
- Reference files.

EXERCISING STAFF SUPERVISION

D-28. Staff supervision involves overseeing operations within individual fields of interest and supervising staff sections and their personnel.

Overseeing Fields of Interest

D-29. Staff sections exercise oversight by performing the following tasks that affect their individual fields of interest:

- Performing staff supervision of activities and units assigned, attached, or under the operational control (OPCON) of the command, to ensure adequate support of the command.
- Monitoring the maintenance, personnel, and equipment status, and advising the commander and responsible coordinating staff officer.
- Organizing and supervising subelements.

Supervising Staff Sections and Staff Personnel

D-30. Staff section leaders supervise their personnel. Supervision includes—

- Recommending and coordinating assignments and personnel issues.
- Coordinating procurement, storage, issue, and distribution of section equipment.
- Conducting section training.

SPECIFIC STAFF RESPONSIBILITIES AND DUTIES

D-31. This section outlines the responsibilities and duties of the chief of staff (executive officer) and individual staff officers. Staff officers are listed under the coordinating, special, and personal staff group to which they belong. Special staff officers are listed under the staff officer exercising coordinating staff responsibility over them. Discussions include the areas over which each staff officer exercises responsibility for staff planning and supervision. They also list special staff officers over which each coordinating staff officer exercises coordinating staff responsibility.

CHIEF OF STAFF/EXECUTIVE OFFICER

D-32. The COS or executive officer (XO) is the commander's principal assistant for directing, coordinating, supervising, and training the staff, except in areas the commander reserves. The commander normally delegates executive management authority (equivalent to command of the staff) to the COS. The COS frees the commander from routine details of staff operations and passes pertinent data, information, and insight from the staff to the commander and from the commander to the staff. Staff members inform the COS of any recommendations or information they pass directly to the commander, and of instructions they receive directly from the commander.

D-33. The value of a close relationship between the commander and COS cannot be overstated. During operations, the COS must anticipate events and share a near-identical visualization of operations, events, and requirements. The COS must understand the commander's intent at least as well as subordinate commanders. An effective COS understands the commander's personality, style, and instincts as they affect the commander's intentions.

D-34. The COS helps the commander prepare subordinate units for future employment. The COS monitors their combat readiness status and directs actions to posture subordinate units. Under special conditions or missions, the commander may give the COS temporary command of a portion of the force. Examples of these situations include deployments, retrograde operations, obstacle crossings, and when the commander and deputy or assistant commanders are unable to command.

D-35. The COS ensures the information element of combat power is integrated into operations per the commander's intent and concept of operations. In corps, divisions, and selected brigades, the G-7 (S-7) and other coordinating staff officers assist the COS with information operations (IO) responsibilities.

D-36. Corps, divisions, major support commands, and other organizations commanded by a general officer are authorized a COS. Other units (regiments, brigades, and battalions) are authorized an XO, who performs the duties of a COS. As supervisor of the staff, the COS (XO) is responsible for—

- Supervising all tasks assigned to the staff.
- Directing the efforts of coordinating and special staff officers.
- Integrating and synchronizing plans and orders.
- Supervising management of the CCIR.
- Establishing, managing, and enforcing the staff planning time line (per the commander's guidance).
- Supervising the targeting and other cross-FLOT (forward line of own troops) planning cells.
- Integrating fratricide countermeasures into plans and orders.
- Determining liaison requirements, establishing liaison information exchange requirements, and receiving liaison teams.
- Directly supervising the main command post (CP) and headquarters cell, including, displacement, protection, security, and communications.
- Monitoring the staff's discipline, morale, and operational readiness.
- Conducting staff training.
- Ensuring staff work conforms to the mission, commander's guidance, and time available.
- Ensuring the staff integrates and coordinates its activities internally and with higher, subordinate, supporting, supported, and adjacent commands.
- Ensuring all staff sections participate in and provide functional expertise to IPB, managed by the G-2 (S-2) in coordination with the G-3 (S-3).
- Informing the commander, deputy or assistant commanders, other primary staff officers, and subordinate unit COSs about new missions, instructions, and developments.
- Directing and supervising staff planning.
- Supervising ISR integration.
- Ensuring the staff renders assistance to subordinate commanders and staffs.
- Integrating risk management across the staff throughout the operations process. (See FM 100-14.)

- Maintaining knowledge of all directives, orders, and instructions the commander issues to the staff, subordinate commanders, and subordinate units, and verifying their execution.
- Exercising coordinating staff responsibility for the following special staff officers—
  - Headquarters commandant.
  - Secretary of the general staff (SGS).
  - Liaison officers (LNOs).

COORDINATING STAFF OFFICERS

D-37. Coordinating staff officers coordinate actions for the commander and for special staff sections over which they are assigned coordinating staff responsibility. Coordinating staff responsibility includes—

- Ensuring that special staff officers or sections have personnel, logistics, facilities, and proper support.
- Coordinating actions and taskings of special staff officers across the entire staff.
- Informing the COS of the special staff officer's actions.

Coordinating staff officers establish procedures for coordinating and integrating special staff activities within their individual fields of interest.

Assistant Chief of Staff, G-1/AG (S-1), Personnel

D-38. The ACOS, G-1/AG (S-1) is the principal staff officer for all matters concerning human resources support (military and civilian). The G-1/AG (S-1) also serves as the senior adjutant general officer in the command. A G-1/AG (S-1) is authorized at every echelon from battalion through corps. Specific responsibilities of the G-1/AG (S-1) include manning, personnel services, personnel support, and headquarters management.

D-39. **Manning.** Manning includes personnel readiness management, personnel replacement management, and personnel accounting.

D-40. Personnel readiness management includes—

- Analyzing personnel strength data to determine current capabilities and project future requirements.
- Unit strength maintenance, including monitoring, collecting, and analyzing data affecting soldier readiness (such as, morale, organizational climate, commitment, and cohesion).
- Monitoring unit strength status and developing plans to maintain it.
- Monitoring the deployability of soldiers.
- Supporting unit linguist requirements through identifying all foreign-language-skilled soldiers in the organization, regardless of MOS. This includes administrative support of linguists.

D-41. Personnel replacement management includes—

- Advising the commander and staff about individual, team, or crew replacements, and replacement-system operations.
- Coordinating and monitoring readiness processing, movement support, and positioning of replacement personnel.

- Receiving, accounting, processing, and delivering personnel.
- Preparing estimates for personnel replacement requirements, based on estimated casualties, nonbattle losses, and foreseeable administrative losses.
- Preparing plans and policies to govern the assignment of replacement personnel.
- Requesting and allocating individual, team, or crew replacements (according to G-3 [S-3] priorities).
- Integrating the personnel replacement plan with the equipment replacement plan (from the G-4 [S-4]) and the training plan (from the G-3 [S-3]).

D-42. Personnel accounting includes—

- Maintaining a personnel information database.
- Accounting for military personnel individually.
- Collecting, processing, and storing critical information about soldiers, units, and civilians.
- Accounting for civilian personnel.

D-43. **Personnel Services.** Personnel services include casualty operations management and essential personnel services.

D-44. Casualty operations management involves—

- Casualty reporting, notification, and assistance.
- Line-of-duty determination.
- Reporting of status of remains.
- Casualty mail coordination.

D-45. Essential personnel services include—

- Awards program management.
- Records management, including finance, legal services, and command information.
- Retention.
- Planning and coordinating policies for soldiers deemed unfit for combat duty (for example, for medical reasons).
- Managing line-of-duty investigations, congressional and family inquiries, and special correspondence.
- Finance and legal services.
- Servicemember's Group Life Insurance (SGLI).
- Internal (formerly command) information program.

D-46. **Personnel Support.** Personnel support includes—

- Postal operations management, which involves operational and technical control, including EPW mail services.
- Morale, welfare, and recreation (MWR), and community support, including fitness programs.
- Band operations.
- Quality-of-life programs, including assessing morale and recommending programs to enhance it.
- Equal opportunity management.

- Community and family support activities and programs.
- Coordinating interaction with the Army and Air Force Exchange Service (AAFES), and nonmilitary agencies servicing the command, such as the American Red Cross.
- Deploying civilian labor (with the civilian personnel officer).

D-47. **Headquarters Management.** Headquarters management includes—

- Managing the organization and administration of the headquarters.
- Recommending manpower allocation.
- Coordinating and supervising movement, internal arrangement, and space allocation.
- Administrative support for military and civilian personnel, including leaves, passes, counseling, transfers, awards, and personal affairs.
- Providing information services, including publications, printing, distribution, and Freedom of Information Act material.
- Administrative support for non-US forces, foreign nationals, and civilian internees.
- Administration of discipline, law, and order (with the provost marshal [PM]), including absence without leave (AWOL), desertion, court-martial offenses, punishments, and straggler disposition.

D-48. **Coordinating Staff Responsibility.** The G-1/AG (S-1) has coordinating staff responsibility for the following special and personal staff officers:

- Special staff officers.
  - Civilian personnel officer (CPO).
  - Dental surgeon.
  - Equal opportunity adviser (EOA).
  - Finance officer.
  - Surgeon.
  - Veterinary officer.
- Personal staff officers when functioning as special staff officers.
  - Inspector general (IG).
  - Public affairs officer (PAO).
  - Staff judge advocate (SJA).

Assistant Chief of Staff, G-2 (S-2), Intelligence

D-49. The ACOS, G-2 (S-2) is the principal staff officer for all matters concerning the enemy/threat, the environment as it affects the enemy/threat, intelligence, and counterintelligence. Additionally, the G-2 (S-2) supports security programs. A G-2 (S-2) is authorized at every echelon from battalion through corps. The G-2 (S-2) is responsible for intelligence readiness, intelligence tasks, intelligence synchronization, other intelligence support, counterintelligence, and support to security programs.

D-50. **Intelligence Readiness.** Intelligence readiness includes—

- Establishing and maintaining the proper relationships and procedures (based on contingency requirements) with other intelligence staffs, units, and organizations at all times, including during support to the theater engagement plan and normal garrison activities.

- Establishing and maintaining flexible intelligence architecture during normal garrison activities. This includes coordinating with the G-6 (S-6) for adequate supporting communications.
- Coordinating with higher echelons, the G-4 (S-4), and the engineer coordinator (ENCOORD) to identify requirements for geospatial products, before deploying on an operation.
- Preparing the command intelligence training plan and integrating intelligence, counterintelligence, and enemy/threat considerations (organization, equipment, operations, and EPW handling) into other training plans.
- Exercising staff supervision of military intelligence support to the command intelligence training program.

D-51. **Intelligence Tasks.** Intelligence tasks include—

- Managing the intelligence process to produce and disseminate intelligence to meet the commander's and other users' requirements in a timely manner, and to support distributed intelligence production and intelligence reach based on the unit area of intelligence responsibility.
- Managing IPB, to include integrating the IPB efforts of the rest of the staff and other echelons, and supporting parallel planning during dynamic situations.
- Performing situation development, to include updating the enemy/threat, terrain and weather, and civil considerations portions of the COP.
- Providing indications and warnings support to operations.
- Providing intelligence support to targeting, to include participating in targeting meetings, developing targets, planning target acquisition, and tracking high-payoff targets (HPTs).
- Providing intelligence support to battle damage assessment.
- Providing intelligence support to force protection.
- Providing intelligence support to IO by integrating intelligence products into IO planning and integrating IO considerations into the other intelligence tasks, as applicable at that echelon.
- Recommending priority intelligence requirements (PIRs).

D-52. **Intelligence Synchronization.** Intelligence synchronization includes—

- Synchronizing intelligence support to operations and to ISR integration through close coordination with the commander, COS (XO), G-3 (S-3), and the other staff members.
- Managing intelligence requirements, to include—
  - Developing and continuously updating a list of intelligence gaps.
  - Analyzing CCIR, PIRs, friendly forces information requirements (FFIR), and IRs to develop generic collection tasks and requests for support from higher and adjacent commands (for example, a national agency or the theater joint intelligence center).
  - Developing the intelligence synchronization plan.
  - Satisfying requirements through intelligence reach.
  - Tracking requirements and disseminating intelligence to satisfy CCIR, then PIRs, FFIR, IRs, and other requirements.

- Evaluating collection reporting and intelligence.

- Facilitating ISR integration by giving the commander and G-3 (S-3) the initial intelligence synchronization plan and helping the G-3 (S-3) develop the initial ISR plan. These tasks include—
  - Advising the commander on collection capabilities and limitations.
  - Advising the commander on unit intelligence production capabilities and limitations.
  - Helping translate the commander's intent, concept of operations, and initial CCIR into the initial focus and intent for collection.
  - Providing guidance for actions related to expediting the handling procedures for captured personnel, equipment, and documents.
  - Recommending to the G-3 (S-3) initial taskings of assigned, attached, and supporting intelligence collection assets.
  - Requesting support for higher and adjacent unit intelligence collection, processing, and production.
- Recommending to the commander and G-3 (S-3) adjustments to the ISR plan to facilitate ISR integration. This task includes—
  - Assessing the effects of collection by maintaining requirements visibility, asset visibility, and ISR assessment capability.
  - Recommending to the G-3 (S-3) refocus of and new taskings for assigned, attached, and supporting intelligence collection assets.
  - Requesting support for higher and adjacent command intelligence collection, processing, and production.
  - Adjusting the production and dissemination portion of the intelligence synchronization plan.

D-53. **Other Intelligence Support.** Other intelligence support includes—

- Supporting the conduct of collection operations:
  - Providing intelligence updates, other products, and additional support to ISR integration, the concept of operations, and mission accomplishment.
  - Advising the commander so that all collection, production, and dissemination adhere to special security, legal, and regulatory restrictions.
  - Facilitating the military-intelligence-unique deconfliction of collection among assigned, attached, and supporting intelligence collection assets and other collection assets in the area of operations (AO).
- Preparing the intelligence annex to plans and orders, and the intelligence estimate.
- Coordinating technical control and technical support for military intelligence assets and units.
- Debriefing friendly personnel when necessary.
- Performing the following language-related functions:
  - Identifying linguist requirements pertaining to intelligence support.
  - Determining all foreign languages (spoken and written) and dialects in which proficiency is needed for mission accomplishment.
  - Coordinating for security investigations of local-hire linguists.

D-54. **Counterintelligence.** Counterintelligence includes—

- Coordinating counterintelligence activities.
- Identifying enemy intelligence collection capabilities, such as efforts targeted against the unit.
- Evaluating enemy intelligence capabilities as they affect OPSEC, countersurveillance, signals security (SIGSEC), security operations, military deception (MD) planning, psychological operations (PSYOP), area security operations, and force protection.

D-55. **Support to Security Programs.** Support to security programs includes—

- Supervising the command and personnel security programs.
- Evaluating physical security vulnerabilities (to support the G-3 [S-3] and G-7 [S-7]).
- Performing staff planning and supervising the special security office.

D-56. **Coordinating Staff Responsibility.** The G-2 (S-2) has coordinating staff responsibility for the staff weather officer.

Assistant Chief of Staff, G-3 (S-3), Operations

D-57. The ACOS, G-3 (S-3) is the principal staff officer for all matters concerning training, operations and plans, and force development and modernization. A G-3 (S-3) is authorized at every echelon from battalion through corps.

D-58. **Training.** G-3 (S-3) training responsibilities include—

- Conducting training within the command.
- Preparing training guidance for the commander's approval.
- Helping the commander develop the unit's mission essential task list (METL).
- Identifying training requirements, based on the unit METL and training status.
- Determining requirements for and allocation of training resources.
- Organizing and conducting internal schools, and obtaining and allocating quotas for external schools.
- Conducting training inspections, tests, and evaluations.
- Maintaining the unit readiness status of each unit in the command.
- Compiling training records and reports.

D-59. **Operations and Plans.** Operations and plans includes—

- Preparing, coordinating, authenticating, publishing, and distributing the command SOP, plans, orders (including fragmentary orders [FRAGOs] and warning orders [WARNOs]), and terrain requirements and products involving contributions from other staff sections.
- Planning, coordinating, and supervising exercises.
- Participating in targeting meetings.
- Reviewing plans and orders of subordinate units.
- Synchronizing tactical operations with all staff sections.
- Reviewing plans and orders for synchronization and completeness.

- Ensuring necessary combat support requirements are provided when and where required.
- Coordinating with the G-5 (S-5) on using Army forces to establish civil government.
- Integrating ISR into the concept of operations.
- Integrating and managing the ISR effort through an integrated staff process and procedure.
- Developing the ISR plan (with rest of the staff). The ISR plan produces an initial ISR order to answer initial CCIR, PIRs, and IRs. It supports the commander's visualization.
- Developing the ISR annex to plans and orders (with the rest of the staff).
- Synchronizing ISR with the overall operation throughout the operations process (with the rest of the staff).
- Allocating ISR tasks (considering recommendations from the rest of the staff).
- Retasking and refocusing collection assets during execution (considering recommendations from the rest of the staff).
- Integrating fire support into operations.
- Coordinating with the commander, COS (XO), and G-6 (S-6) to establish, oversee, and supervise battle staff IM activities of the CP.
  - Giving direction and guidance to the G-6 (S-6) and battle staff on how the CP supports the commander's exercise of C2.
  - Providing input to the CIMP so the G-6/IMCOORD and the battle staff can provide RI and INFOSYS technical support.
- Planning tactical troop movements, including route selection, priority of movement, timing, security, bivouacking, quartering, staging, and preparing movement orders.
- Recommending priorities for allocating critical resources, including—
  - Time (available planning time).
  - Ammunition basic loads and the controlled supply rate (CSR). Approving the CSR after G-4/materiel management center input.
  - Personnel and equipment replacements.
  - Electronic frequencies and secure key lists.
- Developing the ammunition required supply rate (RSR) (with the G-2 and G-4).
- Requisitioning replacement units (through operations channels).
- Establishing criteria for reconstitution operations.
- Recommending use of resources to accomplish maneuver and support, including resources required for MD.
- Coordinating and directing terrain management.
- Determining combat service support (CSS) resource requirements (with the G-1/AG [S-1] and G-4 [S-4]).
- Participating in COA and decision support template development (with the G-2 [S-2] and fire support coordinator [FSCOORD]).
- Coordinating with the ENCOORD, G-2 (S-2), G-5 (S-5), and surgeon to establish environmental vulnerability protection levels.

- Recommending general CP locations.
- Recommending task organizations and assigning missions to subordinate elements, which includes—
  - Developing, maintaining, and revising troop lists.
  - Organizing and equipping units, to include estimating the numbers and types of units to organize and the priority for phasing in or replacing personnel and equipment.
  - Receiving units, detachments, or teams, to include orienting, training, and reorganizing them.
- Integrating space support, IO (with the G-7), and fire support into all operations.
- Coordinating with the G-1/AG (S-1) for civilian personnel involvement in tactical operations.
- Supporting linguist requirements, to include consolidating linguist requirements and establishing priorities for using linguists.

D-60. **Force Development and Modernization.** Force development and modernization includes—

- Developing and recommending a planned or programmed force structure.
- Processing procedures for unit activation, inactivation, establishment, discontinuance, and reorganization (force accounting).
- Fielding new weapons and equipment systems (force modernization).
- Evaluating the organizational structure, functions, and workload of military and civilian personnel to ensure their proper use and requirements (manpower utilization and requirements).
- Allocating manpower resources to subordinate commands within established ceilings and guidance (manpower allocation).
- Developing and revising unit force data for documenting any changes to the modification table of organization and equipment (MTOE) and modification table of distribution and allowances (MTDA).
- Recording and reporting data for information, planning and programming, allocation, and justification (manpower reports).
- Conducting formal, on-site manpower and equipment surveys.
- Ensuring MTOE and MTDA documents reflect the minimum essential and most economical equipment needed for the assigned mission.
- Determining qualitative and quantitative personnel requirements for new equipment and systems.

D-61. **Staff Planning and Supervision.** The G-3 (S-3) has staff planning and supervisory responsibility for the following areas:

- Force protection.
- Army airspace command and control (A2C2).
- Area damage control.
- Rear area and base security.
- Discipline, law, and order (coordinates with the G-1/AG (S-1) on appropriate administrative procedures).
- Activating and deactivating units.
- Operations involving EPWs and civilian internees (with the PM).

D-62. **Coordinating Staff Responsibility.** The G-3 (S-3) has coordinating staff responsibility for the following staff officers:

- Air and missile defense coordinator (AMDCOORD).
- Air liaison officer (ALO).
- Aviation coordinator (AVCOORD).
- Chemical officer (CHEMO).
- Engineer coordinator (ENCOORD).
- Explosive ordnance disposal (EOD) officer.
- Fire support coordinator (FSCOORD).
- Historian.
- Liaison officers (LNOs).
- Marine liaison team (MLT) commander.
- Provost marshal (PM).
- Safety officer.
- Space operations officer (SOO).
- Special operations coordinator (SOCOORD).
- Theater airlift liaison officer (TALO).

Assistant Chief of Staff, G-4 (S-4), Logistics

D-63. The ACOS, G-4 (S-4) is the principal staff officer for logistic operations and plans (general), supply, maintenance, transportation, and services. The G-4 (S-4) links the support unit, commander, and rest of the staff. The G-4 (S-4) helps the support unit commander maintain logistics visibility with the commander and the rest of the staff. A G-4 (S-4) is authorized at every echelon from battalion through corps. In brigades and battalions, the S-4 both coordinates activities and executes requirements for the commander and unit.

D-64. **Logistic Operations and Plans (General).** Logistic operations and plans (general) includes—

- Developing the logistic plan to support operations (with the G-3 [S-3]).
- Coordinating with the G-3 (S-3), G-2 (S-2), and ENCOORD to requisition cataloged topographic foundation data and existing mission-specific data sets from the Defense Logistics Agency.
- Coordinating with the G-3 (S-3) and G-1/AG (S-1) on equipping replacement personnel and units.
- Coordinating with the support unit commander on the current and future support capability of that unit.
- Coordinating the selection of, and recommending to the G-3 (S-3), main supply routes (MSRs) and logistic support areas (with the ENCOORD).
- Performing logistic preparation of the battlefield (with the support command).
- Recommending command policy for collecting and disposing of excess property and salvage.

D-65. **Supply.** Supply includes—

- Determining supply requirements, except medical (with the support unit commander and the G-3 [S-3]).

- Coordinating all classes of supply except class VIII (which is coordinated through medical supply channels).
- Coordinating the requisition, acquisition, and storage of supplies and equipment, and the maintenance of materiel records.
- Recommending CSS priorities and CSRs.
- Ensuring that accountability and security of supplies and equipment are adequate (with the PM).
- Calculating and recommending to the G-3 (S-3) basic and prescribed loads, and helping the G-3 (S-3) determine RSRs.
- Coordinating and monitoring the collection and distribution of excess, surplus, and salvage supplies and equipment.
- Directing the disposal of captured enemy supplies and equipment (after coordination with the G-2 [S-2]).
- Coordinating the allocation of petroleum products to subordinate units.
- Coordinating HN support with the G-5 (S-5).

D-66. **Maintenance.** Maintenance includes—

- Monitoring and analyzing the equipment readiness status.
- Determining maintenance workload requirements, less medical (with the support command).
- Coordinating equipment recovery and evacuation operations (with the support command).
- Determining maintenance time lines.

D-67. **Transportation.** Transportation includes—

- Conducting operational and tactical planning to support mode and terminal operations, and movement control.
- Planning administrative troop movements (with the G-3 [S-3]).
- Coordinating transportation assets for other Services.
- Coordinating with the G-5 (S-5) for HN support.
- Coordinating special transport requirements to move the CP.
- Coordinating with the G-1/AG (S-1) and the PM on transporting replacement personnel and EPWs.
- Coordinating with the G-3 (S-3) for CSS of tactical troop movements.

D-68. **Services.** Services include—

- Coordinating the construction of facilities and installations, except for fortifications and signal systems.
- Coordinating field sanitation.
- Coordinating organizational clothing and individual equipment exchange and replacement.
- Coordinating unit spill-prevention plans.
- Coordinating or providing food preparation, water purification, mortuary affairs, aerial delivery, laundry, shower, and clothing/light textile repair.
- Coordinating the transportation, storage, handling, and disposal of hazardous material or hazardous waste.
- Supporting the linguist requirements, to include contracting for, planning, and providing logistic support to contracted linguists.

D-69. **Staff Planning and Supervision.** The G-4 (S-4) has the following staff planning and supervisory responsibilities:

- Identifying requirements that can be met through contracting.
- Identifying requirements and restrictions for using local civilians, EPWs, and civilian internees and detainees in CSS operations.
- Coordinating with the SJA on legal aspects of contracting.
- Coordinating with the resource manager (RM) and finance officer on the financial aspects of contracting.
- Coordinating real property control and fire protection for facilities.

D-70. **Coordinating Staff Responsibility.** The G-4 (S-4) has coordinating staff responsibility for the transportation officer.

Assistant Chief of Staff, G-5 (S-5), Civil-Military Operations

D-71. The ACOS, G-5 (S-5) is the principal staff officer for all matters concerning civil-military operations (CMO). The G-5 (S-5) establishes the civil-military operations center, evaluates civil considerations during mission analysis (identifying the civil centers of gravity), and prepares the groundwork for transitioning the AO from military to civilian control. The G-5 (S-5) advises the commander on the military's effect on civilians in the AO, relative to the complex relationship of these people with the terrain and institutions over time. The G-5 (S-5) is responsible for enhancing the relationship between Army forces and the civil authorities and people in the AO. The G-5 (S-5) is required at all echelons from battalion through corps, but authorized only at division and corps. Once deployed, units below division level may be authorized an S-5.

D-72. **Staff Responsibilities.** G-5 (S-5) responsibilities include—

- Advising the commander on the effect of civilian populations on military operations.
- Minimizing civilian interference with operations. This includes dislocated civilian operations, curfews, and movement restrictions.
- Advising the commander on legal and moral obligations incurred from the long- and short-term effects (economic, environmental, and health) of military operations on civilian populations.
- Advising the commander on employing military units that can perform CMO missions.
- Operating a civil-military operations center to maintain liaison with other US governmental agencies, HN civil and military authorities, and nongovernmental and international organizations in the AO.
- Coordinating with the FSCOORD on protected targets.
- Planning community relations programs to gain and maintain public understanding and goodwill, and to support military operations.
- Coordinating with the SJA about advice to the commander on rules of engagement (ROE) when dealing with civilians in the AO.
- Providing the G-2 (S-2) information gained from civilians in the AO.
- Coordinating with the G-7 and PSYOP officer on trends in public opinion.
- Coordinating with the surgeon on the military use of civilian medical facilities, materials, and supplies.

- Coordinating with the G-7, PAO, and PSYOP officer to ensure disseminated information is not contradictory.
- Helping the G-1/AG (S-1) coordinate for local labor resources.
- Coordinating with the PAO on supervising public information media under civil control.
- Providing instruction to units, officials (friendly, HN civil, or HN military), and the population on identifying, planning, and implementing programs to support civilian populations and strengthen HN internal defense and development.
- Identifying and assisting the G-6 (S-6) with coordinating military use of local INFOSYS.
- Providing technical advice and assistance in reorienting enemy defectors, EPWs, civilian internees, and detainees.
- Participating in targeting meetings.
- Coordinating with the PM to control civilian traffic in the AO.
- Helping the G-4 (S-4) coordinate facilities, supplies, and other materiel resources available from the civil sector to support operations.
- Coordinating with the G-1/AG (S-1) and SJA in establishing off-limits areas and establishments.
- Coordinating civilian claims against the US Government with the SJA.

D-73. **Staff Planning and Supervision.** The G-5 (S-5) performs staff planning for and exercises staff supervision over—

- Attached civil affairs units.
- Military support to civil defense and civic action projects.
- Protection of culturally significant sites.
- Humanitarian civil assistance and disaster relief.
- Noncombatant evacuation operations (NEO).
- Emergency food, shelter, clothing, and fuel for local civilians.
- Public order and safety as they apply to operations.

Assistant Chief of Staff, G-6 (S-6), Command, Control, Communications, and Computer Operations

D-74. The ACOS, G-6 (S-6) is the principal staff officer for all matters concerning command, control, communications, and computer operations (C4OPS). A G-6 (S-6) is authorized at all echelons from battalion through corps. The G-6 (S-6) advises the commander, staff, and subordinate commanders on C4OPS matters. C4OPS include C4 operations (general), network operations (NETOPS) and IM.

D-75. **C4 Operations (General).** G-6 (S-6) responsibilities related to C4OPS (general) include—

- Preparing and maintaining C4OPS estimates, plans, and orders.
- Monitoring and making recommendations on all technical C4OPS activities.
- Assessing C4OPS vulnerability and risk management (with the G-2 [S-2] and G-7, assisted by the 1st Information Operations Command (Land), [1st IOC {L}]).

- Recommending C4OPS network priorities for battle command.
- Recommending CP locations, based on the information environment.
- Ensuring that redundant communications means are planned and available to pass time-sensitive information.
- Recommending C2-related essential elements of friendly information (EEFI).
- Establishing automation systems administration procedures for all INFOSYS.
- Establishing procedures for collecting, processing, displaying, storing, and disseminating data and information within the headquarters, staff sections, and major subordinate commands throughout the operations process (per the CIMP).
- Managing and controlling information network capabilities and services.

D-76. **Network Operations.** The NETOPS officer integrates mission information applications with INFOSYS and communications and computer operations of the warfighting information network. NETOPS includes network management (NM), information dissemination management (IDM), and information assurance (IA):

- **Network management**. Network management provides commanders with the ability to review and manage their networks to support ongoing IO and to adjust or reallocate network capabilities.
- **Information dissemination management**. IDM is the capability to provide a managed flow of RI based on the command's missions.
- **Information assurance**. IA includes issuing plans, orders, and polices that minimize the vulnerabilities of information, INFOSYS, and networks consistent with the defense-in-depth concept. Its goal is to protect and defend INFOSYS and networks against exploitation, degradation, and denial of services. IA responsibilities of the G-6 (S-6) include IA management and computer network defense functions.

D-77. G-6 (S-6) responsibilities related to NETOPS include—

- Coordinating, planning, and directing all C4OPS support interfaces with joint and multinational forces, including HN support interfaces.
- Coordinating the availability of commercial INFOSYS and information services for military use with the G-5 (S-5).
- Coordinating unit commercial and military satellite communications requirements with the SOO.
- Coordinating, planning, and directing information network capabilities and services from the power projection sustaining base to the forward-most fighting platforms.
- Coordinating, planning, and directing communications protocols and user interfaces from within the Global Information Grid (GIG) to the Tactical Internet, for all BOSs.
- Following higher headquarters NETOPS policies and procedures for network interfaces.
- Configuring wide-area networks.
- Managing radio frequency allocations and assignments and providing spectrum management.

- Ensuring that IDM meets the command's IM requirements. (IDM provides a managed flow of RI based on the commander's priorities).
- Coordinating, planning, and directing all command IA activities.
- Providing IA by—
  - Directing and supervising information and system security (ISS functions [a subset of IA]).
  - Ensuring the appointment of an information assurance security officer (IASO) in all elements of the command.
  - Coordinating, planning, and directing communications security (COMSEC) measures, including the operation of the information assurance systems security office (IASSO).
  - Providing IA direction and guidance to information assurance security coordinators (IASCs).

D-78. **Information Management.** The G-6 (S-6) is responsible for IM, in coordination with the battle staff. IM includes RI and INFOSYS functions. IM representatives within the CP are positioned to best support the commander's intent, with priority normally to the G-3 (S-3) operations cell and other critical cells within the CP. The RI officer operates in close coordination with each section. G-6 (S-6) responsibilities related to IM include—

- Preparing, maintaining, and updating IM estimates, plans, and orders (per the CIMP).
- Supporting CIMP implementation at the tactical and main CPs (based on G-3 [S-3] and G-6 [G-6] direction and guidance).
- Facilitating the timely flow of RI and enabling the staff to process, display, store, and disseminate the COP.
- Establishing procedures that enable the staff to maintain a timely flow of RI (with the staff).
- Establishing INFOSYS to develop the COP (with the staff).
- Coordinating the staff interaction necessary to develop the COP within CPs and at each major subordinate command (with the staff).
- Providing the architecture necessary to collect, process, display, store, and disseminate RI to support C2 functions (with the staff).
- Facilitating staff presentation of RI according to quality criteria of accuracy, timeliness, usability, completeness, precision, and reliability.
- Coordinating, planning, and directing the establishment of C2-system architectures that provide a sound foundation for current and future IM (with the G-3 [S-3] and the staff).
- Providing INFOSYS support through—
  - Directing and supervising automation management functions, a subset of INFOSYS.
  - Planning and ensuring that deployed nonmilitary INFOSYS are open and nonproprietary, with commonly accepted standards and protocols that interoperate with military INFOSYS.
  - Establishing and providing automation configuration management for all INFOSYS hardware/software employed by the command.
  - Coordinating planning, and directing the use of C2 INFOSYS and automation software and hardware employed by the command.

D-79. **Staff Planning and Supervision.** The G-6 (S-6) has the following staff planning and supervisory responsibilities:

- Supervising the activities of the NETOPS officer, IA staff manager, IMCOORD, RI officer, and INFOSYS officer.
- Assisting all staff sections with tactics, techniques, and procedures (TTP) for performing IM functions within and between staff sections.

Assistant Chief of Staff, G-7, Information Operations

D-80. The ACOS, G-7 (S-7) is the principal staff officer for all matters concerning information operations, including current operations, plans, and IO-related targeting. A G-7 is authorized at corps and divisions. Selected Army National Guard and active component brigades are authorized an S-7.

D-81. **Current Operations.** G-7 (S-7) responsibilities related to current operations include—

- Ensuring IO supports achieving information superiority.
- Synchronizing and coordinating offensive and defensive IO with the overall operation.
- Assessing the effects of offensive and defensive IO throughout the operations process; recommending IO adjustments as required.
- Coordinating and synchronizing tactical IO with theater-strategic- and operational-level IO.
- Coordinating IO elements and related activities for the COS (XO).
- Integrating intelligence from the G-2 (S-2) +into IO.
- Coordinating the attachment of the 1st IOC(L) Field Support Team and other specialized IO teams.
- Monitoring execution of IO tasks to ensure delivery of massed information effects when needed.

D-82. **Plans.** G-7 (S-7) responsibilities related to plans include—

- Exercising staff coordination over the conduct of the overall IO effort.
- Coordinating preparation of the IO portions of plans and orders.
- Producing other IO products.
- Recommending priorities for accomplishing IO tasks identified during planning.
- Leveraging the capabilities of higher echelon IO agencies and units providing connectivity with national- and theater-level IO agencies.

D-83. **Targeting.** G-7 (S-7) responsibilities related to targeting include—

- Participating in targeting meetings.
- Recommending IO effects to influence adversary perceptions, decisions, and actions.

D-84. **Staff Planning and Supervision.** The G-7 (S-7) has the following staff planning and supervisory responsibilities:

- Establishing and supervising an IO cell.
- Coordinating IO with other agencies (such as the US Information Agency, US Agency for International Development, and US ambassador).

D-85. **Coordinating Staff Responsibility.** The G-7 (S-7) has coordinating staff responsibility for the following staff officers:

- Military deception officer (MDO).
- Electronic warfare officer (EWO).
- Operations security officer.
- Psychological operations officer.

Support Operations or Materiel Officer

D-86. A support operations officer or materiel officer is authorized in support commands and battalions. The support operations or materiel officer is the principal staff officer for coordinating logistics and combat health support. The support operations officer or materiel officer provides technical supervision for the CSS mission of the support command and is the key interface between the supported unit and support command. The responsibilities of the support operations officer or materiel officer include—

- Advising the commander on support requirements versus support assets available.
- Coordinating external support requirements for supported units.
- Synchronizing support requirements to ensure they remain consistent with current and future operations.
- Planning and monitoring support operations and making adjustments to meet support requirements.
- Coordinating with the S-4 to track available CSS capabilities and assets.
- Coordinating support locations and time schedules with the S-2, S-3, and supported units.
- Preparing and distributing the external service support SOP that provides guidance and procedures to supported units.
- Providing input to supported units on the logistic estimate and service support annex to orders and plans.
- Preparing the support command's external service support annex.
- Providing technical assistance to supported units.

SPECIAL STAFF OFFICERS

D-87. Every staff has special staff officers. This section addresses the specific duties of each special staff officer. The number of special staff officers and their responsibilities vary with authorizations, the desires of the commander, and the size of the command. If a special staff officer is not assigned, the officer with coordinating staff responsibility for the field of interest assumes those functional responsibilities. (See figure D-1 on page D-26.) During operations, special staff officers work in parts of the CP designated by the commander, COS, or their supervising coordinating staff officer.

Chief of Staff/Executive Officer

D-88. The COS (XO) exercises coordinating staff responsibility over special staff officers as listed in figure D-1 on page D-26.

D-89. **Headquarters Commandant.** The headquarters commandant is responsible for soldiers assigned to the headquarters. Corps, divisions, and

major support commands are authorized a headquarters commandant. Headquarters commandant responsibilities include—

- Local headquarters security, including constructing defensive positions.
- Moving and arranging the headquarters.
- Training and morale activities for headquarters personnel.
- Food service, quartering, medical support, field sanitation, and supplies for headquarters personnel.
- Receiving and accommodating visitors and augmentees.
- Motor transportation organic to or allocated for headquarters use.
- Maintaining equipment organic or allocated to the headquarters.

<table>
<tr><th>Chief of Staff (XO)</th><th rowspan="2">G-3 (S-3)</th></tr>
<tr><td>• Headquarters commandant
• Secretary of the general staff
• Resource manager/comptroller</td></tr>
<tr><th>G-1/Adjutant General (S-1)</th><td rowspan="3">• Air and missile defense coordinator
• Air liaison officer
• Aviation coordinator
• Chemical officer
• Engineer coordinator
• Explosive ordnance disposal officer
• Fire support coordinator
• Historian
• Liaison officers
• Marine liaison team commander
• Provost marshal
• Safety officer
• Special operations coordinator
• Space operations officer
• Theater airlift liaison officer</td></tr>
<tr><td>• Civilian personnel officer
• Dental surgeon
• Equal opportunity advisor
• Finance officer
• Surgeon
• Veterinary officer
Note. The inspector general, public affairs officer, and staff judge advocate are personal staff officers to the commander. They coordinate through the G-1/AG when necessary.</td></tr>
<tr><th>G-2 (S-2)</th><th>G-6 (S-6)</th></tr>
<tr><td>• Staff weather officer</td><td>• None</td></tr>
<tr><th>G-4 (S-4)</th><th>G-7 (S-7)</th></tr>
<tr><td>• Transportation officer</td><td rowspan="3">• Military deception officer
• Electronic warfare officer
• Operations security officer
• Psychological operations officer</td></tr>
<tr><th>G-5 (S-5)</th></tr>
<tr><td>• None</td></tr>
</table>

Figure D-1. Coordinating Staff Responsibility for Special Staff Officers

D-90. **Secretary of the General Staff.** The SGS is the special staff officer who acts as XO for the COS. Corps, divisions, major support commands, and general officers with a staff are authorized an SGS. SGS responsibilities include—

- Planning and supervising conferences chaired by the commander, deputy or assistant commanders, or the COS.
- Directing preparation of itineraries for distinguished visitors to the headquarters and monitoring their execution.
- Monitoring preparation and execution of all official social events and ceremonies involving the commander, deputy or assistant commanders, or the COS.
- Acting as the informal point of contact for LNOs.

D-91. **Resource Manager or Comptroller.** The RM or comptroller is responsible for budget preparation and RM analysis and implementation. Corps and divisions are normally authorized an RM or comptroller. During joint operations, comptroller functions are normally transferred to the ARFOR headquarters. However, specific comptroller functions may occur at corps and division level. RM or comptroller responsibilities include—

- Supervising the development, training resource synchronization, evaluation, revision, defense, and execution of the command budget estimate and the program objective memorandum (POM).
- Establishing plans, policies, and procedures for developing and implementing the command budget.
- Assisting the staff on budget methods and formats; techniques of preparation, resource synchronization, presentation, and analysis; and developing workload information, expense (cost) factors, cost capturing, and statistics.
- Providing financial planning and assistance during the transition to war and throughout the conflict, including mobilization, redeployment, and demobilization.
- Providing fund ceilings to subordinate units.
- Monitoring execution of funded programs.
- Coordinating required program budget activity meetings.
- Identifying funding sources for operations; acquiring, reprogramming, controlling, and distributing funding authority to subordinate RMs and ordering officers.
- Overseeing cost capturing to support requests for funding authority for operations and requests to replace funds shifted from other programs (for example, mission training) to support an operation.
- Providing resource stewardship, primary linkage to the logistic financial system for fiscal constraints, and interface with contracting authorities.
- Helping contract HN support in logistics-based development, as part of the contracting implementation team.
- Developing policies, procedures, and techniques to ensure the most cost-advantageous and effective methods of purchasing commercial products and services, within fiscal and regulatory constraints.
- Monitoring administrative controls for accounting and reporting receipt and disbursement of public funds, including special contingency funds.
- Developing and maintaining effective financial and management controls, procedures, and systems for the best use of resources.
- Developing policies, procedures, and techniques to govern the establishment, maintenance, and operation of the command's budget accounting system.
- Implementing resource control procedures and serving as the primary fund certifying officer.
- Conducting audits of certain nonappropriated funds.
- Performing chief financial officer training and reviews, and audit compliance services.
- Supervising the implementation of RM policies.

- Performing real-time audits of command systems, procedures, and internal controls to ensure their proper implementation and effective operation.
- Developing and implementing an internal review program to safeguard, account for, properly use, and care for resources used in accomplishing the command's mission.
- Providing integrated and independent progress and statistical reports and analyses of command programs. Examples are qualitative evaluations of progress toward meeting programmed objectives and using resources to support the command's missions.
- Developing a zero-based budget using Headquarters, Department of the Army cost factors for operational tempo (OPTEMPO).
- Developing annual non-OPTEMPO requirements.

Assistant Chief of Staff, G-1/AG (S-1)

D-92. The ACOS, G-1/AG (S-1) exercises coordinating staff responsibility over special staff officers as listed in figure D-1 on page D-26.

D-93. **Civilian Personnel Officer.** The CPO is responsible for managing and administering the civilian employee personnel management program. The CPO is a civilian employee and has a permanent position on the staff at divisions and corps. CPO responsibilities include—

- Advising the commander and staff concerning, and supervising the management and administration of, the civilian employee personnel management program within the command.
- Administering civilian personnel management laws and regulations.
- Participating, when appropriate, in negotiations with HNs on labor agreements.
- Developing plans and standby directives for procuring, using, and administering the civilian labor force and using local labor in foreign areas during emergencies (with other staff members).

(The AR 690 series discusses CPO functions.)

D-94. **Dental Surgeon.** The dental surgeon is responsible for coordinating dental activities within the command. Corps and divisions are authorized a dental surgeon. Dental surgeon responsibilities include—

- Coordinating dental activities with the command surgeon.
- Exercising staff supervision over and providing technical assistance to dental activities.
- Planning and supervising the following dental functions:
  - Preventive dentistry program.
  - Oral health and readiness.
  - Maintaining professional standards and levels of dental care and treatment.
  - Managing the panoramic X-ray identification program.
  - Establishing priorities for dental care and treatment.
  - Professional training of dental personnel.

- Developing a program for dental support of humanitarian and civil action operations.
- Providing advice and technical assistance in constructing, rehabilitating, and using dental facilities.

D-95. **Equal Opportunity Advisor.** The EOA is responsible for coordinating matters concerning equal opportunity for soldiers and their families. Commanders at every echelon are authorized or appoint an EOA. EOA responsibilities include—

- Advising and assisting the commander and staff on all equal opportunity (EO) matters, including sexual harassment, discrimination, and affirmative action.
- Recognizing and assessing indicators of institutional and individual discrimination and sexual harassment.
- Recommending remedies and developing affirmative action and EO plans and policies to reduce or prevent discrimination and sexual harassment.
- Monitoring affirmative action and EO plans and policies.
- Collecting and processing demographic data concerning all aspects of EO climate assessment.
- Managing or conducting all EO education and training programs within the command.
- Receiving and helping process complaints, to include—
  - Conducting inquiries per the commander's guidance.
  - Consulting with the servicing SJA during all informal and formal investigations.
- Conducting ethnic observances.

(AR 600-20 discusses the responsibilities and duties of the EOA.)

D-96. **Finance Officer.** The finance officer, responsible for coordinating and providing finance services to the command, is also the finance unit commander. Corps and divisions are authorized a finance officer. Finance officer responsibilities include—

- Providing finance policy and technical guidance.
- Supervising disbursement of funds.
- Providing US and non-US pay functions involving military, DOD civilian, foreign national, HN, civilian internee, EPW, and travel and miscellaneous pay.
- Advising the commander and staff on the following:
  - Current economic situation, including the economic impact of expenditures on the local economy.
  - Availability and status of banking facilities in the AO.
  - Command currency control program.
- Performing limited fund and nonappropriated fund accounting, as determined by theater policy.
- Providing banking and currency support.
- Coordinating financial support of procurement and contracting.
- Coordinating local procurement support with the G-1/AG for personnel, and with the G-4 for materiel and services.

- Stationing subordinate finance units, equipped with their supporting systems, to support battlefield procurement and pay operations.
- Monitoring commercial accounts, including paying for supplies, equipment, and services procured to support the CSS BOS.
- Providing family support at home station.
- Making solatium (compensation for suffering) and other claims payments (with the SJA).
- Supporting bounty programs, such as turning in weapons for cash.

D-97. **Surgeon.** The surgeon is responsible for coordinating health assets and operations within the command, and may be a medical unit commander. Organizations from battalion through corps are authorized a surgeon. Surgeon responsibilities include—

- Health education and combat lifesaver training.
- Medical evacuation, including Army dedicated medical evacuation platforms (air and ground).
- Coordinating for Air Force aeromedical evacuation aircraft.
- Combat stress control program.
- Mass casualty plan.
- Providing medical care to EPWs.
- Providing medical care to civilians per the law of land warfare.
- Providing medical treatment support on an area basis.
- Hospitalization support of sick, injured, or wounded soldiers.
- Veterinary food inspection, animal care, and veterinary preventive medicine activities of the command (with the veterinary officer).
- Medical laboratory service.
- Combat health logistics, including blood management.
- Preventive medicine services, including the medical threat, pre- and post-health assessments, medical surveillance activities, pest management, environmental and occupational health hazards, food service sanitation, monitoring drinking water supplies, and field hygiene and sanitation activities.
- Combat health support of humanitarian assistance and disaster relief operations.
- Supervising and preparing health-related reports and statistics.
- Collecting and analyzing operational data for on-the-spot adjustments in the medical support structure and for postwar combat and material-development studies.
- Advising on command health services and health matters concerning occupied or friendly territory within the AO.
- Formulating the combat health support plan.
- Coordinating with the G-2 (S-2) to obtain national medical intelligence reports and summaries.
- Helping coordinate support of the area medical laboratory in receiving biomedical samples and initially identifying biological warfare agents.
- Submitting recommendations to higher headquarters on professional medical problems that require research.

- Advising on the effects of the medical threat—including, environmental, endemic, and epidemic diseases; nuclear, biological, and chemical (NBC) weapons; and directed-energy devices—on personnel, rations, and water.
- Recommending use of nondedicated transportation assets for evacuation, if required.
- Maintaining medical records within the command per AR 40-66.
- Determining the medical workload requirements (patient estimates), (based on casualty estimates determined by the G-1/AG [S-1]).
- Advising how operations affect the public health of personnel and the indigenous populations.
- Examining and recommending use or processing of captured medical supplies.
- Advising the command and coordinating with the G-5 (S-5) on public health issues involving military operations.

D-98. **Veterinary Officer.** The veterinary officer is responsible for coordinating assets and activities concerning veterinary service within the command. Corps are authorized a veterinary officer. Veterinary officer responsibilities include—

- Coordinating veterinary activities with the surgeon and other staff.
- Determining requirements for veterinary supplies and equipment.
- Ensuring safety of food and food sources.
- Advising on health and operational risks of animal disease, including possible biological warfare events.
- Monitoring the sanitation of food storage facilities and equipment.
- Managing veterinary equipment and facilities.
- Coordinating animal housing.
- Participating in CMO.
- Coordinating the use of medical laboratory services by veterinary personnel.
- Preparing reports on command veterinary activities.

Assistant Chief of Staff, G-2 (S-2)

D-99. The ACOS, G-2 (S-2) exercises coordinating staff responsibility over the staff weather officer.

D-100. The staff weather officer (SWO) is responsible for coordinating operational weather support and weather service matters through the G-2 (S-2). The SWO is an Air Force officer or noncommissioned officer who leads a combat weather team of two or more personnel. Typically, a SWO supports corps, divisions, aviation brigades, and special operations forces. SWO responsibilities include—

- Coordinating weather support procedures (both for garrison and during deployments) before deployment with the supported Army command.
- Advising the Army commander on Air Force weather capabilities, limitations, and the ways in which weather can enhance operations.
- Helping the G-2 (S-2) arrange indirect weather support, such as tactical unmanned aerial vehicles, for subordinate units.

- Helping the G-2 (S-2) and staff produce weather displays, graphic COP overlays, and weather-effects tactical decision aids displaying weather effects on Army platforms and components, among other things.
- Evaluating and disseminating weather products and data, and making products and data available in a client/server fashion to other Army INFOSYS.
- Advising the Air Force on Army operational weather support requirements.
- Helping the G-2 (S-2) monitor the weather support mission, identify responsibilities, and resolve weather support deficiencies.

Assistant Chief of Staff, G-3 (S-3)

D-101. The ACOS, G-3 (S-3) exercises coordinating staff responsibility over special staff officers as listed in figure D-1 on page D-26.

D-102. **Air and Missile Defense Coordinator.** The AMDCOORD is responsible for coordinating ARFOR air and missile defense (AMD) activities and plans with the area air defense commander (AADC), joint force air component commander (JFACC), and airspace control authority (ACA). The AMDCOORD coordinates the planning and use of all joint air and missile defense systems, assets, and operations, including Army air defense artillery (ADA), JFACC defensive counterair, and Navy/Marine surface-to-air missile systems. ARFOR AMD plans are deconflicted and synchronized with the AADC's area air defense plan, the JFACC's joint air operations plan and daily air tasking order (ATO), and the ACA's airspace control plan and daily airspace control order (ACO).

D-103. The AMDCOORD is the senior ADA officer in the command and the commander of an ADA unit supporting IT. An AMDCOORD is authorized at corps and divisions. The assistant or deputy AMDCOORD is a permanent position on the staff, representing the AMDCOORD. AMDCOORD responsibilities include—

- Providing air and missile attack early warning.
- Disseminating air defense ROE, weapons control status, and air defense warnings to subordinate units.
- Disseminating ATO and ACO information to ADA units. (ATO and ACO information is normally received electronically through the Army Battle Command System (ABCS), which receives it from the Theater Battle Management Core System.
- Coordinating airspace control measures to support AMD operations.
- Recommending offensive counterair, defensive counterair, and theater missile defense targets and priorities, based on the enemy air and missile capability assessment.
- Coordinating with the G-2 (S-2) to ensure that surveillance and intelligence units locate enemy air support assets.
- Coordinating air defense sensor management.
- Participating in targeting meetings.
- Recommending active and passive air defense measures.
- Determining requirements and recommending assets to support AMD.

- Providing AMD input to the airspace control plan.
- Planning and coordinating airspace use with the AVCOORD, ALO, FSCOORD, assistant G-3 (S-3) (air), and other airspace users. Representatives of the AMDCOORD from organic ADA units may also serve as members of the A2C2 cell.
- Providing information on the status of AMD systems, air and missile attack early warning radars, and ADA ammunition on hand.
- Recommending to the G-3 (S-3) the ADA ammunition RSR.
- Providing an estimate of the adequacy of the ADA ammunition CSR.
- Coordinating and synchronizing ARFOR AMD with joint force AMD.
- Reviewing and recommending joint force counterair ROE and procedures (with the SJA).

D-104. **Air Liaison Officer.** The ALO is responsible for coordinating aerospace assets and operations, such as close air support (CAS), air interdiction, air reconnaissance, airlift, and joint suppression of enemy air defenses. The ALO—authorized at corps, divisions, and brigades—is the senior Air Force officer with each tactical air control party. ALO responsibilities include—

- Advising the commander and staff on employing aerospace assets.
- Operating and maintaining the Air Force tactical air direction radio net and Air Force air request net.
- Transmitting requests for immediate CAS and reconnaissance support.
- Transmitting advance notification of impending immediate airlift requirements.
- Acting as liaison between AMD units and air control units.
- Planning the simultaneous employment of air and surface fires.
- Coordinating tactical air support missions with the FSCOORD and the appropriate A2C2 element.
- Supervising forward air controllers and the tactical air control party.
- Integrating air support sorties with the Army concept of operations.
- Participating in targeting team meetings.
- Directing CAS missions.
- Providing Air Force input into A2C2.

D-105. **Aviation Coordinator.** The AVCOORD is responsible for coordinating Army aviation assets and operations. The AVCOORD is the senior aviation officer in the force and the commander of an aviation unit supporting it. The assistant or deputy AVCOORD is a permanent position on the staff, representing the AVCOORD. An AVCOORD is authorized at corps and divisions. AVCOORD responsibilities include—

- Exercising staff supervision and training over Army aviation operations.
- Monitoring aviation flying-hour, standardization, and safety programs.
- Planning and supervising Army aviation operations.
- Providing technical advice and assistance on using Army aviation for evacuation (medical or other).
- Participating in targeting meetings.

D-106. **Chemical Officer.** The CHEMO is responsible for NBC defense operations, smoke operations, and chemical asset use. A CHEMO is authorized at every echelon, from battalions through corps. CHEMO responsibilities include—

- Recommending COAs to minimize friendly and civilian vulnerability, and assessing the probability and effect of NBC-related casualties.
- Providing technical advice and recommendations on mission-oriented protective posture (MOPP), troop-safety criteria, operational exposure guidance, NBC reconnaissance, smoke operations, biological warfare defense measures, and mitigating techniques.
- Planning and initiating procedures to verify and report enemy first use of NBC agents (with the surgeon).
- Assessing the probability and effect of NBC-related casualties.
- Coordinating across the entire staff while assessing the effect of enemy NBC-related attacks and hazards on current and future operations.
- Coordinating health support requirements for NBC operations with the surgeon.
- Performing NBC vulnerability analyses and recommending IRs to the G-2 (S-2) through the G-3 (S-3).
- Planning, supervising, and coordinating NBC decontamination (except patient decontamination) operations.
- Supervising the nuclear and chemical accident and incident response assistance program.
- Processing and distributing NBC attack and contamination data.
- Preparing, managing, and distributing NBC messages.
- Preparing NBC situation reports.
- Conducting NBC reconnaissance operations and coordinating them with the overall ISR plan.
- Assessing weather and terrain data to determine if environmental factors favor enemy use of weapons of mass destruction or, at corps level, friendly use of nuclear weapons.
- Predicting downwind vapor hazard and fallout patterns, and their probable effects on operations.
- Predicting fallout from friendly use of nuclear weapons and disseminating nuclear strike warning messages when required.
- Planning, coordinating, and managing chemical and radiological survey and monitoring operations.
- Maintaining and reporting radiation exposure and dose status, and coordinating with surgeon.
- Participating in targeting meetings.
- Estimating the effect of a unit's radiation exposure state on mission assignments.
- Participating in the nuclear target nomination process (corps only).
- Estimating consumption rates of NBC defense equipment and supplies.
- Operating the NBC warning and reporting system.
- Overseeing construction of NBC shelters.

- Planning and recommending integration of smoke and obscurants into tactical operations.
- Coordinating with the G-4 (S-4) on logistics as it relates to chemical defense equipment and supplies, maintaining chemical equipment, and transporting chemical assets.
- Developing smoke targets.
- Planning and recommending the use of flame field expedients to supplement unit defense and existing minefields and barriers.
- Advising the commander on possible hazards and effects of low-level hazards, such as, low-level radiation and toxic industrial material (with the surgeon).
- Advising the commander on passive defense measures to help protect and warn the force against missile attack (with the AMDCOORD).
- Advising the commander on using riot control agents.

D-107. **Engineer Coordinator.** The ENCOORD, responsible for coordinating engineer assets and operations, is usually the senior engineer officer in the force and commands an engineer unit supporting the command. The assistant or deputy ENCOORD is a permanent staff officer, representing the ENCOORD. An ENCOORD is authorized at corps and divisions. One is normally task-organized to maneuver brigades and battalions. ENCOORD responsibilities include—

- Planning and controlling these engineer battlefield functions:
  - Mobility.
  - Countermobility.
  - Survivability.
  - General and topographic engineering.
- Planning and coordinating with the G-3 (S-3) and FSCOORD on integrating obstacles and fires.
- Advising the commander on using all engineer assets.
- Advising the commander on employing and reducing obstacles.
- Participating in targeting meetings.
- Advising the commander on environmental issues, coordinating with other staff members to determine the impact of operations on the environment, and helping the commander integrate environmental considerations into decisionmaking.
- Providing a terrain visualization mission folder to determine the effects of terrain on friendly and enemy operations.
- Managing the digital terrain data storage device (coordinates with the G-2 [S-2] for planning and distribution).
- Producing maps and terrain products (coordinating with the G-2 (S-2) for planning and distribution).
- Planning and supervising construction, maintenance, and repair of camps and facilities for friendly forces, EPWs, and civilian internees.
- Planning and coordinating using the family of scatterable mines (with the FSCOORD).
- Providing information on the status of engineer assets on hand.

- Planning and coordinating environmental protection, critical areas, and protection levels.
- Preparing the engineer battlefield assessment in assisting the G-2 (S-2) with IPB.
- Recommending MSRs and logistic areas, based on technical information, to the G-4 (S-4).
- Planning the reorganization of engineers to fight as infantry, when the commander deems their emergency employment necessary.
- Coordinating with interagency department engineers, such as the FBI engineer.
- Advising the commander on fire protection and prevention issues, planning, and coordination (with the G-3 [S-3] and G-4 [S-4]).

D-108. **Explosive Ordnance Disposal Officer.** The EOD officer is responsible for coordinating the detection, identification, recovery, evaluation, render safe, and final disposal of explosive ordnance. An EOD officer is authorized at corps and divisions, and normally serves as the EOD group, battalion, or company commander. EOD officer responsibilities include—

- Establishing and operating an EOD incident reporting system.
- Establishing, operating, and supervising technical intelligence reporting procedures.
- Coordinating requirements for EOD support with requesting units, other Army commands, other Services, federal agencies, and multinational partners. Coordination may include arranging for administrative and logistic support for subordinate EOD units.
- Monitoring the supply status of and expediting requests for special EOD tools, equipment, and demolition materials.

(AR 75-15 discusses the responsibilities and duties of the EOD officer.)

D-109. **Fire Support Coordinator.** The FSCOORD is responsible for advising the commander on the best use of available fire support resources, developing the fire support plan, issuing necessary orders in the name of the commander, and implementing the approved fire support plan. At maneuver brigade through corps, the FSCOORD is also the commander of the field artillery unit supporting the force. A deputy FSCOORD or fire support officer (FSO) assists the FSCOORD. At battalion and company level, the FSO serves as the FSCOORD for the maneuver commander. FSCOORD responsibilities include—

- Developing, with the commander and G-3 (S-3), a concept of fires to support the operation.
- Planning and coordinating essential fire support tasks.
- Integrating nonlethal fires, including offensive IO, into the concept of fires and concept of operations (from input by the G-7 [S-7] at targeting meetings).
- Coordinating positioning of fire support assets.
- Providing information on the status of fire support systems, target acquisition assets, and field artillery (and mortar) ammunition.
- Coordinating and synchronizing joint fire support.
- Managing ammunition requirements, resupply, and reallocation.

- Recommending fire support coordinating measures to support current and future operations; managing changes to them.
- Recommending and implementing the commander's counterfire (including radar zones) and other target engagement priorities.

D-110. In addition to the above responsibilities, FSCOORDs at brigade and higher are responsible for—

- Accurately interpreting the commander's desired effects on enemy targets, formations, and capabilities in automated fire support INFOSYS.
- Participating in targeting meetings and developing applicable targeting products.
- Coordinating and planning for scatterable-mine use (with the ENCOORD).
- Coordinating nonstandard sensor-to-shooter linkages to attack targets with short dwell times.
- Coordinating field artillery survey and meteorological support.
- Performing nuclear target analysis (corps and above).

D-111. **Historian.** The historian is responsible for coordinating the documentation of the command's historical activities. The historian, normally an Army civilian, is authorized at corps and divisions. Historian responsibilities include—

- Preparing the command history.
- Supervising the command's historical activities.
- Injecting historical perspective and institutional memory into command activities.
- Collecting and maintaining records, such as, staff journals, plans and orders, and after-action reports.
- Preparing special studies and reports, based on assembled historical material.
- Maintaining a command historical research collection adequate to support the historical mission.

D-112. **Liaison Officer.** An LNO is responsible for representing the commander at the headquarters of another command to coordinate and promote cooperation between the two commands. (See appendix E.)

D-113. **Marine Liaison Team Commander.** The MLT is responsible for coordinating naval gunfire (NGF) and Marine CAS assets and operations. The MLT commander, a Navy or Marine officer, operates at division level and below. MLT commander responsibilities include—

- Processing requests for naval air or gunfire.
- Operating the NGF ground support net.
- Providing support teams to maneuver elements when Navy ships have a direct support mission.
- Helping the company FSO adjust NGF, in the absence of a spotter.
- Providing control and liaison associated with the ground elements of a landing force in controlling and employing NGF and Navy and Marine CAS in amphibious assaults or other types of operations.
- Participating in targeting meetings.

- Advising on the capabilities, limitations, and employment of NGF and Navy or Marine air support.

D-114. **Provost Marshal.** The PM is responsible for planning, coordinating, and employing all organic, assigned, or attached military police assets. The PM is usually the senior military police officer in the command. The PM augments the staff with a small planning cell that typically works within the G-3. A PM is authorized at corps and divisions. PM responsibilities include—

- Maneuver and mobility support operations, including—
  - Route reconnaissance.
  - Surveillance.
  - Circulation control.
  - Dislocated civilian and straggler control.
  - Information dissemination.
  - Tactical and criminal intelligence collecting and reporting.
- Components of area security operations, including activities associated with—
  - Force protection.
  - Zone and area reconnaissance.
  - CP access control.
  - Physical security of critical assets, nodes, and sensitive materials.
  - Counterreconnaissance.
  - Security of designated key personnel.
- Internment and resettlement of EPWs and civilian internees, dislocated civilians, and US military prisoners, including their—
  - Collection.
  - Detention and internment.
  - Protection.
  - Sustainment.
  - Evacuation.
- Law and order operations, including—
  - Law enforcement.
  - Criminal investigations.
  - Counterterrorism and antiterrorism activities.
- Conducting police intelligence operations, including activities related to the collection, assessment, development, and dissemination of police intelligence products.
- Coordinating customs and counterdrug activities.
- Providing physical security guidance for commanders.
- Assisting with area damage control and NBC detection and reporting.
- Performing liaison with local civilian law enforcement authorities.
- Helping the G-1/AG administer discipline, law, and order, including—
  - AWOL.
  - Desertion.
  - Court-martial offenses.
  - Requests for transfer of internees, detainees, and prisoners.

  - Rewards and punishments; and disposition of stragglers.
- Providing AWOL and desertion statistical data to the G-1/AG through the G-3.
- Coordinating for all logistic requirements relative to EPW and civilian internees, US military prisoners, and dislocated civilians (with the G-4).
- Coordinating on EPW and civilian internee pay support, and financial aspects of weapons bounty programs (with the finance officer and RM).

D-115. **Safety Officer.** The safety officer is responsible for coordinating safety activities throughout the command. Commanders at every echelon from battalion through corps appoint a safety officer. An aviation safety officer is authorized for corps staffs and all aviation units. Safety officer responsibilities include—

- Command safety and occupational health program.
- Accident prevention program.
- Coordinating with the IG and PM on unsafe trends identified during inspections.
- Providing input to the G-1/AG (S-1) on projected accident losses.
- Providing safety training to the local civilian labor force.
- Preparing risk assessments and recommending risk-reduction control measures for all operations.

D-116. **Special Operations Coordinator.** The SOCOORD is responsible for coordinating and integrating special operations forces (SOF) activities. A SOCOORD is normally authorized only on corps staffs. However, whenever a SOF unit is attached or under OPCON of the command, someone from the staff or the attached unit fulfills the SOCOORD's responsibilities. Below corps level, a command normally receives a special operations liaison team to fulfill the SOCOORD's responsibilities. The SOCOORD's responsibilities include—

- Providing coordination between the corps and the special operations command and control element, which may co-locate with the main CP.
- Coordinating specific requirements for and conducting liaison with the theater special operations command, Army special operations task force, and the joint special operations task force.
- Coordinating with the conventional force's long-range surveillance units to deconflict operations.
- Coordinating special forces, ranger, and special operations aviation support requirements with other staff sections.
- Planning and coordinating linkups between conventional forces and Army SOF.
- Providing expertise to other staff sections on special forces, ranger, and special operations aviation employment, doctrine, and TTP.

D-117. **Space Operations Officer.** The SOO is responsible for providing space-related tactical support and coordination of space-based capabilities available to the command. A SOO is authorized at corps and may be authorized at divisions in the future. If the command has no SOO assigned, an ARSST is often placed OPCON to it. The team's officer in charge fulfills the SOO's responsibilities. SOO responsibilities include—

- Advising the commander on the capabilities, limitations, and use of theater, strategic, national, and commercial space assets.
- Calculating, analyzing, and disseminating global positioning system (GPS) satellite coverage and accuracy data.
- Facilitating the dynamic retasking of space-based assets to support current and future operations.
- Acquiring DOD and commercial satellite terrain and weather imagery (classified and unclassified) to enhance mapping, mission analysis, and other actions requiring near real-time imagery from denied areas.
- Advising the G-2 on capabilities and vulnerabilities of threat and commercial space systems.
- Providing estimates on the effects of space weather activities on current and future operations.
- Nominating threat or foreign ground stations for targeting (with the G-3 and FSCOORD).
- Coordinating the activities of the Army space support team (ARSST) supporting the command.

D-118. **Theater Airlift Liaison Officer.** The TALO is responsible for advising the commander on the best use of airlift resources and coordinating their use. The TALO is a rated Air Force officer. TALOs are normally authorized at corps, divisions, regiments, and separate brigades. TALO responsibilities include—

- Advising the ground commander on the capabilities, limitations, and use of Air Force fixed-wing theater and strategic airlift assets.
- Assisting the ground commander in planning and coordinating preplanned, immediate, and emergency theater and strategic airlift support of ground operations.
- Operating and maintaining the airlift advance notification or coordination net.
- Transmitting advance notification of impending immediate airlift requirements.

Assistant Chief of Staff, G-4 (S-4)

D-119. The ACOS, G-4 exercises coordinating staff responsibility over the transportation officer. The transportation officer is responsible for coordinating transportation assets and operations. A transportation officer is authorized at corps (CTO) and divisions (DTO). Transportation officer responsibilities include—

- Administrative movements, including onward movement from ports of debarkation, CSS movements, and other movements the G-3 directs.
- Movement scheduling and regulation of MSRs.
- Mode operations (truck, rail, air, and water).
- Movement of materiel and personnel.
- Monitoring movements on routes two echelons down.

Assistant Chief of Staff, G-7 (S-7)

D-120. The ACOS, G-7 exercises coordinating staff responsibility over special staff officers as listed in figure D-1 on page D-26.

D-121. **Electronic Warfare Officer.** The EWO is normally a military intelligence officer who performs EW duties. An EWO is authorized at corps and divisions. EWO responsibilities include—

- Coordinating with the G-7 to integrate EW into IO.
- Coordinating, preparing, and maintaining the EW target list, electronic attack (EA) taskings, EA requests, and the EW portion of the sensor/attack matrix.
- Coordinating with the G-6 to deconflict EW targets with frequencies and the joint restricted frequency list.
- Coordinating with the FSCOORD and G-2 (analysis and control element) to identify opportunities for conducting effective EA.
- Participating in targeting meetings.
- Analyzing adversary EW activities (with the G-2).
- Assessing adversary vulnerabilities, friendly capabilities, and friendly missions in EW terms.
- Developing a prioritized adversary C2 target list based on high-value targets and HPTs (with the FSCOORD).
- Developing the EA mission tasking based on the C2 target list, and issuing the EA target list.
- Coordinating the EA target list with organic military intelligence units and with adjacent and higher commands, including joint and multinational commands when appropriate.
- Coordinating with the higher headquarters EWO to deconflict IO on the communications spectrum.
- Helping the G-6 determine electronic protection requirements.
- Preparing EW estimates and the EW appendix to the IO annex to orders and plans.
- Forwarding and coordinating EW support targets with the G-2. The G-2 collection manager integrates EW support targets into the collection plan and the intelligence synchronization plan.
- Briefing adversary and friendly EW vulnerabilities for each COA.

D-122. **Military Deception Officer**. The MDO is a functional area 30 officer responsible for coordinating MD assets and operations. An MDO is authorized at corps and divisions. MDO responsibilities include—

- Exercising staff supervision over MD activities.
- Providing expertise in MD operations.
- Managing information required for conducting MD operations.
- Determining requirements or opportunities for MD operations (with the G-2).
- Recommending to the G-7 the deception target, deception objective, and deception story.
- Writing the MD appendix to the IO annex to orders and plans.
- Coordinating OPSEC measures to shield the MD plan with the OPSEC officer.
- Coordinating with the higher headquarters MDO and G-7, ENCOORD, and CHEMO.

- Distributing the MD plan on a need-to-know basis.
- Integrating MD assets.
- Assessing execution of MD operations.

(FM 3-13 contains MD doctrine.)

D-123. **Operations Security Officer**. The OPSEC officer helps the G-7 (S-7) perform OPSEC functions. Commanders at all echelons, battalion through corps, are authorized or appoint an OPSEC officer. OPSEC officer responsibilities include—

- Conducting OPSEC assessments to analyze the command's OPSEC posture.
- Coordinating with higher headquarters for OPSEC activities support.
- Determining EEFI and OPSEC vulnerabilities and recommending EEFI to the commander.
- Recommending OPSEC measures, based on weighing the risks to the mission against the cost of protection.
- Publishing the OPSEC appendix to the IO annex to orders and plans.
- Coordinating with other members of the IO cell to ensure OPSEC coverage and dissemination of OPSEC measures.
- Submitting taskings for OPSEC tasks to subordinate units through the G-7 (S-7) to the G-3 (S-3).
- Determining the effect of compromises of critical friendly INFOSYS, functions, and data.
- Coordinating with the 1st IOC(L) for IO vulnerability assessments and red-teaming.
- Evaluating effectiveness of force-protection measures (with the G-7 [S-7], ENCOORD, and the CHEMO).
- Reporting incidents through channels to regional computer emergency response team and Army Computer Emergency Response team.

(FM 3-13 contains OPSEC doctrine.)

D-124. **Psychological Operations Officer.** The PSYOP officer is responsible for synchronizing PSYOP operations with those of other IO elements and echelons. A PSYOP officer is authorized at corps and divisions. If no PSYOP officer is assigned, the commander of an attached PSYOP support element may assume the PSYOP officer's responsibilities. PSYOP officer responsibilities include—

- Coordinating with the G-7 to ensure synchronization of PSYOP.
- Synchronizing command PSYOP with higher headquarters PSYOP.
- Writing the PSYOP appendix to the IO annex to plans and orders.
- Performing staff planning and coordination of PSYOP activities.
- Conducting PSYOP to support the overall operation.
- Allocating organic and supporting resources to support PSYOP efforts.
- Prioritizing the efforts of attached PSYOP forces.
- Evaluating enemy PSYOP efforts and the effectiveness of friendly PSYOP on target groups (with the G-2 and G-5).
- Coordinating possible PSYOP effects with the G-5.

- Coordinating audience pretesting and posttesting of propaganda and counterpropaganda products.
- Coordinating support of dislocated civilian operations with the G-5.
- Assessing PSYOP effectiveness.
- Providing a PSYOP representative to IO cell meetings.
- Assessing the psychological impact of military operations on the enemy and the civilian populace.
- Countering enemy propaganda and misinformation.
- Coordinating with the PAO and G-5 to ensure disseminated messages are consistent.

PERSONAL STAFF OFFICERS

D-125. Personal staff officers work under the immediate control of, and have direct access to, the commander. The commander establishes guidelines or gives guidance on when a personal staff officer informs or coordinates with the COS (XO) or other staff members.

D-126. Some personal staff officers have responsibilities as special staff officers and work with a coordinating staff officer. They do this case-by-case, depending on the commander's guidance or the nature of the task. Personal staff officers also may work under the supervision of the COS (XO).

D-127. By law or regulation, personal staff officers have a unique relationship with the commander. Although there are other members in the commander's personal staff, this section discusses only staff officers and the command sergeant major. The personal staff officers discussed here are the—

- Command sergeant major (CSM).
- Aide-de-camp.
- Chaplain.
- Inspector general (IG).
- Public affairs officer (PAO).
- Staff judge advocate (SJA).

Command Sergeant Major

D-128. The CSM is a member of the commander's personal staff by virtue of being the command's senior noncommissioned officer (NCO). No officer exercises coordinating staff responsibility over the CSM. The CSM is responsible for providing the commander with personal, professional, and technical advice on enlisted soldier matters and the NCO corps as a whole. A CSM is authorized at every echelon from battalion through corps. The CSM's responsibilities vary according to the commander's desires, but normally include—

- Providing advice and recommendations to the commander and staff in matters pertaining to enlisted soldiers.
- Executing policies and standards concerning enlisted soldier performance, training, appearance, and conduct.
- Maintaining communications with subordinate unit NCOs and other enlisted soldiers, through the NCO support channel.
- Monitoring unit and enlisted soldier training, and making corrections as necessary.

- Administering and monitoring the unit NCO development program and sergeant's time training.
- Providing counsel and guidance to NCOs and other enlisted soldiers.
- Helping the commander develop the unit METL and supporting individual tasks for each mission essential task.
- Administering and chairing unit selection and soldier boards for enlisted soldiers.
- Performing other duties the commander prescribes, to include receiving and orienting newly assigned enlisted soldiers and helping inspect command activities and facilities.
- Monitoring and recommending actions on unit morale and discipline.
- Coordinating unit security operations, to include fighting positions and local security.

Aide-de-Camp

D-129. The aide-de-camp serves as a personal assistant to a general officer. An aide-de-camp is authorized for general officers in designated positions. The rank of the aide-de-camp depends on the rank of the general officer. No officer exercises coordinating staff responsibility over the aide-de-camp. Aide-de-camp responsibilities include—

- Providing for the general officer's personal well-being and security, and relieving the general officer of routine and time-consuming duties.
- Preparing and organizing schedules, activities, and calendars.
- Preparing and executing trip itineraries.
- Coordinating protocol activities.
- Acting as an executive assistant.
- Meeting and hosting the general officer's visitors at the headquarters or the general officer's quarters.
- Supervising other personal staff members (secretaries, assistant aides, enlisted aides, and drivers).
- Performing varied duties, according to the general officer's desires.

Chaplain

D-130. The chaplain is responsible for religious support operations. The chaplain advises the commander on matters of religion, morals, and morale as affected by religion, and on the impact of indigenous religions on military operations. No officer exercises coordinating staff responsibility over the chaplain. A unit ministry team consisting of one chaplain and one chaplain assistant is authorized at every echelon from battalion through corps. The chaplain's responsibilities include—

- Advising the commander on the issues of religion, morals, and morale as affected by religion, including the religious needs of all assigned personnel.
- Providing the commander with pastoral care, personal counseling, advice, and privileged communications.
- Developing and implementing the commander's religious support program.

- Exercising staff supervision and technical control over religious support throughout the command.
- Providing moral and spiritual leadership to the command/community.
- Coordinating religious support with unit ministry teams of higher and adjacent headquarters, other Services, and multinational forces.
- Translating operational plans into battlefield ministry priorities for religious support.
- Helping the commander ensure that all soldiers have the opportunity to exercise their religion.
- Advising the commander and staff of the impact of the faith and practices of indigenous religious groups in an AO (with the G-5 [S-5]).
- Performing or providing religious rites, sacraments, ordinances, services, and pastoral care and counseling to nurture the living, care for casualties, and honor the dead.
- Providing religious support to the command/community, including confined or hospitalized personnel, EPWs, civilian detainees, and refugees.
- Providing liaison to indigenous religious leaders (with the G-5 [S-5]).
- Training, equipping, and supporting subordinate chaplains and chaplain assistants.

Inspector General

D-131. The IG is responsible for advising the commander on the command's overall welfare and state of discipline. The IG is a confidential adviser to the commander. An IG is authorized for general officers in command and selected installation commanders. The ACOS, G-1/AG exercises coordinating staff responsibility over the IG, when required. IG responsibilities include—

- Advise commanders and staffs on inspection policy.
- Advise the commander on the effectiveness of the organizational inspection program.
- Conducting inspections, surveys, and assessments, as the commander requires, and monitoring corrective actions.
- Receiving allegations and conducting investigations and inquiries.
- Monitoring and informing the commander of trends, both positive and negative, in all activities.
- Consulting with staff sections, as appropriate, to obtain items for the special attention of inspectors and to arrange for technical assistance.
- Providing the commander continuous, objective, and impartial assessments of the command's operational and administrative effectiveness.
- Assisting soldiers, Army civilians, family members, retirees, and other members of the force who seek help with Army-related problems.
- Identifying and helping solve systemic problems.

(AR 20-1 discusses IG responsibilities and duties.)

Public Affairs Officer

D-132. The PAO is responsible for understanding and fulfilling the information needs of soldiers, the Army community, and the public. A PAO is authorized at corps, divisions, and major support commands. The ACOS,

G-1/AG exercises coordinating staff responsibility over the PAO, when required. PAO responsibilities include—

- Planning and supervising the command public affairs program.
- Advising and informing the commander of the public affairs impact and implications of planned or current operations.
- Serving as the command representative for all communications with external media.
- Assessing the information requirements and expectations of the Army and the public, monitoring media and public opinion, and evaluating the effectiveness of public affairs plans and operations.
- Facilitating media efforts to cover operations by expediting the flow of complete, accurate, and timely information.
- Coordinating logistic and administrative support of civilian journalists under unit administrative control.
- Conducting liaison with media representatives to provide accreditation, mess, billet, transport, and escort as authorized and appropriate.
- Developing and educating the command on policies and procedures for protecting against the release of information detrimental to the mission, national security, and personal privacy.
- Coordinating with the assistant G-3 (PSYOP) and G-5 to ensure disseminated information is not contradictory.
- Informing soldiers, family members, and DOD civilians of their rights under the Privacy Act, OPSEC responsibilities, and roles as implied representatives of the command when interacting with news media.
- Assessing and recommending news, entertainment, and information needs of soldiers and home station audiences.
- Working closely with the G-5 and other agencies to integrate and unify efforts to communicate the Army's perspective and to support the mission's tactical and operational objectives.
- Advising the commander and staff on Privacy Act and Freedom of Information Act matters.

(AR 360-1 discusses PAO responsibilities and duties.)

Staff Judge Advocate

D-133. The SJA is the commander's personal legal adviser on all matters affecting the morale, good order, and discipline of the command. An SJA serves commanders exercising general-court-martial convening authority. The ACOS, G-1/AG exercises coordinating staff responsibility over the SJA, when required. Additionally, the SJA serves under the supervision of the COS to provide legal services to the staff and, through other staff members, responsive legal services throughout the command. A legal support element—including at least a judge advocate—deploys in direct support of each brigade-level task force. The SJA provides complete legal support, including operational law (OPLAW) support and coverage of six core legal disciplines: international law, military justice, administrative law, civil law (including contract, fiscal, and environmental law), claims, and legal assistance. SJA responsibilities include—

- Providing military justice advice and performing military justice duties prescribed in the *Uniform Code of Military Justice*.
- Resolving legal problems regarding administrative boards, investigations, or other military tribunals.
- Providing technical supervision and training of legal personnel in the command and its subordinate units.
- Providing legal advice and assistance concerning contracts, health care, environmental matters, and compensation matters.
- Providing legal counsel to the CPO, EOA, and the command.
- Providing counsel to the family advocacy case review committee.
- Serving as the command ethics counselor.
- Providing international law and OPLAW assistance, including advice and assistance on implementing the DOD law of war program. This includes helping to draft and review ROE.
- Assisting with litigation in which the United States has an interest.
- Operating the following command training programs:
  - Legal assistance.
  - Claims.
  - Procurement fraud.
  - Federal magistrate court.
  - Victim-witness assistance.
  - Military justice.
- Participating in targeting meetings to advise on legal considerations to minimize unnecessary collateral damage or injury to the civilian population.
- Providing legal advice concerning intelligence activities.
- Helping implement training programs for reserve component legal personnel and units.

(AR 27-1 and FM 27-100 discuss SJA responsibilities and duties.)

Appendix E

Liaison

This appendix discusses liaison principles and the responsibilities of liaison officers and parties. It addresses requirements distinct to deployment operations and the unified action environment. It includes liaison checklists and an example outline for a liaison officer handbook.

LIAISON FUNDAMENTALS

E-1. *Liaison* is that contact or intercommunication maintained between elements of military forces or other agencies to ensure mutual understanding and unity of purpose and action (JP 3-08). Liaison helps reduce the fog of war through direct communications. It is the most commonly employed technique for establishing and maintaining close, continuous physical communication between commands. Commanders use liaison during operations and normal daily activities to help facilitate communication between organizations, preserve freedom of action, and maintain flexibility. Liaison provides senior commanders with relevant information and answers to operational questions. It ensures they remain aware of the tactical situation.

E-2. Liaison activities augment the commander's ability to synchronize and focus combat power. They include establishing and maintaining physical contact and communication between elements of military forces and, as directed, nonmilitary agencies. Liaison activities ensure—

- Cooperation and understanding between commanders and staffs of different headquarters.
- Coordination on tactical matters to achieve unity of effort.
- Understanding of implied or inferred coordination measures to achieve synchronized results.

E-3. Liaison is a tool that enhances the commander's confidence. It helps commanders overcome friction and synchronize operations. Effective liaison assures commanders that that subordinates understand implicit coordination.

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THE LIAISON OFFICER

E-4. A liaison officer (LNO) represents the commander or a staff officer. The task and its complexity determine the required qualifications. At higher echelons, the complexity of operations often requires an increase in the rank required for LNOs. (See figure E-1.)

Echelon	Recommended Rank
Corps	Major
Division	Captain
Brigade/regiment/group	Captain
Battalion	First lieutenant

Figure E-1. Senior Liaison Officer Rank by Echelon

E-5. Commanders use LNOs to transmit information directly, bypassing headquarters and staff layers. A trained, competent, trusted, and informed LNO (either a commissioned or noncommissioned officer) is the key to effective liaison. LNOs must have the commander's full confidence and the necessary rank and experience for the mission. Using one officer to perform a liaison mission conserves manpower while guaranteeing the consistent, accurate flow of information. However, continuous operations require a liaison team.

E-6. The LNO, normally a special staff officer, is the personal representative of the commander and has access to him consistent with his duties. However, for routine matters, LNOs work for and receive direction from the chief of staff (COS) or (at lower echelons) the executive officer (XO).

E-7. The LNO's parent unit is the *sending unit*; the unit to which the LNO is sent is the *receiving unit*. An LNO normally remains at the receiving unit until recalled. Because LNOs represent the commander, they must be able to—

- Understand how their commander thinks and be able to interpret the commander's messages.
- Convey their commander's intent and guidance, mission, and concept of operations.
- Represent their commander's position.

E-8. The professional capabilities and personal characteristics of an effective LNO encourage confidence and cooperation with the commander and staff of the receiving unit. LNOs—

- Know the sending unit's mission; tactics, techniques, and procedures (TTP); organization; capabilities; and communications equipment.
- Appreciate and understand the receiving unit's TTP, organization, capabilities, mission, doctrine, staff procedures, and customs.
- Are familiar with—
  - Requirements for and purpose of liaison.
  - The liaison system and its reports, documents, and records.
  - Liaison team training.
- Observe the established channels of command and staff functions.
- Are of sufficient rank to represent their commander effectively to the receiving unit's commander and staff.

- Are trained in their functional responsibilities.
- Are tactful.
- Possess the necessary language expertise.

LIAISON ELEMENTS

E-9. Commanders organize liaison elements based on the mission and echelon. Common ways to organize liaison elements include—

- An LNO alone or with minimum support.
- A liaison team composed of an LNO, a liaison noncommissioned officer in charge, clerical personnel, drivers, and communications personnel with their equipment.
- A liaison detachment of several teams, with expertise in specialized areas, such as intelligence, operations, and combat service support.
- Couriers (messengers) responsible for the secure physical transmission and delivery of documents and material.

LIAISON PRACTICES

E-10. When possible, liaison is reciprocal between higher, lower, supporting, supported, and adjacent organizations (that is, each one sends a liaison element to the other). It must be reciprocal when US forces are placed under control of a headquarters of a different nationality and vice versa, or when brigade-sized and larger formations of different nationalities are adjacent. When liaison is not reciprocal, the following practices apply:

- Higher-echelon units establish liaison with lower echelons.
- Units on the left establish liaison with units on their right.
- Supporting units establish liaison with units they support.
- Units of the same echelon and units in the rear establish liaison with those to their front.
- Units not in contact with the enemy establish liaison with units that are in contact with the enemy.
- During a passage of lines, the passing unit establishes liaison with the stationary unit.
- During a relief in place, the relieving unit establishes liaison with the unit being relieved.

E-11. If liaison is broken, both units act to reestablish it. However, the primary responsibility rests with the unit originally responsible for establishing liaison.

LIAISON RESPONSIBILITIES

E-12. Both the sending and receiving units have liaison responsibilities before, during, and after operations.

SENDING UNIT

E-13. The sending unit's most important tasks include selecting and training the soldiers best qualified for liaison duties. Liaison personnel should have the characteristics and qualifications discussed in paragraphs E-5 through E-9.

Figure E-2 shows a sample outline for an LNO handbook that addresses knowledge and skills LNOs require.

- Table of contents, with the sending unit's proponency statement.
- Purpose statement.
- Introduction statement.
- Definitions.
- Scope statement.
- Responsibilities and guidelines for conduct.
- Actions to take before departing from the sending unit.
- Actions to take on arriving at the receiving unit.
- Actions to take during liaison operations at the receiving unit.
- Actions to take before departing from the receiving unit.
- Actions to take upon return to the sending unit.
- Sample questions. LNOs should be able to answer the following questions:
  - Does the sending unit have a copy of the receiving unit's latest OPLAN, OPORD, and FRAGOs?
  - Does the receiving unit's plan support the plan of the higher headquarters? This includes logistics as well as the tactical concept. Are MSRs and RSRs known? Can the CSR support the receiving unit's plan?
  - What are the receiving unit's CCIR? At what time, phase, or event are they expected to change? Are there any items the CCIR do not contain that the sending unit can help you with?
  - Which sending commander decisions are critical to executing the receiving unit operation? What are the "no-later-than" times for those decisions?
  - What assets does the unit need to acquire to accomplish its mission? How would they be used? How do they support attaining the more senior commander's intent? Where can the unit obtain them? from higher headquarters? other Services? multinational partners?
  - How are aviation assets (rotary and fixed-wing) being used?
  - How can the LNO communicate with the sending unit? Are telephones, radios, facsimile machines, computers, and other INFOSYS available? Where are they located? Which ones are secure?
  - What terrain has been designated as key? decisive?
  - What weather conditions would have a major impact on the operation?
  - What effect would a chemical environment have on the operation?
  - What effect would large numbers of refugees or EPWs have on the receiving unit's operations?
  - What is the worse thing that could happen during execution of the current operation?
  - How would you handle a passage of lines by other units through your own force?
  - What conditions would cause your unit to request OPCON of a multinational force?

Figure E-2. Example Outline of a Liaison Officer Handbook

- If your unit is placed under OPCON of a larger multinational force, or given OPCON of a smaller such force, what special problems would it present?
- If going to a multinational force headquarters, how do the tactical principles and command concepts of that force differ from those of US forces?
- What HN support is available to the sending unit? IRs?

- Required reports (from higher and sending units' SOPs)
- Packing list:
  - Credentials (including permissive jump orders, if qualified).
  - Forms: DA Form 1594 and other blank forms as required.
  - References.
    – Excerpts of higher and sending headquarters' orders and plans.
    – Sending unit SOP.
    – Sending unit's command diagrams and recapitulation of major systems. The unit MTOE, unit status report (if its classification allows), and mission briefings can be used. The G3 (S3) or the force modernization officer are excellent sources of these.
  - Computers and other INFOSYS required for information and data exchange.
  - Signal operating instructions extract.
  - Security code encryption device.
  - Communications equipment, including remote FM radio equipment.
  - Sending unit telephone book.
  - List of commanders and staff officers.
  - Telephone calling (credit) card.
  - Movement table.
  - Administrative equipment (for example, pens, paper, scissors, tape, and hole punch).
  - Map and chart equipment (for example, pens, pins, protractor, straight edge, scale, distance counter, acetate, and unit markers).
  - Tent (camouflage net, cots, stove, as appropriate).
  - Foreign phrase book and dictionary.
  - Local currency as required.

Figure E-2. Example Outline of a Liaison Officer Handbook (continued)

E-14. The sending unit provides a description of the liaison party (number and type of vehicles and personnel, call signs, and radio frequencies) to the receiving unit. The LNO or team must also have—

- Identification and appropriate credentials for the receiving unit.
- Appropriate security clearance, courier orders, transportation, and communications equipment.
- The SOP outlining the missions, functions, procedures, and duties of the sending unit's liaison section.
- Individual weapons and ammunition.
- Rations for the movement to the receiving unit.

E-15. Figure E-3 lists tasks for liaison personnel to accomplish before departing the sending unit.

• Understand what the sending commander wants the receiving commander to know. • Receive a briefing from operations, intelligence, and other staff elements on current and future operations. • Receive and understand the tasks from the sending unit staff. • Obtain the correct maps, traces, and overlays. • Arrange for transport, communications and cryptographic equipment, codes, signal instructions, and the challenge and password—including their protection and security. Arrange for replacement of these items, as necessary. • Complete route-reconnaissance and time-management plans so the LNO party arrives at the designated location on time. • Ensure that liaison personnel and interpreters have security clearances and access appropriate for the mission.	• Verify that the receiving unit received the liaison team's security clearances and will grant access to the level of information the mission requires. • Verify courier orders. • Know how to destroy classified information in case of an emergency during transit or at the receiving unit. • Inform the sending unit of the LNO's departure time, route, arrival time, and, when known, the estimated time and route of return. • Pick up all correspondence designated for the receiving unit. • Conduct a radio check. • Know the impending moves of the sending unit and the receiving unit. • Bring INFOSYS needed to support LNO operations. • Pack adequate supplies of classes I and III for use in transit. • Arrange for the liaison party's departure.

Figure E-3. Liaison Checklist—Before Departing the Sending Unit

RECEIVING UNIT

E-16. The receiving unit is responsible for—

- Providing the sending unit with the LNO's reporting time, place, point of contact, recognition signal, and password.
- Providing details of any tactical movement and logistic information relevant to the LNO's mission, especially while the LNO is in transit.
- Ensuring that the LNO has access to the commander, the COS (XO), and other officers for important matters.
- Giving the LNO an initial briefing and allowing the LNO access necessary to remain informed of current operations.
- Protecting the LNO while at the receiving unit.
- Publishing a standing operating procedure (SOP) outlining the missions, functions, procedures, and duties of the LNO or team at the receiving unit.
- Providing access to communications equipment (and operating instructions, as needed) when the LNO needs to communicate with the receiving unit's equipment.
- Providing administrative and logistic support.

DURING THE TOUR

E-17. Figure E-4 summarizes liaison duties during the tour. LNOs also inform the receiving unit's commander or staff of the sending unit's needs or requirements. The LNO's ability to rapidly clarify questions about the sending unit can keep the receiving unit from wasting planning time. During the liaison tour, LNOs—

- Arrive at the designated location on time.
- Promote cooperation between the sending and receiving unit.
- Accomplish their mission without becoming actively involved in the receiving unit's staff procedures or actions; however, they may assist higher staffs in war-gaming.
- Follow the receiving unit's communication procedures.
- Actively obtain information without interfering with receiving unit operations.
- Facilitate understanding of the sending unit's commander's intent.
- Help the sending unit's commander assess current and future operations.
- Remain informed of the sending unit's current situation and provide that information to the receiving unit's commander and staff.
- Expeditiously inform the sending unit of the receiving unit's upcoming missions, tasks, and orders.
- Ensure the sending unit has a copy of the receiving unit's SOP.
- Inform the receiving unit's commander or COS (XO) of the content of reports transmitted to the sending unit.
- Keep a record of their reports, listing everyone met (including each person's name, rank, duty position, and telephone number) as well as primary operators and their telephone numbers.
- Attempt to resolve issues within the receiving unit before involving the sending unit.

• Arrive at least two hours before any scheduled briefings. • Check in with security and complete any required documentation. • Present your credentials to the COS (XO). • Arrange for an "office call" with the commander. • Meet the coordinating and special staff officers. • Notify the sending unit of arrival. • Visit staff elements, brief them on the sending unit's situation, and collect information from them.	• Deliver all correspondence designated for the receiving unit. • Annotate on all overlays the security classification, title, map scale, grid intersection points, effective date-time group, date-time group received, and from whom received. • Pick up all correspondence for the sending unit when departing the receiving unit. • Inform the receiving unit of your departure time, return route, and expected arrival time at the sending unit.

Figure E-4. Liaison Duties—During the Liaison Tour

- Notify the sending unit promptly if unable to accomplish the liaison mission.
- Report their departure to the receiving unit's commander at the end of their mission.

AFTER THE TOUR

E-18. After returning to the sending unit, LNOs promptly transmit the receiving unit's requests to the sending unit's commander or staff, as appropriate. They also brief the COS (XO) on mission-related liaison activities and prepare written reports, as appropriate. Figure E-5 lists tasks to perform after completing a liaison tour.

E-19. Accuracy is paramount. Effective LNOs provide clear, concise, complete information. If the accuracy of information is not certain, they quote the source and include the source in the report. LNOs limit their remarks to mission-related observations.

• Deliver all correspondence. • Brief the COS (XO) and the appropriate staff elements.	• Prepare the necessary reports. • Clearly state what you did and did not learn from the mission.

Figure E-5. Liaison Duties—After the Liaison Tour

LIAISON DURING UNIFIED ACTION

E-20. Deployment, joint, multinational, and interagency operations require greater liaison efforts than most other operations.

DEPLOYMENT OPERATIONS

E-21. Deployment operations create an increased need for liaison. Unfamiliarity with the area of operations requires extensive research for staff estimates. Some operations require tight security, which restricts access or dissemination of information and affects the deployment schedule. New command and control relationships and newly task-organized organizations may result in slower staff coordination and actions due to unfamiliarity with SOPs and unit equipment and soldiers. Effective liaison improves commanders' situational understanding and reduces the possibility of conflicting guidance, frequent planning changes, and inefficient execution of deployment tasks. During deployment, LNOs become critical information conduits.

E-22. Effective LNOs understand their commander's information requirements (IRs), especially the commander's critical information requirements (CCIR). IRs during deployment might include—

- The type of transportation the unit needs for deployment and resupply.
- The information systems (INFOSYS) and intelligence products available.
- The level and extent of protection the unit needs as it arrives, disembarks, and prepares for operations.
- Staging area requirements.
- The combat service support that the Army component of a joint force must provide to other Service components.

- Local tactical intelligence products otherwise unavailable.
- Unit movement officer responsibilities.

JOINT OPERATIONS

E-23. Current joint INFOSYS do not meet all operational requirements. Few Service INFOSYS are interoperable. Army liaison teams require INFOSYS that can rapidly exchange information between commands to ensure Army force operations are synchronized with operations of the joint force and its Service components.

MULTINATIONAL OPERATIONS

E-24. Army forces often operate as part of multinational forces. Mutual confidence is the key to making these multinational operations successful. Liaison during multinational operations includes explicit coordination of doctrine and TTP. It requires patience and tact during personal interactions. Thorough understanding of the strategic, operational, and tactical aims of the international effort is needed. Special communication and liaison arrangements may be necessary to address cultural differences and sensitivities, and ensure explicit understanding throughout the multinational force. (See FM 3-16.)

INTERAGENCY OPERATIONS

E-25. Army forces may participate in interagency operations across the spectrum of conflict. Frequently, Army forces conduct peacetime operations under the leadership and control of civilian governmental agencies. For example, the Federal Emergency Management Agency (FEMA) has overall charge of federal disaster relief within the United States and its territories and possessions. Interagency operations may lack unity of command. All governmental agencies may be working toward a common goal but not under a single authority. In such situations, effective liaison is essential to achieving unity of effort.

E-26. Some missions require coordination with nongovernmental organizations (NGOs). No overarching interagency doctrine delineates or dictates the relationships and procedures governing all agencies, departments, and organizations in interagency operations. Effective liaison elements work toward establishing mutual trust and confidence, continuously coordinating actions to achieve cooperation and unity of effort. (See also JP 3-08.)

Appendix F

Rehearsals

A *rehearsal* is a session in which a staff or unit practices expected actions to improve performance during execution. Rehearsing key combat actions before execution allows participants to become familiar with the operation and to translate the relatively dry recitation of the tactical plan into visual impression. This impression helps them orient themselves to their environment and other units when executing the operation. Moreover, the repetition of combat tasks during the rehearsal leaves a lasting mental picture of the sequence of key actions within the operation. This appendix contains guidelines for conducting rehearsals. It describes rehearsal types and techniques. It lists responsibilities of those involved.

GENERAL

F-1. Rehearsals allow staff officers, subordinate commanders, and other leaders to practice executing the course of action (COA) the commander chose at the end of the military decisionmaking process (MDMP). Rehearsals are the commander's tool. Commanders use them to ensure staffs and subordinates understand the commander's intent and the concept of operations. Rehearsals also synchronize operations at times and places critical to successful mission accomplishment.

F-2. For units to be effective and efficient in combat, rehearsals need to become habitual in training. All commands at every level should routinely train and practice a variety of rehearsal types and techniques. Local standing operating procedures (SOPs) should identify appropriate rehearsal types, techniques, and standards for their execution. Leaders at all levels

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conduct periodic after-action reviews (AARs) to ensure that units conduct rehearsals to standard and that substandard performance is corrected. AARs also provide opportunities to incorporate lessons learned into existing plans and orders, or into subsequent rehearsals.

F-3. Time is key to conducting rehearsals. It is probably the most precious resource available to commanders and organizations. The time required for a rehearsal varies with the complexity of the task to rehearse, the type and technique of rehearsal, and the level of participation. Rehearsals should be conducted at the lowest possible level, using the most thorough technique possible, given the time available. Under time-constrained conditions, staffs conduct reduced rehearsals. These focus on critical events determined by reverse planning.

F-4. During offensive operations, staffs address the following actions in order: the objective, passage of lines, and movement to the objective—then other phases of the operation. During defensive operations, staffs address counterreconnaissance, battle handover, and commitment of counterattack forces or the striking force—then other phases of the operation. Each unit has different critical events, based on its readiness and the unit commander's assessment.

F-5. Whenever possible, rehearsals are based on a completed operation order (OPORD). A contingency plan may be rehearsed to prepare for an anticipated deployment. The rehearsal is a coordination event, not an analysis. It is not a substitute for the war game. War games are preformed during the MDMP to analyze several COAs and determine the optimal one. Rehearsals are conducted during preparation to practice executing the COA that the commander chose at the end of the MDMP. Commanders avoid making major changes to OPORDs during rehearsals. They make only those changes essential to mission success.

REHEARSAL TYPES

F-6. Each rehearsal type achieves a different result and has a specific place in the preparation time line. The five types of rehearsals are—

- Confirmation brief.
- Backbrief.
- Combined arms rehearsal.
- Support rehearsal.
- Battle drill or SOP rehearsal.

CONFIRMATION BRIEF

F-7. The confirmation brief is routinely performed by a subordinate leader immediately after receiving any instructions, such as an OPORD or a fragmentary order (FRAGO). Subordinate leaders brief their commander on their understanding of the commander's intent, their specific tasks and purpose, and the relationship between their individual unit missions and those of other units in the operation.

BACKBRIEF

F-8. A *backbrief* is a briefing by subordinates to the commander to review how subordinates intend to accomplish their mission (FM 5-0). Backbriefs are normally performed throughout preparation. They allow commanders to clarify the commander's intent early in subordinate planning. Commanders can—

- Identify problems in the concept of operations.
- Identify problems in subordinate commanders' concepts of operations.
- Learn how subordinates intend to accomplish their missions.

COMBINED ARMS REHEARSAL

F-9. A maneuver unit headquarters normally executes combined arms rehearsal after subordinate units issue their OPORD. This rehearsal type ensures that—

- Subordinate units synchronize their plans with each other.
- Subordinate commanders' plans achieve the higher commander's intent.

SUPPORT REHEARSAL

F-10. Units usually conduct support rehearsals within the framework of a single or limited number of battlefield operating systems (BOSs). They are referred to by the primary BOS being rehearsed, for example, the fire support rehearsal. Units execute support rehearsals throughout preparation. Although these rehearsals differ slightly by BOS, they achieve the same results:

- Ensure those responsible for each BOS can support the OPORD and accomplish all their missions.
- Ensure each BOS is synchronized with the overall operation.

BATTLE DRILL OR SOP REHEARSAL

F-11. A battle drill or SOP rehearsal ensures that all participants understand a technique or a specific set of procedures. All echelons use these rehearsal types; however, they are most common for platoons, squads, and sections. They are performed throughout preparation and are not limited to published battle drills. They can rehearse such actions as a command post (CP) shift change, an obstacle breach lane-marking SOP, or refuel-on-the-move site operations.

REHEARSAL TECHNIQUES

F-12. Techniques for executing rehearsals are limited only by the commander's resourcefulness. Generally, six techniques are used. (See fig. F-1, p. F-4.) The resources required for each range from extensive preparation time and resources to a map and overlay. As listed, each successive technique takes a decreasing amount of time and resources. Each rehearsal technique provides a different degree of understanding to participants.

F-13. The following discussion addresses these considerations:

- **Time**—amount of time required to conduct (plan, prepare, execute, and assess) the rehearsal.

- **Echelons involved**—the number of echelons that can participate in the rehearsal.
- **Operations security (OPSEC)**—the ease with which the enemy might gather intelligence from the rehearsal.
- **Terrain**—factors affecting the space needed to be allocated and secured for the rehearsal.

FULL-DRESS REHEARSAL

F-14. A full-dress rehearsal produces the most detailed understanding of the operation. It involves every participating soldier and system. If possible, organizations execute full-dress rehearsals under the same conditions—weather, time of day, terrain, and use of live ammunition—that the force expects to encounter during the actual operation. The full-dress rehearsal is the most difficult to accomplish at higher echelons. At those levels, commanders develop a second rehearsal plan that mirrors the actual plan but fits the terrain available for the rehearsal.

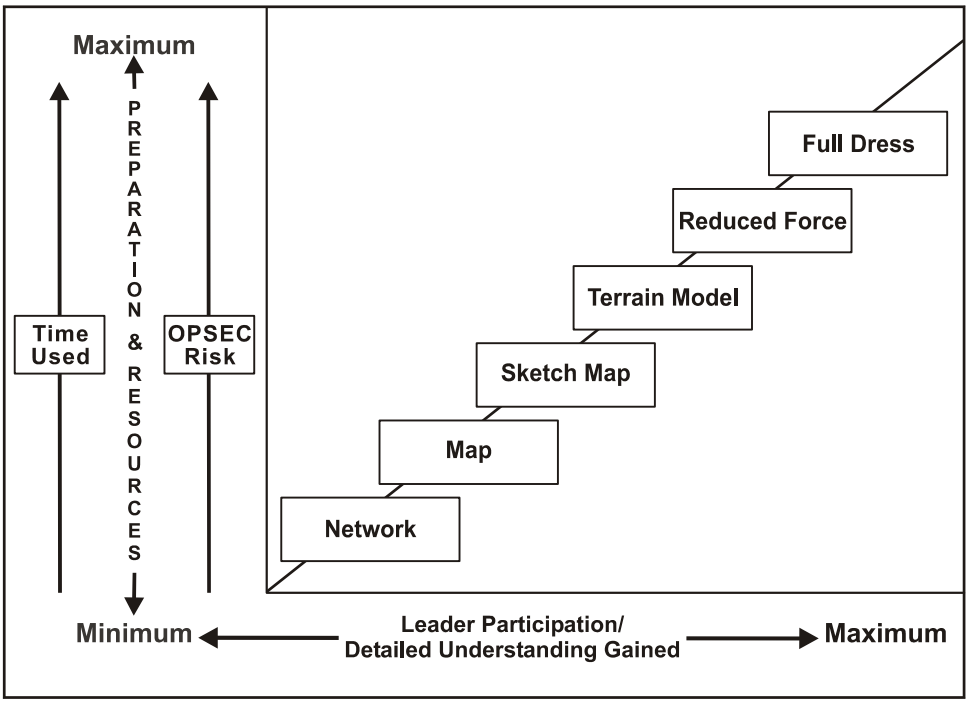

Figure F-1. Rehearsal Techniques Relative to Time, Resources, OPSEC, Participation, and Understanding

F-15. Full-dress rehearsal considerations include the following:

- **Time.** Full-dress rehearsals are the most time consuming of all rehearsal types. For companies and smaller units, the full-dress rehearsal is the most effective technique for ensuring all involved in the operation understand their parts. However, brigade and task force commanders consider the time their subordinates need to plan and prepare when deciding whether to conduct a full-dress rehearsal.

- **Echelons involved.** A subordinate unit can perform a full-dress rehearsal as part of a larger organization's reduced-force rehearsal.
- **OPSEC.** Moving a large part of the force may attract enemy attention. Commanders develop a plan to protect the rehearsal from enemy surveillance and reconnaissance. One method is to develop a plan, including graphics and radio frequencies, that rehearses selected actions but does not compromise the actual OPORD. Commanders take care to not confuse subordinates when doing this.
- **Terrain.** Terrain management for a full-dress rehearsal can be difficult if it is not considered during the initial array of forces. The rehearsal area must be identified, secured, cleared, and maintained throughout the rehearsal.

REDUCED-FORCE REHEARSAL

F-16. A reduced-force rehearsal involves only key leaders of the organization and its subordinate units. It normally takes fewer resources than a full-dress rehearsal. Terrain requirements can be the same as for a full-dress rehearsal, even though there are fewer participants. The commander first decides the level of leader involvement. The selected leaders then rehearse the plan while traversing the actual or similar terrain. Commanders often use this technique to rehearse fire control measures for an engagement area during defensive operations. A reduced-force rehearsal may be used to prepare key leaders for a full-dress rehearsal. It may require developing a rehearsal plan that mirrors the actual plan but fits the terrain of the rehearsal.

F-17. Reduced-force rehearsal considerations include the following:

- **Time.** A reduced-force rehearsal normally requires less time than a full-dress rehearsal. Commanders consider the time their subordinates need to plan and prepare when deciding whether to conduct a reduced-force rehearsal.
- **Echelons involved.** A small unit can perform a full-dress rehearsal as part of a larger organization's reduced-force rehearsal.
- **OPSEC.** A reduced-force rehearsal is less likely to present an OPSEC vulnerability than a full-dress rehearsal because the number of participants is smaller. However, the number of radio transmissions required is the same as for a full-dress rehearsal and remains a consideration.
- **Terrain.** Terrain management for the reduced-force rehearsal can be just as difficult as for the full-dress rehearsal. The rehearsal area must be identified, secured, cleared, and maintained throughout the rehearsal.

TERRAIN-MODEL REHEARSAL

F-18. The terrain-model rehearsal takes less time and fewer resources than a full-dress or reduced-force rehearsal. (A terrain-model rehearsal takes a proficient brigade from one to two hours to execute to standard.) It is the most popular rehearsal technique. An accurately constructed terrain model helps subordinate leaders visualize the commander's intent and concept of operations. When possible, commanders place the terrain model where it

overlooks the actual terrain of the area of operations (AO). However, if the situation requires more security, they place the terrain model on a reverse slope within walking distance of a point overlooking the AO. The model's orientation coincides with that of the terrain. The size of the terrain model can vary from small (using markers to represent units) to large (on which the participants can walk). A large model helps reinforce the participants' perception of unit positions on the terrain.

F-19. Terrain-model rehearsal considerations include the following:

- **Time.** Often, the most time-consuming part of this technique is constructing the terrain model. Units require a clear SOP stating how it will be built to ensure the model is accurate, large, and detailed enough to rehearse the operation. A good SOP also states who will build the terrain model, and when.
- **Echelons involved.** Because a terrain model is geared to the echelon conducting the rehearsal, multiechelon rehearsals using this technique are difficult.
- **OPSEC.** This rehearsal can present an OPSEC vulnerability if the area around the rehearsal site is not secured. The collection of commanders and their vehicles can draw enemy attention. Units must sanitize the terrain model after completing the rehearsal.
- **Terrain.** Terrain management is less difficult than with the previous techniques. A good site is easy for participants to find, yet concealed from the enemy. An optimal location overlooks the terrain where the unit will execute the operation.

SKETCH-MAP REHEARSAL

F-20. Commanders can use the sketch-map technique almost anywhere, day or night. The procedures are the same as for a terrain-model rehearsal, except the commander uses a sketch map in place of a terrain model. Effective sketches are large enough for all participants to see as each participant walks through execution of the operation. Participants move markers on the sketch to represent unit locations and maneuvers.

F-21. Sketch-map rehearsal considerations include the following:

- **Time.** Sketch-map rehearsals take less time than terrain-model rehearsals and more time than map rehearsals.
- **Echelons involved.** Because a sketch map is geared to the echelon conducting the rehearsal, multiechelon rehearsals using this technique are difficult.
- **OPSEC.** This rehearsal can present an OPSEC vulnerability if the area around the rehearsal site is not secured. The collection of commanders and their vehicles can draw enemy attention.
- **Terrain.** This technique requires less space than a terrain model rehearsal. A good site is easy for participants to find, yet concealed from the enemy. An optimal location overlooks the terrain where the unit will execute the operation.

MAP REHEARSAL

F-22. A map rehearsal is similar to a sketch-map rehearsal, except the commander uses a map and operation overlay of the same scale used to plan the operation.

F-23. Map rehearsal considerations include the following:

- **Time.** The most time-consuming part is the rehearsal itself. A map rehearsal is normally the easiest technique to set up, since it requires only maps and current operational graphics.
- **Echelons involved.** Because a map is geared to the echelon conducting the rehearsal, multiechelon rehearsals using this technique are difficult.
- **OPSEC.** This rehearsal can present an OPSEC vulnerability if the area around the rehearsal site is not secured. The collection of commanders and their vehicles can draw enemy attention.
- **Terrain.** This technique requires the least space of any. A good site is easy to find for participants, yet concealed from the enemy. An optimal location overlooks the terrain where the unit will execute the operation.

NETWORK REHEARSAL (WAN/LAN)

F-24. Network rehearsals can be executed over wide-area networks (WANs) or local-area networks (LANs). Commanders and staffs execute network rehearsals by talking through critical portions of the operation over communications networks in a sequence the commander establishes. The organization rehearses only the critical parts of the operation. These rehearsals require all information systems (INFOSYS) needed to execute that portion of the operation. All participants require working INFOSYS and a copy of the OPORD and overlays. CPs can rehearse battle tracking during network rehearsals.

F-25. Network rehearsal considerations include the following:

- **Time.** If the organization does not have a clear SOP and if all units do not have working communications or are not up on the net, this technique can be very time consuming.
- **Echelons involved.** This technique lends itself to multiechelon rehearsals. Participation is limited only by the commander's desires and the capabilities of the command's INFOSYS.
- **OPSEC.** If a network rehearsal is executed from current unit locations, the volume of the communications transmissions and potential compromise of information through enemy monitoring can present an OPSEC vulnerability. The organization should use different frequencies from those planned for the operation. Using wire systems is an option but does not exercise the network systems, which is the strong point of this technique.
- **Terrain.** If a network rehearsal is executed from unit locations, terrain considerations are minimal. If a separate rehearsal area is required, considerations are similar to those of a reduced-force rehearsal.

REHEARSAL RESPONSIBILITIES

F-26. This discussion addresses responsibilities for conducting rehearsals. It is based on the combined arms rehearsal. Responsibilities are the same for support rehearsals. However, position titles may be different; for example, in CSS units, the support operations officer takes the place of the S-3.

PLANNING

F-27. Commanders and chiefs of staff (COSs) (at lower echelons, executive officers [XOs]) (COSs [XOs]) plan rehearsals.

Commander

F-28. Commanders provide the following information as part of the commander's guidance during the initial mission analysis. They re-evaluate it when they select a COA:

- Type of rehearsal.
- Rehearsal technique.
- Place.
- Attendees.
- Enemy COA to be portrayed.

Chief of Staff (Executive Officer)

F-29. The COS (XO) ensures that all rehearsals are included in the organization's time-management SOP. COS (XO) responsibilities include—

- Publishing the rehearsal time and location in the OPORD or in a warning order.
- Completing any staff rehearsals.
- Determining rehearsal products, based on type, technique, and METT-TC.
- Coordinating liaison officer (LNO) attendance from adjacent units.

PREPARATION

F-30. Everyone involved in executing or supporting the rehearsal has responsibilities.

Commander

F-31. Commanders prepare to rehearse operations with events phased in proper order, from start to finish. Under time-constrained conditions, this is not always possible. Commanders—

- Identify and prioritize key events to rehearse.
- Allocate time for each event.
- Perform personal preparation, including reviews of—
  - Task organization completeness.
  - Personnel and materiel readiness.
  - Organizational level of preparation.

Chief of Staff (Executive Officer)

F-32. The COS (XO), through war-gaming and coordinating with the commander—

- Prepares to serve as the rehearsal director.
- Coordinates and allocates time for key events requiring rehearsal.
- Establishes rehearsal time limits per the commander's guidance and METT-TC.
- Verifies rehearsal site preparation. A separate rehearsal site may be required for some events, such as a possible obstacle site. A good rehearsal site includes—
  - Appropriate markings and associated training aids.
  - Parking areas.
  - Local security.
- Determines the method for controlling the rehearsal and ensuring its logical flow, for example, a script (see paragraphs. F-53–F-55).

Subordinate Leaders

F-33. Subordinate leaders complete their planning, including—

- Completing unit OPORDs.
- Identifying issues derived from the parent organization's OPORD.
- Providing a copy of their unit OPORD, with graphics, to the parent organization.
- Performing personal preparation similar to that of the commander.
- Ensuring they and their subordinates bring binoculars, maps, and necessary equipment.

Conducting Headquarters Staff

F-34. Conducting headquarters staffs—

- Develop an OPORD with at least the basic five paragraphs and necessary overlays.
- Deconflict all subordinate unit graphics. Composite overlays are the first step for leaders to visualize the organization's overall plan.
- Publish composite overlays at the rehearsal including, at a minimum—
  - Maneuver.
  - Fire support.
  - Mobility and survivability.
  - Combat service support (CSS).

EXECUTION

F-35. The following paragraphs list responsibilities during execution.

Commander

F-36. Commanders command the rehearsal, just as they will command the fight. They maintain the focus and level of intensity, allowing no potential

for subordinate confusion. Although the staff refines the OPORD, it belongs to the commander, who uses it to fight. An effective rehearsal is not a commander's brief to subordinates. Its purpose is to validate synchronization—the what, when, and where—of tasks subordinate units will perform to execute the operation and achieve the commander's intent.

Chief of Staff (Executive Officer)

F-37. The COS (XO) normally serves as the rehearsal director. As such, he rehearses his role during the operation. He ensures each unit accomplishes its tasks at the right time and cues the commander to upcoming decisions. The COS's (XO's) script is the execution matrix and the DST. These are the foundations for the OPORD and list events in chronological order. The COS (XO)—

- Starts the rehearsal on time.
- Conducts a formal roll call.
- Ensures everyone brings the necessary equipment. This equipment includes organizational graphics and previously issued orders.
- Validates the task organization. Link-ups must be complete or on schedule, and required materiel and personnel on hand. The importance of this simple check cannot be overemphasized.
- Ensures sustaining operations are synchronized with shaping operations and the decisive operation.
- Rehearses the synchronization of combat power from flank and higher organizations, which are often beyond communication range of the commander and G-3 (S-3) when they are away from the CP.
- Synchronizes the timing and contribution of each BOS by ensuring the rehearsal of operations against the decisive points, by time or event that connect to a decision.
- For each decisive point, defines the conditions required to—
  - Commit the reserve or striking force.
  - Move a unit.
  - Close or emplace an obstacle.
  - Fire planned targets.
  - Move a medical station, change a supply route, and alert specific observation posts.
- Disciplines leader movements, enforces brevity, and ensures completeness. The OPORD, decision support template (DST), and execution matrix are the COS's tools.
- Keeps within time constraints.
- Ensures that the most important events receive the most attention.
- Ensures that absentees and flank units receive changes to the OPORD. Transmits changes to them by courier or radio immediately.

Assistant Chief of Staff, G-3 (S-3)

F-38. The G-3 (S-3) helps the commander with the forward fight and rehearses that task. The G-3 (S-3)—

- Portrays his actions during the fight.

- Ensures compliance with the plan.
- Normally provides the recorder.

Assistant Chief of Staff, G-2 (S-2)

F-39. The G-2 (S-2) plays the enemy commander during rehearsals. He bases his actions on the enemy COA the commander selects during the MDMP. The G-2 (S-2)—

- Provides participants with current intelligence.
- Portrays the best possible assessment of the enemy COA.
- Communicates the enemy commander's presumed concept of operations, desired effects, and intended end state.

Subordinate Leaders

F-40. Subordinate unit leaders, using an established format—

- Effectively articulate their units' actions and responsibilities.
- Record changes on their copies of the graphics or OPORD.

Recorder

F-41. The recorder is normally the G-3 (S-3) or a representative from the operations cell.

F-42. During the rehearsal, the recorder—

- Captures all coordination made during execution.
- Captures unresolved problems.

F-43. At the end of the rehearsal, the recorder—

- Presents any unresolved problems to the commander for resolution.
- Restates any changes, coordination, or clarifications directed by the commander.
- Estimates when a written FRAGO codifying the changes will follow.

Conducting Headquarters Staff

F-44. The staff updates the OPORD, DST, and execution matrix.

ASSESSMENT

F-45. The commander establishes the standard for a successful rehearsal. A properly executed rehearsal validates each leader's role and how each unit contributes to the overall operation—what is done, when relative to times and events, and where to achieve desired effects. Effective rehearsals ensure that commanders have a common visualization of the enemy, their own forces, the terrain, and the relationship among them. It identifies specific actions requiring immediate staff resolution and informs the higher commander of critical issues or locations that the commander, COS (XO), or G-3 (S-3) must personally oversee.

F-46. The commander (or rehearsal director in the commander's absence) assesses and critiques all parts of the rehearsal. Critiques center on how well the operation as rehearsed achieves the commander's intent and on

the coordination necessary to accomplish that end. The internal execution of tasks within the rehearsal is usually left to the subordinate unit commander's judgment and discretion.

CONDUCTING A REHEARSAL

F-47. All participants have responsibilities before, during, and after a rehearsal. Before a rehearsal, the rehearsal director states the commander's expectations and orients the other participants on details of the rehearsal as necessary. During a rehearsal, all participants rehearse their roles in the operation. They make sure they understand how their actions support the overall operation and note any additional coordination required. After a rehearsal, participants ensure they understand any changes to the OPORD and coordination requirements, and receive all updated staff products.

F-48. Commanders do not normally address small problems that arise during rehearsals. Instead, these are recorded. This ensures the rehearsal's flow is not interrupted. If the problem remains at the end of the rehearsal, the commander resolves it then. However, if the problem can wait until the end of the rehearsal, it may not have been a real problem. If the problem jeopardizes mission accomplishment, the staff accomplishes the coordination necessary to resolve it before the participants disperse. Identifying and solving such problems is a major reason for conducting rehearsals. If this is not done while participants are assembled, the opportunity to do so will be missed. Coordinating among dispersed participants and disseminating changes to them is more difficult than accomplishing these actions face to face.

BEFORE THE REHEARSAL

F-49. The rehearsal director begins the rehearsal on time by calling the roll. He then briefs participants on information needed to execute the rehearsal. The briefing begins with an introduction, overview, and orientation. It includes a discussion of the rehearsal script and ground rules. The detail of this discussion is based on participants' familiarity with the rehearsal SOP.

F-50. Before the rehearsal, the staff develops an OPORD with at least the basic five paragraphs and necessary overlays. Annexes may not be published; however, the responsible staff officers should know their content. The rehearsal is not a substitute for the war game. During the war game, the staff analyzes feasible COAs to determine the optimal one to recommend to the commander. The rehearsal allows commanders and other key players to practice implementing the COA the commander has decided to adopt.

Introduction and Overview

F-51. The rehearsal director begins by introducing himself and all other participants as needed. He then gives an overview of the briefing topics, the rehearsal subjects and sequence, and the time line, specifying the no-later-than ending time. He explains AARs and how and when they occur, and discusses how to incorporate changes into the OPORD. He explains, in

detail, any constraints, such as pyrotechnics use, light discipline, weapons firing, or radio silence. He ensures that all participants understand safety precautions and enforces their use. Last, he emphasizes results and states the commander's standard for a successful rehearsal. He allows subordinate leaders to state any results of planning or preparation (including rehearsals) they have already conducted. If a subordinate recommends a change to the OPORD, the rehearsal director acts on the recommendation before the rehearsal begins, if possible. If not, the commander resolves the recommendation with a decision before the rehearsal ends.

Orientation

F-52. The rehearsal director orients the participants to the terrain or rehearsal medium. He identifies magnetic north on the rehearsal medium, and points out symbols representing actual terrain features. He explains any graphic control measures, obstacles, and targets. He issues supplemental materials, if needed.

Rehearsal Script

F-53. An effective technique for controlling rehearsals is to use a script. It keeps the rehearsal on track and is a checklist to ensure the organization addresses all BOSs and outstanding issues. The script has two major parts: the agenda and the response sequence.

F-54. **Agenda.** The execution matrix, DST, and OPORD outline the rehearsal agenda. These tools, especially the execution matrix, both drive and focus the rehearsal. The commander and staff will use them to control the operation's execution. Fire support and CSS rehearsals follow the fire support execution matrix or logistic synchronization matrix. These two products are tied directly to supported unit's execution matrix and DST.

F-55. An effective rehearsal requires the enemy force to be portrayed realistically and quickly, without distracting from the rehearsal. One technique for doing this is for the G-2 (S-2) to prepare an actions checklist, a sequence of events much like the one for friendly units, but from the enemy perspective.

F-56. **Response Sequence.** Participants respond in a logical sequence: either by BOS, or by unit as the organization is deployed, from front to rear. The commander determines the sequence before the rehearsal. It is posted at the rehearsal site, and the rehearsal director may restate it.

F-57. Effective rehearsals allow participants to visualize and synchronize the concept of operations. As a rehearsal proceeds, participants verbally walk through the concept of operations. They focus on key events and the synchronization required to achieve the desired effects. The commander commands the rehearsal. He gives orders at the point he expects to give them during the operation. Subordinate commanders enter and leave the discussion at the time they expect to begin and end their tasks or activities during the operation. This practice helps the commander assess the adequacy of synchronization. Everyone should avoid "re-war-gaming" except as absolutely necessary to ensure subordinate unit commanders understand the plan.

F-58. The rehearsal director emphasizes integrating fire support, events that trigger different branch actions, and actions on contact. The fire support coordinator (FSCOORD) states when fires are initiated, who is firing, from where, the ammunition, and the desired target effect. Subordinate commanders state when they initiate fires per their fire support plans. The rehearsal director speaks for any staff section not present and ensures all actions on the synchronization matrix and DST are addressed at the proper time or event.

F-59. The rehearsal director ensures that key combat support (CS) and CSS actions are included in the rehearsal at the times they are executed. (See figure F-2.) Not doing this reduces the value of the rehearsal as a coordination tool. The staff officer with coordinating staff responsibility injects these items into the rehearsal at the appropriate times. Special staff officers should brief by exception when a friendly or enemy event occurs within their BOS. Summarizing these actions at the end of the rehearsal can reinforce the coordination requirements identified during the rehearsal. The staff updates the DST and gives a copy to each participant. Under time-constrained conditions, the conducting headquarters may provide copies before the rehearsal and rely on participants to update them with pen and ink changes.

- Casualty evacuation routes
- Ambulance exchange point locations
- Refuel-on-the-move points
- Class IV and V resupply points
- Logistic release points
- Support area displacement times and locations
- Enemy prisoner of war collection points
- Aviation support
- Military police actions

Figure F-2. Example CS and CSS Actions for Rehearsals

Ground Rules

F-60. After discussing the rehearsal script, the rehearsal director —

- States the standard (what the commander will accept) for a successful rehearsal).
- Ensures everyone understands the parts of the OPORD to rehearse. If the entire operation will not be rehearsed, the rehearsal director states the events to be rehearsed.
- Quickly reviews the rehearsal SOP, if all participants are not familiar with it. An effective rehearsal SOP includes—
  - Who controls the rehearsal.
  - Who walks the rehearsal medium.
  - When special staff officers brief the commander.
  - The relationship between how the execution matrix portrays events and how events are rehearsed.
- Briefs the time line. Designates the rehearsal starting time in relation to H-hour. For example, have the rehearsal begin by depicting the anticipated situation one hour before H-hour. One event executed before rehearsing the first event is deployment of forces.

- Set the time interval to begin and track the rehearsal. For example, specify a ten-minute interval to equate to one hour of actual time. (See figure F-2).
- Update friendly and enemy activities as necessary, for example, any ongoing reconnaissance operations.

The rehearsal director concludes the orientation with a call for questions.

DURING THE REHEARSAL

F-61. After the rehearsal director finishes discussing the ground rules and answering any questions, the G-3 (S-3) reads the mission statement, the commander reads the commander's intent, and the G-3 (S-3) lays out the current friendly situation on the rehearsal medium. The rehearsal then begins, following the rehearsal script.

F-62. The following paragraphs outline a generic set of rehearsal steps. It was developed for combined arms rehearsals. However, with a few modifications, it can be used for fire support and CSS rehearsals. They support any rehearsal technique. The products depend on the rehearsal type.

Step 1—Deployment of Enemy Forces

F-63. The G-2 (S-2) briefs the current enemy situation and places markers indicating enemy forces on the rehearsal medium where they would be before the first rehearsal event. He then briefs the most likely enemy COA. The G-2 (S-2) also briefs the status of reconnaissance and surveillance operations (for example, citing any patrols still out or any observation post positions or combat outposts).

Step 2—Deployment of Friendly Forces

F-64. The G-3 (S-3) briefs friendly maneuver unit dispositions, including security forces, as of the rehearsal starting time. Subordinate commanders and other staff officers brief their unit positions at the starting time and any particular points of emphasis. For example, the chemical officer states the mission-oriented protective posture (MOPP) level, and the FSCOORD states the range of friendly and enemy artillery. Other participants place markers for friendly forces, including adjacent units, to positions on the rehearsal medium that they will occupy at the rehearsal starting time. As participants place markers, they state their task and purpose, task organization, and strength.

F-65. CS and CSS units brief their subordinate unit positions at the starting time and at points of emphasis the rehearsal director designates. Subordinate units may include forward arming and refueling points (FARPs), refuel-on-the move points, or communications checkpoints. The rehearsal director restates the commander's intent, if necessary.

Step 3—Advancement of the Enemy

F-66. The rehearsal director states the first event on the execution matrix. Normally this involves the G-2 (S-2) moving enemy markers according to the most likely COA at the point on the execution matrix being rehearsed.

The depiction must tie enemy actions to specific terrain or to friendly unit actions. The G-2 (S-2) portrays enemy actions based on the situational template developed for staff war-gaming. The enemy is portrayed as uncooperative, but not invincible.

F-67. As the rehearsal proceeds, the G-2 (S-2) portrays the enemy and walks the enemy through the most likely COA (per the situational template), stressing reconnaissance routes, objectives, security force composition and locations, initial contact, initial fires (artillery, air, attack helicopters), probable main force objectives or engagement areas, likely chemical attack times and locations, and likely commitment of reserves. The G-2 (S-2) is specific, tying enemy actions to specific terrain or friendly unit actions. The walk-through should be an accurate portrayal of the event template.

Step 4—Decision Point

F-68. When the enemy movement is complete, the commander assesses the situation to determine if a decision point has been reached. Decision points are taken directly from the DST.

- **Not at a Decision Point**. If the organization is not at a decision point and not at the end state, the rehearsal director continues the rehearsal by stating the next event on the execution matrix. Participants, using the response sequence (see paragraphs F-57–F-60), continue to act out and describe their units' actions.
- **At a Decision Point**. When conditions that establish a decision point are reached, the commander decides whether to continue with current COA or select a branch. If the commander elects the current COA, he states the next event from the execution matrix and directs movement of friendly units. If he selects a branch, the commander states why he selected that branch, states the first event of that branch, and continues the rehearsal until the organization has rehearsed all events of that branch. As the unit reaches decisive points, the rehearsal director states the conditions required for success.

F-69. If units in reserve participate, they rehearse all of their branches, beginning with the most likely.

F-70. When it becomes obvious that the operation requires additional coordination to ensure success, the participants immediately accomplish it. Doing this is one of the key reasons for rehearsals. The rehearsal director ensures that the recorder captures and all participants understand coordination.

Step 5—End State Reached

F-71. Achieving the desired end state ends that phase of the rehearsal. In an attack, this will usually be when the organization is on the objective and has finished consolidation and casualty evacuation. In the defense, this will usually be after the decisive action (such as committing the reserve or striking force), the final destruction or withdrawal of the enemy, and casualty evacuation are complete.

Step 6—Recock

F-72. At this point the commander states the next branch he wants to rehearse. The rehearsal director "recocks" the situation to the decision point where that branch begins and states the criteria for a decision to execute that branch. Participants assume those criteria have been met and then refight the operation along that branch until the desired end state is attained. They complete any coordination needed to ensure all understand and can meet any requirements. The recorder records any changes to the branch.

F-73. The commander then states the next branch to rehearse. The rehearsal director "recocks" the situation to the decision point where that branch begins, and participants repeat the process. This continues until all decision points and branches the commander wants to rehearse have been addressed.

F-74. If the standard is not met and time permits, the commander directs participants to repeat the rehearsal. The rehearsal continues until participants are prepared or until the time available expires. (Commanders may allocate more time to a rehearsal, but consider how doing this affects subordinate commanders' preparation time.) Additional rehearsals, conducted as time permits, may be more complex and realistic.

F-75. At the end of the rehearsal, the recorder restates any changes, coordination, or clarifications the commander directs, and estimates how long it will take to codify changes in a written FRAGO.

AFTER THE REHEARSAL

F-76. After the rehearsal, the commander leads an AAR. The commander reviews lessons learned and makes the minimum required modifications to the existing plan. (Normally, a FRAGO effects these changes.) Changes should be refinements to the OPORD; they should not be radical or significant. Changes not critical to the operation's execution can confuse subordinates and desynchronize the plan. The commander issues any last-minute instructions or reminders and to reiterate the commander's intent.

F-77. Based on the commander's instructions, the staff makes the necessary changes to the OPORD, DST, and execution matrix based on the rehearsal's results. Subordinate commanders incorporate these changes into their units' OPORDs. The COS (XO) ensures these changes are briefed to any leader or LNO who did not participate in the rehearsal.

F-78. A rehearsal is the final opportunity for subordinates to identify and resolve "dangling" issues. An effective staff ensures that all participants understand any changes to the OPORD and that the recorder captures all coordination done at the rehearsal. All changes to the published OPORD are, in effect, verbal FRAGOs. As soon as possible, the staff publishes these verbal FRAGOs as a written FRAGO that changes the OPORD.

Source Notes

These are the sources used, quoted, or paraphrased in this publication. They are listed by page number. Where material appears in a paragraph, both page and paragraph number are listed. Boldface indicates the titles of historical vignettes.

Introduction

vii "How one understands command and control depends on the perspective…": paraphrased from Thomas P. Coakley, *Command and Control for War and Peace* (Washington, DC: National Defense Univ. Press: GPO, 1992) (hereafter cited as Coakley), 9–15.

vii **The Battle Of Arbela (331 BC):** based on Anthony Livesey, *Great Commanders and Their Battles* (New York: Macmillan, 1987), 8–19; and Simon Goodenough, *Tactical Genius in Battle*, ed. Len Deighton (London: Phaidon, 1979), 67–70.

Chapter 1—Command and Control

1-10 "War is the realm of uncertainty;…": Carl von Clausewitz, *On War*, ed. and trans. Michael Howard and Peter Paret (Princeton, NJ: Princeton Univ. Press, 1976; reprint, First Princeton Paperback, 1989) (hereafter cited as Clausewitz), 101.

1-12 pars. 1-55–1-60. The discussion of the challenges of land-force and land-combat operations is based on GEN Paul F. Gorman, as quoted and discussed in Kenneth Allard, *Command, Control, and the Common Defense*, rev. ed. (Washington, DC: National Defense Univ. Press: GPO, 1996), 158–188.

1-15 Figure 1-4. Adapted from Marine Corps Doctrinal Publication 6, *Command and Control* (Washington, DC: GPO, 04 Oct. 1996) (hereafter cited as MDCP 6), 81.

1-15 "no plan…extends…": Helmuth von Moltke, *Moltke's Military Works*, vol. 4, *War Lessons*, Part I, "Operative Preparations for Battle" (Berlin: Mittler, 1911), quoted in Hans Delbrück, *History of the Art of War within the Framework of Political History*, vol. 4, *The Modern Era*, trans. by Walter J. Renfroe, Jr. (Westport, CT: Greenwood Press, 1985), 425.

1-21 **Command and Control at Chancellorsville:** based on Stephen W. Sears, *Chancellorsville* (Boston: Houghton Mifflin, 1996) (hereafter cited as Sears); James M. McPherson, *Battle Cry of Freedom* (New York: Oxford Univ. Press, 1988); and Shelby Foote, *The Civil War: A Narrative*, vol. 2, *Fredericksburg to Meridian* (New York: Random House, 1963) (hereafter cited as Foote).

1-22 "I not only expected victory,…": as quoted in Foote, 262.

1-24 "My plans are perfect,…": as quoted in Foote, 262. See also Sears, 120.

Chapter 2—Command

2-1 "The criterion by which a commander…": *Field Service Regulations: Operations* (Washington, DC: GPO: 22 May 1941; reprint, Fort Leavenworth, KS: US Army Command and General Staff College Press, 1992), 24.

2-1 "To command is to do more…": Roger H. Nye, *The Challenge of Command: Reading for Military Excellence* (Wayne, NJ: Avery Publishing Group, 1986), 28.

2-5 par. 2-17: "the quick recognition of a truth…": Clausewitz, 102.

2-6 par. 2-22: "As each man's strength gives out…": Clausewitz,104.

2-6 "There will be neither time nor opportunity…": as quoted in Thomas B. Buell, *Master of Sea Power: A Biography of Fleet Admiral Ernest J. King* (Boston: Little, Brown, 1980), 521.

2-7 "I suppose dozens of operation orders…": William Slim, *Defeat Into Victory* (London: Cassell, 1956; reprint New York: David McKay, 1961), (hereafter cited as Slim) 210–211.

2-11 "It is my design if…": Ulysses S. Grant, *The Papers of Ulysses S. Grant*, vol. 10, *January 1–May 31, 1864*, ed. John Y. Simon (Carbindale, IL: Southern Illinois Univ. Press, 1982) (hereafter cited as *Papers*), 251-252.

2-11 "That we are now all to act…": *Papers*, 253–254 note.

2-115 "Next to a battle lost…": as quoted in *The Greenhill Dictionary of Military Quotations*, ed. Peter G. Tsouras, (Mechanicsville, PA: Stackpole Books, 2000) (hereafter cited as Tsouras), 51.

2-19 "A commander has…": Harold G. Moore and Joseph Galloway, *We Were Soldiers Once…and Young* (New York: Random House, 1992), 113.

2-24 **Calculated Risk or Military Gamble? Operation HAWTHORNE, Dak To, Vietnam:** based on John M. Carland, *Combat Operations: Stemming the Tide, May 1965 to October 1966*, The United States Army in Vietnam, CMH Pub 91-5 (Washington DC: Center of Military History, US Army: GPO, 2000), 277–287.

2-25 **Resolve: Mustafa Kemal at Gallipoli:** based on George W.Gawrych, "The Rock of Gallipoli," in *Studies in Battle Command* (Fort Leavenworth, KS: US Army Command and General Staff College: GPO, 1995), 87–96.

2-27 **Obstinacy: Frederick the Great at Kunersdorf:** based on Scott Stephenson, "Old Fritz Stumbles: Frederick the Great at Kunersdorf, 1759," in *Studies in Battle Command* (Fort Leavenworth, KS: US Army Command and General Staff College: GPO, 1995), 13–20.

2-30 **Establishing and Using Commander's Intent: VII Corps and the Ruhr Encirclement:** based on William M. Connor, "Establishing Command Intent, A Case Study: The Encirclement of the Ruhr, March 1945," in *The Human In Command: Exploring The Modern Military Experience*, ed. Carol McCann and Ross Pigeau (Toronto, Canada: Kluwer Academic/Plenum Press, 2000), 93–110.

Chapter 3—Control

3-1 "The test of control…": The Infantry Journal. *Infantry in Battle*, 2d ed. (Washington, D.C.: Infantry Journal, 1939; reprint, Fort Leavenworth, KS: US Army Command and General Staff College: GPO, 1981), 169.

3-2 "Many…reports in war are contradictory…": Clausewitz, 117.

3-2 "Everything in war is simple ….": Clausewitz, 119, 121.

3-19 **Crosstalk in the Desert: VII Corps in the Gulf War:** based on TRADOC Pam 525-100-1, *Leadership and Command on the Battlefield: Operations JUST CAUSE and DESERT STORM* (Fort Monroe, VA: HQ, TRADOC, 1992) (hereafter cited as TRADOC Pam 525-100-1), 28.

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3-24 **Control in Command and Control: Austerlitz:** based on David G. Chandler, *The Campaigns of Napoleon* (New York, Macmillan Co., 1966), 402–432.

Chapter 4—The Role of the Commander

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4-10 "…one of the most difficult things…": Adolph von Schell, *Battle Leadership* (Fort Benning, GA: *Benning Herald*, 1933; reprint, Quantico, VA: Marine Corps Association, 1999), 55.

4-15 "Morale is a state of mind…": Slim, 182.

4-15 "Judgment comes from experience…": Simon Bolivar Buckner, as quoted by Omar N. Bradley, "Leadership: An Address to the US Army War College, 07 Oct. 71," *Parameters* 1 (3) (1972): 8.

4-18 "Benteen. Come on…": as quoted in John S. Gray, *Custer's Last Campaign: Mitch Boyer and the Little Bighorn Reconstructed* (Lincoln: Univ. of Nebraska Press, 1991), 281.

4-18 "More than 50 percent of battle command in VII Corps was nonelectric…": as quoted in TRADOC Pam 525-100-1, 34.

4-18 "There is no alternative…": as quoted in Martin van Creveld, *Command in War* (Cambridge, MA: Harvard Univ. Press, 1985), 199.

4-18 **"Magnificent, But Not War": Misunderstood Orders and the Charge of the Light Brigade:** based on John Sweetman, *Balaclava, 1854: The Charge of the Light Brigade* (London: Osprey, 1990); and Cecil Woodham-Smith, *The Reason Why* (New York: McGraw-Hill, 1954).

4-20 "General Meade was an officer of merit with drawbacks…": Ulysses S. Grant, *Memoirs and Selected Letters: Personal Memoirs of U.S. Grant, Selected Letters, 1839-1865*, vol. 2, *Personal Memoirs,* ed. William S. Mc Feely and Mary Drake McFeely (New York: Library of America, 1990), 770. [Online] Available http://ibiblio.org/gutenberg/etext97/2musg12.txt

4-23 "Like the great artist the general…": J.F.C. Fuller, *Generalship: Its Diseases and their Cure: A Study of the Personal Factor in Command* (Harrisburg, PA: Military Service Publishing, 1936; reprint, Fort Leavenworth, KS: US Army Command and General Staff College: GPO, 1987), 87.

4-23 "No man is more valiant than Yessoutai…": as quoted in Rashid ad-Din, *Sbornik Letopisei (Collected Chronicles)*, vol. I/2 (Moscow-Leningrad: Gosizdat, 1952), trans. O.I. Smirnova, 261–262, as quoted in Harold Lamb, *Genghis Khan: The Emperor of All Men* (New York: Robert McBride, 1927; reprint, New York: Doubleday, 1956), 46.

4-23 "He [Napoleon] fell from the height of greatness…": Antoine Henri de Jomini, *Treatise on Grand Mililtary Operations*, trans. S.B. Holabird (New York: D. Van Nostrand, 1865), as quoted in UK Army Doctrinal Publication 2, *Command* (London: Chief of General Staff, Apr. 1995), 2-14.

4-25 "One of the most valuable qualities of a commander…": William Slim, *Unofficial History* (New York: David McKay, 1962), 156.

4-28 "[Rommel] believed...in commanding from the front…": David Fraser, *Knight's Cross: A Life of Field Marshal Erwin Rommel,* 1st US edition (New York: Harper Collins, 1993), 161.

4-28 **Forward Command: LTG Eichelberger at Buna:** based on Thomas M. Huber,"Eichelberger at Buna: A Study in Battle Command," in *Studies in Battle Command* (Fort Leavenworth, KS: US Army Command and General Staff College: GPO, 1995), 123–128.

Chapter 5—The Command and Control System

5-19 "I will only invite your attention to…": George C. Marshall, "Development in Tactics," undated lecture, US Army Infantry School (1928–1933), in *The Papers of George Catlett Marshall*: vol. 1, *The Soldierly Spirit, December 1880–June 1939* (Baltimore: Johns Hopkins, 1981), ed. Larry Bland and Sharon R. Ritenour, 334–335.

Chapter 6—Exercising Command and Control

6-0 "The great end…": paraphrased from Robert D. Heinl Jr., *Dictionary of Military and Naval Quotations* (Annapolis: US Naval Institute, 1966), 1.

6-18 "Only in very rare cases can an army…": F.W. von Mellenthin, *Panzer Battles: A Study of the Employment of Armor in the Second World War*, 1st American ed., trans. H. Betzler; ed. by L.C.F. Turner (Norman, OK: Univ. of Oklahoma Press, 1956), 94.

6-20 "If I always appeared prepared…": as quoted in Tsouras, 363.

6-20 pars. 6-77–6-130: The doctrine for decisionmaking during execution is based on, among other sources, Dennis K. Leedom, et al., *Final Report: Cognitive Engineering of the Human-Computer Interface for ABCS* (Andover, MA: Dynamics Research Corporation, 1998); and Gary Klein, *Sources of Power: How People Make Decisions* (Cambridge: MIT Press, 1998).

Appendix A—The Observe-Orient-Decide-Act (OODA) Cycle

A-3 par. A-7. based on Robert L. Bateman III, "Avoiding Information Overload," *Military Review* 77 (4) (1998): 54–55.

Appendix B—Information

B-1 The cognitive hierarchy and discussion of it are based on MCDP 6, 66–71; JP 6-0, *Doctrine for Command, Control, Communications, and Computer (C4) Systems Support for Joint Operations* (Washington, DC: GPO, 30 May 1995), I-3–I-4; and Jeffrey R. Cooper, "The Coherent Battlefield—Removing the 'Fog of War'" (unpublished paper: SRS Technologies, Jun. 1993), as cited in MCDP 6, 143.

Glossary

The glossary lists acronyms and terms with Army, multiservice, or joint definitions, and other selected terms. Where Army and joint definitions are different, *(Army)* follows the term. Terms for which FM 6-0 is the proponent manual (the authority) are marked with an asterisk (*). The proponent manual for other terms is listed in parentheses after the definition. Terms for which the Army and Marine Corps have agreed on a common definition are followed by *(Army-Marine Corps)*.

1SG	first sergeant
1st IOC(L)	1st Information Operations Command (Land)
A2C2	Army airspace command and control
AADC	area air defense commander
AAR	after-action review
ABCS	Army Battle Command System
ACA	airspace control authority
ACM	airspace control measures
ACO	airspace control order
AD	armored division
ADA	air defense artillery
***adjustment decision**	during preparation and execution, the selection of a course of action that modifies the order to respond to unanticipated opportunities or threats
AFATDS	Advanced Field Artillery Tactical Data System
ALO	air liaison officer
AMD	air and missile defense
AMDCOORD	air and missile defense coordinator
AMDPCS	Air and Missile Defense Planning and Control System
ANZAC	Australia and New Zealand Army Corps
AO	area of operations
app.	appendix
AR	Army regulation
ARFOR	the senior Army headquarters and all Army forces assigned or attached to a combatant command, subordinate joint force

command, joint functional command, or multinational command (FM 3-0)

ARSST Army space support team

***art of command** the conscious and skillful exercise of the authority to fulfill command responsibilities through visualizing, deciding, directing, and leading. Art, as opposed to science, requires expert performance of a specific skill using intuitive faculties that cannot be solely learned by study or education.

ASAS All Source Analysis System

***ASCOPE** a memory aid for the characteristics considered under civil considerations: areas, structures, capabilities, organizations, people, events

assessment (Army) continuous monitoring—throughout planning, preparation, and execution—of the current situation and progress of an operation, and the evaluation of it against criteria of success to make decisions and adjustments (FM 3-0)

ATO air tasking order

***authority** the delegated power to judge, act, or command

AUTL Army Universal Task List

AVCOORD aviation coordinator

avenue of approach (joint) an air or ground route of an attacking force of a given size leading to its objective or to key terrain in its path (JP 1-02)

AWOL absent/absence without leave

backbrief a briefing by subordinates to the commander to review how subordinates intend to accomplish their mission (FM 5-0)

battle command the exercise of command in operations against a hostile, thinking enemy (FM 3-0)

battlespace (joint) the environment, factors, and conditions that must be understood to successfully apply combat power, protect the force, or complete the mission. This includes the air, land, sea, space, and the included enemy and friendly forces; facilities; weather; terrain; the electromagnetic spectrum; and the information environment within the operational areas and areas of interest. (JP 1-02)

BOS battlefield operating system

branch a contingency plan or course of action (an option built into the basic plan or course of action) for changing the mission, disposition, orientation, or direction of movement of the force to aid success of the current operation, based on anticipated events, opportunities, or disruptions caused by enemy actions. Army forces prepare branches to exploit success and opportunities, or to counter disruptions caused by enemy actions (FM 3-0)

C2	command and control
C4OPS	command, control, communications, and computer operations
***calculated risk**	an exposure to chance of injury or loss when the commander can visualize the outcome in terms of mission accomplishment or damage to the force, and judges the outcome as worth the cost
CAS	close air support
CCIR	commander's critical information requirements
cdr.	commander
chap.	chapter
CHEMO	chemical officer
CIMP	command information management plan
***civil considerations**	the influence of manmade infrastructure, civilian institutions, and attitudes and activities of the civilian leaders, populations, and organizations within an area of operations on the conduct of military operations
close combat	combat carried out with direct fire weapons, supported by indirect fire, air-delivered fires, and nonlethal engagement means. Close combat defeats or destroys enemy forces, or seizes and retains ground. (FM 3-0)
CMO	civil-military operations
CNR	combat net radio
COA	course of action
cognition	the act of learning, of integrating from various pieces of information
***collect**	an information management activity: to continuously acquire relevant information by any means, including direct observation, other organic resources, or other official, unofficial, or public sources from the information environment
combat information	(joint) unevaluated data, gathered by or provided directly to the tactical commander which, due to its highly perishable nature or the criticality of the situation, cannot be processed into tactical intelligence in time to satisfy the user's tactical intelligence requirements (JP 1-02)
command	(joint) the authority that a commander in the armed forces lawfully exercises over subordinates by virtue of rank or assignment. Command includes the authority and responsibility for effectively using available resources and for planning the employment of, organizing, directing, coordinating, and controlling military forces for the accomplishment of assigned missions. It also includes responsibility for health, welfare, morale, and discipline of assigned personnel. (JP 0-2)

***command and control** (Army) the exercise of authority and direction by a properly designated commander over assigned and attached forces in the accomplishment of a mission. Commanders perform command and control functions through a command and control system.

***command and control system** (Army) the arrangement of personnel, information management, procedures, and equipment and facilities essential for the commander to conduct operations

commander's critical information requirements (Army) elements of information required by commanders that directly affect decisionmaking and dictate the successful execution of military operations (FM 3-0)

commander's intent a clear, concise statement of what the force must do and the conditions the force must meet to succeed with respect to the enemy, terrain, and the desired end state (FM 3-0)

***commander's visualization** the mental process of achieving a clear understanding of the force's current state with relation to the enemy and environment (situational understanding), and developing a desired end state that represents mission accomplishment and the key tasks that move the force from its current state to the end state (commander's intent)

***command post** (Army) a unit headquarters where the commander and staff perform their activities

common operational picture (Army) an operational picture tailored to the user's requirements, based on common data and information shared by more than one command (FM 3-0)

communicate (joint) to use any means or method to convey information of any kind from one person or place to another (JP 1-02)

concealment (joint, NATO) protection from observation and surveillance (JP 1-02)

***conduct** to perform the activities of the operations process: planning, preparing, executing, and continuously assessing

***control** (Army) within command and control, the regulation of forces and battlefield operating systems to accomplish the mission in accordance with the commander's intent. It includes collecting, processing, displaying, storing, and disseminating relevant information for creating the common operational picture, and using information, primarily by the staff, during the operations process.

control measures Directives given graphically or orally by a commander to subordinate commands to assign responsibilities, coordinate fires and maneuver, and control combat operations. Each control measure can be portrayed graphically. In general, all control measures should be easily identifiable on the ground. (FM 5-0)

***coordination** (Army-Marine Corps) the action necessary to ensure adequately integrated relationships between separate organizations located in the same area. Coordination may include such matters as fire

support, emergency defense measures, area intelligence, and other situations in which coordination is considered necessary.

COP common operational picture

COS chief of staff

***cover** (Army) protection from the effects of fires

CP command post

CPO civilian personnel officer

CPT captain

***criteria of success** information requirements developed during the operations process that measure the degree of success in accomplishing the unit's mission. They are normally expressed as either an explicit evaluation of the present situation or forecast of the degree of mission accomplishment.

CS combat support

CSR controlled supply rate

CSS combat service support

CSSCS Combat Service Support Control System

CTC combat training center

***data** (Army) the lowest level of information on the cognitive hierarchy. Data consist of unprocessed signals communicated between any nodes in an information system, or sensings from the environment detected by a collector of any kind (human, mechanical, or electronic)

dead space (joint, NATO) an area within the maximum range of a weapon, radar, or observer, which cannot be covered by fire or observation from a particular position because of intervening obstacles, the nature of the ground, or the characteristics of the trajectory, or the limitations of the pointing capabilities of the weapon (JP 1-02)

***decisionmaking** selecting a course of action as the one most favorable to accomplish the mission

decisive terrain key terrain whose seizure and retention is mandatory for successful mission accomplishment (FM 3-90)

***describe** to relate operations to time and space in terms of accomplishing the purpose of the overall operation

***direct** to communicate execution information

***directed telescope** a dedicated information collector—a trusted and like-minded subordinate—to observe selected events or units and report directly to the commander

disinformation information disseminated primarily by intelligence organizations or other covert agencies designed to distort information, or deceive or influence US decisionmakers, US forces, coalition

allies, key actors or individuals via indirect or unconventional means (FM 3-13)

***display** (Army) an information management activity: to represent relevant information in a usable, easily understood audio or visual form tailored to the needs of the user that conveys the common operational picture for decisionmaking and exercising command and control functions

***disseminate** an information management activity: to communicate relevant information of any kind from one person or place to another in a usable form by any means to improve understanding or to initiate or govern action

DOD Department of Defense

DP decision point

DS direct support

DST decision support template

EA electronic attack

ed. editor/edited by

EEFI essential elements of friendly information

EMCON emission control

ENCOORD engineer coordinator

end state (Army) At the operational and tactical levels, the conditions that, when achieved, accomplish the mission. At the operational level, these conditions attain the aims set for the campaign or major operation (FM 3-0)

EO equal opportunity

EOA equal opportunity advisor

EPW enemy prisoner of war

essential elements of friendly information (Army) the critical aspects of a friendly operation that, if known by the enemy, would subsequently compromise, lead to failure, or limit success of the operation and therefore must be protected from enemy detection (FM 3-13)

estimate (Army) an analysis of a situation, development, or trend that identifies its major factors from the perspective of the decisionmaker for whom prepared, interprets their significance, assesses the future possibilities and prospective results of possible COAs, and recommends a COA. (This definition is being staffed with draft FM 5-0. If approved, it will become an Army definition.) *See also* running estimate.

***evaluate** an element of assessment: to compare relevant information on the situation or operation against criteria of success to deteermine success or progress

EW electronic warfare

EWO electronic warfare officer

***exceptional information** information that would have answered one of the commander's critical information requirements if the requirement for it had been foreseen and stated as one of the commander's critical information requirements

***execute** to put a plan into action by applying combat power to accomplish the mission and using situational understanding to assess progress and make execution and adjustment decisions

***execution decision** the selection, during preparation and execution, of a course of action anticipated by the order

***execution information** information that communicates a decision and directs, initiates, or governs action, conduct, or procedure

***facility** (Army) in the context of the command and control system, a structure or location that provides a work environment. (The joint lexicon includes the terms *facility* and *facility substitutes*. [See JP 1-02.] For Army purposes, a C2 facility may be a facility or facility substitute in the joint sense; however, it may also be dedicated space in a vehicle, ship, or aircraft.)

FBCB2 Force XXI Battle Command Brigade and Below System

FFIR friendly forces information requirements

field of fire (joint, NATO) the area that a weapon or group of weapons may cover effectively from a given position (JP 1-02)

fig. figure

FM field manual

force protection those actions taken to prevent or mitigate hostile actions against DOD personnel (to include family members), resources, facilities, and critical information. These actions conserve the force's fighting potential so it can be applied at the decisive time and place and incorporates the coordinated and synchronized offensive and defensive measures to enable the effective employment of the joint force while degrading opportunities for the enemy. Force protection does not include actions to defeat the enemy or protect against accidents, weather, or disease (FM 3-0)

FRAGO fragmentary order

***friendly forces information requirements** information the commander and staff need about the forces available for the operation

FSCL fire support coordination line

FSCOORD fire support coordinator

FSO fire support officer

G-1 assistant chief of staff, personnel

G-2 assistant chief of staff, intelligence

G-3 assistant chief of staff, operations and plans

G-4 assistant chief of staff, logistics

G-5 assistant chief of staff, civil affairs

G-6 assistant chief of staff, command, control, communications, and computer operations (C4OPS)

G-7 assistant chief of staff, information operations

GA general of the army

GCCS Global Command and Control System

GCCS-A Global Command and Control System–Army

GEN general

Global Information Grid (joint) The globally interconnected, end-to-end set of information capabilities, associated processes and personnel for collecting, processing, storing, disseminating and managing information on demand to warfighters, policymakers, and support personnel. The Global Information Grid (GIG) includes all owned and leased communications and computing systems and services, software (including applications), data, security services and other associated services necessary to achieve information superiority. It also includes National Security Systems asdefined in section 5142 of the Clinger-Cohen Act of 1996. The GIG supports all Department of Defense (DOD), National Security, and related intelligence community missions and functions (strategic, operational, tactical, and business), in war and in peace. The GIG provides capabilities from all operating locations (bases, posts, camps, stations, facilities, mobile platforms and deployed sites). The GIG provides interfaces to coalition, allied, and non-DOD users and systems. (JP 1-02)

GPO Government Printing Office

HN host nation/host-nation

HPT high-payoff target

hq headquarters

IA information assurance

ID infantry division

IDM information dissemination management

IG inspector general

IM information management

IMCOORD information management coordinator

information (Army) (1) in the general sense, the meaning humans assign to data. (2) in the context of the cognitive hierarchy, data that have been processed to provide further meaning

information management the provision of relevant information to the right person at the right time in a usable form to facilitate situational understanding and decisionmaking. It uses procedures and information systems to collect, process, store, display, and disseminate information. (FM 3-0)

***information requirements** (Army) all information elements the commander and staff require to successfully conduct operations; that is, all elements necessary to address the factors of METT-TC

information systems (Army) the equipment and facilities that collect, process, store, display and disseminate information. These include computers—hardware and software—and communications as well as policies and procedures for their use. (FM 3-0)

INFOSYS information systems

initiative *See* operational initiative; subordinate initiative

***intuitive decisionmaking** (Army-Marine Corps) the act of reaching a conclusion which emphasizes pattern recognition based on knowledge, judgment, experience, education, intelligence, boldness, perception, and character. This approach focuses on assessment of the situation vice comparison of multiple options.

IO information operations

IPB intelligence preparation of the battlefield

IR information requirement

ISR intelligence, surveillance, and reconnaissance

JFACC joint force air component commander

JP joint publication

***key tasks** those tasks the force as a whole must perform, or conditions the force must meet, to achieve the end state and stated purpose of the operation

key terrain (joint, NATO) any locality, or area, the seizure or retention of which affords a marked advantage to either combatant (JP 1-02)

***knowledge** in the context of the cognitive hierarchy, information analyzed to provide meaning and value or evaluated as to implications for the operation

LAN local-area network

LD line of departure

leadership influencing people—by providing purpose, direction, and motivation—while operating to accomplish the mission and improving the organization (FM 22-100)

liaison	(joint) that contact or intercommunication maintained between elements of military forces or other agencies to ensure mutual understanding and unity of purpose and action (JP 3-08)
LNO	liaison officer
LTC	lieutenant colonel
LTG	lieutenant general
MCS	Maneuver Control System
MD	military deception
MDMP	military decisionmaking process
MDO	military deception officer
METL	mission essential task list
***METT-TC**	a memory aid used in two contexts: (1) in the context of information management, the major subject categories into which relevant information is grouped for military operations: mission, enemy, terrain and weather, troops and support available, time available, civil considerations (2) in the context of tactics, the major factors considered during mission analysis
MG	major general
***military gamble**	a decision in which a commander risks the force without a reasonable level of information about the outcome
mission	(joint) the task, together with the purpose, that clearly indicates the action to be taken and the reason therefor (JP 1-02)
***mission command**	the conduct of military operations through decentralized execution based upon mission orders for effective mission accomplishment. Successful mission command results from subordinate leaders at all echelons exercising disciplined initiative within the commander's intent to accomplish missions. It requires an environment of trust and mutual understanding.
***mission orders**	a technique for completing combat orders that allows subordinates maximum freedom of planning and action in accomplishing missions and leaves the "how" of mission accomplishment to subordinates
MLT	Marine liaison team
***monitoring**	(Army) an element of assessment: continuous observation of the common operational picture to identify indicators of opportunities for success, threats to the force, and gaps in information
MOS	military occupational specialty
MSR	main supply route
MTOE	modification table of organization and equipment
NATO	North Atlantic Treaty Organization

NBC	nuclear, biological, and chemical
NCO	noncommissioned officer
NETOPS	network operations
NGF	naval gunfire
NGO	nongovernmental organization
NVA	North Vietnamese Army
***OAKOC**	a memory aid associated with the five military aspects of terrain: observation and fields of fire, avenues of approach, key and decisive terrain, obstacles, cover and concealment
OB	order of battle
***observation**	the condition of weather and terrain that permits a force to see the friendly, enemy, and neutral personnel and systems, and key aspects of the environment
obstacle	(joint) any obstruction designed or employed to disrupt, fix, turn, or block the movement of an opposing force, and to impose additional losses in personnel, time, and equipment on the opposing force. Obstacles can be natural, manmade, or a combination of both. (JP 1-02)
OODA	observe-orient-decide-act
OPCON	operational control
operational initiative	setting and dictating the terms of action throughout the battle or operation (FM 3-0) [Note: This definition applies at all levels of war.] *See also* subordinates' initiative.
operational picture	a single display of relevant information within a commander's area of interest (FM 3-0)
operational tempo	the mileage allowed to be put on a vehicle or aircraft during a fiscal year based on budgetary guidance
***operations process**	the activities performed during operations: plan, prepare, and execute with continuous assessment
OPLAN	operation plan
OPORD	operation order
ops	operations
OPSEC	operations security
order	(joint, NATO) a communication, written, oral, or by signal, which conveys instructions from a superior to a subordinate. In a broad sense, the terms "order" and "command" are synonymous. However, an order implies discretion as to the details of execution whereas a command does not. (JP 1-02)
p./pp.	page/pages
PAO	public affairs officer

PIR priority intelligence requirement

plan a design for a future or anticipated operation (FM 5-0)

planning the means by which the commander envisions a desired outcome, lays out effective ways of achieving it, and communicates to his subordinates his vision, intent, and decisions, focusing on the results he expects to achieve (FM 3-0)

PM provost marshal

***positive control** (Army) a technique of regulating forces that involves commanders and leaders actively assessing, deciding, and directing them

pos/nav position/navigation

preparation activities by the unit before execution to improve its ability to conduct the operation including, but not limited to, the following: plan refinement, rehearsals, reconnaissance, coordination, inspections, and movement (FM 3-0)

priority intelligence requirements (joint) those intelligence requirements for which a commander has an anticipated and stated priority in the task of planning and decisionmaking (JP 1-02)

***procedural control** (Army) a technique of regulating forces that relies on a combination of orders, regulations, policies, doctrine, and tactics, techniques, and procedures

procedures standard and detailed courses of action that describe how to perform a task (FM 3-90)

***process** an information management activity: to raise the meaning of information from data to knowledge

PSYOP psychological operations

r river

***rehearsal** a session in which a staff or unit practices expected actions to improve performance during execution

relevant information all information of importance to the commander and staff in the exercise of command and control (FM 3-0)

responsibility (joint) the obligation to carry forward an assigned task to a successful conclusion. With responsibility goes authority to direct and take the necessary action to ensure success. (JP 1-02)

rev. ed. revised edition

RI relevant information

RM resource management/resource manager

ROE rules of engagement

RSR required supply rate

***running estimate** a staff estimate, continuously updated based on new information, as the operation proceeds

S-1 personnel staff officer

S-2 intelligence staff officer

S-3 operations staff officer

S-4 logistics staff officer

S-5 civil-military operations officer

S-6 command, control, communications and computer operations (C4OPS) officer

S-7 information operations officer

scalable capable of being changed in size or configuration, that is, an INFOSYS' or display's ability to expand or contract based on need

***science of control** use of objectivity, facts, empirical methods, and analysis, with emphasis on anticipation in the form of forecasting, to regulate forces and functions to accomplish the mission in accordance with the commander's intent

sequel an operation that follows the current operation. It is a future operation that anticipates the possible outcomes—success, failure, or stalemate—of the current operation (FM 3-0)

situational understanding (Army) the product of applying analysis and judgment to the common operational picture to determine the relationships among the factors of METT-TC. (FM 3-0)

SJA staff judge advocate

slice (Army) the normal apportionment of combat support and combat service support elements allocated to support a maneuver unit

SOF special operations forces

SOO space operations officer

SOP standing operating procedures

standing operating procedure (joint, NATO) a set of instructions covering those features of operations which lend themselves to a definite or standardized procedure without loss of effectiveness. The procedure is applicable unless ordered otherwise. (JP 1-02)

***store** an information management activity: to retain relevant information in any form, usually for orderly, timely retrieval and documentation, until it is needed for exercising command and control.

***structure** an element of control: a defined organization that establishes relationships among its elements or a procedure that establishes relationships among its activities

***subordinates' initiative** the assumption of responsibility for deciding and initiating independent actions when the concept of operations no longer applies or when an unanticipated opportunity leading to achieving the commander's intent presents itself. *See also* operational initiative.

SWO staff weather officer

TACON	tactical control
tactics	(Army) the employment of units in combat. It includes the ordered arrangement and maneuver of units in relation to each other, the terrain, and the enemy to translate potential combat power into victorious battles and engagements (FM 3-0)
task organizing	the process of allocating available assets to subordinate commanders and establishing their command and support relationships (FM 3-0)
TDA	table of distribution and allowances
techniques	the general and detailed methods used by troops and commanders to perform assigned missions and functions, specifically, the methods of using equipment and personnel (FM 3-90)
tempo	the rate of military action (FM 3-0)
TEWT	tactical exercise without troops
TF	task force
TLP	troop leading procedures
TOE	table of organization and equipment
trans.	translator/translated by
TTP	tactics, techniques, and procedures
UCMJ	Uniform Code of Military Justice
***understanding**	in the context of the cognitive hierarchy, knowledge that has been synthesized and had judgment applied to it in a specific situation to comprehend the situation's inner relationships
***unity of effort**	coordination and cooperation among all military forces and other organizations toward a commonly recognized objective, even if the forces and nonmilitary organizations are not necessarily part of the same command structure
univ.	university
US	United States
USAF	United States Air Force
***variances**	differences between the actual situation during an operation and what the plan forecasted the situation would be at that time or event
***visualize**	to create and think in mental images
WAN	wide-area network
WARNO	warning order
XO	executive officer

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By Order of the Secretary of the Army:

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