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CONVERGING VECTORS: COMPARING EMERGING ARMY AND AIR FORCE BASIC DOCTRINE

A MONOGRAPH
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SCHOOL OF ADVANCED MILITARY STUDIES

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Major Robert F. Gass

Title of Monograph: *Converging Vectors: Comparing Emerging Army and Air Force Basic Doctrine*

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ABSTRACT

CONVERGING VECTORS: COMPARING EMERGING ARMY AND AIR FORCE BASIC DOCTRINE by Major Robert F. Gass, USAF, 61 pages.

This paper compares the most recent revisions to Army and Air Force draft basic doctrine. It focuses on the sets of doctrinal frameworks that describe each service's approach to the range of modern military operations and the integrating ideas that draw those frameworks together. With its focus on operations, it compares draft Army and Air Force basic doctrine in three ways: in a review of their overall content and organization, in their key frameworks describing operations, and in their operational concepts. The paper concludes with an analysis of differences key doctrinal structures describing force employment and with a comparison of each service's interpretation of asymmetric force application and force projection. It is useful as a comparative review of each service's draft basic doctrine and in assaying differences in their approach to operations. It provides a preview into the similarities and differences in operational perspective that may influence future joint operations.

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INTRODUCTION

Both the Army and Air Force are currently revising their basic doctrine in an effort to adapt to dynamic national security challenges and to anticipate rapid technological advances and evolving ideas of future warfare. For both services it will be the second revision of basic doctrine since the end of the cold war. Both services are already looking at the doctrinal implications of new ideas affecting warfighting and other operations well into the next century. It is likely that the fast pace of doctrinal development will accelerate.

Anticipating an increasingly rapid evolution of service doctrine, it is constructive to examine basic doctrine in its developmental process to determine the emerging operational perspectives of the services. Developing such insight creates the opportunity to identify potential conflicts in joint operations at the earliest time possible. This paper compares the most recent revisions to Army and Air Force draft basic doctrine. It focuses on the sets of doctrinal frameworks that describe each service's approach to the range of modern military operations and the operational concepts that draw those frameworks together. The direction this emerging basic doctrine pursues is important. It represents each service's latest institutional thinking about how to employ its forces and, when held in comparison, indicates the future operational harmony of the joint community.

Doctrine is an authoritative statement of a military force's approach to war: what it perceives as truth regarding warfare and how it applies that truth to the specific security challenges facing its nation. That perception of truth and mission is shaped by a diverse and changing set of forces such as evolving national security strategy, improved weaponry, advances in information technology, the nature of potential threats, interservice rivalry, and parochial intraservice clashes.[1] Doctrine distills and reflects these complexities. It provides an important and efficient way to gain insight into each service's approach to operations. Representative of the central importance of doctrine in the US military, the Army considers doctrine as lying at the "heart of its professional competence" and providing a framework for all of its

major concerns.[2] In this light, comparing the basic doctrine of the Army and Air Force is the best way of framing discussion of the fundamental aspects of future joint operations.

This paper compares the evolving Army and Air Force operational perspectives through the lens of compatibility in joint operations. With its focus on operations, it compares draft Army and Air Force basic doctrine in three ways: in overall content and organization, in the key frameworks describing operations, and in the integrating operational concepts. The paper concludes with an analysis of differences in key doctrinal structures and a comparison of each service's approach to operations. It is useful as a comparative review of each service's draft basic doctrine and in assaying differences in their approach to operations. It provides a preview into the similarities and differences in operational perspective that may influence future joint cooperation.

THE BASIC DOCTRINE DOCUMENTS

Discussion of Army and Air Force basic doctrine revolves around two main documents. The Army equivalent of basic doctrine is *Field Manual 100-5, Operations*. The current version is dated "June 1993." The final product of the revision process is scheduled to replace it under the same title in 1998. The preface of the most recent draft document defines its charter:

> *Field Manual 100-5* establishes the Army's operational doctrine. It addresses the full range of operations we expect to execute in the foreseeable future. It reflects the lessons of nearly a decade of post-cold war experience, assessments of technological advancements, sound theory, and an appreciation of proven fundamentals and principles.[3]

This paper examines the most current product of the development team at Fort Leavenworth, the coordinating draft as of 14 Jan 1997.

The final draft of Air Force basic doctrine should replace the current version, *Air Force Manual 1-1, Vol I and Vol II, Basic Aerospace Doctrine of the United States Air Force* (March, 1992), as *Air Force Doctrine Document 1, Air Force Basic Doctrine*, in late 1997 to mid 1998. This paper uses the most current Second Draft 21 May 1996. The draft doctrine defines its role:

> Basic doctrine states the most fundamental and enduring beliefs which describe and guide the proper use of air and space forces in military action . . . it provides broad and continuing guidance on how Air Force forces are prepared and employed.[4]

Additionally, to draw further upon emerging Air Force operational thought, some material was drawn from a draft of an entirely new doctrinal document, *Air Force Doctrine Document 2, Theater Air Warfare* (fourth draft 21 May 1996). This document is presently under extensive revision and will likely be published as part of a greater doctrine document refashioned as "Global Engagement."[5] This major organizational revision will integrate previously separate areas in a new doctrinal architecture that will address the operational level of war. A draft copy of this document is, at the time of this writing, not released for comment or coordination by the Air Force Doctrine Center. The development process for all these draft doctrine publications is ongoing and revisions to the drafts noted here may affect the substance of this paper's analysis.

REFERENCES AND TERMS

Clarification on the references to doctrine and the definitions of new terms in the paper will ease interpretation. The focus of this paper is on the comparing Army and Air Force draft documents, not the draft doctrine to the previous version. Therefore, references to *Field Manual 100-5* (FM 100-5) within the paper address the 14 January coordinating draft. Similarly, references to *Air Force Doctrine Document 1* (AFDD-1) and *Air Force Doctrine Document 2* (AFDD-2) address the most current drafts of those documents.

Examining new doctrine unavoidably introduces new terms and definitions. New terms not explained in the main text of the paper will have their doctrinal definition annotated in the associated endnote.

CONTENTS AND STRUCTURE

There is not perfect correspondence of contents and structure between the new Army and Air Force draft basic doctrine. FM 100-5 and AFDD-1 use different approaches in describing their respective service's purposes, missions, capabilities, and organization. The Army has organized its operations

doctrine to provide a foundation upon which to build more specific guidance in an extensive family of doctrinal publications based largely, but not exclusively, on unit mission and command echelon. As part of a different structure, the draft Air Force doctrine describes the roles and missions of aerospace power as a starting point for emerging operational doctrine and to provide context for a family of detailed tactical doctrine. A brief survey of the contents and structure of each document illustrates the scope and depth of Army and Air Force basic doctrine.

FIELD MANUAL 100-5, OPERATIONS

Taken as a whole, FM 100-5 is expansive in scope and provides sufficient depth to describe, and prescribe, force employment throughout the spectrum of Army operations. The development team organizes fundamental concepts by advancing methodically from definitions, to conceptual frameworks, and on to general prescriptive guidance. They present the ideas in the basic doctrine in five parts: a description of today's Army; a comprehensive conceptual architecture for military operations; a definition of command and an outline of the elements of planning, execution and logistics; a broad framework for conducting and sequencing operations; and a perspective regarding land warfare within the joint environment, within information operations, and within conflict using weapons of mass destruction.

In Part I, FM 100-5 introduces the Army's roles and mission, its basic combat forces, the central place of its soldiers, and goes on to put Army operations in a modern context by describing the modern environment of conflict. Its definition of the Army's roles and missions starts with their legal basis in the constitution and federal law, emphasizing the central purpose of national defense. The new doctrine takes deliberate steps in broadening a narrow legal focus in the military mission of compelling adversaries to yield to America's will and deterring threats to the nation's security. It incorporates a diplomatic mission in reassuring US allies and a domestic mission in providing military support to civil authorities during peacetime emergencies.[6] It describes the mix of heavy, light, and special forces that provide the Army's capability to perform to assume these roles and perform its key missions. Beyond force structure, FM 100-5 asserts the central feature of the Army's capability to succeed in any mission is its human element, the

American soldier. It proceeds to provide a larger context for the Army, its purposes, its fielded forces, and its people. The draft doctrine recognizes the political, economic and social complexity of the post-cold war world situation. Rather than focusing on current potential areas of contention, it provides a framework for interpreting today's conflict environment in physical, informational, and moral dimensions and in strategic, operational, and tactical levels. The first part of basic Army doctrine concludes by articulating a basic pattern for future operations: projecting the force, protecting the force, gaining information dominance, shaping the battlespace, conducting decisive operations, and sustaining the force.[7] Having defined the Army, its purpose, and provided a way to think about operational environment, FM 100-5 moves on to develop fundamental ideas about force employment.

In its second part, FM 100-5 explains the Army's operational concept. This idea is the core of Army doctrine. It describes how its forces will operate at each level of conflict. The draft doctrine builds the fundamentals of Army operations toward the goal of achieving dominance over an enemy. It begins by stressing the centrality of seizing the initiative and maintaining momentum to exploit success.[8] It expands upon that concept by presenting a conceptual scheme of employing complementary and reinforcing effects to achieve an asymmetric advantage over an adversary.[9] As a foundation to this operational concept, FM 100-5 identifies general principles that apply to the complete spectrum of Army operations and highlights characteristics of successful operations.[10] The new doctrine bridges the gap between these basic concepts and its fielded forces within a framework of five core functions in applying combat power: seeing, shaping, shielding, striking, and moving.[11] It incorporates the fielded forces into its operational concept by describing military power by defining two types of operating systems based on executing the core functions: engagement systems (such as maneuver units and fire support) and integrating systems (that is, command and control and combat service support). Where Part II establishes the intellectual foundation and structure for the Army's operational doctrine, Part III addresses the intangible dimensions of operational art.

In Part III, FM 100-5 addresses the "creative action" that links the tactical means to strategic ends: operational art.[12] It identifies four "key tasks" implicit in the art of operations: command, planning, execution, and logistics. The new doctrine articulates traditional Army values in a definition of command and an inventory of its characteristics and its imperatives.[13] It structures its treatment of the task of operational planning by explaining the importance of establishing the context of the operation (the situation), of the elements of operational design (e. g., end-state, mission, lines of operation, etc.), of the dynamic of the planning process, and of linking planning to execution through preparation. In discussing the art involved in executing military operations, FM 100-5 reinforces the concepts of initiative, momentum, and exploitation introduced in Part II. The final "key task" of logistics, receives broad consideration in the new doctrine's description of strategic, operational, and tactical levels of logistics and in a survey of characteristics of logistic operations.[14] The new doctrine develops the idea of the logistical context of force projection in its definition of the idea of operational reach and logistical preparation of the theater.[15] The science and art of military operations most thoroughly merge in the next part of the new doctrine, the conduct of operations.

Part IV of FM 100-5, encompasses the complete spectrum of potential Army operations in a comprehensive conceptual structure (see Appendix J for a graphical depiction). The doctrinal development team keeps its discussion of operation at the conceptual level by addressing the capabilities of the various combat arms, combat support (CS), and combat service support (CSS) formations as well as the details of force tailoring and task organization in the manual's appendices. The new doctrine establishes four basic categories of operations: offense, defense, stability, and support.[16] It approaches military operations throughout the levels of conflict as composed of some combination of these categories. It describes each category through a framework of close, deep, rear, reconnaissance and surveillance, and reserve operations.[17] Furthermore, it expands on this framework with a survey of imperatives, typical phasing, forms of maneuver, and specific types of operations unique to each category. FM 100-5 also describes these categories of operations by expressing them as specific applications of the core functions introduced

in Part II. In its integrated and seamless vision of military operations, Part IV merges the Army warfighting missions with its operations other than war.

The first four parts of FM 100-5 focus on the Army and its approach to war. Part V puts Army operations in a larger context in describing: unified action, force projection, information operations, and integrated warfare. The new doctrine works to integrate Army capabilities within joint, combined, and interagency operations by reviewing relevant joint doctrine, and experience-based considerations in combined and interagency operations. It delineates the Army's role in, and requirements for, force projection and explains this joint effort through an overview of a force projection process from mobilization through demobilization. FM 100-5 also fits Army operations into the emerging field of information operations by describing the information environment, a structure for developing understanding from raw data in an uncertain situation, and the Army's capability to achieve information dominance.[18] FM 100-5 shifts emphasis from an information environment to an environment influenced by nuclear, biological, chemical weapons. It describes Army operations within the special context of weapons of mass destruction (WMD) as integrated warfare. It explains the unique effect WMD has on operations through an explanation of their effect on the framework of the core functions. Part V of the new doctrine injects Army operations into potential complexities of operations in today's world environment.

The draft FM 100-5 uses a broad conceptual approach to structure fundamental ideas and methodology as well as prescriptive guidance for a broad spectrum of Army operations. It presents basic principles, imperatives, and characteristics for command, planning and execution. The Air Force approaches its basic doctrine from a slightly different angle.

AIR FORCE DOCTRINE DOCUMENT 1, AIR FORCE BASIC DOCTRINE

The focus of AFDD-1 is on applying aerospace power to US national security challenges, with a clear emphasis on warfighting. The development team presents a general perspective on aerospace power in four chapters: the nature of aerospace power, its operational employment, readiness and sustainment, and force organization.

AFDD-1 begins by introducing the idea of aerospace power as a unique aspect of modern warfare and an instrument of national policy. A term central to the entire document, the new doctrine defines "aerospace power" and promulgates operating tenets that reflect "current air and space power qualities."[19] An appendix to AFDD-1 expands the ideas advanced in these aerospace tenets by interpreting the principles of war from joint doctrine (see Appendix E). Maintaining a broad context, AFDD-1 fits the idea of aerospace power into the strategic, operational, and tactical levels of war. It addresses the potential contributions of aerospace power to military operations other than war (MOOTW), special operations, and information warfare as distinct categories of operations. This first part of AFDD-1 defines and develops the central idea of the new doctrine and lays the intellectual groundwork for the core feature of the document: describing aerospace power.

Chapter Two of AFDD-1 introduces the basic doctrinal structure for "operationalizing," that is expressing in terms of missions directly applicable to military operations, the idea of aerospace power. It forms the first broad step toward describing campaign and tactical operations through a framework supporting the conception of aerospace power as a key element of the US "power projection" through a combination of capabilities that provide "Global Reach" and "Global Power."[20] This doctrinal framework rests on the ability to maintain and sustain the force structure providing those capabilities. The development team refines the notions of Global Reach and Global Power into five "core competencies" that describe its essential functions: air superiority, space superiority, precision employment, information dominance, and global mobility.[21] In support of each core competency the new doctrine identifies the Air Force's basic missions. These constituent missions provide more detailed definition to the core competencies and tie directly to operational and tactical doctrine. The core competency of air superiority forms the basis for the Air Force counterair mission (including offensive and defensive operations); space superiority generates a similar counterspace mission. Precision employment creates the five missions: strategic attack, interdiction, close air support, combat search and rescue, and special operations. The core competency of information dominance covers a broad range of activity and is supported by seven distinct

missions: counterinformation, command and control (C^2), surveillance, reconnaissance, navigation and positioning, and weather service. Global mobility establishes airlift and air refueling as basic Air Force missions.[22] This second chapter of AFDD-1 describes the basic architecture of the new Air Force doctrine and connects mission with purpose. It's focus, however, is on employing aerospace power; the next chapter describes the Air Force approach to readiness and sustainment.

In Chapter Three, AFDD-1 integrates the ideas of force readiness and sustainment with the operational missions from the previous chapter, but maintains them as distinct concepts. It defines and describes the components of readiness and sustainment in a general relationship to selected basic missions. The new doctrine identifies three components of readiness: education, training, and evaluation. Sustainment covers logistics (strategic and operational sustainment, research and development, and acquisition), space support (spacelift and on-orbit support), civil engineering, and operational sustainment (support of deployed forces).

Having progressed from purpose to function and support, AFDD-1 concludes by addressing Air Force organization. Chapter Four is brief; it is less than two pages long. It prescribes that the Air Force must organize for wartime effectiveness rather than peacetime efficiency and stresses the importance of the tenant centralized control. The new doctrine sustains the idea of the Air Force role as a provider of combat power, but underscores support for the unity of command provided and professional expertise provided by a Joint Force Air Component Commander in major joint operations.

The new Air Force basic doctrine establishes a structure for thinking about Air Force operations. Though broad in perspective, its fundamental orientation turns quickly to employing aerospace power within the context of force projection. Its comprehensive framework stresses the relationship between capability, function, and the necessary support foundation.

APPROACHES TO OPERATIONS

Ultimately, the cores of both basic doctrine documents describe employing forces in support of national objectives. The development teams designed frameworks, sometimes related sets of frameworks,

to organize thought regarding the conduct of operations for their respective services. A comparison of these doctrinal structures provides insight into the perspective each service takes in describing how it operates. The following correlation of doctrinal features has two related parts: a comparison of the key structures of each basic doctrine, and a comparison of each doctrine's operational concept.

DIFFERENT DESIGNS IN DOCTRINAL STRUCTURE

The Army and Air Force take different approaches in developing their operational perspectives in the structure of their basic doctrine. FM 100-5 bases its description of potential Army operations on generic functions inherent in all operations. It uses a functionally oriented and interrelated set of frameworks to present its basic operational perspective. In short, it describes how to use Army forces in major operations. Conversely, AFDD-1 structures its description of Air Force operations with a focus on constituent mission types that together comprise major operations. The new Air Force basic doctrine does not address the role of specific weapon systems or units within its operational framework. Instead, AFDD-1 presents an integrative structure that combines its strategic vision with its basic mission components and its base of sustainment.

Both approaches describe an operational perspective, however, FM 100-5 stresses the art and mechanics of force employment. Its function based orientation dominates its doctrinal architecture.

FM 100-5: Operating Systems in Functional Context

The new Army basic doctrine uses three key frameworks to organize thought regarding its operational concept: core functions, operating systems, and categories of operations. These interrelated structures describe employment of Army forces throughout the spectrum of operations. Together, these frameworks support a functional approach toward operational doctrine.

Core functions. FM 100-5 introduces its functional concept first. It describes a system of five fundamental actions that Army forces perform to apply military power: "see, shape, shield, strike, and move." The new doctrine considers these core functions parts of a conceptual framework that describes all operations. The core functions provide a functionally defined link between the characteristics of different

categories of operations and the capabilities of different types of operating systems. They provide an intellectual foundation for interpreting the subtleties of effective force employment. A summary of the core functions and a practical example of their utility reinforces the point.[23]

FM 100-5 defines the "see" core function as: "gain and maintain knowledge of elements of METT-TC [Mission, Enemy, Terrain, Troops-Time, and Civilians] at all appropriate echelons."[24] It stresses the importance of this function as understanding rather than collecting information. This understanding establishes relationships between the activity of the relevant actors and provides insight into the operational context and meaning of those relationships. Furthermore, it asserts that the degree of situational understanding achieved by a force largely determines how effectively it combines other core functions. It breaks this idea into four parts: seeing the enemy, seeing friendly forces, seeing neutrals, and seeing the environment. Seeing the enemy means more than an understanding of its physical disposition in the field and its past and present actions. It means understanding its doctrine, culture, C^2 structure, and weapons systems. Fundamentally, seeing the enemy is understanding its strengths and weaknesses. In a similar way, seeing the friendly force means understanding its abilities and limitations in the moral and physical dimensions. This understanding entails knowledge of the organizations, dispositions, capabilities, and intentions of all friendly elements that affect operations. Seeing neutrals requires an appreciation of the allegiances, culture, concerns, and objectives of those uncommitted peoples and organizations that will influence or be affected by an operation. In a larger perspective, seeing the environment involves an understanding of a battlespace's terrain, climate, and demographic profile to determine their effect on operations.[25] In summary, the doctrinal emphasis in the "see" function is on understanding rather than perceiving the actors and environment relevant to an operation. It stresses analysis over collection to give meaning to information. The other functions address action taken based on "seeing" the players and the battlespace.

The "shape" function describes actions intended to "establish the optimum environment for conducting operations."[26] This idea entails placing friendly forces in a position of strength and enemy

forces in a position of weakness. Beyond that arrangement, it means constantly setting the conditions for operational success. The new doctrine organizes its definition in four parts: shaping enemy, friendly, and neutral elements, and shaping the environment. Shaping the enemy means placing it in a weak condition and a weak position. A force can achieve this condition by lethal action, such as preparatory fires and interdiction, and nonlethal fires, such as electronic combat and deception. Conversely, shaping friendly forces involves organizing, resourcing, training, rehearsing, and positioning units to deliver combat power in the most decisive manner possible. Beyond effectively allocating resources and assigning responsibilities and constraints within the overall plan, shaping friendly forces includes disciplined leadership, maintaining high morale and physical health, as well as providing essential logistic support. Where the commander can often take direct action to shape enemy and friendly elements, shaping neutrals requires restraint and persuasion. The new doctrine stresses the importance of rules of engagement consistent with operational objectives complemented by active measures such as psychological operations, civil affairs programs, and humanitarian assistance. Like seeing the environment, shaping the environment requires a broad view of the battlespace. It involves engineering efforts to mold terrain to tactical advantage (mobility and survivability operations) and improve infrastructure supporting friendly operations. Shaping the battlespace effectively, continually improves the conditions in which units can perform the remaining core functions most successfully.

FM 100-5 defines the "shield" function as: "Deny opponents the ability to threaten the force or interfere with operations, and preserve strength through preventive action."27 This function has four key aspects: denying the enemy critical information about friendly forces, protecting them from enemy attack, preventing enemy maneuver that threatens them, and protecting them from hazards other than the enemy (e. g., health threats, land mines, etc.). The "shield" function includes the full array of active and passive measures used to protect the force and preserve operational security and freedom. The remaining functions exploit that security and freedom.

The "strike" function addresses "lethal and nonlethal capabilities to achieve objectives."[28] The new doctrine identifies this function as the most decisive application of military power. Striking compels or deters an opponent or reassures an ally. Offensively, striking an enemy can force it to yield or be destroyed. Defensively, striking can win the initiative from the attacker, deny him his objectives and provide the opportunity to transition to the offensive. In non-combat operations the strike function may appear as employing combat forces to deter hostile action, impose order, or provide protection as well as providing non-combat resources such as essential supplies and services. The strike function is a truly versatile concept in the new doctrine and requires some imagination to apply as the pivotal actions in operations throughout the spectrum of conflict.

The new doctrine completes its system of core functions with its definition of the "move" component: "Position and reposition forces."[29] This function describes positioning forces to meet mission requirements and anticipating follow-on actions. The draft manual reinforces the importance of this "dynamic element of maneuver" by linking the action of movement to the purpose of gaining an advantageous position in order to threaten an enemy with new dilemmas and dangers.[30] It stresses shock, momentum, and exploiting success as central defining features. It adds the dimension of time, with speed and tempo being key to successful movement. In non-combat operations the "move" function appears as shifting resources to deal with newly emerging crises and areas of need. Together with the rest of core functions, the "move" function describes the actions that constitute operations across the spectrum of conflict. An example pulls together the idea in a practical way.

In describing complex operations, these core functions are highly interrelated and do not usually give an adequate representation individually. They have no utility except in relationship to one another and the objective being sought.[31] The manual shows how one type of action may be used to execute more than a single core function and how these functions often overlap:

> A commander may strike with a battalion of artillery to destroy an enemy observation post. Similarly, he may use that strike to see the enemy if his aim is to measure the enemy's speed and nature of response. A commander may strike the enemy with an armor company team to fix him

with a supporting attack while a main effort assaults a flank elsewhere. In this case, he shaped by striking.[32]

The purpose and nature of an operation determine the most effective combinations and proportions of core functions. In successful operations deliberate changes in these combinations influence the action according to the commander's concept of operations. The doctrinal construction of a system of core functions explains the conduct of operations in a generic, functional way. The next structure in the new doctrine links these generalized functions to contemporary Army forces.

Operating systems. FM 100-5 defines an operating system as "the aggregate of soldiers, equipment, material, and procedures organized as an entity to perform the core functions."[33] The term operating system is broad in this context. It does not relate these operating systems to specific weapons systems in the Army inventory, but creates a general framework describing current force structure. Further definition comes from the distinctions in the two categories the doctrine makes for operating systems: engagement systems and integrating systems. For offensive and defensive operations the distinction is readily comprehensible. Engagement systems, normally combat and CS formations, apply effects directly to achieve objectives. FM 100-5 identifies six engagement systems that operate directly to achieve the force's objectives: reconnaissance, surveillance, and intelligence (combined as RSI), information dominance, maneuver, fire support, air defense, and mobility and survivability. Integrating systems, usually C^2 and CSS organizations, enable the application and orchestration of the engagement systems (see Appendix B for a more detailed description of engagement and integrating systems).[34] In stability and support operations that distinction blurs in that systems associated with integrating combat operation may apply their effects directly to achieve operational objectives. The framework of engagement and integrating systems presented in FM 100-5 provides a connection between the current Army force structure and the architecture of the new doctrine. Though general in its description of these operating systems, it readily translates into the reality of today's army. Furthermore, should new technologies induce a radical change to operating system framework, a complete revision would have little effect on the rest of the functionally

oriented basic doctrine. In this way, the structural design of FM 100-5 provides a mechanism for applying significant technological advances to its overall concept of operations. To provide mission oriented context to its structural system of core functions and operating systems, the new doctrine adds a further framework: categories of operations.

Categories of operations. A key element of FM 100-5's operational concept rests on thinking in terms of four categories of operations: offensive, defensive, stability, and support. It advances the idea that commanders can accomplish all potential missions through crafting the proper combination and proportion of these categories of operations. The key features in this structure are the distinctions between the categories of operations, the internal structure that defines them, and their role in describing the Army's operational concept.

The distinctions between the categories of operations are based on the use of military power. Offensive operations carry the fight to the enemy. They are the decisive form of warfare, the ultimate means of imposing the commander's will on the enemy. Defensive operations are those undertaken to cause an enemy attack to fail. Alone, they achieve no decision and must be combined with, or followed by, offensive action. Stability operations apply military power to influence the political environment, facilitate diplomacy, and disrupt specified illegal activities. They include both developmental and coercive actions. Support operations provide essential supplies and services to assist designated groups. They are conducted mainly to relieve suffering and assist civil authorities responding to crises without an active adversary.[35] In presenting these categories of operations the new doctrine uses a flexible internal structure to organize its discussion.

FM 100-5 defines and describes each category of operation through a common set of internal structures. This organization of thought provides discipline in promulgating an explanation of, and guidance for the conduct of, real world operations. The new doctrine's individual discussion of offensive, defensive, stability, and support operations share (as applicable), these elements: a description of the operation's execution imperatives, an explanation of how to plan and execute the operation in the context of

a comprehensive conceptual framework, a description of the specific subcategories of the operations, a definition of the various forms of offensive maneuver, and a description of the likely phasing of the operation. These elements are, in fact, a set of substructures to enhance regularity and thoroughness in the design and conduct of Army operations. A brief synopsis of these substructures, with selected examples of each, illustrates the utility of the basic doctrine's design.

The manual describes a set of imperatives for each category of operation consisting of a set of general rules to apply in combining core functions and operating systems. For example, the following six imperatives provide guidance for the commander in conducting offensive operations:

(1) Place the defender in a weak condition and position.
(2) Attack weakness, avoid strength.
(3) Strike with extraordinary violence.
(4) Press the fight--never let the enemy recover from the initial blow.
(5) Designate, sustain, and shift the main effort.
(6) Plan for and resource the exploitation[36]

The manual expands on each imperative to provide broad guidance to help plan and execute attacks. These imperatives give general direction in design and execution and establish the doctrine's approach to each type of operation. The next substructure gives further guidance in somewhat greater detail.

The development team developed a comprehensive conceptual framework to organize its guidance for the conduct of all categories of operations across the depth of the area of operations.[37] To help organize thought in designing and executing operations, the team identifies the following areas:

(1) Close Operations
(2) Deep Operations
(3) Reconnaissance and Security Operations
(4) Reserve Operations
(5) Rear Operations[38]

The general nature of these categories are similar for each category of operation, however, the new doctrine defines key distinctions for each. Comparing offensive close operations to stability close operations illustrates the point:

Offensive operations: Close operations aim at the immediate and decisive defeat of committed enemy forces. Main and supporting attacks strike forces defending assigned objectives. Close operations normally decide the outcome of an attack.

Stability operations: Close operations deal with the immediate problems of achieving and maintaining stability. This does not imply that they have an instantaneous impact. Commanders must often execute close operations repeatedly over long periods of time for their effect to take hold. Typical close operations include initial separation of belligerents, patrolling sensitive areas, guarding facilities, training forces, and site monitoring.[39]

The framework established for each type of operation provides a simple, complete foundation for the doctrine to articulate guidance for planning and execution. The next substructure provides a for a more specific interpretation of the categories of operations.

For offensive, defensive, stability, and support operations the new doctrine defines and illustrates specific categories (subcategories) of the operation. The identification of these types of specific operations helps to visualize the progression and character of the overall activity. Commanders and planners may combine and apply these types simultaneously or in sequence. They form the building blocks for planning and apply to all phases of the operation. A comparison of the types of defensive operations and of support operations gives an indication of various types:

Types of Defensive Operations	**Types of Support Operations**
Mobile Defense	Humanitarian Assistance
Area Defense	Environmental Assistance
Retrogrades[40]	

The distinctions between subcategories of operations come from either their purpose, such as the difference between humanitarian and environmental assistance, or the manner in which they are executed, such as the difference between mobile and area defenses. The division of the main categories of operations into subcategories helps planners conceive and plan complex operations that change emphasis and direction over time. Offensive operations are typically very complex and require an additional set of ideas.

The breakdown of the main categories of operation into forms of maneuver applies only to offensive operations. The new doctrine defines maneuvering as "to gain an advantage over the enemy and to close with and destroy him."[41] It defines, describes, and illustrates five types of maneuver: envelopment,

turning movement, penetration, frontal attack, and infiltration.[42] Attacking forces often use combinations of these forms in complex offensive operations. For example, one echelon of the force may attack frontally to fix a portion of the enemy force while another is making an envelopment to trap and destroy it.

The last framework within the new doctrine's discussion of the categories of operations addresses the changing nature of major operations as they progress. For offensive, defensive, and support operations (not applicable to stability operations), the doctrine describes the expected progression of phases. For example, the four sequential phases of offensive operations are: preparation, attack, exploitation, and pursuit (see Appendix C for further description). This pattern is flexible by design. The length and nature of each phase will vary based on the overall situation. The development team expects few categories of operations to move neatly through the phases in the sequence listed. In fact, operations may move back and forth between phases, phases may flow into each other with no clear break, or an operation may even skip entire phases. Additionally, all subcategories of operations may apply to each phase of a main type of operation. For example, a company team may conduct a hasty attack (a subtype of offensive operation) as part of a division pursuit (the fourth phase of offensive operations).[43] Despite the anticipated flexibility in practice, the development team recognizes that each phase poses significantly different challenges and the doctrine creates an adjustable conceptual template to frame its discussion and organize planning and execution. The situational relationship between phases of operations is similar to the interrelationship between the main categories of operations themselves.

The categories of operations are a key feature in describing the Army's operational concept. FM 100-5 uses the offensive, defensive, stability, and support categories of operations as building blocks within a framework that encompasses the complete spectrum of operations. It describes the character of an operation by the proportion of activity these categories represent. The doctrine explains this approach from the perspective of unit size and shifting emphasis of the operation.

The size of the tactical unit determines its ability to perform different categories of operations simultaneously and in varying proportions. A large unit not only has quantitatively more resources to

prosecute different categories of operations at once, but also is made up of subordinate units of varying operating systems that are organized and equipped to perform tasks applicable to specific categories of operation. The manual gives the following example of the operational capability of a large unit:

> A corps conducting offensive operations may find several brigade sized units engaged in offensive operations [varying proportion and emphasis] while the rest of the corps conducts defensive operations. Some of its other units may be conducting support operations to aid battlefield refugees.[44]

Doctrinally, this corps is prosecuting operations by varying proportions of offensive operations, defensive operations, and support operations. Conversely, a smaller unit lacks the resources and variegated subordinate units of larger units and likely maintains a narrower operational focus:

> A division conducting a mobile defense, for example, may employ one brigade to conduct delaying actions (defensive), and two brigades to strike the decisive blow (offensive operations). On the other hand, a company team in the attack will often employ all assets in the offense.[45]

This example illustrates the varying proportions of the categories based on the unit's size. In short, the size of the unit, from corps to platoon, affects its ability to perform different categories of operations simultaneously and, by extension, its scope of operations (see Appendix D, Level of Command and Weight of Effort). The changing proportion of activity associated with the categories of operations can describe the operational orientation of tactical units at a given time, however, its greatest utility comes from applying this idea to the Army's operational concept.

A key feature of the new doctrinal architecture is the connection it makes between the Army's basic purposes and the employment of its operating systems. It forges a link from the strategic level missions to tactical level activity. The categories of operations provide a way to translate the Army's operational concept into action. In describing its operational concept, FM 100-5 states: "Army forces accomplish assigned missions [compel, deter, reassure, and support] worldwide by executing offensive, defensive, stability, and support operations."[46] The idea of "shifting combinations" of the categories describes the nature of operations within the doctrinal structure.

FM 100-5 posits that complex operations may involve activity associated with offensive, defensive, stability, and support operation simultaneously. Furthermore, as the operation progresses the proportions of activity, or "shifting combinations," associated with each category will change (see Appendix D, Shifting Combinations). An appreciation of proportion of activity associated with each category provides insight to the operational emphasis. Moreover, it is a useful concept in planning and executing the operation within the context of the greater doctrinal architecture. The new doctrine uses two very short examples to illustrate the concept of shifting combinations across the spectrum of operations:

> Operation DESERT STORM in Iraq and Kuwait in 1991 was offensive in the main with complementary defensive, stability, and support operations. Operation POWER PACK in the Dominican Republic in 1965 was stability in the main with complementary offensive, defensive, and support operations.[47]

Perceiving operations in this way, as shifting combinations of offensive, defensive, stability, and support operations, allows access to the rest of the doctrine's integrated structure of operating systems and core functions. That set of frameworks is a flexible organization of thought that applies to the missions the Army expects to perform in the post-cold war era.

AFDD-1: Mission Oriented Structure

AFDD-1 uses a single overarching framework to describe the Air Force's concept of aerospace power. Within this framework, several component structures add definition and organization to a broad perception of aerospace power's multiform nature. It makes a translation of current aerospace capabilities into Air Force basic missions. The results of this evolution are broad functional requirements for modern aerospace operations that correspond to current capabilities within the Air Force force structure. More importantly, the new doctrine connects these aerospace capabilities to contemporary national security requirements. In short, it provides a way of thinking about current Air Force capabilities as an instrument of national power. Though it does not provide guidance for the operational employment of aerospace assets, the structure of AFDD-1 forms the basic conceptual model of US aerospace power within the Air Force doctrinal architecture and for its key operational approach. An overview of the AFDD-1's main

framework and a more detailed description of its component structures provide a solid first step in understanding the Air Force operational concept.

The main framework. The development team designed the new doctrine's main framework to explain the unique role of the Air Force in meeting contemporary national security challenges. Stressing its demonstrated worldwide mobility and increasingly precise application of firepower, the team describes aerospace power's unique potential to further national security interests in the post-cold war era:

> Unlike other Services, the Air Force projects power and executes the national military strategy throughout a global dimension. In this global dimension, aerospace power's unique collection of strengths and capabilities make a pivotal contribution in meeting nation security objectives.[48]

Leveraging aerospace power capabilities and reflecting the realities of a new strategic complexion, the doctrine attaches its intellectual moorings to the strategic concept of power projection. The shape of the main framework of the basic doctrine begins to emerge. Its progression of thought unfolds this way:

> Today, after the collapse of the Soviet Union, the substantial reduction in the size of American military forces, and the closing of a large portion of our overseas basing structure, the nation must rely more than ever on a military that is capable of projecting power over vast distance on very short notice. The strategic vision of Global Reach—Global Power provides the architecture for the Air Force's power projection capability.[49]

In this way the Air Force strategic vision of Global Reach—Global Power supports the overall strategic concept of power projection. The structure of AFDD-1 expands upon this relationship.

The main framework of the new doctrine establishes the idea of power projection as the capstone concept with the idea of Global Reach—Global Power providing a translation into Air Force aerospace power. To provide a more detailed functional description of Global Reach—Global Power, AFDD-1 creates a conceptual structure of "core competencies" with integral substructures of "basic missions." Incorporating the immense logistical dimension of modern aerospace power into the doctrine, it describes the entire framework supported by a foundation of readiness and sustainment. The framework goes far to interpret the Air Force view of operations in the aerospace medium as well as its integration of supporting institutions. Appendix F illustrates the doctrine's overall structure and outlines the following overview of

new doctrine's articulation of Air Force core competencies, their associated basic missions, and the foundation of readiness and sustainment.

Air Force core competencies. AFDD-1 creates a conceptual array of five "core competencies" to support its strategic vision. It interprets Global Reach—Global Power as requiring the Air Force to maintain the ability to perform key functions that together command and exploit the aerospace environment to achieve the greater vision of power projection.[50] These core competencies describe a capability that is the result of the "effective integration of platforms, people, weapons, bases, logistics, and all supporting infrastructure."[51] Together the core competencies of air superiority, space superiority, precision employment, information dominance, and global mobility describe US Air Force aerospace power functionally. A closer look at these functional categories adds detail to the overall structure.

Air superiority addresses the requirement to control the airspace associated with any operation. Control of the air enhances freedom of action on land, on sea, and in the air. This idea has two important aspects. First, gaining control of the air secures that medium for exploitation by friendly forces. It greatly enhances the ability to leverage the most potent characteristics of air power. Second, it denies the enemy that same advantage. In most cases air superiority is the key enabler for the operation of all friendly units of all services. As an enabler, however, it is rarely an end in itself but a prerequisite for success. The doctrine stresses the importance of this competency: "Air superiority will not necessarily ensure victory, but success in military operations will certainly be more difficult and costly, if not impossible, without it."[52]

Space superiority is identical in basic concept to air superiority. The new doctrine establishes this core competency as a separate category. AFDD-1 appears to make a distinction between the air and space superiority categories based on the differences in current capabilities to influence each medium rather than a distinction between air and space.

Interpretation of the core competency of precision employment requires some mental flexibility. It is an idea that takes on many forms and is associated with a wide range of Air Force weapon systems and other assets. AFDD-1 defines precision employment as "the ability to employ forces to cause strategic or

operational effects or the employment of forces to affect an event across the range of military operations."[53] Expanding upon this definition, the doctrine considers the "range of military operations" as stretching from high intensity conflict (such as strategic nuclear warfare) to operations other than war (such as disaster relief). Furthermore, the "strategic or operational effects" may vary from the destruction caused by precision guided munitions, to the increased health of a population due to airlifting medical supplies, to space based surveillance of compliance with peace agreements. In short, precision employment encompasses action by aerospace forces that directly progresses toward strategic or operational objectives.

AFDD-1 recognizes the increasing importance of awareness and knowledge of the battlespace in establishing information dominance as a core competency.[54] It defines information dominance as "the ability to collect, control, exploit, and defend information while denying an adversary the ability to do the same."[55] The result of effective information dominance is gaining an advantage in making decisions and communicating with friendly forces.

Global mobility refers to the "timely positioning and sustainment of military forces" and capabilities worldwide.[56] In an increasing continental United States (CONUS) based force, mobility capability makes credible a major part of the "Global" aspect of the Air Force strategic vision. It is significant that the idea is made up of two elements The first is the intuitive movement portion, that is "timely positioning." This element has a time component described in terms such as "rapid" and "very short notice" as well as worldwide range.[57] The second element is that of long range sustainment of forces that provides staying power to the Air Force's global operations.

To increase the precision of its doctrinal vocabulary, AFDD-1 describes its core competencies through a further system of subcategories. These subcategories translate the abstraction of the core competencies into more useful operational terms that the doctrine describes as "basic missions."

Basic missions. Where the core competencies define very general functional requirements to dominate and exploit the aerospace environment, their associated basic missions describe the "broad, fundamental *activities*" the Air Force performs to meet those requirements.[58] In this way, the doctrine

begins to "operationalize" the functional perspective of the core competencies. It is these basic missions that form the building blocks of the Air Force approach to operations (see Appendix G). A brief inventory of the basic missions associated with each core competency shows the connection.

The core competency of air Superiority generated one sub-category: counterair. This sub-category consists of "operations to attain and maintain a desired degree of air superiority by the destruction or neutralization of enemy forces."[59] This basic mission consists of two elements: offensive counterair (OCA) and defensive counterair (DCA). OCA consists of operations to destroy, neutralize, disrupt, or limit enemy air and missile power (including ballistic missiles and suppression of enemy air defenses) as close to its source as possible and at the desired time and place. On the other hand, DCA is synonymous with air defense and is made up of active and passive operations to defend friendly forces, material, and infrastructure from enemy air and missile attack (including ballistic missiles).[60]

Like the air superiority core competency, space superiority spawned a single basic mission: counterspace. AFDD-1 gives the counterspace mission a definition that mirrors that of counterair: "operations conducted to attain and maintain a desired degree of space superiority by the destruction or neutralization of enemy forces."[61] Counterspace consists of both offensive (active measures to destroy or neutralize enemy assets) and defensive (active and passive measures to protect friendly forces).

Precision employment spawned five basic missions: strategic attack, interdiction, close air support, combat search and rescue (CSAR), and special operations employment. AFDD-1 defines each activity. Strategic attack is an offensive operation carried out against enemy vital target sets, designed to achieve a maximum level of destruction and disintegration of the enemy's capacity to conduct military operations. Interdiction consists of operations to divert, disrupt, delay, or destroy the enemy's surface military potential before it can be used effectively against friendly forces. Close air support consists of air operations against hostile targets in close proximity to friendly forces and integrated with friendly fire and maneuver. CSAR recovers distressed personnel during wartime or contingency. Special operations employment refers to the use of airpower operations to conduct the following joint special operations

missions: unconventional warfare, direct action, special reconnaissance, counterterrorism, foreign internal defense, psychological operations, and counter-proliferation.[62]

Information dominance generated the most varied set of related activities. The new doctrine associates seven basic missions with it: counterinformation, C^2, intelligence, surveillance, reconnaissance, navigation and positioning, and weather service. Counterinformation seeks to establish information superiority through control. It has an offensive element (actions to gain control of the information environment by enabling friendly information operations and neutralizing enemy activity) and a defensive element (protecting friendly information operations).[63] The basic mission of C^2 includes planning, directing, coordinating, and controlling forces. It also encompasses the integration of the procedures, organizations, people, equipment, facilities, and communication that enables a commander to exercise command and control across the range of military operations. Intelligence provides clear, brief, relevant, and timely analysis of enemy capabilities and intentions as well as continuing enemy damage assessment. Surveillance is the mission of systematically observing air, space, surface, or subsurface areas, places, persons, or things, by visual, aural, electronic, photographic, and other means. Reconnaissance complements surveillance to obtain information about the activities or resources of an enemy or potential enemy, or about meteorological or geographic characteristics of a particular area. Navigation and positioning provides accurate data regarding location and time in support of the range of military operations. Weather service provides timely and accurate environmental information including both atmospheric and space weather.[64]

Two subcategories emerge from the global mobility: airlift and air refueling. AFDD-1 defines the concept of airlift as simply: "the transportation of personnel and material through the air."[65] The idea suggests speed and global range. Air refueling consists of the capability to refuel aircraft in flight. The significance of this capability relates to its ability to extend presence, increase range, and allows air forces to bypass areas of potential trouble.[66]

Together the core functions and basic missions form a related structure that describes Air Force aerospace power operations as fulfilling functional requirements created by its strategic vision. They describe the operational portion of the main framework. However, a foundation of readiness and sustainment supports this structural system to produce a comprehensive doctrinal architecture.

Readiness and sustainment. The "bedrock" of Air Force aerospace power is in the force's preparedness and ability to execute operations and in the ability to sustain those forces. The ideas of readiness and sustainment form that bedrock foundation.[67] Readiness and sustainment form a distinct, yet integrated part of AFDD-1's main framework. Its role within the overall structure as the foundation reflects its central importance to the entire system and its supporting relationship to the operational elements of the framework. Its placement within the framework completes the comprehensive description of the entire Air Force within the basic doctrine.

The basic conceptual structures of both FM 100-5 and AFDD-1 present the organization of thought these new doctrines develop regarding their overall approach to operations. Though the structures of these basic doctrines are different, the operational concepts they describe is remarkably similar.

CONVERGING OPERATIONAL CONCEPTS

The new basic doctrine of the Army and Air Force, to varying degrees, present their respective service's fundamental operational concept. These operational concepts are the central feature of service doctrine. FM 100-5 represents the importance both services attach to the idea:

> The Army's operational concept is the core of our doctrine. It guides our conduct of campaigns, major operations, battles, and engagements. It establishes how we expect forces to operate at every level of conflict but allows sufficient freedom for bold, creative variations in any situation.[68]

Its operational concept provides the most revealing insight to an armed service's entire approach to operations. Both the Army and Air Force new basic doctrine view combat and non-combat operations from the vantage of their respective operational mediums: land and air. However, aside from the degree of parochialism that those perspectives engender, the new doctrines of the Army and Air Force show a significant similarity in their operational concept. Two key themes arise from the operational concept

articulated in FM 100-5 and from a synthesis of ideas in AFDD-1 and emerging Air Force operational level doctrine: asymmetric force application and force projection. An overview of each doctrine's basic operational concept highlights these key ideas.

FM 100-5: The Army's Approach to Operations

FM 100-5 presents its operational concept by drawing together its system of conceptual structures and describing how they are used to dominate an adversary. Underscoring this concept, it reflects a realization that the Army will conduct nearly all of its operations as worldwide force projection. Together, a description of each of these ideas illustrates the Army's overall approach to operations.

The Army's operational concept. As a preface to describing the key dynamic elements of the Army's operational concept, it is important to touch upon the fundamental principles that guide the design and execution of all Army operations. Two sets of ideas form this guidance: the Army's principles of operations and the characteristics of Army operations. The development team edited together the current version of FM 100-5's "principles of war" and "principles of MOOTW" to present a single set of principles that provide seamless guidance through the range of military operations. FM 100-5 describes the importance and purpose of the principles of operations: "The 11 principles of operations are the foundation of Army doctrine. They instruct and inform our conduct of operations at all levels. There is no priority among the principles. Indeed, they should not be viewed independently of one another, but as a collective whole."[69] A list and definitions of these principles are contained in Appendix E. The characteristics of Army operations (listed and defined in Appendix H) provide guidance indirectly by describing those qualities that lead to success in the current approach to operations. The Army's concept of operations evolved from these sets of ideas. The principles of operations and characteristics of operations can be considered the intellectual origin and foundation of the structures that describe Army operations and an integral part of its operational concept.

FM 100-5 begins its chapter "The Army's Operational Concept" by applying its basic functional structure to the demands of national security: "Army forces accomplish assigned missions worldwide by

executing offensive, defensive, stability, and support operations."[70] Using the core functions as a starting point, it expands the idea by describing the conduct of operations in the dimensions of time and space and in terms of combinations of actions.

The new doctrine transmits a vision of an aggressive, fast paced approach to the conduct of operations. This vision seeks to dominate the dimensions of time and space:

> Army units strike simultaneously throughout the battlespace to control, neutralize, or destroy objectives whose loss disorganizes the enemy and destroys the coherence of his operations. Army units use information dominance, precision fires, superior relative mobility, and full force protection to conduct distributed, simultaneous operations at a tempo and level of intensity enemy forces cannot match. These operations force the enemy into a turbulent, steadily deteriorating situation with which he cannot cope. His ability to conduct coordinated, effective operations is destroyed.[71]

Simultaneous operations and superior tempo dominate the dimension of time. Distributed operations throughout the battlespace dominate the dimension of space. The draft doctrine describes these aggressive operations as "overwhelming" and "unrelenting."[72] It uses three ideas to relate the spirit of the concept: seizing the initiative, maintaining momentum, and exploiting success. Seizing the initiative entails throwing the enemy off balance with overpowering blows delivered simultaneously throughout the battlespace. Maintaining momentum requires orchestrating unrelenting pressure to follow up the battlefield effects rapidly to prevent the enemy's recovery. Exploiting success means following through to conduct all operations necessary to achieve long-term, decisive success.[73] These ideas describe the doctrine's spirit regarding the conduct of operations. The concept of combinations addresses the mechanics of operations.

FM 100-5 advances the idea of creating proper combination of actions and operating systems to generate the combat power required to dominate an adversary. It identifies two aspects of effective combinations: complementary and reinforcing effects, and asymmetric attack.

The first set of combinations, complementary and reinforcing effects, describe a relationship between friendly forces. A complementary combination integrates fundamentally different capabilities to produce an "insoluble dilemma" for the enemy. The commander can craft combinations using the effects

created by operating systems or by their actions. FM 100-5 provides this example of using complementary effects:

> . . . using artillery fires to fix a dismounted enemy while a mounted task force maneuvers against his flank and rear. If the enemy attempts to move to meet the threat to his flank, he risks destruction from long range fires. If he stays put to weather the artillery fires, he risks being encircled and trapped.[74]

It describes complementary action as employing forms of maneuver to gain a decisive advantage and uses the example of combining a supporting effort penetration and main effort turning movement to illustrate the point:

> By attacking the strength of an enemy's position with a strong supporting attack, we compel him to concentrate the bulk of his combat power against a secondary effort or risk having the coherence of his defense ruptured. By simultaneously striking against an exposed flank with a powerful main effort and driving deep to destroy key objectives, we make the enemy decide between several bad alternatives. He can remain in prepared positions and risk being encircled, isolated, and defeated in detail, or he can elect to move and give up the advantages of fighting from prepared positions. Likewise, repositioning forces from the main part of his defense to meet the turning threat exposes the enemy's main defense to penetration.[75]

Using the capabilities of different operating systems in the right combinations leverages a specific operational synergy. The concept of reinforcing combinations takes a different approach.

Reinforcing actions and effects magnify the influence of similar types of systems. The local effect of tube artillery may be reinforced by rockets and mortars. In a more sophisticated interpretation, elements of one type of fire support system may complement another throughout the depth of the battlefield:

> Air power used inside the range of artillery generally reinforces artillery effects. If it is used exclusively to supplement artillery in providing close support, it allows the enemy to approach to artillery range unhurt. However, if the commander applies air beyond the range of his supporting artillery, he complements one element of his fire support system with another to change the complexion of the fight.[76]

Where complementary and reinforcing combinations address the relationships between operating systems in conducting operations, the idea of asymmetric attack addresses the relationship between friendly and enemy forces.

The new Army basic doctrine does not advocate an even fight between its forces and their adversaries. It introduces the idea of asymmetric attack as applying dissimilar capabilities against an enemy or overmatching similar enemy capabilities.

Gaining an asymmetric advantage though dissimilarity entails attacking an enemy with a capability for which it has no response. FM 100-5 sums up the essence of the concept: "This is the exact opposite of fighting fire with fire; it is fighting fire with water."[77] The idea embraces leveraging US technological advantage in military operations. The example its uses is illuminating:

> For example, we may use information operations to paralyze an enemy's artillery fires. If the enemy has no means to counter the electronic warfare assets that prevent him from executing key fire support tasks, he is defeated asymmetrically. His cannons and rockets are rendered irrelevant by a system for which, due to its dissimilarity, he has no counter.[78]

Technology may be key in gaining an asymmetric advantage through exploiting new vistas in military capability, however, it may also enhance the traditional American preference for asymmetry through overmatch.

The new doctrine describes an overmatching relationship as generating and applying power similar to that of the enemy's at a level and in a manner it cannot match. This relatively simple idea has two dimensions. First, it may be a raw quantitative imbalance such as applying a division artillery's worth of firepower against an enemy battery in a counter-battery duel. Second, in a more sophisticated approach, overmatch may achieved by disparity in the capability and agility of friendly and enemy forces. Forces can overwhelm an enemy by applying extraordinary levels of force at a tempo the enemy cannot resist. The significant feature is effect rather than quantity. By leveraging communication and information technology, a commander may achieve the equivalent effect of a division artillery's worth of firepower by combining operating systems, core functions, and tempos. An overmatching advantage can be achieved by striking the right blows, against the right targets, in the right combination, in the right sequence.[79] The intent of asymmetry, achieved through dissimilarity or overmatch, is to conduct operations which the enemy cannot effectively counter.

A force projection Army. The development team built FM 100-5 around the idea of an army anticipating projecting its operations worldwide. It emphasizes the importance of the force projection concept: "It is a central element of US strategy and a dominant pattern of our military operations."[80] Toward that end, the basic doctrine presents a comprehensive description of force projection requirements and the related processes it will use to operate outside the CONUS.

FM 100-5 outlines its projection requirements, emphasizing its reliance on the joint team and its progression of readiness to deploy. While airlift can move some portions of the Army quickly, the doctrine recognizes the time requirements of moving large forces. In a related idea, the doctrine addresses the varying states of readiness of the Total Army (active and reserve components), from forward based units to strategic reserve units, to project power globally. The doctrine's emphasis is on providing the "unified combatant commander's requirement for prompt and sustained combat operations on land."[81]

An important part of meeting the needs of the unified combatant commander revolves around the process of deploying ready forces overseas. The new doctrine describes the process, from mobilization and deployment to redeployment and demobilization of projecting and recovering Army power worldwide. In embracing the immensity of the challenge, it underscores the doctrinal commitment the Army makes to conducting operations around the globe.

AFDD-1: Divining the Air Force Operational Concept

Though AFDD-1 focuses on describing the nature and functional orientation of Air Force aerospace power, its does provide insight to the Air Force's equivalent of the Army's operational concept. Drawing together other elements of draft Air Force doctrine with the new basic doctrine reveals an emerging view of the Air Force's approach to operations. Similar to the Army's concept, this view includes an asymmetric force strategy and an emphasis on force projection.

Asymmetric force strategy. AFDD-1 outlines an operational concept, but does not add detail to the basic design.[82] It is necessary to look outside AFDD-1 to find an adequate doctrinal description of the Air Force way of warfighting above the tactical level. AFDD-2, a totally new draft doctrine document,

describes theater air warfare. It includes a section that describes what it calls "the emergence of new American way of war" as: asymmetric force strategy.[83] It describes this concept as a way to leverage sophisticated military capabilities to achieve national objectives without the cost of traditional attrition and annihilation strategies. The central premise behind asymmetric force strategy is applying US strengths against enemy weaknesses. AFDD-2 interprets US strengths as technological superiority. Though the concept involves the capabilities of the entire joint team, the doctrine emphasizes that airpower is particularly relevant to this new way of war. The strategy suits the post-cold war environment by enabling the US to attack an enemy's strategic centers of gravity at much lower risk to its forces. Asymmetric force strategy has five key components: shaping the battlespace, decisive maneuver, precision employment, controlling the battlespace, and integrated sustainment.

The first step in the strategy, before committing physical resources, is shaping the battlespace. This step entails the use of information to manipulate the conditions under which forces will be employed. The doctrine describes the identification of operational threats and opportunities and other preparation of the information environment as shaping the "virtual battlespace."[84]

Decisive maneuver is the positioning of forces to gain advantage over an adversary in anticipation of an engagement or strike. This function requires rapidly deployable, highly mobile joint forces that can outpace and outmaneuver opposing forces. These forces maneuver in order to transition to precision employment.

Precision employment links the asymmetric strategy directly with the basic doctrine. It refers to the direct application of force to degrade an adversary's will, or the employment of forces to affect an event. This idea applies to both combat and non-combat actions. Precision employment includes the application of force, supplies, or information.

Controlling the battlespace allows for forces in all media (air, land, sea, and information) to operate effectively while denying that same overarching capability to the enemy. It entails freedom of operation for friendly forces to execute decisive maneuver and precision employment as well as secure lines

of communication. Information dominance and control of the electromagnetic spectrum also play a critical role in battlespace control.

Integrated sustainment is the ability to effectively deploy and maintain forces. It includes logistics readiness, facilities, and modernization[85] This concept enables the other functions and is the first prerequisite for sustained asymmetric operations.

AFDD-2 describes the emerging Air Force way of warfighting. It presents a vision of operations that includes joint forces, though its approach leverages the most potent characteristics of Air Force aerospace power.

Power projection: the central doctrinal feature. The nature of modern aerospace power makes the Air Force uniquely suited to project American power globally. AFDD-1 not only embraces force projection, it translates the idea into a description of aerospace capability. The main framework of the doctrine reflects the significance of the idea. Power projection, the Air Force synonym for force projection, is the capstone concept of the new basic doctrinal architecture. The Air Force strategic vision of Global Reach—Global Power linked the worldwide perspective of Air Force aerospace power to national security requirements. AFDD-1 puts power projection in an operational context through its asymmetric force strategy. In the new basic doctrine the idea of force projection is a fundamental, integrating, and driving force in the Air Force operational concept.

The essential elements of the Army and Air Force operational concepts described in the new basic doctrines share a common perspective. The common themes of leveraging US strengths through asymmetric force strategy and of conducting operations from a force projection posture show a remarkable convergence in approach to operations.

ANALYSIS

Analysis of the key structural components of FM 100-5 and AFDD-1 that describe operations and the doctrines' basic operational concepts shows a remarkable convergence of thought from widely

separated starting points. A study of the internal structure and operational concept of the two draft service doctrines produces an appreciation of how different doctrinal structures can describe similar, and ultimately complementary, operational concepts. A review of the key differences in structure and convergence of operational concept gives a preview of trends in future joint warfighting and doctrine.

DIFFERENCES IN STRUCTURE

Taken as a whole, and in their component elements, the basic doctrine structures of FM 100-5 and AFDD-1 reflect different approaches to describing operations. The structural difference between the basic doctrine is evident in three important ways. First, while both use a system of conceptual structures to organize thinking about operations, the focus of each basic doctrine is different which accounts for a part of the structural difference. Second, the variance in the integration of current forces into the structure provides insight to the tactical mechanics of each service's operational concept. Third, the relationship of military operations other than war to combat operations reflects the doctrinal emphasis on the range of military operations.

Differences in Focus

FM 100-5 stresses fighting and winning. It is "the Army's keystone warfighting manual."[86] In establishing the Army's operational doctrine, it presents an official interpretation of operational art and a basic tactical description of how the Army fights. However, beyond warfighting, it also presents a comprehensive approach to all Army operations. This focus produces a functionally oriented set of three interrelated frameworks to support its operational perspective: core functions, operating systems, and categories of operations. The nature of the relationship between these conceptual structures illustrates the point.

FM 100-5 begins with a structure that describes the most fundamental military functions: see, shape, shield, strike, move. It links those core functions to a generic description of its current force structure in its framework of operating systems. The new doctrine establishes a relationship of core function to operating system as function is to tool. The third structure integrates the first two in an

operational context, establishing more specific functional relationships based on the nature of the operation. The structure of categories of operations provides a way to operationalize the abstract core functions and creates a forum for setting guidance regarding the employment of operating systems. In dealing with fundamental military functions, the development team is able to construct categories of operations that, combined in various proportions, can provide guidance for the spectrum of Army operations. Significantly, these structures rest upon a foundation of principles of operations which provide broad guidance in planning and execution across the range of operations, Additionally, the doctrine integrates an assessment of those characteristics of operations that tend to produce success within overall framework. To sum up, in its functional orientation FM 100-5 presents a comprehensive structural system that describes and prescribes how to employ Army forces in major combat and non-combat operations. The new Air Force basic doctrine has a different focus.

AFDD-1 is largely descriptive rather than prescriptive. It is not operations doctrine in the same way as is FM 100-5. It defines its charter, as the basic doctrine of the Air Force, as having two aspects. First, it acts as the foundation of all aerospace doctrine by stating the most fundamental and enduring beliefs which describe and guide the proper use of air and space forces in military action. Second, it provides broad and continuing guidance on how Air Force forces are prepared and employed.[87] The document does provide a foundation for all Air Force doctrine by presenting an official view on the nature of aerospace power and an analysis of key functions and missions, however, it offers little specific guidance regarding the actual employment of air and space forces. What direction the new basic doctrine contains is often so broad as to be difficult to apply operationally. For example, in its entire discussion of the strategic attack basic mission it gives only this guidance: "Whether using aircraft, missiles, or information attack, the enemy's C^2 should always be a target of particular focus in strategic attack."[88] A significant structural indicator of its descriptive orientation is that AFDD-1 provides an interpretation of the joint doctrine's principles of war based on an aerospace perspective as an appendix to the basic doctrine rather than as an integral part of its discussion. It is this lack of employment guidance within the doctrinal structure that

stands in sharpest contrast to FM 100-5. On the other hand, the structure AFDD-1 advances is a truly comprehensive functional description of the Air Force and it translates the Air Force strategic vision into constituent functions and missions. This functional description of the Air Force reflects the true focus of the basic doctrine as a description of aerospace power and how the Air Force supports the US military's force projection strategy.

The emphasis AFDD-1 places on describing Air Force aerospace power explains the second main structural difference it has with FM 100-5, that is in the integration of operating systems into the overall doctrinal structure.

Differences in Integrating Current Forces into the Doctrinal Structure

With a focus on force employment, FM 100-5 links the Army force structure into its framework. Its operating system structure describes the character and purpose of its current forces and puts them in the context of the doctrine's functional scheme. The structure is flexible enough to accommodate the considerable versatility of some units.[89] Ultimately, the purpose of the three main frameworks of core functions, operating systems, and categories of operations is to provide guidance and structured thinking for the employment of Army forces. Conversely, AFDD-1 never mentions an Air Force equivalent of the Army operating systems.

The new Air Force basic doctrine uses a structure and vocabulary consisting of functions and missions to describe Air Force aerospace power. The development team does not address specific weapons systems, such as an F-15E Strike Eagle or C-5A Galaxy, or even a general type of weapon system, such as fighters or transport aircraft.[90] They take this approach for two reasons. First the focus of the new basic doctrine is on functions and does not include the tactical aspects of force employment, so reference to weapon systems becomes an unnecessary layer of detail. Second, the extraordinary versatility of aerospace platforms makes it difficult to associate weapon systems with specific missions, or even core competencies. For example, an F-16 Fighting Falcon can fly three combat sorties per day. On the first sortie it may support ground forces in the close air support basic mission (fulfilling the precision strike core

competency). On the second sortie it can fly a different basic mission associated with precision strike such as interdiction. On the third sortie it may switch, not only basic missions, but even core competencies, and fly a defensive combat air patrol (demonstrating the counterair basic mission of the air superiority core competency). As a practical matter, the employment of specific weapons systems and platforms devolves to a tactical concern and detracts from a conceptual structure based on a broader appreciation of modern aerospace functions.

Differences in Integrating Military Operations Other Than War

FM 100-5 makes an important change from the previous doctrinal structure, and the joint community, in its treatment of MOOTW. The functional structures of the FM 100-5 provide a completely integrated approach to thinking about all Army operations. This approach engenders a perception of a specific operation based on the functional complexion of activities performed rather than on its resemblance to a doctrinal definition. In this way the doctrine allows commanders and planners to interpret the operation and apply guidance seamlessly throughout rapid changes in an operation's nature and complexity. Importantly, this approach reflects an institutional embrace of non-combat taskings as a truly integral part of the Army's concept of operations.

The new Air Force doctrine keeps the conventional joint distinction between warfighting and MOOTW. While it recognizes the powerful contribution aerospace power makes to MOOTW, the emphasis of the basic doctrine clearly is on applying aerospace power to warfare. The functional descriptions of the core competencies allow their interpretation in a MOOTW context. Additionally, all air and space basic missions are adaptable to MOOTW, however, the doctrine establishes a separate framework for MOOTW activities. In keeping with its warfighting orientation, the doctrine bases its distinction of its groupings of typical MOOTW activities based on the potential to engage in combat while executing the operation. Appendix I illustrates the three AFDD-1 doctrinal groupings of MOOTW actions: typical combat operations, typical non-combat operations, and operations that may be either combat or non-

combat. By maintaining this structural distinction, the new Air Force doctrine diverges from FM 100-5 in the structural perspective of MOOTW as incidental to the main focus on warfighting.

The basic doctrine of the Army and the Air Force use different structural approaches to describe key elements of their concept of operations. Beyond the structural differences, however, those concepts converge toward a common vision.

APPROACHES TO OPERATIONS

The first parts of both basic doctrines offer little hope of producing a harmony of thought regarding the conduct of operations. The introduction portions of FM 100-5 and AFDD-1 appear to point to diverging approaches to operations. These sections clearly reflect the perspective of their respective services. Not surprisingly, the contrast is most evident regarding the viewpoint on warfare. The opening rhetorical salvo of FM 100-5 states:

> The Army exists to fight and win the nation's wars. Army forces serve as the primary land combat element serving the nation during joint, multinational, and interagency operations. It is the conduct of sustained land operations, *augmented by air and naval forces*, that forms the core of the nation's ability to dominate an adversary. *Wars are won on the ground. Only the Army can dominate the land.* . . While an opponent might be able to *avoid naval forces or endure punishment from the air*, it cannot ignore land forces on territory in dispute. . . America's Army remains the *strategic force of decision* [emphasis added].[91]

AFDD-1 provides admirable counter-battery fire:

> Early airpower advocates argued for an independent Air Force, in part, because they believed airpower could be decisive and *achieve national security objectives by itself.* It is now clear that *aerospace power is the dominant and decisive element of combat* in the modern world. It can be *supported by surface forces* as well as act to support them. . . Furthermore, aerospace power is *the great enabler* that allows all Services to optimize their contributions to America's national security [emphasis added].[92]

Little evidence exists to suggest that these viewpoints are anything less than sincere. However, despite these differing perspectives the new basic doctrines share key common operational perceptions. The previous overview of the operational concepts articulated by each basic doctrine showed that two key concepts, asymmetric strategy, and force projection, dominate both services' approaches to operations.

Asymmetric Strategy

The Army and Air Force new basic doctrines embrace the idea of gaining a decisive advantage relative to an adversary through applying unique American capabilities and strengths.[93] Though both FM 100-5 and AFDD-1 use the word "asymmetric" to describe their force employment strategy and present a similar interpretation of the idea, a more detailed comparison shows specific points of agreement and tension. Two salient points emerge: the definition of asymmetric force and the doctrinal design of applying air and land forces together within that strategy in joint operations.

As noted earlier, FM 100-5 breaks the concept into two parts: dissimilarity and overmatch. Dissimilarity entails attacking an enemy with a capability for which it has no response. Overmatch suggests an overwhelming imbalance of combat effects. The Air Force approach agrees, to varying degrees, with both ideas of dissimilarity and overmatch. Emerging Air Force doctrine recognizes the first part of the Army definition, dissimilarity, as "applying US strengths against adversary weakness."[94] Furthermore, to achieve this force relationship, it stresses leveraging "sophisticated military capabilities" not available to enemy forces.[95] Ultimately, AFDD-2 asserts that a significant US technological advantage over an adversary results in an asymmetry based on the Army's doctrinal equivalent of dissimilarity. Consistent with its global perspective, it emphasizes this asymmetric force strategy as a way to attack directly enemy strategic centers of gravity, eschewing the purely *quantitative* force oriented overmatch portion of the Army definition. These differences, however, are reconcilable.

Within its idea of two types of an asymmetric force relationship FM 100-5 encompasses the perspective of technological dissimilarity forwarded by AFDD-1. Moreover, the constituent elements of AFDD-1's asymmetric force strategy, shaping the battlespace, decisive maneuver, controlling the battlespace, precision employment, and integrated sustainment translate reasonably well into combinations of FM 100-5 core functions and operating systems.[96] The perspective presented in AFDD-1 differs somewhat from the FM 100-5 idea of overmatch as a feature of asymmetric strategy. Though AFDD-1 does not embrace the concept of a pure qualitative overmatch as the best interpretation of US strength, its

basic approach in applying US strength against enemy weakness can be stretched to fit this concept the in a narrow set of circumstances. However, Army and Air Force thinking do converge as FM 100-5 presents another dimension to its definition of overmatch as using the presumed US technological edge to dictate an operations tempo and mass combat effects that would overwhelm similarly equipped enemy forces. This appreciation of asymmetry neatly fits both services' approaches to operations. Though FM 100-5 and AFDD-1 give different definitions to asymmetric force strategy, the common features of the underlying appreciation of the idea of technological asymmetry show a trend toward a general agreement in the services' basic approach to future operations.

Applying ground and air forces jointly as part of an asymmetric force strategy is built in to the conceptual structures of both new basic doctrines. In pursuit of asymmetric force application, FM 100-5 prescribes forming the proper combinations of actions and systems to dominate an adversary. As part of these combinations, airpower touches several operating systems. Incorporated into the fire support engagement system, combat power contributed by the Air Force (as well as Navy and Marine Corps) falls into the category of air support (FM 100-5 makes a further distinction as air support and interdiction). In the air defense engagement system airpower is treated as a partner in the overall joint air defense system. Indirectly, aerospace power figures in the RSI engagement system as spaceborne and airborne RSI component systems and in the C^2 integrating system in satellite communications and airborne C^2 assets.

AFDD-1 recognizes the Air Force contribution to ground operations as part of the joint team. Its structure of basic missions link reasonably well into the doctrinal structure of FM 100-5. The new Air Force doctrine's definition of the basic missions of close air support and interdiction meshes perfectly within the FM 100-5 air support concept. Its definition of the counterair basic mission complements the Army doctrine's concept of the air defense engagement system. The basic missions of intelligence and C^2 support the Army's RSI engagement system and C^2 integrating system. Though fundamentally different in some important respects, the conceptual structures of FM 100-5 and AFDD-1 provides a way to translate common ideas between their doctrinal architectures in support of a similar strategy of force application.

The services' commitment to force projection also results in cooperative approaches to worldwide operations.

Force Projection

Both FM 100-5 and AFDD-1 embrace the idea of force projection as a central strategic feature of US military posture. Ultimately, the two doctrines complement each other to produce a foundation of cooperation in joint force projection. However, they present slightly different perceptions of the complexion of force projection operations.

The new Army doctrine includes force projection as a feature of all operations. The development team considered current and emerging technology, national strategy, and the domestic and international environments in determining the dominant strategic requirements for the Army. First among them is force projection.[97] The new doctrine presents a perspective of force projection as an escalating series of major force deployments augmented, if possible, by forward based forces.[98] Additionally, it presents the associated logistical sustainment effort as a substantial and integral part of force projection operations. That logistical dimension, including transportation, greatly influences the operational reach of force projection, often defining the distance and duration of the operation.[99] Reflecting the increasing reduction in forward basing opportunities, the doctrine emphasizes the essential enabling role of joint (and commercial) strategic lift to the Army's ability to perform its mission: "The US Army's mission is global. Projecting the force anywhere is the world is a joint . . . mission."[100]

Strategic lift is a major part of AFDD-1's doctrinal structure and complements the Army's requirement. However, unlike FM 100-5's perspective it is viewed as a component core competency, not an essential prerequisite for all force projection operations. Reflecting an institutional appreciation for the nature of aerospace power, the new doctrine stresses an inherently global view:

> The unique capability of airpower enables it to strike at the heart of the enemy. . . The range, speed, and versatility of air and space forces allow a truly global perspective in the application of military power, one not constrained by national boundaries, theater requirements, or even traditional warfighting methods.[101]

This perspective regards force projection as a fundamental characteristic, not of contemporary strategic requirements, but of the Air Force itself. It reflects the doctrinal distinction between the core competency of global mobility and the Air Force greater strategic vision of Global Reach—Global Power.

Despite the different perceptions of force projection contained in the Army and Air Force draft basic doctrine, they are ultimately complementary. Where FM 100-5 emphasizes the need for a joint effort in strategic lift as an operational prerequisite, AFDD-1 provides adequate doctrinal support. On the other hand, the Air Force new basic doctrine views force projection as the inherent capability of modern aerospace power that is coincidentally applicable to US national strategy.

CONCLUSION

The new basic doctrines of the Army and the Air Force present similar and complementary operational concepts. Though not identical in every feature and perspective, their approach to asymmetric force application and worldwide force projection converge toward a common view of the trends in modern warfare and in national military strategy. This ultimate convergence of thought, however, emerges from very different doctrinal frameworks.

FM 100-5 and AFDD-1 approach the idea of basic doctrine differently and create different conceptual structures to describe their operational concept. FM 100-5 maintains a prescriptive, functional approach in describing how to employ Army forces to achieve a broad range of potential missions. The resulting doctrinal structures support that approach and provide an integrated progression of ideas describing fundamental functions and fielded systems and employment guidance. In contrast, AFDD-1 is not operations doctrine and takes a more descriptive approach and creates a framework that applies the unique capabilities of aerospace power to the demands of contemporary US security challenges. Though it describes the Air Force operational concept, it restrains from addressing tactical force employment. AFDD-1 establishes a point of departure for emerging operational doctrine and strategic context for tactical doctrine. Though the focus of the doctrinal documents is significantly different they describe similar and complementary operational concepts.

On the most fundamental level the trends in emerging Army and Air Force doctrine point to successful integration in joint operations. In areas where Army and Air Force operations overlap, primarily in tactical and operational levels of conflict, the draft doctrines agree in basic operating philosophy. Doctrinal friction in those levels of operations that does develop will likely deal with details involving coordinating the tactical employment of forces.[102] Interestingly, disagreement on larger issues may develop in areas where Army and Air Force operations do not overlap.

Though not creating specific points of friction in direct comparison with each other, the draft doctrines reflect differences in their services' operational perspectives. FM 100-5 clearly makes its focus on the operational level of conflict, where the Army employs the great majority of its forces. Its perception of itself as America's "strategic force of decision" relies on the relevancy of a major ground campaign: "Wars are won on the ground." In sharpest contrast, AFDD-1 takes a different view of the idea of a campaign in emphasizing the Air Force's well known inclination for independent operations that "bypass traditional elements of military power—enemy land and sea forces—and go straight to an enemy's national will and capacity to continue to pursue goals contrary to US interests."[103] The new doctrines do nothing to reconcile the fifty year interservice debate about independent strategic air campaigning. Interestingly, aside from service oriented hyperbole in the introduction of both documents, the operational concept of FM 100-5 accommodates this direct, strategic level approach. It is not too far a stretch to say that, intellectually, FM 100-5 supports the AFDD-1 concept of asymmetric strategic attack. Even in areas of the greatest potential for friction the fundamental operational concepts of both services share a common vision.

A comparison of the emerging basic doctrines of the Army and the Air Force shows how different doctrinal structures can describe similar, and ultimately complementary, operational concepts. On the most fundamental level the Army and Air Force are converging toward a common appreciation of the nature and conduct of future operations. This basic agreement on operational concept gives reason for optimism in the evolution of joint doctrine and Army-Air Force cooperation in the post-cold war era.

Appendix A

AFDD-1 TENETS OF AEROSPACE POWER

Flexibility: This idea springs from the freedom, speed, and range of maneuver of air and space forces. This quality allows for the aerospace forces to adapt rapidly to changing situations and project massed effects more quickly and more extensively than surface forces.

Versatility: Aerospace forces can prosecute warfare on all levels simultaneously. Flexibility and precision weapons allow strategic, operational, and tactical targets to be attacked in parallel (simultaneously) rather than sequentially. Additionally, many modern combat aircraft have the range, payload, and survivability to attack target sets at all levels of war.

Synergistic: Aerospace power can produce effects far out of proportion to the effort expended in conducting the operation. It can also complement the effects of joint surface forces. Air power attacks on key elements of essential systems can dictate the tempo and direction of the warfighting effort.

Strategic force: Aerospace power is inherently a strategic force. This idea draws from the definition of flexibility applied to the ability to reach over traditional elements of military power and strike at the heart of the enemy by disrupting, disintegrating, or destroying its base of power. Additionally, the global range and freedom of movement of strategic airpower have application in supporting diplomatic efforts, humanitarian action, and other US objectives worldwide. Space forces provide strategic reconnaissance, surveillance, and warning.

Concentration: Airpower can deliver overwhelming power at the decisive time and place. Precision weapons have redefined the Air Force concept of mass in that the relationship between lethal effect and numbers of weapons delivered has changed. Precision weapon capability allows as few as one weapon to destroy a single target.

Centralized control: This method of control allows commanders to focus the effects of aerospace power. Through centralized control commanders can give coherency, guidance, and organization to air and space operations.

Offensive employment: Airpower is inherently an offensive weapon. The defensive application of airpower tends to be less efficient and effective than that of the offensive. The optimal use of airpower centers on its offensive application throughout the spectrum of warfare. Space is not currently used to project offensive power directly, therefore the doctrine uses the term "airpower" when discussing the direct application of force.

Persistent: Airpower does not have to remain in proximity to enemy forces to deliver desired effects. However, repeated operations may be required to ensure targets are kept out of action for the desired time period or to deny the enemy the initiative. Persistence suggests continued efforts.

Technology related: Aerospace power is integrally related to technology. More than any other service the Air Force must rely on technology to keep it on the cutting edge of its potential.

Information: Computer and communication technology have made information superiority a strategic component of warfare. The side which can gather, understand, and control information, and deny the same to the enemy, can gain a significant advantage.

Condensed from AFDD-1, 2-4,

Appendix B

FM 100-5 Operating Systems

FM 100-5 defines an operating system as "the aggregate of soldiers, equipment, material, and procedures organized as an entity to perform the core functions." The term operating system is broad and applies to all Army organizations in the field, in all types of operations. Further definition comes from the distinctions in the two categories the doctrine makes for operating systems: engagement systems and integrating systems.

Engagement Systems

The **reconnaissance, surveillance, and intelligence** (RSI) system is used to see the enemy, terrain, and other aspects of battlespace that will affect friendly operations. It employs technical assets, human sources, and force to discover and test the enemy's organization, disposition, strength, and intent. Technical assets rely primarily on signals intelligence, photography, seismic and sensor acquired data, and radar. Human resources rely mainly on reports submitted by patrols, special operations forces, and long range surveillance detachments. Force seeks to compel the enemy to react to direct attacks (reconnaissance in force), fire strikes (reconnaissance by fire), feints and demonstrations. A critical part of the RSI system is understanding how the enemy employs its RSI, and learning to counter it.

Information Dominance systems magnify our combat power and diminish the enemy's. A key information dominance function is confusing, disrupting, or paralyzing the enemy's ability to apply his engagement systems. The information dominance system may be employed in a passive or active manner. Typical actions include jamming, signal. Information dominance systems are normally used to complement other non-lethal and lethal assets.

The **maneuver** system is made up of those forces that employ fire and movement to close with and destroy an enemy. The maneuver system consists of three subordinate systems: dismounted, mounted, and aviation. The dismounted maneuver system uses fire and maneuver to close with and destroy the enemy, seize and hold terrain, and gain information. It is particularly suited to operations in restricted and urban terrain, but is limited by a relative lack of protection against direct and indirect fires, a lack of organic mobility assets, and less robust firepower as compared to mounted systems. It traditionally includes light, airborne, and air assault forces and is the most strategically deployable of the engagement systems. The mounted maneuver system employs a combination of armored, mechanized forces to close with and destroy the enemy, seize and hold terrain, and gain information. The mounted system employs tanks, armored fighting vehicles, and dismounts to form the nucleus of a combined arms team that delivers mobile, protected firepower to create tremendous shock effect, however they are vulnerable in close terrain, require massive amounts of logistics support, and are relatively slow to deploy strategically when compared to dismounted forces. It consists of armor, mechanized infantry, and cavalry. The aviation maneuver system principally employs attack and utility helicopters to apply combat power throughout the depth of the battlespace. Attack aviation delivers antiarmor firepower on short notice against moving formations and can perform direct fire support, reconnaissance and security roles. Utility aviation enables commanders to maneuver dismounted forces rapidly throughout the depth of the battlespace and a full range of critical support to forces including medical evacuation, resupply, intelligence gathering, and command and control.

The **fire support** system provides a wide variety of fires in combined arms operations to defeat enemy forces and support schemes of maneuver. The fire support system incorporates all manner of cannons, rockets, missiles, mortars, air delivered weapons, and naval gunfire. Field artillery is the principal fire support element in fire and maneuver and acts as the integrating point for all other elements of fire support. It provides cannon and rocket fires throughout the depth of the battlespace to suppress,

neutralize, and destroy the enemy. Air support is the combat power provided in support of Army forces by air component assets (Air Force, Navy, and Marine Corps). Air support may come in the form of close air support and interdiction and may strike the enemy throughout the depth of the battlespace. Naval gunfire provides gun and rocket fires to augment ground and air delivered fires. Although not generally as accurate as artillery fires, naval gunfire systems can deliver massive quantities of fires quickly.

The **air defense** system protects Army forces from enemy air attack. It incorporates Army Air Defense systems, air component counterair operations, and unit employment of passive measures and organic weapons in self-defense. It provides low, medium, and high altitude air defense.

The **mobility and survivability** system shapes the battlespace before, during, and after a fight. Mobility operations preserve freedom of maneuver for friendly forces by enhancing friendly mobility and restricting the enemy's. Survivability operations protect friendly forces from the effects of enemy action and natural incidents. The mobility and survivability system centers on combat engineers. Engineers operate as an integral member of the combined arms team to provide a full range of mobility and survivability options. In the offense, they concentrate efforts on mobility. In the defense, they concentrate on countering enemy mobility and protecting friendly positions. The engineering system is also capable of providing some basic services such as power generation and infrastructure repair.

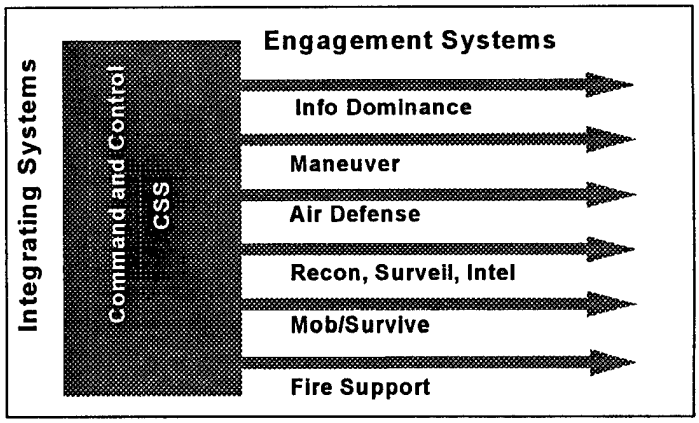
Integrating Systems

The **command and control system** is the means by which commanders orchestrate the actions of supporting and subordinate units as they perform core functions. It is the means by which commanders establish objectives, organize forces, gauge progress or lack of it, and react to setbacks and opportunities. The command and control system includes three basic elements: equipment, organization, and procedures. Command and control equipment includes the full array of communications systems; computers that manage and analyze data, perform battlefield simulations, aid in decision making, and helps produce plans and orders. The organization that serves the command and control system is essentially the command and staff structure. This structure includes permanent and temporary command and staff organizations. Command and control procedures establish the methods by which forces establish mission requirements, collect information, develop and analyze options, make decisions, and communicate those decisions.

The **combat service support** (CSS) system delivers the force to the right place at the right time in the required condition. Once projected, it provides the force with the tools and personnel needed to accomplish the mission. The CSS system encompasses those elements that integrate and provide essential supplies and services to the force in all stages of an operation. All core functions are made possible by sound logistics and administration—CSS provides this enabling capability.

Note: Theses definitions are extracted from FM 100-5, pages II-5-1 to II-5-9

The figure to the right shows the relationship between integrating and engagement systems. It was taken from FM 100-5, page II-5-1.



Appendix C **FM 100-5 PHASES OF OFFENSIVE OPERATIONS**

Preparation phase: The focus of this phase is on Seeing, Shaping, and Shielding. This phase is marked by intensive surveillance, reconnaissance, counter-reconnaissance. The enemy is shaped by conducting information operations, striking with preparatory fires and attacks throughout the depth of the battlespace, and positioning friendly forces to limit his defensive options. Friendly forces are shaped through task organization, positioning, and resourcing.

Attack phase: This phase is dominated by the core functions Strike and Move. The degree of preparation determines the nature of the attack. Whether hasty or deliberate, successful attack depends on speedily following preparatory actions with the maximum possible shock and violence.

Exploitation phase: This phase is dominated by the core functions Move and Strike. The purpose of exploitation is to take advantage of and make permanent the temporary effects of battlefield success. The ultimate objective is disintegration of the enemy force.

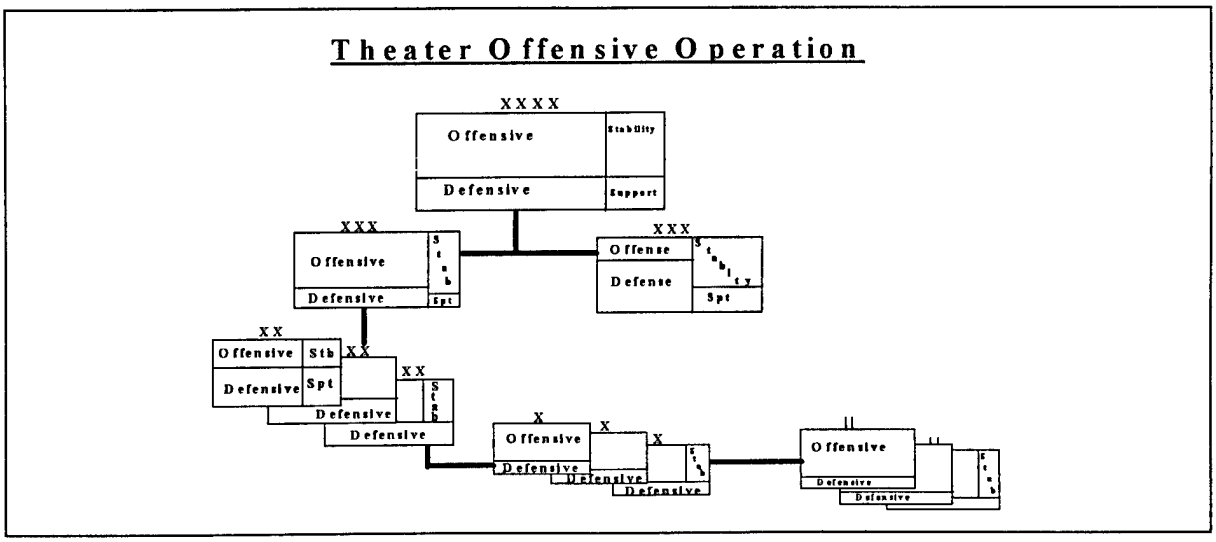
Pursuit phase: This begins when an enemy force breaks down entirely and is vulnerable to complete destruction. Like the exploitation phase, pursuit is dominated by the core functions Move and Strike. Operations in this phase are characterized by rapid shifting of units, round-the-clock movements and hasty attacks. To maintain contact with a fleeing foe, agility and initiative are at a premium. Planning for the pursuit phase must account for the requirement to defend temporarily in preparation to continue the pursuit, or consolidate gains.[104]

These descriptions are extracted and condensed from pages IV-1-25 to IV-1-28.

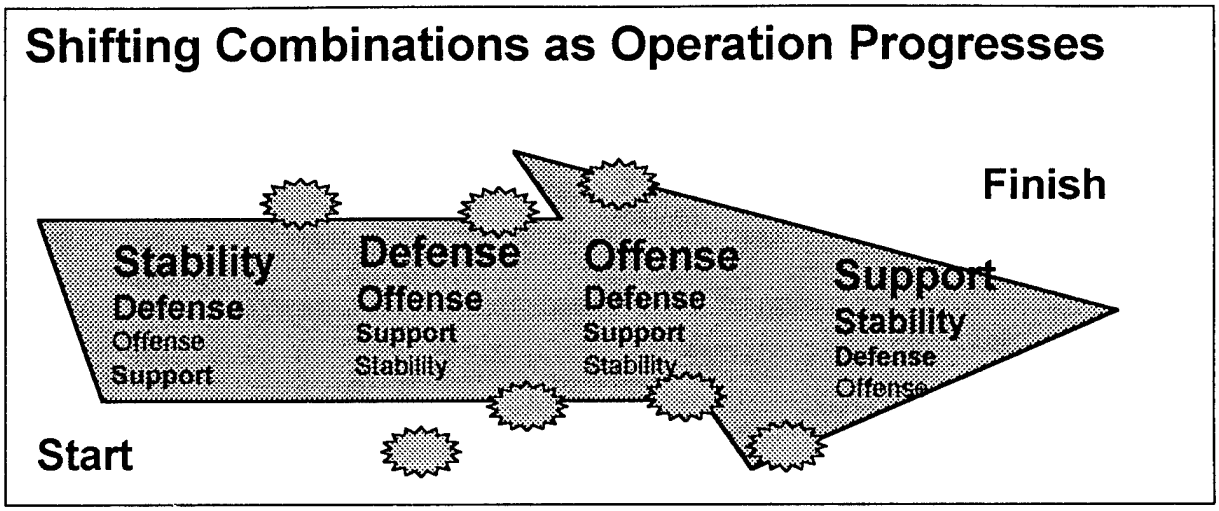
Appendix D

LEVEL OF COMMAND AND WEIGHT OF EFFORT AND SHIFTING COMBINATIONS

Level of Command and Weight of Effort



Shifting Combinations



FM 100-5, IV-overview-3 and IV-overview-4.

Appendix E

FM 100-5 Principles of Operations

OBJECTIVE
Direct every military operation toward a clearly defined, decisive, and attainable goal.

OFFENSIVE
Seize, retain, and exploit the initiative.

MANEUVER
Place the enemy in a position of disadvantage through the flexible application of combat power.

MASSED EFFECTS
Mass the effects of combat power in a decisive manner in time and space.

ECONOMY OF FORCE
Employ all combat power available in the most effective way possible; allocate minimum essential combat power to secondary efforts.

SURPRISE
Achieve effects disproportionate to the effort by taking unexpected action.

UNITY OF EFFORT
Achieve common purpose and direction through unity of command, coordination, and cooperation.

EXPLOITATION
Take advantage of and make lasting the temporary effects of battlefield success.

SECURITY
Never permit an enemy to acquire an unexpected advantage.

MORALE
Build, maintain, and restore fighting spirit.

Airmindedness and the Principles of War

OBJECTIVE
Direct military operations toward a defined, attainable objective that contributes to strategic, operational, or tactical aims.

OFFENSIVE
Seize, retain, and exploit the initiative.

MANEUVER
Place the enemy in a position of disadvantage through the flexible application of combat power. Not required to achieve mass

MASS
Concentrate combat power in a decisive manner in time and space. Mass is an effect, not a quantity

ECONOMY OF FORCE
The rational use of force by making use of all combat power; allocate minimum essential combat power to secondary efforts to ensure overwhelming combat power is available.

SURPRISE
Gain advantage by attacking the enemy in an unexpected time, place or manner.

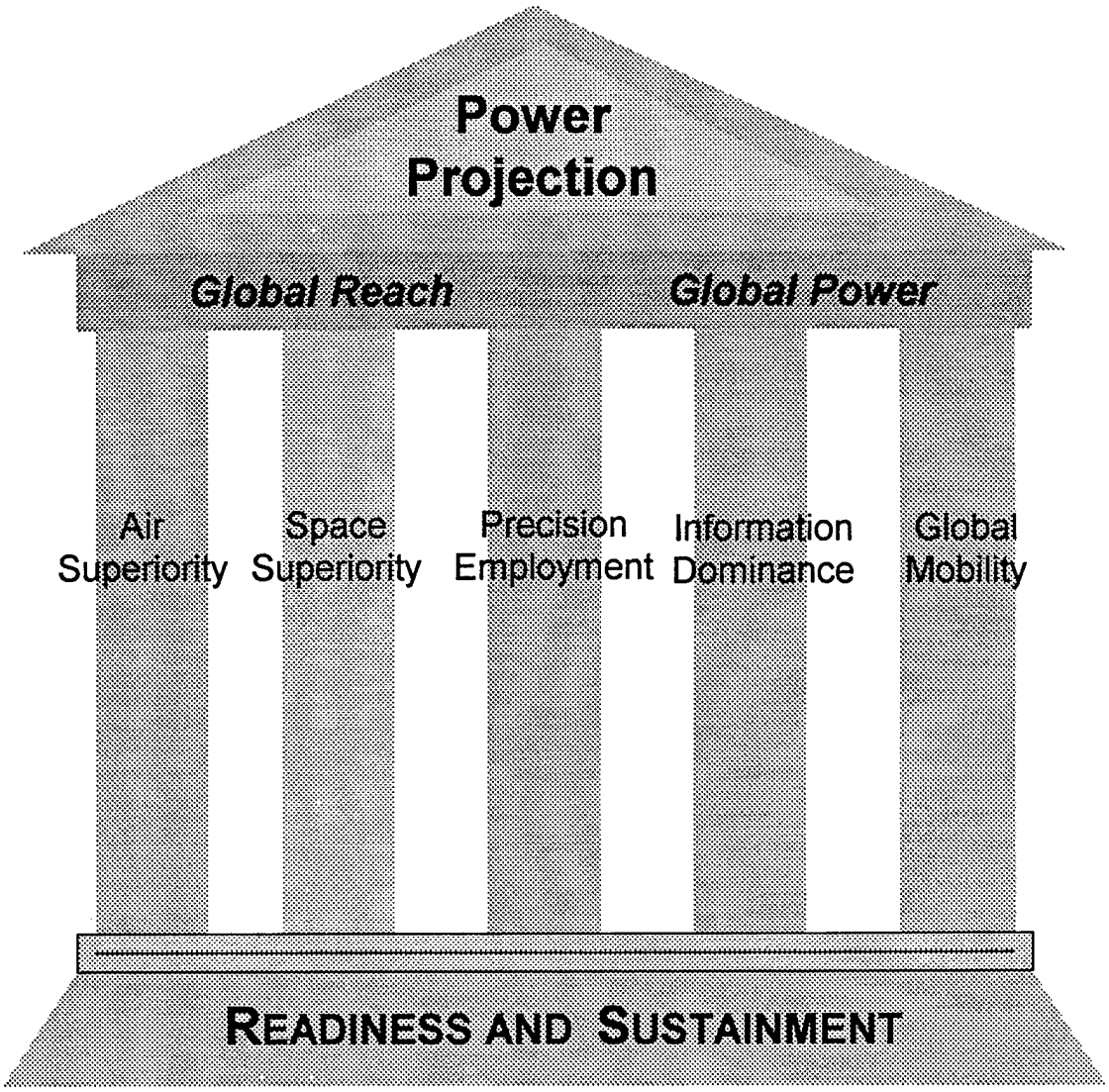
UNITY OF COMMAND
Achieve unity of effort for every objective under one responsible commander; all efforts should be directed and coordinated toward a common goal.

SECURITY
Protect friendly operations against the enemy gaining an unexpected advantage

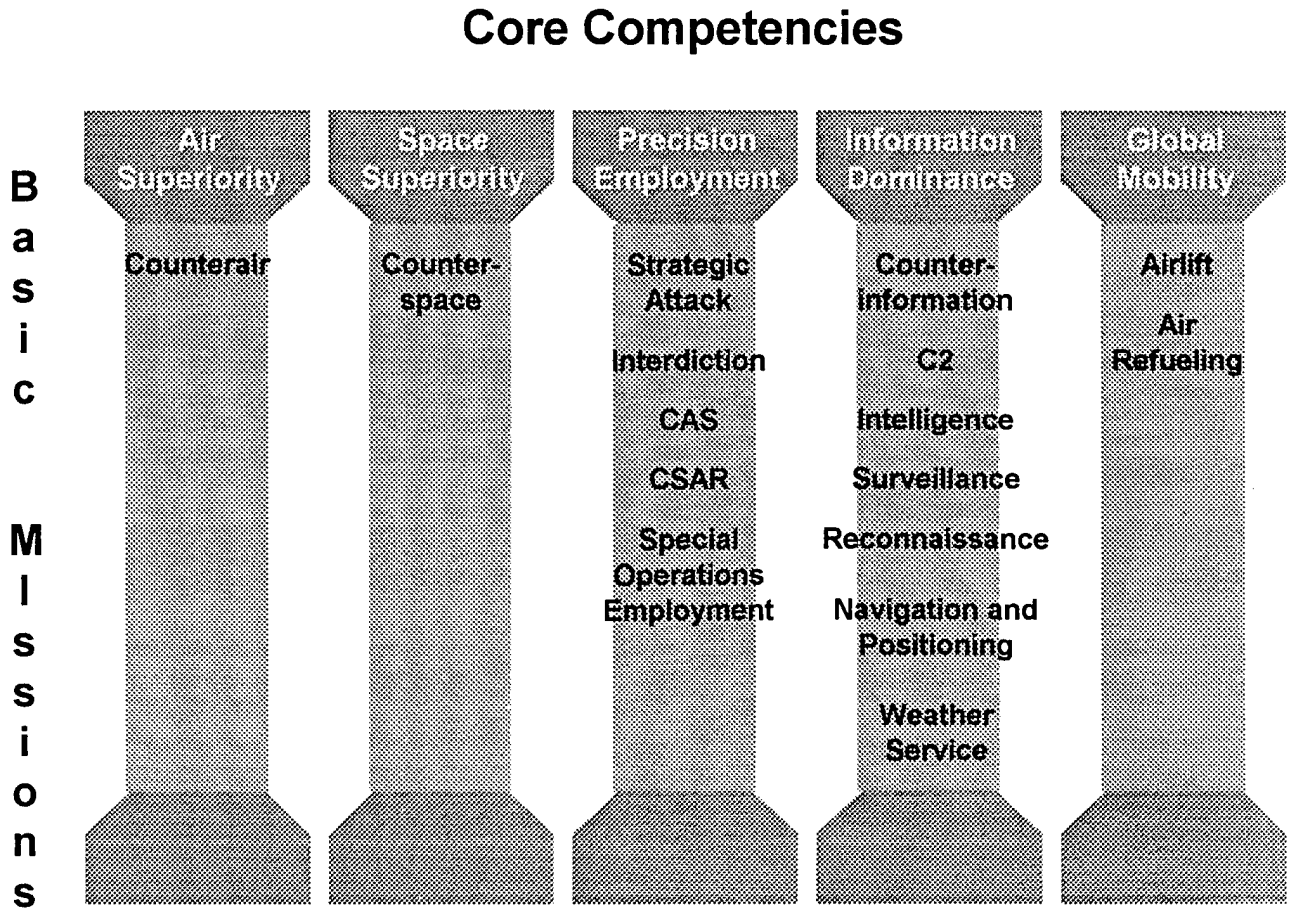
Condensed from FM 100-5, II-2-2 to II-2-8 and AFDD-1, Appendix A.

Appendix F

AFDD-1 Main Framework



Reconstructed from AFDD-1, figure 2.1.



Adapted from AFDD-1, figure 3.1.

Appendix H **CHARACTERISTICS OF ARMY OPERATIONS**

INITIATIVE

Initiative sets or changes the terms of battle by action and implies an offensive spirit in the conduct of all operations.

AGILITY

Agility is the ability to act and react faster than the enemy. It is a prerequisite for seizing and holding the initiative.

DEPTH

Depth is the extension of operations in time, space, resources, and purpose.

ORCHESTRATION

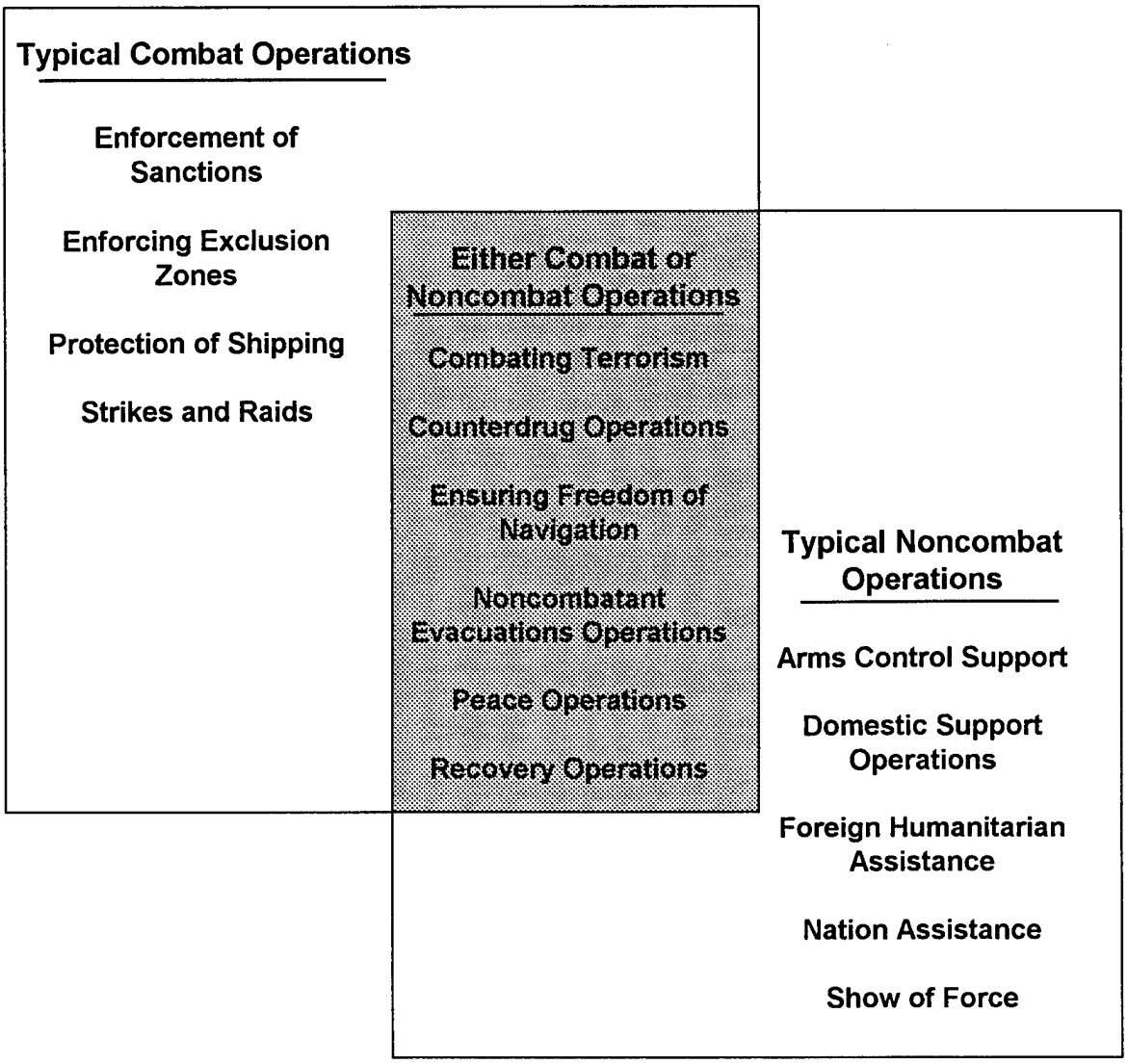
Orchestration means to arrange, develop, organize, or combine to achieve a desired or maximum effect. Operationally it means applying the *right* mix of forces using the *right* degree of control, operating at the *right* tempo, at the *right* level of intensity to accomplish assigned missions. Orchestration *includes* synchronization, the means by which commanders mass decisive combat power effects. Commanders synchronize the complementary and reinforcing effects of all military and civilian assets to overwhelm opponents at decisive points.

VERSATILITY

Versatility denotes the ability to perform in many roles and environments, conducting the full range of operations.

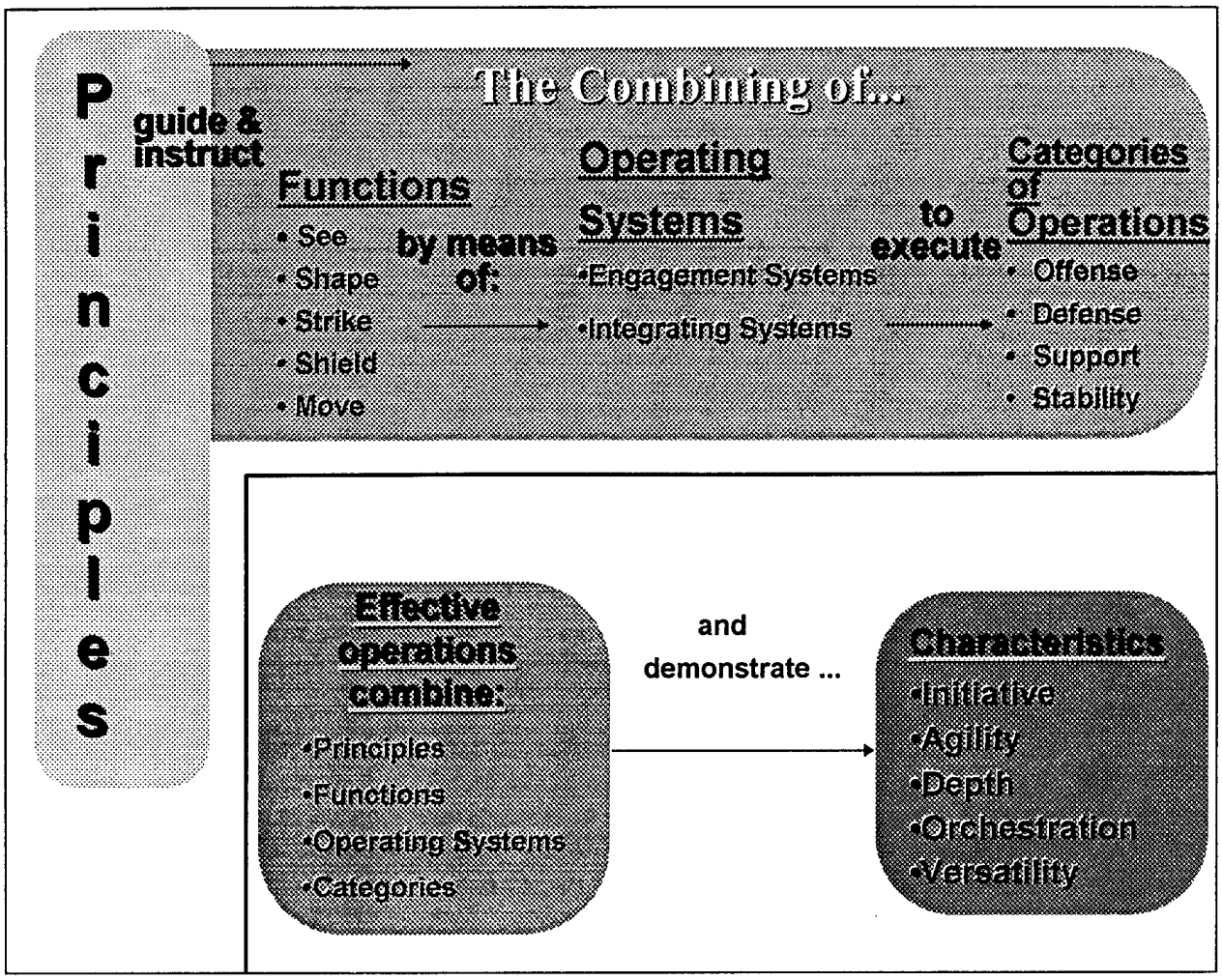
Condensed from FM 100-5, II-3-1 to II-3-7

Appendix I AFDD-1 Military Operations Other Than War Framework



Reconstructed from AFDD-1, figure 1.1.

Appendix J **FM 100-5 OPERATIONAL CONCEPTUAL FRAMEWORK**



Adapted from FM 100-5, II-overview-1.

ENDNOTES

[1] Robert A. Doughty, "The Evolution of US Army Tactical Doctrine, 1946-1976," Leavenworth Papers no.1 (Ft Leavenworth, KS: Combat Studies Institute, US Army Command and General Staff College. 1979), 1.

[2] Department of the Army, Field Manual 100-5: Operations, (Washington, D. C.: U. S. Government Printing Office, 1993), v.

[33] Department of the Army, Field Manual 100-5: Operations, (Coordinating draft as of 14 January 1997), i.

[4] Department of the Air Force, Air Force Doctrine Document 1, (Second Draft, 21 May 1996), 36.

[5] The Air Force published a new strategic vision in November 1996 under the title "Global Engagement." Its features have not yet been incorporated into the basic doctrine.

[6] FM 100-5 ties all basic doctrine, and by extension all subordinate doctrine, to these four basic purposes: compel, deter, reassure and support. The definitions of each function begin to outline an image of today's Army. The first sentence of the new doctrine underscores the entire document: "The Army exists to win the nation's wars." This statement stresses the primacy of the "compel" purpose in the basic doctrine's description of the Army. FM 100-5 puts this idea in perspective: "When all else fails, it [the Army] compels adversaries to yield to our nation's will." The doctrine's recognition of the extremity of armed conflict reinforces the gravity it attaches to warfare. Expanding later in both detail and emphasis, the new doctrine makes clear land warfare remains the central purpose and key defining element of today's Army. FM 100-5 lays the foundation in purpose for an image of strong "strategic force of decision" that protects "US national interests on global scale." Furthermore, success in combat operations not only dominates the focus of the basic doctrine, its approach to warfare forms the organization, force structure and operational pattern for its approach to operations other than war. The "deter" and "reassure" purposes identified by FM 100-5 enhance the view of the Army as warfighting organization. The new doctrine states: "The Army deters others from actions hostile to our national interest..." It links this mission to its warfighting image by adding another dimension of "maintaining a trained and ready force." FM 100-5 outlines the potential for this trained and ready force to extend an element of deterrence, through the national security strategy, to threats upon the interests and security of US allies worldwide. Though the new basic doctrine emphasizes of a highly trained and ready warfighting institution, it clearly embraces operations other than combat. FM 100-5 integrates the "support" purpose with other combat oriented missions to develop a more complex definition of the Army. It describes the Army as supporting "other American government agencies as well as communities within the United States." This description encompasses wide range of potential activities from international peacekeeping operations to domestic disaster relief.

[7] FM 100-5, I-2-11 to I-2-12. No further definition given beyond the basic pattern.

[8] FM 100-5 (draft), II-1-2 to II-1-3. The ideas of seize the "initiative," "maintain momentum," and "exploit success" are discussed on page 28.

[9] Complementary and reinforcing effects and asymmetric advantage are addressed in detail on page 30.

[10] See Appendix E for a definition of "Principles of Operations" and Appendix H for "Characteristics of Army Operations."

[11] The core functions are described in detail on page 11.

[12] FM 100-5 (draft), i.

[13] FM 100-5 (draft), III-1-2 tc III-1-11. The complete list follows (FM 100-5 discusses each topic in detail):

The Characteristics of Command	**The Imperatives of Command**
Leadership	Teamwork
Professional Knowledge	Common Doctrine and Training Standards
Vision and Intellect	Control
Judgment and Initiative	Delegation of Authority
Courage and Resolve	Allocation of Resources
Self-confidence	Timely Decisions and Action

The Ability to Communicate
Integrity and Example

[14] FM 100-5, II-4-6 to II-4-8.

[15] FM 100-5, III-4-8. Operational reach is the potential distance and duration in which commanders can successfully employ our military capabilities. It reflects the operating ranges and endurance of combat, combat support, and combat service support capabilities. Operational reach is influenced not only by the relative combat power of opposing forces, but also by logistics capabilities, the length, efficiency and security of their lines of communication, and the effectiveness of the distribution system that operates along those lines of communication. If military operations extend beyond our operational reach, then culmination ensues.

[16] Discussed in detail on page 15.

[17] Each element of the battlefield framework is defined within the context of its respective type of operation.

[18] FM 100-5 (draft), V-3-3. The definition of information environment is composed of two parts: "The global information environment (GIE) includes all individuals, organizations, or systems, most of which are outside the control of the military or National Command Authorities, that collect, process, and disseminate information to national and international audiences. The military information environment (MIE) is that portion of the GIE relevant to military operations.

The definition of information dominance (page V-3-7) is: "the degree of information superiority that allows the possessor to use information systems and capabilities to achieve an operational advantage."

[19] AFDD-1 (draft), 1. The definition of aerospace power is: "the effective projection of military power by using manned or unmanned vehicles which are capable of sustained orbit or flight." See Appendix A for a list and description of the aerospace power tenets.

[20] For an expanded discussion of the Air Force concept of Global Reach—Global Power, "Global Reach—Global Power." Air Force White Paper, December 1992.

[21] The core competencies are discussed in detail beginning on page 23

[22] The basic missions are discussed in detail beginning on page 25.

[23] These summaries are condensed from FM 100-5, chapter II-3.

[24] FM-100-5 (draft), II-4-3. METT-TC is an acronym that stands *for Mission, Enemy, Terrain, Troops-Time, and Civilians.* The draft of FM 100-5 adds "Civilian" to the previous edition. The term METT-TC addresses specific aspects of the overall strategic, operational or tactical environment of a given operation.

[25] Battlespace refers to a comprehensive, conceptual view of the operational environment and all factors that influence the success of a military operation. It extends beyond the traditional notions of width, depth and height. It includes portions of the electro-magnetic spectrum, as well as the dimension of time. It also incorporates human considerations: not only soldiers, but also civilian populations -- indigenous peoples in the area of operations, and citizens and families in the United States.

The idea of battlespace is based on perceiving linkages between physical, informational, and moral domains of conflict. In the informational domain, military activities influence the ability to acquire, use, protect, manage and deny enemy use of data and information. This is the realm of the electromagnetic spectrum and information warfare. The moral domain is the domain of perception, ideas, beliefs and commitment. It is in the moral domain, where we shape the will of an adversary, that military operations are ultimately won or lost.

The dimensions of battlespace are time, space, and activity. The time dimension addresses current and future operations in terms of timing, tempo, orchestration, and phasing. The idea of space imparts a conceptual view of space that encompasses the entire physical volume where friendly and enemy systems can influence the success of a military operation. This idea is operationalized by assigning a geographical area (e. g., Area of Responsibility, Theaters of War, Theater of Operations, and Combat, and Communication Zones) within which a commander has authority to plan and conduct operations. The key ideas in concept of the dimension of activity encompass the organization of military activities in the battlespace such as campaigns, major operations, battles and engagements, and operational frameworks. See FM 100-5 (draft), III-2-13 to II-2-20.

[26] FM 100-5 (draft), II-4-7.

[27] FM 100-5 (draft), II-4-10.

[28] FM 100-5 (draft), II-4-11.

[29] FM 100-5 (draft), II-4-12.

[30] FM 100-5 (draft), II-4-12.

[31] FM 100-5 (draft), II-4-1.

[32] FM 100-5 (draft), II-4-1.

[33] FM 100-5 (draft), II-5-1.

[34] See Appendix H for a definition of "orchestration."

[35] FM 100-5 (draft), IV-1-1. Condensed from the original text.

[36] FM 100-5, IV-1-2.

[37] The development team generalized the previous edition's "Battlefield Framework" of close, deep, reconnaissance and security, reserve, and rear operation to apply to all Army operations.

[38] FM 100-5 (draft), IV-1-1.

[39] FM 100-5 (draft), IV-1-9, IV-3-8.

[40] FM 100-5 (draft), IV-2-12 to IV-2-23, IV-10 to IV-4-11

[41] FM 100-5 (draft), IV-1-21.

[42] No change in definitions from the current edition.

[43] FM 100-5 (draft), IV-1-26.

[44] FM 100-5 (draft), IV-overview-2.

[45] FM 100-5 (draft), IV-overview-2.

[46] FM 100-5 (draft), II-1-1. The text on IV-overview-1 associates the bracketed [compel, deter, reassure, and support] purposes with assigned missions and the categories of operations.

[47] FM 100-5 (draft), IV-overview-2.

[48] AFDD-1 (draft), 10.

[49] AFDD-1 (draft), 11.

[50] AFDD-1 (draft), 42.

[51] AFDD-1 (draft), 11.

[52] AFDD-1 (draft), 12.

[53] AFDD-1 (draft), 13.

[54] AFDD-1 embraces the concept of "battlespace" in a similar way to FM 100-5. It defines it on page 41 as: The commander's conceptual view of the area and factors that he must understand to successfully apply combat power, protect the force, and complete the mission. It encompasses all applicable aspects of air, sea, space, and, and operations. . . Battlespace provides the commander a mental forum for analyzing and selecting courses of action for employing military forces in relationship to time, tempo, and depth.

[55] AFDD-1 (draft), 13.

[56] AFDD-1 (draft), 1 4.

[57] AFDD-1 (draft), 11, 14.

[58] AFDD-1 (draft), 15. My italics.

[59] AFDD-1 (draft), 15. AFDD-1, on page 41, defines the term "air superiority" as: "That degree of dominance in the air battle of one force over another which permits the conduct of operations by the former and its related land, sea, and air forces at a given time and place without prohibitive interference by the opposing force.

[60] AFDD-1 (draft), 16. OCA and DCA definitions are extracted from the original text.

[61] AFDD-1 (draft), 16. AFDD-1, on page 45, defines the term "space superiority" as: "The degree of control necessary to employ, maneuver, and engage space forces while denying the same capability to an adversary.

[62] AFDD-1 (draft), 17-19. These definitions are extracted or condensed from the original text.

[63] AFDD-1 (draft) does not specifically define "information environment."

[64] AFDD-1 (draft), 19-21. These definitions are extracted or condensed from the original text.

[65] AFDD-1 (draft), 21.

[66] AFDD-1 (draft), 41.

[67] AFDD-1 (draft), 23-27. AFDD-1's definition of readiness consists of three main parts: education, training, and evaluation and assessment. Military education is the systematic instruction of individuals

and teams in subjects that will enhance their knowledge of the science and art of war and other military operations. It is distinguished from training by the focus of instruction. Training is the instruction of personnel to enhance their capacity to perform specific military functions and to develop teamwork. Linking education and training to performance, evaluation and assessment are methods to appraise Air Force personnel, plans, units, and systems to determine their true capability and reliability to execute their assigned mission taskings. A well educated and trained force is a prerequisite for achieving the state of readiness required for mission success. The staying power of that force depends on sustainment.

Sustainment includes several missions that provide the ability to create and sustain air and space forces. AFDD-1 breaks this idea down into four parts: logistics, space support, civil engineering, and operational sustainment. The Air Force concept of logistics is complex and multifaceted. It covers the art and science of planning and executing the movement and sustainment of forces. It includes all stages of the research, design, acquisition, development, storage, movement, and maintenance of material; the movement, evacuation, and hospitalization of personnel; the acquisition or construction, maintenance, operation and disposition of facilities; and the acquisition or furnishing of services. Space support consists of operations to deploy and maintain equipment, personnel, and facilities in space. It also covers launching, deploying, and employing vehicles while on orbit. Civil engineering provides and maintains air base infrastructure and other facilities required for air and space operations. The concept of operational sustainment addresses the coordination among forces employed, the transportation system, and the material repair and supply systems to ensure effective logistical support. It can entail a wide range of services such as food, lodging, emergency services, legal, chaplain, medical, environmental and security police.

[68] FM 100-5 (draft), II-1-1.

[69] FM 100-5 (draft), II-2-1.

[70] FM 100-5 (draft), II-1-1.

[71] FM 100-5 (draft), II-1-1.

[72] FM 100-5, (draft)IV-1-4.

[73] FM 100-5 (draft), II-1-1 to II-1-3. Definitions are extracted or condensed from the original text.

[74] FM 100-5 (draft), II-1-4.

[75] FM 100-5 (draft), II-1-4.

[76] FM 100-5 (draft), II-1-5.

[77] FM 100-5 (draft), II-1-5.

[78] FM 100-5 (draft), II-1-5.

[79] FM 100-5 (draft), II-5-6. This discussion is extracted and edited from the original text.

[80] FM 100-5 (draft), V-2-1.

[81] FM 100-5 (draft), V-2-1.

[82] AFDD-1 (draft), 10. The Air Force basic doctrine gives a brief outline of asymmetric force strategy as an economy of force capability to execute the national military strategy. It stressed the compatibility of the strategy with the aerospace power's advantages in time, mass, position, and awareness.

[83] AFDD-2, 10

[84] No further definition of "virtual battlespace" given in AFDD-2.

[85] Department of the Air Force, Air Force Doctrine Document 2, (Fourth Draft, 21 May 1996), 10-11. The definitions of all five elements of asymmetric force strategy: shaping the battlespace, decisive maneuver, precision employment, controlling the battle space, and integrated sustainment are extracted or condensed from the original text.

[86] FM 100-5 (draft), i.

[87] AFDD-1 (draft), 36.

[88] AFDD-1 (draft), 17. This quotation is one of the clearest examples of employment guidance in the document. The rest of the text in this section describes strategic attack as a concept and gives examples of potential target sets.

[89] IV-overview-3 gives an example of the different tasks an infantry company may perform when moving to conduct (a type of offensive operation) as opposed to disaster relief (a type of support operation).

In a related concept that adds a layer of sophistication to the idea of versatility, it pointed out some units, such as CSS formations, may perform identical tasks in those different types of operations.

[90] FM 100-5 does not mention specific weapon systems such as an M-1A2 Abrams tank or M-109A6 Paladin self propelling artillery, however, its description of operating systems (maneuver, fire support, etc.) would translate to an Air Force equivalent of speaking of fighter, bombers, transports, etc..

[91] FM 100-5 (draft), I-1-1 and I-1-2. My italics.

[92] FM 100-5 (draft), I-1-1 and I-1-2. My italics.

[93] Interestingly, both the FM 100-5 (draft) and AFDD-1 (draft) definition of asymmetric force application bear only indirect resemblance to the joint definition of asymmetrical and symmetrical action: "Engagements may be thought of as symmetrical, if our force and the enemy force are similar (for example, land versus land) or asymmetrical if forces are dissimilar (for example, air versus sea, sea versus land). JP 3-0, III-10.

[94] AFDD-1, 10.

[95] AFDD-1 (draft), 10.

[96] The translation requires some imagination and flexibility as correspondence is not perfect. For example, where precision employment translates very well into the core function of striking; shaping the battlespace emphasizes information operations and draws ideas from both core functions of shaping and seeing.

[97] FM 100-5 (draft) I-2-11.

[98] FM 100-5 (draft), V-2-1. This idea includes entry operations (forcible and unopposed) as well as redeployment and demobilization.

[99] FM 100-5 (draft), III-2-9. The definition of operational reach is: "the distance and duration in which we can successfully employ military capabilities." Reach is extended by locating forces reserves, bases, and logistics forward, by increasing the range of weapon systems, and by improving lines of communication.

[100] FM 100-5 (draft), V-2-1.

[101] AFDD-1 (draft), 3. Extracted from the definition of the tenet of aerospace power "strategic force."

[102] The placement of the Fire Support Coordination Line (FSCL) is indicative of the type of currently contentious doctrinal issues that exist below agreement on basic operational concepts.

[103] AFDD-1, 3.

[104] FM 100-5 (draft), IV-1-25 to IV-1-28. These descriptions are extracted or condensed from the original text.

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