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From the Editor

For the US Army, the 21st century began in 1989 when the Berlin Wall fell. No one could predict the magnitude, pace and fundamental nature of the physical and cultural changes confronting the Army over the next eight years. The type and complexity of operations have changed. Training has changed. Doctrine has changed and is changing again.

As the 14th in a series that began in 1905-the second to be published in the post-Cold War era-the upcoming US Army Field Manual (FM) 100-5, Operations, exemplifies the Army's commitment to exploiting change. By articulating the Army's doctrine for how to conduct operations now and in the future, it establishes a comprehensive blueprint that reflects a decade's worth of lessons learned, an assessment of technological progress and time-proven fundamentals and principles. While the new FM 100-5 contains some significant changes, much remains constant.

This issue's writers explore operational doctrine's roots, evaluate changes to FM 100-5 and discuss operational art's importance. Last year's Military Review writing contest winners offer several suggestions for incorporating Force XXI lessons and evolving information-age warfare into emerging doctrine, including the need for force structure modifications that discard traditional, linear battlefield conceptualizations in favor of open-ended, multiple-perspective methods that visualize warfare and develop solutions in nonlinear terms.

Bruce W. Menning provides an overview of operational art's evolution, pointing out that it first appeared during the 1920s in response to the shifting content of strategy, the changing nature of operations and the evolving character of military structures. During the late 1980s and early 1990s, these conditions were once again present, eliciting renewed interest in operational art.

In subsequent articles, authors observe that 21st-century warfare's speed, lethality and complexity require that we hone battle command skills of our best leaders now; adopt a more logical alternative to the current military decision-making process to facilitate rapid decision making; develop initiative so that subordinates can cut through combat's complexities and make decisions that support the higher commander's intent; and retain mission-focused command and control with its inherent decentralization while molding the Army's digital technology and tactical design to support how we fight.

In "The Rommel Myth," Colonel James R. Robinson argues that despite fighting countless battles in the North African desert over two years and cementing his place in legend, Field Marshal Erwin Rommel's failure to blend time, space, means and purpose meant that he failed to meet the challenges of operational art.

In this issue's Almanac, Christopher R. Gabel provides a historical overview of the US Army Command and General Staff College (CGSC) since its austere beginnings in 1882 as the School of Application for Infantry and Cavalry. While chronicling the college's past, he discusses the school's evolutionary changes over the years, bringing us to the 1990s. Colonel William D. Bristow and retired Lieutenant Colonel Robert B. Kupiszewski then profile significant changes under way at CGSC today. Because of the challenges associated with a rapidly changing world and the consequent changes in the way the Army trains and fights, the college's role is even more important.

Military Review's presence on-line is also evolving. While readers can currently access text only for the three most recent issues of the English, Spanish and Portuguese editions through the CGSC homepage at
they soon will be able to select an on-line version that matches the printed edition exactly. Efforts continue to expand the number of available *Military Review* English back issues on the Center for Army Lessons Learned (CALL) Restricted Access Database at <http://call.army.mil/call/homepage/calldb5.htm>.

More important, readers can now access *Military Review*'s back issues, including the Spanish and Portuguese editions, for the first time on a publicly available server at the Army's Freedom of Information Act (FOIA) Electronic Reading Room at <http://leav-err.army.mil/>. Files from the restricted CALL database are being transferred to this site, and an archive will be added. Eventually, English-language issues back to 1924 will be on-line as well as Spanish and Portuguese issues back to 1945. Using the most advanced commercial search and retrieve engine available, readers can scan back issues using both content- and concept-based retrieval methods. This project was made possible by the Army Records Management Program Division within the Office of the Adjutant General, for whom CALL is fielding the Army's FOIA website.

LJH
The New FM 100-5: A Return to Operational Art

by Major Michael McCormick, US Army

Well-conceived and clearly articulated doctrine can instill confidence throughout an army. Therefore, an army's doctrine can have the most profound effect on its performance in war.
- From Deciding What Has to Be Done: General William E. DePuy and the 1976 Edition of FM 100-5, Operations

Successful military organizations change to meet future requirements—wisely during times of peace; quickly during times of war. Part of this "change" certainly includes doctrine. "Doctrine is an approved, shared idea about the conduct of warfare that undergirds an army's planning, organization, training, leadership style, tactics, weapons and equipment."  

The 1998 US Army Field Manual (FM) 100-5, Operations, coordinating draft is ready for distribution and review. During its review, the manual will face both internal and external examination from the Department of Defense and its subordinate agencies. The product of these examinations, along with the resulting "informed debate" should help produce a sounder doctrine.

A key change within the 1998 FM 100-5 is that it offers a more comprehensive approach to doctrine than its antecedents. The 1998 FM 100-5 folds the concepts of war and operations other than war (OOTW) into one-operations. Past FM 100-5 versions failed to address or separated the notions of OOTW and war. The 1998 FM 100-5 maintains that the Army exists to compel, deter, reassure and support. It further asserts that, in order to accomplish these assigned missions, "Army forces conduct four basic categories of operations: offense, defense, stability and support."  

The introduction of the 1993 FM 100-5 marked an era of great change both inside and outside the Army. Despite being touted as an operational manual, the current FM 100-5 adopted a greater strategic focus. "In 1993, fundamental Army doctrine was further broadened when it was extended and linked to the strategic level of war."  

The 1993 FM 100-5's strategic outlook marked a departure from an operational focus that the Army had nurtured over the past decade. An operational focus genesis was the notional adoption in 1982 of an operational level of war. The 1986 FM 100-5 continued this operational focus, introducing and defining operational art as "The employment of military forces to attain strategic goals in a theater or theater of operations through the design, organization and conduct of campaigns and major operations."  

Simply stated, operational art is the ability to link tactical means to strategic ends. Operational art is important because without this linkage, tactical victories may fail to achieve the nation's strategic purpose.

This article examines the development of the 1998 FM 100-5 to determine whether the changes proposed in the 1998 FM 100-5 coordinating draft mark a return to the concept of operational art. The importance of this manual's adherence to operational art's attributes is significant for three reasons:
FM 100-5 drives subordinate manual development.
Army doctrine has traditionally led joint doctrine development.
The Army education system-heavily influenced by FM 100-5-produces soldiers and officers whose long-term impact as future leaders dwarf the five to seven year significance of a flawed doctrinal manual.

Doctrine Overview

Doctrine provides an officially sanctioned framework for common understanding, dialogue, training, learning and action. Doctrine, like a football playbook, is eminently practical. Accordingly, the Army has a long history of tactically focused doctrine. FM 100-5 traces its lineage back to 1905 and the publication of the first Field Service Regulations. Fourteen editions later, we arrive at a "work in progress" that still tries to provide a framework for common understanding of Army operations. Over the past two decades, however, the focus of our principle doctrine has shifted out of the tactical realm. The impetus for this shift was a painful lesson learned from the Vietnam War-you can win every battle and still lose the war.

Let us first examine recent historical trends in doctrine development—specifically from 1976 to 1986. This historical foundation provides a framework from which we then can examine the 1993 and pending 1998 FM 100-5 versions. I will then identify the significant changes-positive and negative-in the 1986, 1993 and 1998 doctrine.

The US Army returned from Vietnam in a shattered state. Not only had it failed to win, it had to accept great change-something a military often finds most difficult. T.E. Lawrence once dryly remarked that "the regular officer has the tradition of forty generations of serving soldiers behind him, and to him the old weapons are the most honored." Change constituted a smaller volunteer force and an equipment modernization program to remedy a decade-long void. The realization that battlefields had become more lethal, as witnessed by the Yom Kippur War, emphasized the need to change from the lessons learned in Southeast Asia. This, along with a growing Soviet conventional threat in Europe, produced a prescriptive and tactically focused doctrine fixated on a forward defense. The 1976 FM 100-5 and the active defense it proposed was important for what was not contained in the manual more than for what was. The preoccupation with firepower, vice the need to address maneuver, set off a strong debate. Like any vigorous debate, the discourse that ensued following the publication of the 1976 manual, was healthy for the Army. An important ingredient missing from that manual was any operational content. The Army seemed so fixated with fighting and winning the first battle, that it forgot the importance of winning the last.

AirLand Battle doctrine, introduced in the 1982 FM 100-5, was an important first step in rectifying the inadequacies of active defense. Professing the necessity of "fighting outnumbered and winning," the manual marked a return to the primacy of the offense and the maintenance of the initiative required to conduct it. The 1982 edition also introduced four tenets of AirLand Battle: initiative, agility, depth and synchronization. A considerable change in 1982 was a move away from the tactical level of war. The manual presented the notion of an operational level of war—the level of war that links the tactical means with strategic ends.

The third level of war concept was not totally new. Echoing the traditional idea of grand tactics, already recognized in 20th century German and Soviet army doctrine, the operational level was something new for the US Army. The operational level of war's inclusion was a difficult but necessary decision. In an
attempt to help solve the "maneuver-firepower" debate that had raged since the 1976 manual, US Army Training and Doctrine Command (TRADOC) Commander General Glen K. Otis directed operational level of war inclusion in the 1982 manual.13 Four years later, the 1986 FM 100-5 sustained the manual's operational focus by introducing the term operational art into our doctrinal lexicon.

Overall, however, the 1986 manual was more "theoretical and general" than its predecessors for these reasons:14

- The Army's focus was extending beyond Western Europe. The recognition of less intensive conflict and the development of light infantry divisions marked this expanding focus.
- The manual could afford to be less specific as it was expected to provide "a long-term foundation for the development of more transitory [and specific] tactics, techniques and procedures."15

The 1982 and 1986 manuals were a distinct change for Army doctrine. Some argue the changes were revolutionary. According to Bill Robertson, a TRADOC Force Design Directorate member, it was the realization that the well-echeloned Red Army could be attacked throughout its depth, that ultimately left the Soviet Union with no conventional military options in Europe.16 In any event, the changes mark a clear shift in doctrinal focus to the operational level of war. "Though changes in national security policy always underlay the changes in doctrine, operations was almost wholly tactically focused until the advent of the AirLand Battle editions of the 1980s."17

The 1993 FM 100-5 resonates with the global social, political and economic changes brought on by the Soviet Union's collapse. In addition to these changes, the 1993 FM 100-5 was further influenced by the lessons of then recent operations in Panama and Southwest Asia, and the impact of emerging technologies. Some of the more significant changes include a greater emphasis on the strategic level of war, OOTW, battlespace, depth and simultaneous attack, commander's intent and conflict termination. Perhaps the most significant change in the 1993 FM 100-5 was a shift in emphasis away from the operational level of war towards the strategic level. This shift to strategic focus, though perhaps not as tangible as others in the manual, is important because of its overarching effect on the entire manual.

Another significant change in the 1993 doctrine was the extension of operations into the strategic realm in keeping with the wide latitude of US military actions permitted by a reduced Soviet threat and the new doctrinal emphasis on joint and combined operations and OOTW.18

A word search of the 1986 and 1993 manuals confirms this shift to the strategic level of war. The word, or form of the word, strategic appears 104 times in the 1986 manual and a resounding 233 times in the 1993 manual.

Another 1993 manual characteristic associated with strategic focus is its linkage to the strategic level. "This keystone manual links Army roles and missions to the National Military Strategy [and hence the National Security Strategy]. . . ."19 A problem of discontinuity may develop when the strategy changes, which has occurred at least twice since 1993. "Such linkage is important, and we should continue to seek it. But we should be sparing in our specificity, refusing to cite certainties that do not exist."20 In contrast, the 1998 manual links itself to a more solid statement of function or purpose-federal law. Title 10 of the 1956 US Code requires that the Army "be organized, trained and equipped primarily for prompt and sustained combat incident to operations on land."21

The inclusion of OOTW into the Army's operational doctrine was another conspicuous change from previous manuals. OOTW mission conduct is not new to the US Army-we have a long history dating
back at least as far as the 19th century American Indian Wars. The concept is not new to our doctrine. The 1962 FM 100-5 contains an entire chapter titled "Situations Short of War." Some critics believed that the introduction of OOTW into a "warfighting" manual was a mistake, thinking that its inclusion would somehow dilute the doctrine's purpose. Placing OOTW into FM 100-5 was merely an example of operational doctrine taking its proper direction from strategy, notwithstanding the type activity involved.

Another measured change in the 1993 manual involved considerations of depth and simultaneous attack. "The dominating idea and critical change of the 1993 warfighting doctrine was the new vision of depth and simultaneous attack." The aim of depth and simultaneous attack is to achieve a relatively antiseptic and brief conflict. Notwithstanding the inherent efficiency of attacking an enemy in depth, the recent advances in weapons technology perpetuate the human desire for bloodless wars. Similarly, constraints, amplified by almost real-time media coverage, place incredible demands on political and military leaders to end conflicts quickly. One needs to look no further than the impact of reports of the "highway of death" in Kuwait, to appreciate the ageless demand for both brief and antiseptic wars.

Emphasis in the 1993 doctrine on simultaneous attack ignores the complementary aspect of sequential attack. A word count of the 1986, 1993 and 1998 manuals reflect this imbalance in Figure 1. These figures do not indicate a correct balance between sequential and simultaneous as it is written in doctrine. They merely suggest a marked increase of the term simultaneous in the 1993 manual.

**Battlespace.** The 1993 manual defines battlespace as "a physical volume that expands or contracts in relation to the ability to acquire and engage the enemy." Battlespace allows the commander the freedom to form his battlefield view without graphic constraints. Given the increased range of weapons-both enemy and friendly-and the corresponding separation of the close and deep fight, battlespace is an important consideration for commanders as they conduct mission analysis. The 1998 manual will present battlespace in a less nebulous fashion. It discusses the battlespace dimensions of time, space and activity in a more succinct fashion, thus providing a better definition.

**Commander's intent.** A welcome addition to the 1993 manual, commander's intent, was addressed pragmatically in 1993. Retired Lieutenant General L.D. Holder, a co-author of the 1982 and 1986 manuals, wrote the following comment: "The 1993 manual . . . is far superior to its predecessors in setting the previously misunderstood business of commander's intent in its proper relationship to the concept of the operation." The 1998 manual will stress commander's intent with two significant modifications. First, is the addition of key tasks. Key tasks "provide the link between the mission and the concept of the operation." The second, is a definitive requirement that the commander personally prepare the intent statement. Together, these changes should help commanders write intent statements that avoid becoming merely a restatement of the concept of operations.

**Conflict termination.** The formal inclusion of conflict termination into our doctrine showed a coherent thought process. Since conflict termination is something the Army has always done, the inclusion of conflict termination into doctrine was a logical step. One could surmise that the inclusion of conflict termination marked an attempt to learn from our collective hindsight lessons learned from Operations Just Cause and Desert Storm. Given the many factors that weigh on the conduct of operations-which lately seem to imply an emphasis on brevity-the time to consider conflict termination is during initial planning.
A New Focus

Despite these substantive changes, the Army received the 1993 manual without the healthy discourse that followed its three predecessors. As demonstrated in earlier manuals, especially the 1976 manual, it is important to establish a dialogue. If nothing more, it shows people are reading and critically thinking about doctrine. The indifferent response given the 1993 manual can be traced to at least two causes: the manual was well staffed, with consensus built among the senior leaders. Moreover, most of the Army was just too busy. However, it did provide a framework for common understanding for almost four years. Over the past 20 years, FM 100-5’s shelf-life has been four to seven years. While in theory, doctrine is changed or discarded when it no longer effectively guides military action or interprets events, in practice, the US Army routinely revises its doctrine. Regardless of the 1993 manual’s perceived adequacy, events dictated revisions to FM 100-5. Figure 2 lists the guidance from the TRADOC and Combined Arms Center (CAC) commanders to the new manual’s four-man writing team.

The 1998 FM 100-5 coordinating draft maintains a dual focus. First, it describes operational art. Second, it describes how we fight, the art of combat operations, which includes tactical principles and forms of maneuver. It is a comprehensive doctrine presented in five distinct parts:

- The Army and Conflict
- Fundamentals of Army Operations
- The Art of Operations
- Conducting Operations
- Enabling Operations

Significant changes in this operationally focused manual include the following four points:

- War as a form of conflict, not the reverse.
- Tactical functions are introduced.
- Existing operating systems are revamped.
- War and OOTW are integrated into four different categories of operations.

Since war is difficult to define, the new manual describes war as "the most violent form of conflict." Although this definition is somewhat simplistic, "War in general is simply far easier to write about than war in particular." The manual avoids its predecessor's pitfalls and covers war and OOTW under the conceptual framework of conflict. In his paper titled "A General Theory of Conflict: Bosnia, Strategy and the Future," Colonel David Fastabend (a former 1998 FM 100-5 writing team member) advances the theory that conflict incorporates two interdependent components: logic and violence.

**Logic** attempts to revise a conflict participant’s ideas through the exchange of information and the reasoned comparison of ideas to reality. **Violence** attempts this revision through the presentation of unfavorable alternatives to compliance: injury, destruction or death. This theoretical construct, incorporating the interdependent components of conflict, is all encompassing. The simplistic construct prevents loopholes endemic to the war-OODW construct in the 1993 FM 100-5.
Core functions. The 1998 manual introduces five tactical core functions: see, shape, shield, strike and move. These core functions are not to be confused with the combat functions—battlefield operating systems (BOS)—presented in the previous manual. These core functions "are the fundamental actions forces take to apply military power. They should not be viewed independently of one another but as inseparable parts of a whole."38 Derived from J.F.C. Fuller's and Lieutenant Colonel E.S. Johnson's five and six respective functions posited in the 1920s and 1930s, the proposed functions add a pragmatic and holistic approach to operations.39

Operating systems. Previously referred to as the seven "combat functions" or BOS, operating systems are now presented as:

- Integrating command and control (C2) and combat service support.
- Engagement-information dominance, maneuver, air defense, reconnaissance/surveillance/intelligence, mobility/survivability and fire support.

Operating systems are "the aggregate of soldiers, equipment, material and procedures organized as an entity to perform the core functions.40 Interestingly, the term battle command, introduced in 1993, does not appear as an operating system in the new manual.

Operations Categories

Finally, and perhaps the most dramatic change, is the integration of war and OOTW into four different operations categories as follows:

Offensive operations "are those that carry the fight to the enemy. They are the decisive form of warfare, the commander's ultimate means of imposing his will on the enemy."41 The new offensive operations chapter combines two chapters—fundamentals of the offense and planning/conducting the offense—from the previous manual. The framework and forms of offensive maneuver remain virtually unchanged. Spoiling/counterattacks and raids/feints are subsumed under the terms "attacks in the defense" and "limited objective attacks," respectively. An important addition is a section labeled "phases of offensive operations." It addresses the preparation and actual attack, and it expands the necessity of exploitation and pursuit to finish the offensive operation.

Defensive operations "are those undertaken to cause an enemy attack to fail. Alone, they achieve no decision. They must ultimately be combined with or followed by offensive action."42 This new chapter combines two chapters from the previous manual. Sections discussing the framework and phases of defensive operations also mirror the offense chapter. The key change: this chapter includes retrograde operations, whereas the 1993 manual treated them separately.

Stability operations "apply military power to influence the political environment, facilitate diplomacy and disrupt specified illegal activities."43 Stability operations incorporate almost all of what was referred to as OOTW in the last manual. Peacekeeping and peace enforcement operations are listed under the broader terminology of peace operations, which follows the FM 100-23, Peace Operations, structure. Relative successes and failures in Somalia and Bosnia have changed doctrine to specifically mention "show of force" in stability operations.

Interestingly, the stability operations chapter does not include a section on "phases of stability operations."
operations." Rationale: stability operations vary greatly and are too numerous to fit the convenient phasing framework of the other operations.44

Support operations "provide essential supplies and services to assist designated groups. They are conducted mainly to relieve suffering and assist civil authorities response to crises."45 The terms "humanitarian assistance and disaster relief operations" are now embodied as a support operation-specifically as humanitarian and environmental assistance. Support operations "are normally characterized by lack of an active opponent."46 This chapter helps break the war-OOTW tension that came with less intensive military operations, and thoroughly discusses framework and phases for support operations.

This doctrinal overview has shown key changes presented in the 1998 FM 100-5 with respect to its recent predecessors. From the initial continuation of a tactically focused doctrine, published in 1976, Army doctrine evolved towards a more operational focus by 1986. An examination of the changes incorporated in the 1993 doctrine demonstrate a shift to the strategic level of war. Overall, the 1986, 1993 and 1998 doctrinal manuals exhibit the characteristics depicted in Figure 3. Double click on image for larger version.

Operational Art

Until the 1998 FM 100-5 is published, it is premature to argue that the new manual marks a return to an operational art focus. Suffice to say that the new FM will better define the term. Operational art is sequencing a series of battles and major operations which will constitute a campaign's goal which also is a strategic objective.47 The Army's adoption of operational art is perhaps the most important doctrinal change since World War II's end.48 It is also, arguably, an unseen lesson learned from that climactic struggle. Developing an operational art concept did not happen overnight. It is a long-term process that has evolved over time and, unfortunately, operational art varies in definition from one doctrinal manual to another. Additionally, operational art is often confused with the operational level of war. The operational level of war is that middle level of war that links the strategic and tactical levels; while operational art is the activity conducted at the operational level of war. Joint Publication (Pub) 5-0, Doctrine for Planning Joint Operations, and Joint Pub 3-0, Doctrine for Joint Operations, clearly delineate the two terms below:

Operational art. The employment of military forces to attain strategic and/or operational objectives through the design, organization, integration and conduct of strategies, campaigns, major operations and battles. Operational art translates the joint force commander's strategy into operational design, and, ultimately, tactical action, by integrating the key activities of all levels of war. (Joint Pub 3-0)

Operational level of war. The level of war at which campaigns and major operations are planned, conducted and sustained to accomplish strategic objectives within theaters or areas of operations. Activities at this level link tactics and strategy by establishing operational objectives needed to accomplish the strategic objectives, sequencing events to achieve the operational objectives, initiating actions and applying resources to bring about and sustain these events. These activities imply a broader dimension of time or space than do tactics; they ensure the logistic and administrative support of tactical forces, and provide the means by which tactical successes are exploited to achieve strategic objectives. (Joint Pub 5-0)
Joint operation planning at the operational level links the tactical employment of forces to strategic objectives. The focus at this level is on operational art—the employment of military forces to attain strategic and/or operational objectives through the design, organization, integration and conduct of strategies, campaigns, major operations and battles. A further examination of doctrinal differences, vis-à-vis the proposed features of operational art, will identify possible merit in the alignment of emerging doctrine.

Operational art's origins defy specific chronological determination (see Bruce W. Menning's article on page 32). Debate about the first practitioners of operational art is not as important as understanding and properly applying operational art when employing military forces. The concept of operational art was born in the minds of German and Soviet military theorists who recognized the Industrial Revolution's dramatic effects on the conduct of war. Sigismund von Schlichting, a late 19th century German army officer who studied the works of Carl von Clausewitz and Helmut von Moltke, was perhaps the first who recognized the quantitative and qualitative changes in warfare. "Where Clausewitz had defined strategy as the art of battles for the purpose of the war, Schlichting emphasized the importance of using operational maneuver to achieve the purposes of war." 50

Several Soviet 1920 and 1930 theorists credited with furthering the evolution of operational art include: A.A. Svechin, V.K. Triandafillov, M.N. Tukhachevsky and G.S. Isserson. Most of these theorists studied at the General Staff Academy on the translated works of Schlichting, Clausewitz and Moltke, among others. Working without the limitations of an entrenched bureaucracy—which was swept away by World War I and the Russian Revolution—these theorists advanced ideas that form operational art's foundation today. Svechin implied a new level of warfare by claiming that operations link strategy and tactics. Triandafillov stressed the importance of successive operations. Tukhachevsky asserted the significance of deep operations. Finally, Isserson advanced his aggregation theory, whereby operational art served to re-aggregate the effects of military forces. This served to correct an unforeseen impact of technology that, since World War I, had created a vast diversity in force effects and characteristics due to the evolution of airplanes, tanks and long-range artillery.51

Despite these theoretical improvements in operational warfighting, Joseph Stalin's 1930's purges hampered the Red army's early World War II performance against the Third Reich. Within two years, the Soviets implemented the practice of operational art with devastating effect against the German army. From 1943 to 1945, the Soviets perfected large-scale sequential and simultaneous operations with emphasis on the encirclement—a complex maneuver that the Red army executed successfully about 50 times.52

The United States struggled early in the war as well, finishing with solid operational art performances. Introspective preoccupation within the 1930s US Military had forced senior World War II leaders to learn the essence of operational art the hard way. "And to their credit, commanders and their staffs gradually perfected the art of conducting massive and joint operations across vast distances to reach strategic objectives." 53

The incorporation of World War II operational lessons into US Army doctrine (as well as actual employment) was largely a failure. "Although World War II had been planned, executed and won by a series of complex operational campaigns, the mechanics of that effort had been largely forgotten by the early 1950s." 54 Inter-service cooperation—an imperative of operational art—was constrained, in part, by the US Air Force's emergence, the limits of the 1947 National Defense Reorganization Act and the budgetary squabbling resulting from the Eisenhower Administration's Cold War policy of massive
The 1954 Field Service Regulations professed that "Army combat forces do not support the operations of any other components." The Army, in most respects, reverted to its traditional tactical focus until after the Vietnam War.

The origins and recent history of operational art reveal that its development was the result of inspiration, necessity and technological advances, as well as, evolutionary setbacks and progress. Most experts in the field seem to believe that the birth of operational art traces its lineage to the Industrial Revolution and the middle of the 19th century. This century's world wars expanded combat's effects in terms of time and space, creating a more pronounced gap between strategy and tactics. Operational art serves to fill this expanding gap. However, there must be more to this important theoretical construct than linking together strategy and tactics.

**Operational Art's Attributes**

In a theoretical paper titled "Vulcan's Anvil: The American Civil War and the Emergence of Operational Art," James Schneider claims that Ulysses S. Grant's 1864 to 1865 campaign marks the birth of American operational art. Schneider differentiates between classical strategy and operational art by describing maneuver and battle. The classical strategy in the Alexandrian genre was one of concentrated maneuver and concentrated battle. Classical strategy in the Napoleonic genre was one of concentric maneuver, yet still retained concentrated battle. In contrast, the characterization of operational art is one of extended maneuver and deep battle. Schneider offers eight distinctive attributes and definitions inherent to operational art as follows:

- **Distributed Operation:** An ensemble of deep maneuvers and distributed battles extended in space and time but unified by a common aim.

- **Distributed Campaign:** The final structure built by the operational artist and characterized by the integration of several simultaneous and successive distributed operations.

- **Continuous Logistics:** Concerned with the movement and sustainment of armies in the field. Continuous logistics maintains both the movement tempo and the army's force density.

- **Instantaneous C2:** Distributed deployment of forces creates a greater variety of unexpected or unanticipated tactical and operational possibilities, necessitating enhanced C2.

- **Operationally Durable Formation:** A formation capable of conducting indefinitely a succession of distributed operations; a byproduct of continuous logistics and C2.

- **Operational Vision:** Associated with mental agility, operational vision is the ability to react to incoming information faster than it arrives; to see the whole view of war.

- **Distributed Enemy:** An operationally durable formation operates most effectively against a similarly designed opponent. If there is nothing to strike, the operational artist may have trouble describing a way to link tactical means to strategic ends.

- **Distributed Deployment:** Ties together a nation's ability to generate and field an army. Includes production capacity, working population, natural resources, infrastructure and mobilization procedures.

These attributes make good sense when viewed from the standpoint of artist vice the empirical scientist.
These attributes provide content to operational art, but not the exacting definition required by science. For example, the distributed enemy attribute implies the necessity of facing a similarly designed opponent in order to achieve operational success. If this is so, does the lack of a similarly designed opponent intrinsic to guerrilla warfare and many recent stability operations negate the importance of operational art? No. The attribute bends, but it does not break. The lack of a similar design makes the actual opponent harder to identify, acquire and engage. The opponent still exists and requires greater imagination and different techniques to engage fully. Another consideration regarding stability operations and operational art is that most conventional wars throughout history include these lesser forms of warfare. Because of its interactive nature, conflict must be accepted as it comes to us. Regardless of the form of conflict one is faced with, it is imperative to be able to adapt to conflict's very complex nature quickly.

From these eight attributes it is possible to distill three overarching operational art features. A feature implies a more general content than attribute. This inductive approach yields the following three interrelated features of operational art: size, balance and comprehensiveness. Each of Schneider's attributes fall under at least one (sometimes more) of these features.

Size. Denotes a certain magnitude of forces and geography. It is the theater's size or the sheer number of forces that have driven the need for operational art. From a doctrinal standpoint, size marks the evolutionary growth in importance of the term "commander's intent." As the battlefield has grown in size, spurred by technological advances in weaponry, combat decision making has been forced down to junior leaders. Clearly written intent statements provide the necessary direction for subordinate leaders when the original plan no longer fully applies. The attributes of continuous logistics, instantaneous C2, the operationally durable formation and the distributed deployment all find some sort of attachment to the feature size. This feature suggests a location on the "science half" of an art to science continuum.

Balance. Represents the paradox in warfare. In order to perform or display a necessary capacity, one must have the ability to achieve its opposite effect. For example, the endless debate between maneuver and firepower is one of balance. "We maneuver in order to bring fire on the enemy. We bring fire on the enemy so that we can maneuver. One should not happen—indeed could not happen—without the other."59 Balance for the operational artist also includes, but is not limited to, linear/nonlinear, sequential/simultaneous, offensive/defensive and centralized/decentralized operational considerations. Two of Schneider's attributes, the distributed enemy and the distributed campaign, show an association to balance. Balance, by its very nature, displays both art and science characteristics. The final two attributes, distributed campaign and operational vision, fall under the feature labeled comprehensiveness.

Comprehensiveness. Infers a holistic approach to warfighting that is focused on the objective. Not only does it mean the use of all available tools—joint, combined, stability and support operations—but it also requires a proper understanding of a beginning and an end to the campaign or operation. "Operational art, as a unique style of military art, became the planning, execution and sustainment of temporally and spatially distributed maneuvers and battles, all viewed as one organic whole."60 Comprehensiveness is where the art portion of operational art predominantly resides.

As discussed in the doctrinal overview section, the recent development of US Army doctrine as it relates to operational art and FM 100-5 can be broken into three phases: the 1986 (1976 to 1986) manual, the 1993 manual and the 1998 manual. Each phase presents distinct characteristics that are important to the formulation of operational art as depicted in Figure 4. The characteristics are assigned the applicable feature of operational art, as well as, a corresponding relative value: positive (+), negative (-) and neutral (0). Double click on image for larger version.
Figure 5 is a compilation of the relative values assigned in Figure 4. From these figures, the following trends evolve with respect to achieving operational art. First, the 1986 manual displays a weakness with respect to comprehensiveness, because it fails to address OOTW. Size is neutral due to the manual's failure to address commander's intent with any degree of depth. The 1986 manual achieves balance by addressing in detail maneuver and firepower, and sequential and simultaneous operations.

Second, the 1993 manual improves with respect to the size and comprehensiveness features of operational art. The formal introduction of commander's intent and the concept of battlespace help achieve a positive relative value in size. Consideration of conflict termination and the inclusion of OOTW, despite fragmentation, help to improve the comprehensiveness feature to a neutral relative value. Balance suffers a degradation in relative value, because of an imbalance of simultaneous and offensive operational considerations.

Finally, the 1998 manual achieves positive relative values regarding operational art's size, balance and comprehensiveness features. Where past manuals achieved positive values in either size or balance, only the 1998 manual achieves a positive relative value with respect to comprehensiveness. To be sure, it is the adoption of the four categories of operations that enables the holistic and hence comprehensive-approach to doctrine. The 1998 FM 100-5 addresses the need for a comprehensive approach to planning and conducting operations, by stressing the likelihood of shifting emphasis throughout an operation. Figure 6 demonstrates this point. Notice that all four categories of operations are considered in each operation's phase.

By adopting the theory of conflict, and accepting that war is but a most violent form of conflict, the 1998 manual avoids most of the tension associated with the 1993 manual's war-OOPTW focus. It is the size, balance and comprehensiveness, inherent within operational art, that enables the 1998 manual to better meet conflict's changing requirements. To keep operational art institutionally alive as a warfighting concept shows good long-term judgment, as the days of large armies and great wars just might not be over yet.61
operational art advocated by the 1986 manual, towards the strategic realm. This strategic focus, influenced by victories in Panama and the Persian Gulf, was a direct result of the Soviet Union's timely demise in 1989.

The 1998 FM 100-5 signifies a return to operational art because it better meets the features of size, balance and comprehensiveness. In particular, the manual addresses a holistic approach to military operations that engenders a variety of options for both military planners and commanders. These multiple options are, in essence, the paints, brushes and canvas of operational art. The picture—the conduct of military operations—painted by the operational artist suffers routinely the criticism of historians, much like the commentaries of art critics on conventional artwork. Commentary and criticism are ultimately less important than the tangible results—successful military operations that help achieve US policy.

Because the 1998 FM 100-5 marks a return to operational art, it will help ensure the Army focuses its efforts at the operational level of war and the conduct of operational art. The operational art concept is an important one. It allows the Army to relate tactical means to ever-changing strategic ends, and it provides a framework for large operations if they should arise. Finally, operational art provides our Army, one with a tactically focused history, the opportunity to come to the joint arena and better relate to its sister services.62

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2. Ibid., 3.
5. Ann E. Story and Aryea Gottlieb, "Beyond the Range of Military Operations," Joint Force Quarterly (Autumn 1995), 99-104. In their article, the authors claim that MOOTW [OOTW] is an ambiguous concept that fails to provide the fundamental principles required for doctrine and is thus flawed. The authors propose a Military Operational Framework to rectify the problem. For additional examples of OOTW critics, one can read the many articles that unfavorably critique former Secretary of Defense Les Aspin (mission creep) following the October 1993 actions in Somalia.
11. Ibid., 22.
12. Romjue, 7-8.
15. Ibid., i.
17. Romjue, 14.
18. Romjue, 121.
20. David A. Fastabend, "Checking the Doctrinal Map: Can We Get There from Here with FM 100-5?" *Parameters* (Summer 1995), 38.
23. US Army retired COL James McDonough, former director, SAMS, and the 1993 FM 100-5 Writing Team, interview by author, 13 March 1997. McDonough states that on the whole, many branch chiefs and tactical level commanders opposed including OOTW in FM 100-5.
30. Romjue, 133.
31. Comment made by a SAMS student to US Army retired GEN Gordon R. Sullivan during a presentation made at Fort Leavenworth, KS, on 23 October 1996. Sullivan claimed that he was disappointed that the 1993 manual did not spark serious debate within the Army.
32. Swain, 147.
33. FM 100-5 Writing Team, briefing presented to US Army Training and Doctrine Command (TRADOC) commander, 12 December 1996.
35. Ibid., I-2-4.
36. Swain, 166.
41. Ibid., IV-Overview-1.
42. Ibid.
43. Ibid.
44. COL Michael Combest, 1998 FM 100-5 Writing Team, interview by author, Fort Leavenworth, 19 February 1997.
46. Ibid., IV-4-1.
51. Ibid., 24-27; and Bruce W. Menning, "An Operator/Planner's Introduction to Operational Art," in C510 Course Syllabus: *Strategic, Operational and Joint Environments* (Fort Leavenworth, KS: USACGSC, 1995), 192-93.
52. Menning, 194.
53. Ibid.
56. Schneider and Menning both state that operational art is a product of the industrial revolution.
57. Schneider, "Vulcan's Anvil: The American Civil War and the Emergence of Operational Art" (Fort Leavenworth, KS: USACGSC, 1991), 32.
58. Ibid., 38-67.
60. Schneider, "Vulcan's Anvil," 30.

Major Michael McCormick is the chief, G3 Plans and Exercises, 82d Airborne Division, Fort Bragg, North Carolina. He received a B.A. from the University of Pittsburgh, an M.S. from George Washington University and an M.M.A.S. from the US Army Command and General Staff College, Fort Leavenworth, Kansas. He has held a variety of command and staff positions in the Continental United States and Germany, including project engineer, Rocky Mountain Area, Omaha District, US Army Corps of Engineers, Colorado Springs, Colorado; commander, C Company, 14th Combat Engineer Battalion, Fort Ord, California; assistant S3, 14th Combat Engineer Battalion, Fort Ord; and mechanization officer, 317th Engineer Battalion, Eschborn, Germany.
FM 100-5 and Information Age Warfare

by Major John M. Spiszer, US Army

While our purposes may remain unchanged, Army capabilities must not. Warfare is changing; we must stay in front of that change to be the nation's force of decision.

-Army Chief of Staff General Dennis J. Reimer and Secretary of the Army Togo West, Force of Decision

The current US Army Field Manual (FM) 100-5, Operations, must change as the Army moves into the 21st century. Despite talk of a revolution in military affairs, this change will be evolutionary, not revolutionary. As the Army evolves, each change in doctrine, training, leader development, organization, materiel and soldier systems (DTLOMS) must be integrated and distributed throughout the force to sustain the Army's force compatibility. The 1998 FM 100-5 should be evolutionary, logical and practical to provide the Army with a doctrinal blueprint for the next five to 10 years. This article suggests several evolutionary considerations for FM 100-5, which should lead us into Army XXI. I will also suggest changes to current doctrinal terms and concepts, while retaining their validity and relevance. The 1998 FM 100-5 must incorporate the lessons of Force XXI and evolving information-age warfare and take us further down the road to the Army After Next so that we remain "the nation's force of decision."

As the Army's keystone warfighting doctrine, FM 100-5 "describes how to think about the conduct of campaigns, major operations, battles, engagements and operations other than war [OOTW]." As such, it is the most important document we have and "furnishes the authoritative foundation for subordinate doctrine, force design, materiel acquisition, professional education and individual and unit training." As the Army changes, so must its doctrine. The FM 100-5 writing team at the Army's Combined Arms Center, Fort Leavenworth, Kansas, has handled that challenge and will soon be ready to field the 1998 FM 100-5. This article discusses several possible changes that may be considered by the writing team.

Principles of War

The principles of war have stood the Army in good stead since 1921, by providing "general guidance for the conduct of war at the strategic, operational and tactical levels. They are the enduring bedrocks of Army doctrine." However, these nine basic principles have changed over the years. In fact, the 1941 Field Service Regulations contained no discussion on principles of war, but did discuss seven terms called "Doctrines of Combat," which, paraphrased, included: objective, simplicity, unity of effort, offensive, concentration, surprise and security.

It is once again time to revise the principles of war. Mass, in particular, is confusing, implying numbers of troops or units more than combat power or its unnecessary and limits the force's capabilities to achieve decisive results. The writing team has considered changing this principle to...
concentration. In fact, the 1986 FM 100-5 defined mass as follows: "Concentrate combat power at the decisive place and time." Changing the term mass to concentration will assist in breaking the mind-set concerning numbers and refocus on the effects of combat power to achieve decisive results at the decisive place and time.

Consideration was also given to adding principles of war for areas the Army has determined are critical to warfighting: morale and sustainment. These proposed principles are overdue and not contingent upon Army XXI characteristics and capabilities. The addition of morale as a principle of war recognizes the fact that our Army is made up of people whose performance, training and esprit de corps are crucial to our success. Commanders and leaders must consider the soldier and unit morale as they plan and conduct operations, just as much as they do the other nine principles. An oft-quoted military aphorism is, "morale is to the physical as two is to one." If we truly believe this, it is time to add morale as an Army principle of war. While not directly required by Army XXI operations, "morale" will remind Army leaders of its importance to a high-tech future. The machines are not the "be all and end all" of our force-soldiers are. Likewise, sustainment remains critical to Army operations. Since World War II, we have maintained the most mechanized and technologically advanced army in the world and have provided our soldiers greater support and comfort-in and out of the field-than any other army. The ability to administrate, move, maintain and supply this force, as well as the proposed successor in Army XXI, is also essential to Army operations. As with morale, the inclusion of sustainment as a principle of war provides the required emphasis to this aspect of operations.

Army Operations Tenets

The tenets have provided the Army additional doctrinal focus since their initial inclusion in Army doctrine for AirLand Battle. Expanded from four to five basic tenets with the addition of versatility to initiative, agility, depth and synchronization in 1993, "the US Army believes that its five basic tenets are essential to victory." A tenet, as defined by FM 100-5, is "a basic truth which is held by an organization." However, to help clarify and adapt Army doctrine to the Army XXI capabilities, these basic tenets must also change.

First, the tenet versatility is redundant. While necessary to Army operations, it is an outgrowth of the other tenets and not a tenet in and of itself. Versatility, "the ability of units to meet diverse mission requirements," results from maintaining agility and establishing the initiative. The "basic truths" held by the US Army include initiative and agility, but not versatility, which results from these other tenets. For doctrinal coherence and simplicity, we should omit this tenet from the 1998 manual.

Second, the tenet synchronization requires changing. Synchronization is defined as "arranging activities in time and space to mass at the decisive point." Although this tenet remains valid, its application is limited for Army XXI. Additionally, potential confusion exists in the force over synchronization as a tenet and synchronization as a goal to be achieved in the planning and conduct of operations at Combat Training Centers (CTCs). All after-action reviews at CTCs focus on the synchronization of Battlefield Operating Systems (BOS). This consists of horizontal synchronization of the BOS across the task force
involved. Thus, synchronization is narrowly focused to the horizontal arrangement of activities. What is omitted is the vertical integration of combat power within each BOS, coordinating the information flow and combat effects from higher to lower and vice versa. Changing this tenet to *orchestration* would alleviate this narrowed focus and provide a term defined as "the synchronization and integration of combat power and effects in time and space to concentrate at the decisive point." Orchestration complements *Army XXI* battle command and the commander's responsibilities in a fluid and dynamic battlespace dominated by information and its flow.

**Operations Categorization**

The 1993 FM 100-5 categorized operations as encompassing war, conflict and OOTW. While necessary then to categorize the increased and varied involvement of the US military in various non-traditional operations, coining the phrase "OOTW" was inexact and confusing. These operations range from combat to deterrence to assistance; from fighting to feeding. In fact, US Army Training and Doctrine Command (TRADOC) Commander General William Hartzog has mandated the retirement of this catch-all phrase "that in some cases may be misleading."11 Categorizing operations as combat, stability and support accomplishes this mission with an understandable and useful framework. The violence or potential for conflict decreases from one category to the next. Combat operations incorporate those operations included in the previous areas of war and conflict. Stability operations include many OOTW or old low-intensity conflict missions such as peace enforcement (PE), counterinsurgency, antiterrorism, peacekeeping (PK) and noncombatant evacuation operations (NEOs). Support operations also include other OOTW operations characterized largely as humanitarian assistance, such as disaster relief operations (DROs), civil support and a variety of other low-threat situations which the Army has become more involved in recently. As the Army moves into the next century we must maintain and improve our abilities to conduct stability and support operations while maintaining our combat "go-to-war" capabilities. The conflict level provides the dividing line between the type of operations. Low conflict probability characterizes support operations. Thus, certain PK, NEO and counterdrug missions may be support operations in a low-threat environment where the goal is more in line with nation assistance. At higher threat levels, these operations are conducted as stability operations at the local or regional level. Operations fall in a continuum characterized by the level of threat and are categorized by type. This categorization method provides a more precise understanding of what to expect and how to prepare for the mission involved. For instance, while Somalia began as a humanitarian assistance mission to feed the hungry, the threat level was high enough that PK and PE elements were necessary. This operation, even at its inception, would be categorized as a stability operation, thus preparing the force for the higher threat level. DROs with low or no threat, for example, are support operations. A potential continuum of operations is depicted below.

**Operations Patterns**

The Patterns of Operations, developed by TRADOC as part of the operational concept for Force XXI employment, should be included in the 1998 FM 100-5. Inclusion would provide the operational concepts necessary to indoctrinate the force with *Army XXI* capabilities, characteristics and doctrine. These patterns would be developed from lessons learned during past advanced warfighting experiments, other 4th Infantry Division Experimental Force exercises and general officer conferences and "rock drills." Based on current and emerging doctrinal concepts taken from TRADOC Pamphlet (PAM) 525-5, *Force XXI Operations*, these "patterns" closely follow the old tactical concepts field, find, fix, fight, finish and protect. By adapting these terms to information-age operations, we get the following:
• **Project the force (field):** Encompasses the deployment and positioning of a versatile, expandable and sustainable force capable of decisive victory. The realities of a Continental United States-based power projection force dictate that the Army must rapidly project forces anywhere in the world to accomplish the mission at hand. It is the first step in all future operations.

• **Protect the force:** Providing force protection remains an important element throughout all Army operations phases. However, 21st-century protection will take on additional, more difficult elements. Protection of vulnerable sensors, computers and information assets from direct or indirect threats such as computer viruses or electronic pulse generators, is essential for future operations and will promote new challenges in force protection. The increased threat from weapons of mass destruction proliferation requires enhanced detection, deterrence and destruction capabilities. Longstanding potential threats to US forces from terrorist activity have taken on new and added emphasis since the New York City World Trade Center, Oklahoma City and recent Dhahran, Saudi Arabia, bombings, and requires command emphasis at all levels. Army XXI operations' characteristics necessary to protect the force include: enhanced intelligence, tracking and predictive capabilities; dispersion; deception; speed and agility; increased local security protective measures and vigilance; improved nuclear, biological and chemical defense; multidimensional and highly responsive air operations; redundancy; and improved computer security measures. Fast-paced, decentralized and dispersed operations envisioned for Army XXI will aid in this effort, but they must be complemented by both traditional and nontraditional force protection methods.

• **Gain information dominance (find):** Finding the enemy and then denying him information on friendly forces has long been an Army operations' goal. However, the reliance on information and the resulting situational awareness required in future operations mandates greater attention to gaining and maintaining friendly force information dominance. For maximum effectiveness, Army XXI will rely on current and future technology to establish information dominance to continuously and simultaneously attack varied targets with all available combat power.

• **Shape the battlespace (fix and fight):** Once the force gains information dominance, commanders will be able to shape the battlespace through their enhanced weapons' capabilities. Deep operations, which will use precision munitions, the Army Tactical Missile System, Comanche and other weapon systems, will allow the commander to set the conditions necessary for decisive operations and exploitation.

• **Conduct decisive operations (fight and finish):** The commander concentrates and orchestrates all available combat power to accomplish his intent. Once the conditions for victory are established, operations are conducted on a continuous basis leading to a decisive result.

• **Sustain and transition to future operations:** Sustainment capabilities gain added importance in a smaller, more technologically developed force. Sustainment conducted throughout an operation enables commanders to rapidly transition their forces to other operations. Future forces will be smaller, requiring units to conduct continuous operations in all environments throughout an extended battlespace. Opportunities to rotate units in and out of the battle will be fleeting at best given projected force structures. Enhanced and improved logistic capabilities will allow commanders to conduct high operations tempo envisioned for Army XXI.

Taken together, these patterns provide a comprehensive and complementary operational concept for the 1998 FM 100-5 which will maximize Army capabilities and characteristics. These basic concepts are not revolutionary, but the terms and their definitions provide the focus necessary for the Army to internalize and embrace the changes inherent in future warfighting.

**BOS and Combat Functions**
The differences between combat functions' operational focus and BOS' tactical usage are not readily apparent. The combat functions are used when, "to synchronize forces and effects on the battlefield, Army leaders examine large, complex operations in terms of functional operating systems that exist at each level of war." On the other hand, BOS are "the major functions performed by the force on the battlefield to successfully execute Army operations (battles and engagements) in order to accomplish military objectives directed by the operational commander . . ." The disconnect arises when the CTCs focus on BOS synchronization to achieve combat effects, as previously discussed. In fact, the only differences between the two are logistics vice combat service support (CSS) and battle command vice command and control (C2).

The 1998 FM 100-5 should adopt only the combat functions. This would help alleviate a confusing doctrinal issue. Additionally, the functions are equally applicable at the operational and tactical levels. In fact, logistics and battle command encompass the narrower terms of CSS and C2 and provide the added emphasis on information-age operations necessary for the new manual. Battle command, in particular, includes an increased emphasis on visualizing an extended battlespace. In addition, battle command incorporates the capabilities provided by information-age technology and enhanced situational awareness and allows the commander to synchronize and integrate the functions to an unprecedented degree.

Visualization, decision making, orchestration and leadership are all battle command components that will place greater, differing demands, responsibilities and capabilities in the commander's hands. "To win on future battlefields, future leaders of all armies must be skilled in the art of military operations, capable of adjusting rapidly to the temporal and spatial variations of new battlefields." In short, they must be capable of exercising battle command. Thus, battle command replaces C2 in an information-age force.

Logistics, which encompasses CSS, also includes Army XXI's expanded capabilities. Retaining the combat functions for use at all levels-operational and tactical-while retiring "BOS" and replacing the terms CSS and C2 with logistics and battle command will further ingrain emerging Army XXI concepts into the force and simplify our doctrine. The combat functions are more relevant to an information-age army and more closely tied to the changes occurring in our Army.

The bottom line on changing and evolving Army doctrine is to provide coherence and relevance while enhancing understanding. Eliminating unnecessary terms and confusion; adapting and changing concepts; updating definitions and reestablishing doctrinal purity; and reworking operational frameworks and categories are essential for understanding future Army operations. The 1998 FM 100-5 must do all this and more. Dynamic doctrine must address these issues to provide the force an opportunity to consider and embrace the changes required for Army operations in the next century. 

3. Ibid.
4. Ibid., 2-4.
8. Ibid.
9. Ibid., 2-9.
10. Ibid., 2-8.
13. Ibid., Glossary-1.

Major John M. Spiszer is a student at the School of Advanced Military Studies, Fort Leavenworth, Kansas. He received a B.S. from the United States Military Academy and an M.S.A. from Central Michigan University and is a graduate of the US Army Command and General Staff College. He has held a variety of command and staff positions in the Continental United States and Hawaii, including aide de camp to the deputy commandant, USACGSC; program analyst, Program Analysis and Evaluation Directorate, Office of the Army Chief of Staff, Washington, DC; Army intern, Joint Staff, J5 Strategy Division, Washington, DC; and assistant S3, 1st Brigade, and commander, Company A, 3d Battalion, 22d Infantry Regiment, 25th Infantry Division (Light), Schofield Barracks, Hawaii. His article "Providing Coherence for Training Force XXI," co-authored with Major General David H. Ohle, appeared in the July-August 1996 issue of Military Review.
Paying the Price for Versatility

by Colonel Steven P. Schook, US Army

The 1993 US Army Field Manual (FM) 100-5, Operations, is an admirable first step in defining a versatile doctrinal direction that covers the entire spectrum of conflict, including operations other than war (OOTW). Colonel James R. McDonough, former School of Advanced Military Studies director and prolific military author, describes our doctrine as "a doctrine of full-dimensional operations for a force-projection Army whose units will normally act in conjunction with air, naval and space assets and seldom be involved in operations outside the United States separate from the forces of allied nations." 1

In developing the Army's approach to fighting the entire spectrum of conflict, fundamental change within the Army must occur and cannot be approached as business as usual.

Perhaps the most revealing aspect of this new journey lies in the Army's adoption of a fifth battle tenet. Versatility now joins initiative, agility, depth and synchronization, and it should be treated as a wake-up call for the Army, for it has potentially far-reaching consequences. Versatility directs the "ability of tactical units to adapt to different missions and tasks, some of which may not be on unit mission-essential task lists (METLs). . . . The ability of units to meet diverse mission requirements . . . ensures that units can conduct many different kinds of operations, either sequentially or simultaneously, with the same degree of success."2 General George A. Joulwan, commander, Supreme Headquarters Allied Powers Europe and US European Command, wrote, "Versatility is the ability to be multifunctional and not mission-essential task list myopic."3 FM 100-5 compares a boxer with a decathlete-the boxer trains for a single event, whereas the decathlete trains for and competes in 10 separate events-to illustrate the versatility Army units need to quickly change unit configurations and tackle the next mission across the entire spectrum of conflict. A vital point is that the decathlete trains for each event-his versatility does not come cheaply but at great personal sacrifice and truly focused effort. He is always assessing his shortcomings and dedicating time and resources to fix them. Additionally, FM 100-5 implies that the decathlete has the tools he needs to compete.

McDonough's interpretation of the fifth tenet's impact is exactly as our doctrine intends: "Versatility is a prerequisite for a strategic Army, one that can move anywhere on short notice, whose units can pick up a mission previously absent from their mission essential task list, as well as one they have trained for and perfected their abilities in over time, and bring home a victory."4 We must not and cannot return to the Army of pre-FM 25-100, Training the Force, which required units to do anything and everything. FM 25-100 states, "Battle-focused training programs are based on wartime requirements. Army organizations cannot achieve and sustain proficiency on every possible training task. Therefore, commanders must selectively identify the tasks that are essential to accomplish the organization's wartime mission."5

According to current doctrine, OOTW includes, but is not limited to: noncombatant evacuation operations, arms control, domestic civil support, humanitarian assistance and disaster relief, security assistance, nation assistance, counterdrug operation support, anti-terrorism operations, peacekeeping and peace enforcement, show of force, support for insurgencies or counterinsurgencies, and attacks and raids. The very fact that by adding versatility to the battle tenets, current doctrine hints at a return to pre-FM 25-100 times is dangerous. We must continue to comply with FM 25-100, because OOTW consists of a set of service and doctrinal missions without a home in anyone's METL.
"I am a cold war soldier," a simple, yet profound statement made by Professor Tim Somes of the US Naval War College, applies to all of us who have served our nation since the end of the Vietnam War and includes all the baggage, both good and bad, that the statement implies. Our task is to intellectually discard the bad, keep the good and look for solutions today and for the future. Our new approach to versatility would be akin to leaving the Clausewitzian theory of war behind in the false belief that it is outdated. A more accurate assessment recognizes that Clausewitz is often misunderstood due to incomplete study of what he says and how he says it. It would be dangerous to leave FM 25-100 behind. Combined with the Combat Training Centers (CTCs), FM 25-100 returned focus and priorities to the chaotic approach to training and preparedness that existed in the hollow post-Vietnam era Army. This approach to training bore fruit. Evidence includes our total Cold War victory and the success of Operations Desert Shield and Desert Storm. To hint at a return to doing everything and anything under the guise of versatility, without the true associated costs, has the dreaded potential of creating a hollow Army again. If we are serious about versatility as defined in FM 100-5, we can no longer delay the tough decisions that must be made to execute it. We must pay a fair price associated with the costs that accompany that commitment.

The term major regional contingency (MRC), a strategy under the 1993 Bottom-Up Review to be prepared to prevail in two nearly simultaneous MRCs, is now called major theater war in the Quadrennial Defense Review. The term major theater war has been inserted in this article to replace any reference to MRC. For brevity, in this article only, we use the acronym MTW for major theater war. Readers should understand that MTW is not an approved acronym.—Editor

In its totality, FM 100-5 is sound. It portends to deal with the complexities that our nation, the Department of Defense (DOD) and the Army grapple with daily. It was written while our leadership was, and is, struggling with the results of DOD's Bottom Up Review, a budget that does not support a 10-division Army, base realignment and closure, the transition from forward presence to power projection and an increase in OOTW and potential regional conflicts. Under the rallying cry of "No more Task Force Smith's," the Army is expected to handle all this while ensuring force readiness. That the Army could produce a new doctrine during one of the most intense periods of change in its history demonstrates what a great institution it is.

Nonetheless, FM 100-5's greatest potential flaw resides in the added battle tenant, versatility, which is really no more than a hiding place for a less-than-total commitment to OOTW. This is not surprising, considering the continuous debate, politically and within DOD, surrounding OOTW. Our doctrine simply reflects that debate's uncertainties. If the Army continues on its present course, it may fail to properly address these distinct risks:

- How do US military units perform OOTW without sacrificing the ability to wage the entire spectrum of conflict, including two major theater wars (MTWs).
- If we continue to hedge in deference to MTWs and do not properly embrace OOTW, we risk losing the ability to meet the Quadrennial Defence Review's (QDR's) requirements and our national military strategy (NMS).
- Our continued inability to firmly address the first two dilemmas in a timely and balanced manner, defers the tough decisions to Congress. If we cannot convince Congress and DOD how to best configure the Army to meet the nation's needs now and in the future, our force could further erode due to lack of funding.

A Solution
So how do we honestly incorporate versatility into our Army and limit risk? First, I suggest we display institutional versatility and embrace OOTW totally, completely and intelligently. We are already intimately involved; all we need to do now is acknowledge the OOTW mission and treat it as we do all missions-by placing it in our METL. This equates to assigning the mission to major commands (MACOMs) down to division level. This is how the Army trains and how the Army can demonstrate true versatility under FM 25-100. Once OOTW appears as a prioritized mission on a unit METL and is consistently part of CTC training rotations, then our commitment is locked in stone, the Army way.

From the outset, the deployment of US forces into Bosnia was planned as a show of force designed to intimidate the former warring factions. More importantly, when the US Army's 1st Armored Division troops crossed the Sava River float bridge into Bosnia-Herzegovina on 31 December 1995, they arrived astride tanks and armored vehicles and wore Kevlar helmets and body armor, postured for mid-intensity conflict.

Second, I recommend modifying our force structure to reflect the QDR's requirements, which will incorporate the versatility desired in both FM 100-5 and 25-100. We must define the total capability the Army can commit to OOTW and the impact such a commitment has on other missions the Army must conduct. This does not necessarily mean a reduction in current capability or acceptance of greater risk to our primary reason for being-to fight and win the nation's wars-but rather an opportunity to better conduct operations holistically as doctrine requires. McDonough states, "Commitment to operations other than war may precede combat or flow readily back and forth between the two. They may complement ongoing combat operations, support an ambassador's country plan or otherwise serve a higher strategic purpose." Any force structure change that meets the QDR requirements must take into account McDonough's holistic approach. We have the doctrine, but not the means.

Third, by enthusiastically embracing OOTW doctrinally, and by developing more versatile units within our force structure, we garner momentum with Congress and the American people. In the battle for the budget and, more important, for increasing understanding of the Army's role, we must clearly articulate our commitment and doctrine to support the QDR's NMS guidance.

The Commitment

An extremely articulate and compelling argument against totally embracing OOTW was presented by retired Colonel Harry Summers Jr. before select congressional subcommittees and incorporated the views shared by former chairman of the Joint Chiefs of Staff, retired General Colin Powell. Summers states that "A major concern within the military is that this basic underlying principle will be corrupted by overemphasis on peacekeeping and other such nonmilitary operations." This concern is well founded. The underlying principle Summers referred to is our essence for being: to fight and win the nations wars for the American people. An example was cited in a study conducted by Lieutenant Colonel John A. English, who served with the Princess Patricia's Canadian Light Infantry and then on the National Defence College of Canada faculty. In its desire to be loved and politically correct during an antimilitary period between the two world wars, the Canadian army involved itself entirely in good works in the civilian sector and abandoned its reason for being—preparing to fight...
Canada's wars. The cost of this endeavor was a great deal of bloodshed at World War II's onset.11

There are two opposing viewpoints in assessing the risk associated with embracing OOTW. We could dilute our ability to meet the requirements of our underlying reason for being-to fight and win the next war. Or we could risk being able to win the next kind of war by insisting on being prepared to fight the next war as we fought the last one.

Steven Metz and William J. Doll of the US Army War College Strategic Studies Institute published a special report titled *The Army and Multinational Peace Operations: Problems and Solutions*, in which they state, "The most pressing tasks for the Army are not changes in procedures, doctrine, force structure, organization or training, but in attitudes. Army leaders at all echelons must understand peace operations. When peace operations are a valued part of the Army's function, then changes in procedures, doctrine, force structure, organization and training will flow naturally and smoothly."12 Although correct in the remedy, Metz and Doll do not grasp why the Army has not totally embraced OOTW: the Army will not sacrifice its ability to win the next war for anything less than war. Until we can determine an azimuth with acceptable risk levels, we will continue to be less than totally committed to OOTW. The Army not only has the right to drag its feet, but a solemn duty to do so. For change to take place, a force structure must be developed for the next 10 years. Before we as an institution commit to OOTW, we must develop a solution that reduces risk.

Professor Michael Handel believes that because of our decisive victory in *Desert Storm*, whoever takes us on next will fight any kind of war on the spectrum other than the one we just fought. At least, they will do this until they can close the technology gap.13 Former Army Chief of Staff retired General Gordon R. Sullivan stated, "We understand the difficulties of ethnic conflict and peace operations. We understand as well the need to be ready to fight and win two major regional conflicts [now called major theater wars]. Most important, we understand that we cannot meet either of these challenges at the expense of our ability to respond to the other. We must raise and sustain a force capable of success at both missions."14

This leads to the second step in becoming truly versatile: developing a conceptually simple recommendation to modify our force structure while minimizing risk from all directions and maximizing current capabilities. We must keep the same number of brigades we have now under the 10-division Army. This modification, combined with a real commitment to OOTW, and a marriage of FM 100-5 and FM 25-100, is how we can truly begin to limit the risk we must deal with now-the risk of two MTWs, resources lost to OOTW and losing the budget war.

**The "Holistic" Division**

Current Army debates involving force-structure changes usually revolve around two central themes: what additional divisions or brigades must go away to meet QDR requirements; and who will be the bill payer-heavy or light units? The debate must refocus on what our doctrine demands: units that demonstrate agility, initiative, depth, synchronization and versatility. Doctrine must support the Joint Staff's needs and, more specifically, the unified commands'. We must find a workable solution for our force structure with what we possess now. Additionally, we must demonstrate to Congress that we understand our roles. We already possess versatility-our challenge is to integrate it better so we can achieve more flexibility and synergism. Quite simply, the "holistic" division must be able to fight the entire spectrum of conflict from beginning to end, by training each of its units to METL standard.

Essentially, this holistic division must be able to play its current role in MTWs, fight the entire spectrum
of war and conduct stability and support operations. It must be able to participate in each separately and have the versatility to conduct any sequence of them in its entirety. I agree with both McDonough's belief and our doctrine's definitions, except that I believe we must assign METL tasks. The holistic division must be assigned the necessary tasks to conduct these operations. Subordinate commanders, down to and including company level, must be able to accomplish their assigned missions.

We conducted diverse missions in Haiti, Somalia and Panama by mixing light, heavy and special operations forces. We can only sustain our current deployment system of sending units-such as the 10th Mountain Division (Light)-on multiple missions for just so long. A basic fundamental change needed to build the holistic division starts with adding a light brigade to a heavy division. By definition, this automatically takes advantage of characteristics both organizations already possess and creates vastly greater synergism in what they can accomplish as a whole. The potential permutations of task-organized pieces of such an organization are limitless. We should "hold the line" at 10 divisions. We must fight to maintain the current number of brigades to create units that meet QDR requirements and allow us to support the NMS. This will require us to retrain some forces for conventional operations and will drastically reduce that requirement. For any requirement with a demand for heavy forces, the Army can task units coming out of CTC rotations which have enhanced their warfighting skills.

Adding a light brigade to a heavy division provides the versatility we are searching for without sacrificing our ability to fight and win wars. The heavy units continue to train for the next MTW; the light units focus on low-intensity conflict and OOTW. Linking the parts, based on the contingency assigned to the division, places in one package what we are now doing across MACOMs and divisions. In addition to adding the light brigade, we must also enhance the division staff and the division support command (DISCOM).

The already hefty capabilities of a heavy division's DISCOM are legendary and could easily be beefed up from already existing elements within the division. Still, additional air and ground lift capabilities, to include mechanics and stockage parts, would have to be added to the DISCOM.

The division headquarters would have to be greatly modified to plan, conduct liaison, coordinate and command and control the entire spectrum of conflict. This enhancement would allow the division to pull out "pieces" necessary to conduct various missions without eroding the division's ability to fight in a separate MTW. An additional assistant division commander (ADC) for OOTW would be needed to conduct OOTW operations and direct the necessary training much the way the maneuver ADC does now. Foreign area officers could be assigned according to their contingency missions, giving the Army liaison cells that really conduct coordination with intergovernmental organizations, national governmental organizations and UN planning cells, and could provide direct liaison with the unified command they work for. Most, but not all, of these positions would have to come from the downsizing of other MACOM staffs. The Army would truly be leading the way into the future by demonstrating low-risk service versatility.

How we train the holistic division is as important as how we build it. The Army takes great pride in its "train as we fight" motto. The CTCs have provided a "training revolution" in terms of just how important they have been in building readiness. Our doctrine states that "The Army will not operate alone. The Army contributes a full range of unique capabilities for combat, combat support and combat service support functions for sustained land combat operations as part of a joint, combined or interagency team."15

Although we now conduct broader operations at the Combat Maneuver Training Center, Hohenfels,
Germany, and the Joint Readiness Training Center, Fort Polk, Louisiana, that include OOTW, we should expand all our CTC training to ensure we train as we fight. CTC rotations must include allies, strategic lift (both air and sea), staff representation from the unified commands and our sister services-either physical participation or as part of a simulation-as well as interagency and nongovernment organizations. In sum, we must include all representatives that are part of the division's contingency mission. It may also be prudent from both a budget and jointness perspective to rename the CTCs "joint allied training centers." All users share the costs and the benefits of using the greatest training centers in the world.

There are many ideas about how to best modify the Army to better prepare it for the future. They range from a basic "dug-in heels" approach to maintain what we have now to a total overhaul with development of new units and equipment to better conduct OOTW. Figure 1 provides a risk assessment for the 10-division force given the listed scenarios.

In the case of maintaining current force structure, the Army runs a high risk of continuing to lose in budget and size while maintaining medium risk in conducting two MTWs and OOTW. The bottom line is that staying the course will only dilute our ability to do both. The Army potentially runs a higher risk as time goes on if we are not institutionally aggressive.

To build a new force out of hide without a definitive scenario would be foolhardy. To put all the Army's budget eggs into one basket would be an unacceptable risk that would exacerbate our current lack of funding for necessary continued technological advancements and quality of life. Without beefing up our current projected end strengths, new requirements will only detract from the Army's ability to win the next war. Thus, risk will increase.

The holistic division is a serious attempt to minimize risk by gaining DOD and congressional confidence now while maintaining our current risk level in a two-MTW scenario. Adding a light brigade to a heavy division begins the formation of units that can conduct all facets of our doctrine. Once the organization is formed and begins to conduct holistic operations at the CTCs, we can better define equipment needs and necessary doctrinal enhancements.

**DOD and Congress**

The third risk is that the Army budget will continue to erode if we do not institute change. Retired Lieutenant General Richard L. West, director of the Association of the US Army Institute for Land Warfare, states that "Aside from the Comanche helicopter, there are no big programs that are important to a broad base of congressional supporters." Unlike our sister services, the Army does not possess high-dollar items such as aircraft carriers and jet fighters that garner natural support from Congress at budget time. To win the budget war within DOD, we must take another approach; one that offers the best solution for our NMS and one the unified commanders will support. The Army must provide the United States with the best force possible.

We now have a legitimate target of opportunity to regain much needed funding for the Army's defense budget share-for all the right reasons-not self-serving ones. The expected post-Cold War peace dividend is a premonition gone bad. Sullivan states that "The uncertainty of the international environment makes the Army's task doubly difficult. Throughout 1993, on an average day 20,000, US Army soldiers were
deployed on operational missions in more than 60 countries. That number is in addition to 125,000 soldiers stationed forward in Europe, Korea, Panama and elsewhere." 17 Since Sullivan's address, we have committed additional forces to Haiti, Southwest Asia and Bosnia. The current defense budget was based on an expected peace dividend, compounded from a world that would be a safer place after the Soviet empire's fall. We are still living with a budget whose premise has not come to fruition. The security environment is more unpredictable and potentially harmful than previously thought. If we demonstrate our understanding of all the security needs and develop versatility to implement that understanding, it also makes sense that we aggressively seek additional funding from DOD and Congress. Figure 2 depicts the cold, hard truth of our current budget risk. The Army simply cannot continue on its current course and retain the necessary force structure and ability to stay trained and ready while ensuring we have the right technology for the future.

Our new azimuth can best be described as a marketing plan for DOD and Congress. If we believe in our doctrine and accept risk through an institutional adoption of OOTW, then proposed force structure modifications can indeed work. We must intelligently prepare and present our case to DOD and Congress.

The blueprint for this presentation must demonstrate a real commitment to adapt while looking forward and show Congress and DOD that the best place to spend their money is the Army. We must show them an Army versatile in its ability to conduct holistic operations through overseas presence, power projection, peacetime engagement, conflict prevention and, if necessary, its ability to fight to win our nation's next war. The Army can conduct peacetime operations, transition to any point on the spectrum of conflict and still remain postured to fight. We can do this because we understand the NMS and have embraced it. We have modified our force to ensure we possess the versatility demanded of us. To do all this, we need a budget that supports force sustainment and a continuing technological edge.

What has been offered is by no means a panacea-only a bandaid. These are very challenging times, made tougher by the advent of the information age. Change happens fast in every facet of life. Technological advantages in modern warfare will evaporate quicker now than ever before. This means the Army as an institution must be predictive and adaptive without the benefit of a crystal ball.

The risks associated with our ability to fight and win the next war and to adapt to successfully accomplish the missions required of us, along with the ever-present budget difficulties, are coming together all at once. We are at a culminating point right now. Change is no longer an option-it is required. To be truly versatile-to meet the demands the fifth tenet places on us-we must be ready and willing to pay a fair price now. Modifications to our current force structure should not be an "either/or" debate between heavy and light divisions but, rather, a better way to provide what is being demanded of us by both Congress and doctrine. Modifying the light brigade and attaching it to a heavy division provides such a capability. The holistic division can be a relatively cheap solution now.

To abandon the very essence of our training revolution and try to achieve versatility cheaply is not in our best interest. There is much to be discarded from the Cold War victory, but there are also some absolute jewels to be carried forward and treasured. FM 25- 100, which essentially calls for identifying specific tasks for Army units so they do not try to be proficient at every task, is one of those tools that still fits in our rucksack very nicely-and does not sacrifice our ability to win the next war or our nation's trust. MR
3. GEN George A. Joulwan, "Operations Other Than War: A CINC's Perspective," Military Review (February 1994), 10. Clearly, the roles and missions Joulwan discusses lend themselves to establishing versatility. I do not believe, however, that the same logic applies to divisions based in the Continental United States concerning reduced operating tempo and that enjoy current success because of FM 25-100, Training the Force, and mission-essential task list (METL)-driven training.
5. FM 25-100, Training the Force (Washington, DC: GPO, November 1988), 2-1. By its very name, "operations other than war," (OOTW) is a concept that may be debated on the grounds that such operations do not belong on a METL list because they are not wartime missions. I strongly disagree. Our doctrine states we must be able to fight the entire spectrum of conflict, including OOTW.
10. Ibid.
11. Ibid.
13. Handel.
15. FM 100-5, 2-2.
18. Lardner, 64.

Colonel Steven P. Schook is the chief, Conventional War Plans, Joint Chiefs of Staff, J7, Washington, D.C. He received a B.S. from the United States Military Academy and an M.A. from the Naval War College and is a graduate of the US Army Command and General Staff College, Fort Leavenworth, Kansas. He has held a variety of command and staff positions in the Continental United States and Europe, including commander, 3d Brigade, 3d Infantry Division (Mechanized), Fort Benning, Georgia; and battalion commander, 2d Brigade, 7th Cavalry Squadron, 1st Cavalry Division, Fort Hood, Texas.
At the century's turn, European armies experienced a "rolling" crisis as accelerating technological advances continually rendered existing doctrine obsolete. Recent strides in computer-age technology have created a similar crisis for the US Army. Specifically, the crisis involves conceptualizing the battlefield in a manner that enables, rather than constrains, future potential. Novel advances in information technology have introduced numerous new warfighting capabilities. For example, digital location and reporting systems now allow self-location and automated target and logistics tracking. Consequently, we can now launch simultaneous, noncontiguous operations focused on defeating the enemy decisively and rapidly.

To optimize this capability, we must discard traditional, linear battlefield conceptualizations that shackle us to an unrealistic, almost dysfunctional thinking mode. Instead, we must develop an open-ended method that enables us to visualize warfare in nonlinear terms—as a series of interconnected and related occurrences rather than as a single, sequential event. This conception will enable us to optimize chaos, maximizing it beyond functional levels for the enemy while reducing his ability to do the same to us.

Crisis and Response

During the transition from the 19th to the 20th century, Europe's "face of battle" changed radically and continuously. New inventions added unexpected dimensions to warfighting and threatened existing doctrine's foundations. The railroad and telegraph had already extended the battlefield's physical limits by the 1850s, enabling commanders to move faster and communicate better over great distances. By the 1870s, the needle gun, chassepot and mitrailleuse increased battlefield lethality and forced a revision of infantry, cavalry and artillery tactics. Before the end of the 1880s, smokeless powder and third-generation rifles, such as the Lebel, Lee Enfield and Mauser, challenged existing tactics, techniques and procedures (TTPs) once again. In the 1890s, improved recoil mechanisms, wireless telegraphy and the Maxim gun pushed European war lethality to another level. Finally, the early 20th century saw the first practical use of automobiles, submarines, airships and airplanes. In addition, the rise of nationalism since the American and French revolutions made the human dimension of war indispensable, and the progress of industrialization altered force structures across Europe and transformed the individual warrior's ethos.

European armies responded energetically to this multidimensional crisis. Tactically, they emphasized open-order formations, encouraged developing subordinate-leader initiative and advocated centralized planning and decentralized execution. Operationally and strategically, though, doctrine became more future and contingency oriented, with vast and sometimes intricate mobilization plans wedded to equally complex transportation and communication networks. General staffs developed into the operational "brains" of an army and grew in size, capability and purpose. Culturally, leaders at all levels attempted to resurrect, preserve and inculcate such time-honored military virtues as discipline, selfless service, obedience and loyalty within their units. They institutionalized professionalism, adopted universal
military service and built mass armies.

Despite their energetic efforts, Europe's armies experienced an immense stalemate and blood-letting during World War I. This deadlock occurred more rapidly, erratically and profoundly in the late 19th and early 20th centuries than in any previous period in European history. For example, the invention of the Siemens-Martin open-hearth process led to the production of cheap steel plates that combined with the new "hardening process" of the 1890s to destabilize the status quo of global power, leading to new naval rivalries—with Britain, Japan, Italy, Germany and the United States emerging as key players by 1914. Thus, lacking the wherewithal to simulate combat in a realistic manner and unaccustomed to absorbing rapid and myriad change, many soldiers found it nearly impossible to revise their battlefield conception quickly enough to keep pace with advances in military technology. Indeed, one might use the term "future shock" to explain the psychological impact that this far-reaching, rapid and nonlinear transformation had on Europeans, both civilian and military. In addition, Europe's armies lacked sufficient large-scale, live-fire maneuver areas to test the collective combat effects of new weapons before the war. None of Europe's training areas adequately replicated or simulated the multidimensional combat environment in which its "million-man" armies-equipped with the latest weaponry—would have to maneuver and fight.

Late 19th-century military reform sprang from the nature of war itself. Carl von Clausewitz described war's imponderables: fog, friction, chance, uncertainty, physical exertion, danger and its tendency to escalate toward greater violence. War's objective nature remains constant despite the radical changes that war's "means" might undergo over time. Together, these natures render combat power—maneuver, firepower, leadership and protection-relative and contingent. In other words, its value is situational and depends on the relative worth of an opponent's combat power. Additionally, independent and dependent variables interact nearly simultaneously and continuously to produce a sense of battlefield chaos. This chaos, in turn, makes war a nonlinear phenomenon—an open-ended system or process which, because of the complex interplay of foreseen and unforeseen elements, unfolds in unexpected ways. In short, turn-of-the-century military reformers lacked the ability to conceptualize fully the ongoing interaction between the nonlinear emergence of technology and the nonlinear nature of war.

21st-Century Warfare

The US Army confronts a rapidly changing battlefield today. Military operations can now occur simultaneously and continuously throughout the extended battlespace. Consequently, traditional, linear battlespace divisions such as close, deep and rear place artificial and unnecessary constraints on combat power application. Additionally, nonhierarchical, internetted command structures have begun to replace hierarchical ones in the realm of battle command. Such structures expedite the flow of critical information, decentralize operations and increase their tempo.

US Army Field Manual (FM) 100-5, Operations, defines battlespace as a "physical volume that expands or contracts in relation to the ability to acquire and engage the enemy. It includes the breadth, depth and height in which the commander positions and moves assets over time. Battlespace is based on the notion that commanders expand their thinking to develop a vision for dominating the enemy and protecting the force before any mental constraints are emplaced, such as overlays depicting phase lines, boundaries and arrows. This gives them complete freedom of thought to build a broad vision. Battlespace includes the combat power of all friendly forces that can be brought to bear on the enemy, including joint and combined forces. It contains the physical, three-dimensional view of the battlefield, which can later be depicted with operational graphics. Battlespace also includes the operational dimensions of combat, including time, tempo, depth and synchronization. Understanding battlespace
allows commanders to keep their options open, protect and sustain their forces, synchronize combat power and keep the enemy off balance."7

As digital systems begin to revolutionize tactical-, operational- and strategic-level command and control (C2) through situation awareness enhancement, commanders can send instantaneous, graphical transmission of their intent. Computer icons will soon depict individual vehicles and weapon systems with precise logistics and geographic information, all constantly and automatically updated and shared with other systems. Indeed, icons will soon make the "goose egg" obsolete and will eventually render unit boundaries, standard combat formations and graphics unnecessary.8 Digitized units might deploy in unorthodox manners to defeat the enemy's templating ability, without risking C2 loss. Traditional missions, such as defend a battle position, will become obsolete because they confine units to arbitrary terrain or a static, largely irrelevant front-line trace. Additionally, modern, well-armed and armored vehicles such as the M1A2 Abrams Main Battle Tank can fire and protect themselves while moving or stationary. Thus, the Army may choose to conduct even "defend" missions from a moving platform, presenting an ever-fluid template to the enemy.

Furthermore, force structures have begun to move toward the greater flexibility and responsiveness associated with complex adaptive systems.9 Such systems restructure themselves to adapt to and overcome changes in the environment.10 Increased information flow means that we can configure and reconfigure units like complex adaptive systems for rapid combined-arms and joint operations. We can project force packages tailored to the mission and respond to unexpected contingencies.

Today, broad socio-cultural, political and economic developments run parallel to and reinforce the dynamics of the military-technological revolution. Nationalism, once a unifying force, has now become a leading cause of fragmentation and regional destabilization. Information technology has broadened and heightened world cultural and political awareness, giving large populations instant access to military and political events and exposing them to psychological mobilization or manipulation on a vast scale. National and metanational forces have emerged in greater numbers to become likely future opponents.11 The global economy's interdependent nature has made national economies more sensitive to events in world affairs. The nonstate warrior's terror- and criminal-oriented ethos has risen to challenge the citizen-soldier's integrity, purpose and discipline. In short, the military operations environment will continue to unfold in a nonlinear, accelerated manner.

**Nonlinear Battlefield Conceptualizing**

These developments underscore the need for battlefield reconceptualization to accommodate the multiple dimensions-and war's nonlinear nature-and help commanders unleash technology's tremendous potential. However, nonlinear conceptualizing causes crises for societies and cultures conditioned to think linearly. We have allowed left-to-right, top-to-bottom and beginning-to-end processes to govern our lives and channel our thinking. Our educational institutions have told us that the rational mind likes order and eschews chaos. In other words, it prefers definite, closed configurations over amorphous, open-ended ones.12 At the same time, experience has taught us that most of the world's phenomena do not fit into such tidy packages.

Despite such systems' limitations, commanders and their staffs have had little choice but to use linear systems and two-dimensional maps and graphics to describe and conduct war. We began to envision a third dimension-air power-in the early 20th century and a fourth-space-more recently. Unfortunately, the static battle lines drawn on maps reflect physical reality no better than the maps or overlays which underpin them. Military situations constantly change: units shift position, consume fuel and ammunition
or simply report inaccurate locations, friendly as well as enemy. Static graphics fail to reflect critical events as well as important changes in the following dimensions:

- **Operational:** tempo, depth and synchronicity.
- **Human:** physiological, psychological and ethical.
- **Force:** violence and lethality.
- **Information.**

Unlike late 19th- and early 20th-century soldiers, we enjoy several distinct advantages that can help us develop a nonlinear battlefield conception:

- We have large-scale training areas and a host of constructive and virtual simulations for testing our TTPs and conceptual models.
- Society has grown accustomed to rapid change. For example, we understand that many purchases, such as new computers, will become obsolete in a very short time. In some cases, we even look forward to such "progress."
- Much work has occurred in a new multidisciplinary field called **complexity theory.** Cumulatively, this work amounts to a scientific revolution at least as important as Sir Isaac Newton's development of three mathematical laws to explain motion.14

**Complexity theory.** This theory employs nonlinear analytical systems in combination with several fundamental chaos theory concepts to explain physical phenomena's variability.15 We can adapt some of these concepts to 21st-century warfighting. For example, in chaos theory a **critical point** represents the moment at which an ordered system breaks down into chaos.16 Likewise, we can generate unmanageable chaos levels for an adversary by pushing his units to their critical points. **Chaos** is a state of turbulence or disorder resulting in a significant loss of morale or combat effectiveness or the collapse of an adversary's decision cycle, leading to an increase in the number and frequency of his tactical, operational and strategic mistakes.

Critical points develop as a function of two forces: tempo and lethality/violence. When either of these increases beyond manageable levels, the enemy has reached his critical point, and his state of being becomes one of chaos. Units can reach a state of chaos rapidly or gradually, depending on the intensity or duration of their exposure either to violence or high-tempo operations, or both. Information functions as an accelerator or decelerator, depending on its accuracy and timeliness. It can hasten or delay the rate at which a unit reaches its critical point.

Commanders should not confuse centers of gravity (COGs) with critical points. Like COGs, critical points exist on all levels of war and affect the individual soldier as well as the national command authority. Each also depends upon a larger context of political, social, economic and military power. However, critical points reflect an enemy’s state of being at a specific moment in time, whereas FM 100-5 defines COGs as his "sources of strength."17 COGs remain difficult to identify. One can also justify any number of COGs, which dilutes the concept almost beyond use.18

At the engagement of Lundby, Schleswig-Holstein, on 3 July 1864, 124 Prussian infantrymen armed with the needle gun brought a detachment of 184 Danes to its critical point in a matter of minutes. After receiving three devastating volleys, the Danes went to ground and attempted to outflank the Prussians. However, relentless fire from the needle gun cut the flanking element to pieces-and the men of the 1st Danish Infantry Regiment broke and ran. In less than 15 minutes, the Danes had lost 3 officers, 85 men killed or wounded and 12 prisoners. Prussian casualties totaled only 3 men wounded.19
The French army mutinies in May 1917 illustrate how units can reach critical points after experiencing intense violence for several weeks. During the second battle of the Aisne, 16 April to 9 May, French forces under General Robert Georges Nivelle suffered heavy casualties in a series of futile and costly attacks over difficult terrain. By early May, Nivelle's forces experienced a dramatic rise in desertions. By 27 May, whole units began to mutiny. Along the Chemin des Dames, as many as 30,000 soldiers left their positions and moved rearward, seized buildings, ignored their officers' orders and refused to "go to the front." For more than a week, chaos reigned in the French rear before mass arrests finally established order. More than 23,000 soldiers received convictions for mutinous behavior; 400 of those received death sentences, with 55 actually carried out.20

Units, particularly headquarters elements, can reach a state of chaos after exposure to high-tempo operations involving relatively low levels of violence or lethality. For example, the physical and mental demands of executing the infamous Schlieffen Plan contributed to situational "mis-awareness" in General Heinrich von Kluck's First Army headquarters in early September 1914. Six weeks of hard fighting and forced marches had pushed Kluck's army to the verge of exhaustion, outstripping his logistics and significantly increasing the number of desertions and "panics in the rear." He and his headquarters narrowly escaped capture by a French cavalry squadron on 8 September. In this flurry of activity, Kluck failed to appreciate the size of French forces gathering to his rear, dispatching only one corps at a time to deal with the French Sixth Army's advance. This advance eventually forced Kluck to withdraw behind the Marne, opening a sizable gap between his and the German Second Army into which the British Expeditionary Force and the French Fifth Army poured, resulting in the strategic "Miracle of the Marne" victory.21

Critical points provide excellent strategic-, operational- and tactical-level targets against which we can direct overwhelming force to compel an adversary to do our will. All combat forces, organizations and systems have critical points, though such variables as leadership, protection, training, experience and a unit's battlefield operating systems make each entity's critical point unique. These variables, in turn, influence the nature, duration and intensity of a unit's state of chaos.

We do not need to know our adversary's precise critical point. We need merely apply continuous pressure until signs of chaos appear. However, because armies recover and reorganize relatively quickly, their states of chaos have only variable, finite life-spans. Therefore, we must not hesitate to exploit chaos the moment it occurs. We can attack critical points equally well, whether in lethal or nonlethal environments, with the technology we currently have. The manner in which commanders employ combat power to create chaos will still depend upon mission, enemy, terrain, troops and time available (METT-T). The 1998 FM 100-5 should address how to create unmanageable levels of chaos by targeting critical points and aggressively exploiting that chaos when it occurs.

New and rapid developments have begun to alter warfighting. We must not fail-as late 19th- and early 20th-century soldiers did-to revise our battlefield vision to accommodate change. The cost is simply too high. To keep pace with the rate of technological change and account for the variable nature of war, we must embrace a nonlinear battlefield conception. In other words, we must develop an integrated, multidimensional vision that seeks to target the critical points of an adversary's warfighting system as a whole. New capabilities such as noncontiguous operations, total situational awareness, nonstandard formations, nontraditional missions, complex adaptive systems restructuring, realistic training environments and computer simulations enhance our ability to attack those critical points.

Conceptualizing the nonlinear battlefield means attacking beyond the physical dimensions of war to
envelop the operational, human, force and information dimensions as well. However, to do that consistently, we must alter our traditional thought habits. We must train ourselves to look at problems from multiple perspectives and to develop solutions that lay outside restrictive linear paradigms by wading through the discomfort this will cause. Otherwise, the chaos we witness on future battlefields may be our own. MR

9. TRADOC Pam 525-5, 2-5.
11. TRADOC Pam 525-5, 2-4.
13. The 1993 FM 100-5 recognizes only the physical, operational and human dimensions of war.
17. FM 100-5, 6-7. On the other hand, Clausewitz defined them as "the hub of all power and movement, on which everything depends." Carl von Clausewitz, *On War*, edited and translated by Michael Howard and Peter Paret (Princeton, NJ: Princeton University Press, 1976), 595-96.


Major Antulio J. Echevarria II is currently serving at US Army Training and Doctrine Command headquarters, Fort Monroe, Virginia, on the Army After Next team. He received a B.S. from the United States Military Academy (USMA) and an M.A. and a Ph.D. from Princeton University. He is also a graduate of the US Army Command and General Staff College, Fort Leavenworth, Kansas. He has held a variety of command and staff positions in the Continental United States, including chief, Battalion/Task Force and Brigade Doctrine, US Armor Center, Fort Knox, Kentucky; S3, 3d Battalion, 16th Cavalry Squadron, Fort Knox; and assistant professor, USMA, West Point, New York. He has published articles in a number of professional journals. He is also the 2d Place Winner in the 1997 Military Review Writing Contest.
Operational Art's Origins

by Bruce W. Menning

This article examines operational art's evolution in response to strategies' shifting content, operations' changing nature and military structures' evolving character. The author contends "the appearance of major new elements within the international order and the constant intrusion of new technology into military conflict" also contributed to operational art's protracted development since the 1920s. The 1998 US Army Field Manual 100-5, Operations, marks a return to operational art, ensuring the Army focuses its efforts at the operational level of war. Because this concept is such an important one, the Army must continue relating tactical means to ever-changing strategic ends, thereby providing a framework for large operations if they should arise.

Over the last decade, and especially since coalition victory in the Gulf War, the term "operational art" has achieved buzzword status within the Army and joint communities. However, despite growing acceptance, a good deal of confusion surrounds the meaning and significance of operational art. For some, it is merely tactical arrows drawn larger. For others, it is a cumbersome transplant from foreign military usage. For still others, it remains a key to recent and future victories, but one whose origins are murky and whose nature and content are difficult to define.

This article will attempt to increase the comfort level of those confronting operational art for the first time, or those still harboring doubts about its meaning and significance for future war. The discussion focuses on concept, with an emphasis on doctrinal evolution as the product of interaction over time among combat experience, theory, technology and circumstance.

The term operational art long antedates US Army usage. Six decades before operational art gained currency in the West, it was used by the Soviets. Arguably, a rough equivalent had also appeared among the Germans, who before World War I coined something they called operativ. However, neither term immediately entered the US military vernacular for two possible reasons: Before World War II and the Cold War, there was no persistent requirement in peacetime to prepare for the conduct of extended military operations on a vast scale; and during a less complex era it was possible-even comfortable-to remain firmly wedded to a 19th-century inheritance which taught that military art consisted of strategy and tactics.

For the Soviet military culture of the 1920s and 1930s, this was not the case. Fresh from the seemingly contradictory experiences of World War I (1914 to 1918) and the Russian Civil War (1918 to 1920), Soviet army theorists and practitioners sought systematic explanations for the complexities underlying victory and defeat in modern war. Armed with an ideology that emphasized theory and scientific method in military affairs, they brought new perspective to the study of military history and refreshing rigor to views on the nature of possible future war, including the conduct of operations. 1 By the late 1920s, they had emerged with an altered view of the constituent components of military art, and it is to this period-a golden age of military thought-that we owe the origins of our basic understanding of operational art. To understand why the Soviets developed this concept when they did, the reader must understand their perspectives and preoccupations.

Military Art's Changing Nature
A chief problem bedeviling all military theorists of the period was the changing nature of modern operations. Historically, the term "operation" had been in use at least since the end of the 17th century to describe what European armies did in the field. Initially, during the age of pre-industrial warfare, generals and kings raised professional armies to fight limited wars for the dynastic state's limited objectives. Within limited war's framework, the conduct of operations formed an integral part of strategy, and strategy was simply conceived as "the tactics of theater-level operations." By 18th century's end, Napoleon imparted new meaning to the traditional calculus when he raised larger armies to fight decisively for objectives that called for the annihilation of enemy forces and gave rise to empires.

Still, the basic technologies remained the same, and with room for alteration and even poetic license, the next generation of military thinkers, led by Henri Jomini and his disciples, redefined the traditional pre-industrial paradigm to describe Napoleonic military art. Their view was that military strategy remained the domain of large-unit operations and that the essence of Napoleonic genius could be understood in his pursuit of "the strategy of the single point." That is, Napoleon's columns march-maneuvered within theater to force convergence with the enemy at a single point-finite in time and space-for climactic battle to determine the outcome of a season's campaign, perhaps even the outcome of an entire war. Strategy described a limited complex of actions, including approaches, marches, countermarches and maneuvers, which took place within theater to leverage mass for decisive battle. Tactics described what happened within the limited confines of the battlefield.

During the 19th century's last half, about the time when most military thinkers had grown comfortable with this understanding of strategy and tactics, the industrial revolution went to war, thereby altering the basic paradigm in ways not fully understood until after World War I:

- The evolution of the modern industrial state during the 19th century enabled governments to tap vast manpower resources to produce truly mass armies based on the cadre and reserve principle of recruitment and organization.
- The application of steam and electricity to military ends enabled governments to mobilize these armies and project them into potential theaters with unprecedented rapidity and predictability.
- The size of these armies and their preparation for deployment in future conflict mandated the application of industrial-style planning and directing methods.
- The new firepower, based first on rifled, breech-loading weaponry, then on its magazine-fed, smokeless powder variant, increased lethality and ranges, and with them, the scale of modern combat.

These changes revolutionized the conduct of war and set the stage for an altered understanding of military art and its component parts. Except for the Prussians, few practitioners understood that strategy now had to account for movement of forces in-theater and for their mobilization and movement to theater. In addition, something else was occurring that only a few obscure East European thinkers perceived: as modern conflict drew increasingly on the will and resources of entire populations, notions of strategy also had to take into account linkages between fighting front and deep supporting rear.

Even more perplexing for the practitioner, the novel combination of mass and firepower meant that the strategy of the "single point" within theater had lost relevance. To avoid lethal frontal confrontation and to avail themselves of mass and speed of deployment, commanders now sought to stretch Napoleon's "single point" of troop confrontation laterally in pursuit of an extended line. The idea was to pin frontally, then extend to the soft flank, with an eye toward either the envelopment or the turning
movement. Thus, the Napoleonic strategy of the single point gave way within theater to the strategy of
the "extended line." This development, which was already evident in the American Civil War's later
stages found its tragic culmination with the extended trench lines of World War I on the Western Front.4

If these changes were not challenging enough, traditional notions of tactical-level battle also underwent
fundamental alteration. As ranges extended, battlefield limits increased geometrically and the
commander's ability to control his troops diminished dramatically. Although more troops than ever
before inhabited the battlefield, they now became invisible as they went to ground to avoid lethal
firepower. Battles began to lose whatever internal logic and coherence they once had: From a mixture of
controlled mayhem and chaos within a limited area mercifully lasting only hours or perhaps several days,
they had now evolved to rattle across time and space to produce an outcome from which even the
triumphant might emerge without final victory. As the slaughter of World War I-style positional warfare
indicated, the sum of tactical successes was no sure predictor of larger strategic success.5

Though not fully apparent until after 1918, a key to understanding what had occurred was a perception of
how the nature of military operations had changed over the course of the late 19th and early 20th
centuries. In traditional Napoleonic-style strategic perspective, operations described what occurred
within theater as armies, which had already been assembled and deployed, were concentrated and
maneuvered against each other to force a single, climactic battle. Logistics had always been a significant,
but subsidiary part of the calculus: Troops got by on what had been stockpiled before the onset of a
season's campaign or on what they could scrounge from a grudging population within theater.

However, the overall picture had changed by the beginning of the 20th century. Campaigns were no
longer governed by the seasons. The nature of operations was increasingly dictated by the thrust of
higher-level preparation and planning, and operations themselves were no longer finite affairs leading to
a single decisive battle. Operations, a complex of military actions and battles linked by time, place and
intent, might extend for several weeks or longer. An operation's course might witness a major
regroupment of forces and require changed command, control and logistic arrangements, all within the
altered limits of greatly expanded space and time. The growing realization was that the preparation for
and conduct of operations had expanded beyond the limits of traditional military strategy to incorporate
new content, methods and concerns. The most important issue was one of linkages, and within a
conceptual framework for the conduct of operations, how to fashion linkages to contend with changes in
time, timing, duration, support, scale, range and distance.

World War I simply reinforced and added more wrinkles to these and related considerations. Combat
experience demonstrated conclusively that single operations no longer dictated the outcome of a
campaign or war. Decision came only as a result of successive operations linked by intent, location,
allocation of resources and concerted action. Combat experience also demonstrated the bankruptcy of the
extended-line strategy-once flanks were denied, adversaries were left with two unpalatable options:
Effect a penetration or attack in another theater. Penetrations presented formidable challenges because
the hard school of experience taught that defending forces could fall back on a combination of deep
reserves, a relatively undamaged rail net and a coherent rear area to reconstitute a viable defense in what
later was called "operational depths." Consequently, after only limited tactical gains at great cost, the
attackers would have to pause and prepare for follow-on offensive operations.

World War I also suggested solutions from outside theater for the bloody impasse. One was to have a
potential ally available with vast manpower reserves to tip the scales at the 11th hour. Another was to
attack the enemy's deep supporting rear either indirectly through surface blockade or a submarine "guerre
de course." Still another came from technological innovation: Aircraft could fly over trench lines, while
armored vehicles could crush and shoot their way through. But before any of these innovations could be applied with any degree of consistent success in future war, practitioners had to understand what had happened and why and what the implications were for the future. In the course of pondering these variables, theorists and practitioners would begin to fashion not only a common vocabulary, including a rudimentary understanding of operational art, but also a common conceptual framework for the conduct of operations.

**New Vocabulary and Solutions**

I have described a world of complex military realities that Soviet thinkers confronted during the 1920s and 1930s. To be sure other military cultures and thinkers, including Giulio Douhet, William "Billy" Mitchell, J.F.C. Fuller and B.H. Liddell Hart, also contributed to intellectual ferment and "new thinking" during the same era. The Soviets were distinctive for the following reasons:

- They maintained a consistent focus on the conduct of large-scale, ground-oriented operations.
- They worried obsessively about linking separate aspects of their thought about the changing nature of operations to larger and smaller military realities.
- They produced an entire school of thinkers, not just individuals laboring in isolation from one another and their military cultures.
- They undertook a systematic historical study of operations since Napoleon's time to understand what had changed and why.

Soviet army theorists emerged from this quest with what they felt were fundamental keys to understanding change: The shifting content of military strategy, the evolving nature of operations themselves and the disaggregation of military structures. An important underlying assumption was that these developments owed much of their significance to the impact of changing technology over time.

The Soviets perceived that evolving military theory and practice had led to a situation in which the strategy of an entire nation at war had become a kind of intellectual and organizational continuum linking broad fighting front with large supporting rear. That is, strategy was what guided a nation in preparing for and waging contemporary and future war, while the conduct of operations was rapidly assuming sufficient identity to warrant attention in itself, albeit not in isolation from strategy and tactics. The conscious understanding was that strategy-more precisely, military strategy-had ballooned to encompass a host of activities, including higher-level planning and preparation, resource orchestration and priority and objective identification, all of which culminated in the direct application of military power for the state's goals. In short, strategy had come to mean something akin to what Colonel Arthur F. Lykke Jr. would later define as orchestrating and linking "ends, ways and means" to the attain national security objectives.

This development, when coupled with the increasing complexity of operations, caused a gap to open between the traditional understanding of strategy and tactics. Some commentators filled this gap with the term "grand tactics" while others searched for analogous terms, including "applied strategy" and operatika (Russian circa 1907), to define what the more traditional understanding of strategy had once described as happening within theater. For a time, under military theorist Sigismund W. von Schlichting's influence, the Germans toyed with operativ, but they do not appear to have elaborated it with any degree of persistence and consistency. Under the influence of varied perspectives and preoccupations, other commentators saw no gap and therefore found little reason to worry about it, continuing to regard tactics and strategy as directly linked.
In contrast, by 1922 the Soviets were beginning to fill the "terminological gap" with something they
called "operational art," and they would spend much of the 1920s and 1930s developing a more complete
understanding of this concept and its implications. At first, it was a term Soviet army thinkers used to
bridge the gap between strategy and tactics and to describe more precisely the discipline that governed
the preparation for and conduct of operations. In 1926, a Soviet theorist and former Imperial Russian
General Staff officer, Aleksandr A. Svechin, captured the essence of linkages among the new three-part
understanding of military art when he wrote, "Tactics makes up the steps from which operational leaps
are assembled. Strategy points out the path." Not surprisingly, a new department, Conduct of
Operations, appeared alongside the conventional Departments of Strategy and Tactics at the Soviet Staff
Academy.

The new understanding of the relationship among the three components of military art provided impulse
for a second factor—steady focus on the evolving nature of operations, with implications for future war. In
accordance with the foregoing discussion, the Soviets understood that the industrial revolution had
changed the face of modern operations. They knew that operations now had to be consciously
differentiated from battles, which were shorter in duration, more limited in scope and outcome and more
episodic in nature. Moreover, World War I had driven home the realization that single operations in
themselves rarely produced strategic decision. Decision now came as the result of a whole complex of
successive, simultaneous and related operations. The Soviets also perceived that operations as diverse as
those of World War I and their own civil war had much in common. This realization came primarily
from an understanding that logistics and rail and road nets played a key role in determining the scale,
scope and depth of modern military operations. During the mid-1920s, Soviet army Staff Chief
Mikhail N. Tukhachevskiy ordered the faculty that taught the conduct of operations at the staff academy
to incorporate logistics into their operational-level exercises. Some Russian commentators later asserted
that consideration of support in tandem with operations actually gave birth to the concept of Soviet
operational art.

Soviet theorist Georgiy S. Isserson provided the necessary insight: That armies since the onset of World
War I had witnessed a "disaggregation of forces." That is, between 1914 and the early 1930s, the steady
march of technology had resulted in the structural evolution of armed forces whose organizations now
reflected greater diversity and whose weapon had become increasingly differentiated by range and
combat effect. For continental-style armies, these forces bore only superficial resemblance to their past
counterparts. In 1914, for example, despite differences in movement and combat technique, infantry and
cavalry represented two aspects of a fairly homogeneous force moved by muscle on the battlefield and
supported by similar kinds of artillery. The operational radius and combat effects of these forces were
still relatively limited in depth and scope. However, by the 1930s, new structures and weapons had
evolved to accompany the introduction of aircraft, armor and long-range artillery into battles and
operations. What resulted was a more heterogeneous force, but more important, a force whose qualities
and attributes required a new order of thought and preparation before they could be systematically
applied to military ends.

Isserson saw that a primary purpose of operational art was to reaggregate the diverse effects and
operational characteristics of these forces either simultaneously or sequentially across a much larger
theater of combat operations.

These and related impulses came together during the 1930s to produce the Soviet concept of deep
operations. With the massive application of new technologies, the Soviets swept away the older
geometries of point and line to settle on the advantages of extending a force vector in depth. The
requirement was to mobilize a diverse combat array, including infantry, armor, airborne, long-range
artillery and air power, then orchestrate this array's multiple effects through an operation both sequentially and simultaneously in three dimensions. The object in the offensive was to attack an enemy's defenses as near simultaneously as possible throughout their depth to effect a catastrophic disintegration of their entire defense system. The concept was to accomplish a penetration by blasting and crushing a path through the tactical zone; then insert a powerful mobile group for exploitation into the operational depths. For maximum decisive effect, the Soviets envisioned these operations as driven from the top down, starting at front (army group) and proceeding down through army and corps levels.15

Although the Soviets did not ignore other operational issues, the theory and practice of deep operations occupied center stage for Soviet operational art during the 1930s. Operational art required the practitioner to:

- Identify strategic objectives within theater.
- Visualize a theater in three dimensions.
- Determine what sequence of military actions-preparation, organization, support, battles and command arrangements—would bring the attainment of those objectives.

After analyzing previous operations, and assuming massive injections of armor and airpower, the Soviets calculated that future operations might occupy up to 300 kilometers of frontage, extend to a depth of about 250 kilometers and have a duration of 30 to 45 days. Consequently, these operations would be closely tied to the attainment of objectives determined by larger strategic requirements, while overall success would rest on the ability to integrate logistics and tactics into the larger design.

Linkages between fighting front and large supporting rear were also clear. For various reasons, including a close reading of Carl von Clausewitz's work, the digestion of lessons from the home front in World War I and a growing sense that victory in future war would depend on the state's total resources, the Soviets gravitated to a view that future conflict would be systemic and protracted. During the 1930s, Joseph Stalin's policies of agricultural collectivization and massive industrialization amounted to a peacetime mobilization of Soviet society. A succession of five-year plans built infrastructure for future war and produced much of the military hardware required for deep operations. The transformation—even militarization—of Soviet society stood as grim testimony to linkages between strategic vision and operational-level capability.16

Stalin's potential German adversaries inherited a different military legacy and worked from a different philosophical base. After lightning victories over the French in 1870 and 1871, much of the rationale behind German military planning had been to devise initial operations of sufficient scope and speed that they would bring about the enemy's capitulation during a single brief campaign of annihilation. The assumption was that modern society had become too fragile to withstand the dislocations of extended military conflict. The World War I experience seemed to confirm earlier apprehensions: Protractedness had brought the "Hydra-headed" dangers of attrition, domestic exhaustion and political instability, even revolution.

As the German Reichswehr emerged from the Versailles-imposed 1920s' cocoon to become Hitler's Wehrmacht in the late 1930s, emphasis once again fell upon avoidance. From a near-intuitive grasp of the military potential resident in the same technologies the Soviets were developing, the Germans fashioned blitzkrieg, a stunning response to the challenges, including protractedness, inherent in positional warfare. The marriage of air power and armor with combat technique gave birth to a combined arms concept with immediate tactical application and important operational implications.
Once again the siren-like calls of annihilation and rapid decision summoned the Germans to rocky military shores.17

In retrospect, the new German vision for "lightning war" had at least two major shortcomings, one of which was accepted as self-imposed. The first was that operators and planners failed to embed blitzkrieg in a coherent vision for the conduct of operations, something which might have come about if the Germans had bothered with developing their own legacy of operativ.18 Experience could overcome this problem. The second and more important shortcoming was that the Germans failed beyond the obvious and superficial to consider important systemic linkages between fighting front and supporting domestic rear. Nevertheless, Hitler found the new vision congenial with his own grasp of strategy, while the successes of 1939 to 1942 obscured the more profound difficulties of mobilizing the home front.19

In contrast, the Soviet vision possessed impressive coherence, but it is important to note that Moscow did not initially have all the answers. The very nature of Soviet military culture, coupled with the requirements of continental-style warfare, meant that the Soviets retained a very limited view of operational arts' air and naval components. The chief purpose of air power was to serve the ground operation, while the primary role of naval forces was to defend the coastline and to extend the geographical limits of conventional land-oriented theaters of military actions. In addition, other circumstances peculiar to the Soviet situation prevented the Soviet army from drawing timely benefit from an understanding of operational art. Thanks to a series of circumstances, including Stalin's officer corps' purge in 1937 and 1938, misinterpretation of lessons learned from the Spanish Civil War (1936 to 1939), the necessity to assimilate huge quantities of troops and new technology and Hitler's ability to effect surprise in 1941, the Soviets did poorly in World War II's opening stages on the Eastern Front.20 Not until 1943 did they emerge from the hard school of experience to return to a more perfect version of operational art-with devastating consequences for the Wehrmacht.

From Stalingrad to Berlin during 1943 to 1945, the Soviets perfected front and multi-front sequential and simultaneous operations. Stalin's marshals learned to command and control these operations in depth and breadth while coordinating air support with armored thrusts. From 1944 on, mobility and maneuver assumed increasing significance, in part because the Germans could no longer replace losses, and because lend-lease trucks enabled the Soviets to stretch the limits of logistic support. Doctrine and practice gradually evolved to emphasize the most complex of modern ground operations-the encirclement-which the Soviets successfully executed about 50 times on the Eastern Front. The Soviets decisively turned the tables on the Germans and, in so doing, demonstrated a mastery of the military art that compared favorably with earlier German successes.21

The World War II and Cold War Legacy

World War II also left the US Armed Forces with considerable experience in conducting modern operations. However, operational mastery had come neither easily nor quickly, in part because the period between the world wars offered scant intellectual, doctrinal and organizational precedent. At the US Army Command and General Staff School (USACGSC) during the 1930s, theater operations were taught according to 19th-century precedent as "military strategy." The Army's capstone field manual, FM 100-5 Operations, appeared in draft form in 1939, but its focus, as befitting a small, peacetime ground force, was primarily tactical. The Louisiana Maneuvers of 1940 and 1941 offered only belated and limited practical experience with large-unit operations.22 For its part, the Army Air Corps had to support ground operations, but much of its attention was riveted on acquiring the expertise and hardware to conduct strategic bombing campaigns.23
To its credit, the US Navy, drawing from its experience in World War I and anticipating the possibility of a protracted two-ocean war, seriously considered the planning challenges inherent in conducting multidimensional operations over time and across large expanses. Yet, the overall US picture was one of Isserson's disaggregated forces translated into American terms. Unfortunately, the services and their offspring remained largely preoccupied with their own perspectives, problems and self-interests. For these and other reasons, the background for preparing and conducting operations constituted at best a mixed bag. The result was that US military forces during World War II had to learn on the job from the hard school of experience. To their credit, commanders and their staffs gradually perfected the art of conducting massive combined and joint operations across vast distances to reach strategic objectives. It would be difficult, in retrospect, to argue that major operations by Admiral Chester W. Nimitz in the Central Pacific, General Douglas MacArthur in the Southwest Pacific, General Dwight D. Eisenhower in Europe and General George S. Patton Jr. across northern France, did not match the majesty and significance of Soviet World War II operations.

Despite the richness of experience in conducting World War II operations, the United States and the Soviet Union followed different paths of postwar doctrinal and organizational evolution. For a time, neither former ally focused consistently on large-scale operations. The Cold War precluded doctrinal interchange, while demobilization and the advent of nuclear weaponry produced varying responses which affected the way the two armed powers viewed their roles and the nature of possible military operations.

In the US Army, theater armies and support commands atrophied or disappeared in the rush to demobilize, leaving the Army to seek parochial comfort in tactical-level concerns. During the Cold War's first decade, the United States increasingly sought military capital in reliance on strategic and battlefield-level nuclear devices, which further dampened doctrinal interest in large-unit operations.

When the Korean War intervened, a mixture of improvisation and difficulties associated with theater geography at first precluded serious thought about sweeping operations on a vast scale. The one subsequent bright spot, MacArthur's landing at Inchon and advance to the Yalu River, was soon forgotten as tactical stalemate set in along the 38th parallel. Meanwhile, the Soviets began to reconsider their own hasty post-World War II demobilization. Because Stalin initially did not have the atom bomb, the best he could do was to modernize Soviet forces to field a better variant of what had brought them victory on the Eastern Front. Until 1953, Stalin's presence clouded analysis of lessons learned from World War II. Subsequently, Nikita S. Khrushchev's rush to downsize the Soviet military through reliance on nuclear weapons also de-emphasized operational art's importance.

For the US Army, three important circumstances prompted a doctrinal evolution that culminated in the adoption of operational art as a doctrinal concept. The first was the Vietnam War, in which field forces scored a series of tactical triumphs but were unable to transform them into strategic outcomes. Debate over the reasons for this failure, along with the necessity to rebuild the US Army, eventually prompted a far-reaching series of doctrinal and organizational changes that cut to the core of how the Army expected to do business in future war. As the Army resurrected itself and peered into the future, some officers looked to the military classics, especially those by Clausewitz, both to afford insight into recent failure and to provide inspiration and vocabulary for what needed to be done. Meanwhile, threat analysis identified the task's magnitude-major confrontation with Soviet and Warsaw Pact forces in Europe assumed overriding significance as the most challenging version of possible future war. The very nature and scale of this threat led naturally to a rebirth of interest in the conduct of large-unit operations.
A second important factor in the Army's doctrinal evolution was the technological content of possible future war. The Vietnam War had witnessed the limited introduction of sophisticated precision-guided weaponry, but there was little coherent sense of the overall implications the new gadgetry and related technologies might hold for conventional war. Much of that sense came from the 1973 Middle East War, during which the massive application of new munitions appeared to revise conventional wisdom about the calculus for air superiority, the role of armor in ground combat and the relationships among various components within the conduct of operations. Meanwhile, a new organization, the US Army Training and Doctrine Command, attempted to digest the lessons of the Middle East War and respond to the challenge of possible conflict with Warsaw Pact hordes on the northern European plain. The result was the 1976 version of FM 100-5 which emphasized "active defense."28

Dissatisfaction with this concept and the search for alternatives was a third major factor in the Army's post-Vietnam doctrinal evolution. On one hand, the geopolitical realities of NATO dictated both a forward defense and national contributions of corps-size formations, both of which lobbied strongly for a continuing tactical-level focus. The 1976 FM 100-5 accurately reflected this focus. On the other hand, increasingly obvious considerations, including the necessity for defense in depth and the requirement to apply and integrate sophisticated technologies at higher levels, argued for new departures in thought and organization. As critics and writers of doctrine turned to the promise inherent in conducting a future war of maneuver with large-scale units, they sought historical and doctrinal precedent. Earlier, advocates of "active defense" had seized upon dogged German defense against the Soviet onslaught from 1943 to 1945 as key to the doctrinal secret of "fighting outnumbered and winning." The belated realization was that the Germans had fought outnumbered and lost.

Now, the advocates of maneuver war seized upon blitzkrieg and initial German successes in World War II to advance doctrinal departures that would emphasize the marriage of technology and technique while conducting modern mobile operations. Almost as an afterthought, other thinkers began seriously to examine the doctrine and military art of the Soviet adversary which had inflicted defeat on "the devil's disciples." From Soviet military history there gradually emerged a mature understanding of the three-part nature of Soviet military art, along with notions about why the Soviets chose to place separate emphasis on "operational art" as the theory and practice of conducting operations. The term found immediate resonance among US Army doctrine writers, who were now more attuned to the nuances and complexities of modern operations.29

Meanwhile, the Soviets themselves emerged from the doctrinal torpor induced by Stalinist and early nuclear-era rigidities. From the mid-1960s on into the 1970s, as the Soviets slowly clawed their way to nuclear parity with the United States, military art theorists filled the pages of the serious Soviet military press with works that amounted to a renaissance of operational art and its contemporary legacy. Under conditions of nuclear parity, a major assumption was that in a future European war, the nature of operations might remain conventional, either initially or for an extended period. Consequently, it was necessary once again to focus single-mindedly on the preparation and conduct of large-scale conventional operations-albeit under conditions which might witness a rapid escalation to nuclear war.30 During the late 1970s and early 1980s, this train of thought lay at the heart of the conceptual evolution of the theater strategic offensive operation. This series of integrated operations envisioned a massive offensive built around the echeloned introduction of forces that would develop attacks facilitating the insertion of operational maneuver groups for exploitation within the shallow NATO rear area.

**US Operational Art**
When open-source materials on Soviet operational art and scattered intelligence about the theater strategic operation reached US and NATO audiences, they added fuel to the fire of doctrinal and technologically inspired innovation. Already in the early 1980s, NATO leaders had begun to adopt the follow-on forces attack (FOFA) concept as a way of striking at highly echeloned Warsaw Pact formations in depth by employing new and more powerful long-range precision weaponry.

The promise of new technology, along with a NATO-oriented military buildup and the emerging emphasis on maneuver war, prompted doctrine writers to alter their focus, examine linkages and contend with the thorny issues of scale, content, scope and duration. As a result, the US Army doctrinal community conceded operational art was necessary within theater to link new concepts and technologies with higher (strategic) and lower (tactical) level concerns.

Not surprisingly, when the 1982 FM 100-5 appeared, it recognized three levels of war and asserted that "the operational level of war uses available military resources to attain strategic goals within a theater of war." The new FM emphasized agility, initiative, depth and synchronization. It also addressed the problem of reaggregation by acknowledging the necessity for close cooperation with the US Air Force in waging AirLand Battle. Despite the tactical overtones implicit in the word "battle," the 1982 FM-100-5 clearly encouraged a focus on the operational level of war, which involved planning and conducting campaigns. For their part, campaigns were conceived as "sustained operations designed to defeat an enemy force in a specified space and time with simultaneous and sequential battles."

Four years later, the 1986 FM 100-5 deepened and extended the Army's understanding of contemporary operations, and for the first time in US military usage, the Army capstone manual actually defined operational art. Under US rubric, operational art was "the employment of military forces to attain strategic goals in a theater of war or theater of operations through the design, organization and conduct of campaigns and major operations." This definition was no mere copying of Soviet precedent, but rather an attempt to apply the concept to future US operations from the perspective of an informed and updated understanding.

The elaboration of operational art in US view reflected many of the preoccupations and intellectual growing pains with which Army doctrine writers had contended since the Vietnam War. From a curious mixture of modified Clausewitz and Jomini came the concepts of operational design, including center of gravity, lines of operation, decisive points and culmination, which underlay operational art and its application to campaign planning. From a sense that technology and circumstance were changing the nature and content of operations, there flowed a generic understanding of operational-level functions-intelligence, fires, maneuver, logistics, protection and command and control-which entered either sequentially or simultaneously into planning for major operations and campaigns. From a realization that operational art would remain an empty concept unless closely tied to education and application, there came gradual introduction of campaign planning into the curricula of the US Army War College and the USACGSC.

**Joint Impact**

Although the Army had dealt convincingly with issues of concept, vocabulary and application, there was no immediate guarantee that the joint community would pick up on one service's fixation with operational art. Of the other services, only the US Air Force had become increasingly a party to the Army's doctrinal evolution, thanks to the explicit and implicit implications of FOFA and AirLand Battle. Indeed, doctrinal evolution might have stopped in the mid-1980s, had it not been for several subsequent, near-simultaneous developments.
The 1986 Goldwater-Nichols Department of Defense Reorganization Act. This legislation had several important and, at first, almost unnoticeable consequences for the US defense establishment. The new congressional legislation enhanced the stature and functions of the warfighting commanders in chief (CINCs), who now wielded increased responsibility in planning for and conducting future joint and combined military operations.

Mandated emphasis on jointness. "Jointness" forced the services to write doctrine with an eye toward a common understanding of the conduct of operations, both jointly and separately. With the creation of J7, a new Joint Staff directorate, joint-level doctrinal stress fell increasingly on the development of common joint-level vocabulary and concepts. Under these circumstances, it was no accident that the US Navy began to talk about operational art in maritime theaters. It was also no accident that Joint Publication 3-0, Doctrine for Joint Operations and Joint Publication 5-0, Doctrine for Planning Joint Operations focused more clearly and consistently on operational art.

The Cold War's End. Another factor in contemporary doctrinal development was the Cold War's end. One major result of vanishing bipolarity was a renewed effort to integrate regional perspectives and priorities into the crafting of US national security and military strategies. These concepts provided guidance and a sense of larger context. The same concepts reinforced the impact of Goldwater-Nichols, causing CINCs to focus more distinctly on the development of theater-level strategies with an attendant but sometimes unspoken emphasis on operational art concerns. Campaign planning also had a role to play. It incorporated elements of operational art and theater-level strategy, but also gradually evolved to contend with regional threats. Thus, another Cold War consequence had figured into the development of doctrine and concept: The emergence, or perhaps rediscovery, of major regional threats outside the context of traditional ideological conflict. Still another consequence was a de-emphasis on the likelihood of nuclear war, a realization which forced all the US services to ponder the challenges inherent in conducting extended conventional operations within the context of regional military conflict.

Downsizing. The post-Cold War era brought force reductions, force projection and a scarcity of resources, all of which argued that future conflict would leave little room for service parochialism and little time for World War II-style on-the-job training. Key components of modern operations, especially logistics and sustainment, suddenly assumed greater significance. If during the 1970s and 1980s the Army worried about "first battles" in future war, now the joint community had to worry about "first operations" in future campaigns and wars.

To prove this point, the 1990 to 1991 Gulf War erupted to provide an important impulse for a doctrinal reincarnation of operational art in joint guise. Operations in Desert Shield/Storm reinforced the evolutionary flow in several ways. First, they unconsciously revisited Isserson's legacy by drawing attention to the complexities of planning and action required to bring about a reaggregation of combat effects within theater over time by disparate armed forces with disparate capabilities. This realization lay at the heart of modern joint warfare and continues to provide fertile ground for continued doctrinal growth. Second, the conceptual tools inherent in the US understanding of operational art, including center of gravity, played an important part in the calculus that brought allied victory. And third, with all the attention devoted to "high-tech" weaponry, the Gulf War reminded both the military and the public at large that a revolution in military affairs (RMA) was continuing apace, with important implications for the future. One way of placing the RMA within context for theater application would be to view it within the intellectual and doctrinal perspective of operational art. After all, operational art was born in an era when the advent of air power and ground mechanization contributed to a specific theater-level
focus, and there is no reason to believe that operational art as it has entered US usage cannot again serve as a doctrinal catalyst for new ways to envision the conduct of future operations.

This operational art evolution overview demonstrates some of the verities and ironies inherent in the history of a concept. Concepts are based on ideas, and ideas over time can be picked up, dropped and either reborn or refashioned to suit fresh circumstances and changed situations. In general, operational art first appeared during the 1920s in response to the shifting content of strategy, the changing nature of operations and the evolving nature of military structures. Larger context included the appearance of major new elements within the international order and the constant intrusion of new technology into military conflict. During the late 1980s and early 1990s, all of these conditions were once again present, and in one of the ironies of intellectual and military history, they elicited a rebirth of interest in operational art under different circumstances. The productive elaboration of this concept in contemporary context supports the contention that military thinkers and doctrine writers should always draw inspiration from the past but not be bound by it. Indeed, the term's potential for retaining future significance argues that theorists should seek to expand and refine the limits of operational art. It and related concepts remain dynamic, and dynamism, while sometimes a source of confusion, is also an important sign of vitality and growth.  

4. Ibid., 34-37.
6. The classic example of this trend was Aleksandr A. Svechin's textbook *Strategiya* [Strategy], 2d ed. (Moscow: Voyennyy Vestnik, 1927), which has been edited by Kent D. Lee and translated into English as Aleksandr A. Svechin, *Strategy* (Minneapolis, MN: East View Publications, 1992); the first chapter describes "strategy in a number of military disciplines."
10. The origin of the term is categorically ascribed to Svechin by N. Varfolomeyev, an early student of operational art, in "Strategiya v akademicheskooy postanovke" [Strategy in an Academic Setting], *Voyna i revolyutsiya* [War and Revolution] (November 1928), 84n.
11. Svechin, *Strategy*, 269; see also, Jacob Kipp, "Two Views of Warsaw: The Russian Civil War and
12. The officer most frequently associated with the comparative analysis of operations was V.K. Triandafillov, whose ground-breaking Kharakter operatsiy sovremennykh armiy [The Nature of the Operations of Modern Armies], 3d ed. (Moscow: Voyenizdat, 1936), has been edited by Jacob W. Kipp and translated into English as The Nature of the Operations of Modern Armies (Ilford, Essex, UK: Frank Cass and Co., Ltd, 1994); see especially part two.
15. R.A. Savushkin, Razvitiye sovetskikh vooruzhennykh sil i voyennogo iskusstva v mezhevoinenny period (1921-1941 gg.) [The Development of the Soviet Armed Forces and Military Art during the Inter-War Period (1921 to 1941)] (Moscow: VPA, 1989), 90-100.
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18. See the discussion, for example, in John Keegan, Six Armies in Normandy (New York: Viking Press, 1982), 243.
20. The attainments and difficulties of the pre-war era are summarized in Georgiy S. Isserson, "Razvitiye teoriy sovetskogo operativnogo iskusstva v 30-ye gody" [The Development of the Theory of Soviet Operational Art during the 1930s], Voyennno-istoricheskiy zhurnal (March 1965), especially 54-59.
27. The most recent account is Roger J. Spiller, "In the Shadow of the Dragon: Doctrine and the U.S. Army after Vietnam," typescript to be published in RUSI Journal (December 1997).
30. For an indication of the renewed emphasis on operational art, see then Chief of the Soviet General Staff M.V. Zakharov's "O teorii glubokoy operatsii" [On the Theory of the Deep Operation], Voyenno-istoricheskiy zhurnal (October 1970), 10, 20; overall context is provided by David M. Glantz, "The Intellectual Dimension of Soviet (Russian) Operational Art," in McKercher and Hennessy, editors, The Operational Art, 135-39.


34. See, for example, COL William W. Mendel and LTC Floyd T. Banks Jr., Campaign Planning (Carlisle Barracks, PA: US Army War College, 1988), 5-15.


38. See, for example, James K. Morningstar, "Technologies, Doctrine, and Organization for RMA," Joint Force Quarterly (Spring 1997), 37-43.

Bruce W. Menning is an instructor in the Strategy Division, Department of Joint and Multinational Operations, US Army Command and General Staff College (CGSC), Fort Leavenworth, Kansas. He received a B.A. from St. John's University and an M.A. and Ph.D. from Duke University. He is also a CGSC graduate. His previous positions include special assistant to the Deputy Commandant, CGSC; Secretary of the Army Fellow, Moscow; director, Soviet Army Studies Office, Combined Arms Center, Fort Leavenworth; John F. Morrison Professor of Military History, Combat Studies Institute, CGSC; Associate Professor of History, Miami University, Ohio; and he is a retired US Army Reserve officer. He is the author of Bayonets Before Bullets: The Imperial Russian Army, 1861-1914.
Battle Command: Will We Have It When We Need It?

by Major Deborah Reisweber, US Army

The US Army has embraced battle command, a concept which involves expertise in understanding the current state of the battlefield, visualizing a desired future end state, communicating intent and making the desired end state a reality.1 In simpler terms, it is the ability to create a vision for success (to know) and see it applied on the battlefield (to do).2 To know encompasses the visualization tasks involved in battle command. A battle command master is able to see both friendly and enemy forces in time and space and the results of their contacts. To do is the skill in taking this vision, successfully communicating it to subordinates, constructing a plan that will achieve success and providing leadership which can carry the operation to a successful end state.

We envision that skilled battle commanders will use the Force XXI Army to defeat our future adversaries. However, many characteristics of these future wars and adversaries are uncertain. We anticipate information-age technology will drive the scope, intensity and tempo of future operations to fast, furious and lethal new heights.3 The question we must ask ourselves now is: "Has this enthusiasm and drive for information dominance caused us to overlook and downplay the critical human element in warfare and the battle command skills that will be essential to success on 21st-century battlefields?"

Battle command, like operational art, is a difficult concept to define, although most would "know it when they see it." We acknowledge that warriors such as Napoleon, generals Douglas MacArthur, William T. Sherman and George S. Patton Jr. "had it," but what exactly is it? These men each had superior intellect and relevant warfighting experience, but can we identify the specific knowledge, thinking and behavioral skills these leaders possessed that allowed them successful battle command performance? It is highly probable that there are inherent capabilities possessed by certain individuals which allow them greater success in the art of battle command than others, and for the purposes of this article I make the assumption that this is true.

There is ample evidence to suggest that battle command skills are a function of not only raw talent, but years of practice, experience and maturation. The Army must train competent, experienced commanders capable of making high-quality decisions in complex, volatile, ill-defined and novel situations. The human element will be critical for success in any major conflict. Leaders must ensure the right people are in the right place at the right time to make critical decisions and lead their forces through the fog of war.4

Some ask why we must act quickly to establish this battle command talent pool. First and foremost, our survival as a dominant world power may depend on our Army’s ability to dominate and win future land battles. No matter what the mission, physical mass on the ground still counts.5 We must consider the idea that 21st-century warfare will not provide us the luxury of time to prepare as past wars have. Their speed, complexity and lethality may create situations in which the "first battle" may be the only battle. There will be little time for mistakes or for talented battle commanders to rise to the top.
Given current fiscal restraints and the nature of 21st-century warfare, we must determine now what types of individual traits or characteristics correlate with successful battle command. Those who show above-average traits should be key candidates for command of units where the art of war will be most decisive. It is essential that these critical skills and talents be developed. The Army cannot afford to sit back and hope that a future Patton or MacArthur is out there developing battle command skills on his own.6

The Army has already begun identifying the battle command skills and traits that are involved in thought and action processes. These initial insights support the concept that knowledge is fundamental. There is no substitute for technical domain knowledge in proficient battle command.7 However, technical knowledge alone is no guarantee for success on the battlefield. In fact, recent studies suggest that similar trait clusters are common to successful battle commanders. These traits include cognitive complexity and behavioral complexity, among others. It is crucial that the Army study these traits extensively and determine how to best identify those officers most gifted with them. The question of who is best fit to command Force XXI cannot be left to chance.

**Cognitive Complexity**

The ability "to know" involves understanding the present state and visualizing a successful future end state. These tasks demand leaders who possess high levels of cognitive complexity. The higher the organizational level, the higher the task complexity and cognitive capacity required in formulating this vision. *Cognitive processes* consist of many types of mental processes such as learning, memory, concept formation, problem solving and decision making. Future combat commanders must possess high levels of cognitive complexity to understand conceptually highly complex, volatile and probabilistic environments. Failure to construct such a vision will most likely result in defeat.8

Cognitive complexity involves a broad range of skills that include integration of information, abstraction, independent thought and use of broad and complex frames of reference. Those with high levels of cognitive complexity are able to think in metaphors and seek related patterns in unrelated objects, situations and events. Fundamentally, cognitive complexity is a measure of how an individual constructs meaning and organization to incoming information. It does not encompass what battle commanders think, but how they think.9 Frederick the Great and Napoleon both stressed the significance of becoming familiar with the events of great campaigns and battles and the thought processes of the successful commanders. Frederick urged his officers not to memorize details alone, but "to examine thoroughly [the] overall views and particularly to learn how to think in the same way."10

Those most gifted in cognitive complexity skills are better able to understand and identify what is critical or key given the same amount of information available to others.11 "Discovery consists of seeing what everyone else has seen and thinking what no one has thought" best illustrates this point.12 The ability to correctly see the battlefield is central to battle command success. Commanders must see:

- The enemy-priority information requirements (PIR).
- Friendly forces-friendly force information requirements (FFIR).
- The terrain in terms of time, space and purpose.
- Determine how to prevent the enemy from seeing his forces-essential elements of friendly information (EEFI).

Combined, these tasks give the commander the ability to understand what information is important and thus correctly see the present battlefield state and desired end state. Cognitive complexity, therefore, is
the foundation for the commander's visualization process. Put another way, the greater the commander's cognitive capacity, the stronger the foundation upon which the entire battle command process rests.

An Officer Personnel Management System study conducted by the Department of History at the United States Military Academy, West Point, New York, found that successful combat leaders are able to assess rapidly changing situations and continually assimilate large quantities of conflicting information. It appears that those highly talented in these cognitive skills are better able to see their own lines as the enemy would see them and also better determine where to physically be at the decisive point in time when they can most readily influence a battle's action. These skills are examples of mental processes representative of cognitive complexity and illustrate how high-level thinking skills influence battle command performance.

MacArthur's success at Inchon illustrates cognitive complexity at its finest. He was able to see through a myriad of information and determine that the North Korean center of gravity resided in Seoul. He clearly saw that in order to break the bloody stalemate, he had to attack them from the place they would least expect—Inchon. His plan—to take Seoul and cut off the North Koreans' lines of communication. He took a calculated risk but correctly saw the strengths and abilities of his forces as they truly existed and as the enemy saw them. The North Koreans did not see Inchon as a possibility, and with that assessment, MacArthur won his gamble.

It appears that expertise in battle command is shaped over a dynamic, long-term developmental process and that the traits that make a successful battle commander are present early in a career with evolutionary change over time. It is imperative that we identify those with the greatest battle command potential early in their careers.

General George C. Marshall wrote that high-level thinking skills were not necessarily God-given or acquired overnight. He believed that this skill required experience solving many different types of problems, making clear decisions, concentrating on the most important question at hand and elasticity of the mind.

Experts tend to agree with Marshall that short-term, skill-based training programs are not likely to have a large impact on cognitive capacity. Knowledge, skills and attitudes necessary for effective battle command develop over time. These capabilities are relatively impervious to traditional training programs and tend to slowly evolve. Although short-term strategies may be inadequate, some promising long-term strategies may help further develop the battle command talents. Several cognitive process initiatives in battle command and visionary leadership theory offer a glimpse of the types of training and experiences the Army ought to invest in its future leaders. These initiatives, along with others that will most likely be discovered, must be nurtured and developed to ensure Force XXI success.

Training strategies that show promise in developing mature battle commanders include practical thinking and battlefield situation assessment skills, in concert with challenging work roles accompanied by solid mentor support and coaching. These techniques appear to aid in making well-developed decisions under pressure and adapting more easily to changing circumstances and fluid environments. These abilities characterize many commanders who have displayed outstanding leadership and successful performance in combat.

**Practical Thinking**

A new technique that appears to better develop battle command thinking skills is **practical thinking**.
It is based on everyday reasoning in which premises are often implicit, problems are not well bounded, several possible answers to a problem may exist and uncertainty is always present. This technique is in direct contrast to traditional formal thinking strategies, such as the Deliberate Decision-Making Process (DDMP), where premises are supplied, problems are well bounded, options are generated and rated and then the optimum option is chosen. The traditional approach sounds good, but its results for real-world problems are often disappointing. It often does not work well under time pressure, and if there is time, it lacks flexibility in adapting to rapidly changing field conditions. We often end up executing "the plan" as opposed to "executing the enemy."

The formal approach portrays problem solving as:

- Objectively rational.
- Often ignores how options are developed.
- Diminishes the fact that uncertainty exists about the current situation and future outcomes.

Biases, limited perspectives, failure to integrate disparate and conflicting information and failure to identify hidden, and often false, assumptions are common processes that insidiously influence the traditional approach. It very rarely reflects real-world decision-making environments, especially the chaotic, uncertain and volatile ones we expect in the next century.

The dismal failure of the Bay of Pigs invasion (17 April 1960) is a classic example of how the weaknesses of the formal decision-making process can sabotage battlefield success. It has been argued by some historians that the formal logic model or traditional approach allowed the president's advisers to structure the problem in a way that maximized the likelihood he would choose their preferred option—a US-sponsored invasion.

Some attribute the Bay of Pigs disaster as a failure to assess hidden assumptions, a key process emphasized by the practical thinking approach. President John F. Kennedy and his staff may have incorrectly assumed, as did his advisers, that the Cuban situation was similar to the 1954 events in Guatemala, in which a US-sponsored force successfully overthrew the communist-leaning government of President Juan Jose Arévalo. They assumed elements of the Cuban armed forces would defect and join the brigade sent, that there would be popular uprisings throughout Cuba as the brigade hit the beach and if the exiled force got into trouble it could melt into the countryside and become guerrillas.

No one strongly questioned these assumptions or the fact that the situation in Cuba was far different than the Guatemalan experience in which the US ambassador, working inside the country, coordinated the effort—one in which there was an absence of Soviet bloc-supplied arms. Here we clearly see how traditional decision-making processes did not take into account biases, limited perspectives and failed to identify hidden assumptions. The invasion ultimately resulted in a very bad decision by a group of highly intelligent individuals.

A dismal failure, the Bay of Pigs and the decision to execute it were most likely based on many formal decision-making flaws we often see committed in current operations. This includes the familiar approach to the decision matrix, in which we generously offer a throwaway course of action and alter values and weights to obtain the optimal decision as the one we favored all along. The formal/traditional approach cannot stand alone; it is too easy to be lulled into a false sense of security while skating on very thin ice.

The Army must augment its traditional decision-making approach in order to produce battle
commanders with the best chance for success. The practical thinking approach is a move in the right direction; it is a far better match for the decision-making conditions we expect Force XXI battle commanders to encounter. Practical thinking's goal is to have students use what they already know to reason about what they need to know. It is not a step-by-step recipe for thinking, but rather a method that develops skill in adaptation to changing situations, managing one's thinking, openness to other positions and flexibility in approaching problems. It advocates the use of one's knowledge, experience and evaluative skills to explore, define and continually refine a problem, then find a solution and weigh the decision's consequences. It involves a blend of critical thinking, which is judgmental and cautious, with creative thinking, which may be daring and innovative. These two processes of evaluation and innovation complement each other, allowing the decision maker to adapt to changing conditions, states of knowledge, purpose and individual/organizational values. Practical thinking topics that offer promise in developing battle command skills include multiple perspectives, adapting to situations, finding hidden assumptions, practical reasoning and integrative thinking.24

An example of a practical thinking approach might be finding the hidden assumptions in the belief that an enemy force will cross the river at location X. This belief is based on numerous indicators concerning distance to the suspected enemy objective, depth of the river and opportunities for concealment. One might be confident of this assessment, but the cost may be high if it is incorrect. A critique of the assessment is necessary and one can imagine a perfect intelligence source which tells us that the enemy will not cross at location X, and demands that this failure be explained. At this point the following list might be generated:

- The enemy anticipates that our force will be at location X.
- The enemy will detect the movement of our force to location X.
- There are good crossing sites that we missed.
- The enemy does not have any river-crossing assets; he cannot cross the river at all, or his river-crossing assets are so good he can cross anywhere.
- The enemy has a large enough force that he can accept casualties crossing elsewhere.
- The enemy's objectives are different; he does not need to cross at all.
- The enemy will air assault across the river using helicopters.25

This technique in finding hidden assumptions forces us to consider the plausibility of counter-explanations. It helps us avoid or minimize the possibility of giving more weight to the explanations that we would like to be true, and helps us identify counter-arguments that may be plausible explanations for a different position.26 Even if we stick with our initial assessment, we have consciously considered other explanations and can begin to plan or consider how we might react should any one of them turn out to be "ground truth." This is an example of how the practical approach can better prepare battle commanders to adapt to fluid, volatile environments.

**Situation Assessment**

Another cognitive approach in developing battle command skills is situation assessment. This skill involves the ability to know or find the essence of a situation. As in practical thinking techniques, training battle commanders to be more proficient problem solvers through situational assessment would provide more flexibility and greater adaptability to changing situations and novel problems. These techniques allow commanders to better recognize the significance of a situation or information, develop a willingness to pursue nontraditional representations of information and devise strategies to structure
information into something meaningful even if no known pattern comes to mind.27

Battlefield situation assessment techniques rely on metacognitive skills, which include higher-order abilities used to plan, monitor and evaluate problem solving. The explicit use of metacognitive processes-consciously reviewing and monitoring one's thought processes-to control selection of strategies may significantly increase the probability of successful battle command problem solving. Metacognitive skills include recognizing that a problem exists, along with defining the problem correctly.28 This sounds obvious, but often a problem is misdiagnosed or, in some cases, not recognized at all. The destruction of Iran Air Flight 655 and the death of its 290 civilian passengers by the USS Vincennes is a classic example of an exercise in problem definition gone tragically wrong. Circumstances and human bias crossed paths at a critical time and place to create a catastrophe when there was no cause for one. The USS Stark incident a year before, small gunboat battles that morning, conflicting transponder emissions, lack of response to warnings, inexperience, and perhaps most important, a frame of mind that biased the commander and crew to perceive and interpret that commercial flight signature as hostile, doomed them to commit their tragic mistake.

Or did it? Was there information available that morning which might have enabled one with sharper metacognitive skills to better define the situation and refine that definition as more information became available. The flight was included in the Navy's list of commercial flights over the Gulf, the Combat Information Center (CIC) data tapes revealed the plane was at 12,000 feet and climbing (not an attack posture), and an officer standing behind Captain Will Rogers III, USN, shouted "possible commair" (commercial airliner) before the captain gave the green light to fire the missiles.29 Another commander might have been able to represent the available information in such a way as to consider the not-so-probable - in this case, perhaps the more probable. In this example, as in most others, the ability to define the problem correctly is a crucial first step to successful problem solving.

One situational assessment method includes evaluating the reliability of hidden assumptions before they cause problems, a "Devil's Advocate" technique in which problem solvers imagine that their assessment is wrong or that their plan will fail. This technique counteracts overconfidence in an assessment. Another method deals with assumptions after they cause problems and improves chances of noticing that conflicting data exists and successfully correcting it once it occurs.30 Key to successful battlefield assessment is recognizing and taking into account classic human biases that often blind one's decision making. These biases include placing greater importance on initial information than on later-arriving information and ignoring information that conflicts with one's initial assessment. Other assessment skills that will help develop battle commander skills include mental simulation, visualization, prediction and anticipation. These techniques and strategies all offer promise into how we can finely tune the cognitive/thinking skills of those commanders who must make crucial decisions in fluid, complex and lethal environments.

This discussion of cognitive complexity's importance in the battle command process delineates the idea that information technology alone cannot guarantee success on future battlefields. The key to success will not lie solely in the information the commander receives, but how his knowledge base, experience and cognitive skills shape and interpret the information received.31

**Behavioral Complexity**

Cognitive capacity is not the only factor we believe plays a key role in successful battle command. Behavioral as well as thinking skills are critical components. Those with the most sophisticated thinking processes will not be able to implement their vision without finely tuned interpersonal and technical
skills. The ability to behave complexly requires not only complex thinking skills but also a complex set of performance skills. "It is with and through people, by empowering them to act in concert toward a common aim, that visions are made real."32

Behavioral complexity involves the ability to execute a complex strategy by playing multiple, even competing roles in a highly integrated and complementary way. Robert E. Quinn's Competing Values Model of Leadership Roles provides a framework for conceptualizing and measuring behavioral complexity. These roles include those of mentor, facilitator, innovator, producer and director. Those high in behavioral complexity are able to perform many different roles and are able to strike a balance in these roles in order to motivate their subordinates to make their vision happen. These individuals are high in self-efficacy, a belief that they have control and a direct impact on their environment by what they do. Their behavioral skills in playing these different roles allow them to use the social influence process to guide members in organizations to achieve the commander's goals.33 The Roman poet Virgil's remark "They do all because they think they can" illustrates the power of this quality to influence behavior and obtain results.34 We can look at men of vision such as Patton and Napoleon who knew not only what had to be done for battlefield success but also how to push others to actually make it happen.

Behavioral complexity is closely associated with the ability "to do," in which the commander articulates his intent and then proceeds to make the desired end state a reality. The commander's leadership style dictates his strategy to motivate subordinates into action to achieve the vision. Again, commanders with the highest levels of behavioral complexity are flexible in their approach to key subordinates. Motivational strategies may differ dependent upon the experience and personalities of subordinates. The commander must assess each role to achieve the performance needed from all critical players. Again, the higher the commander's behavioral complexity, the higher the chance of successfully directing, pushing and harmonizing groups of often fundamentally different individuals toward a common goal.

While development of cognitive and behavioral skills is crucial to the maturation of battle command skill, assignment to challenging duties and work roles requiring an upward revision of thinking, envisionary and behavioral processes is critical. This process cannot occur in a vacuum. It must take place in an environment in which a mentor can coach or teach the individual to better understand the new, more complicated world in which he must operate. The mentor must possess the required conceptual skills to communicate effectively to the mentoree.35 This communication process is vital and will ensure the individual has the chance to reflect, understand and integrate new experiences and knowledge with previously held knowledge.36

For example, the classic mentor relationship existed between George Washington and Nathanael Greene. Greene was well known for his intelligence, revolutionary passion and knowledge of military affairs. He was a man talented in both cognitive and battle command behavioral traits, but he did make mistakes early in his military career. It was not until five years of mentorship under Washington, from the siege of Boston, the campaigns of New York and New Jersey and an assignment as the Quartermaster General, that Greene began to shine and became qualified like few others to command the Continental Forces in The South. His raw battle command talent matured into what some call genius to meet the challenges of alien terrain, a logistic nightmare, differing attitudes and fighting styles and an economy in turmoil.37

Arguably, it is in our Army's best interest that we identify those whose potential for successful battle command is the greatest. Twenty-first-century warfare's speed, lethality and complexity will not afford us time in combat to allow our best battle commanders to rise to the top. The best-qualified leaders must be in place where the art of command will be most decisive. Battle command traits must include cognitive and behavioral complexity.
Once we have identified those with the greatest battle command potential, we must further develop their
talents. Promising techniques for the maturation of battle command skills will involve practical-thinking
training, battlefield situation assessment techniques and the assignment of successively challenging work
roles in which a mentor is present to help the individual integrate the new knowledge and experience.

As we approach the new millennium, it is imperative now that we identify the talent we will need to win
the next major conflict and determine how to develop their battle command skills to the greatest extent
possible. Inherently talented individuals who have spent years fine-tuning their problem-solving skills
and assessing novel and dynamic situations and who have been coached by knowledgeable experts will
be the key to victory in Force XXI and beyond. MR

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Major Deborah A. Reisweber is currently Provost Marshal, Fort Leavenworth, Kansas. She received a B.S. from the United States Military Academy (USMA) and an M.S. from the University of Illinois at Champaign-Urbana. She is also a Command and General Staff College graduate. Her previous positions include senior project officer, Battle Command Battle Lab, Fort Leavenworth; assistant professor and director, Human Science Lab, Department of Behavioral Sciences and Leadership, USMA; and chief, Military Police Investigations, A Company, Military Police Activity, Fort Rucker, Alabama.
The ability to make decisions is fundamental to "getting inside the enemy's decision loop." This promise alludes to the importance such skills play in our ability to fight and win. Whoever makes the best decisions the fastest, will incrementally increase their chances for success. In order to teach and exercise the process of decision making, we have developed the Military Decision-Making Process (MDMP). In other services, nations and in US joint doctrine, we see similar attempts to institutionalize and capture a system for this all-important process.

There is a problem, however, in the current MDMP-it is flawed or at least incomplete at this point. The problem is in the development, comparison and selection of a course of action (COA). In many ways, COA selection is fundamental to the process. What comes before the COA is analysis. What comes after is the process of passing the decision to subordinates. Unfortunately, we have developed a system that often does not systematize best COA selection and, despite all the claims to the contrary, does not lend itself to rapid decision making when necessary. This article will describe a better, more logical method that lends itself to rapid decision making.

Using the design of a house as an example, it is big and expensive, so we cannot build any prototypes. We must build the house from the design we develop and hope that our process is efficient. Similar in many respects to the challenges of military planning, we must plan first, then execute using the plan we designed. Keep in mind that in combat, you may not get a second chance. The MDMP in Figure 1 below helps us "design" our house.

After analyzing all of the project's requirements, Steps 1 and 2, we would move into COA development. Using the MDMP in accordance with current doctrine, we would create several different house designs. The criteria for the different designs include: suitability, feasibility, acceptability, distinguishability and completeness. In US joint doctrine, two other criteria, adequacy and variety, are applied. Using any or all of these criteria, our team would devise a manner to come up with several house designs which would somehow have different materials, styles, frames, colors or sizes. Some proposals might be copies of previous houses, some might be new or contain slight modifications. Some designs, unfortunately, might be "throw-aways" which the team really did not believe in, but created because the MDMP demands it. A problem with this process is that there is no system at this point to ensure the quality of the designs; only to check that they are indeed different and lend themselves to comparison. We would then move to Steps 4 and 5- COA analysis and comparison to pick the best proposal. The buyer would be briefed on the process and asked to bless the group's decision.

This process-paralleling our MDMP-is just one way to build a house. Given our group of experts, the house would probably be very good and would serve its purpose. However, it might not be the best house possible if time and resources prevent other parameters from being evaluated.

If this team was then told to design another house in 1 hour, vice 30 days for the first one, the system would not allow the COA development process described above to work. Creating and then comparing different COAs takes too much time. The buyer would probably, based on experience, just "think up"
one best design. While such a time crunch rarely occurs in house building, it is normal in the military.
The group might be asked for quick critiques and for their input, but in the end the system used for quick
decisions "pieces" together one "best choice" as quickly as possible. Therefore, looking at this system,
we have seen problems in using it for deliberate and crisis-action planning. There is a better way, one
which could work the same regardless of time factors.

**A better way.** Using a different approach, the team conducts the initial analysis following MDMP Steps
1 and 2. At Step 3, however, they will do something different. They can still design only one house, but
do it by maximizing each of its individual characteristics. They first determine what makes a house
good: color, design, materials, style and insulation, and then try to maximize each quality. They would
then prioritize within each quality and pick the best attribute. For example, the team might determine
that an important factor is color, and of the 10 most popular colors, the best is blue. They would go
through each critical factor until all of the major decisions were made and they had the best house
qualities possible. At that point they would "wargame" their complete design and change anything which
did not support the final product. Once this process is finished, they would brief the buyer, get an
approval and start construction. Referring back to the current MDMP, this method would change Steps
3, 4 and 5. Otherwise, the process remains the same.

If time was constrained in making this decision, the same process works because it systematizes an
intuitive approach. Frame the question or problem, determine the critical parts, decide what the choices
available are for each critical part, start making choices, fit the various pieces together and make a final
decision. People in a hurry to piece together complex plans do not devise different, unique COAs for
comparison; they decide what is important in the final product, make quick choices on important
characteristics and then base the final product on those choices. Those who do make rapid decisions in
the military by creating and then analyzing different COAs will make the same mistakes as indicated
above in deliberate planning. Additionally, they may completely miss critical COA parts or good options
within those parts. Because of time constraints, they have less time to review their decisions and catch
these mistakes.

**A proposed MDMP change.** Instead of designing and comparing COAs, we should maximize the best
one. This will give us a better deliberate planning product, and the system actually works the same in
crisis-action planning.

Fundamental to this critique of our present system is the span of analysis concept for which our
system is useful. COA comparison works with relatively simple items to be compared but breaks down
badly when we look at the complex issues involved in military tactical or strategic situations. In
day-to-day life, we often compare items. This works for buying oranges or picking anything for which
the choices are already laid out for us. Even for life choices such as careers or buying houses, the choices
are essentially in front of us and do not take any effort to create—all of the effort is in the analysis. The
need is to pick from already existing choices, not to invent the choices from scratch. Picking from
existing COAs is useful in the military in many situations and should be retained for those times when it
can be used. It is, however, inappropriate as a process in which we are also creating complex COAs
covering great time spans and with many different phases or parts. Such COAs are too complex to
compare fairly as a whole. Our current problem is that our methodology does not lead us to create the
best possible COAs from which to choose. Often, if they are essentially different and serve the purpose
at hand, they are "good enough." There is no system, other than guesswork, to create COAs, so we have
difficulty determining the best options. That is the fundamental flaw in our current MDMP.

As previously stated, our current MDMP flows naturally and logically until we get to COA development.
At this point, we have no formal system to develop COAs. Once the COAs are developed, we compare them and then select a final product. By this point, however, we have already missed the boat- we have created less than optimal COAs to compare. There is no formal or logical way to devise COAs; nor is there a way to make sure we pick the best available plan. The current system's problems are amplified and our process gets progressively weaker as we are required to make decisions more rapidly. In reality, the process is abandoned when we are in a real time crunch. When MDMP does work, it is not pretty, efficient or logical. Our planning works, for the most part, because we have smart people who understand tactics, strategy and operational art and often intuitively gravitate toward a good plan. It does not happen because of a logical planning process flow. I believe certain modifications are needed to make the flow logical and bring the process in line with an intuitive approach.

The goal is to devise the single best COA. Using an "engineering" approach, we must break the operation down into its major component parts to maximize each one. Staff officers should show their commander all critical components, the options available for each component, and then which combination of options produces the best overall result.

To show how this works, consider a short military example. A task force's mission is to attack a hill, seize it and then establish a defense. En route to the objective is a lightly defended river line in enemy territory. The staff performs its mission analysis (Steps 1 and 2). After the current MDMP Step 2, the following steps become the sub-parts of Step 3.

In Step 3a, the staff lists horizontally across a chart the operation's critical components. This must include specified and implied tasks, listing the critical components chronologically from left to right. These components may actually equate to phases of the operation. Step 3a includes:

- Move to line of departure (LD).
- Move from LD.
- Cross river.
- Attack.
- Defend.

In Step 3b, the staff prioritizes these components from most to least critical as follows:

- Move to LD (#5).
- Move from LD (#4).
- Cross river (#3).
- Attack (#1).
- Defend (#2).

In Step 3c, under each component, list the major available options which can be applied to that particular component. Number them using the prioritization from their column followed by letters in alphabetical order. This numbering system helps later with discussions about the COAs and could actually be used as a brevity code for defining branches and sequels after execution begins. Note that each one of these number/letter combinations represents a different option for a particular plan component as depicted in Figure 2. A brief option explanation should be written or drawn in the remarks section. Often sketches-similar to our current COA sketches-provide the best visual technique to use. To develop these options, this step could be done by the staff working together or different groups developing the options under each component. In the above example, the staff determined that there are really only two major ways to defend the objective: option 2a, a forward slope defense; and option 2b, a reverse slope defense.
In Step 3d, the commander is briefed on the matrix and adds any options or components he wants considered. After updating the matrix and gaining the commander's approval, the staff begins Step 3e. Now the staff must identify the best options under each component, using various techniques. Wargaming, decision matrices or other decision making/analysis tools could be used. The difference between our present COA comparison system and the one I am proposing is that the comparison is very specific (focused) to options within each component. Comparing entire COAs with multiple moving parts is much more complex and difficult to do properly.

Once the best option under each component is identified, they must all be linked together. Start with the priority #1 option. Add priority #2 and ensure they are compatible. If not, the priority #2 option may have to be bumped to an inferior choice so that when linked together the plan will work. Continue to add the chosen options from each component until all have been discussed. The choices decided upon for the final COA are marked with an asterisk.

Note that the matrix shows, by priority, that after the attack, the defense of the objective was chosen as the next priority component. Choice 2a, a forward slope defense, was viewed as being better than a reverse slope defense (choice 2b) in this case.

During Step 3f, a task organization that best supports this COA is sketched. If the task organization should change at some point in the operation, more than one task organization should be listed by component or phase. In general, task organizations should not be options within the components. They should be devised to best support the components, which are tactical questions to be answered or operations phases that must be addressed.

In Step 3g, the COA defined by the "asterisked" options in Figure 3 is briefed to the commander. This COA should be the best one available. The commander should approve this COA or modify it if he wishes, then approve a final COA for wargaming.

During Step 3h, the COA is wargamed and any suggestions or modifications are made. The wargame's purpose is not to compare the COA to other options, but to determine problems in the overall COA that should be fixed before orders production. At this point the steps in the current MDMP are again used, beginning with Step 6, COA approval. Following the selection of a COA, normal mission planning and orders production continues.

Whether this procedure were done in 5 minutes or less as a tactical decision, versus a year as an operations plan, the procedure would be the same. A main difference would be the staff's involvement, but mentally, the commander-or his operations officer-could use the same process to systematize an intuitive approach. He would do all of the mission analysis in accordance with the current MDMP, making sure that the mission-specified, implied and critical tasks was understood. He then would ask other questions to formulate the COA decisions. What are the "critical" pieces? Of these pieces, which are the most important? Within each piece, what are the options? The commander then begins picking options, fitting one decision with others already made and, in the end, piecing together a plan. Placing this on a sheet of paper will help order the thought process and can help in explaining the decision to others. It can be done very quickly if necessary, and if based on the experience of doing the same process in deliberate planning, it should produce a viable, if not excellent, decision.
The goal here is to develop a system that leads to the best overall COA. Going out of our way to plan several COAs, which we say are all possible, is counterproductive to the method of thinking and planning introduced here. For example, compare a single handmade product to one off a production line. The production line gives us a number of good products, along with some duds. A handmade product, if done right, gives us the best we can get. If we only need one product, the quality of the handmade one should always be our goal. Why? Since we are building just one product, we optimize each critical step in the process. Instead of building several products and picking the one that has come out the best-after they are built or designed—we deliberately plan our product up front.

This process we have just discussed is my proposed change to our mission planning system. By using a systemic approach to identifying options, we can select the best COA. The process must flow logically from one step to another. Whereas commanders must make spot decisions in combat, they must be very adept in rapidly piecing together their options and the best overall COA. This system trains them to do this naturally when they have to. The Army must formalize an intuitive approach to making rapid and accurate decisions. Coming up with completely separate COAs is not how people think or make decisions when they must do it in a hurry. The proposed system does not waste time developing arbitrary choices to compare in a time-consuming process. The process is essentially the same for deliberate or rapid decision making and makes sense for both. One of the products that should not be underestimated is the matrix showing the major components and options available. This will be useful as the operation proceeds and changes need to be made. Many of the options will have already been identified and analyzed so that changes to the plan can be quickly implemented. These options should outline many of the branches available in the operation.

The MDMP is fundamental to our ability to fight and win. Commanders at every level must be capable of doing both deliberate and crisis-action planning. As discussed, the main tool to do such planning is currently flawed and does not produce the best possible product. There are many strengths in the current process, but one critical weakness persists. Developing complete COAs with multiple moving parts, followed by COA comparison is disjointed, not systematized and does not optimize our eventual product. Although we are currently operating effectively, we are not operating at full capacity. MDMP system modifications will make us better and more efficient and will improve our planning processes in all environments and under all conditions. With this modification to our procedures and our way of thinking about decision making, we can stop the production line approach and handtool each of our plans to very precise specifications. This will lead to better planning and, in execution, better operations.

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2. Ibid. Chapter 5.

Lieutenant Colonel Gregory T. Banner is plans officer, Special Operations Command Europe, Stuttgart, Germany. He received a B.S. from the United States Military Academy, an M.S from Troy State University and an M.M.A.S. from the US Army Command and General Staff College, Fort Leavenworth, Kansas. He has held a variety of command and staff positions in the Continental United States, South America and Europe, including battalion XO, 3d Battalion, 10th Special Forces Group, Fort Devens,
Massachusetts; company commander, 3d Battalion, 10th Special Forces Group, Fort Devens.
Initiative: The Power Behind Intent

by Lieutenant Colonel Jeffrey W.S. Leser, US Army

Mission orders. Initiative by subordinates. The ability to seize a moment's opportunity for success or to turn defeat into victory. This is the capability our doctrine envisions, which our education and our leaders state needs to be embedded within our Armed Forces. But when one examines the events at the Combat Training Centers (CTCs) and other training exercises, there seems to be a lack of common understanding of intent in the US Army. Reading intent paragraphs from various exercises' operations orders demonstrates this problem. Most intent paragraphs restate doctrine or the concept of operation, but they add little to a subordinate's understanding of the commander's vision. So what is intent and how can it be effectively harnessed on today's battlefield?

To understand intent, you must first understand initiative, for the purpose behind intent is to enable initiative.1 If we merely require our subordinates to do what we tell them, then initiative is an unnecessary trait and eliminates the requirement to express intent. However, the study of war indicates that armies which operate in this manner are less capable and enjoy success only in a certain band of battlefield conditions. The difficulty these armies experience is the inability to make decisions quickly. Armies with highly centralized control require greater time to make decisions. Without rapid decision making, war tends to become indecisive. It is rapid decision making that transforms defeat into routs or attacks into pursuits. Would the Axis in North Africa have surrendered in late 1942 if the decision to pursue them after El Alamein had been made earlier?

The problem with rapid decision making is time. It takes time for data and information to reach higher command levels. Fog and friction continue to operate in war, making data incomplete or inaccurate. The very act of transmitting data adds to the problem of friction. Every additional step taken or additional echelon involved in making the decision adds to the problem of accurate and timely data. Easy decisions become complex the further removed the decision maker is from the point of decision. There is also the time required by the decision maker to assimilate and understand the information to make an informed decision. If some of the information is not accepted at face value, clarification is sought, which requires more time. While this decision process is consuming time, the enemy is changing the battlefield's conditions. At the moment a higher commander finally makes his decision, the battlefield has changed to a degree that makes the decision inconsequential at best, or dangerous at worst, for his forces. To overcome this problem of time, our Army has turned to the tenet initiative.

Understanding Initiative

Webster's dictionary defines initiative as: "n. energy or aptitude displayed in initiation of action; on one's own initiative: at one's own discretion: independently of outside influence or control."2 This definition implies that initiation of action means to make a decision-deciding to act. By espousing initiative, the Army is saying it needs subordinates to make decisions. What our Army has not defined yet is what types of decisions.
One initiative type is internal to the unit and its assigned mission. A commander is given a task, resources, time and a purpose—who, what, when, where and why. The "how" is left up to the commander. This is a basic tenet within our doctrine. It is the "how" that will be affected by this first form of initiative. As long as the subordinate does not require additional resources or time and does not affect others adversely outside his command, his superior leaves the "how" entirely up to him. If the mission is achieved within the set parameters of higher headquarters' orders, a subordinate is free to use initiative to his advantage.

The error here is that this is not initiative in the light of our use and understanding of intent. This type of initiative is embedded in our understanding of command responsibility.3 A commander has the responsibility to use all of his resources to best accomplish the mission. He already has the authority to make these decisions and does not need to be empowered by higher headquarters. Our Army expects commanders will do everything necessary within their authority to successfully execute their assigned mission. For discussion's sake, maybe the term improvisation best describes the type of expected initiative.4 We expect commanders to improvise if their initial plan fails or they lack sufficient resources. Did Colonel Joshua L. Chamberlain use initiative to fulfill his mission at Little Round Top, or did he improvise? If Chamberlain had decided to march and defend Little Round Top without orders, then he used initiative in light of intent. But if he was ordered to defend the position and found that his defense was beginning to fail, he improvised by ordering his men to charge to regain success. To order a charge was within his authority as a regimental commander and did not require an intent statement from his brigade commander, Strong Vincent. Gettysburg might have been lost for the Union Army had not Chamberlain improvised and taken the initiative.

Chamberlain was expected to make that type of decision. It was part of his "job description." His decision was a product of good doctrine and excellent training and was matched by an understanding of the art of war gained through battlefield experience. If these same conditions existed today, an officer would be relieved if he passively accepted defeat. We expect leaders to improvise within their authority.

In fact, the only impact higher commanders make in these cases is to remove some of the subordinate's authority. This removal, or limiting, is done by issuing detailed plans, commander's guidance or graphical control measures. Each of these limit or hinder the subordinate's authority to make decisions within his given authority as a commander. This is an essential understanding of mission orders' nature. The more guidance given, the less it is mission orders and the more it becomes command by plan or direction.

So if what I described above is not initiative in light of intent, what is? The critical difference that needs to be considered is that the battlefield has changed from what was expected and the subordinate's decision affects others not under his authority. It is this type of decision making that overcomes the problem of time in rapid decision making. By not requiring information to travel as far up the command hierarchy for decision, the problem posed by time and friction is reduced. It is this type of decision that intent is designed to enable so our Army can react to unexpected battlefield changes.

**Some Examples**

The Battle of Balaklava (25 October 1854) during the Crimean War (1853-1856) provides one example of this initiative type. Major General Fitzroy J.H. Somerset, Lord Raglan, ordered the Light Brigade to charge the Russian position. The Light Brigade charged and received heavy causalties. The brigade needed to disengage but would likely be destroyed in the process. Without orders, the Heavy Brigade charged the Russian forces that threatened the Light's flank, allowing the Light Brigade's survivors to
escape. While there has been much debate over what Raglan envisioned, the situation that actually occurred was clearly wrong. The Heavy Brigade commander understood this and used his initiative to react to the new situation.

While the Heavy Brigade successfully stabilized the situation, the Battle of Tannenberg (26 to 31 August 1914) is an example of a subordinate achieving decisive results. General Hermann K. von François, the German I Corps commander, was ordered to execute a turning movement around the Russian Second Army's left flank. Fighting was severe during the first day's offensive and the German center was threatened. General Erich F.W. Ludendorff, the I Corps chief of staff, decided he needed to shorten movement to bring it behind the Russian center to stabilize the situation. Von François, better able to assess the true battlefield condition, quickly understood that the center was unimportant and his deep flanking movement was decisive. He ignored the order and pressed his attack, which resulted in near destruction of the Russian Second Army. Success stemmed from von François' initiative and understanding of the current situation. A week later, von François was placed in a similar situation regarding the German attack on the Russian First Army. While disagreeing with the order, he compromised and split his corps to do both tasks simultaneously. The Russian First Army escaped the German trap. Many historians believe that had von François disobeyed again, the Russian First Army would have suffered the same fate as the Second. Twice von François was placed into a position capable of gaining decisive results. Both times he used initiative to act outside his authority.

Operation Crusader (18 November 1941) shows another facet of initiative-trust. General Erwin Rommel believed the British forces had been decisively defeated and ordered his army east into Egypt. The reality was that the British, although badly battered, remained on the decisive ground and began to concentrate their forces. Unable to contact Rommel, Lieutenant Colonel Friedrich W. von Mellenthin, the G3, ordered the army back into Libya. What is overlooked in this example is not that Rommel agreed von Mellenthin was correct, but that the corps and division commanders obeyed the order without argument. In fact, initiative was displayed twice. First, von Mellenthin issued an order to the Axis forces beyond his authority; second, the generals in command decided to follow that order from an officer who lacked the authority. This incident displays that trust is important for effective use of initiative as more senior officers were willing to accept a subordinate's judgment.

History shows us that this is the type of initiative we wish to engender in our Army—the ability to act when the plan and battlefield reality do not match. When this happens, we want subordinates to take action that restores the current plan or creates a new plan. Initiative can simply be defined as "making decisions outside of one's authority." Look at the statement "A plan never withstands the first minute of battle." If this is true, why bother writing a plan? There are many examples of plans that succeed. The German invasion of Poland, on 1 September 1939; General Robert N. O'Connor's offense in North Africa; the Normandy D-Day invasion and General Douglas MacArthur's Inchon invasion, to name a few. My rationale: You will create workable plans, but not all plans work. You must be prepared to change your plan based on battlefield realities. To successfully change plans in the middle of a battle requires rapid decision making. If your plan is failing, the enemy is gaining an advantage. You must regain the initiative before his advantage becomes decisive. If your plan has created unexpected opportunity, then you must quickly leverage that opportunity into decisive results before the enemy can react. To do so, you must create and execute a new plan. So the desire to foster initiative is the need to have higher-level decisions made at a lower level to reduce the time necessary for critical decisions.

But there is a problem. The reason the decision must be made—under the guise of initiative—is because the reality has changed and the higher commander does not see it. This is a difficulty that hinders initiative in our Army. The implied message in initiative is that a subordinate is telling a commander he does not
understand the true battlefield state, and adjustment is necessary. Does the senior commander agree with the subordinate's judgment? Is he willing to allow a subordinate to make this decision? While it is easy to accept initiative in the case of success, can commanders accept it in times of failure? Did the plan truly fail, or did misguided initiative unhinge the operation? This is at the root of our problem with the intent paragraph—how much authority is a commander willing to give a subordinate?

Common Appreciation of the Battlefield

This is an issue of training, creating a common appreciation of the battlefield (CAB) within the organization, trust and a commander's own personality. If a commander is unwilling to do any one of these things, then realistically there cannot be any initiative on the battlefield beyond improvisation. When you have a "zero defects" Army, there isn't any trust. If you do not train to a certain known standard, there isn't any trust. If you cannot achieve CAB within the organization, there isn't any trust. If the commander's personality does not believe he can be wrong or does not allow others to suggest alternative solutions, there isn't any trust. The ability to allow subordinates to make what are normally your decisions is to trust that they can make right decisions. A good way to overcome potential problems is to:

- Work together as a battle command team.
- Employ realistic training.
- Mentor your subordinates.
- Have open, frank discussions between leaders at all levels.
- Understand your own strengths and weaknesses and discuss them.
- Create an environment where people can make honest mistakes during training followed by honest discussions.

Now that we know what we want to accomplish with initiative, how do we control it? We do not desire uncontrolled initiative, for a well-intentioned, but battle command-deficient subordinate can wreck a sound plan that only requires improvisation to succeed.6 If the commander does not believe his plan is failing, or the subordinate provides an incorrect assessment and these two viewpoints are not reconciled, then we have introduced another vision into the battle and chaos is created. There is a fine line, which can only be answered through experience and experimentation. One must remember that even such battle command geniuses as Napoleon, Rommel and General George S. Patton made mistakes.

The first point of using initiative on the battlefield is having a CAB.7 Without CAB, superiors and subordinates will never agree on what is happening on the battlefield. CAB ensures common:

- Data for decision.
- Basis for understanding the battlefield.
- Frame of reference for examining solutions.

Understanding Intent

The intent paragraph provides part of the basis used to understand the battlefield.8 Intent should be a simple statement of what needs to be done. Because the underlying assumption of initiative is that the plan and reality no longer match, intent should avoid providing guidance, for guidance begins to define a course of action. Any guidance developed prior to execution was based on what we thought the battlefield would look like. As reality does not match the anticipated picture, the guidance is basically
flawed. Any hint of control measures, guidance or specific instructions only limits the subordinate's ability to find a new solution to current battlefield reality. Limitations (guidance) should be included only if the commander is positive that subordinates cannot be allowed options regardless of the situation.9

What belongs in the intent paragraph is a simple statement of what success looks like. This is not an end state description, because end state is directly tied to the concept of operations that produced it.10 An intent paragraph might be: "The division must seize a minimum of two intact bridges over the river, two cleared main supply routes (MSRs) to those bridges and a secured bridgehead that provides adequate security to pass through a follow-on division without fighting." As the division's zone of attack encompasses five bridges and seven major roads, the plan will identify which bridges to seize, which roads to clear and how the bridgehead will be taken and defended. The plan, and its associated end state, depict how the division commander has decided to achieve success. The intent paragraph tells his subordinates that if we cannot get the bridges the plan identified, we need to get two bridges with MSRs and a bridgehead. What more does a subordinate need to know to use initiative? Any guidance beyond the basic vision of success might force the subordinate to adopt the failed vision, because the guidance forced him into it. The rest is up to the subordinate.

**Battle Command**

If commanders build battle command into their organizations, subordinates are fully capable of using initiative. The 1993 US Army Field Manual (FM) 100-5, *Operations*, formally introduced the idea of battle command.11 Battle command is defined as "the art of battle decision making, leading and motivating soldiers and their organizations into action to accomplish missions. [It] includes visualizing current state and future state, then formulating concepts of operations to get from one to the other at least cost." Battle command also includes "assigning missions; prioritizing and allocating resources; selecting the critical time and place to act; and knowing how and when to make adjustments during the fight."12 Does this definition provide insight to battle command or confuse the practitioner? In my opinion, this definition has several flaws. The most critical is its absence of *vision*. To decide, one must be able to see and understand battlefield events before they happen. The need to see is the critical task. Once everything on the battlefield is understood, decisions are easy. The definition, however, highlights the decision's importance, not the vision that creates the need for it.

The problem with this definition is that it is identical to the definition of command:"Command is the art of battle decision making, leading and motivating soldiers and their organizations into action to accomplish missions at least cost to soldiers."13 Why are there two terms to describe the same concept or collection of skills? This alone can cause confusion to anyone trying to apply the terms. Additionally, what is meant by "battle decision making?" Does this imply that battle command is practiced only on the battlefield during the execution of the plan and ignored at other times? If battle command includes vision, how can it be limited to the time of actual contact? What are the other types of decisions? Finally, what is leadership's role in battle command? Must a commander be charismatic to be a successful battle commander? Is motivation a subset of leadership? These issues indicate that there is a definite problem with our understanding, definition and application of battle command.

The effect of these problems is obvious when one tries to integrate battle command with the other combat functions. FM 100-5 gives battle command equal weight with the combat functions of intelligence, maneuver, fire support, air defense, mobility and survivability and logistics.14 Yet, how can a concept that encompasses vision, that critical component which drives all that happens on the battlefield, be merely equal to these functions? Doesn't vision give these functions form and purpose?
Doesn't "decision" determine what each of these other functions will do on the battlefield? Without decision and the vision that gives it substance, one cannot determine what to do with these combat functions. Should battle command be placed on a level above these concepts? These questions posit that our Army does not understand the nature of the doctrinal concept we created.

After examining these issues, the first question we must answer is, "Is there a need for the term battle command?" I believe there is. General Frederick M. Franks Jr. states in his Military Review article "Battle Command: A Commander's Perspective," "We saw that leaders must master a set of battle command principles. . . . Thus, battle command demands more art than science."15 Franks points out that there are skills leaders must master. Carl von Clausewitz also addresses this in On War by discussing leaders' talents, abilities and characteristics.16 Initial draft FM 22-102, Command, states that "A successful commander will, of necessity, demonstrate the characteristics of a good leader."17 This statement points to a difference between the position of command and the commander's actual qualities. All these sources indicate an individual's makeup has a direct bearing on combat success. Because the seeds of success reside principally in the individual, individual qualities cannot be defined by command. Command is merely a position to be filled by individuals with specific qualities. Thus, the term battle command is needed to describe the individual who possesses the qualities we desire in a commander.

Battle command should be defined as "the ability to create a vision for success and see it applied on the battlefield." This entails visualizing the current and future battlefield and enemy and friendly forces with all possible interactions and results. It requires the individual to identify an end state so the operation has purpose. Identifying an end state means the individual can visualize the conditions necessary for success and can select the correct mechanism for victory. If a commander can see all this on a battlefield yet to be filled with friendly and enemy forces, then he understands the art of war. When he actually makes his vision happen, he has mastered the ability to apply the art of war on the battlefield-he has mastered battle command.

**Communication**

Using initiative does not absolve a subordinate from communicating with higher headquarters or his peers. In fact, successful execution of initiative requires communication with a subordinate's peers, which include fellow company, battalion and brigade commanders. The subordinate using initiative must harmonize his organization's actions to establish a new vision and create a new plan. A battalion, moving out of its sector, can create chaos if the other battalions do not know what is going on. One can argue whether Major General Daniel E. Sickles' repositioning of V Corps at Gettysburg was right or not, but his lack of communication with the corps on his right doomed his corps to fight alone against Confederate Lieutenant General James Longstreet. Harmony is critical to successful use of initiative, as the organization must focus on the new objective to achieve decisive results.

This article provides form to the concept intent, but for intent to have value and to be of use to the leaders within our Army, we must understand initiative. The concept most individuals would describe as initiative is already effectively embedded within our leader development and doctrine and is displayed daily by all soldiers in our Army. The initiative that intent is meant to activate is the ability to exceed one's authority to restore a critical situation or leverage success in a different manner than originally conceived. Achieving this requires giving subordinates the maximum freedom to make decisions. Giving this freedom cannot be done haphazardly, but only after creating a battle command team. Our Army needs to open a dialog among leaders to discuss initiative, its place in our Army and how to nurture and grow this important ability. **MR**
1. See the Corps and Division Doctrine Directorate Memorandum Proposed Changes to Commander's Intent, 12 September 1996. The first paragraph of the change states "It [commander's intent] provides the link. . . . The basis for subordinates to exercise initiative. . . . This change will appear in the new US Army Field Manual (FM) 101-5-1, Operational Terms and Graphics.


4. I discovered this term when reading the British Army's ADP 2 Command 1995. To me, it captures the spirit of what we expect commanders-operating within their authority-to do on the battlefield.

5. See GEN Edmund Ironside, The Tannenberg Campaign (London, 1930) and LTG Nicholas Golivine, The Russian Campaign in East Prussia, 1914 (US Army Command and General Staff School, 1933), for some excellent discussions of these battles.


7. Ibid.

8. Ibid. My attempt to explain the value of an intent paragraph led to an in-depth review of intent and initiative within the US Army.

9. Corps has told division they cannot use a certain road. The division commander, using initiative, can choose to use it, but he limits the brigade commanders' options by denying it in his guidance to them.

10. End state, as presented in the August 1996 Draft FM 101-5, Staff Organization and Operations, page 5-16, combines forces with terrain: one brigade in the north and another in the south. As the current reality differs from the plan, it is likely that these force/terrain combinations are no longer possible.


12. Ibid., Glossary-1. Why the battle command definition is buried in the glossary of FM 100-5 instead of being presented and discussed within the body of the manual is puzzling.

13. FM 22-102, Command initial draft (Washington, DC: GPO, undated), 1-1.

14. FM 100-5, 2-14.


17. Draft FM 22-102, 1-5.

Lieutenant Colonel Jeffrey W.S. Leser is a member of the Combined Arms Center Commander's Planning Group, Fort Leavenworth, Kansas. He received a B.A. from the University of Colorado and an M.P.A. from Golden Gate University and is a graduate of the US Army Command and General Staff College. He has held a variety of command and staff positions in the Continental United States and Europe, including chief, Concepts and Initiatives Division, Battle Command Battle Laboratory, Fort Leavenworth; deputy commander and executive officer, 11th Armored Cavalry Regiment (Opposing Force), National Training Center, Fort Irwin, California; S4, 2d Brigade, 1st Armored Division, Baumholder, Germany; assistant operations officer, Third Army (Army component to Central Command), Saudi Arabia; and S3, 2d Battalion, 68th Armor Regiment, 8th Infantry Division (Mechanized), Baumholder. His article "Battle Command: Vision for Success" appeared in the March-April 1997 issue of Military Review.
Preserving Mission-Focused Command and Control

by Major Jack Kammerer, US Army

The demands of fighting both as an industrial and post-industrial power place a premium on well-educated, professional men and women who have mastered the tools of modern warfare while maintaining the traditional fighting spirit of the US Armed Forces. Our military must be skilled in the use of bytes and bayonets alike.1

- Joint Publication 1, Joint Warfare of the Armed Forces

As the US Army pursues its Force XXI vision into the next century, the measured application of digital technologies is central to efforts to further leverage the Army's unique contributions to the joint fight. Yet, as Joint Pub 1 highlights, we must strike a careful balance among technology, tradition and the essential role of people. The immense potential of new digital technologies is tarnished by the underlying fear that they may tip this careful balance in favor of more centralized command and control (C2) on the future battlefield. This could then threaten the US Army Field Manual (FM) 100-5, Operations, doctrinal imperatives of mission-focused C2: commander's intent, initiative, decentralized execution and mission orders, "which specify `what' the subordinate commands are to do without prescribing `how' they must do it."2

In "US Doctrine and the Revolution in Military Affairs," David Jablonsky highlights some of the challenges inherent in future information technologies. He summarizes the view held by former Army Chief of Staff General Gordon R. Sullivan and supported by studies that "integrative technology on the post-industrial battlefield will increase the tempo of action-reaction-counteraction and thus continue the necessity for initiative at lower command levels and for the concomitant decentralization of decision making."3 He cautions that "the picture of the small unit leader operating independently in the nirvana of pure aufstragstaktik still will not be easy to create."4 Auftragstaktik, a German army term, literally means mission tactics. It is more accurately described as a complex leadership philosophy, built around initiative, risk taking, confidence and independent action.5 The auftragstaktik picture, or US Army equivalent, is worth striving for as we realize the exciting benefits of new digital technology in shaping Force XXI. But we must also heed the advice of US Army Training and Doctrine Command (TRADOC) Pamphlet (Pam) 525-5, Force XXI Operations, that "success on past battlefields has resulted not so much from technological advances but from innovative ways of considering and combining available and sometimes new technologies as they apply to warfighting."6

TRADOC Pam 525-5 also emphasizes that doctrine must continue to serve as the engine of change into the 21st century. Mission-focused C2 is an effective doctrinal foundation that we should retain in Force XXI. By understanding the complex ways in which digitization can impact upon tactical C2, we can then "recalibrate" the Army's future systems around this doctrine of choice. To preserve mission-focused C2 in Force XXI requires us to look within the Army, at the other services and even at unorthodox approaches to tactical C2.
C2 Past and Present

Union General of the Army Ulysses S. Grant's instructions to General William T. Sherman to undertake operations against Confederate General Joseph E. Johnston on 4 April 1864, were: "I do not propose to lay down for you a plan of campaign, but simply lay down the work it is desirable to have done and leave you free to execute it in your own way. Submit to me, however, as early as you can, your plan of operations."7 Comparable sentiments echoed in the 1941 FM 100-5 stated: "[a]n order should not trespass upon the province of a subordinate. It should contain everything the subordinate must know to carry out his mission, but nothing more."8

While US Army doctrine writers drew upon the German auftragstaktik to shape AirLand Battle doctrine in the early 1980s, the US Army had a long tradition of mission-focused C2.9 There is evidence that Hessian mercenaries returned to Prussia with a conception for auftragstaktik based on their experiences with American soldiers during the Revolutionary War.10 Grant's directive and 1941 Army doctrine represent a further refinement of earlier ideas.

Count Helmuth von Moltke, "the Elder," formalized mission tactics in the Prussian army by the mid-19th century. Auftragstaktik came to fruition prior to World War II and gave German tactical commanders the freedom of action required for blitzkrieg warfare to succeed. Modern-day US doctrinal authors were undoubtedly influenced by German auftragstaktik. Nevertheless, our present conception of mission focus has its own American "roots." Mission-focused C2 is an enduring doctrinal foundation that should remain at the core of the future Army Battle Command System (ABCS).

Toward a "More" Digitized Battlefield

To exercise C2 on the modern battlefield, commanders employ electronic and non-electronic means. The Army has already capitalized on digitization in many tactical systems, such as Single-Channel Ground and Airborne Radio System, Mobile Subscriber Equipment, Global Positioning System and Tactical Fire, just to name a few. The Gulf War was heralded as the nation's first "information war," in part due to the digital advantage we enjoyed over the Iraqis.11 What is "new" is that the Army may soon field digital technologies which fundamentally change the way information is used on the battlefield. "Digitization of the battlefield involves the insertion of digital technologies across the battlefield . . . to allow the creation of a common, relevant picture of the battlefield. This will allow commanders, staff and soldiers to maintain a clear, accurate and appropriate picture of the battlespace . . . and to operate with a shortened decision cycle. It will also provide warfighters and supporters with relevant, realtime information. . . ."12

The accompanying figure highlights the Army's strategic objectives and how information technology can enhance our ability to successfully achieve them.13
On today's battlefield, the commander receives a mission, uses his staff to choose a course of action and then communicates his intent to his subordinates. The commander then balances command with control-applied through the staff over forces as they maneuver and employ precision fires against the enemy. In the absence of orders, subordinate commanders act within the parameters of the higher commander's intent. Reductions in uncertainty shorten the radius of the decision cycle.

As we transition to the Force XXI battlefield, we will see higher-tempo operations, with more dispersed forces throughout the depth of the battlespace. Commanders must see, decide and act faster than the enemy to operate inside his decision cycle. The ultimate end state is to provide accurate, real-time information to the commander, sharply reducing his uncertainty and allowing him to instantaneously direct forces against the enemy.

Enhanced digitization may facilitate that goal, as summarized in TRADOC Pam 525-5: "[c]ombinations of centralized and decentralized means will result in military units being able to decide and act at a tempo enemies simply cannot equal." Yet no man or machine can ever operate with complete perfection, nor can we reach total certainty of information. Carl von Clausewitz's "fog and friction of war" will forever intrude, even on an enhanced digital battlefield.

**21st-Century Decision Making**

As the Army's tactical C2 architecture becomes more digital, it should reduce the commander's uncertainty, thereby shortening his decision time. While enhanced digitization represents an exponential leap in capabilities for the ABCS, it also carries with it inherent contradictions that, if left unresolved, threaten the decentralized nature of mission-focused operations.

Force XXI intelligence support will feature multiechelon, multidiscipline fused products that may give commanders a near real-time picture of the enemy situation. The All Source Analysis System (ASAS) is the first step toward realizing that vision. Nevertheless, enhanced intelligence does not automatically reduce the commander's uncertainty. As Professor Eliot Cohen warns, the commander may face "a plethora of half-knowledge" and "[c]ombat information increasingly [in] the form of abstract representations of reality from multiple sources." Information overload is a serious concern, as is the potential for the commander to separate the staff from the fluid enemy situation.

Systems such as ASAS do not negate the need for careful intelligence preparation of the battlefield (IPB) and in-depth staff analysis. These systems must have filters and alarms engineered into them to give the commander a relevant common picture of the battlefield. The Duke of Wellington's success at Waterloo was partially due to his ability to focus on the impending commitment of Napoleon's cavalry and Imperial Guard. Conversely, in October 1973, Israeli intelligence had "perfect" knowledge of the Egyptian "training exercise" that in reality became a bold attack across the Suez Canal.

Human Intelligence (HUMINT) will remain critical to the commander. "UPTEL" from "scouts out" is an
irreplaceable complement to "DOWNTEL" from operational/strategic systems. Commanders must be
dissuaded early on from the digital notion that they may automatically have better information than their
forward units. This is one particularly vulnerable area where intent and initiative could fall prey to
electronic centralization. The commander must balance his battlefield view with that of his subordinates,
and should hesitate to routinely intervene with what he thinks is "better" intelligence.

There is tremendous potential in emerging digital maneuver systems, such as Intervehicular Information
System, Enhanced Position Location Reporting System, and Brigade and Below Command and Control,
that offer hope of creating a common situational awareness within the commander's battlespace. But a
pitfall in such systems is clear: commanders with a "perfect" battlefield view must exercise great care
and discipline not to intervene in their subordinates' activities. Vietnam-era heliborne C2 platforms
reappear all too quickly.

A commander's real-time awareness of his friendly situation may render the staff somewhat irrelevant.
The contrary view is that heretofore inconceivable amounts of enemy and friendly data may necessitate
larger staffs to digest this plethora of information. The Army should continue to reexamine staff
functions and current redesign initiatives such as the Mobile Strike Force.

Images of a seasoned maneuver commander issuing frequent edicts from a computer screen in his
tactical operations center down to individual soldiers remain difficult to visualize. Nevertheless,
digitization makes it more imperative that the commander continue to:

- Discipline himself at all costs from routine electronic intervention.
- Make his continued personal presence known forward on the battlefield.
- More cleverly employ his staff or other means for a nonelectronic, directed-telescopic view of the
  battlefield.

Field Marshal Sir William Slim, one of Britain's premier World War II leaders, worked his command
"miracles" in Burma through mission orders, clear intent and a habitual physical presence at units at
every level, even though "new" electronic means such as the FM radio could have led him to do
otherwise.19

Fire support issues may also cloud the future digitized battlefield. Technology already exists for direct
sensor-to-shooter links from combat vehicle to firing battery. Such links offer great potential with
"quickfire" channels for deep fires with joint precision strike capability such as Joint Surveillance Target
Attack Radar System and Army Tactical Missile System. However, execution of "automatic" fires has
the potential to completely separate the commander and fire support officer from the "fires loop."
Sensor-to-shooter links may also result in less responsive fires to subordinate maneuver forces. The
sheer volume of "electronic calls for fire" may overwhelm control systems. Finally, automatic fires
represent a break in our tradition of clearance of fires, thereby risking fratricide.

**Sister Service Arrangements**

Despite our newfound "jointness," most Army officers would have a difficult time describing the tactical
C2 arrangements of the other services. An examination of Air Force and Navy perspectives could help
align digitization with mission-focused C2.

Air Force tactical C2—as described in Air Force Manual (AFM) 1-1, *Basic Aerospace Doctrine of the
United States Air Force*, features centralized control and decentralized execution. The theater joint force
Air component commander (JFACC) assigns tactical missions via the air tasking order (ATO) to a designated mission commander. The mission commander's wing or squadron commander approves his tactical plan, but once airborne, the mission commander acts with complete autonomy. He delegates the actual execution to one or more flight leaders but retains ultimate authority for the mission's conduct.

Air Force pilots rely heavily on digital systems—radar, target vectoring and identification friend or foe—which are critical to mission task execution. The Air Force has made great strides toward achieving situational awareness, but mission completion is jeopardized if a digital system loses functionality. Moreover, Air Force tactical C2 is more synonymous with our targeting process than with synchronization of a ground maneuver force.

Despite the absence of extensive written doctrine, the Navy has well-established procedures for tactical C2. Using a system sometimes referred to as "command by negation," the Navy also plans centrally while executing decentrally. The officer in tactical command (OTC) names subordinate warfare commanders for functional areas such as strike, antisubmarine and antiair warfare. The OTC develops an overall plan, in which functional commanders independently execute their assigned missions. Nevertheless, the OTC can always exercise "command override" if he sees fit.

Situational awareness also characterizes Navy tactical C2. Their Joint Operational Tactical System ties major ships into a worldwide network that provides near real-time plots of other vessels at sea. Similarly, the Navy Tactical Distribution System (NTDS) yields a clear picture of the tactical situation for the maneuvering commander afloat.

It is not surprising that the Air Force and Navy also place a high premium on decentralized execution. All services now heed Joint Pub 1, which highlights that "[a] clearly understood aim (commander's intent) enables subordinates to exercise initiative and flexibility while pursuing the commanders goals and priorities." Yet there is no joint paradigm that drives service commonality in C2. The differing role of technology also diminishes service similarities.

The Army can learn from its sister services about how to "fight the digital battle." The more central position of technology in the Air Force and Navy may explain their early development of digitized systems. Their mastery of current digital systems facilitates decentralized execution by pilots, ships and crews. The Army's digitization efforts may result in further integration of joint C2 systems. It could also help forge a more common perspective among the services, ultimately strengthening US joint warfighting effort.

Surviving "Chaos" on Future Battlefields

AirLand battle doctrine in the 1982 FM 100-5 introduced the concept of deep operations, and the battlefield was no longer seen as linear. The 1993 FM 100-5 went a step further by defining battlespace. For 21st-century battlefield operations, the Force XXI Army will internet information in both hierarchical and non-hierarchical flows. While new digital technology may encourage centralized C2, TRADOC Pam 525-5 indicates that when traditional hierarchical command structures become internettied on a more dispersed, empty battlefield, it can lead to a diffusion in command authority.

While the answer lies somewhere between the two extremes, the Army must aggressively explore new tactical C2 design initiatives such as the ongoing Mobile Strike Force. As Sullivan and Colonel James Dubik explain, "in a network, processes—the web of relationships that enhance the flow of information among the parts of an organization . . . determine the organization's ability to be effective and..."
One alternative is to apply cybernetic theory to tactical organization. Cybernetics is the study of automatic control systems. Air Force First Lieutenant Gary Vincent has proposed a common, shared data network that connects basic action units, such as armor and infantry companies, and allows the elimination of unnecessary C2 layers at battalion, brigade or division. Companies fight directly for the theater commander. Vincent argues that digital updates on position, situation and automatic deconfliction of maneuver and fire support control measures allow the elimination of intermediate command levels, while the larger span of control at theater level discourages micromanagement.

Battlefields are described as chaotic. Perhaps the Army should explore tactical C2 organization in light of chaos theory. Contrary to its name, chaos theory posits that many systems which appear random are by nature orderly. Author Steven Mann argues that chaos theory may have utility in strategic studies and even at the tactical level. He suggests that a chaotic Clausewitzian battlefield is "manifestly nonlinear and irregular" and lends itself to chaotic study. Researcher Margaret Wheatley holds that chaotic models are applicable to the study of the consistency and predictability in explaining behavior within organizations. As we expand Force XXI digitization, chaos theory may allow us to exploit unconventional design perspectives that facilitate mission-focused C2.

As the Army recovered from the trauma of the Korean War, it seized on technology to regain its post-World War II stature. As retired Colonel Andrew J. Bacevich relates in *The Pentomic Era*, the Pentomic Army was formed around tactical nuclear weapons and austere battle groups in an attempt to ensure the Army's continued viability at a time when strategic nuclear weapons were dominant. It was a new and dynamic Army, designed to operate on a dispersed nuclear battlefield. Yet, he says, "The incessant emphasis on technology was little more than an artful dodge concealing the emptiness of the Army's thinking. . . . Captivated by the prospect of turning the latest technological breakthrough to the benefit of short-term institutional goals, Service leaders charged off to develop the doctrine, tactics and organization needed to convert technological promise into combat capability. . . . The Army's unfettered enthusiasm blinded it to the limits of technology in the overall equation of war and to the real problems that technological change brings in its trail.

We must ensure the campaign plan for the Force XXI Army carefully weighs such lessons from the past. As we leverage emerging digital technology, it is imperative that we keep sacrosanct the idea that doctrine is the engine of change. Auftragstaktik ceased to exist in the German army by World War II's end with the defeat of the Wehrmacht on two fronts. However, upon deeper examination, as Michael Geyer argues, the German army had become part of a military machine culture, which had "created a new kind of military leader, who developed the laws of operations from means rather than deriving from them eternal and scientific laws about war and leadership." As we shape the Force XXI Army, we cannot regress to a military machine culture. We must retain mission-focused C2 with its inherent decentralization while molding the Army's digital technology and tactical design to form a solid framework to support how we fight.

3. I use the term "mission-focused" command and control (C2), which is an emerging doctrinal term.


5. Ibid.


9. FM 100-5, 31.


15. TRADOC Pam 525-5, 1-5.


22. Ibid. 18-21.

23. Ibid. 43.


26. Carl Builder explains, "the Air Force is, by far, the most attached of services to toys . . . the Navy is far less toy oriented, even though it has a more diverse set of toys to play with . . . Army people have historically taken greater pride in the basic skills of soldiering than their equipment." Carl Builder, The Masks of War (Baltimore, MD: Johns Hopkins University Press, 1991), 23-24.

27. Interestingly enough, GEN William E. DePuy, in shaping the early AirLand Battle doctrine for the
1976 FM 100-5, noted a shift from a battlefield perspective of people with weapons to that of weapons with crews. He argued that the Army "was becoming more like the Air Force and Navy and needed to prepare accordingly." MAJ Paul Herbert, Deciding What Has to be Done: GEN William E. DePuy and the 1976 Edition of FM 100-5, Operations, Leavenworth Paper #16, 95.

28. TRADOC Pam 525-5, 2-8.
32. Margaret Wheatly, Leadership and the New Science: Learning About Organization from an Orderly Universe (San Francisco: Berret-Koehler Publisher, 1992), 132.

Major Jack Kammerer is the secretary of the General Staff, 3d Infantry Division, Fort Stewart, Georgia. He received a B.S. from the United States Military Academy, an M.P.A. from Harvard University and an M.M.A.S. from the US Army Command and General Staff College, Fort Leavenworth, Kansas. He has held a variety of command and staff positions in the Continental United States and Korea, including S3, 315th Infantry, Fort Stewart; G3, Operations (EDRE), 24th Infantry Division (Mechanized), Fort Stewart; strategic plans officer, Headquarters, Department of the Army, ODCSOPS, Directorate of Strategy, Plans and Policy, War Plans Division; and commander, Headquarters, Headquarters Company, 1st Battalion, 5th Infantry Regiment (Mechanized), 2d Infantry Division, Camp Casey, Korea.
As we move closer to the information-age technologies that pave the way to Force XXI, not everyone looks to the future in anticipation. While many professional journals proclaim the revolution in military affairs' potential advantages, officers and noncommissioned officers at company and battalion levels worry about Force XXI's impact on mission orders, commander's intent and subordinate leader initiative and current concepts. If information becomes as universally available as some futurists envision, our current battle command system may become outdated and inefficient. A centralized decision-making process—producing detailed, specific instructions to subordinates—will not only be possible, but practically dictated. Allowing subordinates to operate under their own initiative within a commander's intent will fail to take full advantage of the emerging technology.

On the surface, fear of such a radical change in our doctrine seems baseless. US Army Field Manual (FM) 100-6, Information Operations, specifically states that "the current doctrinal approach of mission orders, or decentralized decision making, is not anticipated to change." Nevertheless, logic of the sort that argues for the end of mission orders is not as farfetched as one might think. Like every generation before us, our Army walks the fine line between failing to capitalize on new technologies and falling prey to expectations that technology cannot fulfill. History is littered with earlier armies that failed to "get it right." General Gordon R. Sullivan, former Army Chief of Staff, was largely responsible for our current efforts in information technologies. He recognized the dangers in our future when he stated that "Increasingly capable integrative technology may, once again, generate the false belief that centralized decision making will result in greater combat effectiveness at the point of battle." Simply put, the more effective information technologies become, the greater the temptation to discard critical elements of our doctrine.

Some anticipate an Army where commanders who have grown accustomed to relying on information from computers are fearful of putting similar trust in their subordinates. After all, when the commander enjoys complete and accurate information, why would he allow his subordinates to attempt to work their way through the fog of war existing at lower levels? Even sharing "perfect" information with subordinates appears to fall short of the ideal, as a subordinate may not respond to the information as quickly or as insightfully as the higher headquarters might wish. It is far more efficient, the argument dictates, sending direct and specific instructions that the subordinate can execute without a need to understand the "big picture." In the information age, higher headquarters will always know best.

Fortunately, the future is what we make it. The need for subordinates who can act independently within a commander's intent will be with us well into the next century. Three factors will keep Force XXI from becoming the robot-like organization that some envision:

- The drastic increase in the flow of information, both vertically and horizontally, will not solve the underlying problem leaders have always faced—interpretation and decision.
- The complexity of even our current operations and those envisioned for Force XXI will require every leader to devote his full attention to operations at his echelon. The execution of subordinate tasks will, by necessity, be left largely to subordinates.
- Despite much overstated promotion, information technologies will fall far short of eliminating the
The Information Explosion

Taken collectively, the factors above will make any attempt to remove mission orders from our doctrine a mistake.

Our doctrine already recognizes that an increase in the availability of information is not a solution to our problems. FM 100-6 offers a cautionary perspective on information technology potential: An increase in the amount of information available does not guarantee certainty; in fact, it potentially increases ambiguity. Current staff organizations, procedures and analytical methods must adjust to master the richer flow, faster pace and huge volume of information.4 FM 100-5, Operations, offers a similar perspective: "In modern battle, the magnitude of available information challenges leaders at all levels. Ultimately, they must assimilate thousands of bits of information to visualize the battlefield, assess the situation and direct the military action required to achieve victory."5

Early reports from units undergoing information technology field testing indicates that the future will hold true to the past-the best we can hope for is to "get it about right." A common after-action review comment is that the unit was overwhelmed at times by the amount of information available to it. This comes as no surprise to anyone who has conducted battalion or brigade operations at a combat training center, as information overload could be found in tactical operations centers (TOCs) long before "digitization" was a topic. Lack of information is rarely a paramount problem in our Army, given our already formidable lead in technology. A far more common cause of failure is the inability to draw the truly important information from a conglomeration of mostly useless data. Increasing the amount of information available-in some cases by orders of magnitude-will continue to complicate the problem.

Field reports from the 4th Infantry Division (4th ID) Experimental Force (EXFOR) confirm that the true task of the commander is to make use of available information. Former 4th ID operations officer, Colonel John D. Rosenberger, stated that information technologies do not alleviate the necessity for the commander to identify those pieces of information that are truly important. When commanders fail to do so, staffs become "bogged down sorting through volumes of data."6 This was true before the arrival of information technology and will remain true into the future. The real issue is not having information, but using it.

The commander's intent is still the most promising way of making information useful. A clearly articulated intent, understood throughout the organization, serves as a filter for information. It allows soldiers at all levels to identify critical information when they encounter it. The mountains of information technology makes available to us can only be properly managed when everyone, not just a single centralized data processor, is actively engaged in filtering information for its true worth. Information technologies will make it more critical than ever that every soldier be an active, thinking participant.

Battle Command in Force XXI

Perhaps the most common Force XXI vision is that of a brigade commander watching the battle in real...
time on a huge screen in the brigade main. In this vision, the commander jumps quickly from frequency to frequency, telling a platoon to pick up the pace or notifying a squad leader to move up to the next "intervisibility" line. It is a compelling image and probably accounts for much of the skepticism that many leaders feel at all the talk of digitization.

Fortunately, this image crumbles under close scrutiny. Brigade commanders—indeed commanders at every echelon—will find that the art of battle command will always be demanding. Two factors will limit future commanders' ability to conduct "armchair" war. First, the number of simultaneously occurring battlefield events, all requiring immediate attention, makes it physically impossible for any single decision maker to respond. Second, although information technologies may change much about how we fight, they are not likely to change basic leadership tenets. Commanders will have more important things to do than direct the actions of individual squads from their TOCs.

Perhaps the first factor can best be understood by comparing it to a commercially available computer-based tactical simulation. Many simulations often allow a player to give specific instructions to units down to squad or individual level. With a battalion or a company, it may take several minutes to complete issuing instructions. The game player then tells the computer to run the simulation for some period of game time, at the end of which he goes through the instruction cycle again. The primary difference between simulation and real combat, of course, is the "pause button" that allows the game player to issue his instructions. In combat, time is not divided neatly into order and execution phases. Hence, a commander who attempts to control too many units is quickly overwhelmed. The limited span of control principle posits that one man, or headquarters, is capable of doing only so much within a given period of time.

In Force XXI, the period of time between receipt of mission and execution is likely to be far less than we are accustomed to now. As information about enemy activities increases, opportunities will become evident that in the past would simply have gone unnoticed. However, to capitalize on those opportunities, our forces must be trained to respond very quickly to new situations. The EXFOR has found that division planning can be compressed to 30 to 45 minutes using the information technologies already available. The potential exists for an entire division to change its mission focus and react to a new tactical opportunity within a matter of hours. This will not happen, however, if commanders are attempting to provide their subordinate elements with specific instructions rather than mission orders. By the time they have completed issuing such orders, the window of opportunity will have long since closed. To match the future battlefield's pace, commanders will have to maintain a limited span of control and leave the execution of subordinate tasks to their subordinates.

An example from a recent field test demonstrates my point. Historically, artillery batteries have needed to be closely located to the units they support for fire missions. Because movement is usually conducted as a battery, the battery commander issues one movement order and his subordinate guns execute that order. With the arrival of Paladin, the need for the guns to be together for fire missions is eliminated and the battery can disperse for greater force protection. However, this generates a significant problem for the battery commander. Where he once planned for the movement of one element, he is now faced with planning individual movements for each artillery piece. So battery commanders in the field test soon arrived at a sensible solution-issue movement graphics that establish boundaries for the movement of the guns and let the individual gun leaders plan their routes. Issuing individual instructions to each vehicle was simply beyond the realm of possibility.

Despite the benefits that technology offers, the demands of battle command are likely to increase on future battlefields. In fact, FM 100-6 states that Force XXI commanders "will continue to inspire and
mentor subordinates through face-to-face communications and physical presence. Direction and instruction can be sent through a computer screen-inspiration and motivation cannot.

Besides the new technologies to be mastered, mountains of information to be processed or analyzed and increased pace of combat operations, commanders must still find ways to lead soldiers. As former US Army Training and Doctrine Command Commander, General Frederick M. Franks Jr., stated "Because land combat will continue to be tough, brutal, full of friction and with unpredictable enemies, commanders will want to be on the battlefield with their troops and not in their CPs. They need to be up front."10

The Fog of War

Of all the misperceptions surrounding the future of land warfare, the most troubling is the idea that "un-certainty can be eliminated."11 In the mythical world created by the most devoted information age disciples, our enemies lie helpless before our forces while we, armed with complete and perfect information, dispatch them at our leisure. While such images are fun to contemplate, they are altogether unlikely. Information technology offers an undoubted advantage, but it is not the panacea for all combat difficulties.

Former Chairman of the Joint Chiefs of Staff General John M. Shalikashvili points out that information technology "will not eliminate the fog of war."12 Current doctrine also caveats future technology's benefits: "Perfect knowledge is not the objective . . . Uncertainty will always exist. The commander may know what the enemy is doing, but he will rarely know why."13 If Force XXI works as the Army envisions it, our technology advantage will allow us to know more about the enemy than he knows about us. This will offer an advantage that skillful commanders and well-trained units can turn into victory. However, it will not ensure that victory.

On the Force XXI battlefield, just as on today's, sensors will fail, excited soldiers will issue misleading reports, the enemy will intentionally deceive, leaders will believe inaccurate data and vital pieces of information will go unnoticed until too late. Although we may be better informed than any other army in history, "perfect intelligence" will remain a phantom just beyond our reach. Leaders will discover that digital computer screen truth, just like TOC's situation overlay truth, does not always equal truth on the ground. The fog of war, if somewhat thinner than in days gone by, will still hold plenty of surprises for unwary commanders.

Fortunately, our current doctrine of mission orders combined with a clear intent statement has already proved successful in dealing with the many obstacles and surprises that have marked warfare until now. In the future, commanders will combine an advantage in information with subordinates who display initiative in overcoming unforeseen problems to create a force of increased combat power. FM 100-6 emphasizes this point: "Successful leaders use the knowledge advantage by combining technical and human information capabilities with a broad intent statement and a clearly articulated concept of operation."14

Mission Orders' Future

Far from eliminating the need for mission orders, information technologies may well increase the need for leaders who can act on their own initiative within the higher commander's intent. The difficulties of handling increased amounts of information, the complexity of battle command on future battlefields, and
the impossibility of attaining perfect intelligence preclude centralized control. Leaders who can cut through combat's complexities and make decisions that support the higher commander's intent will continue to be in demand on the digital battlefield.

As we look to the future, whether we see a revolution brought on by history, changing technology or simply another chapter in warfare's development, we will continue to find that "training in solving problems of all types, long practice in making clear, unequivocal decisions, the habit of concentrating on the question at hand and an elasticity of mind are indispensable requisites for the successful practice of war."15 Leaders who can assess the situation, recognize the heart of the problem, arrive at a solution and execute an action supporting the commander's intent will be as invaluable in Force XXI as they are today.

4. FM 100-6, 1-14.
7. Ibid.
8. COL John R. Wood, "Lessons Learned in Information Age Warfare," Army (February 1996), 32-44.
9. FM 100-6, 6-6.
13. FM 100-6, 6-6.

Captain Joseph S. McLamb is battalion analyst at the Joint Readiness Training Center (JRTC), Fort Polk, Louisiana. He received a B.S. from the United States Military Academy and graduated from the Combined Arms and Services Staff School, Fort Leavenworth, Kansas. He has held a variety of command and staff positions in the Continental United States, including platoon observer/controller at JRTC, Fort Polk; commander, B Company, 2d Battalion, 502d Infantry, Fort Campbell, Kentucky; S1, 2d Brigade, 101st Airborne Division (Air Assault), Fort Campbell; and assistant S3, 1st Battalion, 52d Infantry Regiment, Fort Irwin, California.
Terrain Visualization

by Major General Leon J. LaPorte, US Army, and Colonel David F. Melcher, US Army

At 1500 on 2 July 1863, Lieutenant General James Longstreet's artillery opened fire as Major General John B. Hood's division readied for its attack on the Union left flank at Gettysburg. Major General George G. Meade, the Union commander, rode to the Union left flank and, upon seeing it exposed, immediately ordered reinforcement. He sent Major General Governeur K. Warren, chief engineer of the Army of the Potomac, to assess the importance of the terrain immediately south of Cemetery Ridge. At 1600, as Hood's division smashed into the Union left flank at Devil's Den, Warren arrived at Little Round Top, finding it held by only a small signal detail. He immediately realized this was key terrain. From its crest, enemy artillery could rake the entire Union line. Upon his own authority, he ordered two brigades and an artillery battery upon its summit. Arriving just before Hood's Confederate soldiers, the 44th New York and 83d Pennsylvania repulsed determined assaults for over an hour. When Hood's division attempted to outflank the Union position, Colonel Joshua L. Chamberlain's 20th Maine volunteers drove them off in vicious hand-to-hand combat, securing the Union flank and setting conditions for victory at Gettysburg.1

History is replete with examples of tactical success achieved by commanders with the ability to use terrain visualization to their advantage and the enemy's disadvantage: Meade's appreciation of terrain importance at Gettysburg is but one example of how terrain visualization helped the commander to see the battlefield and the impact terrain would have upon the fight. Napoleon, in defeating the Russian army at Austerlitz, walked the battlefield and shaped the terrain by digging trenches and moving berms. Similarly, the Israeli army achieved tactical success on the Golan Heights in the 1973 Middle East War, defeating a numerically superior Syrian force by holding the key terrain.2 In each example, the commander's ability to visualize the battlefield was enhanced by his ability to visualize the terrain-to see its effect on the enemy's and his own ability to move, generate combat power, seize the initiative and control battle tempo.

Today's Army faces the requirement to rapidly project ground forces from the United States to deter regional conflicts or defeat an enemy that threatens US interests abroad. Our Continental United States-based Army is often deployed to locations such as Bosnia and Somalia where we have not had the opportunity to train or conduct reconnaissance in the area of operations. In such an environment, the ability to visualize the terrain quickly becomes extremely important. The Army of the future will endeavor to create battlefield visualization-or total situational awareness-by combining command and control (C2) systems from each of the combat functions into one integrated system. Terrain visualization is an important part of that process, for it is the process through which a commander sees how terrain influences battlespace in both his and the enemy's operations.3

The 1st Cavalry Division (Cav Div) is a good example of a rapid-deployment unit that leans toward two completely different theaters of conflict but is stationed in neither. As a result, it has sought to increase its collective knowledge of the terrain in each theater through a combination of reconnaissance, tactical exercises without troops (TEWTs), training deployments and a host of terrain visualization products that embrace the power of digitized terrain data. During the past year, the 1st Cav Div has made great strides toward improving its ability to visualize the terrain and to translate its properties into usable products that create situational awareness and influence the fight. This article will share some of the approaches
we have taken during our preparation and execution of the division's recent Korean WARFIGHTER Exercise, in multiple rotations at the National Training Center (NTC), Fort Irwin, California, and during battalion and brigade deployments to Kuwait.

**Terrain Visualization in the Division Fight**

In preparing for the division's wartime mission in Korea, the 1st Cav Div conducted a TEWT and a leaders' recon in-country during the fall of 1996 to gain an appreciation for the enormity of the challenge we would face if we were deployed to fight there. Retired General Richard E. Cavazos, our Battle Command Training Program senior observer/controller, commented during our Leaders' Training Program at Fort Leavenworth, Kansas, that during his service in the Korean War, the North Korean terrain was the most difficult series of mountains, large rivers and impassable roads he had ever seen. To get the full impact of the terrain-to see it, smell it and walk it—approximately 50 of the division's senior leaders and battle staff traveled to Korea to review our war plans, explore the port of debarkation, visit the tactical assembly areas and ride the routes to our battle positions. In tandem, the division prepared a series of digital terrain products, which our terrain analysts and engineers translated into movement factors, time-distance analysis and estimates of optimal locations to position artillery, maneuver and logistics forces.

We knew from our NTC experiences that the most successful commanders possessed the ability to "see the terrain" and its effects on combat operations. This embodied the ability to envision the effects of terrain on both enemy and friendly mobility, the ability to mass, disperse, observe, deploy and kill the enemy with direct and indirect fires. Our terrain walk objective was to give commanders the ability to think about how terrain might create conditions that would make the enemy vulnerable to friendly fire; how obstacles could tie into terrain to block, fix, disrupt or turn the enemy; and how terrain could be used to control battle tempo.4

While walking the terrain itself gave us a magnificent macro-view of the country, its tremendous growth and urbanization and the avenues of approach, it was the terrain products that gave us the micro-view we needed to develop our plans and fight the war during the WARFIGHTER. As a result, upon our return to Fort Hood, Texas, we embarked on an ambitious plan to produce a series of products at division level that we would analyze and then push down to the maneuver brigades. Our terrain analysts studied terrain properties and how it changes with constant use and varying weather conditions. Our combat engineers interpreted and evaluated the products and data to produce the estimates for mobility, countermobility and impact upon every Battlefield Operating System during the fight. This effort resulted in the products discussed below, most of which were digitized and capable of reproduction on the division terrain detachment's multispectral imagery processor (MSIP).

"Reverse" modified combined obstacle overlay (MCOO). As part of the intelligence preparation of the battlefield process, our engineers produced a MSIP product that outlined all the manmade and natural obstacles that would impede our movement. By revereven influences battlespace in both his and the enemy's operations.3

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mark a key bridge for demolition during a field training exercise in southern Germany.

**Slope analysis.** Another MSIP product depicted the slope of the terrain through differentials in shading for slope degrees in the 0-7, 8-15 and over 15 ranges. This product was used for a variety of purposes, such as artillery positioning including determining where the enemy could position his artillery; traffcability of routes for maneuver forces and logistic support; and estimating the amount of engineer work that would be required to upgrade routes to become main supply routes (MSRs) or alternate supply routes (ASRs).

**Enemy obstacle template.** Based on the MCOO, slope analysis and the enemy template as outlined by the division G2, we also produced an enemy obstacle template that was derived as much from terrain visualization as it was from known or templated enemy unit locations. Our engineer brigade S2 looked at where the enemy could best tie obstacles into terrain to achieve the desired effects, and confirmed his analysis with the division G2. What resulted was about a 90-percent read on the location of the enemy's tactical obstacle belts for the first and second operational echelons.

**MSR and lines of communication (LOC) analysis.** Our engineers used terrain detachment estimates for route width, slope, trafficability and curve to determine the amount of time it would take to travel along the routes, ASRs and MSRs within the division sector. With over 200-300 kilometers of movement along three MSRs, roughly 10 ASRs and over 40 additional routes, this analysis directly translated into the division's plan for maneuver, how we envisioned the pace of the battle and into logistic estimates to sustain the fight forward.

**Penbox products.** The 1st Cavalry Division uses a "penetration box" approach to concentrate forces and fires on the location where we plan to penetrate the enemy's defensive belts. For each division penbox selected, a corresponding MSIP product was produced that showed major terrain features such as roads, mountains and defiles which would affect maneuver. When combined with oblique views of the defiles, it gave maneuver commanders at all levels a good appreciation of the terrain, movement factors and where we should concentrate our reconnaissance and fires.

**River-crossing products.** One of our training objectives was to cross two major rivers during the fight. We used 1:24,000 scale MSIP products of the river line with river crossing control measures, river data and operational graphics superimposed for our rehearsals and for use by the brigade commanders conducting the river-crossing. On these we added blow-ups of available bridges using national secondary imagery to give the commanders the full picture of what they could expect at the river line. At brigade level, these products were complemented with line of sight (LOS) analyses for support-by-fire positions and placement of recon elements.

**Target folders for areas of interest (AOI).** In addition to the products above, which were standardized and available throughout the division, the engineers and terrain detachment produced specialty MSIP products for "target folders" on particular AOIs as requested by the brigade commanders. These included products with intervisibility plots, cover and concealment, entrance and egress routes, oblique views and
other required features.

Each of these efforts allowed the division's leadership to understand the terrain and how it would affect the scheme of maneuver for both friendly and enemy forces. Our visualization of the terrain helped all of us understand the division's battlespace. As commanders, we knew what we could and could not do on Korean terrain; we knew how we should task organize our forces to maneuver and fire upon the enemy; and we used the terrain as a weapon to enhance our success and defeat the enemy. The results were impressive:

- Nearly a 90-percent read on the templated location of the enemy tactical obstacle belts for the first and second operational echelons.
- A shared understanding of mobility rates for all MSRs/ASRs and routes within the entire corps sector, allowing us to quickly adapt to boundary changes.
- Better task organization decisions with less risk, because we matched the combat and engineer forces to the terrain they would cross.
- An unprecedented crossing of two major rivers with sufficient combat power to continue the attack beyond the original objective to exploit success.
- Ability to compress the planning cycle for several contingency plans and the agility to execute with confidence.

The production and interpretation of these terrain products gave the 1st Cav Div and its leaders the confidence to plan and execute its mission in some of the toughest terrain we might be asked to fight upon in the future. In combination with our efforts to physically walk the terrain, these products gave us the ability to visualize our battlespace and how we would fight.

Brigade and Battalion Terrain Visualization

In addition to the Korean theater of operations, the 1st Cav Div also must be prepared to rapidly deploy to Southwest Asia (SWA). This is abundantly illustrated by our continued presence in Kuwait for US Central Command CENTEX training exercises, and the no-notice deployment of the 1st Cav's entire 3d Brigade to Kuwait last fall at the National Command Authority's direction to preserve US interests in that country.

Because we may be called upon to deploy up to a brigade-size unit to reinforce troops on the ground in Kuwait, our ability to visualize the terrain at home station is critically important. Our training regimen at the NTC is designed to replicate rapid deployment to such a theater to fall in on pre-positioned equipment. The one dominating feature that differs between the NTC and either the Korean or SWA theater is the terrain. Although NTC is a reasonable facsimile for the latter in some respects, it is still very different in others. For this reason, our brigade and battalion task forces (TFs) prepare many of the following products to improve terrain visualization for both training and deployment.
Refined MCOO. Brigade and battalion TF commanders will refine the MCOO products produced at division level to look two levels down to site enemy and friendly company unit locations for a brigade and platoon locations for a battalion TF. The MCOO is further refined to identify smaller trails and avenues of approach that will ill is abundantly illustrated by our continued presence in Kuwait for US Central Command CENTEX training exercises, and the no-notice deployment of the 1st Cav's entire 3d Brigade to Kuwait last fall at the National Command Authority's direction to preserve US interests in that country.

Because we may be called upon to deploy up to a brigade-size unit to reinforce troops on the ground in Kuwait, our ability to visualize the terrain at home station is critical detail. Terrabase is a laptop computer terrain analysis program that does LOS and visual area plots for friendly and enemy battle positions, weapon systems, observation post locations and siting of signal and C2 nodes for maximum effectiveness. This level of detail is required at brigade and battalion levels. It is quite useful in deriving maximum benefit from our combat multipliers and in determining when we are in direct-fire range of enemy weapon systems.

Oblique terrain views. Another Terrabase capability provides terrain oblique views, which are useful for visualizing the shape the battlefield will take as one moves from battle position to objective. As the terrain visualization systems and data become more sophisticated, this feature could take on greater significance as a means to "see" the terrain as the commander rides through it digitally.

The greatest difference between terrain visualization products at the division level and below is the sophistication of the machinery available to produce those products. The 1st Cav Div currently has only one MSIP machine at division level, with no comparable capability at brigade level or below. Terrabase is the only terrain analysis software now available at brigade and battalion levels, and it only provides rudimentary products. We are in the process of expanding our capabilities at maneuver brigade level with next-generation software from both commercial sources and the Waterways and Experimentation Station products used in the Force XXI experiment. A comparison of terrain analysis and visualization at the division and brigade or battalion TF level appears in the accompanying figure.

Looking To the Future

Under the Force XXI redesign recently tested at the NTC by the 1st Brigade, 4th Infantry Division (EXFOR), terrain visualization capabilities are much enhanced. The terrain detachment falls under the engineer brigade with more than double the capability it has now. Each engineer battalion supporting a maneuver brigade receives the Digital Topographic Support System, which allows brigade and battalion
TOCs to receive and display digital information including movement rates, vegetation, soil and slope analysis, LOS analysis and time-distance factors.

Terrain visualization in the future will be less dependent on hard copy maps and products as technology enables digital, information-based capabilities that are directly linked into battle command systems. Terrain information will be provided to combatant commanders through state-of-the-art equipment and standard Army software packages that support a common infrastructure. Many products used during our WARFIGHTER and in real-world deployments will be digitized for future commanders. Part of the requirement that goes along with this technology is the leader development which must continue to allow commanders and their staffs to take full advantage of the capabilities. In particular, our engineers will have to continue to refine their capabilities to visualize the terrain and translate that into meaningful information the maneuver commander can use to fight and win on the battlefield.

Terrain visualization brings the battlefield alive for the maneuver commander. It enables the commander to see how he and the enemy will fight, allowing him the opportunity to use terrain as a weapon. After using a variety of terrain products and analyses during real deployments, training exercises and our division WARFIGHTER, I am convinced this capability is absolutely essential for the Force XXI environment where speed, smaller and more dispersed organizations and expanded battlespace will prevail. One look at the US Army's recent deployments shows 1st Cav Div soldiers in Panama during Operation Just Cause, Saudi Arabia, Kuwait and Iraq during Desert Storm; Somalia, Haiti and several other locations where we did not have the time to do extensive reconnaissance, training or advanced planning. The truth is we do not know where we will fight tomorrow, which is why the ability to visualize the terrain and battlespace is critically important today.

Commanders who can visualize the terrain on future battlefields will be as successful as Napoleon, Meade and Warren were in the past. We must continue to develop this capability and our own expertise as leaders to use it to fight and win on 21st-century battlefields. MR


Major General Leon J. LaPorte is commander, 1st Cavalry Division, Fort Hood, Texas. He received a B.A. from the University of Rhode Island and an M.S. from the University of California. He is also a graduate of the US Army Command and General Staff College (USACGSC) and the Army War College (AWC). He has served in a variety of command and staff positions in the Continental United States (CONUS), including commander, National Training Center, Fort Irwin, California; chief of staff, III
Colonel David F. Melcher is commander, Engineer Brigade, 1st Cavalry Division, Fort Hood, Texas. He received a B.S. from the US Military Academy (USMA), an M.S. from Harvard Business School and an M.P.A. from Shippensburg University. He is also a graduate of the USACGSC and the AWC. He has served in a variety of command and staff positions in the CONUS and Alaska, including regimental tactical officer, USMA, West Point, New York; commander, 6th Engineer Battalion, 6th Infantry Division (Light), Fort Wainwright, Alaska; special assistant to Chief of Staff of the Army, Washington, DC; and S3 and XO, 13th Engineer Battalion, 7th Infantry Division (Light), Fort Ord, California. His article "How to Build the Wrong Army" appeared in the September 1992 issue of Military Review.
The Rommel Myth

by Colonel James R. Robinson, US Army Reserve

Field Marshal Erwin Rommel rode across North Africa onto the pages of history. His legend secure, Rommel will be forever thought of as a military genius who, but for bad fortune and the faults of others, might have changed the course of World War II. His noble nature was crowned tragically by his involvement in the failed attempt on Adolf Hitler's life and his subsequent forced suicide. Legends, however, offer little in the way of direction for students of operational art. Those students must learn, directly or indirectly, from lessons locked in plans, maps, technical comparisons and analyses of others. It is through the disciplined application of critical analysis that campaigns of the past are transmuted into lessons for the future.

What did Rommel accomplish in North Africa, and how should those accomplishments be judged? Is he one of the "Great Captains," or is he more legend than genius, more image than substance? Exploring these issues is germane to future strategists, as it illuminates the tasks, skills and responsibilities at the heart of the operational level of war. Examining Rommel's North African campaigns under the scope of operational art requires not just revisiting battles, but identifying and analyzing the critical elements that constitute campaigns. Of particular importance to current operational-level thinking are lessons that teach us the oft-hidden effects of political, psychological and social factors on a campaign's purpose and execution.

Analyzing Operational Art

The renaissance in US military thought about the operational level of war provides an enhanced means to examine military efforts—past, present and future—that pursue political or strategic goals. Operational art is the planning and execution of military efforts to achieve political aims. It correlates political needs and military power. Operational art should be defined by its military-political scope, not by force size, scale of operations or degree of effort. Likewise, operational art provides theory and skills, and the operational level permits doctrinal structure and process.

While the emerging corpus of operational art and the establishment of an operational level of war are relatively new, operational art has existed throughout recorded history. Nations have long pursued political goals through military actions, and campaigns of any period can be examined from the existential perspective of operational art. Although a broadly accepted primer of operational art is yet to be written, current schools of thought share the fundamental view that military success can be measured only in the attainment of political-strategic aims. This is, in its broadest sense, a truism, valid for all wars in all times.

Operational art comprises four essential elements: time, space, means and purpose. Each element is found in greater complexity at the operational level than at the tactical or strategic level. This is true, in part, because operational art must consider and incorporate more of the strategic and tactical levels than those levels must absorb from the operational level. Although much can be gained by examining the four elements independently, it is only when they are viewed together that operational art reveals its intricate fabric.
The challenge of operational art is to establish a four-element equilibrium that permits the optimal generation and application of military power in achieving the political goal. Viewing time, space, means and purpose as a whole requires great skill in organizing, weighing and envisioning masses of complex, often contradictory factors. These factors often exist for extended periods, over great distances and with churning mixes of players, systems and beliefs, pursuing political goals which may or may not be clear, cogent or settled. Meanwhile, an enemy seeks to create options beyond our thoughts. Compounding factors from other dimensions of power create further, and inestimable, ambiguity and chance.

Mission analysis. The operational-level strategist possesses numerous tools to frame and guide his thinking, but chief among these are mission analysis and end state. Mission analysis answers the question "What is to be accomplished?" Through mission analysis, the operational-level planner fuses political aims and military objectives. In so doing, the planner determines what application of military force will create military power to achieve the political purpose. Subordinate processes here include defining objectives and centers of gravity, but excessive dependence on analytical mechanisms can create false security. The final test rewards success, not the quality of the argument. Conversely, we cannot hope to "feel" our way to victory-complexity demands an integration of thought and structure. A prime challenge to operational-level strategists is to strike a balance between mechanisms and intellect. Too much or little of either reduces the possibility of equilibrium over time and, with it, success.

End state. The end state answers the question "What will constitute success?" The campaign end state is not merely a visualization of the military goal. It also establishes a touchstone for the tactical, operational and strategic levels, along with other dimensions of power. The end state crystalizes the intended results of military power and exposes any limitations. Indeed, an achievable end state may require employment of nonmilitary elements of national power. As such, it recognizes that military power alone may not be capable of attaining political success. The flesh and blood of the military effort are the campaign plan and its execution, but at its soul must be the satisfaction of political goals as defined by the end state.

Operational-level strategists must continually inventory and weigh time, space, means and purpose, extrapolating from them outcomes and probabilities. To accomplish this, practitioners need both skill and theory, experience and knowledge. At the operational level, skills and experience must usually be developed indirectly, through formal training, military history and wargaming. Success at the tactical level is no guarantee of success at the operational level, because there is no natural transition. Without a strong grounding in the theory and application of operational art, a successful tactician has little hope of making the demanding leap from tactics-mastery of operational art demands strategic skills. The operational-level strategist must see clearly and expansively from the foxhole into the corridors of national or coalition authority. In particular, there is a real, but unwritten, requirement for operational-level strategists to consider the plausibility and coherence of strategic aims, national will and the players who decide them. Successful operational art charts a clear, unbroken path from the individual soldier's efforts to the state or coalition's goals.

Factors in viewing World War II. Several factors affect any operational-art examination of Rommel's North Africa efforts. First, the Germans did not use the operational level as a formal doctrinal concept in World War II. While operational art was known within the German forces, its awareness and practice was limited principally to general staff-trained officers. As stated before, the existential na-ture of operational art means that examining Rommel's efforts against political aims is valid irrespective of the doctrine or structures of the period. In this, operational art's elements-time, space, means and purpose-illuminate thoughts and actions of any era, regardless of the prevailing doctrine or structure.
A different challenge is faced in addressing, under any framework, portions of the World War II epoch. World War II's sheer size, scale and complexity create a historical mass possessing its own relativity. It is impossible to separate and examine a sizable segment of the war without seeing that examination "bent" by the weight of other considerations, views, factors and potentialities. It is not just the military dimension that skews the image; the political, economic, social and psychological dimensions are as firmly entwined here as in any conflict in history. Moreover, retrospective "what ifs," while fundamental to analysis and learning, suffer much from an inability to reach conclusions amid an almost incomprehensible array of facts, figures, actors and chaos. These factors challenge not just efforts to "what if" the North Africa efforts, but those who seek to establish truth.

Interests and Aims

The arrival of German forces in North Africa was precipitated by a political need to bolster the sagging fortunes of Italy's fascist leadership. In 1940, the British quickly swept the Italians from the air and drove them back to Tripoli on the ground. Except for delays caused by regrouping and resupplying, then diverting forces to the doomed Balkan effort, the British would likely have defeated the Italians, taken North Africa and forestalled a German entry. Hitler feared an Italian defeat in North Africa could cause a political collapse in Italy, leading that nation to a separate peace. Hitler was unwilling, however, to pay a great price for propping up the Italians. North Africa was to be an economy of force effort, a sideshow to Hitler's upcoming Russian campaign.

An alternative, larger aim offered by some historians sees a German "pincer" strategy, whereby Germany would proceed several thousand miles around the Mediterranean, across the Middle East and link up with victorious German forces near the Caucasus. Access to oil is seen as the primary goal of this strategy. But the pincer strategy is specious, for it greatly exceeded strategic or operational-level feasibility or rationality. The axis lacked means to man, equip and sustain additional armies, fleets and air corps needed to seize and maintain the enormous territory envisaged. Moreover, a second, exposed corridor to Russian and Middle East oil, operating on far-external lines, was unneeded. A German victory in Russia, essential to the pincer strategy, would provide secure internal lines, required no additional effort and would free up huge forces for further strategic schemes.

British interests in North Africa related to strategic freedom of movement, while the German interests were to steady a faltering ally. The relative importance of each nation's interests are debatable. The British were not as overextended as the Germans were, given the demands of Russia. The British could, with extensive US materiel support, fight the Germans and defend their interests. Moreover, battling the Germans in North Africa fit within the Brit-ish "peripheral" strategy, in which Britain hoped to attack and weaken the Germans by engagement along the continental Europe perimeter, and avoid what the British felt would be a more costly direct attack via invasion. This plan was later abandoned after US rejection. After the invasion of Russia, that country urged the British (and later the Americans) to relieve pressure from the Eastern Front by engaging German forces wherever possible. Time, space, means and purpose combined in an odd weighting in North Africa, a good reason these elements should always be considered together.

Rommel at the Operational Level

Rommel was ill-prepared by training, experience or temperament to lead an operational-level German effort in North Africa. World War I treaties limited Germany to a small army of 100,000 soldiers and reduced its officer corps from 35,000 to 4,000. However, the remaining officers were the creme de la
cream, a significant number of whom were vaunted general staff members. Further, the German army circumvented the treaty restrictions against training and retaining the general staff, thereby continuing Germany's cultural commitment to this concept. Rommel's brilliant, aggressive small-unit actions in World War I secured for him a position in the post-war army, but he was never invited to attend the multi-year training of, or serve on, the general staff. Rommel was autodidactic, but little is known of his specific studies of the higher levels of war. His disdain for the general staff and its mental trappings is clear. Except for a brief, unhappy stint on a corps staff during World War I, Rommel did not serve in a division or higher headquarters until he commanded the 7th Panzer Division in 1940.2

This lack of higher staff responsibility stands in marked contrast to his contemporaries, many of whom came from the general staff ranks. Their interwar years were marked by service on higher staffs, to include extensive wargaming and brief interludes of command. Rommel's impetuosity and dynamism were often at odds with his peers' more disciplined, controlled approach. General staff training and service had at its core a commitment to knowledge, logic, detailed analysis and a shared, almost interchangeable, approach. Against this Rommel presented an antipodal approach, one that saw battle as not merely flowing from strategy but often leading it. Rommel was not without support in this line of reasoning. A famous quote from Count Helmuth von Moltke, the renowned 19th-century German strategist, offers that "The demands of strategy grow silent in the face of a tactical victory."5

Rommel's impetuosity and brilliance continued to serve him well as a division commander in 1940 France, although even there his actions began to betray his weaknesses. There were disturbing faults in staff procedures, time-phasing, communications and battlespace, but these were lost in the victory and in Rommel's growing persona.6

When Rommel stepped onto Africa, he seized the mantle of operational art, and in that world tactical brilliance alone would not suffice. Much has been said of the miserable German-Italian command structure for the theater, but the simple matter is Rommel took hold of the operational-level controls and never let go. The German Armed Forces Command's initial guidance to Rommel was clear and followed the strategic plan to defend the Italians. Rommel was to help hold Libya and not exceed an operational depth of 300 miles. Rommel quickly mounted an attack on the British which, given the situation, was entirely justified. This early seizing of the initiative amounted to a tactical offensive in support of an operational-level defense. But Rommel did not stop there. With his forces disembarking piecemeal, Rommel drove on to Egypt, greatly overextending his operational depth, to say nothing of his military aim.

From the initiation of his First Offensive campaign until the withdrawal from El Alamein two years later, Rommel never offered an operational plan that pointed to achievable aims and balanced the four elements. Rather, he proceeded into an extended series of battles, unencumbered by an achievable sequencing of operations and means and disregarding the limited aims given him. There was no pretense of the supremacy of strategy over tactics. Rommel simply pushed his forces forward, pulling behind him like so much unnecessary baggage a century of German strategic thought and practice.

After the war, Field Marshal Gerd von Rundstedt, elder statesman of the German generals and quintessential product of the general staff system, said of Rommel, "He was a brave man, and a very capable commander in small operations, but not really qualified for high command."7 Rommel did what he knew—tactics. He failed to do what he did not know—operational art. Rommel reveals his limitations in his own words. In an 8 April 1941 letter to his wife, Rommel makes what must be one of the oddest admissions of any operational-level commander: "I've no idea whether the date [of the letter] is right. We've been attacking for days now in the endless desert and have lost all idea of space or time."8
On 17 January 1942, Rommel writes his wife of his approach: "I work out my plans early each morning, and how often, during the past year and in France, have they been put into effect within a matter of hours? That's how it should be and is going to be in [the] future.”

Rommel never grasped the extended dimensions of his challenge and never comprehended the elements of time, space, means and purpose in any framework. Often, he merely rationalized or dismissed them, particularly when he addressed logistics. As Martin van Creveld has noted, Rommel failed to recognize the nature of his logistic challenges and incorporate them in his plans. He blamed logistics for not giving him all he wanted, where and when he wanted it—for not hewing to his battle desires. In this, he failed to grasp that, as Joint Chiefs of Staff Publication 1, Joint Warfare of the US Armed Forces, succinctly puts it, "Logistics sets the campaign's operational limits." Instead, Rommel attributed even huge logistic shortfalls to failures in attitude and initiative at various levels. He blamed the Italians, the German general staffs and his own logisticians. It was as though the gallons, the tons and the overextended and exposed supply lines could be reduced to issues of human will.

A striking irony is that, had the British correctly identified and addressed Rommel's logistic vulnerability, they could have greatly reduced his successes. As it was, the British were a major provider of Rommel's operational depth. The British displayed a remarkably unfortunate propensity to surrender to the Germans all manners of supplies, often at key points in the campaign. Particularly startling are the vast quantities of trucks and fuel that fell into German hands. Amazingly, captured British trucks formed the bulk of German ground transport assets and were essential to maintaining German operational depth. That, of course, made them high-priority air targets, thereby incurring for the British the cost of destroying their own trucks. The great failure at Tobruk was not the fall of the town itself, for Rommel could not have maintained, at that point, his forces against rapidly increasing British air and ground power. The true failure was permitting the large stores of supplies and equipment in Tobruk to be captured by the Germans, for without those supplies, the Germans could not have gone on to El Alamein.

Time after time, Rommel's initial and ongoing mission analyses were limited to bringing the enemy to battle and defeating it. There was little linkage to operational aims—or concern for their absence—or to a feasible sequence to attain them. Some of his greatest tactical victories offered no decision, contained no feasible branches or sequels and held no true logic. These truths were lost to the world audience and to the German and British people and their leaders. The sounds of guns drowned out thoughts of strategy. All that was seen was victory, glory and national joy or sorrow. Rommel gave brilliant tactical performances. He consistently stayed within the British decision cycle by combining attacks, counterattacks, deceptions and risk taking. In this, he was aided by weaknesses in British command and tactics, particularly the British tendency to split heavy forces and offer them up to Rommel piecemeal. Nevertheless, Rommel's impulsiveness, surprise, improvisation and daring made him one of the most brilliant tactical leaders of the modern age.

Rommel knew that German strategic needs elsewhere would not permit sufficient reinforcements in North Africa, even if ways could be found to land them, move them to the front and sustain them once they were there. Colonel General Franz Halder, the German Army Staff chief, was one of many who attempted to open Rommel's eyes to the futility of his efforts in North Africa. On one occasion, Rommel told Halder he would need additional armored forces to capture Cairo, the Suez and swing into East Africa. Halder asked how, even if Germany could provide them, would those large formations be resupplied? Rommel replied that this was someone else's problem. No wonder Halder, in his war diary, referred to Rommel as "this soldier gone stark mad."
Rommel—and to an extent his foes—confused the campaign's nature. Tactical brilliance and public emotions reinforced the participants' beliefs that this was a theater where maneuver and individual battles could or would be decisive. In fact, North Africa became a theater of materialschlacht (battle of materiel) where the rhythms of war confused its participants, but where the inputs of war-weapons, manpower and supplies-determined the outcome. Tactical brilliance offered little hope for a decisive German victory, in no small part because that victory was never realistically defined. What if, in 1942 after Tobruk, the Germans took Alexandria, Cairo and even the Suez? No plausible German sequel can be construed. Time had run out for Rommel: his operational depth was hopelessly overextended; the enemy's means far exceeded his; and his purpose was now delusional. British gains in air- and sea-dimensional superiority were increasingly dominating the Axis forces throughout the theater battlespace, while ground force reserves in Egypt were building rapidly.

Several days after El Alamein, the US Torch landings occurred in Northwest Africa, leaving the Germans little choice but to withdraw from Egypt or dramatically reinforce Libya. Hence, it was confirmed that tactical initiative is no guarantee of operational success. Rommel's overextension and pointless quest for battle played little part in theater decisions. Tobruk and El Alamein, far from the major events portrayed then and now, were virtually epilogues of the Second Offensive campaign, as by then the pendulum of military power had swung away from the Germans, never to swing back.

German thinking was disinterested with an expanded strategic purpose in North Africa and Rommel knew it. The Nazi strategic focus was Russia, where Germany's fate would be decided. In fact, each German North Africa offense surprised Hitler and the German Armed Forces High Command. Even as late as January 1942, Rommel's Second Offensive was unexpected. Not until the end of April was a strategy meeting held with the Italians-one which produced sloppy, confused thinking, resolved nothing and set no future course.14 "What to do in Africa?" was Italy's and Germany's continuing refrain.

**Factors.** Despite the dramatic sense of vast open areas, the North Africa campaigns were actually conducted on a long, narrow strip that followed the coast, rarely exceeding 50 miles in width. Ground combat in North Africa followed this long lane, limiting campaign efforts to linear, sequential warfare. Forces fought battle after battle, town to town, with no real operational-level maneuver. Tactical maneuver abounded but did nothing to break the string of sequential battles or the back-and-forth investment in destruction of lives and materiel.

Technology impacted time, space and means but never hoped to resolve the absence of purpose. The Germans entered a theater where the British and Italians had fought at limited ranges with rickety planes and outdated ordnance. The Germans immediately upped the technological ante with battle-proven, high-performance airplanes and far superior weapons. On the ground, the German 88 millimeter dual-purpose antiaircraft/antitank gun proved insurmountable to the British. The 88's effective range, killing power and accuracy terrorized the British ranks. It was not until 1942, when British air superiority permitted air-ground efforts targeting the 88s, that the weapon's battlefield supremacy was diminished. The Germans maintained, albeit to an ever diminishing degree, tank technological superiority throughout the North Africa campaigns. Germany showed a strong capability to upgrade existing models to meet new challenges. However, over time, British gains in quantity and quality, provided principally by the United States, attenuated earlier German advantages. The combination of two technologies-radio intercept and code breaking—were of major importance throughout the campaigns, but they require separate examination.

**Myth and Meaning**
Contemporary photographs and newsreel clips of Rommel are familiar even to those born decades later. Rommel is almost always depicted as a bronzed, handsome man, projecting transcendent wisdom and courage. His daring and valor earned him Germany's highest military medals in World Wars I and II. No 20th-century military foe approaches the enduring fame awarded Rommel by English-speaking peoples.

In truth, Rommel was and is a myth, crafted during his life by friend and foe alike to satisfy various political, social and psychological needs. It was a myth created from an admixture of truth, fiction and emotion, ever enshrined in popular culture and military history. Rommel's myth was used to explain events, to promote beliefs and to entertain, just as myths have done throughout the ages.

Rommel achieved some measure of fame in World War I and in the 1940 Battle of France, but North Africa forms the bulk of his legend. During the war, his deeds were trumpeted in countless newsreels, books and articles around the world. His fame in Germany was enormous. Shortly after the war, B.H. Liddell-Hart, one of this century's best-known military theorists and historians, proposed Rommel for entry into the pantheon of "Great Captains." Most views of Rommel offer similar songs of praise. Martin Blumenson, the distinguished World War II chronicler, could hardly contain himself in a 1989 piece, claiming that Rommel "is increasingly regarded as a soldier who had a clear and compelling view of strategy and logistics and a sound and balanced touch for grand operations."

Rommel's myth was shaped not just by the Germans, but by his enemies as well. Rommel's brilliance mitigated for the British their defeats in North Africa. Rommel became a demigod of war, even to his enemies. During one period of the "Desert Fox's" successes, British Prime Minister Winston Churchill made his now-famous speech before the House of Commons, saying, "We have a very daring and skillful opponent against us, and, may I say across the havoc of war, a great general . . ." No doubt Churchill meant his words; but little doubt can exist either that by acknowledging Rommel's putative genius, Churchill helped excuse British errors, thereby deflecting political criticism of his government.

**Image and Power**

Rommel traveled the paths of glory not just on the strength of his record and abilities, but also from his personal relationship with Hitler. Rommel met Hitler briefly in 1934 and again in 1935, but it was Rommel's temporary tours of duty as commander of Hitler's headquarters party for the invasions of Czechoslovakia and Poland that cemented the relationship. Hitler read and enjoyed Rommel's book *Infantry Attacks*, which was based on his exploits in World War I. In 1939, Rommel was promoted to general officer and assigned as the Fuhrer's headquarters full-time commander. Less than three years later, Rommel was a field marshal, surely one of the most meteoric rises in any modern army. Rommel was neither Prussian, an aristocrat nor a member of the general staff, factors greatly increasing his appeal to Hitler. Rommel was, to Hitler, a wholly acceptable ally, one disenfranchised from the army's usual social elite that Hitler detested and distrusted. In 1940, Rommel was assigned 7th Panzer Division command through Hitler's intercession. On arrival at the division, he shocked his new subordinates by using the "Heil Hitler" greeting.

Rommel clearly was not above increasing and using his political power. Rommel was quick to realize the subtle interactions among public appeal, political value and personal goals. While in North Africa, Rommel often communicated directly or indirectly with Hitler, bypassing his German and Italian higher headquarters. Rommel's aide, SS Lieutenant Alfred Berndt, maintained close ties with his former boss, Propaganda Minister Joseph Goebbels. Rommel often used Berndt to intercede with Hitler, Goebbels and others. Sometimes these were political or strategic matters but were often more mundane issues.
Goebbels guided the building of Rommel's reputation in Germany. Like Hitler, Goebbels saw the political, social and psychological benefits that accrued to the Nazis from the handsome, dashing Rommel, whose political acceptability was rewarded with extensive press coverage. He was the first division commander to receive the Knight's Cross for efforts in the fall of France, and he received the lion's share of press coverage. Even Goebbels, though, recognized Rommel's unpredictable nature and the risks of his actions. In an April 1941 diary entry, Goebbels wrote, "We have our hands full trying to hold him back."20

For Hitler, the daring headline-making exploits of Rommel were too enticing to give up, even if there was no military-strategic logic behind them. Rommel, for his part, knew and cultivated the rewards of image. Prior to his departure for Africa, Rommel met with Hitler and examined American and British magazines lauding the Italian defeat by the British. Soon, Hitler and the world would see German victories there, and the photogenic Rommel would see his fame expanding. The Desert Fox found time to communicate to Goebbels concerns on the quality of his media coverage. Goebbels reacted, in a diary entry of 7 June 1941, that Rommel "deserves the best presentation we can give him. . ." and later that month wrote that Rommel and his forces "deserve the highest praise and a fame that will go down in history."21 Goebbels lived up to his promise, as Rommel became one of the most highly promoted Third Reich heroes. Thus did fame come to Rommel, and with it power.

In the end, the myth was too powerful for even Hitler to destroy. When Rommel came to terms with the irrationality and horror of the Nazi madman, he joined, in some form, the conspirators who hoped to kill Hitler and overthrow the Third Reich. Ironically, the unsuccessful putsch was organized and predominantly made up of Rommel's longstanding foes, general staff officers. Rommel was forced to commit suicide, but the public, of course, was told only that their hero died of wounds. Only after the war would the world learn the truth, a truth that would magnify the myth. In death as in life, Rommel was a hero.

Ultimately, German efforts in North Africa served only to delay the war's outcome at excessive costs. Rommel's failure to envision a realistic end state or to conduct an operational-level mission analysis meant there was never meaning to his battles. For the Germans, little good came of all their tactical and technological brilliance. In the end, they accomplished no clearly identifiable, meaningful objectives. Rommel was untrained and ill-suited for the intellectual rigors of operational art. Rommel came to North Africa, fought countless battles over two years, shaped his legend, but achieved no enduring political goals. In all this, he never met the challenges of operational art and never blended time, space, means and purpose.

Rommel fought battles, but never determined why. For his enemies, the price paid in blood and treasure was later repaid many times over in improvements to equipment and doctrine, and in the inestimable value of battle experience. By any measure of success at the operational level of war, Rommel failed. By most measures of history, he succeeded. The difference is absorbed within the myth. The Rommel myth fulfilled psychological needs for Germany, offset British failures and transfixed the world. His legend as a heroic, tragic figure endures. But operational art is unforgiving-it sets its judgment on success, and Rommel achieved none. It was not just that Rommel failed at operational art, he never really attempted it. He had not learned it, had not practiced it and could not meet the intellectual challenges he faced.

Rommel and North Africa are windows into the future. No, not every circumstance will be repeated, at least in any single campaign. Nonetheless, we must look for each, either in ourselves and our allies or in our foes. For within each weakness is vulnerability. Perhaps the most dangerous risk is permitting public
emotions to poison reason. We must beware of heroes, legends and tales, for they can lure political 
leaders and the public away from the reality of war.

Rommel will be borne by his legend across the sands of time. Nothing said now will change that; nor 
should we wish to rewrite the tale, for heroes are hard to come by. But let us ensure that today's 
warriors—at least the strategists—separate the man from the myth, the deeds from the drama and the futility 
from the glory. We owe that not to the past, but to the future. **MR**

2. David Fraser, *Knight's Cross: A Life of Field Marshal Erwin Rommel* (New York: Harper Collins, 
3. Ibid.
4. An excellent survey of this complex subject can be found in Christian Millotat, *Understanding the 
Prussian-German General Staff System* (Carlisle Barracks, PA: Army War College booklet, 1992).
1993), 47.
9. Ibid., 179.
10. Martin van Creveld, *Supplying War: Logistics from Wallenstein to Patton* (New York: Cambridge 
11. US Joint Chiefs of Staff, Joint Publication 1, *Joint Warfare of the US Armed Forces* (Washington, 
129, 235-38.
293.
18. Len Deighton, *Blitzkreig: From the Rise of Hitler to the Fall of Dunkirk* (New York: Ballantine, 
1982), 54.
19. Berndt is mentioned frequently in Goebbels' diary before, during and after his time as Rommel's 
aide. He later became an SS general and died in action.
21. Ibid., 399 and 421.

*Colonel James R. Robinson is a logistician in the Individual Ready Reserve, US Army Reserve. He 
received a B.S. from Niagara University and an M.B.A. from St. John's University. He is also a graduate 
of the US Army War College and the US Air War College. He has held a variety of command and staff 
positions in the Continental United States, including commander, 304th Materiel Management Center*
(Corps), Los Angeles, California; chief, Support Plans, 311th Corps Support Command (COSCOM), Los Angeles; commander, 387th Maintenance Battalion, Los Alamitos, California; and chief, Operations Branch, 311th COSCOM.
Failed-State Operational Environment Concepts

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In the September-October 1996 issue of Military Review, retired Army Lieutenant Colonel John B. Hunt provides many crucial contributions to the debate surrounding failed-state operations known as operations other than war (OOTW) and stability and support operations (SASO). Given Hunt's former position in the Corps and Division Doctrine Directorate, US Army Command and General Staff College, Fort Leavenworth, Kansas, he offers an in-sider's perspective on recent SASO doctrine history and current SASO doctrine status. His synopsis of the April 1996 draft of US Army Field Manual (FM) 100-20, Stability and Support Operations, which for the first time in doctrine addresses peace-enforcement execution, ethnic conflict and failed states, is of particular value.

Hunt corrects the factual error in my November-December 1995 Military Review article that describes contingency operations as "an early forerunner of OOTW" and points out serious Army shortcomings in OOTW/SASO concept and doctrine development, which I had not realized existed. Hunt also provides three important insights on which I wish to comment, conceptually expand and, when necessary, repostulate as a means to further promote Army doctrinal development for operations that occur in failed states.

Failed-State Operational Environment

The first of Hunt's insights concerns the Army's basic conceptual approach to OOTW/SASO or what I term "non-Western warfare." Hunt states, "Over the years, the Army has entertained many ideas about `not war-not peace' situations." Later he says, "The term's major fault is that it obscures OOTW's warlike aspects, the `not war-not peace' situations that FM 100-5, Operations, refers to as `conflict'." He also mentions that "We must name `not war-not peace' situations, but what the name should be is unimportant." These sentences' significance is the focus on the "not war-not peace" environmental concept as an organizational premise.

The Army continues to view failed-state operations as existing in the "not war-not peace" environment. We have made progress in recognizing that some OOTW missions are forms of warfare and not conflict. However, Hunt's approach to SASO as the warlike aspect of the "not war-not peace" environment is still conceptually flawed. When I described non-Western warfare in my article, I did not mean it was the warlike aspect of the "not war-not peace" concept-only that it was a form of war. Hunt could not know this because I did not propose an alternative conceptual model to the range of military operations in the theater-strategic environment-only that one was needed.

Hunt's reliance on the "not war-not peace" concept suggests why Army doctrine writers have not yet been able to properly define OOTW or develop a satisfactory model. In my article, I state that "because current US Army doctrine is so bound to Clausewitzian thought, many doctrinal questions . . . must be reexamined." The Army has failed to do so in regard to its conceptual approach to SASO because it is institutionally constrained by Clausewitzian thinking.
To help the Army redefine operations in failed states, I propose a new politico-military model. This operational environment model would be composed of a four-cell matrix that would include "war and crime," "war," "crime" and "peace." Three of the cells - war, crime and peace - would pertain to traditional Clausewitzian issues; the fourth - war and crime - would pertain to an emergent neo-Clausewitzian one. To extrapolate the model, we begin with the condition of war. This environment is one of "military issues" that occur between nation-states. It defines the rationale behind US Army operations, as stated in the June 1993 FM 100-5, that after war breaks out, seeks to achieve decisive victory against military forces of belligerent nation-states or their coalitions.

Peace is the domain of "diplomatic issues" between nation-states. Treaties and arms control as well as maintaining a strong army are central to this environment because, when integrated into a national security strategy, they help deter war.

A state of political tension could be said to exist on the borderline between the war and peace environments as defined by the Cold War. This transitional environment was imprecisely conceptualized in the two figures critiqued in my 1995 Military Review article. Fluctuating levels of political tension accurately describe the Cold War, which can be "characterized by war-related activities conducted in the political situation of peace time" and which came to dominate Army thinking. However, this logic falters when categorizing Cold War tension as "conflict," then applying it to OOTW.

Crime is the last Clausewitzian cell. This is the focus of "law-enforcement issues" and principally occurs within nation-states, although it can sometimes be transnational as in the case of cross-border drug smuggling. This cell also includes nonviolent forms of nontraditional missions, such as disaster relief and humanitarian aid that occasionally occur in a stable nation-state.

While the Army has occasionally assisted in domestic situations to suppress civil unrest, as in the 1991 Los Angeles riots, crime is a virtually overlooked environment in Army doctrinal thinking. This is an outcome of Posse Comitatus, which constrains the US Army, except under congressional mandate, from engaging in domestic law-enforcement issues. These operations do not fit into the Clausewitzian war and peace continuum that involves the military forces of other nation-states.

The last cell in the model concerns failed states. This "war and crime" environment represents a nation-state where the governmental system has broken down and there is no rule of law. This environment encompasses challenges within a state to its government by domestic- and foreign-based nongovernment organizations. Chaos and anarchy rather than peace reflect an "anti" Hobbesian order of human association. Thomas Hobbes insisted that the first requirement of political and moral institutions is that they should provide citizens with security.

Rather than reflecting a "not war-not peace" situation, this failed-state environment is based on a blurring of crime and war-a "not war-not crime" situation now occurring throughout the world. In this operational environment, US Army forces face neither other legitimate soldiers fielded by nation-states nor typical criminals generally found on US streets. Instead, they face criminal-soldiers representing nonstate entities such as clans, local militias, mercenary forces, private armies, corporations, guerrillas and drug cartels.

Such a reality is utterly alien to a Clausewitzian-based US Army. In the words of US Army Reserve Lieutenant Colonel Michael H. Hoffman, in "War, Peace, and Interventional Armed Conflict: Solving the Peace Enforcer's Paradox," Parameters, Winter 1995-1996, it represents "the peace enforcer's
paradox." The implications of this emerging warfare form are cause for great concern. We are witnessing nation-states' breakdown in many regions of the non-Western world. In its absence, "societal warfare" is taking place between competing nonstate entities, often between the "haves" and the "have nots." The potential for such strife someday occurring domestically is not lost on military and academic scholars.

While this model represents the antithesis of the US Army's traditional Clausewitzian role, I argue that it more accurately reflects our radically changing world. Because of the unique operational environment failed states pose, a "capability gap" now exists that our domestic law-enforcement and military services do not address. Police officers train to fight crime and soldiers train to wage war, but there is no public institution to effectively operate in the "not war-not crime" environment found in failed states.

**Breaking the Bond**

The second insight Hunt provides concerns "what OOTW really is." He says, "OOTW's chief approach to war is the incorporation of political strategy. OOTW does not seek to defeat enemy military forces by head-on combat. Instead, it turns their power against them, undermines their political support and destroys their morale and discipline." This observation is one of Hunt's most significant. The question of what form of warfare Western peacekeeping and enforcement forces are up against is crucial. However, Hunt falls short in his OOTW analysis because he did not fully articulate his estimation of the security environment US forces now face.

I agree that the basis of what he calls "conflict-related OOTW" can be conceptually drawn to "the political-military struggle used by Vietnam's communist forces." Yet, that basis has since drastically mutated. We no longer solely face nationalistic movements (communist-influenced or otherwise) intent on changing their nation's government. Instead global societal- and criminal-based warfare that pits ethnic, clan, religious and organized crime groups against one another and their indigenous country's legitimate government continues to flourish. Such endemic intrastate warfare that nonstate actors wage represents a qualitatively different reality than the earlier political struggles that the communist Vietnamese and other communist or communist-supported revolutionaries waged.

Understanding the nature of non-Western warfare is also important. From the opposition's perspective, one can argue that non-Western warfare's effect is to undermine Western society's cohesion with which the nonstate force is in conflict. Hunt fully agrees that non-Western warfare is currently incapable of destroying the US material capacity to fight. US Armed Forces were not physically defeated on the battlefield in Vietnam, Lebanon or Somalia. Yet US Armed Forces lost each of these engagements because public opinion turned against government policy. Once this bond between the people and the government was broken, our nation-state was both politically and socially defeated by a nonstate force; a communist-backed, nationalistic movement; an Islamic terrorist organization; and a local warlord.

Based on this logic, we can see that non-Western warfare seeks to affect the nation-state "target set" differently than the Western conduct of war. Our military's target set is composed of the elements that constitute the Clausewitzian trinity - military, government and people.

The US Army is great at destroying things, killing opposing soldiers and seizing terrain. Attrition, annihilation and maneuver are all too familiar concepts. The aspect of the nation-state target set that nonstate forces seek to attack has nothing to do with destroying material things and killing people. Those who are killed-the 241 Marines in Beirut, 18 Rangers in Mogadishu or even the 167 US citizens in Oklahoma City - are not these attacks' primary target. Instead, they provide the means to target the bonds that hold together our nation's Clausewitzian trinity. The effects such terror attacks generate actually
break the bonds themselves. This produces ominous implications: the battlefield is no longer confined to the geographic region in which an overseas operation takes place but, instead, now extends back to our homeland. This aspect of the "CNN effect" can be easily recognized.

What is also unique about the re-relationship targeting of the Western nation-state by nonstate forces is that it cannot be placed within the Clausewitzian cells of the Failed-State Operational Environment Model. Rather, it represents an attribute of the neo-Clausewitzian war and crime cell. There is no other way that terrorism-defined by the US government as a criminal act and by scholars as a non-Western operational concept-can be considered. Terrorism directed against US military forces is responsible for our nation's inability to successfully engage in failed-state operations. From a relationship targeting perspective, the bombings of the Marine barracks in Beirut and the Federal building in Oklahoma City are conceptually no different.

**Fourth Epoch Transition**

The last of Hunt's insights pertains to his perspectives on "future war." I take issue with his direct references to future warfare based on Alvin and Heidi Toffler's "Third Wave Warfare." The Tofflers base their concept on "waves" or war forms that have no actual basis in Western history. Because of this and other serious problems with their concepts, I seriously question their credibility as respected military theorists. As futurists, they accurately portray the fundamental importance information will have on 21st-century operations. For example, while terrorism itself is information-driven, this alone does not signify the Tofflers understand warfighting's future strategic context.

Rather, future security environments will be more in line with the writings of Brian Jenkins, Martin van Creveld, Ralph Peters, Robert Kaplan, William Lind, Samuel Huntington and Charles Dunlap Jr. I argue that we are in a transition to a fourth, or postmodern, epoch in Western civilization that will be of the same magnitude as the two earlier "revolutions in political and military affairs." The first, from 378 to 732, witnessed the classical world's demise and the medieval world's birth. The second, from 1346 to 1648, saw the medieval world's fall and the modern world's emergence. Today we can similarly expect the failure of the dominant state form, a blurring of crime and war, the rise of the nonstate soldier, the emergence of competing war-making entities, the development of a new form of battlespace, the fielding of qualitatively advanced technology, a shift in economic and social structures and, ultimately, the appearance of a new energy foundation and state form. During these transitions, war will become less about struggles between the dominant polity form and its coalitions and more about what social and political form will take its place.

What we have witnessed so far is an early stage in the fourth-epoch transition-the breakdown of the Western nation-state model in many world regions. As a result, the US Army has been increasingly tasked to stabilize and support failed states, much as a medical trauma team would treat a patient. Instead of asking our soldiers to fight and win our nation's wars, we now ask them to engage in intrastate operations to stop the spread of internal anarchy to other still-viable nation-states. For example, the rationale behind the Bosnia operation is to ensure the Balkans' stability so NATO allies' homelands will not eventually be threatened.

While the institutional US Army loathes this type mission, such will become increasingly important. For instance, one reality facing us is that drug cartels are "Colombianizing" Mexico. There is rampant corruption in the Mexican government and law-enforcement agencies. Now, the cartels are undermining the Mexican military, which has been tasked to engage in the drug war. The cartels are also bringing their "not war-not crime" operational environment to the US southern border.
With tens of billions of dollars in economic might and well-armed private armies composed of
criminal-soldiers at their disposal, such ruthless free corporations represent an emergent war-making
entity. The cartels are actively challenging the modern nation-state's legitimacy in Colombia and now
Mexico, which makes them an important national-security concern.

The way Army doctrine addresses these and other security concerns, based on the failed-state operational
environment, will greatly impact our nation's future. While this environment existed far from our
borders, we did not fully take it seriously. Now the "not war-not crime" operational environment closer
to home is directly threatening our nation. Therefore, the US Army must openly confront this doctrinal
issue by placing it in its proper politico-military context. We could then develop practical guidance from
politico-military to operational and tactical levels. Doing so would represent a proposed alternative to
the "operations are operations" approach in the current draft of FM 100-5. The alternative that US Army
Colonel David A. Fastabend and the School of Advanced Military Studies writing team propose includes
four categories of operations: offense, defense, support and stability, all of which can occur in a theater.
However, in a mission in a failed-state environment, stability operations might dominate.

Fastabend suggests that this revised approach to categorizing operations would reduce the Army's
compulsion to wholesale "categorical thinking" in the hope that a declaration of category can bring to
bear a host of imperatives, guidelines and so on that would solve the problem at all institutional levels.
While such thinking is acknowledged to have its uses, in our current strategic environment, it is
generally viewed as offering only limited utility.

I would suggest, however, that this approach may render the politico-military environment-war, peace
and crime-in which a force undertakes a mission, irrelevant to operational concerns. In a time of
increasing global uncertainty and a rise in domestic terrorism, such a potential development is
disturbing. Decoupling doctrine from US government political conventions would acknowledge that
ongoing attempts to create politico-military models within which to place failed-state operations in
strategic context are untenable.

By implication, we have witnessed a breakdown of government guidance on this matter. As a result, the
US Army is divorcing the nontraditional missions it now conducts from a higher form of political
rationale or strategy. It has no choice, because traditional national security perceptions have proved
insufficient and newer ones have yet to be developed. Thus, this doctrinal trend could be cause for
concern because operations represent a means to attain well-defined national security objectives and are
not an end in themselves. Fastabend, however, argues that categorizing operations according to purpose
is in fact a superior method of linking doctrine to strategy.

Regardless of the strategic category or label we use, military planners and executors must evaluate the
strategic direction, end state and objectives. Given these potential benefits, this approach to post-OOTW
era doctrine may, in fact, be far superior to the proposed SASO operational concept. *MR*

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Robert J. Bunker is an adjunct professor, National Security Studies Program, California State
University, San Bernardino, and professor, Unconventional Warfare, American Military University,
Manassas Park, Virginia. He was a speaker on the Institute of Land Warfare Professional Education
Program at the Association of the United States Army annual meeting, Washington, D.C., 14-16 October
1996. He is a frequent MR Digest contributor, and his review essay "Strategy for the Blind" appeared in
the September-October 1996 edition of Military Review.
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Beverly Allen's book is a testimony to and analysis of the horrifying phenomenon of what she calls "a military policy of rape for the purpose of genocide." According to Allen, all forms of genocidal rape constitute the crime of genocide as described in Article II, United Nations Convention on the Prevention and Punishment of the Crime of Genocide (1948). While the US military would never advocate such a policy, we unfortunately have been or will become involved with nations that do. Allen writes that rape warfare is "currently practiced in Bosnia-Herzegovina (B-H) and Croatia by members of the Yugoslav army, Bosnian Serb forces, Serb militias in Croatia and B-H, irregular Serb forces known as Chetniks and Serb civilians."
End State Pitfalls: A Strategic Perspective

James H. Anderson

End states, exit strategies and related war termination issues have received much attention in recent years, largely because of the Gulf War's awkward finish and the contention surrounding deployment of US ground troops to the Balkans. The attention is overdue and welcome.

Thinking through war termination dynamics before committing troops at first has intuitive appeal. This is certainly true at the operational level. James Reed argues in a 1993 Parameters article that, "War termination deserves equal billing with other aspects of the campaign planning process and should be guided by a set of principles or guidelines that, like other dimensions of that process, is best considered in the earliest stages."1

Yet what seems reasonably straightforward at the operational level invariably is more complex at the strategic level, where well-intentioned efforts to specify detailed outcomes may have perverse consequences. Such prescriptions may distort intervention debates, corrupt civil-military relations, tell US enemies more than they need to know and engender disillusionment about US ability to resolve messy conflicts.

When discussing end states' importance, commentators often invoke Carl von Clausewitz's familiar caution: "War plans cover every aspect of war, and weave them all into a single operation that must have a single, ultimate objective in which all particular aims are reconciled. No one states a war—or rather, no one in his sense ought to do so, without first being clear in his mind what he intends to achieve by that war and how he intends to conduct it."2

Problems arise when Clausewitz's insight is cast into a highly restrictive concept. For example, John T. Fishel argues that "end states suggest descriptions in fairly great detail, of the goals of national policy [emphasis added]."3 Clausewitz would likely argue that while clarity of political goals is vital, seeking "great detail" at the strategic level invites disaster because warfare is inherently unpredictable.

Political leaders usually eschew end state terminology for good reason. They have no incentive to define, in detail, conditions that would allow other parties—the media, international organizations or hostile states—to declare success or failure. Yet civilian leaders should also understand that overly broad policy objectives may invite disaster. Navigating between the Scylla of rigid specificity and the Charybdis of nebulous generality requires a deft strategic touch. Therefore, political leaders should muster popular support for military deployments by articulating attainable objectives and explaining how such aims support broader national security objectives.4 Former President George Bush met these imperatives when he clearly outlined US objectives during the Gulf War. Such formulations are necessarily looser than detailed end states but are no less important for being so.

Military leaders should understand why civilian leaders and diplomats prize flexibility. Analyst Bruce C. Bade notes, "Objectives are often cast in ambiguous terms because credibility suffers if they are not achieved."5 Obversely, political leaders should understand why military leaders prize clarity vis-à-vis political direction. Understanding is difficult—though not, as many officers presume, impossible—for political leaders who lack military experience. Abraham Lincoln had limited military experience, yet he
was arguably our most successful wartime president. Franklin D. Roosevelt, another successful commander in chief, never served a day in uniform.6

The bald assumption that detailed strategic end states are necessary before committing US troops may skew traditional civil-military responsibilities. Uniformed personnel should not directly or indirectly seek to frame major policy debates by demanding that civilian leaders provide a detailed picture of any particular conflict's eventual outcome. Such foresight simply does not exist in the real world. Roosevelt would have been hard-pressed to provide military leaders with a detailed end state at the start of World War II beyond the necessarily broad brush imperative of defeating the Axis powers.7

While the preceding paragraph may appear noncontroversial to a military generation steeped in Clausewitzian thought, no less a figure than former Joint Chiefs of Staff Chairman General Colin Powell overstepped his authority by seeking to shape US policy in the Balkans. In a forceful New York Times interview in September 1992, Powell argued against intervening in Bosnia, in part because he could not imagine a desirable end state.8 Moreover, he publicly opposed Bush Administration officials who were lobbying to ban Serbian combat flights over Bosnia-Herzegovina.9 Powell's rhetorical blasts effectively narrowed US policy options for several months thereafter while the Bosnia Serbs continued their odious ethnic cleansing campaign.

Powell’s hesitancy regarding Bosnia typifies the post-Vietnam desire of senior military officers to avoid situations that might risk protracted conflict. Contrary to crude Hollywood stereotypes, senior military leaders are seldom guilty of warmongering, and such caution has obvious virtues. Yet presumed Vietnam lessons are often oversimplified, including the belief that military force must be all-or-nothing.10

Predicting open-ended escalation—the antithesis of a tidy end state—remains a favorite gambit of critics who oppose intervention. Before the 1995 Dayton Peace Agreement, noted strategist Eliot Cohen observed that "[w]hen the Joint Chiefs of Staff have been asked to assess the prospects of effective military action in Yugoslavia . . , they have provided answers almost surely calculated to deter their civilian superiors from the employment of military force."11

Some military leaders also waded deep into policy debates over the Balkan arms embargo. Citing "thousands of years" of bitter ethnic strife, opponents of lifting the arms embargo painted a grim picture of endless warfare, though the existing policy froze the Muslims in a position of relative inferiority and thus rewarded Serbian aggression. The arms embargo also put Washington in the awkward position of winking at Iranian arms shipments to the Muslims.

The military's preference for detailed end states derives, at least in part, from its belief that civilian officials lack interest or competence in managing war termination issues. Consider the following claim: "Because it is unlikely that, when war comes, political leaders will have thought through the demands of war termination strategy, conceptual thinking and contingency planning will fall to the military professionals who must plan and execute the war."12 The author does not indicate why it is "unlikely" civilian leaders will show interest in "war termination strategy" and "conceptual thinking."13 The charge that civilians are not interested in war termination issues does not withstand critical scrutiny. During World Wars I and II, Woodrow Wilson and Roosevelt devoted considerable attention to how the post-conflict world should look. More recently, Bush and his political advisors gave considerable thought to "winning the peace" after evicting Iraqi forces from Kuwait.

Still another skeptic of civilian competence offered this revealing critique: "A theater commander, in any
campaign, is not merely limited to the handling of his troops; he commands that whole area politically, economically and militarily. You have got to trust at that stage of the game when politics fails, and the military takes over, you must trust the military."14 Here the author uncritically assumes what theater commanders should seek to avoid. To presume "politics fails" and the "military takes over" ruptures the connection between policy and war. Clausewitz stressed that such an outcome would leave us "with something pointless and devoid of sense."15

While soliciting input from senior military officers is both proper and necessary, policy makers must not allow uniformed personnel to dominate strategic end state, exit strategy or end date debates. Civilian leaders might well find their authority eroding if they allow such a vacuum to develop.

Specifying overly detailed end states also risks disillusionment, even cynicism, about US ability to bring conflicts to closure. Only Hollywood writers can script wars. One of the few certainties in warfare, paradoxically enough, remains the inevitability of unpleasant surprises. Even straightforward conventional conflicts such as Operation Desert Storm end with unexpected twists. Few imagined that rapid conventional success, coupled with indiscrete statements by Bush, would trigger a disastrous Shi’ite uprising in southern Iraq and the Kurd rebellion in northern Iraq. Moreover, no one predicted the United States would still be conducting overflights of southern and northern Iraq more than five years after Desert Storm.

The preoccupation with detailed strategic end states feeds a related obsession with end dates. Both civilian and military leaders have failed to think through the illogic of specifying end dates before committing troops. The end-date approach to strategy ensures military commitments will be time-driven, not event-driven. As noted strategist Fred Ikle argues, "It is not un-common among government officials . . . to turn the discussion of a controversial decision into a debate about its timing, while its merits are never dealt with."16 This view largely reflects events during the Bosnia debate. To garner support for a major troop deployment, President Bill Clinton promised US ground troops would remain in Bosnia for only one year. Clinton thus built a strategy around a highly publicized end date.

The preoccupation with declaring end dates is fraught with peril. There is a natural tendency for deployed troops to focus on the calendar rather than mission accomplishment. The enemy can lie low until intervention forces withdraw, just as Somali clan leaders did after they learned the United States was planning to withdraw, and just as recalcitrant Bosnian Serbs are doing in the Balkans today. The more detailed US publicized time lines are, the more options adversaries have to undermine them. Superpower credibility suffers when rigid schedules take precedent over the achievement of political objectives. If the president decides the situation merits risking blood and treasure, US forces should stay until they finish the mission or until success has been deemed unattainable. This recommended approach does not exclude specifying internal time lines or target dates, but it prevents senior civilian and military leaders from becoming enslaved by them.

The end date fixation also reinforces, in the worst possible way, sloppy assumptions about US willingness to commit military forces for extended periods. Here conventional wisdom is almost certainly overstated. Worth remembering is that for more than 40 years Americans supported Cold War policies that required significant economic sacrifices. Yet the danger remains that the US’ alleged lack of patience will become a self-fulfilling prophesy—that publicizing end dates will become de rigueur for all future military interventions.

The preoccupation with end dates points toward a deeper pitfall associated with end states: we should avoid thinking of them as phased outcomes that can be frozen in time. In fact, many international
problems require evolutionary solutions, especially when considering military operations other than war (OOTW). Such conflicts often resist quick resolution. During the Cold War, the low-profile US effort to help San Salvador defeat a sophisticated communist insurgency took nearly a decade. In OOTW situations, policy makers and military planners should think about evolutionary processes vice short-term end dates. Equally important, they should dampen unrealistic expectations about cheap and bloodless victories.

At the strategic level, a fundamental tension underlies contentious end state debates: the military's insistence on specificity often conflicts with the desire of political leaders for maneuver room. While we cannot wholly eliminate this tension, we can assuage it if military and civilian leaders seek a better understanding of war termination dynamics.17

Such an understanding would admit war-to-peace transitions are never tidy and, as a rule, require patience and flexibility of mind from both military and civilian leaders. The utility of any particular end state is therefore directly related to its specificity. Unless end state formulations permit flexibility, attempts to secure detailed outcomes will invariably engender disappointment given the unpredictable and chaotic nature of war-fare. No campaign plan survives intact at first contact with the enemy. Why then should anyone expect detailed strategic end states to survive intact?

Military leaders have every right to ask civilian leaders for clear and attainable political objectives. But seeking clarification of political guidance and attempting to shape important policy decisions are different enterprises: uniformed personnel should not engage in the latter. In this vein, rigid end state conceptions might corrupt civil-military relations by tempting military officers to exert untoward influence over policy decisions. While this pitfall's corrosive potential is difficult to predict, it none-the-less should give pause to anyone concerned about the future health of civil-military relations.

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4. As former Secretary of State George Shultz and others argue, time constraints may not always permit the luxury of building public support.
6. That military experience is no guarantee of political success should be clear. U.S. Grant and Zachary Taylor, two leaders with extensive military successes, proved lousy presidents.
7. In 1941, Western leaders had no idea how the eventual war termination dynamics in Eastern Europe would set the political boundaries for almost the next half-century.
10. Such an approach might backfire and lead to even larger US troop commitments later, as happened in Bosnia. Georgie Anne Geyer, "When Policy is Driven by Desire," The Washington Times (26 February 1996), B-3.
13. Interestingly, this criticism runs counter to the more frequent claim that political leaders enjoy micromanaging military operations.
15. Clausewitz, 605.
17. Involving more high-level civilian officials in military war games is one means to this end.

James H. Anderson is an assistant professor of International Relations, Command and Staff College, Marine Corps University, Quantico, Virginia. He received a B.A. from Amherst College and an M.A.L.D. and Ph.D. from Tufts University. He was commissioned a 2d lieutenant at the Navy-Marine Corps Intelligence Center. From 1986 to 1989 he served as an intelligence officer at division and battalion levels. While at the Marine Corps Command and Staff College, he made four trips to Eastern and Central Europe as part of NATO's military-to-military contact team program. His articles have been published in the Washington Times, Proceedings, Strategic Review and Studies in Conflict and Terrorism.
The Political Dimension of Political Action: What Works?

Bruce B. G. Clarke

Recent articles highlight a critical shortcoming in current military operations planning occurring at the Pentagon-and elsewhere within the Army. A crucial element missing is interrelationship consideration between political and military requirements-especially in operations that characterize the post-Cold War world. This article examines that failure and suggests what should be done to preclude potential problems in Bosnia and similar operations elsewhere. I stress that the military education system is perpetuating, if not compounding, the problem.

In the mid-1970s, noted author Bernard Brodie observed: "[W]e need people who will challenge, investigate and dissect the prevailing dogmas' of our foreign policy, and of strategic studies; it is important for students of strategy to be aware of the 'inevitable limitations and imperfections of scientific method in strategic analysis and decision making' particularly with regard to the imperfections of the practitioners, 'whose greatest limitation is that they sometimes fail to observe true scientific discipline'; it is necessary to understand that the 'most basic issues of strategy often do not lend themselves to scientific analysis . . . because they are laden with value judgments and therefore tend to escape any kind of disciplined thought'; and last, but not least, the Clausewitzian admonition on the 'need to stress the superior importance of the political side of strategy to the simply technical and technological side' is particularly relevant in the . . . age [of nuclear deterrence]."3

Brodie's clear admonition is as poignant today as two decades ago. The two critical points he makes are that the scientific analysis the military seeks to perform is potentially flawed because the issues of strategy do not lend themselves to "military-scientific analysis," and strategy's political component is critical and should not be forgotten. It is critical to analyze in great detail the linkages between political concepts and military objectives. For example, in Somalia the military forgot political objectives and focused on military objectives.4 The result: decoupling the military from the political.

The same critique might also apply to the ongoing peace enforcement (PE) or peacekeeping (PK) mission in Bosnia.5 This suggests the US military must relearn a critical lesson that emerged from the Vietnam experience-the interrelationship of political and military objectives. More times than not, the political situation defines the realm of the possible for the military. In short, the military element of power is never a pure policy option, and future strategists must learn this. Interrelationships and synergism between a strategy's political, economic and military components result in a more pragmatic and achievable national effort-where the elements of power are synchronized. Of course, this is what end-state planning seeks to achieve.6

Future Success

With these general admonitions in mind, what must the military do to successfully execute the highly political operations that characterize the post-Cold War world? We must never forget political primacy: the use of military force is a political act to achieve political objectives. Normally foes, who either threaten or actually use force, seek to change an opponent's political objectives to accommodate their
own. However, this might not be the same in PK operations (PKOs). In a PKO, peace enforcers seek to create conditions to allow all sides to reach political accommodations that will preclude future use of force. This is, in fact, a change of political objectives by both sides, but more accurately, it is a change in how foes seek to achieve their objectives.

Americans have not adjusted to PK or PE and other nontraditional uses of military power: they still look for "bad guys." This attitude is reflected in the several attempts at legislating severe restrictions on US involvement in PKOs and the current isolationist jabs some political candidates take at the UN.

When trying to discern what is possible, both politicians and soldiers should remember that the public probably does not understand the complexities of some situations and needs to be educated on the operation being considered. Public support is critical to any operation's success. Belligerents would realize that without it the United States is not likely to stay committed and simply wait us out. Of course, this is also the problem with a definitive statement of withdrawal dates. This is directly related to the fact that with the Cold War's end, too many problems are being brought before the UN. In some circles, the perception persists that the UN can be used in an "economy of force" approach to solving the world's problems. For example, the US perspective is that it is cheaper and easier to "have the UN do it." In this regard, PKOs are evolving into multidimensional operations that are usually part of a larger social or humanitarian problem, increasingly related to internal conflicts and a result of the "CNN factor."

The CNN factor is the concept that "if it bleeds it leads" in TV news shows around the world. The result is that the UN, NATO and other international organizations become involved in operations they were not designed or equipped to perform. The CNN factor impacts decision makers-not just the public, which results in mounting pressure to do something-anything. The military option, because it is available and highly visible, thus becomes more attractive. Politicians can argue they are doing something without dealing with the problem's true sources, which are usually social and political. The military "band aid" is easier to apply than the long-term social cure to the ills that created bloodshed in the first place.

In this context, what works is what participating states will support at any time. However, in hurrying to do something, they generally ignore Brian Urquhart's criteria for a successful PKO. In most cases, this results in problems or failures. Common violations include:

- Insufficient resources: funding for operations is tough-the United States is over a billion dollars in arrears.
- Lack of consent between parties: often the countries involved are not neutral with respect to the original belligerents.
- Lack of impartiality: the peace-keepers usually back one side or the other.
- Peacekeepers' perception that self-defense does not include the mandate's defense.
- An unclear and hard-to-achieve mandate.
- Inadequate resources available and the Security Council's lack of political will to sustain the operation.

To postulate what will work in a post-Cold War PKO, one must understand that an operation's focus will either be conflict-escalation prevention or humanitarian relief. These two types of PKOs are more difficult than traditional PKOs and require a new set of criteria for success. New criteria would have to address many issues and questions as follows:

- Do conditions exist for reaching peace? What are these conditions and what can be done to create them? Do the sides to the conflict want them? Are participating nations willing to expend resources
to achieve them?

- Are PKOs appropriate? Has fighting subsided to a point that the sides believe a PKO and available forces are sufficient, or must an end to the fighting, some form of PE, first be imposed?  

- What is the mission? Is it political, military or humanitarian? How much force is necessary? Depending on the answers to these questions, force size should be elastic. There also might be a need for a rapid reaction team of fact finders to quickly answer such questions. Providing some force and international presence soon seems to be much better than providing a big force too late. Is there at least support for the operation among governmental elite?

Can some infrastructure work be done early and quickly to facilitate getting to the problem? Can speed be achieved-politically and militarily? Speed is essential. It now takes longer to get forces on the ground in troubled parts of the world than it did during previous UN operations. This might be due to the sheer volume of cases being referred to the UN, the paucity of resources available, the unwillingness of nations to take on more commitments, actual physical conditions, the force's sophistication and its requisite needs or some combination of these.

A PKO will occur only because the nations involved will have had an interest to achieve an end state. They will want to reduce the CNN factor, create the perception the problem is someone else's reality, reduce some pain and suffering (a near-term fix) and truly want to eliminate the situation's root causes.

**Setting the Mandate**

Once a PKO is to occur, political leaders must develop a clear and achievable set of political objectives-a mandate. The mandate needs to reflect a political consensus while being flexible, not overly detailed and written so ambiguous rules of engagement (ROE) will not result. The mandate must also state the force's size, which usually is mission-dependent. The mandate must also reflect the consensus of those who have the political will to carry it out. In essence, the mandate is the military's political mission statement and tasking order. It is a critical political document, for from it the military derives both the mission and ROE.

Mission creep occurs when the mandate is changed in either statement or reality. In the mandate, the costs are not absolute. They should be thought of in terms of opportunity costs and savings.

Public or political debate over the mandate's terms will certainly occur. All parties should carefully monitor the debate to understand the document's full intent and, more important, the possible limits as defined by the mission's public support. The mandate links military and political tasks. Soldiers trained in national security and international stability skills should be deeply involved in the mandate's development. Linkages should be explicit, and military leaders must understand that progress will depend on the political conditions to be achieved-not necessarily the military objectives to be achieved.

PKOs have at least three components: political, military and humanitarian. There are two schools of thought on whether these can be integrated or can co-exist. Can they be balanced, or can they be exclusive? Humanitarian actions may be at odds with political and military actions and actually make achievement of political and military objectives more difficult. They must be impartial, whereas military and political actions may not be. For example, sanctions may destroy a nation's health-care capability. Is this acceptable? If situation analysis shows this is the center of gravity and must occur, then planners must give some thought to the humanitarian objectives that will most likely improve health care.
assured the CNN factor will also be at work here, and there will be a clear need to consider which type of objective-political, military or humanitarian-will take priority. The political objective's location will also be important. Domestic political factors, not those in the country in question, might be paramount.

This discussion leads to the conditions necessary for successful PKOs:

- Triggers (criteria) for early intervention.
- A durable mandate.
- Clear linkages between military and political objectives.
- Experts to work implementation.
- Flexibility for commanders and officials in the field to act.
- Low-cost ways to intervene.
- Resources that are committed for the long term.
- Unambiguous, multilateral government commitments to see the matter through.

The US military brings many capabilities to PKOs, but it is a reluctant participant. The thought is that such operations are a funding detractor from readiness and are not warfighting, which is the US military's principal mission. This mind-set, along with others previously mentioned, must be eliminated if the United States is to participate as a useful partner in future PKOs.

Changing the military's perception requires changing the military education system. We must stop believing strategy is like a cookbook—that you only have to find the right recipe to be successful. Any strategy definition must include references to both art and science. If science is the recipe, art is the master chef's ability to look at a recipe and know what must be changed, mixed differently or cooked longer. The military "master chef" must understand political elements and the flavors and spices he will introduce to the recipe. As a strategist, he must be trained in our senior service schools—not simply taught the recipes in the cookbook.20

What Works

Successful post-Cold War military operations depend on tight integration of political and military objectives in all of an operation's phases. To do less is folly. What works can be summarized as follows:

- Flexibility for the operational commander and his political boss.
- Limits to intervention, only intervening when the probability of success is high.
- Economy of force, focusing available resources.
- Adhering to Urquhart's criteria: participants must want the peacekeepers' help and must be able to exercise decisive authority over belligerents to reduce anarchy and chaos.
- End-state planning, including contingency plans.
- Negotiator credibility and leverage, coming from a coherent, agreed-on strategy.
- Timely execution.
- Non-US involvement: the United States lacks the perseverance for protracted conflicts.
- Self-discipline, avoiding the CNN factor.
- Credibility, which is the key to success.

What works is what member states are willing to provide. The United States may only be willing to assist in a triage, not in a long-term effort. In the near term, the United States should conduct low-cost or high-value missions with which to establish US credibility, both with potential belligerents and with the American people. This would require parties willing to seek resolution and a US willingness to exploit
windows of opportunity, use rapidly deployable evaluation teams and involve all sides in the process.

Despite "what works" and lessons learned, the world community, the UN Security Council and the United States will continue to make decisions based on imperatives and lessons learned. Therefore, it makes sense to look at second-best strategies because the optimal strategy of not getting involved will not be tenable.

In the future, the UN and United States must reestablish their credibility. To not do so will result in failure. The US military's future challenge is to groom soldiers who understand political vagaries, linkages between political and military objectives and who are comfortable operating in gray areas. Strategists will be the key to planning as well as executing successful post-Cold War military operations.

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1. Two articles in the Autumn 1995 Joint Force Quarterly prompted me to write this article. Kenneth Allard's "Lessons Unlearned: Somalia and Joint Doctrine" implies that the failure in Somalia occurred because command and control structures were inappropriate. This was just part of the problem, which was due more to the disconnect between political and military objectives. The second article is US Air Force Lieutenant General Ervin J. Rokke's "Military Education for the New Age." In discussing factors for change, Rokke mentions international politics, but he does not address the most critical aspect a strategist requires—the ability to translate the political into the military.

2. This entire dilemma is aptly captured in the ongoing debate about the term operations other than war (OOTW). To many people this term implies that the Clausewitzian link between politics and war is more prevalent during OOTW, to others less. The critical element is that people think there is a difference. In any military operation, political primacy should not be forgotten. Such sterile debates highlight the US military's discomfort with some operations' political aspects.


4. Bruce Clarke, "End State Planning, Managing Contemporary Conflict: Pillars of Success." In this article, I argue that military leaders need to examine political and military variables and understand such interrelationships. A military task might not be possible until a force accomplishes certain diplomatic or political tasks. I highlight that point using Somalia as an example of what could or should have been. I also recommend that strategists determine the critical variables needed for the effort being considered, then conduct a critical-path analysis to determine which variable is critical during each phase of the strategy's execution.

5. The military hierarchy repeatedly says military tasks should be completed within 12 months. In saying this, they imply that military tasks stand by themselves and have no relationship to the many diplomatic or political events that must occur to restore true peace to the region. The impression is that the military can perform its tasks and leave, despite what occurs on the political front.

6. Clarke, "End State Planning."


8. One is reminded of Haiti, where there was a spirited debate during which Newsweek quoted General John Shalikashvili as saying he had run out of ways to say "no" to President Bill Clinton. This shows how the president carried the day by perseverance against adverse public and intergovernmental opinion.

9. GEN Creighton W. Abrams Jr. recognized this coming out of the Vietnam War. He structured the US
Army to involve the Reserve Component, thus the people, when going to war. The Gulf War was this concept's proof.

10. In a speech on 7 March 1996 at George Washington University, Anthony Lake argued that specifying a certain date is important because it forces a belligerent to get on with the required tasks. To the extent this might be true, it is also contradicted by reality. More important, it goes a long way toward decoupling military objectives from achievement of political, economic, social, humanitarian and other types of activities. This is a critical failing of such thinking.

11. The initial Clinton administration national security strategy of enlargement and engagement sought to codify this concept. See Anthony Lake, "From Containment to Enlargement," Vital Speeches, 15 October 1993. Many people argue that in the process the United States abrogated its leadership position and was then forced to overreact as in Haiti, Bosnia and elsewhere.

12. This probably further explains why the US military has sought to distance itself from political and social tasks that must be accomplished if one is to have a chance of solving the cause of such world conflicts. For the current administration's position, see the speech by Anthony Lake referenced in note 10.

13. Such activity might be of limited duration-until the cost becomes too high. This occurred in Somalia. Unfortunately, the factions that cause such problems also realize this and might seek to work the CNN factor to their best advantage.

14. Sir Brian Urquhart postulated six criteria necessary for any Cold War-era peacekeeping operation's (PKO's) success: (1) Have the UN Security Council's political backing; (2) Have the consent of all parties involved in the conflict, including the operation's establishment, mandate, force composition and who the commanding officer will be; (3) Have a clear and achievable mandate; (4) Have a clear understanding of the use of force [rules of engagement] except as a last resort or in self-defense; (5) Provide adequate numbers of troops and clearly understand the acceptance of risk for them; and (6) Be confident of all participants' willingness to provide sufficient logistic support.

15. A growing body of thought includes the argument that peace enforcement-where outside forces militarily impose a cease-fire-is a high-risk, low-return operation. This suggests the way to terminate armed hostilities and create conditions for a PKO is to isolate the battlefield and allow mutual exhaustion to occur in other words, contribute to the realization that both sides have no hope of "winning." This thought is a corollary to the thoughts I present in "Conflict Termination: A Rational Model."

16. There are few cases today where a nation's vital national interests are truly at risk. However, the US debate concerning Bosnia shows that a nation will hide behind national interest to justify its actions.

17. In past cases, the military has used the presidential notification, under the War Powers Act's provision, as the document on which to base planning. This notification serves to advise military leaders what the political objectives are so they can determine military objectives. This was the case in Rwanda and initially in Northern Iraq. Such cases may occur more frequently if the president is unwilling to generate public support.

18. In "End State Planning," I explain and show the linkages and planning techniques that allow political and military objectives to be interrelated. For example, early in the Somalia operation, the commander in chief said he had transitioned to a new phase, when the political conditions that were necessary for such a transition had not actually occurred. This was the beginning of the mission's transformation and the inconsistencies between political and military objectives.

19. The center of gravity concept also applies to PKOs. In some cases it may apply to an individual or an idea. See "End State Planning" for further discussion.

20. The US Army War College's annual warfighting exercise goes to great effort to minimize its political content. The National War College has also played short shrift to strategy's political element, focusing primarily on the military element. I contend this is not the correct focus.
Colonel Bruce B.G. Clarke, US Army, Retired, is the training manager at the Royal Saudi Land Forces Armor Institute in Tabuk, Saudi Arabia. He received a B.A. from West Point, an M.A. from the University of California-Los Angeles and is a US Army Command and General Staff College and National War College graduate. He held a variety of command and staff positions in the Continental United States, Germany and Vietnam, including director, US National Security Studies, Army War College, Carlisle Barracks, Pennsylvania; and commander, 2d Brigade, 1st Infantry Division (Mechanized), Fort Riley, Kansas. In addition, he served as a district adviser in Vietnam and as a political-military analyst at the Arms Control and Disarmament Agency, Washington, D.C.
The Leavenworth Staff College: A Historical Overview

Christopher R. Gabel

As the 20th century ends, it heralds a new era in the US Army's evolution-Force XXI. As with other Army institutions, the US Army Command and General Staff College (CGSC) at Fort Leavenworth, Kansas, has begun to consider how it needs to change to meet the next century's demands. However, before selecting a course into the future, it is appropriate for the institution to reflect on its history. This article encapsulates the college's past for the benefit of the Army community that will guide the college into the future.

Fort Leavenworth's first Army school was the School of Application for Infantry and Cavalry. It opened in 1882 and was in no sense a staff college. The school taught basic branch skills to lieutenants. Within five years, the school began to evolve into an institution of higher military education. In 1902, Secretary of War Elihu Root's reforms resulted in the school's redesignation as the General Service and Staff College (GSSC) and placed it within a hierarchy of Army schools that included precommissioning institutions, such as the US Military Academy and the Reserve Officers' Training Corps, branch schools and the Army War College. From 1904 to 1917, GSSC included two separate courses: the School of the Line and the Army Staff College that, together, prepared officers for staff duties at division, corps and general staff levels. Attending GSSC became a necessary and desirable career step for aspiring officers. Leavenworth also became a center of military thought and doctrinal development.

Leavenworth graduates proved their worth in World War I, most conspicuously as staff officers at American Expeditionary Forces headquarters and as commanders at brigade and regimental levels. The graduates' performance secured the college's status. In 1922, the School of the Line and the Staff College merged to form the Command and General Staff School (CGSS). CGSS graduate lists during that time read like a "who's who" of World War II generals. In the 1940s, the school became the US Army Command and General Staff College (CGSC). Abbreviated courses and huge classes characterized the wartime college as it struggled to meet the demands for trained staff officers and commanders in a vastly expanded Army.

After World War II, the Army was committed to an unprecedented array of global peacetime engagements. The college realigned its curricula and altered student population composition. By about 1972, the college had stabilized into what it is today. The greatest recent change has been the creation of two new schools: the Combined Arms and Services Staff School (CAS3) in 1980; and the School of Advanced Military Studies (SAMS) in 1983.

Core Attributes

The pre-World War I German Kriegsakademie, from which the early Leavenworth college borrowed curricula and methodology, was an exclusive and rigorous three-year school. Admission standards were high-as were failure rates. Top Kriegsakademie graduates joined an elite general staff corps that
dominated both military planning and operations. By contrast, Leavenworth traditionally operated under a philosophy of inclusion, rather than exclusion. Historically, the percentage of US Army officers who have attended Leavenworth is approximately five times greater than the percentage of German officers who attended the *Kriegsakademie*. Moreover, few students have failed (hence the proverbial "Leavenworth B"), and all graduates receive the same diploma. There is not an elite career track reserved for top graduates. The college traditionally has produced a large number of competent officers, rather than a small elite.

In efforts to reach a broad target population, CGSC has not overlooked the citizen-soldier. Since 1922 Reserve Component (RC) officers could attend a special short course. As early as 1907, the college began mailing course materials to Active Component (AC) and RC officers who could not personally attend. This mail-order curriculum evolved into a full-fledged correspondence course in the 1920s. Today it serves over 8,000 officers plus another 1,600 who attend nonresident classes at other military posts. Another Leavenworth outreach program includes this publication. *Military Review*, founded in 1922, has kept generations of officers abreast of military professional developments.

An original reason for founding the college was to narrow the gulf dividing staff officers from line officers. Another reason was to harmonize the various combat arms methods. Leavenworth was where diverse career tracks converged and where officers from different backgrounds learned to work together within a common system. Every Leavenworth college course includes a core curriculum for all students regardless of arm, branch or nationality. From the 1880s to the mid-1960s, except during World War II, virtually the entire course of study consisted of common curriculum.

The benefits of a common "Leavenworth experience" have long been obvious. Doctrine, terminology and procedures promulgated at the college are disseminated throughout the Army. An early example of this was the five-paragraph field order that has been used Armywide ever since college instructor Captain Eben Swift introduced it in the 1890s. The college began writing doctrine in 1905.

When the school began in 1882, its function was essentially remedial-teaching lieutenant skills to lieutenants. Sluggish promotion rates and the Army's general lack of purpose made it fanciful to suppose that lieutenants needed to know anything beyond company drill. Within five years that changed. Under instructors such as Arthur L. Wagner, Eben Swift, John F. Morrison and commandant J. Franklin Bell, the school became a true college that taught intellectual and problem-solving skills useful for life. When Swift became the college's commandant in 1916, the curriculum covered tactical formations as high as division and corps, although few students had ever seen a force larger than a regiment. Two years later, an American army group was engaged in operations against the Germans. Without the school and Wagner's and Swift's foresight, it is doubtful the Army's officer corps could have risen to the challenge.

Since World War I, the typical CGSC student has held the rank of major. The curriculum generally centers on division and corps echelons, which are several levels above the students' career experiences.

**Applicative method.** The Leavenworth methodology for teaching problem-solving skills has remained constant since the 1890s when Swift introduced an educational technique known as the *applicative method*, under which lecture, recitation and memorization gave way to hands-on exercises in analytical problem solving such as map exercises, war games and staff rides-all designed to teach students how to think, not what to think. By the late 1930s such exercises accounted for more than 70 percent of total curriculum hours. The applicatory method survives in the form of practical exercises, terrain walks, staff rides and the capstone exercise *PRAIRIE WARRIOR*, which relies heavily on computer simulation.
Providing officers with skills useful throughout a career involves more than transmitting technical knowledge; it is also important to impart habits of intellectual growth. The college once provided courses in academic subjects such as geography, military history and foreign language, in addition to courses in doctrine, tactics and staff procedures. In 1906, instructor Morrison introduced the seminar format to facilitate active learning. In the 1930s, a separate Department of Intelligence and History served as the proponent for courses in military history, military geography, political economy and individual research. Although academic subjects received little attention in the World War II college, they were again formalized in the curriculum in the postwar era.

**Trends since World War II.** Within the framework of CGSC core attributes, several trends in the last half-century have left a profound mark. The student population's diversification is one of the most significant trends. Evolving as it did out of an infantry-cavalry school, the early college catered mainly to combat arms officers. As late as 1939, only 13 percent of the student body was noncombat arms officers. However, since World War II, combat support, combat service support and "non-OPMD" officers (such as medical corps, nurse corps, chaplain and so on) have con-stituted an increasing proportion of classes: 1948-32 percent, 1989-48 percent, 1996-53 percent.

The percentage of Air Force, Navy, Marine Corps and Coast Guard students has increased comparably. From the 1920s to the 1970s, sister service enrollments held steady at about 1 to 3 percent of the student body. Army Air Corps officers constituted almost 15 percent of all students in the 1930s, but they were counted as Army officers. The 1986 *Goldwater-Nichols Department of Defense Reorganization Act* raised sister service slots to 6 percent in 1989, and they now stand at 12 percent.

The first foreign officer attended Leavenworth in 1894, but not until World War II was "international officer" representation consistent and significant. Since then, international officer enrollments have remained steady at about 10 percent of each class.

**Curriculum Diversification**

Since World War II, diversity among college students has paralleled the course content's diversification. Students from various arms, services and nations bring to the school diverse backgrounds and educational goals. Moreover, changes in warfare's nature and in US defense policy have inspired areas of study that were either unknown or irrelevant before World War II. Such nontraditional subjects as airborne operations, limited war, nuclear weapons, internal defense and security assistance, low-intensity conflict and operations other than war have merited inclusion in CGSC's curriculum. Students can also take elective courses focused on their career specialties.

Although CGSC's goal has always been intellectual growth, the last 30 years have seen an increased emphasis on "academic" endeavors that stress education rather than training. In 1965, a Department of the Army review board headed by Lieutenant General Ralph E. Haines recommended an increase in the curriculum's intellectual content that resulted in the electives program's inauguration in 1966. From 1973 to 1976 during Major General John H. Cushman's tenure as commandant, the electives program encompassed 20 percent of the curriculum. Cushman also introduced courses in communication skills and shifted classroom methodologies to include more small-group (seminar-style) instruction. Leavenworth's graduate degree program, which had operated tentatively between 1963 and 1966, became a permanent fixture. This program allows students to write theses and earn a master's degree, as an adjunct to normal course work. The Combat Studies Institute, a separate military history department, was founded in 1979. SAMS was added in 1983.
Curriculum hours contraction. Paradoxically, a decline in classroom hours accompanied the curriculum's diversification. In 1939, the college course consisted of 1,073 hours—virtually all core curriculum—with a heavy emphasis on division-level operations. Through the 1950s, classroom hours held steady at around 1,000 excepting the abbreviated World War II era courses. By 1985, the curriculum had dropped to 886 hours-676 in core courses and 210 in electives. Curriculum hours bottomed out at 800 in 1989, with 590 core hours and 210 elective hours. The course now consists of 863 hours, with 541 devoted to core subjects, 210 to electives and 112 to PRAIRIE WARRIOR.

The curriculum's simultaneous diversification and contraction has meant a reduction of core hours devoted to tactics, the traditional centerpiece of the college course of study. Just before World War II, tactics accounted for more than 700 hours of instruction. That figure stood at 665 in 1951, 335 in 1968 and just 170 in 1974, after which it rebounded somewhat. This year the tactics department controls 197 hours in the core curriculum, plus the 112-hour capstone exercise and 60 hours of "advanced applications" courses required for all combat arms officers. Whereas the pre-World War II college produced tactical experts, today's graduate is more of a generalist who has studied the military profession in greater breadth than his 1930s counterpart.

The interwar era. If the trends continue, the 21st century college student body will be even more diverse. Curriculum will increasingly focus on courses other than traditional large-unit tactics. However, history does not predict the future. Nor does the simple extrapolation of recent trends constitute an adequate basis for plotting the college's course. One must also account for the unique context in which the future college will exist. For the immediate future, it seems "interwar" conditions will prevail. Understanding the college's response to earlier interwar periods, taken along with core attributes and recent trends, leads to some tentative conclusions about the institution's future.

No organizational panacea. Whatever challenges the college encounters, it seems unlikely it can surmount them merely through restructuring. The college has experimented with a bewildering array of organization forms. In 1902, the college created one teaching department for each major course: tactics, engineering, law and sanitation, the latter representing an effort to "leverage new technology." In 1936, the departments roughly paralleled the division of staff duties—offense, defense and security and supply and administration. These departments apparently shared faculty and cooperated in teaching the different courses. In 1958, college structure reflected Army organization. The teaching departments were infantry division, armor division, staff and educational subjects, airborne operations, Army aviation, larger units, administrative support and special (nuclear) weapons. The 1972 reorganization introduced, in broad outline, today's structure. The new departments were tactics, strategy, logistics and command.

This list of organization schemes is by no means complete. Scarcely a year passes that does not see changes to CGSC's organization charts. Some schemes probably have worked better than others, but it is difficult to evaluate an organization's effectiveness merely by examining its "wiring diagram." However, the frequency with which CGSC undergoes reorganization suggests reorganization itself rarely solves anything. Classrooms, not administrative offices, should receive attention when planning for CGSC in the 21st century.

From a historical standpoint, austerity is CGSC's condition, just as it is the Army's as a whole. Famous World War II generals grew up in an Army that was poverty stricken even by today's lean standards. Yet CGSC somehow provided the tools needed to prevail in history's greatest war. In the future, as in the past, CGSC will make its greatest contribution to the Army in the period between wars, when resources are least plentiful. Whether it is with color monitors or chalkboards, what occurs at CGSC today could spell the difference between victory and defeat on tomorrow's battlefield.
**Producing thinkers.** CGSC's most important contribution to the austere interwar Army was producing thinkers. In World War II, the college concentrated on mass-producing doers—16,000 of them—who were specifically trained for the war in progress. There was little uncertainty as to who the enemy would be, where the war would be fought or what technology would be employed. During interwar periods, uncertainty prevails, so logic suggests that during such times the Army needs thinkers who can do more than execute current doctrine. Officers should view their profession from a broader perspective, thus adapting more readily to the next war's unanticipated conditions.

Generals Dwight D. Eisenhower and George S. Patton were true military intellectuals. Yet, the interwar college they attended contributed little to their intellectual stature. Today's Army cannot simply hope the next Eisenhower is out there somewhere making himself an intellectual. If CGSC does not take a hand, the Army might search in vain for the next war's Eisenhowers and Pattons.

The "intellectual facet" of CGSC's curricula regularly comes under fire for its lack of relevance. Unfortunately, relevance is discernable only in hindsight. The college's history demonstrates just how elusive relevance can be. The 1930s college was downright stodgy in its approach to tactics and operations. Developments such as mechanization and air power received inadequate attention in a curriculum that seemed to be preoccupied with re-fighting World War I. Yet that curriculum produced leaders who functioned competently during the next war. In fact, World War II resembled the latter phases of World War I more closely than most people realize. By contrast, the 1950s college exuded relevance. Its curriculum postulated the most likely scenario—a limited war resembling the recently concluded Korean conflict. Moreover, it fully incorporated the latest military technology—nuclear weapons. Ironically, such relevance was of little avail in Vietnam's quagmire. One doubts the Army's powers of prognostication are significantly better today.

What should the future college teach? One answer, "intellectual growth," would enable future leaders to adapt more readily to unforeseen circumstances. Another answer, offered here solely on the basis of historical precedent, is that CGSC should continue to teach division- and corps-level force-on-force operations. Some military profession students suggest that traditional warfare is obsolete and that the United States, in particular, needs to turn its military establishment into other channels. This is not the first interwar period in which prognosticators have predicted the demise of traditional military conflict. Yet the world seems to accommodate CGSC, every generation or so, by producing a large-scale conflict in which its graduates justify their education.

This is not to say that OOTW is not appropriate to the college curriculum. Past generations of officers would have benefited greatly from such instruction—as the Army's long history of interventions, peacekeeping and domestic employment attests. Such operations will undoubtedly absorb this interwar Army as it has past interwar armies. Yet, there is nothing to suggest that mankind is about to renounce conventional warfare as a means of settling disputes. Under the conditions of a "hollow army," which, in a sense, is the US Army's normal interwar status, CGSC is the only place where many officers will ever "see" whole divisions and corps engaged in conventional operations before executing such operations.

British author John Keegan, in his 1983 book, *Six Armies in Normandy*, refers to Fort Leavenworth as "one of the most sacred places of the army's emotional geography." For the last century, CGSC has been Fort Leavenworth's heart and soul. The college's history is a success story, but past glories do not guarantee future success. A candid appraisal of CGSC's past reveals a fair share of sobering deficiencies. One needs to consider historical successes and failures when plotting the college's direction for the 21st century. *MR*
Christopher R. Gabel is a historian and instructor, Combat Studies Institute, Fort Leavenworth, Kansas. He received a B.A. from Pennsylvania State University and an M.A. and Ph.D. from Ohio State University. He teaches one course, "The Evolution of Modern Warfare," in CGSC's core curriculum and two advanced application courses, "Militaries Between Wars" and "The American Civil War." He has been on the CSI faculty since 1983. He has published articles in Military Review, The Journal of Military History and A Guide to the Sources of US Military History.
The US Army Command and General Staff College: A Changing Institution


CGSOC is being taught in an environment of change. Army requirements are so broad today that we can't isolate one method of fighting or one set of circumstances that will satisfy the requirements of any single student. Instead, we must prepare students to function well in an Army and joint environment in the short term while giving them a broader orientation for their long-term development.

- Retired Lieutenant General L. D. Holder, Former Combined Arms Center Commander and US Army Command and General Staff College Commandant

The US Army Command and General Staff College (CGSC) is synonymous with quality and leadership in military education. Its lineage goes back to 1881, when Commanding General of the Army William T. Sherman directed the School of Application for Cavalry and Infantry's establishment at Fort Leavenworth, Kansas. Since then, nearly all the Army's top leaders have come to Leavenworth to study the profession of arms.

Today, with the many challenges the Army faces in a rapidly changing world, CGSC's role is even more important. These challenges are bringing tremendous changes in the way the Army trains and fights. Fort Leavenworth and CGSC lead this significant transition. This article outlines key changes that have occurred in recent years and the college's plans to implement a revolutionary change to the Command and General Staff Officer Course (CGSOC).

Recent Changes

The early 1980s brought many changes to CGSC. Some contend that events during that period stand among the most significant in the institution's history. Two major schools were created, the Combined Arms and Services Staff School and the School of Advanced Military Studies (SAMS). In addition, the Center for Army Leadership was established; Johnson Wing, a major addition to Bell Hall, the primary instructional building, was added; and the evolving Pre-Command Course underwent important revisions. It took many years for CGSC to fully integrate and stabilize the changes made in the early
1980s.

CGSC is again undergoing change, and despite substantial reduction of resources in recent years, the college continues to expand operations. In July 1995, the Battle Command Battle Laboratory joined the college. This innovative organization, chartered in 1993, focuses on the art of battle command and integrates the activities of other battle labs at Fort Huachuca, Arizona, and Fort Gordon, Georgia. The battle lab provides unique insights into leader development and command and control systems. In February 1996, the Defense Language Institute (DLI) in Monterey, California, became part of CGSC. DLI provides the Department of Defense and other federal agencies with linguists capable of supporting US interests worldwide. In June 1996, the college gained the Training and Doctrine Command (TRADOC) Program Integration Office-Army Battle Command System and the TRADOC System Manager for Maneuver Control Systems-Army Global Command and Control Systems. Both organizations add to the college's ability to focus on battle command and Force XXI issues that will help lead the Army into the next century. These four new organizations significantly expand the college's missions and span of control. They have also added 286 military and 1,400 civilians to the institution's organizational strength.

During the 1980s, the college initiated an aggressive facilities modernization plan that paves the way for much-needed changes. The most visible result is Eisenhower Hall, a 256,000-square-foot facility that houses a new library and dozens of classrooms, seminar rooms and offices. Completed in 1994, Eisenhower Hall is equipped with state-of-the-art communications and educational technology. The modernization plan also calls for a $30-million dollar renovation of Bell Hall, constructed in 1958. Funding is still pending on this much-needed renovation. After Bell Hall's renovation, the college will have dramatically changed virtually all aspects of its physical plant.

Within Bell Hall, two projects have been completed that significantly affect Army education and training. One wing in the building now accommodates the Battle Command Training Program (BCTP), used by Army Active and Reserve Component division and corps commanders and their staffs to conduct state-of-the-art battle command training and seminars. Adjacent to BCTP, a large classroom is now an experimental war lab that provides a highly sophisticated, computer-assisted learning environment. The war lab applies leading-edge technology to college curricula.

The college has also changed how it hires faculty. In 1989 Congress enacted legislation to expand Title 10 hiring authority to intermediate and senior professional military education schools. Title 10 allows broader civil service faculty recruitment. After considerable internal debate, the college decided to pursue Title 10 hiring in 1993. Since then, several key faculty members in the Department of Joint and Combined Operations and SAMS have been hired. In 1996, the college added its first interagency dimension by creating and filling a position from the CIA. Plans also are currently under way to add a member from the State Department.

Advancing technology has dramatically changed how the college operates. CGSC has greatly updated its technology capability and infrastructure. Students now have routine access to course materials, class schedules and other information via automation. During the end-of-course PRAIRIE WARRIOR exercise, students participate in an automated joint battle simulation that provides an appreciation for the dimensions of time and space during combat operations. Other automated simulations are also embedded in the CGSOC curriculum. The goal is for all CGSC students to have a personal computer in the classroom.

One of the most serious problems facing the college has been stability of key faculty positions. Frequent
turnover of deputy commandants and directors has caused continuity problems. The loss of civilian personnel to downsizing and the military faculty's frequent rotation compound the situation. The North Central Association of Colleges and Schools' recent master's degree accreditation review cites personnel turnover as a major concern. To reduce turnover turmoil, on 30 April 1996, Commandant Lieutenant General L.D. Holder established two military deans at the college: a dean of academics and a dean of students and administration. He set tenure for both deans at five years. Colonel William D. Bristow Jr. was appointed the first dean of academics and Colonel Jimmy C. Banks was named first dean of students and administration. A major realignment of college organizations and functions followed. For example, the School of Corresponding Studies was renamed the Directorate of Nonresident Studies.

CGSC's organizational and administrative changes reflect an institution that continues to grow and evolve. As part of the dynamic Combined Arms Center environment, CGSC is an institution postured and organized to serve the Army well into the 21st century.

The "New" CGSOC

CGSOC is the college's flagship course. Its last major revision was in 1991, when then Brigadier General John E. Miller was the deputy commandant. Miller and his faculty completely changed the curriculum based on Army Chief of Staff General Carl E. Vuono's White Paper *A Strategic Force for the 1990s and Beyond*. Miller also changed the basic model laying out how the common curriculum was taught. Miller's curriculum has undergone significant updates over the years, but the model and course flow design remain intact.

The triggering mechanism for changing CGSOC was an August 1995 memorandum from Holder to Deputy Commandant Brigadier General David H. Ohle that provided specific subjects for inclusion. Ohle and college directors began making adjustments to the curriculum, and after several months CGSOC obviously needed a major review. It had been nearly six years since the Miller curriculum's implementation, and the effects of adding and deleting courses were showing. Also, the Army operational environment was changing, with technology beginning to drive major parts of CGSOC's learning experience. The timing was right for a comprehensive review.

*The revision process.* In 1996, Brigadier General Joseph R. Inge became CGSC's deputy commandant. One of the first tasks Inge gave the dean of academics was to conduct a review of CGSOC to determine curriculum relevancy and flow. Focusing on curriculum strengths and weaknesses, the dean and his directors began developing a concept for revision. There was also a spirited debate on the proper balance between tactical and operational instruction and the need for subjects not directly related to warfighting. The outcome was twofold: CGSOC directors reaffirmed the need for a major curriculum revision and agreed to commit the resources for the project. They also agreed that the ideal way to teach the curriculum was to put all common instruction in Term I and to offer an expanded advanced applications program in Terms II and III.

CGSOC directors next needed to develop a curriculum model. They sketched two possible models: one had operational emphasis, the other tactical. The dean added a third model based on a "road-to-war" scenario. A small group of faculty members evaluated the three models. The result was a comprehensive briefing for the commandant laying out curriculum design considerations, proposed courses of action and time lines. Holder approved the concept and directed the models' refinement, although he expressed some concern about putting the entire common curriculum in Term I. He wanted to ensure Term I would allow students enough time for adequate basic tactical and operational instruction.
An analysis of student workload was important in the revision process. The curriculum had previously grown in scope and size without regard to its effect on the learning environment. The analysis revealed some interesting facts. In Term I instruction, students averaged 7.6 hours a day in class, instructor contact time had increased by 22 hours, 118 hours of reading requirements had been added and out-of-class evaluations had increased by 54 hours. These hours reflected a significant workload increase for both students and faculty. College leaders gave this issue careful consideration in the revision process to ensure the new curriculum followed an adult learning model that would allow students adequate time to prepare for class and conduct related research.

The new common curriculum. Beginning in academic year 1998-1999, the new common curriculum totals 438 hours, which means students will average slightly over 4 hours daily in class during Term I. The curriculum will be sequential and progressive, fully exploiting automation. Both resident and nonresident courses will undergo revision. There will be a major change in the number of courses offered. Currently, CGSOC teaches 12 common courses. That number will be reduced to five as illustrated in Figure 1.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>C300, Fundamentals of Warfighting</td>
<td>158</td>
</tr>
<tr>
<td>C400, Resource Planning and Force Management</td>
<td>38</td>
</tr>
<tr>
<td>C500, Fundamentals of Operational Warfighting</td>
<td>128</td>
</tr>
<tr>
<td>C600, History of Warfighting: Theory and Practice</td>
<td>54</td>
</tr>
<tr>
<td>C700, Leadership</td>
<td>60</td>
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**Figure 1. New Common Curriculum.**

A key consideration in building the curriculum was to ensure it would not adversely affect CGSC's Program for Joint Education (PJE) Phase I. As a result of the college's substantial effort to develop PJE in line with Joint Chiefs of Staff (JCS) policy and standards, the JCS chairman recently accredited the program for five years. From the start, directors agreed that PJE would remain strong and fully integrated throughout the five courses offered.

Designing a scheduling model for the new course was a challenge. The goal was to build a course flow that would allow all students to take each block of instruction at the same time. However, because of the class size and faculty available, that was not possible. Consequently, a flow was developed that would allow students to follow a sequential but different path. Half the class would take the path shown in Figure 2.

Directors are currently working on each instruction block's content to retain the current course focus while emphasizing emerging and future warfighting skills. Where possible, they will introduce the use of automated multimedia self-study toolbooks. Fortunately for the 1997-1998 class, considerable course redesign is in place. Courses C700, Leadership, and C500, Fundamentals of Operational Warfighting, are already being taught.

**Advanced applications.** An important advantage in the new course is the increased emphasis on advanced applications. Inge and his directors developed a curriculum to increase elective courses from seven to 12. Consequently, a substantial 324 hours of the course is advanced work. This represents a major shift in emphasis to ensure students receive more education and training related to branch and career needs.
All students must participate in an area of concentration based on branch or specialty. Concentrations focus on combined arms operations, combat service support, joint operations and general military studies. CGSOC also offers a special concentration for Acquisition Corps officers. Each concentration requires students to take specified courses from an approved, multi-disciplinary list. For example, the combined arms area of concentration consists of eight courses. Of that number, students take four mandatory warfighting courses, two from an offering of combined arms courses, one joint planning course and at least one history course. The breakout of coursework for a student in the combined arms area of concentration includes four mandatory warfighting courses (108 hours), two combined arms choices (54 hours), one joint planning course (27 hours), one history course (27 hours) and four elective courses (108 hours) for a total of 324 hours.

As part of the advanced applications program, CGSC will offer focused programs leading to award of a special skill identifier such as joint planner, strategist, space operations or military historian. The Master of Military Art and Science Degree and Cooperative Degree programs leading to graduate degrees remain unchanged.

PRAIRIE WARRIOR. Since May 1991, PRAIRIE WARRIOR has been CGSOC's capstone exercise. The exercise is a corps and division warfighting experience for CGSOC and SAMS students. The exercise focuses on training in the realities of modern joint and combined warfare and is driven by a confederation of computer models. Officers and students from other services and countries also participate. PRAIRIE WARRIOR has become one of the world's foremost warfighting exercises, and the college intends to ensure the exercise continues to be CGSOC's capstone training event. PRAIRIE WARRIOR's past experimental aspects will be scaled back in favor of more emphasis on battle plans execution, battlefield force protection and information dominance.

PRAIRIE WARRIOR also will be part of the Army's effort to integrate the Army Battle Command System (ABCS) into the training environment. Before PRAIRIE WARRIOR begins, instructors will introduce ABCS into the common curriculum to familiarize the students. During advanced applications, ABCS will be fully integrated for officers expected to know the use of systems in a digitized force. During PRAIRIE WARRIOR, students will use ABCS to plan and execute tactical operations at corps and division levels.

In academic year 1998-1999, CGSOC students will attend a course significantly different from their predecessors'. All common instruction will occur in Term I, with major emphasis on warfighting fundamentals. The course will be taught in sequence. Careful cuts have been made in the common curriculum and hours shifted to advanced applications. With the added hours devoted to advanced applications and PRAIRIE WARRIOR, nearly 50 percent of the course will be advanced studies.

In a 1996 speaking engagement at CGSC, former Army Chief of Staff Gordon R. Sullivan called Fort Leavenworth "The jewel in the crown of the Army education system." Part of achieving that important designation has been the college's ability to change as the Army and the world change. Recent changes position CGSC to maintain its place as one of the foremost military institutions in the world and as the intellectual soul of the Army. CGSC is ready for the 21st century's challenges. MR
Lieutenant Colonel Robert B. Kupiszewski, US Army, Retired, is chief, Plans and Policy Division, Directorate of Academic Operations, USACGSC. He received a B.A. from Wake Forest University, M.A.s from the University of Southern California and Central Michigan University and an Education Specialist Graduate Degree from the University of Missouri, Kansas City. He is also a USACGSC graduate.

"The real war will never get in the books," declared Walt Whitman about the American Civil War. Popular British military writer John Keegan is not quite so pessimistic about World War II, although he opines that "the history of the Second World War has not yet been written." Keegan believes we are still too close "for any one historian to strike an objective balance" toward an event engendering passions, wounds and problems on such a monumental scale.

Setting aside the philosophical question of whether there can be an "objective" history, there is obviously something to what Keegan says. One can also infer an equally daunting obstacle for the historian undertaking the writing of World War II's definitive history-the 15,000 books Keegan mentions that have been written to date, with no end in sight, and the largely unmined former Soviet archives.

Keegan does not attempt an overarching synthesis in this slim, elegantly written volume. But he does touch on many wartime controversies among contemporary actors and subsequent historians and offers an extended bibliographical essay that reflects his own wide reading. Neither portion pretends to be exhaustive. In particular, Keegan does not mention several important and well-known interpersonal, interservice and inter-Allied wrangles, such as the debates over whether to campaign in northwest Europe on a broad or narrow front, to seize Berlin or leave it to the Soviets, or to follow a southwest or central Pacific axis against the Japanese.

It is disappointing that Keegan does not enter any of the controversies he cites, except to deliver a well-merited rebuke to the small coterie of Holocaust deniers. Had he weighed in on some operational, strategic or moral issues, this book would be much more interesting. Keegan also eschews offering any guideposts for what he thinks the definitive World War II history might look like. Implicitly, however, he reveals it in the scheme he adopts, which contains chapters on "Biographies," "Campaigns," "Brains and Sinews" and "Occupation and Resistance."

Whatever one's knowledge about the war, the reader can usefully peruse this book. For one less acquainted with the issues and the literature, it can serve as an accessible introduction to both. The advanced student will find it stimulating to compile and compare his own "five-foot shelf" of essential reading with the syllabus drawn up by such a distinguished warfare thinker and writer.

LTC Alan Cate, USA, Combined Arms and Services Staff School, Fort Leavenworth, Kansas


Emphasizing the effects on the city's civilians, this book's authors present a previously undocumented narrative of Manila's liberation. Enough battle analysis is included to allow the reader to understand the causes and effects of noncombatant casualties and the city's destruction. It is no liability that the book was written by a trio of British authors who present a largely unbiased view of US Army actions. The situation maps and presentation of the battle in a logical sequence of events provides smooth reading.
Manila was unique in World War II in that it was the only large city in the Pacific Theater the Allies liberated by force. The fog of war was probably never greater during the war than in the battle for Manila.

General Douglas MacArthur, commander of Allied forces in the southwest Pacific and overall commander of the Philippine invasion, had a great personal interest in a quick and clean liberation of the city. To accomplish this, he played two US Army commanders against each other. It did not help the situation that these commanders had little fondness for each other. However, each had the intelligence, vanity and drive to want the fame associated with liberating a great city of more than one million people.

The charge that US forces sometimes used excessive force is unsubstantiated. If anything, the authors provide evidence that the Japanese defenders were prepared to sacrifice everything, including the civilian population, to either retain control of the city or to increase US casualties in a losing cause. They largely succeeded and would probably have been even more successful if the attacking forces had not used maximum firepower against them.

MacArthur had forbidden using heavy bombers to liberate the city. This ultimately proved artillery's value. To question the field commanders' tactics, especially with the advantage of 50 years of historic hindsight, has no value.

There are no major flaws in the author's analysis of the events, but there are a few opinions that could be debated. Overall, the book contains good reference notes and is recommended for anyone interested in the battles of World War II.

LTC James P. Hartman, USAR,Retired, Aiken, South Carolina


Adam Garfinkle, author and resident scholar at the Foreign Policy Institute, attended Vietnam antiwar rallies as a teenager. Like many who never fully agreed with everything they heard in the speeches, he was ambivalent about the antiwar movement. *Telltale Hearts* is not only excellent history but also good therapy for anyone who wants to logically and meaningfully resolve emotional ambivalence.

Garfinkle examines important psycho-social antecedents to the antiwar movement and counterculture before 1963 and traces the political and cultural "fallout" since 1973. He closely scrutinizes the years between 1963 and 1973 and makes three compelling arguments. First, turning consensus on its head, he argues that because the antiwar movement interfered with normal political channels, it lengthened, rather than shortened, the war. Effective opposition to the war was developing within the Johnson administration and Congress until radical protests provoked negative government and public responses, reinforcing a failed political and military stasis. Garfinkle argues that political backlash to the movement even contributed to Richard Nixon's presidential victory in 1968 and, later, to Watergate.

Second, Garfinkle argues that the antiwar movement extended the counterculture's boundaries. From 1965 to 1968, as the movement grew more radical, the movement became a vehicle for sectarian
agendas. Ironically, the war it helped prolong was what gave a common focus to the movement's diverse and competing groups. The Vietnam War did not lead to the counterculture's development but provided the crisis and opportunity to give it vent. In the 1960s, the New Left developed a new social base in various universities. However, by 1970-71, disorganizing tendencies, which the movement had unleashed on society, destroyed its own organizational coherence.

Garfinkle's third argument concerns the counterculture's roots, which run deep in American anti-authoritarianism and in the modern technocratic tendencies of centralization, uniformity and impersonalization. There is a connection between the New Leftist anti-authoritarianism of the 1960s and 1970s and the New Rightists of the 1980s and 1990s. Garfinkle is one protester turned neoconservative. The "balkanization" of radicalism after the sidelining of mainstream (Old Left) liberalism has resulted in more polarization. Vietnam still tethers US foreign policy in a radically different international context to lessons learned from a Cold War anomaly. The inner core of the 1960s' student radicals are the professional radicals of the 1990s. The eco-anarchists are the green counterculturalists of yesteryear. The counterculture's nature belies apparent political shifts to the right. The 1960s' cultural critique retains resonance, because the deeper issues that gave rise to that revolt are still with us. Like the telltale heart from Edgar Allen Poe's famous story, the Vietnam War is not over for survivors. The beat goes on, informing the guilty conscience and stirring utopian dreams.

MAJ Wesley Allen Riddle, USA, Operational Test and Evaluation Command, Alexandria, Virginia


J. Robert Moskin's book could easily be titled "Mr. Truman's Wars," considering the common man from Missouri faced more turmoil in his first four months in office than probably any other president.

After having served less than four months as vice president, Truman, largely ignored by his predecessor, inherited a full plate of problems, almost all contested by various factions trying to pull him one way or another.

With considerable skill, the author takes us from May though September 1945-touching on Truman's many conflicts, including ending the war in Europe and the thorny negotiations with Russia, Britain and France in charting Europe's future; the decisions to invade Japan and/or drop the first atomic bombs; colonialism's rebirth in Asia; the ever-present interservice rivalries; the first glimmers of General Douglas MacArthur's insubordination; and labor unrest in the United States.

Without a doubt, Moskin admires President Truman, especially Truman's ability to make tough decisions without being tortured by second thoughts. But to be fair, the author points out that some of Truman's decisions did sow the seeds of future conflicts, particularly in postwar Asia.

Though primarily reflecting on world events, the author does give some insight into Harry Truman the man, dealing primarily with his wife, daughter, mother and sister. Moskin also presents some facts about World War II not found in other works about Truman, including the number of atomic bombs on hand or in the pipeline when the first was dropped on Japan, the many divergent points of view about dropping the bomb, and the safeguarding of atomic secrets after the war.
The book does not go into great depth on any topic. However, it does offer an excellent overview of four of the most tumultuous months of the 20th century and the man from Missouri who, having been thrust into the center of the action, made rapid decisions and seldom looked back.

Jack Muhlenbeck, Public Affairs Officer, US Army Cadet Command, Fort Monroe, Virginia


Recent scholarship gives us considerable reason to look beyond the prevailing view of World War I's unremitting futility and incompetence. A powerful argument can be made that the Western Front of 1917 and 1918 was the birthplace of modern combined arms warfare as the challenge of stalemate forced armies to adapt and innovate. This adaptation's nature and innovation in the German and British armies is the subject of Martin Samuels' Command or Control?

Sammels posits that an army's tactics, training and, most important, command and control procedures are based on the army's conception of war. Beginning in the late 19th century, the Germans evolved a view of battle as essentially chaotic, while the British believed structure could be imposed on the battlefield. Seeing confusion as the normal combat state compelled the Germans to emphasize training, initiative and decentralized execution. Seeing combat as a phenomenon where order must be imposed, the British emphasized discipline, obedience and strict adherence to an established plan.

The effect of these opposing views is seen as Samuels traces their development, officer training and the evolution of tactics in the two decades leading up to World War I. He calls the command, control and communications system developed by the Germans directive command. In this system, the commander gave only broad guidance, while the subordinate was expected to exercise initiative in adapting the plan to battlefield conditions. The higher commander intervened only when necessary to preserve mission accomplishment.

The British, by contrast, evolved a system the author calls restrictive control. Under restrictive control, battalion- and company-level subordinates were forbidden to adapt or even question the higher commander's plans. Paradoxically, when a British general officer gave another general a mission, the senior officer would under no circumstances intervene in a subordinate's actions.

Sammels ably shows how the two contrasting command philosophies led to very different tactics and training results during World War I. The Germans encouraged captains, majors and lieutenant colonels to lead tactical innovation, enabling the Germans to first develop the flexible defense in-depth concept, which later evolved into revolutionary "stormtroop" tactics. The British were resistant to change and philosophically unable to think past breaking into the enemy's front-line trench.

Two case studies show the differences in the two military systems: Thiepval, the Somme, on 1 July 1916 and the first offensive at St. Quentin on 21 March 1918. One may question the fairness of Samuels' choices. Thiepval and the rest of the first day on the Somme represent the nadir of British World War I tactical performance. The battle of St. Quentin, however, is a subelement of the Michael Offensive, the
single most successful Western Front German attack. Yet, Samuels' objective is to contrast, not necessarily balance, the two case studies that highlight British and German differences. One can find a more favorable view of British tactical development in Paddy Griffith's recent *Battle Tactics of the Western Front* or R. Prior and Trevor Wilson's *Command on the Western Front*.

For the military historian, *Command or Control?* represents a capable, recent scholarship synthesis of World War I military performance and offers a significant original analysis. However, for the military professional, the book offers considerably more. As we now proclaim our fascination with information warfare and attempt to project our current "military revolution," we must answer the question posed by Samuels' title *Command or Control?* Where will the 21st-century Army fall on Samuels' directive command to restrictive control spectrum? Will the German or British solution be appropriate to the future "flattened," digitized combat unit? Samuels offers a valuable historical perspective to those who must answer these questions.


Precision-guided munitions and shrinking defense budgets have put armored warfare's future in some doubt. However, there is no question a wide audience remains for books and articles about tanks and tank battles. These two books review case studies from armored warfare's history from World War I's Western Front to the most recent Gulf War tank melees. Both books begin with the battle at Cambrai, France, in 1940, and end with Operation Desert Storm, but the similarity ends there. The authors take uniquely different approaches to the topics they emphasize.

In *Clash of Chariots*, the authors describe, from the German perspective, "classic" armored battles and past campaigns. Other case studies include the breakout from Normandy, Kursk, the Bulge and the Sinai in 1967 and 1973. The battle narratives are well written and the analysis is sound. Both authors are senior staff writers for *Army Times*, and they are well versed in military concepts and terms. They understand the pieces that make up the mechanized battlefield.

The authors also devote much of their books to describing armored combat's context. Thus, the reader is well oriented to the campaigns' operational context before the book delves into the details of actual tank fights. Indeed, company- and platoon-level operations get relatively short shrift until the authors discuss the Gulf War. However, the authors do not overlook the tank's relationship to other tactical weapon systems. They emphasize the importance of combined arms and the necessity for tanks to fight as part of a team.

*Clash of Chariots* is written with an American audience in mind, reflecting US fascination with the Wehrmacht and its panzers. Thus, the Battle of France case study highlights General Heinz Guderian's role at the crossing of the Meuse. Field Marshal Erwin Rommel is the central figure in the discussion of desert armored campaigns. The Battle of the Ardennes case study focuses on the infamous exploits of Kampfgruppe Peiper. In the study of the massive tank battles of the Russo-German war, the authors' viewpoint is almost exclusively German, largely ignoring Soviet innovations in mechanized warfare.

Because *Clash of Chariots* is drawn almost exclusively from secondary sources, the reader will glean few new insights. However, in the Gulf War case study of the 1st Armored Division's battle against the
Iraqi Medina Division, Donnelly and Naylor rely on first-person accounts. The narratives are intense and personal as the case study convincingly demonstrates that "Old Ironsides" had no cakewalk during its 100-hour war.

While Donnelly and Naylor emphasize the corps, division and regimental levels of war, Bryan Perrett, in *Iron Fist*, takes a different approach. He directly states his intent to show "how the vehicles themselves and the tactics employed were developed in the light of the crews' experience, and in doing so give . . . some impression of what the tactical tank battle looked like from the inside as it evolved over the years." Perrett openly proclaims his emphasis on armored combat's human dimension. This is a book about the experiences of soldiers, not about doctrine, tactics and technology.

This British author's choice of case studies might seem odd to American readers. He opts not to examine many of the more well-known armored battles such as Kursk and the Normandy breakout. Instead, he gives relatively extensive coverage to obscure expeditions into Persia in 1918, armor employment in the China-Burma-India Theater in 1944 and the use of "funny" tanks in the Normandy landings. His choice also reflects a predictable bias toward British and Commonwealth tankers. The American experience is given relatively little coverage; the Soviet, next to none. In fact, his discussion of armored combat in Vietnam is built around the exploits of the small Australian armored cavalry force that deployed there.
His Gulf War vignette is an extended first-person account from a company-grade officer assigned to the British 1st Armoured Division.

At first glance, one might expect these books to be useful references for junior officer professional development programs. However, neither book would serve this purpose. Donnelly and Naylor's book focuses at too high a level (except for the Gulf War case study), and Perrett's case studies lack sufficient operational context, order of battle data or maps to properly develop discussions of tactical decision making or leadership issues. Both books read well and are entertaining to one who has a casual interest in modern warfare. In addition, Donnelly and Naylor superbly show the development of the tank as the decisive element of the modern combined arms team. Meanwhile, Perrett, with his numerous vivid first-person accounts, reminds us about the true nature of tank-on-tank fighting. He demonstrates that, our Gulf War experience notwithstanding, armored combat between resolute and well-armed opponents has historically been a bloody, nasty business.

LTC Donald Scott Stephenson,
USA, Combat Studies Institute,
Fort Leavenworth, Kansas


During World War II, a massive Soviet intelligence network of more than 200 agents operated in Western Europe. V.E. Tarrant's objective is to tell the story of the agents' operations and the counterintelligence organizations that discovered and rounded them up. The story of the Red Orchestra, or Rote Kapelle, has been told in various ways-as part of a larger Soviet espionage story, as biographical reflections of participants, as a complete story and as a subject of analysis, such as the one done by the CIA. Tarrant gives an exciting account of German counterintelligence work and the orchestra's agents.

The Red Orchestra had many accomplishments, including providing advanced warning of Barbarosa, Germany's June 1941 attack on the Soviet Union. Gathering information from the military, defense industries and the German diplomatic service, the agent network was able to report German troop movements. Stalin was well served, even though he ignored some of the Red Orchestra's best work. The orchestra's players operated primarily in Switzerland, France and Germany and included career civil service employees as well as simple laborers. The agents provided valuable information until their various networks were "rolled up" by the Gestapo and Bureau Abwehr.

A major portion of Tarrant's book is devoted to the German side of the story, probably due to easier access to German information. Soviet sources are more than likely still scarce, despite the availability of some autobiographies and the opening of some Moscow archives.

Because the Germans kept extensive records, the German perspective is well known. The orchestra's pianists-the telegraphers-were its weakest link. Transmissions exposed agents to German field counterintelligence radio-finding equipment.

Once the Germans discovered a Red Orchestra subgroup, they quickly closed the net. Gestapo tactics were crude but extremely effective. Several survivors captured by Bureau Abwehr and interrogated by the Gestapo survived by quickly and completely submitting before the interrogations got violent. At the
The Red Orchestra was a diverse group, including some adrift Communist Party members, Spanish Civil War mercenaries and professional Communist International deep-cover operatives. Some agents had worked in other Soviet intelligence networks until Soviet embassies in Axis countries closed in June 1941. The agents worked together in several subgroups under the direction of one conductor. Tarrant gives the reader the Red Orchestra's background, as well as biographies of certain members.

Overall, the book is well written, with sufficient suspense and counterintelligence detection information to easily keep a reader's attention. The book also illustrates to the military reader what the Soviets were capable of developing in the rear under adverse conditions for intelligence gathering and transmission. Tarrant also provides some insight into how Bureau Abwehr and the Gestapo worked.

Peter Charles Unsinger, Professor, San Jose State University, California


Grave of a Dozen Schemes is a frustrating book, not because it is poorly written or boring, but because its subject is frustrating. From 1943 to 1945, British and Commonwealth forces faced severe limitations. Manpower was short; the British fleet was committed to fighting raiders and submarines; and British aircraft could only handle short-range missions in the European Theater. In addition, both India and Australia were limited by austere infrastructures.

This book integrates these and other limitations into a discussion of British planning for the war against Japan from a naval perspective. Everything depended on naval capability in the fight with Japan. Conflicting objectives created the frustration.

In a coalition war, partners often have different strategic objectives as well as different ways to obtain common objectives. Because the British could not resolve their internal differences, much less differences with their coalition partners, they drifted from plan to plan.

By late 1943 Americans were the principals in the alliance and wanted a complete, all-encompassing victory over Japan, which meant the Japanese had to be driven out of China. Thus, the United States' first objective as a coalition partner was to open a land route to China.

Winston Churchill, a Victorian Age man, wanted to restore British power in Singapore, Malaya and Hong Kong. Thus, his objective conflicted with that of the United States. The British Foreign Office had yet another objective—maintaining close relations with the United States to enable Britain to maintain its world influence. The US military saw Burma as critical for victory, and the US public wanted Britain to fight the Japanese. The British Foreign Office also wanted Britain involved in the victory over Japan but wanted British troops to cross over from the United States.

Another factor—time—became important as planning developed. Could forces move from Europe to the Pacific soon enough to be a factor against Japan? Willmott describes the effects competing objectives and limitations had on operational planning. He takes us from Quadrant Conference planning to the end...
of the war. His story cites more than a dozen schemes to accomplish the objectives, including taking Burma from either the north or south, taking Singapore directly, moving from New Guinea to Singapore and countless variants. Willmott describes each scheme's collapse. With no time and no resources and with a Herculean effort, Britain is forced to commit a fleet and drive toward Singapore.

This book is superbly documented and written. Willmott provides the orders of battle for the Royal Navy's Pacific Fleet as well as pictures highlighting its contribution. He also provides a timely warning about overcommitment. Every graduate student should read the first paragraph of Willmott's foreword; it describes what a dissertation is really all about.

SFC John T. Broom, USA, Ph.D., Combat Studies Institute, Fort Leavenworth, Kansas


Although former sports journalist and current feature writer Peter Richmond organizes his memoirs of his father's World War II service around the Pacific Island battles, readers should not expect to learn too much strategy from My Father's War. Tom Richmond, who served in the Pacific as an officer in the 5th Marine Regiment, survived three major battles but died less than 20 years after the war in an airplane accident when his son was only 7 years old.

Details about the fighting at Guadalcanal, New Britain and Peleliu are interwoven with Peter Richmond's reminiscences of his own visits to the battle sites 50 years after the war. Mute reminders of combat, such as burned-out trucks and empty concrete bunkers, spur the younger Richmond's essay on the heroism of his father and the men of the 1st Marine Division as they secured one island after another in the American drive toward Japan.

My Father's War is a son's journey as he tries to understand the character of a man he never really knew. From numerous interviews with men who served with his father, from Marine Corps records and histories of the Pacific battles and from his own visits to the islands, the author develops a portrait of a man who is an emblem for the American citizen who answered his country's call to duty when the world was threatened by the hegemonic aspirations of Axis leaders. Readers get an intimate portrait of Captain, later Major Richmond accomplishing his mission and taking care of his men.

In these memoirs, the older Richmond possesses a bit of tactical genius and is somewhat of a father figure as he ensures his troops have adequate rations, including turkey on Thanksgiving, and deals with a host of personal problems faced by the young men who fought in the Pacific Theater. Tom Richmond was the kind of leader who would make the spiritual father of the Marine Corps, General John Lejeune, immensely proud.

The author does not make too much of his father's heroism. Tom Richmond "was no superman," he writes, nor were the others who fought and died beside him. "That does not mean that we shouldn't think of these men, for what they did, as men of honor. They understood sacrifice, and that is no small thing." From old Marines gathered at reunions and from war records, Peter Richmond has discovered an important lesson about the American spirit. One can only hope
his journey will be a lesson to others outside the military services so that those who simply do their duty will be appreciated for what they have done and continue to do for their country.

LTC Laurence W. Mazzeno, USA, Retired, Wyomissing, Pennsylvania


This book gives a detailed account of the September 1944 to February 1945 battle of Hurtgen Forest. The author focuses on a detailed tactical examination of the battle and an overview of the operation's objective-or lack of one. The objective issue centers on why senior leaders did not recognize the Roer River dams' importance early in the operation.

Miller superbly gives the reader an awareness of the complexities of forest combat, following VII Corps' entry into the forest, through the Battle of Schmidt and to the eventual capture of Hurtgen Forest and the Roer River dams. This book helps the reader understand the difficulties inherent in fighting in the woods
in bad weather against a determined opponent. The nightmares of trees bursting, freezing rain, frozen
ground, limited visibility, lack of training, a poor replacement system and limited combined arms
capability is all too apparent.

Miller's detailed examination of the battle's tactical side is the book's strongest aspect. The ferocity of the
fighting, the heavy casualties and the battle's ultimate futility bring Miller to his second point. Why did
the First Army continue to push men and materiel into a battle for road junctions and towns when the
battle produced little but casualties and when it should have been obvious the Roer River dams were the
logical objective? The dams' strategic importance and how they relate to the battle are subjects requiring
further study beyond the tactical level. Successfully addressing those areas requires examining
high-echelon decision making, which the author provides only "to the extent necessary to set the stage
for the reader."

This book is well documented, has ample maps and represents a major contribution to the history of the
Battle of Hurtgen Forest. Anyone wishing to step into the boots of a lowly infantryman outside Schmidt
in 1944 should read this book. Those seeking information on the determination of objectives before and
during the battle will find this work an excellent starting point but will need to delve more deeply into
the senior leadership's motivation and thoughts to more fully understand why the battle developed as it
did.

Steve R. Waddell, Department of History, US Military Academy, West Point, New York


Dispatches from the Front, a reference book by a former director of Time World News Service, is
a fascinating anthology of stories by war correspondents who were at the front in 10 American wars.
Nathaniel Lande also served as director of the Time/Life Magazine Group. In this book, Lande draws
on his experience as a journalism professor to select examples of exceptional writing he says represent
"clear thought, accurate interpretation, dramatic incident, varied style and reflective passage." The
selections include stories on the Revolutionary War, the War of 1812, the Mexican-American War, the
Civil War, the Spanish-American War, World Wars I and II, the Korean War, the Vietnam War and the
Gulf War. The author's index and bibliography are thorough.

In an introductory chapter, Lande argues that US interpretations of war have been largely shaped by war
correspondents-many of whom were or became heroes in journalism and literature. Some of those
writers are represented in this anthology, including famous pamphleteer Thomas Paine, who tried to
improve morale during the Revolutionary War with his "The American Crisis, No. 1," published in the
Pennsylvania Gazette on 19 December 1776. Paine's lead sentence is the often-quoted "These are the
times that try men's souls."
The anthology gives samples of author Stephen Crane's *New York World* dispatches during the Spanish-American War. Although Crane was already famous for his war books, including the 1895 *The Red Badge of Courage*, he did not actually see combat until he went to Cuba with the Rough Riders.

Anthology readers also will find Ernest Hemingway's 1918 feature story for the *Kansas City Star*, "Mix War, Art and Dancing," about the first dance the War Camp Community Service gave for soldiers at Fort Leavenworth and Camp Funston.

Famous World War II war correspondent and Pulitzer Prize winner Ernie Pyle's "The Death of Captain Waskow" is included. The story is a tribute to a company commander killed in 1944 on the front lines in Italy. It recounts the woeful comments of the commander's soldiers when they realize that one of the bodies brought back by Italian mule skinners is their beloved "old man"-the 20-something Henry T. Waskow of Belton, Texas.

The anthology also includes the work of 19 other Pulitzer Prize winners, including Herbert Bayard Swope, who wrote for the *New York World*. Swope won the prize for his World War I accounts from the German perspective. In "On the Somme: Ordeal by Battle, Inside the German Empire," Swope describes operations of the Third German Division, which could only cover a mile of front along the
Somme. Lande tells us that Swope and James O'Donnell Bennett of the *Chicago Tribune* were among a few neutral army observers and correspondents allowed to observe the Germans in battle during the war.

One of the anthology's most provocative pieces is a retrospective on war correspondents by Richard Harding Davis, one of the most experienced correspondents. In "Our War Correspondents in Cuba and Puerto Rico," published in the May 1899 edition of *Harper's Monthly*, Davis writes, "The best correspondent is probably the man who by his energy and resources sees more of the war, both afloat and ashore, than do his rivals, and who is able to make the public see what he saw." By that measure, he says Stephen Crane "won first place among correspondents in the late disturbance." Davis, who died in 1916 before the first Pulitzer Prize was awarded, covered the Boer, Russo-Japanese and Spanish-American wars.

Lande presents wonderful insights and factoids in this book. As the Davis retrospective illustrates, *Dispatches from the Front* is more than just an anthology of war correspondence. It also has Superintendent of Boston Military Hospitals and Continental Army veteran John Warren's moving oration at Boston's first July 4 celebration in 1783. Warren, who lost his brother, General Joseph Warren, at the Battle of Bunker Hill, admonished his audience: "When you forget the value of your freedom, read over the history that counts the wounds from which your country bled." This impressive reference book is a fine account of that history.

LTC Lowndes F. Stephens, USAR, Retired, University of South Carolina Columbia, South Carolina


In this book, Lieutenant Colonel Michael Lanning reviews the shortfalls in American Military Intelligence from the Revolutionary War to the ill-fated 1993 attempt to capture Somali warlord Mohammed Farrah Aideed. The author, a retired infantry officer and Vietnam War veteran, writes that he formed his opinions from personal experiences: "I zipped up body bags, and I evacuated soldiers with lifetime disabilities because of actions that I directly attributed to failures of intelligence."

After he retired from the military, Lanning's study of military history led him to conclude that "The inability to provide accurate, timely intelligence about the size, capabilities and intentions of the enemy to frontline ground, air and sea forces has been a constant shortcoming of the US military intelligence community throughout history." Lanning maintains that the MI system, while designed to gather, analyze and distribute critical information, has consistently failed, needlessly squandering American lives and resources. He further states that US Armed Forces have repeatedly snatched victory from the jaws of defeat, not because of good, or even adequate, intelligence but despite continual intelligence failures.

Lanning first lists what he sees as Operation *Desert Storm*'s intelligence failures: overestimating the enemy, failing to quickly locate Iraqi Scud missiles and mobile launchers, conducting poor bomb damage assessments and not being able to find Saddam Hussein (even though CNN interviewed him). Lanning then briefly overviews US military history, focusing on the development and evolution of the MI apparatus and how it has contributed or failed to contribute to US war and peace efforts.
Although Lanning gives credit where he thinks it is due, he clearly believes MI successes have been rare in US history.

After cataloging MI failures, he suggests a number of solutions. For one thing, Lanning says the entire US intelligence community, including military and civilian agencies, should be reorganized. He criticizes the CIA for its "club-like atmosphere" and advocates manning it with intelligence practitioners, not political bureaucrats. Interservice cooperation would greatly improve MI, and key intelligence commands and high-level staff positions should be manned by combat arms officers. Lanning also demands better counterintelligence and a change in the security classification system to make more information available to people who need it.

Lanning clearly sees the MI problem as only part of a much greater systemic problem facing the US defense establishment: "[I]t may be time to completely restructure the concept of an independent Army, Air Force and Navy-Marine Corps. . . . The Marine Corps may have outlived its usefulness." Because the Army can conduct the same missions as the Marines, Lanning says eliminating the Marines would produce "an annual savings of approximately $20 billion." He also suggests it may be time to consider rejoining the Air Force and Army to ensure unity of effort. He advocates abolishing the separate service academies and establishing one US Armed Service Academy.

Obviously, most of Lanning's assertions and proposals are highly controversial. However, he presents a valuable review of the seminal role MI plays on the battlefield and how it can positively or negatively affect the outcome of any engagement or campaign. While it is doubtful many readers will agree with everything the author says, Lanning makes a compelling case for continued MI improvement so we do not needlessly place our young men and women in harm's way.

LTC James H. Willbanks, USA,Retired, Riyadh, Saudi Arabia


Kevin Smith's study of logistics diplomacy - or the Anglo-American battle for control of allocations of US-built merchant ships - provides "an innovative approach for exploring key aspects of wartime Anglo-American relations."

Smith identifies four key factors that dominated Anglo-American wartime logistics diplomacy. First, Great Britain was logistically overstretched and came to depend on US merchant ship allocations to maintain British war efforts. Strategically, Britain and the United States had divergent, if not opposing, views made worse by Britain's determination to maintain strategic dominance over the Allied coalition. Complicating this was the fact that British diplomats dealt directly with President Franklin D. Roosevelt, which led to the alienation of the US bureaucracy and Army. Last, once the Battle of the Atlantic was won, it was painfully obvious that the coalition balance of power had shifted to the United States.

The major consequence of logistics diplomacy was that Britain's failure to sustain enough merchant shipping was detrimental to its long-term maritime interests. Parallels can be drawn to the condition of the US Merchant Marine fleet today. With the number of US-flagged vessels rapidly declining, military operations such as Desert Storm become problematical at best.

Smith has written a highly technical diplomatic history of World War II convoy logistics that, unfortunately, reads like a doctoral dissertation. The book has hundreds of footnotes that provide a

Rape Warfare is a compelling book and should be read by all military officers who will serve or are serving overseas and for planners responsible for implementing Joint Publication (JP) 3-07.6, Joint Tactics, Techniques and Procedures for Foreign Humanitarian Assistance Operations, and JP 3-08, Interagency Coordination During Joint Operations.

Beverly Allen’s book is a testimony to and analysis of the horrifying phenomenon of what she calls "a military policy of rape for the purpose of genocide." According to Allen, all forms of genocidal rape constitute the crime of genocide as described in Article II, United Nations Convention on the Prevention and Punishment of the Crime of Genocide (1948). While the US military would never advocate such a policy, we unfortunately have been or will become involved with nations that do. Allen writes that rape warfare is "currently practiced in Bosnia-Herzegovina (B-H) and Croatia by members of the Yugoslav army, Bosnian Serb forces, Serb militias in Croatia and B-H, irregular Serb forces known as Chetniks and Serb civilians."

Allen identifies three forms of genocidal rape. First, Chetniks or other Serb forces enter a B-H or Croatian village, publicly rape women of varying ages and then depart. News of this spreads throughout the village, and several days later regular Bosnian Serb or Serb soldiers from the Yugoslav army arrive and offer terrified residents safe passage away from the village on condition they never return. Most accept, abandoning the village to the Serbs and furthering "ethnic cleansing." Second, B-H and Croatian women in Serb concentration camps are randomly raped, often as part of torture preceding death. Third, Serb, Bosnian Serb and Croatian soldiers; Bosnian Serb militia members; and Chetniks arrest B-H and Croatian women, imprison them and rape them systematically for extended periods of time to make them pregnant or to torture them before killing them. Pregnant victims are raped until their pregnancies have progressed beyond the possibility of a safe abortion and then are released. If a victim dies during an abortion, the death contributes to the genocidal goal. If a victim's child is born, it is considered to be Serbian and the mother's identity is erased.

Allen's book offers no political or military remedies. She feels political remedies are impossible because they would depend on negotiations with the architects and executors of the rape policy. However, she offers some sound and workable humanitarian and legal remedies, including addressing genocidal rape under Roman Law and the Napoleonic Code. This would permit trial in absentia of Serb army officers who authored the Ram and Brana plans promulgating ethnic cleansing.

Also, by defining biological warfare as "a voluntary use of living organisms or their toxic products with the aim of killing or harming persons, useful animals or plants," Allen concludes that genocidal rape is a type of biological warfare because it is willfully destructive and aimed at doing harm. It is also used to attack highly susceptible members of the population—women and children. Further, sperm, as used to force pregnancy, attacks a woman's reproductive system. Genocidal rape also has immediate and
long-term effects. It immediately produces atrocious physical pain, mental suffering and, often, death. In the long term, it produces social ostracism, psychological trauma and even death by abortion, childbirth or suicide. By defining genocidal rape as biological warfare, it would be a crime and in violation of the UN treaty. With this reasoning, Allen takes a giant step in justifying the US/UN/NATO continuing presence in the Balkans.

The book's details make the reader extremely uncomfortable but quite knowledgeable about rape warfare. It must be read two or three times to understand the dimensions of what Allen has seen, researched and analyzed. *Rape Warfare* calls for actions to help survivors, judge perpetrators and guard against future genocidal rape so we can move toward justice and peace in our disordered world.

LTC David G. Bradford, USAF, Maxwell Air Force Base, Alabama